LIBRARIES
UNIVERSITY OF WISCONSIN–MADISON

A supplement to Mr. Chambers's cyclopædia: or, universal dictionary of arts and sciences. In two volumes. Vol. I

Chambers, Ephraim, 1680 (ca.)-1740., et al.
London: Printed for W. Innys and J. Richardson, R. Ware, J. and P. Knapton, [and 13 others], [s.d.]

https://digital.library.wisc.edu/1711.dl/O6WDO2LZMAQA48I

Based on date of publication, this material is presumed to be in the public domain.

For information on re-use, see:
http://digital.library.wisc.edu/1711.dl/Copyright

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

728 State Street | Madison, Wisconsin 53706 | library.wisc.edu

UNIVERSITY OF WISCONSIN
LIBRARY

A

SUPPLEMENT

TO

Ephraim

Mr. CHAMBERS's Cyclopædia:

OR,

UNIVERSAL DICTIONARY

OF

ARTS AND SCIENCES.

IN TWO VOLUMES.

VOL. I.



LONDON:

Printed for W. INNYS and J. RICHARDSON, R. WARE, J. and P. KNAPTON, T. OSBORNE, S. BIRT, T. and T. LONGMAN, D. BROWNE, C. HITCH and L. HAWES, J. HODGES, J. SHUCKBURGH, A. MILLAR, J. and J. RIVINGTON, J. WARD, M. SENEX, and the Executors of J. DARBY.

M. DCC. LIII.

TO THE

READER.

THE late ingenious Mr. CHAMBERS, in the Preface to his celebrated *Universal Dictionary of Arts and Sciences*, justly observed, that "such a work, well executed, "would answer all the good purposes of a library, and contribute more to the propa- "gating of useful knowledge, than half the books extant;" and he had the pleasure of seeing his judgment confirmed, and his labours approved, by the avidity with which that performance was bought up by all ranks of people, both at home and abroad.

THAT the CHAMBERSIAN was every where so kindly received, is not indeed surprising; for what other book could present to be so extensively useful and agreeable as that in which the man of learning, of science, of curiosity, of business, of pleasure, of art, down to the lowest mechanic, might expect to find each his particular account? There the scholar hath a ready repository, and he whom circumstance or inclination will not permit to read many books, may there find abstracts of the best, suited to his occasions.

SOME few however condemn the use of all such dictionaries, on the slight pretence, that, by lessening the difficulties of attaining knowledge, they abate our diligence in the pursuit of it; and by dazzling our eyes with superficial shew, seduce us from digging for riches in the mine itself. To such, we need only answer, that they have not sufficiently considered the distinction between historical and scientifical knowlege. The latter, as Mr. CHAMBERS has observed, cannot be delivered, and so ought not to be expected, in the order of a Dictionary, yet the former may. And it seems obvious, that an historical knowlege of the Arts and Sciences may be of great use; not only to those who have no leisure for deeper researches, but to those also, who intending a farther progress, consider historical as the best preparation for scientifical knowlege. Not to mention the vast use of refreshing the memory occasionally, and thereby preserving ideas and notions already gained.

OTHERS again allege against the utility of all works of this kind, that they are every one imperfect; none of them being free from numerous defects and errors, besides other faults, by means of which he that trusts to them for information, is in danger of being either disappointed or misled. But whatever truth there may be in this objection, there is a little reason, and as in the former, since every human performance is equally liable to it. Perfection is not attainable by man: his best work therefore is that which has the fewest faults. So far in general, it may be allowed.

WITH respect to the CYCLOPÆDIA in particular, whatever faults of any kind it may be justly charged with, yet every man of sense, who will allow himself to reflect a moment on the extensive, various, complicated nature of the work, will rather wonder that the author committed no more, than censure him for those that escaped him.

No body, however, can be more familiar to the faults than he himself was, as sufficiently appears in his Preface; nor more earnestly desirous of amending them, than he shewed himself to be by labouring with indefatigable, incessant pains, to the very last, in collecting and supplying proper materials for that purpose. So that, if he had lived to complete his design, he would undoubtedly have produced the most satisfactory proofs both of his zeal and his capacity to serve mankind in the important and difficult province which he had undertaken.

BUT his death having put an end to this scheme, the benefit of his labours would have been entirely lost, had not GEORGE LEWIS SCOTT, Esq. F. R. S. a Gentleman of acknowledged learning, and of abilities every way equal to such an undertaking, (since appointed Sub-Preceptor to Their Royal Highnesses the Prince of WALES, and Prince EDWARD) been prevailed upon to perfect the work left by Mr. CHAMBERS, in order to select such articles as were in for the press, and to supply such others, as seemed to be most wanting.

To the execution of this latter part of the design, several late excellent authors, whom Mr. CHAMBERS could not have the opportunity of consulting, have contributed largely. By them also considerable additions have been made to the work, particularly with regard to natural history. However, that this useful branch of learning might be treated in the most accurate manner, as indeed it deserves, a Gentleman who has distinguished himself advantageously therein, was engaged to compile the articles relating to it. The same hand also does many articles in anatomy, surgery, chemistry, mineralogy, agriculture, medicine, and other analogous subjects.

THAT

TO THE

READER.

THE late ingenious Mr. CHAMBERS, in the Preface to his celebrated *Univerſal Dictionary of Arts and Sciences*, juſtly obſerved, that "ſuch a work, well executed, "would anſwer all the good purpoſes of a library, and contribute more to the propa-"gating of uſeful knowledge, than half the books extant;" and he had the pleaſure of ſeeing his judgment confirmed, and his labours approved, by the avidity with which that performance was bought up by all ranks of people, both at home and abroad.

THAT the CYCLOPÆDIA was every where ſo kindly received, is not indeed ſurprizing; for what other book could pretend to be ſo extenſively uſeful and agreeable as that in which the man of learning, of ſcience, of curioſity, of buſineſs, of pleaſure, of art, down to the loweſt mechanic, might expect to find each his particular account? There the ſcholar hath a ready repertory, and he whom circumſtance or inclination will not permit to read many books, may there find abſtracts of the beſt, ſuited to his occaſions.

SOME few however condemn the uſe of all ſuch dictionaries, on the ſlight pretence, that, by leſſening the difficulties of attaining knowledge, they abate our diligence in the purſuit of it; and by dazzling our eyes with ſuperficial ſhew, ſeduce us from digging ſolid riches in the mine itſelf. To ſuch we need only anſwer, that they have not ſufficiently conſidered the diſtinction between hiſtorical and ſcientifical knowlege. Tho' the latter, as Mr. Chambers has obſerved, cannot be delivered, and ſo ought not to be expected, in the order of a Dictionary, yet the former may. And it ſeems obvious, that an hiſtorical knowlege of the Arts and Sciences may be of great uſe; not only to thoſe who have no leiſure for deeper reſearches, but to thoſe alſo, who intending a farther progreſs, conſider hiſtorical as the beſt preparation for ſcientifical knowlege. Not to mention the vaſt uſe of refreſhing the memory occaſionally, and thereby preſerving ideas and notions already gain'd.

OTHERS again alledge againſt the utility of all works of this kind, that they are every one imperfect; none of them being free from numerous defects and errors, beſides other faults, by means of which he that truſts to them for information, is in danger of being either diſappointed or miſled. But whatever truth there may be in this objection, there is as little reaſon in it as in the former; ſince every human performance is equally liable to it. Perfection is not attainable by man: his beſt work therefore is that which has the feweſt faults. So far in general muſt be allowed.

WITH reſpect to the CYCLOPÆDIA in particular, whatever faults of any kind it may be juſtly charged with, yet every man of candour, who will allow himſelf to reflect a moment on the extenſive, various, complicated nature of the work, will rather wonder that the author committed no more, than cenſure him for thoſe that eſcaped him.

NO body, however, can be more ſenſible of thoſe faults than he himſelf was, as ſufficiently appears in his Preface; nor more earneſtly deſirous of reforming them, than he ſhewed himſelf to be by labouring with indefatigable, inceſſant pains, to the very laſt, in collecting and diſpoſing proper materials for that purpoſe: So that, if he had lived to complete his deſign, he would undoubtedly have produced the moſt ſatisfactory proofs both of his zeal and his capacity to ſerve mankind in the important and difficult province which he had undertaken.

BUT his death having put an end to this ſcheme, the benefit of his labours would have been entirely loſt, had not GEORGE LEWIS SCOTT, Eſq; F. R. S. a Gentleman of acknowledged learning, and of abilities every way equal to ſuch an undertaking, (ſince appointed Sub-Preceptor to Their Royal Highneſſes the Prince of WALES, and Prince EDWARD) been prevailed upon to peruſe the papers left by Mr. CHAMBERS, in order to ſelect ſuch articles as were fit for the preſs, and to ſupply ſuch others, as ſeemed to be moſt wanting.

TO the execution of this latter part of the deſign, ſeveral late excellent authors, whom Mr. CHAMBERS could not have the opportunity of conſulting, have contributed largely. By their help conſiderable additions have been made to the work, particularly with regard to natural hiſtory. However, that this uſeful branch of learning might be treated in the moſt accurate manner, as indeed it deſerves, a Gentleman who has diſtinguiſhed himſelf advantageouſly therein, was engaged to compoſe the articles relating to it. The ſame hand alſo drew many articles in anatomy, ſurgery, chemiſtry, mineralogy, agriculture, medicine, and other analogous ſubjects.

THAT

To the READER.

THAT the reader may form ſome idea of what has been done for his ſervice, and of the manner in which this performance hath been conducted, he will be pleaſed to obſerve;

1. THAT the plan of the CYCLOPÆDIA has been, in general, adhered to, with this improvement upon it; that proper authorities are almoſt every where quoted, in the double view of producing vouchers for what is advanced, and of directing ſuch as want further information where to find it.

2. That care has been taken to connect the SUPPLEMENT with the CYCLOPÆDIA, ſo as to make the whole in a manner but one work; it being always referred to for thoſe articles which, having been treated of there, are here re-conſidered, and enlarged, or corrected; every ſuch article having the ſyllable *Cycl.* annexed to it, as a direction to conſult the CYCLOPÆDIA firſt on that head.

3. THAT the main end of the work being kept always in view, ſome branches of learning have been treated much more at length than others, with a due preference to the moſt intereſting: Nor is it to be feared that the reader will condemn a diſtinction ſo much to his own advantage.

ON this principle it was judged improper to ſwell the book with details of the ſubtilties of ſchoolmen, and the frivolous and vague queſtions debated among them. Nor did the niceties of philology and literature ſeem to deſerve much more notice than has already been taken of them in the CYCLOPÆDIA. In general, the additions on all theſe heads conſiſt chiefly of the explanation of ſome terms omitted in that work. However, many ſubjects of this kind are more fully treated here, with additional illuſtrations of thoſe of a like nature found in the CYCLOPÆDIA.

ON the other hand, natural hiſtory, and the other branches of real knowlege, have been chiefly attended to; moſt of the various articles relating to theſe ſubjects, which are to be found in the CYCLOPÆDIA, being here very conſiderably enlarged, and a multitude of new ones ſuperadded.

THO' great regard ought to be paid to the mathematical and phyſico-mathematical ſciences, on account of their ſtrict connection with the knowledge of nature, yet as it was not proper, nor indeed practicable in a work of this kind, to give more than general and hiſtorical views of them, and as the CYCLOPÆDIA already contains extracts from the beſt elementary writers on thoſe ſubjects, large additions were judged unneceſſary. However, ſeveral new articles, both curious and uſeful, will be found in this SUPPLEMENT, and in the APPENDIX. In particular, ſuch care hath been taken to explain the principles of the modern geometry, and the methods of computation uſed in it, as to enable a reader, without any great ſkill in mathematics, to ſatisfy his mind that thoſe things are not involved in unexplicable myſtery, as the late ingenious author of the Analyſt pretends; miſtaking the great inventor's conciſeneſs for obſcurity, and the inadequate and confuſed notions of ſome of his followers, for the accurate doctrines of their maſter.

WITH regard to manual arts and manufactures, whether depending on chemiſtry or mechanics, ſo eminently and extenſively beneficial to mankind, it were to be wiſhed, that more complete information, than is to be found here, or in any books extant, could be given the reader. It is indeed to be lamented that there are ſo very few good writers on thoſe important ſubjects; but it is no wonder that thoſe who underſtand and practiſe them beſt, ſhould have the leaſt leiſure or inclination to communicate them to others. Above half a century paſt, an illuſtrious foreign academy formed the noble deſign of compoſing a Hiſtory of Arts; but little or nothing has as yet appeared in conſequence thereof, and their ingenious ſecretary juſtly repreſents the difficulty of the undertaking in ſo ſtrong a light, that what he has ſaid may well ſerve as an apology for the CYCLOPÆDIA, and SUPPLEMENT, if they ſhould be cenſured as defective on this head. However, the reader will find ſeveral curious particulars relating to the arts depending on chemiſtry.

IN general it is hoped that, as the bulk of the book ſhews the additions and emendations to be very conſiderable in quantity, the reader will find them no leſs ſo in point of pleaſure and utility; and that the purchaſers of the CYCLOPÆDIA will be ſatisfied with the juſtice which the proprietors have done them by printing the SUPPLEMENT ſeparately, in the two volumes now offered to the public.

DIRECTIONS to the BINDER.

Place all the CUTS in the Order they are number'd at the End of the Second Volume.

SUPPLEMENT

TO THE

CYCLOPÆDIA,

OR,

UNIVERSAL DICTIONARY

OF

ARTS AND SCIENCES.

A.

AB, in the Hebrew chronology, the eleventh month of the civil year, and the fifth of the eccleſiaſtical year, which begins with *Niſan*. The month *Ab* anſwers to the moon of July. This month had thirty days. *Calmet.*

ABACATUAIA, in zoology, the name of an American fiſh, of the ſhape of the European doree or faber. It is much of the ſhape, ſize, and figure of the common plaiſe. Its mouth is ſmall and toothleſs, and its eyes have a black pupil, and a ſilvery iris. It has five fins, one on the back, and another on the belly; each running to the tail; and two at the gills. The tail makes the fifth, and is conſiderably forked. It has, beſide theſe, two long filaments on the belly, and one ſuch on the back, near the origin of the back-fin. It has no ſcales, but is covered with a very ſmooth and ſoft ſkin. It is all over of a fine ſhining ſilvery white, except theſe filaments, which are perfectly black. It is caught about the ſhores of the Braſils, and is commonly eaten there. See Tab. of Fiſhes, N°. 51. *Margrave*'s Hiſt. Braſ.

ABACAY, in natural hiſtory, a name given by the people of the Philippine iſlands to a ſpecies of parrot, called alſo calangay. See CALANGAY.

ABACINARE, or ABBACINARE, in writers of the middle age, a ſpecies of puniſhment, conſiſting in the blinding of the criminal, by holding a red-hot baſon, or bowl before his eyes [a].

The word is formed of the Italian *bacino*, a baſon; though Menage chooſes to derive it from the Italian *bacio*, a dark or cloſe place; the puniſhment frequently going no farther, than to the diminiſhing the ſight [b].—[[a] *Du Cang.* Gloſſ. Med. Lat. T. 1. p. 2. *Schoettg.* Lex. Ant. p. 148. [b] V. *Aquin.* Lex. Mil. T. 1. p. 4. Cruſc. T. 1. p. 3. Voc. *Abbacinare.*]

ABACISCUS. See ABACUS.

ABACIST, ABACISTA, in writers of the middle and barbarous ages, denotes an arithmetician, or accomptant [a].—[[a] *Du Cang.* Gloſſ. Med. Lat. T. 1. p. 4. in Voc. *Abacus.* Cruſc. T. 1. p. 3. Voc. *Abbachiſta.*]

ABACOT, in our old writers, the antient coronet or cap of ſtate worn by our Engliſh kings, made up in form of two crowns. *Spelm.* Gloſſ. Arch. p. 1.

ABACUS, (*Cycl.*) — or ABACISCUS, in the antient architecture, is uſed to denote certain compartiments in the incruſtation or lining of the walls of ſtate-rooms, Moſaic pavements, and the like.

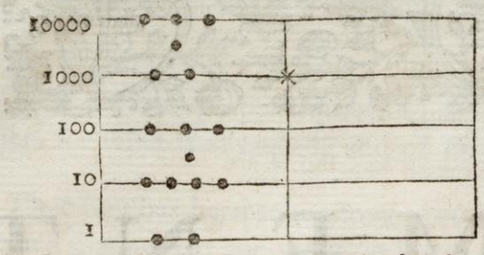
There were *Abaci* of marble, porphyry, jaſper, alabaſter, or [a] even glaſs; ſhaped variouſly, ſquare, triangular, and the like. —[[a] Vid. *Plin.* l. 35. c. 1. *Harduin.* Not. ad Loc. *Vitruv.* l. 7. c. 3. p. 133. *Baxt.* Gloſſ. Rom. p. 2. ſeq.]

The *Abacus* for facilitating the operations of arithmetic, is an inſtrument almoſt as antient, and as extenſive, as the art of arithmetic itſelf: if it be later than the methods of computing by the fingers, and by lapilli, or ſtones, (which obtained among the [b] Egyptians) 'tis at leaſt much prior to the uſe of numeral letters, or figures, wrought with the pen.—[[b] *Herodot.* l. 1. Hiſt. Acad. R. Inſcr. T. 3. p. 389.]

We find it in uſe, under ſome variations, among the Greeks, Romans, Chineſe, Germans, French, &c. It excells in point of facility, and cleanlineſs of operation, as working without any ſtrokes, or blots of the pen, or waſte of paper; ſome alſo give it the preference in point of expedition: at leaſt it appears better adapted to the apprehenſion of children, and beginners in accounts, who might commodiouſly enough be firſt initiated this way. Adam Rieſe, who has written largely on the uſe of the *Abacus*, aſſures us he has found, in the teaching of youth, that thoſe who begin with computing on the *Abacus*, become afterwards more dexterous and expert at accounts, than thoſe who begin with figures. *Wolf.* Lex. Math. p. 171. Voc. *Arithmetica.*

The art of computing by the *Abacus* makes a peculiar ſpecies of arithmetic, called *calculatoria*, or *logiſtica per calculos*; by the French, *la logiſtique par jettons* [c].—[[c] It is treated of by *Herigon*, in Curſ. Mathem. P. 3. p. 125. & *Dechales*, in Mund. Mathem. T. 1. p. 412. ſeq. V. *Wolf.* lib. cit. p. 170.]

The *Abacus* is variouſly contrived; that chiefly uſed in European countries is made by drawing any number of parallel lines, at pleaſure, at a diſtance from each other, equal to twice the diameter of a *calculus*, or counter. Here a counter placed on the firſt or lowermoſt line ſignifies 1; on the ſecond, 10; on the third, 100; on the fourth, 1000; on the fifth, 10000; and ſo on. In the ſpaces between the lines, the ſame counters ſignify half of what they ſignify on the next ſuperior line; *viz.* in the ſpace between the firſt and the ſecond lines, 5; between the ſecond and third, 50; between the third and fourth, 500; and ſo on. Thus the counters on the *Abacus*, in the figure here ſubjoined, make the ſum of 37392.—The *Abacus* is alſo divided croſs-wiſe into *Areolæ*, by means whereof ſubtractions are made. *Wolf.* Lex. Math. p. 171. ſeq.



The Grecian *Abacus*, αβαξ, or counting-board, was an oblong frame, divided by ſeveral braſs wires ſtretched parallel to one another, and mounted with an equal number of little ivory balls, like the beads of a necklace. By the arrangement of theſe balls, diſtinguiſhing the numbers into different claſſes, and obſerving the relations of the lower to the upper, all kinds of computations were eaſily performed. *Mahudel*, in Hiſt. Acad. R. Inſcr. T. 3. p. 390.

The Roman *Abacus* was much the ſame with the Grecian, except that inſtead of ſtrings, or wires, and beads in the Roman, we find pins and grooves for them to ſlide in. It is deſcribed by ſeveral authors; but notwithſtanding all theſe deſcriptions, we ſhould have had a very obſcure idea of the ancient manner of reckoning, had there not been a figure of it found among the ancient marbles. It is given by Schottus [d], Gruter [e], Velſerus [f], and Pignorius [g].—[[d] Nodor. Ciceron. l. 1. c. 6. [e] Inſcript. vet. p. 224. [f] *Opp.* p. 422, 819, & 842. [g] De Servis, p. 340. *Fabric.* Bibl. Antiq. c. 16. §. 15. See the figure in Phil. Tranſ. N°. 180.]

The Chineſe *Abacus* conſiſts, like the Grecian, of ſeveral ſeries's of beads ſtrung on braſs wires, extended from the top to the bottom of the Inſtrument, and divided in the middle by a croſs piece from ſide to ſide; ſo as in the upper row each ſtring has two beads, which are each reckoned for five; and in the lower row, each ſtring has five beads of different values; the firſt being reckoned as 1; the ſecond, as 10; the third, as 100, &c. as among us [h]. Add, that inſtead of four pins for digits, or units in the Roman *Abacus*, the Chineſe has five beads; which ſeems to argue, that this latter was intended for a duodecimal progreſſion, as the Roman was for a decimal [i]. We have two different figures, and deſcriptions of the Chineſe *Abacus*, one given by F. Martinius, who had lived many years in China; the other by Dr. Hook, who copied it from a Chineſe dictionary of the court-language.—[[h] V. *Martin.* Sinic. Hiſt. Dec. 1. l. 1. p. 27. [i] *Hook*, in Philoſ. Tranſact. N°. 180. p. 166.]

ABACUS is alſo uſed by modern writers for a table of numbers ready caſt up, to expedite the operations of arithmetic. V. *Alſt.* Comp. Lex. Phil. p. 3252.

In this ſenſe we have *Abaci* of addition, of multiplication, of diviſion; an *Abacus logiſticus*; *Abacus* of ſquares, of cubes, &c.

ABACUS *logiſticus* is a rectangled triangle, whoſe ſides, forming the right angle, contain the numbers from 1 to 60; and its area, the factums of each two of the numbers perpendicularly oppoſite. This is alſo called a *canon of ſexageſimals*. *Alſt.* Comp. Lex. Phil. p. 3264.

ABACUS *& palmulæ*, in the ancient muſic, denote the machinery, whereby the ſtrings of polyplectra, or inſtruments of many ſtrings, were ſtruck, with a plectrum, made of quills. *Malc.* Treat. of muſick, c. 14. §. 5. p. 558.

ABACUS *harmonicus*, is uſed by Kircher for the ſtructure and diſpoſition of the keys of a muſical inſtrument, whether to be touched with the hands, or the feet. *Walth.* Lex. Muſ. p. 1.

ABADIR, in the Roman theology, the ſtone which Saturn ſwallowed, believing it his new-born ſon Jupiter, and which at length became deified, and the object of religious worſhip. *Priſcian.* Inſt. Grammat. l. 5. p. 125.

The word is alſo written *Abaddir*, *Abdir*, *Abbadier*, *Abdira*, and even *Agadir*.

The origin of the word has greatly puzzled etymologiſts. The curious may conſult *Bochart* Chanaan, l. 2. c. 2. p. 786. *Baxter*, Gloſſ. Antiq. Rom. p. 3. Mem. de l'Acad. des Inſcript. T. 9. p. 194. *Clerici*, Not. ad Heſiod. Theogon. v. 485. Bibl. Univ. T. 21. p. 111.

ABAISSE', in Heraldry. See ABASED, *Cycl.*

ABARCA, an antient kind of ſhoe, uſed by the country people in Spain to paſs mountainous and rocky places; being made of raw bullocks or goats hides, and bound about the feet with cords, which ſecured them againſt the ſnow [a].—[[a] *Du Cang.* Gloſſ. Lat. T. 1. p. 6. *Aquin.* T. 1. p. 3. *Steph.* Span. Dict. in voc.]

Stephens mentions another ſort of *Abarca*, made of wood, like the French *Sabots*; called *Abarca's*, becauſe ſhaped like a boat, *barca*.

ABAS, a Perſian weight, uſed in weighing pearls; one eighth leſs than the European caract. *Savar.* Dict. Comm. T. 1. p. 1.

ABASSI, or ABASSIS, a ſilver coin, current in Perſia, equivalent to twenty French ſols, ſomewhat leſs than an Engliſh ſhilling. Nouv. Mem. des Miſſ. T. 3. p. 396.

The *Abaſſi* took its denomination from Schah Abas II. king of Perſia, under whom it was ſtruck. On one ſide, it bears the Mahometan profeſſion of faith; on the other, the name ABAS, and that of the city where it was coined. *Savar.* Dict. Comm. T. 1. p. 1. ſeq.

There are alſo pieces of five *Abaſſis*, and others of two, tho' little uſed. Fifty *Abaſſis* make the toman.

ABATIS, or ABBATIS, in writers of the barbarous age, denotes an officer in the ſtables, who had the care, and diſtribution of the provender.

Spelman [a] explains *Abatis* by hoſtler; and agreeably hereto, derives the word from the Greek αβατος, ſtupid; a character which he ſuppoſes to belong to that ſervile people. But the *Abatis*, at leaſt in the houſholds of princes, was an officer of better figure: his function ſeems to have amounted to the ſame with that of marſhal, others ſay of ſeneſchal, or avenor. Hence Du Cange, with more probability, derives the word from *batum*, an antient meaſure wherein the oats were dealt out: he was doubtleſs firſt called *à batis*; as others, *à ſcriniis*, *à ſecretis* [b], &c.—[[a] *Spelm.* Gloſſ. p. 4. Voc. *Abbatis.* [b] V. *Du Cang.* Gloſſ. Lat. T. 1. p. 7. ſeq.]

ABATOR, in law, is uſed for one that enters into a houſe or land, void by the death of the laſt poſſeſſor; before the heir takes poſſeſſion, and thereby keeps him out. Old Nat. Br. 115. *Cowel.*

ABBA, in the Syriac, and Chaldee languages, literally ſignifies a *father*; and figuratively, a ſuperior, reputed as a father in reſpect of age, dignity, or affection.

The word has been adopted by divers other languages, beſides the Syriac, and Chaldee, as the Ruſſian, Ethiopic, &c. Whence ſome authors have dreamt of a natural ſignificancy in it. V. Miſ. Lipſ. T. 7. p. 41.

ABBA, ABA, or ANBA, is more particularly uſed in the Syriac, Coptic, and Ethiopic churches, as a title which the people give their biſhops. *D'Herbelot*, Bibl. Orient. Voc. *Aba.*

The biſhops themſelves beſtow the title *Abba*, more eminently on the patriarch of Alexandria; which occaſion'd the people to give him that of *baba*, or *papa*, that is grandfather: a title which he bore before the biſhop of Rome.

ABBA is alſo a Jewiſh title of honour, given to certain of that claſs of rabbins, called Tanaites. V. *Wolf.* Bibl. Heb. T. 2. p. 866.

We have no diſtinct account of this dignity, which however appears to be very antient; as being given to the moſt antient of the Gemaric doctors, and even the Seburæans.

ABBA, is alſo particularly uſed by ſome writers of the middle age, for the ſuperior of a monaſtery, uſually called *Abbot*. *Du Cange*, Gloſſ. Lat. See ABBOT *Cycl.*

ABBAISSEUR, in anatomy, a name given by Winſlow and other French writers, to one of the muſcles of the eye, called by others the *deprimens* and *humilis*, and by Fabricius, the *rectus inferior*: Cowper, and Albinus, call it the *depreſſor oculi*, and it is one of the *quatuor recti oculi* of the laſt author.

ABBAT, ABBAS. See ABBOT, *Cycl.*

ABBATIS. See ABATIS.

ABBAYANCE, in law books. See ABEYANCE, *Cycl.*

ABBREVIATOR, is ſometimes uſed for a perſon who contracts, or reduces a long writing, or other matter into a ſhorter compaſs.

ABBREVIATOR, is more particularly uſed for an officer in the court of Rome, appointed as aſſiſtant to the vice-chancellor, for drawing up the pope's briefs, and reducing petitions, when granted by the pontiff, into proper form, for being converted into bulls.

The *Abbreviators* are ſuppoſed by Ciampini, to be the ſucceſſors either of the *cancellarii* in the imperial houſhold, or of the ſeven *notarii*, ſaid to have been plac'd by pope Clement I. in the ſeven quarters of Rome, to write down the acts of the martyrs within their ſeveral diſtricts [a].

They are ſaid to have taken the name, either from their writing the *brevia*, briefs, or ſhorter epiſtles of the popes [b]; or from their making uſe of *notæ*, or abbreviations in writing. The latter opinion may ſeem the more probable, in that the name is ſometimes uſed by writers of the ſixth age, as ſynonymous with *notarii* or *breviatores* [c].—[[a] V. *Ciampin.* de Abbreviator. c. 1. ſeq. [b] *Calv.* Lex. Jur. p. 127. Voc. *Breviator.* [c] *Walch.* ap Miſc. Lipſ. T. 1. p. 147.]

The earlieſt mention made of *Abbreviators* in the papal court, is in one of the *extravagantes* of pope John XXII. in 1317. Pius II. firſt erected them into a college or order, in 1463, and confer'd on them ample privileges. They were ſuppreſs'd by his ſucceſſor Paul II. in 1474, as uſeleſs and ignorant [d]: and reſtor'd and confirm'd anew by Sixtus IV. in 1478 [e].—[[d] *Platin.* de Vit. Paul. p. 331. [e] *Ciampini* de Abbreviator. c. 4. ſeq.]

The *Abbreviators* at preſent make a college of ſeventy-two perſons, divided into two parks or ranks; one call'd *Abbreviatores de parco majore*, who are twelve in number, all prelates; the other, *Abbreviatores de parco minore*, call'd alſo *examinatores*, who may be laymen [h].—See farther in Ciampini, who has two volumes expreſs, on the inſtitution, office, privileges, ceremonies, &c. of the *Abbreviators* [i].—[[h] Jour. des Scav. T. 37. p. 348. [i] De Abbreviatorum de parco majori, &c. *Joannis Ciampini Romani*, fol. Rom. 1691. Extracts whereof are given in the Act. Erud. Ann. 1691. p. 306. and Journ. des Scav. T. 21. p. 120. Abbreviatoris de curia compendiaria notitia. Rom. 1696. An Extract hereof is given in Act. Erud. Lipſ. 1998. p. 67. ſeq.]

ABBRE-

ABBREVIATORS is also a name given by some authors to an antient litteral academy, suppos'd to have been at Rome, in the fifteenth century, and compos'd of the chief men of letters of the age; as, Pomp. Lætus, Platina, Pontanus, Sannazarius, Sabellicus, &c. who, by the rules of the society, chang'd their names at their admission, for those of some antient Greek or Roman.

They are supposed to have been thus called, either in honour of Platina, one of the papal *Abbreviators*, who was the director of this academy; or because they undertook to *abbreviate* and reduce into a narrow compass, what had been written diffusively on various subjects. *Walch.* in Misc. Lips. Vol. 1. p. 150.

The existence of such an academy has been much controverted: Stempelius first broach'd the notion, which has been since defended by Walchius, and countenanc'd by Struvius, and some other learned men; but exploded by Heumannus, as a fiction, grounded only on mistakes [a].—[a Vid. *Struv.* Introd. ad Not. rei. liter. C. 10. §. 5. *Walch.* in Misc. Lips. T. 1. p. 144. And *Heuman.* de fabula Societ. Abbreviat. Romanæ. Misc. Lips. T. 3. p. 2.]

ABDALS, in the Eastern countries, a kind of saints supposed to be inspir'd to a degree of madness. The word, comes, perhaps, from the Arabic, *Abdallah*, the servant of God.—The Persians call them *devaneh khoda*, agreeable to the Latins way of speaking of their prophets, and sibils, *q. d. furentes deo*, raging with the god.

The *Abdals* are often carry'd by excess of zeal, especially in the Indies, to run about the streets, and kill all they meet of a different religion; of which travellers furnish many instances. The English call this, *running a muk*, from the name of the instrument, a sort of poignard, which they employ on those desperate occasions. If they are kill'd, as it commonly happens, before they have done much mischief, they reckon it highly meritorious, and are esteem'd, by the vulgar, martyrs for their faith. V. *D'Herbel.* Bibl. Orient. p. 5.

ABDEST, among the Mahometans, a peculiar manner of washing, before prayer, entering the mosque, or reading the alcoran; practis'd with some difference both by Turks and Persians. The word is compounded of the Persian *ab*, water, and *dest*, hand.

The Persian *Abdest*, or lotion, is perform'd by passing the hands with water over the head, from the neck to the forehead, twice; and afterwards over the feet to the ankles.—The Turks, on the contrary, pour water on their heads, and wash their feet thrice; but if they have wash'd the feet in the morning, before dressing, they content themselves to wet their heads, and stroke it over their stockings, from the toe to the ankle [a]. Rycaut [b] and Pitts [c] describe the ceremony somewhat differently.—[a *D'Herbel.* Bibl. Orient. p. 10. b *Rycaut*, Pres. Stat. Ottom. Emp. l. 2. c. 23. p. 158. c *Pitts*, Account of Mohamm. c. 6. p. 36. seq.]

ABDICARIA *propositio*, in logic, is used for a negative proposition.

ABDOMEN, *(Cycl.)* — Authors are not agreed, whether the hind part be properly included in the *Abdomen*, which some restrain to the anterior, or fore part only [a]. Keill varies between the two, excluding in one place the back part, yet in another, making it part of the *Abdomen* [b]. Dictionary-writers are still more faulty; some of them make the *Abdomen* only part of the lower venter [c]; others more expressly call it the external part [d]; by which we suppose they mean the integuments of the *Abdomen*.—[a *Cast.* Lex. Med. p. 2. b *Keil*, Comp. Anat. p. 7, 8. c *Danet.* Dict. Lat. p. 7. *Richelet*, T. 1. p. 5. Col. 1. d *Trev.* Dict. Univ. T. 1. p. 24.]

Diseases of the ABDOMEN are inflammations, abscesses, schirrus's, indurations, inflations, spasms, &c. Hence the *Abdomen* becomes the seat of divers operations; as perforations, sutures, sections, &c.

Wounds of the ABDOMEN, either only affect the common integuments and muscles, or else they penetrate into the cavity of the *Abdomen*.

Wounds are examined as to this particular, either by the eye, the passing the probe, or the injecting of warm water; if the water meets no obstruction, you are sure the wound penetrates; if it returns back upon you, and the probe does not pass in, but meets with obstruction, the *Abdomen* is not entirely opened.

Those wounds that do not penetrate into the cavity of the *Abdomen*, are either only in the common integuments, or the muscles of the *Abdomen* are divided as far as the peritoneum. The first of these cases requires little care, being only a common slight wound, but the last is very dangerous, for the intestines very often fall thro' the wound. If the wound is large, great skill is required in the surgeon, especially, if it is made in a transverse, or oblique direction, for in this case the suture is necessary, to keep the gaping lips of the wound together. Having taken these precautions, to preserve the intestines and peritoneum in their natural situation, the wound is to be dressed with vulnerary balsams, and an adhesive plaister; the patient must also be enjoined abstinence, must have rest, and his bowels must be kept open.

In wounds of the *Abdomen*, that penetrate into its cavity, the surgeon is first to examine very carefully, whether any of its contents partake of the injury. It will be found that this is not the case, if there is no great degree of weakness, hæmorrhage, pain, fever, &c. if on laying the patient upon the wounded side, there is no discharge of chyle, gall, excrement, or urine; if milk being injected warm, returns without any alteration in its colour; if the inflicting instrument has not been very sharp; and lastly, if there is no vomiting or discharge of blood by the mouth, stool, or urine, nor swelling or hardness of the belly. *Heister*'s Surg. p. 55.

In the philosophical Transactions, we have an account of a very extraordinary size of the *Abdomen* of a young woman, who was in a dropsy from the want of a kidney. The circumference of the *Abdomen* was six feet four inches, and from the xyphoid cartilage to the os pubis, above four feet. Phil. Trans. N° 482. Sect. 2.

We have some remarks on the hydropical tumors of the *Abdomen*, in the medical essays of Edinburgh. Vol. 5. art. 59.

ABDUCENS *labiorum*, in anatomy, a name given by Spigelius to a muscle, which he also calls the *secundus ad latera trahens*. This is the *levator anguli oris* of Albinus, and the *caninus* or *elevator labiorum communis* of others.

ABDUCENT, in anatomy. See ABDUCTOR, *Cycl.*

ABDUCTION, *(Cycl.)* in surgery, denotes a species of fracture, wherein the bone being broken near a joint, along its whole thickness, the two stumps start to a good distance from each other. See FRACTURE.

This *Abduction* is the same with what Greek writers call απαγμα, or αποκλασμα; sometimes καυληδον, *q. d. Caulatim facta fractura*; some Latin writers call it *Abruptio. Castellus.*

ABDUCTOR, *(Cycl.)* — *Abductor longus pollicis*, in anatomy, a name given by Albinus to a muscle of the hand, called by Winslow, Cowper, and others, *extensor primus pollicis*.

ABDUCTOR *Ossis metacarpi digiti minimi*, in anatomy, a name given by Albinus to a muscle of the hand called by Winslow, and some others, the *metacarpialis*, and by the generality of writers by names but badly expressing its nature or uses. Riolanus calls it *pars hypothenaris parvi digiti*; and Spigelius, *interosseus ultimo ossi metacarpii, parte manus externa, adherens*. Cowper calls it the *abductor minimi digiti*; and Douglas's the *flexor primi internodii minimi digiti*.

ABELMOSCH, or ABELMUSK, the *musk-seed*; a small odoriferous seed brought from Egypt; chiefly used in perfumes. See MUSK-SEED.

The word is Arabic; compounded of *Ab*, *el*, and *mosch*; as being the musk of the Arabs. *Blanc.* Lex. Med. p. 1. seq.

ABELOITES. } See ABELIANS, *Cycl.*
ABELONIANS. }

ABEREMURDER, ABEREMURDRUM, in antient law books, denotes murder that has been proved, or made appear by judiciary process. *Wilk.* Gloss. in voc. *Abarnare*.

The word is Anglo-Saxon; compound of Ebene, bare or clear; and Mopð, killing, homicide. *Spelm.* Gloss. p. 4.

In this sense *Aberemurder*, called also *Eberemurder*, amounts to the same with *probatum murdrum*, or murder which needed proof; and stands opposed to open murder, which was murder sufficiently known by the notoriety of the fact.

Lambard explains *Aberemurder* by *manifestum murdrum*; and Spelman, and after him Du Cange, by *apertum murdrum* [a]; which seems to be a mistake, unless we are to suppose *apertum* and *manifestum* are here to be taken in that loose signification in which Spelman elsewhere uses the latter, when he interprets it, *non quod in aperto fit, sed quod aperto constat de perpetrato scelere*; that is, has been fully proved [b].—[a *Spelm.* loc. cit. *Du Cang.* Gloss. Lat. T. 2. p. 111. Voc. *Eberemurdrum.* b *Spelm.* Gloss. p. 193. Voc. *Eberemurder.*]

Aberemurdrum was one of those crimes, which could not be atoned for with money; as most others might.

ABERRATION, in optics, is used to denote that error or deviation of the rays of light, when inflected by a lens or speculum, whereby they are hindred from meeting or uniting in the same point.

There are two species of the aberrations of rays, distinguished by their different causes, one arising from the figure of the glass or speculum; the other from the unequal refrangibility of the rays of light. See LENS and SPECULUM.

The second species of aberration is sometimes called the Newtonian, from the name of its inventor.

ABESTA, the name of one of the sacred books of the Persian Magi; which they attribute to their great founder Zoroaster, or Zerdusht.

The *Abesta* is a commentary or exposition of two other of their religious books, called *zend* and *pazend* [a]; the three together include the whole system of the *ignicolæ*, or worshippers of fire.—[a *D'Herbel.* Bibl. Orient. p. 11. See also *Hyde*, de Relig. Vet. Pers. c. 2. *Fabrici* Cod. Pseudepig. Vet. Test. T. 1. §. 108. p. 350.]

ABESTON, a word us'd by some of the writers of the middle ages as the name of a stone, to which they attribute great virtues;

virtues; it seems no other than a careless mistake in writing the word Asbestus.

ABEVACUATION, in medicine, denotes a partial evacuation. See EVACUATION, *Cycl.*

Abevacuation is synonymous with the Greek αποκενωσις; which stands in the same relation to κενωσις, or an universal evacuation. V. *Cast.* Lex. Med. in Voc. *Cenosis.*

ABHEL, in botany, a name given by some to savin, an evergreen garden-shrub, well known in physic in many intentions. *Ger.* Emac. Ind. 2.

ABIB, in the Hebrew chronology, the name of the first month of their ecclesiastical year. This month was afterwards called *Nisan*, and answers to our March. *Calmet.*

ABIES. See FIR-TREE.

ABIGEATUS, ABIGEAT, in the civil law, the crime of stealing cattle, or driving them off, especially in droves, or numbers [a].—[a V. *Briss.* de Verb. Signif. p. 3. Voc. *Abigei. Calv.* Lex. Jur. p. 7. *Voss.* Etym. p. 15. Voc. *Ago. Spieg.* ap. Calv. loc. cit.]

The Roman lawyers generally call this crime *Abigeatus*; the orators and poets *Abactus*.—The criminal who commits it is denominated *Abigeus* or *Abigevus*; sometimes *Abactor*, *Abigator*, and even *Abigeator*, by the Greeks αβιγεω, απελατης, and βοηλατης.

Abigeat was a peculiar species of theft, and had its appropriate process: authors vary as to the essence of it, and its distinction from *furtum*. Some fix its characteristic in the quality of the thing stolen, which is to be cattle: others extend it so as to include other kinds of animals, as fowls, and even servants. Others distinguish it by the quantity of the thing stolen; according to which, he who takes a single sheep, or hog, is only *fur*; he that takes a whole herd *Abigeus*. Others make it essential to *Abigeat*, that it be done clandestinely, as in the night, or by enticement, (*e. gr.* throwing corn to pidgeons) not by open force; and that the thing be afterwards concealed. Some again make the place the essential part, as that the thing be taken out of the fold, house, or pasture; not out of the stables, nor straying in the woods, or highways. Others place it in the habit; as if *furtum* were the first, or an occasional offence, *Abigeat* the practice, or making a trade of it. Lastly, others seem to make the frighting of cattle away, a species of *Abigeat.*

The punishment of *Abigeat* was more severe than that of *furtum*; viz. condemnation to the mines, banishment, or even death itself, according to the quality of the offender. But sometimes in Spain the punishment was more severe than elsewhere, in regard the people of that country were more than ordinarly addicted to it [b].—[b *Briss.* & *Calv.* loc. cit. *Aubert.* in Voc. *Pitisc.* Lex. Ant. T. 1. p. 7. seq.]

ABIGEATUS, among physicians, the procuring an abortion by art or medicine [a]; called also *Abactus*, and *Abigere partum.* See ABORTION.

Hence the name *Abiga*, sometimes given to the herb *chamæpitys*, from its use in that action [b]; and sometimes also to the third membrane of the secundines, on account of its supposed office, *abigere lotium*, to keep off the fœtus's urine from annoying it [c]. See SECUNDINE, URACHUS, &c.—[a *Briss.* de Verb. Signif. p. 3. *Calv.* Lex. Jur. p. 7. b *Plin.* Hist. Nat. l. 24. c. 6. *Gorr.* Med. Defin. p. 504. Voc. χαμαιπιτυς. c *Mart.* Lex. Phil. T. 1. p. 2.]

ABILITY, is used in law, for a capacity of doing certain things, relating either to the acquisition of property, or the transferring of it.

Ability in this sense coincides with *capacity*, and stands opposed to *disability*, or *non-ability.*

Every person is supposed to be *able*, i. e. to have the power of taking and disposing of effects, whom the law does not disable. *Hale* Anal. of Law, § 1. p. 3.

ABLAQUEATION, (*Cycl.*) is synonimous with *baring* of trees in some English writers. It stands contradistinguished from *fossio*; and perhaps from *rastri* and *subaratio*, which were more superficial diggings, and did not reach to the roots. *Salmas.* Exercit. ad Solin. T. 1. p. 516.

This great critic censures Solinus for confounding *rastri* with *Ablaqueation*, and seems to make them opposites: *aliud rastrorum opus in agro & vinea, aliud ablaqueatio:—Fossio igitur & rastri non proprie ad radices pertinent vitium, sed ablaqueatio.* Yet, elsewhere, he himself makes them synonymous, and blames the same Solinus for distinguishing them.—*Sic etiam erraverit Solinus, qui rastros & ablaqueationem discernit.* Id. ubi supra, p. 512.

Ablaqueation was practised by the antients on all trees [a]; particularly the vine, and myrrh-tree [b]. The instrument by which it was done, seems to Salmasius, to have been the rastri [c]: its design, and use was, in general, to promote the fertility of fruit-trees, by exposing their roots to the sun and air, for fresh influence; and thus both increase their bearing, and accelerate the ripening of their fruit [d]. But in the myrrh-tree, *Ablaqueation* is said to have had farther views, viz. to cool its root, and hereby promote the bleeding of its gum [e]. Modern husbandmen also find it of use for curing the moss [f], and phyllomania [g]; and for abating the exuberance of trees [h]. The larger roots alone, not the lesser fibres, according to Bradley, are to be laid bare.——Dr. Tong takes *Ablaqueation* to have much the same tendency and use with cross-hacking; and thinks it chiefly contributes to fertility, by hindering the nourishment of the outer coats, and circles of the roots, as well as of suckers and leaves; and thus supplying a greater stock of nutriment to the inner coats, which alone reaches to the outermost sprigs of the last years, on which the fruit are chiefly to be expected [i].—[a *Plin.* Hist. Nat. l. 17. c. 39. b Id. l. 12. c. 33. c Lib. cit. p. 516. d *Pitisc.* Lex. Ant. T. 1. p. 8. e *Diodor.* Bibl. l. 5. p. 317. f *Evel.* Terra, p. 309. g Id. ibid. p. 327. h Phil. Trans. N°. 46. p. 916. i In Phil. Trans. loc. cit.]

The season for *Ablaqueation* is in autumn: an old writer fixes it before the middle of October [k], for the benefit of the winter-rain, and snow-water: a late botanic professor places it in January [l].—[k *Curt.* de Cult. Hort. ap. Pitisc. ubi supra. l *Bradl.* Dict. Bot. in voc. Dict. Rust. Voc. *Baring.*]

ABLATIVE, (*Cycl.*) the question concerning the Greek *Ablative* has been the subject of a famous literary war, between two great grammarians, Frischlin [a] and Crusius [b]; the former of whom stood for, and the latter against the reality of it.

The dispute is scarce decided to this day. Sanctius [c], and the Port-royalists [d] still maintain the affirmative; Perizonius [e] the negative. The chief reason alledg'd by Sanctius is, that the Roman writers often joined Greek words with the Latin prepositions, which govern *Ablative* cases, as well as with nouns of the same case. To which Perizonius answers, that the Latins antiently had no *Ablative* themselves; but instead thereof, made use, like the Greeks, of the dative case; till at length they formed an *Ablative*, governed by prepositions, which were not put before the dative: that, at first, the two cases had always the same termination, as they still have in many instances: but that this was afterwards chang'd in certain words. 'Tis no wonder then, that the Latins sometimes join prepositions which govern an *Ablative* case, or nouns in the *Ablative* case, with Greek datives, since they were originally the same; and that the Greek dative has the same effect as the Latin *Ablative* [f].—[a Demonstratio Græcos non carere Ablativo. Argent. 1586. 4to. b Antistrigilis cum refutatione demonstrat. Ablativi Græcorum. Argent. 1586. 8vo. c In Minerva, Ed. Perizon. p. 26. d Abreg. de la Nouv. Meth. Grecq. c. 2. e Not. ad Sanct. loc. cit. f *Le Clerc*, Bibl. Univ. T. 5. p. 303. seq.]

ABLATIVE *absolute*, in grammar. See ABSOLUTE, *Cycl.*

ABLECTI, in antiquity, a choice or select part of the soldiery in the Roman armies, picked out of those called *extraordinarii.*

The word is Latin, formed of *ablegendo*, *quasi ex plurimis lecti*, of the Greek απολεγειν [a].——Pitiscus [b] takes the word *Ablecti* for a corruption, and to have arisen from a wrong translation of απολεκτος; which, according to him, ought rather to have been rendered *selecti*: which is confirmed by Turnebus, who alters *Ablectæ ædes* in Plautus, for *abjectæ*: but Aquinas defends the authenticity of *Ablecti*; and urges, after Scaliger, *ablegmina*, on his side, as a word of the same origin [c].—[a *Aquin.* Lex. Mil. T. 1. p. 3. *Kenn.* Rom. Ant. Not. l. 4. c. 6. p. 192. b *Scal.* in Fest. Voc. *Albegmina.* c *Pitisc.* Lex. Antiq. Rom. T. 2. p. 721. Voc. *Selecti. Aquin.* loc. cit.]

ABLEGMINA, in antiquity, those choice parts of the entrails of victims, which were offered in sacrifice to the gods.

In Festus we find the word *Albegmina* [a], which Scaliger [b], and others after him [c], take for a corruption of the text; the word being apparently derived from *ablegere*, to cull or separate; formed in imitation of the Greek απολεγειν, which signifies the same. In which sense *Ablegmina* coincides with απολεγμοι; unless, as others suggest, the word be of Latin origin, and derived from *albeo*, whence *Albegmina*, on account of the whiteness of these parts. —[a *Fest.* in *Albegmina.* b Not. in Fest. c *Voss.* Etym. p. 2.]

The *Ablegmina* were otherwise called *prosiciæ*, *porriciæ*, *prosecta*, and *prosegmina* [d]: they seem to have differed from *strebula*, which were the like morsels of the fleshy parts [e]; and from *augmentum*, which particularly denoted a part of the liver [f].—[d *Baxt.* & *Dan.* in Voc. e *Paul. Diacon.* in Fest. Voc. *Strebula.* f *Varro*, de Ling. Lat. l. 4. *Briss.* de Formul. l. 1. p. 24. *Lomeier*, de Lustrat. c. 23. p. 225.]

Some authors make *Ablegmina* to denote all those parts of the victims which were offered to the deities; contrary to the authority of Festus, who restrains *Ablegmina* to the *exta*, or entrails only.

The *exta* being found good, were to be prosected or parted; *i. e.* the extremes or prominent parts cut off, as *Ablegmina*, to be sprinkled with flour, and burnt by the priests on the altar, pouring wine on them [g].——Tertullian rallies the heathens for thus serving their gods with scraps and offals [h].—[g *Pitisc.* Lex. Ant. T. 1. p. 8. h *Tertull.* Apolog. c. 13. *Non dico quales sitis in sacrificando, cum enecta & tabidosa quæque mactatis: cum de optimis & integris supervacua quæque truncatis, capitula & ungulas; quæ domi pueris vel canibus quoque destinas-setis.*]

ABLET, or ABLEN, in zoology, a name given by some to the common bleak, a small fresh-water fish, called in Latin *Alburnus.* See ALBURNUS. *Willoughby*, Hist. Pisc. p. 263.

The *Ablet* is truly and properly a ſpecies of cyprinus, and is diſtinguiſhed by Artedi by the name of the five-inch cyprinus, with twenty rays in the *prima ani*. See the articles ALBURNUS and CYPRINUS.

ABLUTION, (*Cycl.*)—Ablutions appear to be as old as any ceremonies, and external worſhip itſelf. Moſes enjoined them; the heathens adopted them [a], and Mahomet and his followers have continued them: thus they have got footing among moſt nations, and make a conſiderable part of moſt eſtabliſhed religions.—The Egyptian prieſts had their diurnal and nocturnal *Ablutions* [b]: the Grecians their ſprinklings [c]: the Romans their luſtrations and lavations [d]: the Jews their waſhings of hands and feet [e], beſide their baptiſms [f]: the antient Chriſtians had their *Ablutions* before communion [g], which the Romiſh church ſtill retain before their maſs, ſometimes after [h]: the Syrians, Cophts, &c. have their ſolemn waſhings on Good-Friday [i]: the Turks [k] their greater and leſſer *Ablutions*; their Gaſt and Wodou, their Aman, Taharat, Guſul, and Abdeſt, &c.—[a V. *Thomaſ.* Meth. Etud. Poet. P. 3. l. 1. c. 16. p. 240. b *Herod.* l. 2. c. 37. c *Pott.* Archæol. l. 2. c. 4. d *Briſſon.* de Formul. l. 1. p. 4. ſeq. *Struv.* Antiq. Rom. c. 2. p. 192. *Pitiſc.* Lex. Ant. T. 1. p. 8. *Lomeier*, de Luſtrat. paſſim. e *Maimonid.* ad Introit. in Sanct. c. 5. *Miſhna*, 11, 12, 13. p. 169. *Saurin.* Diſſ. on O. Teſt. T. 1. p. 464. *Calm.* Dict. Bib. T. 3. p. 148. f *Barrow*, Expoſit. Decal. p. 543. *Van Dale*, Hiſt. Bapt. paſſim. Bibl. Choiſ. T. 9. p. 224. Bibl. Raiſ. T. 3. p. 122. *Baſhuyſ.* de Lavacr. & Lotion. Hebræor. paſſim. g *Durant.* de Ritib. Eccleſ. l. 2. c. 28. *Bingh.* Orig. Eccleſ. l. 8. c. 12. §. 15. & 23. h *Durant.* loc. cit. i *Calm.* loc. cit. k *Tourneſ.* Voy. de Lev. lett. 14. p. 41. *Rycaut*, Preſ. Stat. Ottom. Emp. l. 2. c. 23. p. 158. *Reland.* de Relig. Mohamm. l. 1. c. 8. *Le Brun*, Voy. de Levant. ap. Jour. des Scav. T. 58. p. 438.]

ABOLITION, (*Cycl.*) is particularly uſed among civilians, for remitting the puniſhment of a crime.

In this ſenſe *Abolition* is a lower ſpecies of amneſty, which takes off the puniſhment, but not the infamy: *Liberat, ſed notat.*

Aloyſius Catalanus has a treatiſe expreſs on amneſty, and *Abolition*. Tract. Criminalis Amneſtiæ, præſertim *Abolitionis* & Indultus. Ven. 1605. & 1644. fol.

ABOLITION is alſo particularly uſed, among Roman lawyers, for the annulling a proſecution, or legal accuſation.

Abolition in this ſenſe differs from amneſty, and oblivion; in that in the former, the accuſation might be renewed, even by the ſame proſecutor, which in the latter was extinguiſhed for ever.

Within thirty day after a public *Abolition*, the ſame accuſer, by the prince's licence, was allowed to renew the charge; after a private *Abolition*, another accuſer might renew it, but the ſame could not.

This kind of *Abolition* is either granted in favour of the accuſed, or of the accuſer; and is either public, granted by the prince or ſenate, on occaſions of publick rejoicing, victory, and congratulation; or private, ſued for to the preſident or judge, by one of the parties; frequently by the accuſer himſelf, who after having imbarked in the proſecution, by ſubſcribing his name to the charge, could not by the Turpilian ſenatus-conſult otherwiſe deſiſt, without incurring infamy. On ſuch occaſions therefore the accuſer would *petere Abolitionem*; that is, move for an *Abolition:* which was only granted, on his ſhewing fair and honeſt motives for withdrawing the charge; viz. inadvertency, youth, warmth, or the like: nor was it granted without the conſent of the accuſed; or if the accuſation appeared to have been utterly falſe, or malicious, &c.

For the accuſed, the charge againſt him was alſo *aboliſhed* by the death of the accuſer, or his being incapacitated from proſecuting by reaſon of ſickneſs, or the like.———An action of injury was *aboliſhed* by diſſimulation: a ſentence of condemnation by indulgence. V. *Briſſ.* de Verb. Signif. p. 4. *Calv.* Lex. Jur. p. 8. ſeq.

ABOLITION was alſo uſed for expunging a perſon's name out of the public liſt of the accuſed, hung up in the treaſury.

This was called *abolere nomen*; and, like the former, was either public, as that under Auguſtus, when all the names, which had long hung up, were expunged at once [a]; or private, done at the motion of one of the parties [b].—[a *Suet.* in Auguſt. c. 32. n. 5. *Diuturnorum reorum, & ex quorum ſordibus nihil aliud quam voluptas inimicis quæreretur, nomina abolevit: conditione præpoſitâ, ut ſi quem quis repetere vellet, par periculum pœnæ ſubiret.* b *Pitiſc.* Lex. Ant. T. 1. p. 9.]

By ſeveral laws in the Theodoſian code it appears, that an *Abolition* of debts was ſometimes granted the debtors to the fiſcus. We have a medal of the emperor Adrian, wherein that prince is repreſented ſtanding with a ſcepter in his left hand, and a lighted torch in his right; with which he ſets fire to ſeveral papers in preſence of the people, who teſtify their joy and gratitude by lifting up their hands towards heaven. The legend is, *Reliqua vetera* H. S. *nummis abolita. Aubert.* ap. Richel. in Voc.

ABOLLA, in antiquity, a warm kind of garment, lined or doubled, uſed by the Greeks and Romans; chiefly out of the city, in following the camp [a].

The word is Latin, formed, as ſome imagine, from *bulla*, on a ſuppoſition that this veſtment was garniſhed with thoſe ornaments called *bullæ* [b]. Others, denying this circumſtance, derive it from the Greek αμβολη, of αναβολη, *amictus*, cloathing [c].—[a *Aquin.* Lex. Mil. T. 1. p. 4. *Pitiſc.* Lex. Ant. T. 1. p. 9. b *Bayf.* de Re Veſtiar. c. 15. c *Voſſ.* Etym. p. 2. *Scal.* in Feſt. Voc. *Bulla. Baxt.* Gloſſ. p. 7.]

Critics and antiquaries are greatly divided as to the form, uſe, kinds, &c. of this garment. Papias makes it a ſpecies of the *toga*, or gown; but Nonius, and the generality, a ſpecies of the *pallium*, or cloak.

The *Abolla* ſeems rather to have ſtood oppoſed to *toga*, which was a garment of peace, as the *Abolla* was of war; at leaſt Varro and Martial [d] place them in this oppoſite light.

Some, after Nonius, hold it to have been a military garb alone; others, after Papias, a ſenatorial; and Salmaſius [e] particularly, to have been worn by the preſidents in the provinces, and even by the præfecti of the city, when they adminiſtered juſtice; which Pitiſcus endeavours to refute. Others will alſo have the *Abolla* to have been uſed by the philoſophers [f], particularly the Stoics, Cynics, &c. Laſtly, others reconcile all theſe variances, by making divers kinds of *Abolla's*, accommodated to different occaſions and profeſſions. Even kings appear to have uſed the *Abolla:* Caligula was affronted at king Ptolemy for appearing at the ſhews in a *purple Abolla*, and by the eclat thereof turning the eyes of the ſpectators from the emperor upon himſelf.—[d *Mart.* Epigr. 48. l. 8. v. 1. e De Uſur. c. 3. *Pitiſc.* T. 1. p. 9. f *Ferrar.* Elect. II. 9. *Fabric.* Bibl. Antiq. c. 17. p. 558. *Donat.* Elucid. in Suet. Calig. c. 35.]

ABORTION, (*Cycl.*)—The antient Greek legiſlators, Solon and Lycurgus, prohibited this practice of creating *Abortion*. Whether or no it was permitted among the Romans, has been much diſputed, between two learned modern Civilians. 'Tis certain the practice, which was by them called *viſceribus vim inferre*, was frequent enough [a]: but whether there was any penalty on it, before the emperors Severus and Antonine, is the queſtion? Noodt maintains the negative; and further, that thoſe princes only made it criminal in one particular caſe: viz. of a married woman's practiſing it out of reſentment againſt her huſband, in order to defraud him of the comfort of children; this was ordered to be puniſhed by a temporary exile: *ſiqua prægnans vim viſceribus ſuis intulerit ne inimico marito filium procrearet, temporali exilio coerceatur* [b]. He adds, that there was no general prohibition of the practice before Gratian and Valens. 'Tis true we find in Cicero an earlier inſtance, of a woman puniſhed for this fact [c]; but it was in Mileſia, a country not ſubject to the Roman laws [d]. Bynkerſhoeck however denies that a woman was allowed to drink the *poculum Abortionis, impunè*; and the reaſon he gives, is, that the womb was the huſband's property, who was declared, by the laws, the ſole *cuſtos* of it; to prevent his being impoſed on in the children he was to bring up. But then this does not affect women, who had been impregnated by others than their huſbands.

The foundation on which the practice is ſaid to have been allowed, was, that the fœtus, while *in utero*, was reputed as a part of the mother, ranked as one of her own viſcera, over which ſhe had the ſame power as over the reſt: beſides, that it was not reputed as a man, *homo*; nor to be alive, otherwiſe than as a vegetable: conſequently, the crime amounted to little more than that of plucking unripe fruit from the tree. V. *Juven.* Sat. 6. v. 500. *Senec.* Conſolat. ad Helviam Matrem, c. 16.

This laſt cited author repreſents it as a peculiar glory of Helvia, that ſhe had never, like other women, whoſe chief ſtudy is their beauty and ſhape, deſtroyed the fœtus in her womb. *Nunquam te fœcunditatis tuæ quaſi exprobraret ætatem, puduit: nunquam more alienarum quibus omnis commendatio ex forma petitur, tumeſcentem uterum abſcondiſti quaſi indecens onus, nec inter viſcera tua conceptas ſpes liberorum eliſiſti.*—[a *Tryphonin.* l. 39. D. de Pœnis. b *Cic.* Orat. pro Cluent. c *Noodt*, Julius Paulus ſive de partus Expoſit. & Nece. c. 11. p. 75. ſeq. d Lib. cit. p. 77. ejuſd. *Noodt*, Reſp. ad Bynkerſh. in Bibl. Anc. Mod. T. 18. p. 373.]

The primitive fathers, Athenagoras [e], Tertullian, Minutius Felix [f], Auguſtin [g], &c. declaimed loudly againſt the practice, as virtual murder; *Homicidii feſtinatio eſt, prohibere naſci; nec refert, natam quis eripiat animam, an naſcentem diſturbet* [h]. Several councils have declared againſt it [i]. Yet we are told that the modern Romiſh eccleſiaſtical laws allow of diſpenſations for it. Egane [k] mentions the rates at which a diſpenſation for it may be had.—[e Legat pro Chriſt. p. 398. f Octav. p. 91. g Serm. 3. de Temp. ap. Barthol. de Puerper. p. 79. h *Tertull.* Apolog. ap. Noodt Jul. Paul. p. 79. i *Bingh.* Orig. Eccleſ. l. 16. c. 10. §. 4. k Book of Rates, Rome. p. 11.]

In ſome countries, the procuring of *Abortion* is ſtill ſaid not only to be allowed, but even enjoined by law; as among the Formoſans, if we may believe Mr. Pſalmanazar, who relates, that the women here, though married, are not allowed to breed before thirty-five years of age. When with child before that time, they are obliged to make themſelves *abortive* by force: to this end the prieſteſs (for in that country it ſeems the prieſtly

office belongs to women) tramples on the patient's belly, till ſhe bring forth. The author laſt cited, who pretends to have lived long in that country, affirms he has known women loſe their births in this manner fifteen of ſixteen times. *Sit penes ipſum fides.*

The practice of artificial *Abortion* is chiefly in the hands of women and nurſes, rarely in that of phyſicians; who, in ſome countries, are not admitted to the profeſſion without abjuring it. Hippocrates, in the oath he would have enjoined on all phyſicians, includes their not giving the *peſſus Abortivus*. Tho' elſewhere he gives the formal proceſs, whereby he himſelf procured a maid to miſcarry. The time for it is preſently after impregnation: at leaſt within the third or fourth month of geſtation [m]. The manner of effecting it is chiefly by medicines of the purgative, and deobſtruent kind: Roman authors ſpeak of the *poculum Abortionis*, or *abortive* draught, frequent among them. External violences are alſo ſometimes had recourſe to; as leaping from a ſtool, preſcribed by Hippocrates: obſtinate faſtings, and vehement evacuations, have been frequently practiſed for the ſame end.—Yet all the powers of medicine often fail to procure *Abortion*; by reaſon of the naturally cloſe contraction of the orifice of the uterus [n]; which has been known to hold out againſt the moſt malignant fevers, dyſenteries, ſalivations [o], and the like; againſt the ſtrongeſt aperients and evacuants [p]; againſt diſtilled oils of juniper, ſavin, ſuccinum; againſt large quantities of crocus metallorum, artemiſia, myrrh, mercury, the farina of muſcus terreſtris, &c.—[m *Erndl.* de Itin. Angl. p. 84. n *Albrecht.* Obſ. 165. in Ephem. Acad. N. C. dec. 2. an. 8. p. 384. o *Barthol.* Obſ. 52. in Ephem. Acad. N. C. dec. 1. an 1. *Albr.* loc. cit. *Zacut. Luſit.* Prax. Admir. Obſ. 43. ſeq. p *Zacut.* Prax. Admir. Obſ. 144.]

The moſt fatal method is by punctures of the uterus, with a pointed inſtrument for the purpoſe; too often uſed among us, and not unknown to the ancients.—Patin mentions a midwife hang'd at Paris, for killing a fœtus in the womb, by running a ſtilletto, or kind of bodkin, up the vagina, thro' the orifice of the uterus; by which a miſcarriage was procur'd, but with ſuch ill ſucceſs, that the mother was ſeized with convulſions, and died miſerably [q]. The criminal confeſs'd ſhe had treated many before in the ſame manner, with good effect. Our own age and country afford a parallel inſtance, a woman having been a few years ago executed among us for the like fact. Tertullian has a paſſage which ſhews the ſame was practiſed in thoſe days; *eſt etiam æneum ſpiculum, quo jugulatio ipſa dirigitur cæco latrocinio ἐμβρυοϑάκτην appellant, utique viventis infantis peremptorium* [r]. The operation, conſidering the tenderneſs of the part, muſt be of the utmoſt danger [s]: Brendelius gives an account of what he obſerv'd in diſſecting a girl at Norimberg, in 1714, who died of the operation, which ſhe had perform'd on herſelf; the neck of the uterus appear'd exceedingly diſtended, the veſſels lacerated and mortified, the uterus itſelf inflam'd and putrefy'd [t], &c.—[q *Patin.* T. 1. Lett. 191. An. 1660. r *Tertull.* de Anim. c. 35. Ed. *Rigalt.* p. 328. *Erndl.* lib. cit. p. 85. s V. *Erndl.* ubi ſupra, p. 87. t Ephem. Acad. N. C. Obſ. 167. p. 377.]

To prevent ABORTION. See MISCARRIAGE.

We meet with many anomalous caſes of *Abortions*, not yet taken into the ſyſtem of phyſic; as, of *Abortions* happening at new, and full moon; *Abortions* by the way of the navel, or anus; *Abortions* caus'd by poiſon, manna [u], bathing [x], a box on the the ear, worms, ſtone, juniper, fumes of ale, coſtiveneſs, and the like; *Abortions* cauſed by epilepſies, prevented by iſſues, prognoſticated by lice, &c. [y]. *Abortions* without lochia [z], attended by moles [a], with a retention of the ſecundines [b], ſwelling of the body, diabetes, and the like.—[u Ephem. Acad. N. C. dec. 1. an. 6. p. 355. x Id. dec. 2. an. 1. p. 305. y Id. dec. 2. an. 9. p. 151. z Id. dec. 2. an. 4. p. 334. a *Gullman.* Obſ. 92. Ephem. Acad. N. C. Cent. 7. p. 217. b Id. dec. 2. an. 1. p. 230. & 292.]

But what ſhall we ſay to *Abortions* by the mouth? Grave authors give inſtances of them; as Salmuth [c], Bartholin [d], Maroldus [e], Sachs [f], &c. yet their reality may well be called in queſtion. That famous one of the ſhoemaker's wife, related by Salmuth, has been vigorouſly attacked by Lud. Kepplerus, and defended by Bartholin: ſome account for it, by ſuppoſing the fœtus conceived in the ſtomach, the huſband, it ſeems, being ſuſpected of ſome abominable way of converſing with his wife [g]. Maroldus gives a different rationale; he ſuppoſes the conception to have been *in utero*; but how it came thence to the ſtomach is a myſtery; ſince naturally there is no canal or communication between the two, whatever ſome authors imagine to the contrary; who pretend it might have aſcended by the veins of the uterus to the vena cava, and thence have fallen into the ſtomach [h]. This ſyſtem Maroldus refutes, as alſo another of Bartholin, who apprehended that the ſtomach and uterus might have been ulcerated, and that the two viſcera being contiguous in pregnant women, the fœtus had been ſhifted out of one into the other. Maroldus reſolves the whole into the vitious conformation of the uterus, which he ſuppoſes had an orifice extraordinary, with a canal paſſing from the fund and opening into the ſtomach; ſomething of which ſtructure has been obſerved in frogs [i].—[c *Salmuth.* Cent. 3. Obſ. 94. d *Barthol.* de Inſolit. Partus Viis. c. 9. e Ephem. Acad. N. C. dec. 1. An. 1. Obſ. 108. p. 215. ſeq. f Ephem. Acad. N. C. dec. 1. an. 1. Obſ. 109. Schol. p. 221. ſeq. g *Barthol.* Anat. Reform. p. 168. h *Fondech.* in Lum. 2. p. 244. i *Marold.* Diſſ. de Abortu per Vomitum rejecto, Ephem. Acad. N. C. ubi ſupra. p. 209. ſeq.]

ABORTIVE *Flux*, *fluxus Abortivus*, is ſometimes uſed, among the antients, as ſynonymous with abortion or effluxion; viz. where the embryo loſes its hold, and ſlips away [a]. In this ſenſe, the eagle-ſtone is celebrated for ſtopping *Abortive* fluxes; for which end it was to be hung to the arm, *ſubnexus ſpem uteri defendit a fluxibus Abortivis* [b]. See ÆTITES.—[a *Salm.* Exerc. Plin. p. 715. 1. D. b *Solin.* Polyhiſt. p. 67. B.]

Among modern phyſicians, *Abortive* fluxes are chiefly underſtood of a kind of hæmorrhages, which ſometimes precede, and bring on abortion; at other times burſt forth in the act of excluſion. *Junck.* Conſp. Med. tab. 11. p. 60.

In this ſenſe, a late author defines them a ſpecies of uterine hæmorrahges, happening to married women; when after a ſtoppage of the menſes, for three or four months ſucceſſively, with a gradual ſwelling of the abdomen, and other ſigns of pregnancy, the blood begins to iſſue from the womb, at firſt ſparingly, like the regular menſes, but afterwards, burſts out with great force, attended with anxieties, fainting fits, and ſometimes with miſcarriage. *Blaz.* Spec. Pathol. tab. 23. p. 125.

The cauſe is a violent ſeparation of the ſecundines from the uterus [c]; which may ariſe from a vehement fit of paſſion, or motion of the body, a fall, fright, or the like. Thunder, lightning, hot liquor, too liberal uſe of deobſtruents, or the navel-ſtring being too ſhort, ſometimes occaſion an *Abortive* hæmorrhage [d].—[c *Davent.* Art Midwif. c. 33. p. 160. d *Bohn.* Diſſ. de Abort. Salub. app. Nov. Lit. Germ. 1708. p. 104.]

ABRAHAMIANS, or ABRAHAMITES, a ſect of heretics, who renewed the error of the Paulicians.

They took their name from that of their leader Abraham, a native of Antioch, by the Arabs called Ibrahim; whence alſo the name *Ibrahimiah*, given by them to this ſect. The *Abrahamians* aroſe about the cloſe of the eighth century, and were ſuppreſſed by the vigilance of Cyriacus, patriarch of Antioch. *Elmacin.* Hiſt. Sacr. p. 123. *D'Herbel.* Bibl. Orient. p. 283. Voc. *Ibrahimiah.* Trev. Dict. Univ. T. 1. p. 39.

ABRAHAMITES is alſo uſed, in church-hiſtory, for a party of monks, who ſuffered death for the worſhip of images under Theophilus. *Conſt. Porphyrog.* l. 3. c. 11. Trev. Dict. Univ. T. 1. p. 40.

ABRAMIS, in ichthyology, a name given by Bellonius and others, to the *Cyprinus latus* or Bream. See the article CYPRINUS, and BRAMA.

ABRAUM, in natural hiſtory, a name given by ſome writers, to a ſpecies of red clay, uſed in *England* by the cabinet-makers, *&c.* to give a red colour to new mohogany-wood; we have it from the iſle of Wight, but it is alſo found in Germany and Italy. The German writers call it *Tam Erde*, and the writers of ſome other nations *Terra Adamica*, from an opinion, that it was out of this very kind of earth that *Adam* was made.

ABRAXAS, *(Cycl.)* a barbarous word, denoting a power which preſides over three hundred ſixty five others, the number of days in the year. *Du Cang.* Gloſſ. Græc. Add. p. 5. Mem. de Trev. Nov. 1703. p. 220. *Caſt.* Lex. Med. p. 3.

Abraxas is a word of obſcure origin, framed by antient heretics as ſhould ſeem for quaintneſs ſake [b]: it is ſuppoſed to be technically compounded of the Greek letters, conſidered as numeral characters; according to the cuſtom of the Grecians, who expreſſed their numbers by letters of the alphabet; the values of which in the preſent word ſtand thus: A 1, B 2, P 100, A 1, Ξ 60, ΑΣ 200; which added together make the number 365.

The word is uſually written, among modern authors, *Abraxas*, tho', as ſome hold, by a corrupt tranſpoſition of the letters Σ and Ξ, for *abraſax*, as it is found in all the Greek fathers [c], as well as on antient ſtones. Irenæus indeed has *Abraxas*, but the reaſon may be, that the chapter in which the word occurs is only extant in Latin; ſo that tho' it be in Greek characters, the orthography is of Latin copiſts or tranſlators. — In ſtrictneſs, the word ought to be written in Greek characters, ΑΒΡΑCΑΞ; ſince beſides that the inventors of it ſpoke that language, the word does not contain the number 365, when written in the Latin character. Hence a further error in moſt books, wherein the word occurs in the ſmaller or running character, on account of the Greek ſigma; which having in antient inſcriptions the ſame figure with the Latin C, is often rendered by a Roman C inſtead of S; whence *Abracax* for *Abraſax* [d].—[b *Du Cang.* Gloſſ. Lat. Præf. p. 21. *Reiman.* Hiſt. Voc. Lat. p. 67. c *Baron.* Ann. 120. N°. 10. T. 2. App. d *Trev.* Dict. Univ. T. 1. p. 38.]

ABRAXAS is more particularly uſed, in the Baſilidian theology, for the ſupreme God, as ſuppoſed to contain the values or powers of 365 dependent deities. Vid. *Iren.* adv. Hæreſ. l. 1. c. 23. *Tertull.* de Præſcr. c. 46. *Epiphan.* Hæreſ. 24. n. 7. 8. p. 56. *Auguſt.* de Hæreſ. c. 4. *Danæus* ad eund. p. 11. *Euſeb.* Hiſt. Eccleſ. l. 4. c. 7. *Hieron.* ad Amos, c. 3. *Theodoret.* Hær. Fab. l. 1. c. 4. *Gaſſend.* Vit. Pireſc. p. 38.

Abraxas was properly the principle of the Gnoſtic hierarchy; the ſpring from whence their plurality of Æons aroſe [a]. From *Abraxas* proceeded the primigenial mind; from the primigenial mind the logos, or word; from the word, phroneſis or prudence; from prudence, ſophia and dynamis, or wiſdom and ſtrength; and from theſe two proceeded principalities, and powers, and angels; and from theſe, other angels, to the number of 365, the regents or intelligences of ſo many celeſtial orbs [b].—[[a] *Montf.* Palæog. Gr. l. 2. c. 8. p. 177. [b] *Sagitt.* Intr. Hiſt. Eccl. T. 1. p. 883. *Micræl.* Hiſt. Eccl. l. 2. Sec. 1. p. 291.]

The Baſilidians, who paſs for the authors of the *diſciplina arcani*, and the Platonic trinity, are ſuſpected among Chriſtians of ſome meaning ſtill deeper, and more myſterious, in their *Abraxas*. Several have even ſmelled ſomething of the goſpel trinity concealed in this word; which they explain, by ſuppoſing it compounded of the initial letters of the Hebrew words *Ab ben rouah*, *q. d.* father, ſon, and ſpirit [c]. Wendelin, canon of Tournay, and father Hardouin, have given more preciſe explications of the word, according to this ſyſtem. The former makes it ſtand for *pater*, *filius*, *ſpiritus ſanctus*, *ſalus a ligno* [d]: the latter, improving ſomewhat on the explication, makes it repreſent as hereunder [e].

A	Ab	Pater	A	1
B	Ben	Filius	B	2
P	Rouah-hakadoſh	Spir. Sanctus	P	100
A	ανθρώπους	homines	A	1
C	σωζων	ſalvans	C	200
A	αγιω	per ſacrum	A	1
ΞΞ	ξυλω	lignum	ΞΞ	60
				365

[[c] *Platon.* unveil. P. 1. c. 8. p. 25. [d] *Honor.* Reflex. Regl. Crit. l. 4. Diſſ. 8. p. 597. [e] Mem. de Trev. Sept. 1701. p. 235. ſeq.]

ABRAXAS is alſo uſed, among antiquaries, for a ſpecies of graven gem, on which the word *Abraxas* is uſually inſcribed; ſuppoſed to have been worn by the antient Gnoſtics, Baſilidians, and Carpocratians, as an amulet or taliſman againſt diſeaſes. *Baudel.* Util. des Voy. p. 340. ſeq. Nouv. Rep. Lett. T. 6. p. 424. Bibl. Univ. T. 4. p. 260.

Abraxas, in this ſenſe, is ſynonymous with Baſilidian ſtone [a], a name by which ſome authors call theſe antiques; or *Abraxean ſtone* [b], as they are denominated by others.—[[a] *Macar.* de Gemm. Baſilid. *Honor.* Reſl. Reg. Crit. l. 4. Diſſ. 8. p. 598. *Chiffl.* ad Macar. Capell. Prodr. Icon. Mem. de Trev. Nov. 1703. p. 2018. [b] *Montf.* Palæog. Gr. l. 2. c. 8. p. 177. ſeq.]

Abraxas's are of divers figures and ſizes; ſometimes in that of rings to be worn on the finger; in which form they were ſuppoſed of great efficacy for driving away flies. *Caſt.* Lex. Med. p. 3.

Abraxas's are frequent in the cabinets of the curious: a collection of them, as compleat as poſſible, has been much deſired by ſeveral [c]. There is a fine one in the abby of S. Genevieve, which has occaſioned much inquiry. They are chiefly of the third century; moſt of them ſeem to have come from Egypt [d]; whence they become of conſiderable uſe for explaining the antiquities of that country.

Macarius, Chifflet, and Capello have works expreſs on *Abraxas's*: the two former have given explications of a great number of theſe ſtones; the laſt, figures only, without explications. The former are reproached with exceſs of conjectures and erudition [e]; the latter, with puzzling the reader with mere riddles [f]: there is ſtill room for ſomething better on the ſubject [g].—[[c] V. Bibl. Ital. T. 4. p. 148. [d] *Baudel.* ubi ſupra. Bibl. Ital. T. 4. p. 148. [e] *Sagittar.* ubi ſupra. [f] Mem. de Trev. loc. cit. [g] Bibl. Ital. ubi ſupra.]

Abraxas's have ſometimes no other inſcription beſide the word; but more uſually ſome ſymbol of the Baſilidian god [h]. Beſides which, we ſometimes find other marks and words adjoined; as, the names of ſaints, angels, Baſilidian virtues, apoſtles, and the ineffable name Jehovah itſelf, either at length, or in the abbreviature IAΩ; ſometimes the words σαβαωθ Αδωναι, or the names of other gods; as Mithras, or Mithraξ; שמש, Semes, Sol; Ανουβις; εις Ζευς Σεραπις; and the like [i]. Sometimes Iſis ſitting on a lotus [k], or Apis ſurrounded with ſtars; ſometimes monſtrous compoſitions of animals, obſcene images, Phalli, and Ithyphalli [l]. The graving of *Abraxas's* is not uniform, rarely good [m]; the reverſe, on which is the word, is ſaid to be ſometimes of a lower and a more modern taſte than the face [n]. The characters are uſually Greek, ſometimes Hebrew, Coptic, or Hetrurian; and ſometimes of a mongrel kind, forged as ſhould ſeem on purpoſe to make their import impenetrable [o]. 'Tis diſputed, whether or no the Veronica of Montreuil [p], or the Granite obeliſk, mentioned by Gori [q], be *Abraxas's*.—[[h] *Baudel.* ubi ſupra. [i] *Capell.* Prodr. Icon. N°. 124. *Montf.* ubi ſupra. Journ. Scav. T. 33. p. 93. Mem. de Trev. ubi ſupra, p. 2020. ſeq. *Hardouin.* in Mem. Trev. Sept. 1701. p. 239. *Spond.* Ann. Bar. An. 120. [k] *Capell.* ubi ſupra. Mem. Trev. loc. cit. [l] *Montf.* ubi ſupra, p. 178. ſeq. [m] *Baudel.* ubi ſupra, p. 340. [n] *Hardouin.* ubi ſupra, p. 239. [o] *Montf.* p. 180. [p] *Mabill.* Muſ. Ital. T. 1. p. 89. *Honor.* Reſl. Reg. Crit. l. 4. Diſſ. 8. p. 597. [q] *Salvin.* Inſcr. Ant. P. 1. Bibl. Ital. T. 4. 147.]

ABRIDGMENT, (*Cycl.*)—*Abridgments of the common law*, are a kind of digeſts of the numerous caſes, arguments, readings, pleadings, &c. diſperſed in the year-books, and other reports, and books of law; reduced under proper heads or common places [a]. The firſt was that of Statham, which comes as low as Henry VI. That of Fitzherbert was publiſhed in 1516 [b]. Brook's in 1573 [c]; of which Hughes's, publiſhed in 1663, is a ſequel [d]. Roll, Danvers, and Nelſon have alſo publiſhed *Abridgments*, including the caſes of later days. To which may be added the new *Abridgment*, and Vyner's *Abridgment*.—[[a] *Nichols*, Engl. Hiſt. Libr. par. 3. p. 233. [b] *Wood*, Athen. Oxon. T. 1. p. 50. [c] *Wood*, loc. cit. p. 110. [d] *Baſſ.* Cat. Law-Books, p. 3.]

Abridgments of the ſtatutes have been made by ſeveral, from Magna Charta to the times of the reſpective abridgers. The firſt by Raſtal, publiſhed in 1559 [e]: the ſecond by Pulton, in 1606 [f]: the third by Wingate, in 1641 [g]: and others ſince by Hughes, Manby, Waſhington, Boult, Nelſon, and the moſt compleat of any by Mr. Cay, in two volumes fol. publiſhed 1739.—[[e] *Wood*, lib. cit. p. 148. [f] Id. ibid. p. 427. [g] Id. T. 2. p. 208.]

Abridgments of books are numerous; 'tis the occupation of one ſet of literati, to make ſhort *Abridgments* from huge volumes; of another ſet, to make huge volumes from ſmall *Abridgments* [h].—We have *Abridgments* of the bible, of the talmud, of the alcoran, and the like. Some in the way of analyſis, others of notitia, others of hiſtory, others of tables, and others of queſtion and anſwer.—We have even *Abridgments* of *Abridgments*; ſuch is the *Abridgment* of Feſtus by Paulus Diaconus, the former of which is itſelf an *Abridgment* of Verrius Flaccus. Many of the voyages in Harris's collection are *Abridgments* of thoſe in Purchas, which themſelves are only *Abridgments*. M. de Renneville, being aſſured that the late king George, to whom he dedicated his hiſtory of the Baſtille, would not be at the pains to read it, gave him an *Abridgment* of it in his preface; but fearing even this would prove too long, he made an *Abridgment* of this *Abridgment* for the Prince of Wales [i]. Modern authors have even found the way to make an *Abridgment* of one book from another: an *Abridgment* of the bible was lately publiſhed by a French monk, *tiré de differens auteurs*, taken from divers authors [k].—The Polyhiſtor of Solinus may ſerve as an inſtance of a bad *Abridgment* [l]; wherein the original, which is Pliny's natural hiſtory, is mutilated, and miſtaken in a thouſand places. On the contrary, Mezeray's *Abregé de l'hiſtoire de France*, is an inſtance of an *Abridgment* preferable to the original itſelf; as being more correct, by ten years labour, and beſides improved with the memoirs of the eccleſiaſtical hiſtory of France, furniſhed him by Meſſ. Launois and Dirois; which, in the opinion of the connoiſſeurs, make the beſt part of the work [m].——[[h] *Gladov.* Præf. Apol. ad Naud. Bibl. Polit. p. 3. [i] Jour. Liter. 1715. p. 207. [k] Abregé de la Sainte Bible, tiré des differens Autheurs, par Dom. R. G. &c. Rou. 1707. V. Jour. des Scav. T. 38. p. 232. [l] *Le Clerc*, Bibl. Univ. T. 19. p. 445. [m] *Le Long.* Bibl. Hiſt. Franc. l. 3. p. 446. Jour. des Scav. Oct. 1719. p. 369. Id. Jan. 1727. p. 36.]

Montaigne lays it down as a maxim, that every *Abridgment* of a good book, is an ill *Abridgment* [n]. In effect, 'tis chiefly the conſideration of ſuperfluities in the original, that warrants an *Abridgment*. Writers, whoſe ſtyle is tedious or diffuſe, or order interrupted with digreſſions and epiſodes, require *Abridgment*: ſuch are Mr. Boyle and Dr. Cudworth; and ſuch are moſt authors repreſented to be by their reſpective abridgers.—[[n] *Montaign.* Eſſ. l. 3. c. 8. p. 950. *Tout Abbregé ſur un bon livre, eſt un ſot Abbregé.*]

Abridgments are uſually ſaid to have had their riſe in the times of ignorance; to have been one of the firſt fruits of that barbariſm which enſued on the decline of the Roman Empire; and to have been unknown in thoſe happy days, when letters flouriſhed among the Greeks and Romans [o]: yet we have ſome traces of them in thoſe times [p].—[[o] V. *Salmaſ.* Præf. ad Ampel. *Baill.* Jugem. des Scav. T. 1. p. 2. c. 11. p. 455. ſeq. [p] Mem. de Trev. An. 1708. p. 1668.]

Many books, which ordinarily paſs for originals, are ſuſpected by learned men to be only *Abridgments*; ſuch are thoſe of Syneſius [q], Apollodorus, Valerius Maximus [r], Stephanus Byzantinus [s], Florus, Athenæus [t], and others. F. Simon has even the temerity to aſſert the ſame of the books of the bible [u].—[[q] Jour des Scav. Sept. 1710. p. 269. [r] *Voſſ.* de Hiſtor. Lat. l. 1. c. 24. p. 123. ſeq. [s] *Ryck.* Præf. in Not. Holſten. ad Stephan. *Baill.* lib. cit. p. 466. ſeq. [t] V. *Caſaub.* Præf. ad Athen. [u] Act. Erud. Lipſ. 1682. p. 97.]

In ſome books it is hard to diſcover which is the *Abridgment*, which the original. Thus it is diſputed between Dr. Grabe and Mr. Whiſton, whether the apoſtolical conſtitutions be an *Abridgment* of ſome antienter conſtitutions, of which there are ſome fragments ſtill extant in the MSS. as the former holds: or theſe fragments an *Abridgment* of the apoſtolical conſtitutions, as is maintained with great zeal by the latter [x].—The common opinion among learned men is, that the ſhorter

epiſtles

epiſtles of Ignatius are the genuine work of that martyr, and the longer a paraphraſe on them, made by a later hand, who has intermixed his own tenets [y]: Mr. Whiſton maintains the contrary, that the longer are the original, and the ſhorter an *Abridgment* of them [z].—[[x] *Whiſt.* St. Clement. &c. Vindic. of Apoſt. Conſt. p. 5. [y] Diſſ. de Epiſt. Ignat. in Cleric. Patr. Apoſt. P. 2. 6. [z] *Le Clerc*, Bibl. Anc. Mod. T. 22. p. 312.]

The uſe of *Abridgments* is either for relieving the memory, or ſaving time, and ſhortning the courſe of ſtudy: ſomething alſo is gained in the price and handineſs of ſmall books, compared with bulky volumes. It has been alledged, that *Abridgments* are chiefly of uſe to the makers; at leaſt to thoſe who have read the originals. A late author adds, that they are chiefly prejudicial to thoſe for whom they are intended, viz. young ſtudents; properly ſpeaking, ſays he, they are only of uſe to thoſe who have no occaſion for them, *i. e.* to proficients. *Baill.* Jug. des Scav. T. 1. P. 2. c. 11. p. 470.

But there are alſo inconveniences attending *Abridgments*; as, their tendency to diminiſh application and ſtudy, by facilitating the acquiſition of knowledge; their conveying only ſuperficial notions, and thus making ſmatterers in ſcience; their maiming good authors, by ſuppreſſing material circumſtances, and thus making them obſcure; and frequently miſrepreſenting them, and thus propagating errors: laſtly, their occaſioning the originals to be overlooked, and in conſequence thereof at length loſt. Thus the loſs of 2000 Roman lawyers is attributed to the digeſt: the loſs of many Greek fathers to the catenæ: that of a number of antient writers on huſbandry, farrying, hiſtory, &c. to the *Abridgments* of Conſtant. Porphyrogenitus; the loſs of Trogus Pompeius to Juſtin; of Dion to Xiphilin; of much of Livy to Florus; of Caſſiodorus to Jornandes, &c.—On theſe grounds, *Abridgments* are but of ill repute in the republic of letters; and are abſolutely condemned by many of the ſeverer critics, though defended by others. Salmaſius, Huet, and Lamy, are of the number of opponents: the ſame Salmaſius, and Le Clerc, with the whole body of journaliſts, bibliothecarians, and epitomiſts, are ſtrenuous advocates of *Abridgments*: 'tis urged in their favour, that they excite and raiſe an appetite for the originals, rather than divert us from them; that many antient books are loſt that were never *abridged*; that many others are ſtill extant of which we have *Abridgments*; that of ſome, the *Abridgments* have been loſt, while the originals are ſtill ſafe; that in the caſe of Dion, part of him was *abridged* by Xiphilin, and part of him is loſt, but the parts are not the ſame: ſo that if the loſs of the twenty laſt books be attributed to that abbreviator, to whom ſhall we aſcribe the loſs of the other thirty-five books, which Xiphilin did not touch? and what reaſon can be alledged, why the twenty-five books ſtill remaining of this hiſtorian did not periſh with the reſt, ſince Xiphilin *abridged* theſe as well as the others? There appears then no great connection between the *abridging* and the loſing of a book; on the contrary, it ſeems owing to *Abridgments*, that many excellent authors are not wholly loſt; that ſome planks at leaſt have eſcaped the general wreck.

ABRIDGING, in algebra, is the reducing a compound problem, or equation to its more ſimple expreſſion. See PROBLEM, EQUATION, and EXPRESSION.

To prevent the mind's being diſtracted with attending to known quantities, concerning which nothing further is required; and to keep the attention entire for the reſt; mathematicians uſe to *abridge* their equations, by expreſſing all the known quantities of the ſame term, by a ſingle letter.—For an inſtance: to *abridge* the equation

$$\begin{array}{l} x^3 - axx + abx - abc = 0 \\ \quad -b \quad +ac \\ \quad -c \quad +bc \end{array}$$

All the known quantities $-a-b-c$ of the ſecond term are ſuppoſed equal to one ſingle letter $-n$: all the known quantities $+ab+ac+bc$ of the third term, equal to another letter $+p$: and all the known quantities $-abc$ of the fourth term to a ſingle letter $-q$. By which means we have $x^3 - nxx + px - q = 0$, inſtead of the equation propoſed. *Reyn.* Anal. Demonſt. l. 2. ſec. 2. §. 17. p. 36.

An equation thus *abridged*, is called a formula. See FORMULA.

ABROCAMENTUM, in antient law writers. See ABROCHMENT, *Cycl.*

ABROKUS, in botany, a name uſed by ſome of the Latin writers, for the *bromus*, or *avena ſterilis*, the wild oat; and by others, for the *orobus*, or bitter vetch. The Greeks originally uſed the word, and that not only for theſe two vegetables, but, in a much larger ſenſe, underſtanding by it any herb reſembling the plants cultivated for the uſe of the table, but not eſculent. The Greeks and Romans had a way of expreſſing the boiling of pulſe, or herbs, by words ſignifying the wetting them: thus the Greeks expreſſed boiled things by *brocha*, βεγχα, and the Romans by *madida* [a]. Virgil uſes this word for the peaſe, and Plautus for all eſculent things that were boiled: hence theſe baſtard peaſe and oats were called *abrocha*, *non madida*, not fit for boiling or eating.—[[a] *Ainſworth's* Dict. in Voc. *Madidus.*]

ABRONO, in botany, a name given by Serapion, and others, to the heart-peas; called alſo *Abrugi*. *Ger.* Emac. Ind. 2.

ABROTANUM, ABROTONUM. See SOUTHERNWOOD.

ABRUGI, in botany, a name given by ſome to the heart-peas. *Ger.* Emac. Ind. 2.

ABRUS, in the materia medica, the name of a ſeed produced by one of the phaſeole, or kidney-beans, and commonly called Angola ſeeds. *Dale's* Pharm. p. 217.

ABSCESS, (*Cycl.*)—See IMPOSTHUMATION.

ABSCESS *in the liver*. See LIVER.

ABSCISSION, *Abſciſſio*, the act of cutting off a thing.

ABSCISSION, in rhetoric, is a figure of ſpeech, when beginning to ſay a thing, we break off ſhort, as ſuppoſing the matter ſufficiently ſignified, by what has been already ſaid. *Cic.* ad Herenn. l. 4. c. 77.

For an inſtance: One of her ſex, age, and beauty, to be ſeen alone, at ſuch an hour, with a man of his character.—I need ſay no more.

Abſciſſion is a ſpecies of ellipſis, or ſuppreſſion.—Scaliger diſtinguiſhes it from præciſion, and ſuſpenſion. *Scal.* Poet. l. 3. c. 76.

Aſtrologers alſo ſpeak of an *Abſciſſion of the Light* of a planet, by another planet's outſtripping it, and joining a third before it. *Abſciſſion* is held a deterioration. *Vital.* Lex. Math. p. 4.

ABSCISSION, in ſurgery, denotes the act of taking away ſome morbid or ſuperfluous part by an edged inſtrument [a].

In this ſenſe, *Abſciſſion* amounts to the ſame with the Greek αποκοπη. Cowper ſpeaks of the *Abſciſſion* of a leg; which is more properly called amputation [b]. The *Abſciſſion* of the præpuce makes what we call circumciſion. *Abſciſſion* of the ears is a kind of legal puniſhment, inflicted on perjury. In ſome countries they alſo practiſe *Abſciſſion* of the noſe on traitors in an army, as a puniſhment reputed worſe than death [c].—[[a] *Caſt.* Lex. Med. p. 4. [b] Phil. Tranſ. N°. 280. p. 1195. [c] *Beier.* Jur. Milit. §. 1285.]

ABSCISSION is more properly uſed for the operation of cutting away ſome ſoft part of the body, when depraved, or grown hurtful. *Blanc.* Lex. Med. p. 3.

In which ſenſe, *Abſciſſion* differs from amputation, in that the latter is of a ſolid or bony part, the former of a fleſhy or membranous one; yet they are ſometimes confounded. *Caſt.* Lex. Med. p. 4.

We ſay, the *Abſciſſion* of a nerve, lip, cheek, or the like: Mr. Shipton gives an inſtance of the *Abſciſſion* of a portion of the inteſtines not mortal. Phil. Tranſ. N°. 283.

ABSINTHITES, ABSINTHIAC, or ABSINTHIATED, ſomething tinged or impregnated with the virtues of abſinthium, or wormwood. *Colum.* l. 12. c. 35. *Martin.* Lex. Phil. T. 1. p. 4. *Voſſ.* Etym. p. 2.

Bartholin mentions a woman whoſe milk was become *Abſinthiated*, and rendered bitter as gall, by the too liberal uſe of wormwood [a].

Vinum Abſinthites, or *poculum Abſinthiatum*, wormwood wine, is much ſpoke of among the antients, as a wholeſome agreeable drink, and even an antidote againſt drunkenneſs; though ſome have charged it with being offenſive to the head [b], and liable to cauſe fevers, cephalalgias, vomitings, uterine fluxes [c], &c. Ray alſo makes it a hinderer of venery [d]. The preparation is given by many [e]. According to the common account, it is made by infuſing the leaves of the plant in a quantity of wine. But Fehr ſhews that it ſhould rather be prepared by fermentation, in order to correct the crudities of the plant, and call forth its volatile ſalt. Paulli prepares it even without abſinthium. Dr. Bowle prefers the *aqua Abſinthites*, or wormwood water, taken in a ſmall quantity after meals, to the wine; as being leſs liable to affect the head, and fill it with vapours [f]. — [[a] *Barthol.* Act. Med. T. 2. obſ. 62. [b] *Lang.* Ed. Medic. 38. l. 2. [c] *Nebel.* Diſp. 2. in Nov. Lit. Mar. Balt. Jul. 1707. p. 241. [d] *Ray*, Synopſ. Stirp. Brit. Gen. 7. p. 94. *Sinibald.* Geneanthr. l. 31. Tr. 3. c. 22. p. 371. [e] *Dioſcor.* l. 5. c. 49. *Plin.* Hiſt. Nat. l. 14. c. 19. *Fehr.* Hier. Picr. in Ephem. Acad. N. C. dec. 2. an. 5. app. p. 170. [f] *Ray*, loc. cit.]

ABSOLUTISM, the dogm of God's acting abſolutely in the affair of ſalvation, and not being guided in his willing, or nilling, by any reaſon. *Loeſch.* Parox. Abſol. Decr. Nov. Lit. Germ. 1708. p. 183.

Abſolutiſm is one of thoſe doctrines charged on the Calviniſts, for which the Lutherans refuſe all union with them. See CALVINIST and CALVINISM.

ABSORBENTS, (*Cycl.*) in a general ſenſe, is uſed for ſuch things as have the faculty of *abſorbing*, or ſwallowing up others.

Aſhes are an *Abſorbent* in reſpect of water, though not in the degree ſuppoſed by Ariſtotle, from whom we derive a vulgar error, That a pot full of aſhes will ſtill *abſorb* as much water as if empty [a]. Cloves are ſo violent an *Abſorbent* of moiſture, that we are told, if care be not taken in the importing, to keep all water, wine and the like at a good diſtance from them, a certain quantity of cloves will, in two days time, drain a whole hogſhead of wine [b]. M. Homberg has a diſcourſe on the quantity of acids *abſorbed* by terreſtrial alcalis; wherein he ſhews, how much acid any known alcali will retain [c]. M. de la Hire gives an experiment for aſcertaining the quantity of water *abſorbed* by plants.—[[a] *Brown*, Vulg. Err. l. 2. c. 5. p. 68. [b] *Ovingt.* Voy. to Surrat. Jour. des Scav. T. 78. p. 63. [c] Mem Acad. R. Scienc. an. 1700. p. 81.]

Abſorbents are of divers kinds; ſimple, compound, ſaline, cinnabarine, marine, fixed, earthy, acid, alcaline, &c. In the Pharmacopœias, we meet with ſeveral forms of *Abſorbents*; *Abſorbent* powders, electuaries, draughts, &c. *Harris*, de Morb. Infant. ap. Jour. des Scav. T. 38. p. 276. ſeq. Mem. de Trev. 1713. p. 1248.

Abſorbents conſume the humours without fuſing them, and have ſometimes the effect of ſtrengtheners, ſometimes of purgatives [d], oftner of calmers, to allay fermentations [e]. They are of uſe for tempering acrimonies [f], and after emollients and attenuants, for healing tumours; ſome hold them neceſſary for preventing the ill effects of bitters; they are good in cardialgias or heats of the ſtomach [g], and hiccups [h]; are alſo given in hectics [i], and other chronical caſes, as coughs [k], though with great caution and reſerve [l]. *Abſorbents* have alſo their ill effects; eſpecially if too laviſhly given, being liable to make congeſtions in the viſcera [m]: they are hurtful in the itch [n], bilious fevers [o], dyſenteries [p], hypochondrial and hyſteric caſes [q], quartans [r], &c. according to ſome.—[[d] Ephem. Acad. Nat. Cur. Dec. 2. an. 7. p. 242. [e] *Junck.* Conſp. Med. tab. 14. p. 82. [f] Remarq. ſur l'abus des Purgatifs 1. Jour. Scav. T. 87. p. 662. ſeq. [g] *Dol.* Encyc. Med. l. 3. p. 287. a. [h] Id. ib. p. 294. a. [i] *Junck.* Conſp. tab. 58. p. 389. [k] *Nent.* Fundam. Med tab. 64. p. 44. [l] *Junck.* ubi ſupra, p. 391. [m] *Albert.* in Act. Acad. N. C. T. 2. p. 316. [n] *Junck.* lib. cit. tab. 68. p. 458. [o] Id. ib. tab. 42. p. 282. [p] Id. ib. tab. 52. p. 350. [q] Id. ib. tab. 29. p. 192. [r] *Junck.* tab. 56. p. 378. &. tab. 61. p. 402.]

Abſorbents are generally preſcribed as the only remedy for the acute diſeaſes of infants, tho' held by others rather hurtful to children, by loading their tender viſcera, and creating obſtructions in the capillaries. *Kozamer*, Inform. de Infant. Valetud. tuend. Jour. des Scav. T. 63. p. 699. ſeq.

Particular kinds of *Abſorbents* have their particular effects; old oiſter-ſhells are preferred for children; magiſteries and precipitates are leaſt ſuitable, as being already ſurcharged with acids. *Abſorbents* ſaturated with acid juices, as of citrons, are good in coughs, and catarrhs; thoſe prepared with cinnabar, in iſchurias; with aſtringents, in the diabetes; ſaline, in the itch; marine, in chronical diſeaſes of the breaſt: in which laſt caſe, the earthy are hurtful. *Quinc.* diſpenſ. Par. 2. Sec. 2. p. 87.

Abſorbents, are ſometimes applied to ulcers; but it is to be obſerved, that the inſipid terreſtreous *Abſorbents*, ſuch as coral, &c. put into an ulcer, where a bone is carious, can have little other effect than to imbibe the matter of the ulcer; if they fall into any cavernulæ of the corrupted bone, they may remain ſo long there, that the matter they imbibe may become acrid. Lint is an *Abſorbent*, which has not this diſadvantage. *Monro*, in Med. Eſſ. *Edinb.* Vol. 5. Art. 24.

The taking an immoderate quantity of crabs eyes, and other *Abſorbents* for the heart-burn, has ſometimes been attended with fatal conſequences. See Phil. Tranſ. N° 459. Sect. 2.

Van Swieten in his comment on Boerhaave's aphoriſm obſerves, that theſe *Abſorbent* powders ought not to be ground too fine, but rather left ſomewhat coarſe, as they will be leſs apt to concrete and prove dangerous.

ABSORBENT *Veſſels*, a minute kind of veſſels, found in animal bodies, which attract, and imbibe the nutritious, and other matters brought near their mouths.

Theſe are ſometimes alſo called *reſorbent veſſels*, and ſometimes *Abſorbent pores*.

Abſorbent Veſſels are found in all parts of the body, eſpecially where the membranes lie open to cavities, as in the mouth, œſophagus, ſtomach, inteſtines, &c. A late author computes no leſs than 7,000,000,000 in one ſquare foot of the ſurface of the ſtomach [a]: by theſe, mercury, plaſters, and the like medicines externally applied, enter the habit of the body: to theſe are alſo owing the inſtantaneous effects of ſpirits, drams, water, &c. upon the body. The like veſſels are alſo numerous in the ſkin; where they are ſuppoſed to imbibe the fluid matters floating in the ambient air, and convey them into the body [b]. —[[a] *Mortimer*, Exerc. Inaug. de Ingreſſ. Humor. in Corp. Jour. des Scav. T. 77. p. 31. [b] Id. ibid.]

ABSORBENT *Veſſels*, are more particularly uſed for thoſe lacteals which open into the ſides of the inteſtinal tube, to imbibe the chyle in its deſcent from the ſtomach, and convey it into the meſenteric veins.

Naturaliſts ſpeak of the like *Abſorbents* in plants; the fibrous or hairy roots of which are conſidered as a kind of *vaſa Abſorbentia*, which attract and imbibe the nutritious juices from the earth. Vid. *Malpigh.* Anat. Plant. par. 2. Bibl. Univ. T. 4. p. 244. *Leewenhoeck.* Let. 2. Bibl. Univ. T. 1. p. 474. ſeq. *Fontenel.* Hiſt. Acad. R. Scien. 1708. p. 81. *De la Hire*, Explic. Phyſ. de la Direct. Vert. des Tiges, ap. Mem. Acad. R. Scien. 1708. p. 297.

ABSORBING, the act of ſucking up, or imbibing another body.

Sir I. Newton ſhews that black bodies *abſorb* all the rays they receive, and that thoſe rays of light which impinge againſt the ſolid particles of bodies are *abſorbed* and loſt. Some naturaliſts are of opinion, that the whole antediluvian earth has been *abſorbed* and covered by the ſea [a]. Rudbeck ſpeaks on the authority of an antient poet, of a large iſland near Britain, *abſorbed* by the ocean: the ſame fate is Plato's Atlantis ſuppoſed to have undergone. Gardeners obſerve, that luxuriant wood-branches *abſorb* and waſte the nutritious juices, which ſhould feed the fruit of the trees. The Copts and Ethiopians hold that the human nature of Chriſt is *abſorbed*, and loſt in the divine nature, as a drop of wine is loſt and *abſorbed* in the ſea [b]—[[a] *De la Pryme*, in Phil. Tranſ. N°. 266. p. 683. ſeq. *Wallis* Ep. ad Leibn. Phil. Tranſ. N°. 255. p. 283. [b] *Poncet.* Voi. d'Ethiop. p. 106. Lett. Edif. & Cur. T. 4.

ABSORPTION. in the animal œconomy, is uſed for that power whereby the ſmall open orifices of veſſels, imbibe liquors lodged in the cavities of the animal bodies. This according to Mr. Monro is obſerved to increaſe or diminiſh proportionally to the ſtrength or weakneſs of the creature. See Medic. Eſſ. *Edinb.* Vol. 2. p. 132.

ABSORPTIONS *of the Earth*, a term uſed by Kircher and others, for the ſinking in of large tracts of land, by means of ſubterranean commotions. See SINKING.

ABSTENTUS, among civilians, is underſtood of an heir withheld by his tutor from taking on him an inheritance. *Calv.* Lex. Jur. p. 11.

Among eccleſiaſtical writers, the word is alſo uſed for a perſon excommunicated. *Spelm.* Gloſſ. p. 6. *Schmid.* Lex. Eccleſ. p. 11.

ABSTERGENTS, (*Cycl.*) — Theſe are given in conſumptions in many caſes, and the moſt proper on this occaſion, are the ſaline ones, with the common abſorbents, ſaturated with acids. Stahl greatly recommends a mixture of tartarum vitriolatum and crabs eyes, ſaturated with lemon juice, each half an ounce, mixt with the diſtilled waters of ſcordium, ſcabious and chervill, each three ounces. Of this the patient ſhould take a ſpoonful, two or three times a day, with ſmall doſes of nitre at the intermediate hours, to take off the febrile heat; and as the patient in theſe caſes is uſually tired out with the long continuance in a courſe with any medicines, this may after a time be changed for a decoction of the roots of arum and pimpernell, half an ounce of each, with ſpeedwell, colts-foot, chervill, daiſy leaves, of each a handful, and maidenhair, and ſanicle, of each half a handful: theſe are to be boiled in two quarts of water, till a pint is conſumed, and then the clear liquor ſweetened with honey. *Juncker*'s, Conſp. Med.

The pectoral *Abſtergents*, are alſo the beſt of all medicines in the decline of an hæmorrhage by the mouth, in which blood has been voided clear from the lungs: in this caſe they never fail to reſolve any grumes that may remain in the part; and at the ſame time, wonderfully reſtore the due tone of the viſcera. The moſt proper on this occaſion are decoctions of daiſy leaves, ground-ivy, ſpeedwell, and the ſmall nettle, with powders of nitre, and dried goat's blood, and a mixture of an ounce of crabs eyes in a pint of white wine.

ABSTINENCE, (*Cycl.*) — We have an account of extraordinary *Abſtinence* in a young woman, cauſed by a difficulty of ſwallowing, ſo great, that on every attempt towards it, ſhe fell into fits. This laſted for thirty four days, about a month afterwards, the difficulty returned, and ſhe remained without meat or drink for fifty four days, without any ſenſe of hunger or thirſt. See. Medic. Eſſ. *Edinb.* Vol. 5. Art. 43. See alſo the article FASTING.

ABSTINENTES, in eccleſiaſtical hiſtory, a ſort of people in the antient church, who carried the buſineſs of *Abſtinence* and mortification ſo far, that they have been put in the catalogue of heretics; tho' wherein their error conſiſted, is little agreed on.

Some repreſent the *Abſtinentes* as the ſame with thoſe otherwiſe called *continentes*, and that they particularly enjoined *Abſtinence* from the uſe of marriage; others ſay, from fleſh; and others, from wine [a]. Others will have them a branch of the Gnoſtics, and that their hereſy conſiſted in holding fleſh evil in itſelf, and created by the devil. Some make them the ſame with the Hieracites; others with the Encratites [b]. They are ſaid to have ariſen in Spain and the Gauls in the third century.—[[a] *Du Cang.* Gloſſ. Lat. T. 1. p. 29. [b] *Trev.* Dict. Univ. T. 1. p. 50.

ABSTRACTI, ABSTRACTED, is a name given to a ſect, or party, in the Lutheran church, charged with heterodoxy in the uſe of the word *Abſtract*, as applied to Chriſt.

Their leader was Heſhuſius a Pruſſian biſhop, or ſuperintendant, who aſſerted againſt Beza, "That Chriſt was not only to be adored, in the concrete, as ſon of God; but that his very fleſh in the *Abſtract* was an object of adoration, or that the right of being adored was communicated to his fleſh." This being underſtood as importing, that the fleſh of Chriſt in its *Abſtract*, or eſſence, excluſive of its union with the divine nature, was an object of adoration; great conteſts aroſe; and tho' Heſhuſius explained his meaning orthodoxly, it would not be taken. Wigandus another biſhop of the ſame church, tho' he allow'd they were agreed about the thing; yet apprehended ſo much danger from the phraſe, That the humanity of Chriſt is to be adored in the *Abſtract*, as omnipotence, &c. that he ceaſed not till Heſhuſius was depoſed: but times turned; the *Abſtracti* gained the aſcendant, and Wigandus himſelf was ſilenced. *Micræl.* Hiſt. Eccl. l. 3. Sect. 2. §. 72. p. 890. *Budd.* Iſag. Hiſt. Theol. l. 2. c. 7. p. 1211.

ABSTRACTION, (*Cycl.*)—*Abſtraction*, in chemiſtry, denotes the drawing off, or exhaling away, a menſtruum from the ſubject it had been put to diſſolve.

Some alſo uſe the word as ſynonymous with diſtillation, or even cohobation. *Teichmey*, Inſtit. Chem. P. 1. c. 4. p. 23.

ABSTRACTITIOUS, or ABSTRACTIVE, is applied by ſome modern chemiſts, to a ſpirit drawn from vegetables without fermentation.

In which ſenſe *Abſtractitious* ſpirits are ſynonymous with natural ſpirits, and ſtand oppoſed to fermentative or artificial ones. *Quinc.* Lex. Med. p. 4.

Such ſpirits are chiefly procured from plants which abound in volatile ſalt. The *Abſtractitious* ſpirit of ſcurvy-graſs is preferred to that procured by fermentation. *Vid. Ludovic.* Pharmac. diſſ. 1. p. 457. *Caſtel.* Lex. Med. p. 4. *Quinc.* Lex. Med. p. 4.

ABSURDITY, (*Cycl.*)—The great cauſe of *Abſurdity*, is in ſpeech. As reaſon conſiſts in the due uſe of names and words, *Abſurdity* conſiſts in the abuſe of them. The higheſt of all our faculties, and our failings, take their riſe from the ſame thing, language; and are as it were coupled together, to temper each other, and reduce human nature to a kind of mediocrity.

Hobbes aſſigns *Abſurdity* as a privilege peculiar to man, and which no other creature is capable of: he adds, that of all men, thoſe called philoſophers, are moſt expoſed to it. Whence the ſaying of Cicero: there is nothing ſo *abſurd* but has been ſaid by a philoſopher, *nihil tam abſurde dici poteſt, quod non dicatur a philoſopho.* The reaſon ſeems to be, that of all men they reaſon, and diſcourſe moſt. Yet a nearer and more appoſite cauſe may be aſſigned; viz. their neglect at ſetting out, to define the terms they make uſe of, *i. e.* to aſſign the preciſe idea each is made to repreſent: which is much like a man's undertaking to number, without knowing the value of the numeral figures; reaſoning, according to the author firſt cited, being no other than computing. Divers *Abſurdities* alſo ariſe from the wrong connecting names into propoſitions; as firſt, when the names of bodies are applied to accidents; or the names of accidents to bodies: as in that propoſition, faith is infuſed, or inſpired; ſince nothing is either fuſible, or inſpirable, but body: and the ſame *Abſurdity* the Carteſians fall into, when they make extenſion to conſtitute body, &c. Secondly, when the names of accidents inherent in external bodies are attributed to accidents of our own bodies; as when it is ſaid that colour is in the object, ſound in the air, &c. Thirdly, when the names of bodies are attributed to words, or conceptions; as is done by thoſe who aſſert that there are univerſal things, that animal is a genus, &c. Fourthly, when the names of accidents are given to words, and propoſitions; as when it is ſaid that the definition is the nature of the thing, or a perſon's command, is his will. Fifthly, when in lieu of proper words, metaphors and tropes are made uſe of; as, the way leads to ſuch a place, the proverb ſays this or that: which though allowable on ordinary occaſions, yet is of miſchievous conſequence in reaſoning and ſearching after truth. Laſtly, when names are taken at random, and uſed without meaning, as tranſubſtantiation, conſubſtantiation, entelechia, &c.

He that can avoid theſe rocks will not eaſily fall into an *Abſurdity*, except in a very long chain of reaſoning, when he may be apt to forget ſome propoſition before laid down. *Hobb.* Leviath. P. 1. c. 5. p. 22. ſeq.

ABSYNTHIUM, in botany. See WORMWOOD.

ABSYNTHUS, in natural hiſtory, the name of a ſtone, deſcribed by ſome old authors as being of a black colour, variegated with ſpots and veins of red. They ſay that when once heated it retains the warmth for ſeven days. The account ſeems ſuperſtitious and imaginary, and the deſcriptions they give ſo ſhort, that it is not eaſy to gueſs what ſtone, if any in nature, was meant to be pointed out by them. Probably the word is only a corruption of the aſiictos, or aſyctos, of Pliny. See ASIICTOS.

ABUNA, among the Chriſtian Arabs, is the title or appellation of a religious.

The word, which is Arabic, is ſometimes alſo written *Abouna*, ſometimes *Abana* [a], and by ſome *Abbuna* [b], or *Abunna* [c]; and literally denotes father.—[[a] *Trev.* Dict. Univ. T. 1. p. 52. [b] *Fabric.* Lux Evang. c. 45. p. 710. [c] *Pagit.* Chriſtianogr. p. 40.]

ABUNA is more particularly uſed for the archbiſhop, or metropolitan of the Abyſſinian church.

Some ſay he is alſo called maco, or macus [a]; others, catholicus: ſome repreſent him as patriarch, but improperly, his office being rather that of biſhop. The *Abuna* is nominated, and conſecrated by the Coptic patriarch of Alexandria, reſiding at Cairo [b]. The Abyſſinians ſome years ago attempted to ſhake off the primacy of the Copts, and refuſed to receive any more of their metropolitans or *Abunas*; inſtead of whom they took patriarchs from the Portugueſe, and were reconciled to the pope: but this laſted not long. The *Abunas* trace their ſucceſſion from St. Frumentius, the firſt *Abuna* or Abyſſinian biſhop [c].—[[a] *Micræl.* Hiſt. Eccl. l. 3. S. 2. §. 7. p. 641. [b] *Fabric.* Lux Evang. c. 45. p. 710. [c] *Ludolph.* Hiſt. Æthiop. l. 3. c. 7. Mem. for Ingen. N°. 5. p. 38.]

ABUTILON, in botany, the name of a genus of plants, allied to the mallow kind. The characters are theſe. The flower wholly reſembles that of the mallow; but the fruit reſembles a ſort of head compoſed of ſeveral capſules, ſo diſpoſed round an axis that every ſtria of that receives one of theſe. Theſe capſules are bivalve, and uſually contain kidney-ſhaped ſeeds.

The ſpecies of *Abutilon*, enumerated by Tournefort, are theſe. 1. The common kind. 2. The Indian *Abutilon* of Authors. 3. The vine-leaved Indian *Abutilon*, with a quinque-capſular fruit. 4. The rough hairy ſtalked *Abutilon*, with pointed leaves and ſmall ſtellated fruit. 5. The African *Abutilon*, with rugged leaves and downy ſeed-veſſels. 6. The great American *Abutilon*, with purple ſtalks and purple ribs in the leaves. 7. The great leaved American *Abutilon*, with hairy ſtalks. 8. The ſhrubby American *Abutilon*, with long leaves, yellow flowers, and a ſmall prickly fruit. 9. The ſhrubby American *Abutilon*, with rounder leaves, yellow flowers, and a larger prickly fruit. And, 10. The marſh American *Abutilon*, with ſmall whitiſh flowers collected into a long pyramidal ſpike. *Tourn.* Inſt. p. 99.

ABUNDANT, (*Cycl.*)—*Abundant* notion, in logic, is that which includes more marks and characteriſtics than are neceſſary to diſtinguiſh it from others.

Thus, we may be ſaid to give an *Abundant* notion of a rectilinear triangle, when we deſcribe it as a ſpace terminated by three right lines, and containing three angles. Inaſmuch as the number of its angles is determined by that of its ſides; ſo that the bare mention of its three ſides, was ſufficient to have defined it. *Wolf.* Phil. Ration. §. 93, p. 161.

ABYSS, (*Cycl.*)—The exiſtence of an *Abyſs*, or receptacle of ſubterraneous waters, is controverted by Camerarius [a], and defended by Dr. Woodward, chiefly by two arguments; the firſt drawn from the vaſt quantity of water, which covered the earth in the time of the deluge; the ſecond, from the conſideration of earthquakes, which he endeavours to ſhew are occaſioned by the violence of the waters in this *Abyſs* [b]. A great part of the terreſtrial globe has been frequently ſhaken at the ſame moment; which argues, that the waters, which were the occaſion hereof, were co-extended with that part of the globe. There are even inſtances of univerſal earthquakes; which ſhew that the whole *Abyſs* muſt have been agitated: for ſo general an effect muſt have been produced by as general a cauſe; and that cauſe can be nothing but the ſubterraneous *Abyſs* [c].—[[a] *Camerar.* Differt. Taurin Act. Erud. Supp. T. 6. p. 24. [b] V. *Woodward*, Natur. Hiſt. Tellur. Illuſtr. Jour. des Scav. T. 58. p. 393. Mem. of Liter. T. 8. p. 101. ſeq. [c] Mem. of Liter. T. 8. p. 104.]

This *Abyſs* is no uſeleſs thing; when once eſtabliſhed, it ſerves to ſolve ſeveral difficult phænomina; as the origin of ſprings and rivers; the level maintained in the ſurface of different ſeas, and their not overflowing their banks. To the effluvia emitted from this *Abyſs* ſome even attribute all the diverſities of weather, and changes in our atmoſphere; and what is more, the origin of every thing in the earth, or on its ſurface. Dr. Woodward has an epiſtle expreſs on the œconomy of the great *Abyſs* hid in the bowels of the earth, and the perpetual communication between it and the atmoſphere [d].

Ray and other authors, antient as well as modern, ſuppoſe a communication between the Caſpian ſea and the ocean, by means of a ſubterranean *Abyſs*: and to this they attribute it, that the Caſpian does not overflow, notwithſtanding the great number of large rivers it receives [e]; of which Kempfer reckons above fifty, in the compaſs of ſixty miles [f]. But may not the daily evaporation ſuffice to keep a level here?—[[d] *Holloway*, Int. to Woodward's Natur. Hiſt. of Earth. Act. Erud. 1727. p. 313. [e] *Ray*, Phyſ. Theol. Diſc. 2. c. 2. p. 76. [f] *Kempf.* Amœn. Exot. F. 2. R. 1. §. 1. p. 256.]

ABYSS is alſo uſed to to denote the cavernous belly of a hollow mountain.

In which ſenſe M. Tournefort deſcribes the *Abyſs* of mount Ararat, a horrible ſpectacle. *Tournef.* Voy. Levant. let. 19. T. 2. p. 150.

ABYSS is alſo uſed to denote hell [a].

In which ſenſe the word is ſynonymous with what is otherwiſe called Barathrum, Erebus [b], and Tartarus; in the Engliſh bible, the *bottomleſs pit*. The unclean ſpirits expelled by Chriſt, begged, *ne imperaret, ut in Abyſſum irent*, according to the vulgate; εις αβυσσον, according to the Greek [c].—[[a] *Suic.* Theſ. T. 1. p. 12. *Calm.* Dict. Bibl. T. 1. p. 29. *Magr.* Notiz. de Vocab. Eccleſ. p. 2. [b] *Saur.* Diſſ. O. Teſt. T. 1. p. 58. [c] Luke, *c.* viii. *v.* 31. Revel. *c.* ix. *v.* 1.]

ABYSS is more particularly uſed, in antiquity, to denote the temple of Proſerpine.

It was thus called on account of the immenſe fund of gold and riches depoſited there; ſome ſay hid under ground. *Suid.* Lex. T. 1. p. 16.

ABYSS is alſo uſed, in heraldry, to denote the centre of an eſcutcheon.

In which ſenſe, a thing is ſaid to be bore in *Abyſs*, *en Abyſme*, when placed in the middle of the ſhield, clear from any other bearing: he bears azure, a flower de lys, in *Abyſs*. *Colombiere*, Scienc. Heroique. Trev. Dict. Univ. T. 1. p. 56.

ABYSS is alſo uſed, by ſome alchymiſts, for the immediate receptacle of ſeminal matter [a]; by others for the firſt matter itſelf [b].—[[a] *Libav.* in Exam. Philoſoph. Vivent. T. 4. p. 139.

Caſt.

Caſt. Lex. Med. p. 4.. [b] *Menenſ.* Tractat. Aurei Veller. l. 1. c. 7. in Theatr. Chym. T. 5. p. 274. *Caſt.* loc. cit.

ABYSS is alſo uſed metaphorically for a thing not to be known or comprehended, on account of its immenſe extent, or profundity. *Magri.* Notiz. Vocab. Eccleſ. p. 2. *Trev.* Dict. Univ. T. 1. p. 56.

In which ſenſe it coincides with ſecret, inſcrutable, incomprehenſible, &c.—The judgments of God are called a great *Abyſs* [a]. The ſcripture is repreſented by an antient father as an *Abyſs* of queſtions, αβυσσος ζητηματων [b].—[a Pſalm xxxv. or xxxvi. *v.* 7. b *Chryſoſt.* Homil. in Act. T. 4. p. 747.]

ABYSS, in hydrography, is ſynonymous with gulph. *Ozan.* Dict. Math. p. 358.

ABYSSINIAN is uſed as the name of a ſect, or hereſy, in the Chriſtian church; eſtabliſhed in the empire of *Abyſſinia.*

The *Abyſſinians* are a branch of the Copts, or Jacobites; with whom they agree in admitting only one nature in Jeſus Chriſt, and rejecting the council of Chalcedon: whence they are alſo called Monophyſites, and Eutychians.

The *Abyſſinians* ſtand oppoſed to the *Melchites*; and are only diſtinguiſhed from the Copts, and other ſects of Jacobites by ſome peculiar national uſages [a]: they are charged indeed with hereſy, but it is a hereſy of a ſubtle kind, hard to define; ſome take it for a mere name, and hold them to be orthodox in reality. In effect, they themſelves deny their being Eutychians, and even anathematize Appollinarius [b], which with ſome zealots is not enough [c]. Ludolph juſtifies them of Eutychianiſm, proving that they allow Jeſus Chriſt to be true God and true man, without mixture and confuſion; and that if they only allow one nature in him, it is becauſe they have no clear idea of the ſignification of that word [d]. Their hereſy, like ſome others, reſolves itſelf into logomachia's, and miſunderſtandings about the terms, nature, perſon [e], &c.—[a *Boſii* Diſc. de Stat. Europ. §. 29. b *Le Grand.* Diſſ. ſur Lobo Voy. d'Abyſſ. p. 2031. c *Renaudot.* Defenſ. Hiſt. Patriarch. ap. Mem. de Trev. an. 1718. p. 661. ſeq. d *Ludolf.* Com. Hiſt. Ethiop. ap. Bibl. Univ. T. 21. p. 19. Oeuv. des Scav. an. 1691. p. 73. e *Le Grand.* Diſſ. ſur Lobo, p. 2032.]

The *Abyſſinian* ſect or church is governed by a biſhop, or metropolitan, ſtiled Abuna, (ſee ABUNA,) ſent them by the Coptic patriarch of Alexandria reſiding at Cairo, who is the only perſon that ordains prieſts. The next dignity is that of Komos, or Hegumenus, who is a kind of arch-preſbyter. They have canons alſo, and monks; the former of whom marry, the latter at their admiſſion vow celibacy, but with a reſervation. Le Grand ſays, they make a promiſe aloud, before their ſuperior, to keep chaſtity, but add in a low voice, *as you keep it* [f]. The emperor has a kind of ſupremacy in eccleſiaſtical matters [g]. He alone takes cognizance of all eccleſiaſtic cauſes, except ſome ſmaller ones reſerved to the judges, and confers all benefices, except that of Abuna [h]. Ludolfus [i], makes their hierarchy reſemble that of the Engliſh church, where the ſupremacy in ſpirituals is lodged in the ſovereign. Mr. Le Grand maintains the contrary, that the Abuna depends only on the patriarch of Alexandria [k].—[f *Le Grand* ubi ſupra, p. 2042. g *Pagit.* Chriſtianogr. P. 1. c. 4. p. 89. *Fabric.* Lux Evang. c. 45. p. 710. h *Pagit.* ubi ſupr. i *Ludolf.* Hiſt. loc. cit. Week. Mem. Ingen. N°. 5. p. 38. k *Le Grand* ubi ſupr. p. 2041.]

The *Abyſſinians* have divers times expreſſed an inclination to be reconciled to the ſee of Rome; but rather out of intereſt of ſtate than any other motive. The emperor David, or the queen regent on his behalf, wrote a letter on this head to pope Clement VII. full of ſubmiſſion, and demanding a patriarch from Rome to be inſtructed by. Which being complied with, he publickly abjured the doctrine of Eutychius and Dioſcorus in 1626, and allowed the ſupremacy of the pope [l]. Under the emperor Seltan Seghed all was undone again; the Romiſh miſſionaries ſettled there, had their churches taken from them, and their new converts baniſhed, or put to death. The congregration *de propaganda* have made ſeveral attempts to revive the miſſion, but to little purpoſe.

It is pretended that the *Abyſſinians* ſent embaſſadors, as early as 1177, to pope Alexander III. and others ſince, in 1459, to the council of Florence; but this conſiſts ill with what others relate, that before the late miſſions of the Jeſuits, the *Abyſſinians* do not appear to have ſo much as known the pope. Some even imagine, that the embaſſadors, who appeared at the council of Florence, were only impoſtors, dreſſed up by pope Eugenius IV. to make the Greeks believe that his authority was allowed as far as Æthiopia [m].—[l *Ludolf.* Comment. ubi ſupra, p. 77. m V. *La Croix* Relat. Univ. de l'Afriq. Oeuv. des Scav. an. 1689. p. 412.]

Meneſis, and other miſſionaries accuſe the *Abyſſinians* of Judaiſm, in regard of the many Jewiſh obſervances ſtill in uſe among them: ſome have even doubted, whether they are more Chriſtians, or Jews [n]? Lobo [o] ſays expreſsly they are only Chriſtians in name: they practiſe circumciſion on females, as well as males. They eat no meats prohibited by the law of Moſes.—Women are obliged to the legal purifications.—Brothers marry their brother's wives [p], &c. They abſtain from hog's fleſh, blood, meats ſtrangled [q], &c. and obſerve both Saturday and Sunday ſabbath, according to the cuſtom of the primitive church [r]: all of them marks of Judaiſm; tho' by ſome reſolved into mere human inſtitution, and uſage [s]. They celebrate the Epiphany with peculiar feſtivity, in memory of Chriſt's baptiſm; when they plunge and ſport in ponds and rivers, which has occaſioned ſome to affirm that they were baptized a-new every year. Among the ſaints-days is one conſecrated to Pilate and his wife; by reaſon Pilate waſhed his hands before he pronounced ſentence on Chriſt; and his wife deſired him to have nothing to do with the blood of that juſt perſon [t]. They have four lents [u]: the great one commences ten days earlier than ours, and is obſerved with much ſeverity, many abſtaining therein even from fiſh, by reaſon St. Paul [x] ſays there is one kind of fleſh of men, and another of fiſhes. They allow of divorce, which is eaſily granted among them, and by the civil judge [y]: nor do their civil laws prohibit polygamy itſelf [z]. They have at leaſt as many miracles, and legends of ſaints as the Romiſh church [a]; which proved no ſmall embaraſſment to the Jeſuit miſſionaries, to whom they produced ſo many miracles, wrought by their ſaints, in proof of their religion, and thoſe ſo well circumſtantiated and atteſted, that the Jeſuits were obliged to deny miracles to be any proof of a true religion; and in proof hereof to alledge the ſame arguments againſt the *Abyſſinians*, which Proteſtants in Europe alledge againſt the Papiſts [b]. Ludolf [c] allows that they believe the real preſence after the Lutheran manner, but denies that they hold tranſubſtantiation: tho' Renaudot aſſerts, that they maintain this latter. They pray for the dead, and invoke ſaints and angels [d]; have ſo great a veneration for the virgin, that they charged the Jeſuits with not rendering her honour enough [e]. Images in painting they venerate, but abhor all thoſe in relievo, except the croſs [f]. They hold that the ſoul of man is not created, becauſe, ſay they, God finiſhed all his work on the ſixth day [g]. They admit the apocryphal books, and the canons of the apoſtles, as well as the apoſtolical conſtitutions, for genuine [h]. Their liturgy is given by Alvarez, and in Engliſh by Pagit [i]; their calendar by Ludolf: the anſwers of abba Gregory to certain queſtions, propoſed by the author laſt cited, are publiſhed by Fabricius, under the title of *Theologia Æthiopica* [k].—[n *Le Grand*, ubi ſupra, p. 2024. o *Lobo*, Voyag. Hiſtor. d'Abyſſin. ap. Bibl. Raiſ. T. 1. p. 56. ſeq. p Id. ibid. p. 60. q *Ludolf*, Hiſt. Æthiop. l. 3. c. 1. r Bibl. Univ. T. 21. p. 4, 16. s *La Croix*, Relat. Univ. de l'Afrique. Giorn. de Lett. d'Ital. T. 3. an. 1689. p. 90. t Bibl. Univ. T. 21. p. 4. u Lett. Edif. T. 4. p. 110. x 1 Cor. *c.* xv. *v.* 39. y *Ludolf*, Hiſt. Æthiop. Week. Mem. Ingen. N°. 5. p. 37. z Oeuv. des Scav. an. 1691. p. 78. a Bibl. Univ. T. 21. p. 16. b Oeuv. des Scav. an. 1691. p. 78. c *Ludolf*, ubi ſupra, p. 656. d *Le Grand*, ubi ſupra, p. 2040. e *Ludolf*, Com. Hiſt. Æthiop. Bibl. Univ. T. 21. p. 16. f Id. ap. Bibl. Univ. T. 21. p. 17. g Id. Hiſt. Æthiop. Week. Mem. Ingen. N°. 5. p. 37. h Id. Com. Hiſt. Æthiop. Bibl. Univ. T. 21. p. 16. i *Pagit*, Chriſtianogr. P. 1. c. 5. p. 102. k *Fabric.* Lux Evang. c. 45. p. 716. ſeq.]

ACACALIS, in the materia medica, the name given by ſome authors, to the ſiliqua ſylveſtris or wild Carob. *Dale* Pharm. p. 340.

ACACALOTL, in zoology, the name of an American bird, called by ſome *corvus aquaticus*, or the water raven. The male is four ſpans long from his beak to the end of his tail, and is moderately fleſhy, his legs are a ſpan and a half long. Its beak is two hands breadth long, is bent like a bow, and of a blue colour; its head is ſmall; it is of a mixt brown and red colour on the breaſt and belly, and of a finely variegated hue on the back, made up of a ſhining purple, black, and green; its wings are of a lovely green, which looks very bright and gloſſy in the ſun. It is a native of Mexico, and is common about lakes and rivers, feeding on fiſh; it is eaten, but is coarſe, and of a rank fiſhy taſte. *Margrave*'s Hiſt. Braſil.

ACACIA, (*Cycl.*)—in botany, the name of a genus of trees, the characters of which are theſe: The flower conſiſts only of one leaf, and is of the funnel-faſhioned kind, and uſually contains a great number of ſtamina, and the flowers are commonly collected in cluſters, or little heads; the piſtil ariſes from the bottom of the flower, and finally becomes a ſiliquous fruit divided into ſeveral hollows, and containing a number of roundiſh ſeeds. *Tourn.* Inſt. p. 605.

The ſpecies of *Acacia* enumerated by Mr. Tournefort are theſe: 1. The true *Acacia.* 2. The white flowered Ægyptian *Acacia.* 3. The Indian Farneſe *Acacia.* 4. The large leaved American *Acacia*, with rounded pods. 5. The broad leaved, white flowered, alopecuroide American *Acacia.* 6. The ſmooth, white flowered American *Acacia*, with broad flatted pods. 7. The tamarind-leaved, white flowered, prickly American *Acacia.* 8. The ſiliqua-leaved, prickly, creeping, American *Acacia*, with white flowers. 9. The purple flowered, wallnut-leaved, ſmooth American *Acacia.* 10. The creeping, prickly American *Acacia*, with white flowers and extreamly ſmall leaves. 11. The purple flowered, ſmooth ſhrub American *Acacia.* 12. The yellow flowered *Acacia*, with very long and thick white prickles.

The Æthiopian pepper of Mathiolus ſeems to belong to this genus of plants.

The manner of propagating theſe trees, is, to ſow their ſeeds on a hot-bed in ſpring; they will ſoon appear above the ground, and are then to be tranſplanted. For this purpoſe, another hot-

bed muſt be prepared, into which muſt be plunged as many ſmall pots as there is occaſion for. Theſe muſt be firſt filled with earth; and when they have ſtood twenty-four hours, this earth will be of a proper warmth. Then the plants are to be raiſed gently out of the firſt hot-bed, and planted one in the middle of each pot, and watered gently to ſettle the earth to their roots. The bed is then to be ſhaded with mats, till they have taken root; and after this, air muſt be given them, as they are able to bear it, by raiſing the glaſſes which cover the beds.

The two kinds called the locuſt-tree and the water *Acacia* of Carolina, and the other hardier kinds, may be wholly uncovered in the hot-bed by midſummer. The firſt and ſecond winter, theſe ſhould be ſheltered in a common hot-bed frame, till they are grown woody; and after this, they may be taken out of the pots in the ſpring of the year, and planted in the open ground, where they are intended to ſtand; which ſhould always be in a wilderneſs or clump of trees, where they may be ſheltered from the wind, the violence of which is otherwiſe apt to ſplit them. When they are eight or ten feet high, they will make very vigorous ſhoots, which ſhould be annually ſhortened, that the heads of the trees ſhould not become open and naked. They love a looſe and ſomewhat moiſt ſoil.

The other tenderer kinds of *Acacia* ſhould be kept in the hot-beds till July, and after this be expoſed to the air by degrees, though the glaſſes ſhould not be removed from them wholly for the firſt year. Theſe muſt be ſet in a ſtove the firſt and ſecond winters; but when they are grown woody, they will live in a good green-houſe, and may be expoſed in ſummer, as myrtles, orange-trees, and the like. They muſt be very little watered in winter; eſpecially thoſe which ſhed their leaves.

The tendereſt kinds of all, which are the true Egyptian *Acacia*, the branched leaved *Acacia* with twiſted pods, and the large four-leaved *Acacia* with twiſted pods, muſt have a hot-bed of tanners bark, and muſt be ſhifted into larger pots, as they increaſe in bulk. The earth for theſe muſt be ſomewhat ſandy; and great care muſt be taken not to give them too large pots. The firſt of theſe three may, when grown woody, be ſet in a common ſtove among viburnums, and the like; but the other two muſt have a bark ſtove in winter: nor ſhould they be expoſed to the open air in ſummer, at leaſt till they are four or five years old. In winter, theſe are to have very little water; but in ſummer, they require frequent refreſhings. *Miller*'s Gardn. Dict.

The Chineſe cultivate theſe trees for the ſake of their flowers, which they uſe in dying. They gather the ſeeds when perfectly ripe, and dry them in the ſun, and lay them up all winter. A little before the ſummer ſolſtice, they throw them into water, and there leave them till they begin to ſhoot; they then take them out and ſow them in a good fat ſoil, with hempſeed mixed among them. Both ſeeds will grow up together; and they gather the hemp at its proper time, and tye up the young *Acacias* to poles, to keep them upright. The ſecond and third year, they, in the ſame manner, ſow hemp among them. The uſe of this is principally to defend them, while young, from the inclemencies of the weather; but after the third year they generally are ſtrong enough to bear it, and are then to be tranſplanted out into proper places, where they will grow to handſome trees. Obſerv. ſur les Coutumes de l'Aſie, p. 256.

The flowers of the *Acacia* are uſed by the Chineſe in making that yellow, which, we ſee, bears waſhing in their ſilks and ſtuffs; and appears with ſo much elegance in their painting on paper. The method is this:

They gather the flowers before they are fully open; theſe they put into a clean earthen veſſel over a gentle heat, and ſtir them continually about, as they do the tea leaves, till they become dryiſh and of a yellow colour; then to half a pound of the flowers they add three ſpoonfuls of fair water, and after that a little more, till there is juſt enough to hold the flowers incorporated together: they boil this for ſome time, and the juice of the flowers mixing with the water, it becomes thick and yellow; they then take it from the fire, and ſtrain it through a piece of coarſe ſilk. To the liquor they add half an ounce of common allum, and an ounce of calcined oyſter-ſhells reduced to a fine powder. All is then well mixed together; and this is the fine laſting yellow they have ſo long uſed. Obſerv. ſur les Coutumes de l'Aſie, p. 242.

The dyers of large pieces uſe the flowers and ſeeds of the *Acacia* for dying three different ſorts of yellow. They roaſt the flowers, as before obſerved; and then mixing the ſeeds with them, which muſt be gathered for this purpoſe when full ripe, by different admixtures of theſe, they give the different ſhades of colour, only for the deepeſt of all, they give a ſmall mixture of Braſil wood. See DYES, YELLOW.

Mr. Geoffroy, with great probability, attributes the origin of bezoar to the ſeeds of this plant; which being broufed by certain animals, and vellicating the ſtomach by their great ſourneſs, and aſtringency, cauſe a condenſation of the juices, till at length they become coated over with a ſtony matter, which we call bezoard [a].

Some will alſo have the *Acacia* to be the tree which yields the gum arabic, or ſenegal [b]. The juice we are aſſured by others makes the baſe of the true Catechu, or Japan earth [c].

'Tis diſputed whether our *Acacia* be the ſame with that ſpoke of by Dioſcorides [d], Pliny [e], and other antients. F. Hardouin [f], Saracenus [g], and others aſſert the affirmative; Salmaſius, Menage [h], &c. the negative; maintaining that the antient *Acacia*, or *ſpina Ægyptia*, from whence their medicinal juice was prepared, was the ſame with our *caſſia fiſtula*. The antients diſtinguiſhed two kinds of *Acacia*; the white, and the black: Salmaſius takes the latter to have been our *caſſia fiſtula*, whoſe uſe was then unknown. The uſe of the former, or white kind, he ſuppoſes loſt to us. So that their *Acacia* is unknown to us, as ours to them. But this is refining to a great pitch. 'Tis certain Pliny's deſcription, in the main, anſwers to the modern *Acacia*, as exactly, perhaps, as Salmaſius himſelf could at this day have deſcribed it [i].

—[a Mem. de l'Acad. loc. cit. b Mem. des Miſſ. T. 2. p. 187. c *Cleyer.* in Ephem. German. dec. 2. an. 4. obſ. 3. p. 6. d *Dioſcor.* l. 1. c. 133. e *Plin.* Hiſt. Nat. l. 24. c. 12. f Not. ad Plin. T. 1. l. 13. c. 10. p. 688. & T. 2. l. 24. c. 12. p. 343. g Not. ad Dioſcor. l. 3. c. 15. h *Menag.* Orig. Franc. p. 4. i *Salmaſ.* Exerc. ad Solin. p. 539. ſeq.]

ACACIA, in antiquity, according to Du Cange, the ακακια, properly ſo called, was a purple bag, filled with earth, or ſand, and bore by the prince in his left hand, to remind him of his frailty and mortallty; to prevent his being too much elated with his ſtation [a]. 'Tis queſtioned, however, whether this *Acacia*, in the hands of the Greek emperors, be the ſame with that repreſented in the ſtatues of the earlier Roman magiſtrates, as conſuls, queſtors, and the like. The latter rather appears to have been a roll, or volume [b].—[a *Codin.* de Offic. Aul. Conſtant. c. 6. §. 27. *Du Cang.* Diſſ. de Infer. Æv. Numiſm. §. 13. p. 11. Ejuſd. Gloſſ. Græc. T. 1. p. 38. b *Du Cang.* Diſſ. loc. cit.]

ACACIANS, ACACIANI, in church-hiſtory, a ſect, or hereſy, who denied the ſon to be conſubſtantial, or of the ſame ſubſtance with the father, but aſſerted him to be of a like, or ſimilar ſubſtance.

They took the denomination from Acacius, biſhop of Cæſarea, who flouriſhed about the middle of the fourth century, whoſe followers they were.

The *Acacians* are otherwiſe called Semi-Arians; though in ſtrictneſs, they are rather a particular ſect or branch of the Semi-Arians. *Micræl.* Hiſt. Eccleſ. l. 2. ſec. 2. p. 434.

ACACIANS alſo denote a ſect of heretics, who held the ſon to be of a different, or diſſimilar ſubſtance from the father.

Theſe are more frequently called Aetians, and Anomæans; by ſome, the later or poſterior *Acacians*, in reſpect of the former, who are hence alſo denominated the prior or former *Acacians*.

They derive their name from the ſame Acacius, who, out of oppoſition to St. Cyril, as ſome alledge, quitted the party of the Semi-Arians, and eſpouſed that of the Anomæans. Vid. *Du Pin*, Bibl. Eccleſ. T. 2. p. 122. *Micræl.* Hiſt Eccleſ. l. 2. ſect. 2. p. 434.

ACACIANS is alſo the denomination of a third ſect, the followers of Acacius, patriarch of Conſtantinople, towards the cloſe of the fifth century, who favoured the errors of Eutychius. Vid. *Petav.* Rationar. Temp. P. 1. l. 6. p. 359.

ACADEMY, (*Cycl.*)—*Medical Academies*, as, that of the Naturæ Curioſi in Germany [a]; that founded at Palermo, in 1645; another at Venice, in 1701, which meets weekly in a hall near the grand hoſpital; another at Geneva, in 1715, in the houſe of M. le Clerc. The college of phyſicians at London is alſo by ſome ranked in the number of *Accademies* [b].

The *Academy* of *Naturæ Curioſi*, called alſo the Leopoldine *Academy*, had its origin in 1652 [c], when Jo. Laur. Bauſchius, induced by the example of the Engliſh, publiſhed an invitation to all phyſicians to communicate their obſervations of extraordinary caſes; which meeting with ſucceſs, he was elected preſident: though the ſociety was not fully eſtabliſhed, till the preſidentſhip of Jo. Mich. Fehr. Their works were at firſt publiſhed ſeparately. In the year 1670, a new ſcheme was laid for publiſhing periodically, a volume of obſervations every year; the firſt of which appeared in 1684, under the title of Ephemerides, and has been continued under ſome interruptions and variations of title, &c [d]. In 1687, the Emperor Leopold took the ſociety under his protection, granting them ſeveral privileges, particularly, that their preſidents ſhould be Counts Palatine of the holy Roman empire [e]. This *Academy* differs from all others, in that it has no fixed reſidence, or regular aſſemblies [f]; inſtead whereof is a kind of bureau, or office, firſt eſtabliſhed at Breſlaw, afterwards removed to Nuremberg, where letters, obſervations, &c. from members and correſpondents are taken in [g]. The *Academy* conſiſts of a preſident, two adjuncts or ſecretaries, and collegues or members. The collegues, at their admiſſion, oblige themſelves to two things; firſt, to chooſe ſome ſubject out of the animal, vegetable, or mineral kingdom to handle, provided it had not been treated of by any collegue before; the ſecond, to apply themſelves to furniſh materials for the annual Ephemerides. Each member to bear a ſymbol of the

Academy, viz. a gold ring, whereon, inſtead of a ſtone, is a book open, and on the face thereof an eye; on the other ſide, the motto of the Academy, *nunquam otioſus* [b].—[a *Gimma*, ap. Bibl. Ital. Tom. 2. [b] V. Mem. de Trev. 1715. p. 2232. [c] *Vockerodt*. Introd. ad Notit. Societat. Literar. c. 2. §. 3. [d] See Mem. de Trev. an. 1707. p. 1858. &. an. 1714. p. 1112. [e] See *Struv*. loc. cit. §. 25. p. 882. [f] *Riedlin*. Iter. Medic. p. 28. [g] V. Mem. de Trev. an. 1716. p. 1914. [h] See the hiſtory, laws, &c. of this *Academy*, with the names of its members, and the titles of its pieces, in Ephem. Germ. dec. 1. an. 1. & 2. Pref. and the continuation of the ſame in the prefaces and appendixes to the enſuing volumes. See alſo *Wedelii* Salve Academicum, vel Judicia & Elogia ſuper recens adornata Academia, Nat. Curioſ. 1662. 4to. & Ejuſd. Progreſſus Acad. N. C. Catal. Patron. & Colleg. Jen. 1680. 4to. For the literary hiſtory of the *Academy*, or a notitia of the ſeveral pieces produced by the members of it, ſee *Valentini* Hiſt. Literar. Acad. Naturæ Curioſorum. in Ephem. Germ. dec. 3. an. 1. App. p. 147. & ſeq. Jour. de Scav. 1710. p. 396. See alſo *Reimman*. Introd. ad Hiſt. Liter. German. T. 5. p. 809. *Vockerodt*. lib. cit. ſec. 2. c. 1. §. 23.

Chirurgical ACADEMIES, as that lately inſtituted by public authority at Paris; the members of which are not only to publiſh their own and correſpondents obſervations and improvements, but to give an account of all that is publiſhed in ſurgery, and to compoſe a compleat hiſtory of this art, by their extracts from all the authors, antient and modern, who have wrote on it. A queſtion in ſurgery is to be propoſed by the *Academy* yearly; and a prize of a gold medal of two hundred livres value to be given him, who furniſhes the moſt ſatisfactory anſwer. Medic. Eſſ. Edinb. T. 1. p. 361.

Eccleſiaſtical ACADEMIES, as that at Bologna, employed in the examination of the doctrine, diſcipline, and hiſtory of each age of the church. Giorn. de Letter. de Parm. an. 1687. p. 144.

Coſmographical, as that of the Argonauts at Venice, inſtituted at the ſollicitation of F. Coronelli, for the improvement of geography. The deſign of the *Accademia Coſmografica* is to procure exact maps, both geographical, topographical, hydrographical, and ichnographical, of the cæleſtial as well as terreſtrial globe, and the ſeveral regions and parts thereof, together with geographical, hiſtorical, and aſtromomical deſcriptions accommodated thereto, to be made and publiſhed: in order to which, the ſeveral members oblige themſelves, by their ſubſcription, to take one or more copies of each piece, publiſhed under the direction of the *Academy*; and to advance the money, or part of it, in order to defray the charge of publication. To this end, there are three ſocieties ſettled, at Venice, Paris, and Rome; the firſt under F. Moro, provincial of the Minorites of Hungary: the ſecond, under the abbot Laurence au Rue Payenne au Marais; the third, under F. Ant. Baldigiani, jeſuit, profeſſor of mathematics in the Roman college; to whom thoſe addreſs themſelves, who are willing to engage in this deſign. The Argonauts number 196 members in the ſeveral countries of Europe: their device is the terraqueous globe, with the motto, *plus ultra*. At the expence of this *Academy*, all the globes, maps, and geographical writings of F. Coronelli have been publiſh'd [b].—[a V. *Krauſ*. Nouv. Liter. an. 1719. p. 18. [b] Act. Erud. Lipſ. an. 1688. p. 524.]

Naval ACADEMIES, as that at Peterſburgh; and another erected among us at Portſmouth, for the breeding up youth for the ſea-ſervice. V. Nouv. Mem. ſur. l'Etat de la grande Ruſſie. Mem de Trev. an. 1725. p. 1507.

ACADEMIES *of Sciences* chiefly denote thoſe erected for improving natural and mathematical knowledge, otherwiſe called philoſophical and phyſical *Academies*: ſuch as the *Academy Secretorum Naturæ*, formed at Naples in the houſe of Baptiſta Porta, about the year 1560, was the firſt *Academy* of the philoſophical kind. It was ſucceeded by

The *Academy of Lyncei*, founded at Rome by Prince Frederic Ceſi, towards the cloſe of the ſame century; ſeveral of whoſe members rendered it famous by their diſcoveries: the celebrated Galileo Galilei was of the number.

Divers other *Academies* contributed alſo to the advancement of theſe ſciences; but it was by ſpeculations, rather than by repeated experiments on the phænomena of nature: ſuch were the *Academy of Beſſarian* at Rome, and that of Laurence de Medicis at Florence, in the fifteenth century; in the ſixteenth that of Infiammati at Padua, of Vegna Juoli at Rome, of Ortolani at Placentia, and of Umidi at Florence. The firſt of theſe ſtudied fire and pyrotechnia, the ſecond wine and vineyards, the third gardens and pot-herbs, the fourth water and hydraulics. Add to theſe, that of Venice, called La Veneta, founded by Frederic Badoara, a noble Venetian; another in the ſame city, whereof Campegio, biſhop of Feltro, appears to have been the chief; and that of *Coſenza*, or *la Conſentina*, whereof Bernadin Teleſio, Sertorio Quatromanni, Paulus Aquinas, Julio Cavalcanti, and Fabio Cicali, celebrated philoſophers, were the chief members.

The compoſitions of all theſe *Academies* of the ſixteenth century were good in their kind, but none of them comparable to thoſe of the Lyncei.

The *Academy Del Cimento* made its appearance at Florence, ſome years after the death of Torricelli, under the protection of Prince Leopold, afterwards Cardinal de Medicis. Redi was one of its chief members. Count Laurence Magalotti, ſecretary of this *Academy*, publiſhed a volume of curious experiments in 1667, under the title of *Saggi di Naturali Eſperienze*; a copy of which being preſented to the Royal Society, was tranſlated into Engliſh by Mr. Waller, and publiſhed at London, in 4to.

The *Academy Degl' Inquieti* at Bologna, incorporated afterwards into that *Della Traccia* in the ſame city, followed the example of that *Del Cimento*: their meetings were at the houſe of the abbot Antonio Sampieri. Here Geminiano Montanari, one of the chief members, made excellent diſcourſes on phyſical and mathematical ſubjects, part whereof was publiſhed in 1667, under the title of *Penſieri Fiſico Matematici*. This *Academy* afterwards met in an apartment of Euſtachio Manfredi; and afterwards in that of Jacob Sandri, but arrived at a higher luſtre, when its aſſemblies were held in the palace Marſilli.

The *Academy of Roſſano*, in the kingdom of Naples, called *La Societa Scientifica Roſſaneſe degl' Incurioſi*, was founded about the year 1540, under the name of *Naviganti*, and renewed under that of *Spenſierati* by Camillo Toſcano, about the year 1600. It was transformed from an *Academy* of Belles Lettres into an *Academy* of Sciences, at the ſollicitation of the learned abbot Don Giacinto Gimma; who being made preſident, under the title of promoter-general thereof, in 1695, gave a new ſet of regulations. He divided the *academiſts* into ſeveral claſſes, viz. grammarians, rhetoricians, poets, hiſtorians, philoſophers, phyſicians, mathematicians, lawyers, and divines, with a claſs apart for cardinals and perſons of quality. To be admitted a member, a man muſt have degrees in ſome faculty. The members are not allowed to take the title of *academiſt*, in the beginning of their books, without a written permiſſion from the preſident, which is not granted till the work has been examined by the cenſors of the *Academy*. This permiſſion is the greateſt honour the *Academy* can confer; ſince hereby they, as it were, adopt the work; and are anſwerable for it againſt all critiques which may be made of it. The preſident or promoter himſelf is ſubject to this law. Add, that no *Academiſt* is allowed to publiſh any thing againſt the writings of another, without leave from the ſociety [a].

There have been ſeveral other *Academies* of ſciences in Italy, which have not ſubſiſted long, for want of being ſupported by the princes. Such were at Naples that of the *Inveſtiganti*, founded about the year 1679, by the Marquis d'Arena, Don Andrea Concubletto: and that which met in 1698, in the palace of the Duke de Medina, Don Lewis della Cerda, viceroy of Naples. At Rome, that of *Fiſico Matematici*, which met in 1686, in the houſe of Sig. Ciampini: at Verona, that of *Aletofili*, founded the ſame year by Sig. Joſeph Gazola, which met in the houſe of the Count Serenghi della Cucca: at Breſs, that of *Fileſotici*, founded the ſame year for the cultivation of phyſics and mathematics, and ended the year following: that of F. Franciſco Lana, a Jeſuit of great ſkill in thoſe ſciences: laſtly, that of *Fiſico Critici* at Sienna, founded in 1691, by Sig. Peter Maria Gabrielli.

Some other *Academies* ſtill ſubſiſting in Italy, repair with advantage the loſs of the former. One of the principal is the *Academy* of *Filarmonici* at Verona, ſupported by the Marquis Scipio Maffei, one of the moſt learned men in Italy. Tho' the members of this body apply themſelves to the Belles Lettres, they do not neglect the ſciences. The *Academy* of *Ricovrati* at Padua ſtill ſubſiſts with reputation; in it learned diſcourſes are held from time to time on phyſical ſubjects; ſuch for inſtance is that, which the celebrated Sig. Antonio Valliſnieri, firſt profeſſor of phyſic in the univerſity of that city, delivered here on the origin of ſprings; ſince printed. The like may be ſaid of the *Academy* of the *Muti di Reggio*, at Modena; to which the ſame Sig. Valliſnieri, a native of that city, preſented an excellent diſcourſe on the ſcale of created beings, ſince inſerted in his hiſtory of the generation of man and animals; printed at Venice in 1721. In the number of theſe *Academies* may alſo be ranked the aſſembly of learned men, which of late years have met at Venice in the houſe of Sig. Criſtino Martinelli, a noble Venetian, and great patron of learning.

Among the new *Academies*, the firſt place, after the inſtitute of Bologna, is given to that of the counteſs Donna Clelia Grillo Borromeo, one of the moſt learned ladies of the age, to whom Sig. Gimma dedicates his literary hiſtory of Italy. She had lately eſtabliſhed an *Academy* of experimental philoſophy in her palace at Milan; of which Sig. Valliſnieri was nominated preſident, and had already drawn up the regulations of it, tho' we do not find it has yet taken place [b].

F. Merſenne is ſaid to have given the firſt idea of a philoſophical *Academy* in France, towards the beginning of the ſeventeenth century, by the conferences of naturaliſts and mathematicians, occaſionally held at his lodgings; at which Gaſſendi, Des Cartes, Hobbs, Roberval, Paſcal, Blondel, and others aſſiſted. F. Merſenne propoſed to each, certain problems to examine, or certain experiments to be made. Theſe private aſſemblies were ſucceeded by more public ones, formed by Mr. Montmort and Mr. Thevenot, the celebrated traveller. The French example animated ſeveral Engliſhmen of

distinction and learning to erect a kind of philosophical *Academy* at Oxford, towards the close of Cromwell's administration; which, after the restoration, was erected by authority into a Royal Society. The English example in its turn animated the French. Lewis XIV. in 1666, assisted by the counsels of Mr. Colbert, founded an *Academy* of sciences at Paris, with a sufficient revenue to defray the charge of experiments, and salaries to the members.

The *Royal Academy of Sciences* at Paris. See the *Cyclopædia*, and Mr. Fontenelle [c], the Republic of Letters [d], as also *Fontenay* [e].

This *Academy* has done great things, for the service of learning; by the continuation of the meridian, by the sending persons to different parts of the world for making observations; but especially by the excellent writings they have published, either in a separate [f], or a joint capacity; particularly their memoirs. Indeed they have an advantage over most *Academies* [g], in being defrayed their expences, and even paid for time and attendance. Nevertheless they have undergone some imputations; particularly that of plagiary, in borrowing their neighbours inventions [h]: with what justice, we do not say. They have the distribution of annual prizes. Their history to the year 1697 was written by Mr. Du Hamel [i]; and since that time continued from year to year by Mr. Fontenelle, their secretary, and his successors; being chiefly a notitia, or view of the several pieces delivered to the *Academy*: especially such as are capable of being made clearer, or contain hints and inlets to new systems [k].

A new history, from the institution of the *Academy* to the period from whence Mr. de Fontenelle commences, has been formed; with a series of the works published under the name of that *Academy*, during that first interval [l].

The *Royal Society at Berlin*, was founded by the late King Frederic of Prussia in 1700, on the model of that of England, excepting that besides natural knowledge it likewise comprehends the *Belles Lettres* [m]. A new form, and a new set of statutes were given it in 1710; by which it is ordained, that the president shall be one of the counsellors of state, and nominated by the king. The members to be divided into four classes; the first, for prosecuting physics, medicine, and chemistry; the second, for mathematics, astronomy, and mechanics; the third, for the German language, and the history of the country; the fourth, for oriental learning, particularly as it may concern the propagation of the gospel among infidels. Each class to elect a director for themselves, who shall hold his post for life. Their meeting to be in the castle called New Marshal; one class to meet every week in their turns. The members of any of the classes to have free admission into the assemblies of any of the rest [n]. The great promoter of this institution was the celebrated M. Leibnitz, who accordingly was made the first director [o]. The *Academy* has published several volumes of its lucubrations in Latin, under the title of *Miscellanea Berlinensia* [p]. This *Academy* has since been renewed; and two volumes of its transactions published in French, for the years 1745, 1746.

The *Academy of Petersburg* was founded, or rather projected by the late Czar, Peter the Great, and happily executed by the magnificence of the Czarina, Catherine, his wife, and successor, on the the model nearly of the *Academy* of Paris [q], whereof the Czar was a member [r]. Hither that prince invited learned men, from all parts of Europe.

The *Academy* held its first public meeting in Dec. 1725, in the presence of the duke of Holstein, and a large appearance of persons of distinction [s]. The ordinary assemblies are held twice a week, and public or solemn ones thrice in the year; wherein an account is given of what has been done in the private ones. The building, apparatus, &c. of this *Academy* are extraordinary. They have a fine library [t], an observatory, &c. In effect, it partakes much of what we call an university; having regular professors in the several faculties, who read lectures as in our schools [u]. One of their occupations, is to be the composing a Russian dictionary, including all the dialects of that language; also a Russian grammar, &c. At the first public assembly, a discourse was read by M. Bulffinger, professor in experimental philosophy, containing a short history of the progress of learning in Europe, from its beginning to the establishment of *Academies*, with an idea of the nature, use, &c. of *Academies* of sciences; and an inquiry whether the magnetic science has been carried so far as to enable us to discover the longitude by it: another by M. Herman, professor of mathematics [x]. Several volumes of the works of this *Academy*, under the title of *Commentarii*, have been published; beside several mathematical pieces, composed by particular members of it [y].

The *Academy of Sciences*, called *The Institute of Bologna*, was founded by Count Marsigli, in 1712; for the cultivating of physics, mathetatics, medicine, chemistry, and natural history. Its history is written by M. de Limiers, from memoirs furnished by the founder himself [z].—[[a] Gimma Elog. Academ. Dell. Societ. degli Spensierati. Jour. des Scav. T. 32. p. 1049. [b] Gimm. Idea della Storia dell'Ital. Letter. T. 2. Bibl. Ital. T. 2. p. 30. seq. [c] V. *Fontenel.* Hist. de l'Acad. an. 1699. p. 1. seq. [d] V. Nouv. Rep. Lett. T. 41. p. 591. [e] *Fontenay*, Lett. Edif. & Cur. T. 7. p. 64. [f] Div. Oeuvr. de Mathemat. par Mess. de l'Acad. Roy. des Scienc. Act. Erud. an. 1695. p. 126. Bibl. Univ. T. 25. p. 169. Bibl. Chois. T. 9. p. 204. [g] Phil. Trans. N°. 255. p. 282. [h] *Hook*, Disc. of Earthquakes Posth. Work, p. 446. [i] V. *Du Hamel.* Historia Regiæ Academiæ Scientiarum, Paris, 4to. or an Extract of it in Kust. Bibl. Nov. Libror. T. 3. art. 3. p. 47. seq. or a Notitia of it in Morhof. Polyhist. T. 1. l. 1. c. 14. p. 147. Not. Struv. Introd. in Notit. Rei Literar. c. 10. §. 20. p. 872. [k] Histoire de l'Academie Royale des Sciences, avec les Memoires de Mathematique & de Physique tirez des Registres de l'Academie, Paris, 4to. & Amsterdam, 12mo. It was begun to be translated into Latin, and the two first years published under the title of *Historia Academiæ Regiæ Scientiarum Parisiensis Physica, Anatomico-Medico-Chirurgica, Chymica & Botanica, e vernaculo sermone in Latinum versa, A. I. F. C. Med. Doct. una cum observationibus similis Argumenti ex Ephemeridibus ejusdem Academiæ depromptis*, Lipsi. 1715, 8vo. But in this the geometrical, mechanical, geographical, optical, and acoustic parts are omitted. V. Jour. des Scav. T. 58. p. 628.—Extracts of each volume of the history are also given by several of the Journalists. [l] Hist. de l'Acad. Roy. des Sciences depuis son Etablissement en 1666, jusqu'en 1699, en 13 tomes, 4to. The first fourteen years by Mr. de Fontenelle. See the project published at Paris in 1728: or an extract of it in Mem. de Trev. Decemb. 1728. p. 2346. seq. [m] V. *Bulffing.* ubi supra. [n] V. Mem. de Trev. 1711. p. 1109. seq. See also the statutes at large in Epist. ad Witt. ap Act. Erud. Lipsi. 1701. p. 175. [o] *Reimman.* Introd. ad Hist. Liter. German. T. 5. p. 810. See also *Struv.* loc. cit. §. 27. p. 886. & Act. Erud. Lipsi. 1701. p. 175. seq. [p] V. Miscellanea Berolinensia ad Incrementum Scientiarum ex scriptis Societatis Regiæ Scientiarum, Berol. 1710. 4to. continuatio prima 1723, secunda 1727, &c. [q] V. *Goldbach.* Præf. ad Comment. Acad. Petrop. *Bulffinger*, Serm. in Prim. Convent. Acad. Petrop. See also *Heuman.* Via ad Hist. Liter. c. 4. §. 65. p. 165. *Struv.* loc. cit. §. 21. not. p. 878. Bibl. German. T. 13. p. 164. seq. [r] *Fontenel.* Hist. Acad. R. des Scienc. 1720. p. 167. [s] See *Vanderbeck.* Act. Ac. Nat. Cur. app. ad. T. 1. p. 144. Bibl. Germ. T. 11. p. 208. [t] Mem. of Litter. T. 5. p. 138. [u] Mem. de Trev. 1727. p. 568. [x] V. Sermones in primo & solemni Acad. Scient. Imp. Convent. Petropol. 1725. 4to. or Extracts hereof in Bibl. Germ. T. 13. art. 5. p. 164. seq. Bibl. Anc. Mod. T. 27. p. 207. seq. [y] Commentarii Academiæ Scientiar. Imperial. Petropolit. T. 1. ad annum 1626. Petrop. 1728, &c. 4to. [z] V. *De Limiers*, Hist. de l'Academie, appellée l'Institut. des Sciences & des Arts, etablie a Boulogne en 1712. Amst. 1723. 8vo. or an Extract of it in Act. Erud. Lipsi. 1724. p. 24. seq. See also Giorn. de Letter. d'Italia. T. 17. p. 148.]

ACADEMIES *of Law*, as that famous one at Beryta [a], and that of the *Sitientes* at Bologna [b].—[[a] V. *Masson*, Hist. Crit. Rep. Lett. T. 13. p. 368. [b] V. *Vockerodt.* loc. cit. c. 2. §. 3.]

ACADEMIES *of History*, as

The *Royal Academy of Portuguese History* at Lisbon, was instituted by the present King John V. in 1720; as appears by a medal struck by the *Academy*, on the front whereof is that prince's effigy, with the inscription *Johannes V. Lusitanorum Rex*; and on the reverse, the same prince standing is represented supporting and raising history, almost prostrate before him, with the legend *Historia Resurges*: underneath are the following words in abbreviature, REGia ACADemia HISToriæ LUSITanæ INSTITuta VI. Idus Decembris MDCCXX. This *Academy* consists of a director, four censors, a secretary, and fifty members; to each of whom is assigned some part, either of the ecclesiastical, or civil history of the nation; which he is to treat either in Latin, or Portuguese: the method to be observed in compiling such history, amounts to this; that in the church-history of each diocese, the prelates, synods, councils, churches, monasteries, *Academies*, persons illustrious for sanctity, or learning, places famous for miracles, or relicks, be distinctly related in twelve chapters: the civil history to comprize the transactions in this country during the government of the Romans, Goths, and Moors; the genealogies of the kings; their wars, acquisitions in Asia, Africa, and America, with the several treaties, and other matters relating to the political and military state of the kingdom. The members who reside in the country, are obliged to make collections and extracts out of all the registers, &c. of the province where they live. Their meetings to be once in fifteen days [a]. The laws they have prescribed themselves, with regard to the credit to be paid, or refused to the testimony of authors, are very just [b]. Their secretary, the count de Villarmajor, called elsewhere Emanuel Tellez de Sylva, Marquis d'Alegrete, has already published five volumes of their works, under the title of documents [c]: the same author has also given the history of the *Academy* in the Portuguese tongue [d].

The *Academy of Suabian History* at Tubingen, was lately established by some learned men, for publishing the best historical writings, the lives of the chief historians, and compiling new memoirs, on the several Points and periods thereof [e].—

[a]

[[a] Act. Erud. Lipſ. an. 1727. p. 1. ſeq. [b] V. *Fabric.* Bibl. Græc. T. 14. l. 6. c. 12. p. 219. Where the act paſſed on that account, is given, in Latin and Portugueſe, under the title of *Aſſento que o Director e Cenſores da Academia Real da Hiſtoria Portugueza tomarao ſobre o Credito que deviano ter Alguns Authores.* [c] Colleccam dos documentos Statutos & Memorias da Academia Real da Hiſtoria Portugueza pelo Conte de Villarmajor, Liſboa 1721—1725. See an Extract hereof in Act. Erud. Lipſ. loc. cit. [d] Preſ. State of Rep. Lett. T. 2. p. 459. [e] V. *Krauſ.* Nov. Literar. 1721. p. 168. ſeq. Where the office, œconomy, ſtatutes, members, &c. of this *Academy* are related at large.]

ACADEMIES *of Antiquities*, as

The *Academy* at Cortona, lately eſtabliſhed for the ſtudy of the Hetrurian antiquities, and conſequently, by right of conqueſt, the antiquities of the whole world. Their head is called Lucumon, a name taken from the antient governors of Hetruria. One of their laws is, to give audience to poets only one day in the year: another is, to fix their ſeſſions and impoſe a tax of a diſſertation on each member in his turn [a].

The *Academy of Antiquities* at Upſal, owes its riſe to Queen Chriſtina, but its eſtabliſhment chiefly to Charles Guſtavus her ſucceſſor. Its deſign is for illuſtrating the northern languages, and the antiquities of the country, as ſtones, coins, and the like monuments; in which notable diſcoveries have been made by it. The more eminent of its members have been Verelius, Loccenius, Scheffer, Rudbecks, Keder, Peringſkiold, Salin [b], &c.

The *Academy of Medals and Inſcriptions* at Paris, was ſet on foot by M. Colbert in 1663, for the ſtudy and explanation of antient monuments, and perpetuating of great and memorable events, eſpecially thoſe of the French monarchy, by coins, relievo's, inſcriptions, &c. The number of members at firſt was confined to four or five, but in 1701 was increaſed to forty; whereof ten to be honoraries, ten penſionaries, ten aſſociates, and the ſame number of novices or eleves. The king nominates their preſident and vice-preſident yearly; but their ſecretary and treaſurer are perpetual. The reſt are choſen by the members themſelves, agreeably to the conſtitutions on that behalf given them [c]. Their chief work is a kind of metallic hiſtory of the reign of Louis XIV [d]. Beſides which we have ſeveral volumes of their eſſays, under the title of memoirs; and their hiſtory, written and continued by their ſecretaries [e].—[[a] Bibl. Ital. T. 4. p. 130. [b] *Struv.* loc. cit. §. 23. p. 879. ſeq. See alſo Mem. de Trev. 1709. p. 161. [c] See *Struv.* Introd. ad Notit. Rei Literar. p. 871. ſeq. [d] See the Statutes of this Academy in Jour. des Scav. T. 30. p. 7. [e] V. Hiſt de l'Acad. Roy. des Inſcrip. Paris 4to. & Amſt. 12mo.

ACADEMIES *of Belles Lettres*, thoſe wherein eloquence, and poetry are chiefly cultivated. Italy is full of theſe; and France has its ſhare; ſuch are

The *Academy of Umidi* at Florence, called afterwards La Fiorentina, in honour of the grand duke Coſmo I. who declared himſelf its protector in 1549, is illuſtrious both for the works it has produced, and its members; which for theſe two laſt ages have included moſt of the eminent men, not only in Tuſcany, but in all Italy. Their chief attention is to the Italian poetry: and as the famous Dante and Petrarch were the great improvers of the ſame, the *Academy* looks on thoſe two as its fathers, or maſters; ſo that the imployment of a great part of their aſſemblies, is in illuſtrating and commenting on thoſe two writers. This *Academy* has contributed greatly to the progreſs of the ſciences, by the noble emulation of its members, in giving excellent Italian tranſlations of the antient Greek and Latin hiſtorians; at the ſame time they applied themſelves to the poliſhing their language, which gave occaſion to the riſe of the *Academy* La Cruſca.

The *Academy of Humoriſts*, *Umoriſti*, had its origin at Rome, from the marriage of Lorenzo Mancini, a Roman gentleman; at which ſeveral perſons of condition were gueſts; and it being carnival-time, to give the ladies ſome diverſion, they took themſelves to the reciting of verſes, ſonnets, ſpeeches, and comedies, firſt *ex tempore*, and afterwards premeditatedly; which gave them the denomination of *Belli humori*. After ſome experience, coming more and more into the taſte of theſe exerciſes, they reſolved to form an *Academy* of *Belles Lettres*; and changed the title *Belli Humori* for that of *Humoriſti*; chuſing for their device a cloud, which after being formed of the ſaline exhalations of the ſea, returns in a gentle ſweet ſhower, with the motto from Lucretius, *redit agmine dulci* [a].

The *Academy of Arcadi*, was eſtabliſhed at Rome in 1690, for reviving the ſtudy of poetry, and the *Belles Lettres*; and comprehends moſt of the politer wits in Italy, of both ſexes; many princes, cardinals, and other eccleſiaſtics: to avoid all diſputes among whom, about preheminence, 'tis wiſely provided, that all appear maſked, after the manner of ſhepherds of Arcadia. Within ten years from its firſt eſtabliſhment, the number of *academiſts* amounted to ſix hundred. They hold aſſemblies ſeven times a year in a mead, or grove; of late in the gardens of the duke of Salviati. Six of theſe meetings are employed in the recitation of poems, and verſes of the Arcadi reſiding at Rome; who read their own compoſitions; except ladies, and cardinals, who are allowed to make uſe of other ſhepherds for this office. The ſeventh meeting is ſet apart for the compoſitions of foreign, or abſent members; in which there is more entertainment than in all the reſt; by reaſon of the pieces produced here, written in all the different ſtyles, and dialects of Italy. The government of this *Academy* is wholly Democratical, allowing of no prince, or protector whatever, but only a cuſtos, who repreſents the whole ſociety, choſen each olympiad, that is, every four years; with a power of electing twelve others yearly, to aſſiſt him in the adminiſtration. Under theſe are two ſubcuſtodes, one vicar or procuſtos, and four deputies, or ſuperintendants annually choſen. There are five manners of electing members; the firſt called *Acclamation*, uſed when ſovereign princes, cardinals, and embaſſadors of kings deſire to be admitted; in which caſe the votes are given *viva voce*: the ſecond *Annumeration*, introduced in favour of ladies, and *academical* colonies; where the votes are taken privately: the third *Repreſentation*, eſtabliſhed in favour of colleges and univerſities, where the young gentry are bred; who have each a privilege of recommending one, or two members privately to be balloted for: the fourth *Surrogation*, whereby new ſhepherds are ſubſtituted in the room of thoſe dead, or expelled: the laſt *Deſtination*, whereby, when there is no vacancy of members, perſons of poetical merit have the title Arcadi conferred on them, till ſuch time as a vacancy ſhall happen. All the members of this body, at their admiſſion, aſſume new paſtoral names, in imitation of thoſe of antient Arcadians. The *Academy* has divers colonies of Arcadi eſtabliſhed in other cities in Italy, all regulated after the ſame manner. They have vice-cuſtodes for their directors, and take different denominations either from the city where they are eſtabliſhed, or from ſome other *Academy* flouriſhing in the ſame place; ſuch are the *Forzata* at Arezzo, *Animoſa* at Venice, *Ferrarian* at Ferrara, *Fiſico Critica* at Sienna, &c. The laws of the Arcadi are immutable, and bear a near reſemblance to the antient model: Alpheſibœus Carius being cuſtos at the time of enacting them, addreſſed the aſſembly in this formula; *Velitis, jubeatis Arcades, ut quæ in his legibus ad noſtri communis regimen comprehenſa, perſcriptaque ſunt, authoritate juſſuque communi juſta, rata, firma perpetuo ſient, iiſdemque paſtores poſthac omnes perpetuo teneantur, ut quicumque Arcadicum deinceps nomen adſumſerit obſtrictus H. L. veluti ſacramento ſiet:* the anſwer is, *Cœtus univerſus ſcivit. Olympiad.* DCXVIII. *an.* 3. *ab Arcadia inſtaurata. Olympiad.* II. *an.* 2 [b].

The *Royal Academy* at Caen, was eſtabliſhed by letters-patent in 1705: it had its riſe fifty years earlier in private conferences, held firſt in the houſe of M. de Brieux. M. de Segrais retiring to this city to ſpend the reſt of his days, reſtored and gave new luſtre to their meetings. In 1707, M. Foucault, intendant of the generality of Caen, procured the king's letters-patent for erecting them into a perpetual *Academy*, of which M. Foucault to be protector for the time, and the choice afterwards left to the members, the number of whom was fixed to thirty, and the choice of them, for this time, left to M. Foucault. Beſides the thirty, leave is given to add ſome ſupernumerary members, not exceeding ſix, from the eccleſiaſtical communities in that city [c].

An aſſembly of men of letters at Lyons, are ſaid only to want letters-patent to form a royal *Academy*, inferior to few in France. It conſiſts of twenty *academiſts*, with a director at their head, and a ſecretary who is perpetual. F. Lombard, a jeſuit, one of the members, here read a learned diſſertation on infinity [d].—[[a] V. *Peliſſ.* Hiſt. Acad. Franc. p. 4. ſeq. [b] V. *Creſcemben.* la Bellezza della Volgar Poeſia, &c. Act. Erud. Lipſ. Supp. T. 3. p. 460. ſeq. [c] V. Lettres Patentes avec les Statuts pour l'Academie des Belles Lettres etablie en la Ville de Caen: an Extract hereof is given in Journ. des Scav. T. 33. p. 610. [d] See Nouv. Liter. T. 2. p. 82.]

ACADEMIES *of Languages*, are called by ſome, *Grammatical Academies*; as

The *Academy della Cruſca* at Florence, famous for its vocabulary [a] of the Italian tongue, was formed in 1582, but ſcarce heard of before the year 1584, when it became noted for a diſpute between Taſſo and ſeveral of its members. Many authors of note confound this with the Florentine *Academy* [b]. The diſcourſes which Torricelli, the celebrated diſciple of Galileo, delivered in the aſſemblies concerning levity, the wind, the power of percuſſion, mathematics, and military architecture, are a proof that theſe *academiſts* applied themſelves to things, as well as words.

The *Academy of Fructiferi*, had its riſe in 1617, at an aſſembly of ſeveral princes and nobility of the country, who met with a deſign to refine and perfect the German tongue. It flouriſhed long under the direction of princes of the empire, who were always choſen preſidents. In 1668, the number of members aroſe to upwards of nine hundred. It was prior in time to the French *Academy*, which only appeared in 1629, and was not eſtabliſhed into an *Academy* before the year 1635 [c]. Its hiſtory is written in the German tongue, by George Neumarck.

The *French Academy* had its riſe in a private meeting of men of letters, in the houſe of Mr. Conrart [d], in the year 1628: Cardinal Richlieu, in 1635, at the inſtance of Mr. Chapelain, erected it into an *Academy* for refining, and aſcertaining the French language and ſtyle. The number of the members was limited

limited to forty, out of whom, a director, a chancellor, and secretary are to be chosen; the two former hold their post for two months, the secretary is perpetual. Several privileges and immunities were conferred on the new *Academy*, particularly the *Droit de Committimus*, or a privilege of not appearing to answer before any court, but that of the king's household. Their first assemblies were held in the cardinal's apartment, after his death in that of the Chancellor Seguier. At last an apartment was given them in the Louvre [e], now called *l'Academie Francoise*. They meet three times a week in the Louvre; at breaking up, forty silver medals are distributed among them, having on one side, the king of France's head, and on the reverse, *Protecteur de l'Academie*, with a laurel and this motto, *a l'Immortalité*. By this distribution, the attendance of the *academists* is secured: those who are present receiving the surplus, otherwise intended for the absent. To elect or expel a member, twenty persons, at least eighteen [f], are ordinarily required; nor can any be chosen unless he petition for it [g]: an expedient to prevent the affront of refusals from persons elected. Religious are not admitted [h]. None to be expelled, except for base and dishoneſt practices. There are but two instances of such expulsions, the first of M. Granier, for refusing to return a deposit; the other of the Abbe Furetiere, for the crime of plagiarism. After the death of Cardinal Richlieu, first protector of the *Academy*, the king took the office on himself [i]. The society met with great opposition to its establishment, on the part of the parliament of Paris; being delayed two years before the patents granted by the king would be register'd. Several satyrists appeared against them, as the Abbe Morgues; *la Comedie de l'Academie*, by M. St. Evremond [k]; *Rolle des presentations faites aux grands jours de l'Eloquence Françoise*, by the author of *Francion*; and the *Requête des Dictionaires*, by M. Menage. As to the employment of the *Academy*; its design being not only to give rules, but examples of good writing: they began with making speeches on subjects taken at pleasure, each member in his turn: twenty of these have been printed. Their next work was a critique of the Cid of M. Corneille, a task enjoined them by the cardinal [l]. They set next about a dictionary of the French tongue, which, after, about fifty years spent in it, in order to settle the words and phrases to be used in writing, &c. was published in 1694 [m]; having in the mean while given occasion to some smart disputes with M. L'Abbe Furetiere, one of their own members [n]. See the article DICTIONARY. Other works destined for them are a perfect French grammar and rhetoric; and an art of poetry; but it should seem these are laid aside. One of their own members in some reflections, with regard to their future employments, shews the unsuitableness of those works, and marks out another employment, viz. making critical observations on the sentiments of authors [o]. Some speak with great panegyric of the success of the *Academy*, and its merits towards the French language [p]; part of which seems to be true. Others object to them, that by refining they have enervated the language [q]. In effect we have seen the *academic* style severely ridiculed [r], What is worse, they are charged with having surfeited the world with flattery [s]; and having exhausted all the topics of panegyric in behalf of their founder [t]: it being a branch of duty incumbent on every member at his admission to make a speech in praise of the king, the cardinal, the chancellor Seguier, and the person in whose place he is elected [u]. Their history is written with great elegancy to the year 1652, by M. Pelisson [x]: improved and continued to the year 1700, by M. l'Abbe d'Olivet [y]; the fame is given rhetorically, by F. le Camus [z].

The *Royal Spanish Academy* at Madrid, held its first meeting in July, 1713, in the palace of its founder Don John Emanuel Fernadeus Pacheco, Duke d'Escalona; it consisted at first of eight *academists*, including the duke; to which number were afterwards added fourteen others, the founder being chosen president or director, and Don Vincent Squarcafigo secretary. Their first act was a petition for the king's confirmation and protection, which was granted in 1714. Their device is a crucible in the middle of the fire, with this motto, *Limpia, Fya, y da Esplendor*, it purifies, fixes, and gives brightness; which some have criticized [a]. Their object, as marked out by the royal declaration, is to cultivate and improve the national language: in order to which, they are to begin with choosing carefully such words and phrases, as have been used by the best Spanish writers; noting the low, barbarous, or obsolete ones, and composing a dictionary, wherein these may be distinguished from the former, &c. by which means, adds that prince, it will clearly appear, that the Castilian tongue is inferior to none of those most esteemed in the world; and may be employed with advantage either in teaching the arts and sciences, or in expressing the most perfect Latin or Greek originals in exact translations. The number of members is limited to twenty four; the Duke d'Escalona to be director for life; but his successors chosen yearly. The secretary to be perpetual. The *Academy* to have its own printer; yet not to put any thing to the press without permission of the council. For further encouragement, all privileges and immunities enjoyed by the domestic officers, actually in the king's service and the royal palace, are granted the *academists*. Their assemblies are all to open with the anthem, *Veni sancte spiritus*, and the prayer *Actiones nostras*; and terminate with the prayer, *Agimus tibi gratias*. When the dictionary is finished, they are to compose a grammar, poetry, and a history of the Spanish tongue [b].—[[a] Vocabolario de gli Accademici della Crusca. 1691. Firenz. 4 vol. fol. [b] V. *Fontanini* l'Amint. defeso. Mem. de Trev. an. 1702. p. 166. where he gives the history of the dispute between Tasso and the *Academy* della Crusca. [c] *Becman.* Hist. Orb. Terrar. P. 1. c. 9. §. 3. p. 386. [d] V. *Stoll.* Introd. Hist. Liter. P. 1. c. 4. §. 22. p. 182. [e] V. *Brice*, Descript. Nouv. de Paris. *Pasch.* de Invent. Nov. Antiq. c. 2. p. 84. [f] Bibl. Franc. T. 14. P. 2. p. 191. [g] Segraisiana. p. 178. Jour. des Scav. T. 74. p. 138. [h] Mem. de Trev. an. 1719. p. 1023. [i] *Struv.* Introd. ad Notit. Rei Literar. c. 10. §. 18. p. 869. [k] V. *Des Maiz.* in Hist. Crit. Rep. Lett. T. 8. p. 338. [l] *Baillet.* Jugem. des Scav. T. 4. P. 2. p. 404. seq. See also T. 1. P. 1. p. 83. Jour. des Scav. T. 28. p. 713. seq. [m] V. Oeuv. des Scav. Sept. 1694. p. 42. [n] V. Act. Erud. Lipsi. an. 1687. p. 372. *Furetiere*, Essai d'un Diction. Univ. ap. Nouv. Rep. Lett. T. 3. p. 173. *Furetiere*, Lett. a Doujat. ap. Oeuv. des Scav. Mars 1688. p. 311. seq. [o] Abbé *de Saint Pierre*, Reflex. sur les Trav. de l'Acad. Franc. *Masson.* Hist. Crit. Rep. Lett. T. 12. p. 142. Jour. Liter. T. 3. p. 447. Item, T. 7. p. 193. [p] V. *Sprat.* Hist. Roy. Societ. P. 1. §. 19. p. 39. seq. *La Motte*, Disc. a sa Reception dans l'Academie Franc.—Mem. de Trev. an. 1710. p. 1205. seq. *Massillon.* Disc. a sa Reception. &c. Mem. de Trev. an. 1719. p. 1023. seq. *Honore de St. Marie* Reflex. sur les Regl. Crit. Diss. 1. p. 70. [q] Reflex. on Learning.—Mem. de Trev. an. 1710. p. 1847. [r] Relat. de la Recept. de Mathanas. a l'Acad. Franc. Hist. Lit. Franc. T. 9. p. 101. [s] *Le Vassor.* Hist. de Louis XIII. T. 8. l. 3. Nouv. Rep. Lett. T. 39. p. 541. [t] *Muralt.* Lett. sur les Anglois, &c. Bibl. Franc. an. 1726. p. 119. *Buffier*, Suit. de Gram. Franc. Jour. des Scav. T. 87. p. 42. seq. *Le Clerc.* Vie de Card. Richlieu. Jour. des Scav. T. 56. p. 46. [u] V. Nouv. Rep. Lett. T. 46. p. 436. Sentim. Crit. sur les Charact. de la Bruyere. Lett. 22. Nouv. Rep. Lett. T. 22. p. 435. [x] *Pelisson.* Hist. de l'Acad. Franc. several times printed, at different places and in different forms. See accounts of it in Nouv. Rep. Lett. T. 54. p. 137. Jour. des Scav. T. 28. p. 712. *Morhof.* T. 1. l. 1. p. 146. *Sprat.* Hist. of Roy. Society, P. 1. §. 19. p. 40. Nov. Liter. T. 5. p. 61. *Bayl.* Dict. Crit. voc. *Pelisson.* Not. (A). [y] Nouv. Hist. de l'Acad. Franc. depuis 1652. jusqu'a 1700. par M. L'Abbé d'Olivet. Paris 1730. Accounts of it are given in Bibl. Franc. T. 14. P. 2. Art. 1. p. 1. seq. Mem de Trev. an. 1730. p. 561. seq. The Book is properly a Bibliotheca of the writers of the *Academy*, describing, in the first part, the works they have composed jointly; in the second, the life and writings of each member: Tho' the work properly terminates in 1700, with the elogy of M. Racine; the author has added that of M. Huet, who died twenty years after, with his defence against F. Castel. [z] V. *Le Camus*, Panegyr. Acad. Gallic. or an extract of it in Mem. de Trev. an. 1707. p. 1557. seq. [a] V. Jour. des Scav. T. 59. p. 389. [b] V. Fundacion, e Statutos de la Real Academia Espanola; an extract of it is given in Jour. des Scav. T. 59. p. 389. See also *Struv.* Introd. ad Notit. Rei Liter. c. 10. §. 21. p. 878.]

ACADEMIES *of Dancing*, as that erected by the late king of France, with privileges beyond all the rest.

ACADEMIES *of Painting*, as those celebrated ones antiently at Florence and Milan, called also *Schools*; and that other at Bologna, lately incorporated into the new institute [a]; to which may be added the *Academy* of painting and sculpture at Paris and Vienna [b]; and another of designing at Rome [c].

The *Academy of Painting and Sculpture* at Paris was established fifty years ago, under the cardinal Mazarine, first protector thereof; and the chancellor Seguier, vice-protector.

It consists of a director, a chancellor, four rectors, a treasurer, twelve professors; adjuncts to the rectors and professors; counsellors; a secretary; a professor for anatomy, and another for geometry, and perspective.

Persons are here admitted either in quality of painters or sculptors.—The painters are admitted according to their respective talents; there being a distinction made between those who work in history, and those who only point portraits, or landskips, or beasts, or fruits, or flowers, or paint in mignature; or only design; or engrave; or carve, &c. An account of it has been pubished by Guerin [d].—[[a] V. *Jark.* c. 2. §. 21. seq. *Vockerodt*, c. 2. §. 3. [b] V. Bibl. Germ. T. 12. p. 217. [c] Giorn. de Letter. d'Ital. T. 4. p. 257. [d] V. *Guerin.* Descript. de l'Acad. Roy. de Peintur. & Sculpt. Act. Erud. 1717. p. 188.]

The Romans had a kind of military *Academies*, established in all the cities of Italy, under the name of Campi Martis. Here the youth fit for war were admitted indifferently, to be trained to arms, at the public expence. They learned to fence, ride, shoot with bows, swim, run, leap, and vault, with all the evolutions of horse and foot.—The Greeks, beside *Academies* of this kind, had military professors called Tractici, who taught all the higher offices of war, as what related to the general, &c. *Folard.* sur Polyb. T. 2. p. 19.

We have now a royal *Academy* at Woolwich, where youth are taught fortification, gunnery, and such branches of the

mathematical ſciences, as are neceſſary to qualify them for Engineers.

ACADEMY is alſo uſed among us for a kind of collegiate ſchool, or ſeminary; where youth are inſtructed in the liberal arts and ſciences in a private way.

Milton gives a project of an *Academy* of this kind, formed in imitation of the antient gymnaſiums of the Greeks and Romans; by way of oppoſition to the modern ſchools and univerſities. *Milton.* Tract. of Educat. Bibl. Angl. T. 4. p. 639.

The non-conformiſt miniſters in England are many of them bred up in private *Academies*; where they are taught *academical* learning without going to any univerſity. The advocates for the hierarchy, and the univerſities, are frequently complaining againſt the *Academies* of diſſenters; we have even books expreſs againſt them. V. New Aſſociation. P. 2. p. 14.

ACÆNA, Ακαινα, in antiquity, a Grecian decemped, or ten-foot rod, uſed in meaſuring of their lands [a].

Some late Greek authors write the word ακενα, and ſome Latin ones *aſcena*. It is compounded, as ſome ſuggeſt, from the privative α, and καινω, *occido*, I kill; as ſerving to prevent quarrels and bloodſhed. But Salmaſius [b] gives a more probable origin: the *Acæna* according to him was originally a long rod with an iron goad at the end, wherewith the oxen were pricked forward at plow; and hence the name was given to the meaſuring rod.—[a *Beverin.* Syntagm. de Ponderib. & Menſur. p. 177. *Hoſt.* de Veter. Menſur. &c. l. 3. c. 7. §. 2. *Opp.* T. 2. p. 248. b V. *Salmaſ.* Exerc. in Solin. p. 684. *Voſſius* Etym. p. 6. in voc. *Acnua.*

Acæna is the ſame with what Plato and others call δικαπυς: its invention is attributed to the Theſſalians. Its length was equal to 10 Grecian feet, or 40 palms, 160 digits, 6 ⅔ cubits, 1 ⅔ orgyia, or to twelve antient Roman feet. Some make it the 60th part of a ſtadium. V. *Ricciol.* Geograph. l. 2. c 4. *Beverin.* ubi ſupra. See alſo *Bernard.* de Menſur. & Ponder. l. 3. §. 20. p. 224. & *Salmaſ.* lib. cit. p. 683. ſeq.

ACAIAIBA, in botany, a name by which ſome authors have called the tree, which produces the caſhew nuts: the Acajou of other writers. *Piſo.*

ACAJOU, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the funnel faſhioned kind, and divided into many ſegments at the edges. From the cup of this there ariſes a piſtil, which is ſurrounded with a multitude of ſtamina, and is fixed in the manner of a nail, to the hinder part of the flower; this finally becomes a ſoft turbinated fruit, to which there is affixed a capſule of the ſhape of a kidney containing a ſeed, or kernel of the ſame figure. *Tourn.* Inſt. p. 658.

There is only one known ſpecies of this genus, which is the tree which produces the caſhew nut, or Weſt-Indian anacardium.

ACALYPHA, in botany, the name of a genus of plants, called by Boerhaave, and others, Ricinocarpos. The characters are theſe, the male and female flowers are diſtinct, but they are produced on the ſame plants, the male ones uſually ſtanding immediately over the female ones. *Linnæi*, Gen. Plant. 456.

In the males, the perianthium conſiſts of four roundiſh concave leaves, equal one to another in ſize; there are no petals; the ſtamina are a number of ſhort filaments from eight to ſixteen, which ſtand very thick together, and are terminated by roundiſh antheræ. The female flowers are fewer in number. They are placed in one large divided involucrum; each of them has a three leaved perianthium; the leaves being ſmall, oval and concave, and meeting almoſt together. There are no petals; the germen of the the piſtil is roundiſh, and there are three long ſtyles which are often branched, and are crowned with ſimple ſtigmata. The fruit is a roundiſh capſule, with three furrows on its outſide, and containing three cells, the valves opening in two parts. The ſeeds are ſingle, roundiſh and very large. *Boerhaave* Ind. Plant. p. 92.

ACANACEOUS, in botany, a word applied to ſuch plants as are prickly, and bear their flowers and ſeeds in a ſort of heads, as thiſtles and the like.

ACANOPHORA, in botany, a name given by ſome, to the common knapweed, or jacca, a common wild plant. *Ger.* Emac. Ind. 2.

ACANTHA, in a general ſenſe, a ſpine or prickle, chiefly of plants of the thorny kind.

The word is Greek, ακανθα, formed from ακη, *mucro*, point, and ανθος, flower.

ACANTHA, in a more particular ſenſe, denotes a ſpine, or quill of certain fiſhes, as the echinus marinus, or ſea hedge-hog. Hence the thorn-back, a ſpecies of the galeus, is peculiarly called *Acanthias*, from the two prickles on its back. *Rondelet* de Piſcib. l. 13. c. 2. *Caſt.* Lex. Med. p. 5.

ACANTHABOLUS, Ακανθαβολος, a ſurgeon's inſtrument, wherewith to extract foreign bodies, which by the ſharpneſs of their points have penetrated and entered the parts of the body. The word is ſometimes alſo written, corruptly, *Acantabolus*. It is compounded of the Greek ακανθα, *ſpina*, and βαλλω, *jacio*, I caſt away. *Æginet.* l. 6. c. 32. ap. *Caſt.* Lex. Med. p. 5.

The *Acanthabolus* is the ſame with what is otherwiſe called *volſella* [a].—Its uſe is for extracting darts, fiſh-bones, or the like, ſticking in the œſophagus; alſo the fragments of bones, hair, &c. remaining in wounds.—Its figure reſembles that of a pair of pincers: ſometimes it is alſo made crooked, for more commodious application to the fauces [b].—[a *Celſ.* l. 7. c. 30. b V. *Scultet.* Armam. Chirurg. tab. 2. fig. 1. Item, tab. 10. fig. 1. *Caſt.* loc. cit.]

ACANTHABOLUS is alſo ſometimes uſed for an inſtrument, wherewith people pull out the hairs from their eye-brows, &c. *Blanc.* Lex. Med. p. 5.

ACANTHE, in the materia medica of the antients, a name given to the plant we now call the artichoak. The name of this comes ſo near that of the bears-breech, or *Acanthus*, that the commentators on the antients have generally confounded them, and not obſerved that they meant two very diſtinct plants. The editions of Dioſcorides in general alſo confound the very text, by printing *Acanthe* for *Acanthus*; and thus they give the flexile branches of the bears-breech to the rigid artichoak, and the round and eſculent head of the artichoak, to the bears-breech.

ACANTHE *Arabica*, in botany, a name given by ſome of the Greek writers to a plant called alſo *Leucacanthe*, and by the Arabian phyſicians *Bunkon*. It was a prickly plant, whoſe roots were ſomewhat like thoſe of the Cyperus, and compoſed of ſeveral knobs or joints, and of a bitter taſte. It was brought for medicinal uſe from the Eaſt Indies and ſome parts of Arabia, and was the root of the *amgaila* of Aviſenna and others. It was not uſed till it had lain ſo long, as to be in ſome degree corrupted, and to fall ſpontaneouſly aſunder. They recommended ſuch as the beſt, which was yellow, light, and of a ſtrong ſmell; and condemned that which was white and heavy, as not fit for uſe. The Arabians alſo uſed the word bunkon, or bunk-myrrh, for the myrtidanum of Theophraſtus and Dioſcorides; but this was not the common ſenſe of the word. The root bunk, or *amgaila*, was uſed in all the warm carminative compoſitions of the antients, and in their ſcents. We are not at this time well informed what it is; but it is to be obſerved, that as it ſignifies the ſame with the *Acanthe Arabica*, in many parts of the works of Dioſcorides, &c. it is a plant, not a ſhrub; and therefore, this term, tho' ſometimes uſed to expreſs the *Acacia* tree, yet was alſo uſed to expreſs a prickly plant or thiſtle, with odoriferous roots.

ACANTHIAS, in zoology, a name given by ſome authors to the fiſh, the ſkin of which is uſed by our artificers in poliſhing, and called by them ſimply fiſh-ſkin. See the article GALEUS.

ACANTHICE, *Maſtich*, in antient naturaliſts, a kind of gum, yielded by the herb helxine [a]. Gaza explains it by *Spinalis Maſticha* [b].—[a *Plin.* Hiſt. Nat. l. 21. c. 16. b *Hard.* Not. ad loc.]

ACANTHINE, *Acanthinus*, denotes a thing relating to, or reſembling the herb *acanthus*. *Martin.* Lex. Philol. T. 1. p. 5. See the article ACANTHUS.

In this ſenſe, we read of *Acanthina veſtimenta*, Acanthine garments, of which we have two different explications. Some underſtand by it a kind of embroidery, wrought in imitation of the Egyptian *acanthus* or thorn, whoſe ſmall ſprigs are much interlaced [a]. Others will have it a peculiar kind of ſilken ſtuff, made of the lanugo or down of a plant of the thiſtle kind, growing in Sicily and the Eaſt [b].—[a V. *Iſid.* Orig. l. 17. c. 9. b *Plin.* Nat. Hiſt. l. 24. c. 12. *Hardouin.* ad loc. *Dioſc.* l. 3. c. 18. *Salmaſ.* Exerc. in Solin. p. 299. ſeq. *Voſſ.* Etym. Lat. p. 3.]

ACANTHINUM *Lignum*, is uſed by ſome writers for braſil. Thus we read of a tincture of *lignum Acanthinum*. V. *Morley*, Collect. Chym. Leyd. c. 5. p. 3.

ACANTHION, among naturaliſts, a plant of the thorn, or rather of the thiſtle kind; whoſe down being cleanſed from the prickles, was manufactured into a kind of ſtuff, not unlike ſilk. V. *Plin.* Hiſt. Nat. l. 24. c. 12. & *Hardou.* Not. ad loc. *Dioſcor.* l. 3. c. 18.

ACANTHOPTERYGII, Ακανθοπτερυγιοι, in natural hiſtory, a term uſed to expreſs one of the general claſſes or families of fiſhes; the character of which is, that the rays of the fins are bony, and ſome of them prickly at the extremities. *Artedi*, Gen. Piſc.

The word is derived from the Greek ακανθα, a thorn or prickle, and πτερυγιον a fin. The fiſhes of this order have bony fins, with ſome of their rays pointed or ſharp. *Lennæi* Syſtema naturæ, p. 53.

ACANTHUS, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is divided in its anterior part into three ſegments its hinder part terminating in a ſort of ring; and a great number of ſtamina ſupplying the place of the upper lip, and carrying a tuft of apices like brooms. The piſtil ariſes from the cup, and is fixed in the manner of a nail into the hinder part of the flower; this finally becomes a fruit reſembling an acorn in ſhape, and is encloſed by the cup, and divided by an intermediate membrane into two cells, which uſually contain a number of gibboſe ſeeds. See Tab. 1. of Botany, Claſs 3.

The ſpecies of *Acanthus*, enumerated by Mr. *Tournefort*, are theſe. 1. The ſmooth *Acanthus*, or *Acanthus* of Virgil. 2. The prickly *Acanthus*. 3. The *Acanthus*, which has only a few ſhort prickles. *Tourne.* Inſt. p. 176.

The ſeveral ſpecies of *Acanthus*, may be known, when not in flower, by the beautiful ſhape of their leaves, which are

ſo elegant as to be imitated in the carvings of the antients and moderns.

The antients have not only called the herb bears-breech by this name, but alſo a thorny tree growing in Egypt. Theophraſtus mentions the Egyptian *Acanthus* as a robuſt ſhrub; and Iſidore, ſpeaking of the tree which produces myrrh, ſays, in the words of a very antient author, that it is a robuſt ſhrub, growing to five cubits or more in height, and ſomewhat reſembling the Egyptian *Acanthus*. Diodorus Siculus, and Dioſcorides alſo, compare the myrrh-tree to the *Acanthus*. It is very evident this could not be meant of the herb *Acanthus*, though the ſame name is made to expreſs it. The ſame Iſidore, however, afterwards confounds this ſhrub with the plant of the ſame name, ſaying, that the *Acanthus* of Egypt was a tender plant, always green, full of prickles, and having large leaves, and bending or flexile ſtalks. Servius alſo runs into the ſame error, and ſuppoſes the Egyptian and common *Acanthus* to be the ſame plant.

An accurate examination of the antient writers will, however, ſhew very plainly, that they meant two very different vegetables under this name; the *Acanthus* of Virgil, and the Egyptian *Acanthus* of Theophraſtus [a], being two wholly different plants. Virgil mentions the *Acanthus* as being an evergreen plant, and producing berries, or a ſmall round fruit, *Baccas ſemper frondentis Acanthi*, are his words: and Theophraſtus tells us, that his Egyptian *Acanthus* is a prickly tree, and bears pods like thoſe of beans. It is plain, that the *Acanthus* of Theophraſtus, is the acacia, a tree, from ſome ſpecies of which, we have the gum Arabic now in uſe; and the *Acanthus* of Virgil, mentioned in this place, ſeems to be the Cyrenian lotus, which Herodotus ſays is like the Egyptian *Acanthus*. Thus we find a third plant brought into the world, under the ſame name: and this lotus, called by ſome *Acanthus*, was found in Egypt, as well as in Cyrene, and had the term *Acanthus* at firſt annexed to its name, by way of a diſtinctive epithet, though it became afterwards uſed ſingly for it, the original name lotus being forgot. The epithet *Acanthus* was uſed to this lotus, becauſe it was prickly. Demetrius, in Athenæus [b], when he deſcribes the Egyptian *Acanthus*, is to be underſtood alſo to mean this plant, he allowing that a round fruit, which Virgil calls a berry, not the pod, as Theophraſtus's *Acanthus* muſt have had. Servius rightly underſtands the account the antients give of the Cyrenian lotus, or *Acanthus*, which he allows to have been a true lotus, and only called *Acanthus*, becauſe prickly. The Latins, as well as the Greeks, having uſed both the ſubſtantive *Acanthus*, and the derivative adjective *Acanthinus*, to expreſs any thing prickly, or beſet with thorns. *Acanthium gummi* was an old name for gum Arabic; becauſe produced by a thorny tree: and Pliny calls the leaves of the euphorbium plant *Acanthina*; not becauſe they were like thoſe of the *Acanthus*, but becauſe they were prickly.—[a *Theophraſt.* de Arboribus. b *Athenæus*, l. 5.]

ACAPATLI, in botany, a name uſed by ſome authors for the plant which produces the long pepper uſed in medicine. *De Laet*, Ind. Occid. p. 231.

ACARA, in zoology, the name of a fiſh caught in the freſh waters of the Braſils, and eſteemed a very delicate and well-taſted one. It ſeldom exceeds three or four inches in length, and has a high back like the pearch. Its mouth is ſmall, and its jaws rough like a file. It has one long back fin, which is ſupported by a great number of rigid and prickly rays, and reaches to the tail. Its ſcales are large; its back is of a gloſſy brown; its ſides and belly white; its tail is not forked. It has a large black ſpot on the middle of each ſide, and another near the tail. Its fins are all brown. *Margrave*'s Hiſt. Braſil.

ACARAAYA, in zoology, the name of a fiſh caught on the Braſilian ſhores, and by ſome called alſo *Garanha*. It grows to three feet in length, and is of the ſhape of our carp. Its lower jaw is furniſhed with an even range of ſharp teeth, like little needles. Its upper jaw has two very long ones, and beſides theſe, a multitude of other very ſhort ones. Its eyes are large, and their iris red. Its tail is broad, and a little forked. Its ſcales are of a moderate ſize, and of a ſilver hue, with an admixture of purple. Its belly, and the under part of its head, are wholly white; and its fins all of a fine pale red, except thoſe under the belly, which are white, with a ſlight edge of red. It is eaten in Braſil, both freſh and ſalted. *Margrave*'s Hiſt. Braſil.

ACARAMUCU, in zoology, the name of a fiſh found in the weſtern ocean, and in ſome other parts of the world. It is a very ſingular and remarkable animal. It is of a flatted, but long body, and not thick. It is uſually of about eight or ten fingers breadth long, and about four broad. Its mouth is round, but very ſmall, ſcarce admitting the end of one's little-finger. In the fore-part of the mouth, both above and below, there are triangular and ſharp teeth. One each ſide, juſt below the eyes, there are two ſquariſh fiſſures, which ſerve in the place of gills; and on the ridge of the back, directly behind the eyes, there is placed a fine ſlender pointed horn, which ſtands nearly erect, but bending a little backward; this is of a cylindrical ſhape, and four fingers breadth long. It has no ſcales, but a ſmooth ſkin, and is of a mixed greyiſh and browniſh colour. It feeds on ſea weeds; and its fleſh is not eatable. *Margrave*'s Hiſt. Braſil, p. 114.

ACARAPEBA, in zoology, the name of an American fiſh, called alſo by ſome *Broſeme*. It has a ſomewhat broad and flat body, covered with large ſcales of a fine ſilver whiteneſs. It grows to a foot in length, and to four or five fingers in breadth. It has a large mouth, but without teeth; and its tail is forked. It has one long back fin, the anterior rays, or naves of which are rigid and prickly, the hind naves ſoft and flexile. The fins are all like the reſt of the body, of a pure white. The fiſh ſeems a kind of *Smaris*. *Margrave*'s Hiſt. Braſil.

ACARAPINIMA, in zoology, the name of a Braſilian fiſh, of the cantharus kind, and ſeeming of the ſame ſpecies with the cantharus of the Mediterranean. *Ray*'s Ichthyogr. p. 310.

ACARAPITAMBA, in zoology, the name of a fiſh caught in the Braſilian ſeas, of an oblong figure, reſembling the mullet, and growing to two feet or more in length. Its mouth and teeth are very ſmall. It has one long fin on the back, running very nearly to the tail, which is ſupported by rigid and prickly rays. Its tail terminates in two oblique horns. Its ſcales are large, and of a purpliſh colour, with a fine admixture of blue; and along the middle of each ſide there runs, from the gills to the tail, a very broad and beautiful gold coloured line. Its back, down to this line, is variegated alſo with ſmall gold coloured ſpots; and the ſides under the line are very beautifully variegated with ſmall and fine longitudinal, but ſhort gold coloured lines, of a ſomewhat paler colour than the broad one. Its belly is white, and its fins yellow. *Margrave*'s Hiſt. Braſil. *Willoughby*, Hiſt. Piſc. p. 337.

ACARAPUCU, in zoology, the name of a Braſilian fiſh, caught in the freſh waters, and growing to eighteen inches in length. It is of a rounded body; and its mouth is ſmall and not prominent. It has lips, which it can hide, or ſuffer to appear at pleaſure, and has no teeth. Its tail is long and forked; its ſcales are all of a ſilvery hue. On the back it has a fine golden gloſs, ſhining among the whiteneſs; and on the ſides five or ſix large blue ſpots. Its back and ſide fins are of a pale blue, as is alſo the tail: the belly fins are yellowiſh. It is a well-taſted fiſh. *Margrave*'s Hiſt. Braſil.

ACARAUNA, in zoology, an American fiſh, of which there are two ſpecies; the one called *Acarauna*, without any addition; and the other the *Acarauna quadrata*, or ſquare *Acarauna*; and by our ſailors, the *Old wife*.

The *Acarauna*, ſimply ſo called, grows to about four or five inches long, and is conſiderably broad and flat. It is covered with ſmall blackiſh ſcales; its tail is large and forked. It has two fins under the gills, two more under the belly, and a long one running all along the back, and another anſwering it from the anus to the tail. Its mouth is ſmall and narrow, and its teeth very ſmall. Its eyes are but ſmall; and on each ſide, near the tail, it has an extremely ſharp thorn, or prickle: theſe it can draw in at pleaſure into its ſides, and occaſionally throw them out, to annoy other fiſhes. *Willoughby*, Hiſt. Piſc. p. 217.

The *Acarauna quadrata*, or ſquare *Acarauna*, or old wife, is much of the ſame ſize with the former ſpecies. It is frequently preſerved in the cabinets of the curious, and is found there, of a pale brown, with its tail and the fore-part of the body of a pale yellow, or ſtraw colour. It is covered with ſcales, furrowed with ſlight parallel lines, except that the anterior part of its head is covered with a naked, but rough ſkin. The top of the head riſes into an acute angle; the forehead is flat; and the eyes round and large, and placed high. Its mouth is very ſmall; and its teeth are very ſlender, and ſtand cloſe together. The upper jaw has on each ſide four ſharp thorns growing from it, and the lower two very large and ſharp ones, bending downward, and in ſhape and ſtructure reſembling a cock's ſpur; and from theſe, there runs up a row of ſmall thorns to the eye. *Willoughby*, Hiſt. Piſc. p. 218.

ACARI, or ACARIS, in natural hiſtory, an animalcule bred in wax; ſaid by Ariſtotle to be the leaſt object of human ſight. *Caſt.* Lex. Med. p. 5. *Card.* de Subtil. l. 9. p. 369. *Scalig.* ad Cardan. Exerc. 194. §. 7. p. 600. *Morhof.* Polyhiſt. Philoſ. l. 2. P. 2. c. 14. n. 3.

ACARI, or ACARUS, is alſo uſed for a kind of vermin lodged under the cutis, where preying on the parts, it excites an itching, and raiſes pimples.

The *Acari*, according to ſome, are the ſame with what we otherwiſe call *cirrhones*, *cyrones*, or *ſirones*; others will have them the ſame with the *teredo*; others diſtinguiſh them from all three. *Jun.* Nomencl. p. 76. V. *Aldrovand.* de Inſect. l. 5. c. 4. *Piſo*, de Morb. Cogn. & Cur. l. 1. c. 4. *Caſt.* Lex. Med. p. 5.

A German phyſician has traced their origin; he finds the *Acari* ariſe from milk-meats turning ſtale and ſour. Their ſeat is chiefly in the hands or feet, rarely in the arms or legs. *Ludovic.* in Ephem. Germ. dec. 19. obſ. 39. p. 109. *Camerar.* Mirab. Cent. 9. P. 83. & *Hildan.* c. 1. obſ. 96.

ACARNA, in botany, a name by which Theophraſtus, and ſome other writers, expreſs the common artichoak. *Ger.* Emac. Ind. 2.

Monſ. Vaillant gives the name *Acarna* to one of the genera of the *Cynarocephalus*, or artichoak-headed claſs of plants. See Mem. Acad. Scienc. an. 1718. p. 207. Edit. Holland.

ACARNAN, in zoology, the name of a ſmall ſea fiſh, very common in the Mediterranean, and brought to market among the *Rubellios*, or *Erythryni*, and called by the fiſhermen by the name, *Fravolino*, or *Phragolino*. It very much reſembles the erythrinus in ſhape; but as that is of a fine red, this, on the contrary, is of a ſilvery white. Its mouth is moderately large; its teeth ſlender and pointed; and its eyes large, and having fine yellow iris's. Its fins are white, but have each a black ſpot at their origin. It ſeems doubtful whether this be really any way different from the erythrynus, except in colour, which alone is not diſtinction ſufficient to make a ſpecies. *Rondelet.* de Piſc. *Gemar.* de Piſc. p. 1. See ERYTHRINUS.

ACATHISTUS, Ακαθιστος, in an eccleſiaſtical ſenſe, a ſolemn hymn, or vigil, antiently ſung in the Greek church, on the Saturday of the fifth week of Lent, in honour of the Virgin, for having thrice delivered Conſtantinople from the invaſions of barbarous nations.

It was called ακαθιστος, *i. e.* without ſitting, in regard it was celebrated ſtanding: the people ſtood all night, ſinging the praiſes of their deliverers.

The ſame name is alſo given to the day whereon it was performed, which is called the feaſt τυ ακαθιστυ. V. *Codin.* de Offic. Aulæ C. P. c. 12. n. 10. *Gretſer.* ad eund. l. 3. c. 7. p. 238. ſeq. *Magri*, Notit. Vocab. Eccl. p. 2. ſeq. *Suic.* Theſ. Eccleſ. T. 1. p. 145. *Schmidt*, Lex. Eccleſ. p. 12.

ACAULIS, in botany, a term applied to certain plants, the flowers of which have no ſtalk or pedicle to ſupport them, but reſt immediately on the ground: of this kind are the carline thiſtle, and ſome others.

ACAULOSE, or ACAULOUS, is applied, by botaniſts, to thoſe plants which have no proper ſtem, or caulis. *Ray*, Hiſt. Plant. T. 1. l. 3. Phil. Tranſ. N°. 186. p. 284.

ACBAB, in natural hiſtory, a name given by the people of the Philippine iſlands, to a bird, very like our common hen, which is very frequently wild among them. It lives on rice and other vegetables, and does a great deal of miſchief; but it is ſhort winged, and does not fly well, ſo that they find it eaſy to kill it.

ACCALIA, in antiquity, ſolemn feaſts, held in honour of Acca Larentia, nurſe, or foſter-mother of Romulus.

Theſe were otherwiſe called *Larentalia*.—To the ſame Acca is alſo attributed the inſtitution of the *fratres arvales*. Vid. *Varro*, de Ling. Lat. l. 5. §. 3. *Scalig.* Conject. in Varr. p. 78.

ACCENDENTES, or ACCENSORES, in eccleſiaſtical writers, a lower order of miniſters in the church of Rome, whoſe office is to light, ſnuff, and trim the candles or tapers. *Spelm.* Gloſſ. p. 6.

The *Accendentes* are much the ſame with thoſe otherwiſe called *Acolythi* and *Ceroferarii*.

ACCENDONES, or ACCEDONES, in Roman antiquity, a kind of gladiators, whoſe office was to excite and animate the combatants, during the engagement [a]. See the article GLADIATOR, *Cycl.*

The orthography of the word is conteſted: the firſt edition of Tertullian, by Rhenanus, has it *Accedones*, an antient manuſcript *Accendones*; Aquinas adheres to the former [b], Pitiſcus to the latter [c]. The origin of the word, ſuppoſing it *Accendones*, is from *accendo*, I kindle; ſuppoſing it *Accedones*, from *accedo*, I accede, am added to. The former places their diſtinguiſhing character in enlivening the combat by their exhortations and ſuggeſtions; the latter ſuppoſes them to be much the ſame with what among us are called *ſeconds*, among the Italians *patroni*: excepting that theſe latter only ſtand by to ſee the laws of the ſword duly obſerved, without intermeddling to give advice or inſtructions.—[a *Tertull.* de Pall. c. 6. b *Aquin.* Lex. Milit. T. 1. p. 4. c *Pitiſc.* Lex. Antiq. Rom. T. 1. p. 10.]

ACCENSI, (*Cycl.*)—The *Accenſi* were thus denominated, *quia accenſebantur*, or *ad cenſum adjiciebantur*: Vegetius calls them *ſupernumerarii legionum*: Cato calls them *ferentarii*, in regard they furniſhed thoſe engaged in battle with weapons, drink, &c [a]. Though Nonius ſuggeſts another reaſon of that appellation, viz. becauſe they fought with ſtones, ſlings, and weapons, *quæ ferrentur*, ſuch as are thrown, not carried in the hand [b]. They were ſometimes alſo called *velites*, and *velati*, becauſe they fought clothed, but not in armour; ſometimes *adſcripticii*, and *adſcriptivi*; ſometimes *rorarii* [c]. The *Accenſi*, Livy obſerves, were placed at the rear of the army, becauſe no great matter was expected from them [d]: they were taken out of the fifth claſs of citizens [e].—[a Vid. *Feſt.* in Voc. *Ferentarii*. b *Non. Marcell.* de Propriet. Serm. c. 12. §. 8. c *Pitiſc.* Lex. Ant. T. 2. p. 10. item in Voc. *Rorarii*. *Baxt.* Gloſſ. Antiq. Rom. p. 11. d *Dan.* Dict. Antiq. Rom. in Voc. e *Salmaſ.* de Re Milit. Rom. c. 15.]

ACCENSI was alſo an appellation given to a kind of adjutants, appointed by the tribune to aſſiſt each centurion and decurion.

In which ſenſe *Accenſus* is ſynonymous with *optio* [a].—In an antient inſcription, given by à Torre, we meet with ACCENSUS EQUITUM ROMANORUM; an office no where elſe heard of; that author ſuſpects it for a corruption, and inſtead thereof reads A CENSIBUS [b].—[a *Feſt.* in Voc. *Optio*, & *Paul.* ad eund. b Monum. Veter. Antii. c. 3. Act. Erud. Lipſ. 1701. p. 259.]

ACCENT is diſtinguiſhed from emphaſis, as the former regards the tune of the voice, the latter the ſtrength of it. The *Accent* raiſes the voice in certain ſyllables, to a higher, *i. e.* more acute pitch or tone, and in others depreſſes it lower, but both admit of ſome emphaſis, *i. e.* of more or leſs vigorous pronounciation. The circumflex *Accent* keeps the voice in a middle tune, and therefore in the Latin is compounded of both the other, but withal adds an emphaſis, and longer ſtay upon that ſyllable. *Hold.* Elem. Speech, p. 99.

Von der Hardt has given a diſcouſe on the nature and uſe of *Accents* [a], wherein he aſſerts, that there are but theſe three *Accents* in nature: viz. the *acute*, *grave*, and *circumflex*. But if it be true, that the whole ſyſtem of pronounciation turns on three *Accents*, 'tis no leſs true, that each of theſe three admits of ſeveral degrees. The acute *Accent*, for inſtance, may be either higher, or lower; may be ſimply acute, or very acute; and the like holds of the grave and circumflex. So that each of the three common *Accents* is, as it were, a genus, including divers particular ſpecies; though the antient Grammarians have not thought fit to give particular names, and figures to all theſe differences [b].—[a *Vonder Hardt*, Arcanum Accentuum Græcorum, Helmſt. 1715. 12mo. b Mem. de Trev. an. 1715. p. 1614. ſeq.]

The uſe of *Accents*, to prevent ambiguities, is moſt remarkably perceived in ſome eaſtern languages, particularly the Siameſe, and Chineſe. Among the people of China, every word, or which is the ſame thing, ſyllable, admits of five *Accents*, as ſpoken more acutely or remiſsly; and thus ſtands for many different things. The ſame ſound *ya*, according to the *Accent* affixed to it, ſignifies *God*, a *Wall*, *Excellent*, *Stupidity*, and a *Gooſe* [c].—The Chineſe have but 330 ſpoken words in their language; but theſe being multiplied by the different *Accents* or tones, which affect the vowels, furniſh a language tolerably copious [d]. By means hereof, their 330 ſimple ſounds come to denote 1650 things; but this being hardly ſufficient, they are increaſed further by aſpirates added to each word, to double the number [e].—[c *Spizel.* de Re Liter. Sinenſ. p. 106. *Bulffing.* Diſſ. de Liter. Sinenſ. p. 308. d Hiſt. de l'Acad. Roy. des Inſcript. T. 3. p. 460. e *Bulfing.* lib. cit. §. 7. p. 296. ſeq.]

The Chineſe only reckon four *Accents*; for which the miſſionaries uſe the following marks, *aá*, *â*, *à*, *ā*; to which they have added a fifth, thus *ă*. They make a kind of modulation, wherein, prolonging the duration of the ſound of the vowel, they vary the tone; raiſing and falling it by a certain pitch of voice: ſo that their talking is a ſort of muſic or ſinging. Attempts have been made to determine the quantity of the riſe or fall in each *Accent* by means of muſical notes. But this is hard to effect, as being different in different perſons.

Hence the great difficulty of the language to foreigners; they are forced to ſing moſt ſcrupulouſly: if they deviate ever ſo little from the *Accent*, they ſay quite a contrary thing than what was intended. Thus, meaning to compliment the perſon you are talking to with the title Sir, you call him a beaſt, with the ſame word, only a little varied in the tone [f].—Magalhon makes the language the eaſier to learn on this account [g].—[f *Le Comte*, Nouv. Mem. ſur la Chine, T. 1. p. 270. *Spizel.* lib. cit. p. 104. *Bulffing.* ubi ſupra, p. 308. ſeq. g *Bulffing.* loc. cit. p. 309.]

The Siameſe are alſo obſerved to ſing rather than talk. Their alphabet begins with ſix characters, all only equivalent to a K, but differently *accented*. For though in the pronounciation the *Accents* are naturally on the vowels, yet they have ſome to diverſify ſuch of their conſonants as are in other reſpects the ſame. *De la Loubere* du Royaume de Siam. T. 2. §. 8. Bibl. Univ. T. 21. p. 113.

As minutely as the *Accents* of words have been ſtudied, the *Accents* of ſentences ſeem to have been utterly overlooked: yet it may be obſerved, that all mankind lower the voice at the end of a period, elevate it in interrogations, and the like. See *Bacon*, de Augment. Scient. l. 6. c. 1.

ACCESSARY. See ACCESSORY, *Cycl.* The word is generally ſpelt *acceſſary* in our ſtatutes and law books.

ACCESSION, (*Cycl.*) in the language of the conclave, is a method of electing a pope, by procuring ſome candidate two thirds of the voices, upon which the reſt are inrolled by way of *Acceſſion*. *Richel.* Bibl. Franc. T. 6. p. 17.

ACCESSION, in the civil law, denotes a method of acquiring property in certain things, by virtue of their connection with other things, which already belong to us.

Acceſſion is effected divers ways, from whence ariſe ſeveral ſpecies of it: ſimple and mixt *Acceſſion*; natural and artificial; diſcrete and concrete *Acceſſion*. Vid. *Briſſ.* de Verb. Signif. p. 6. *Calv.* Lex. Jur. p. 14.

ACCESSORIUS *Williſii*, in anatomy. See ACCESSORY, *Cycl.*

ACCIPENSER, in the Linnæan ſyſtem of zoology, the name of a genus of fiſhes, of the order of the chondropterygii. This genus comprehends the ſturgeon, &c. Its diſtinguiſhing characters are, that the mouth is tubulated, and without teeth;

teeth; and the gills have only one hole or aperture on each ſide. *Linnæi* Syſtem. Natur. p. 52.

In the Artedian ſyſtem of ichthyology, the characters of this genus are,—there is only one foramen or aperture of the bronchia on each ſide, the mouth is placed in the under part of the head, and is like a tube, and has no teeth. The body is oblong, and has uſually ſeven fins; and the fiſh is of the chondropterygious kind.

The ſpecies of this genus are two, the ſturgeon, and the huſo, or iſinglaſs fiſh. The firſt of theſe Artedi diſtinguiſhes by the name *Accipenſer corpore tuberculis ſpinoſis aſpero*. And the other by that of *Accipenſer tuberculis carens*. This laſt ſeems to be the *Mario* of Pliny. *Artedi*, Gen. Piſc. p. 43.

The antients, and ſome of the later authors, give the name *Accipenſer* to the ſturgeon.

There have been many diſputes, whether the ſturio or ſturgeon be the ſame fiſh with the *Accipenſer* or not, and what was the difference between the *Accipenſer* and *Silurus* of the antients; but the whole ſeems to have been this, that the Romans called the ſturgeon *Accipenſer*, when they had it freſh, and caught in their own neighbourhood, but *Silurus* when it was brought to them in pickle from the Grecian ports. *Ray*'s Ichthyography, p. 240.

The word *Accipenſer* is Latin, and is uſed by Plautus, Cicero, and many other of the antient Roman authors in the ſame ſenſe, in which we now uſe it. Its derivation is uncertain, but its ſenſe always the ſame.

ACCIPESIUS, in ichthyology a name given by Athenæus and other of the Greek writers, to the ſturgeon, called by others Oniſcos. See ACCIPENSER.

ACCIPITER, in ichthyology, a name given by Gillius, and ſome others to the fiſh called by others, the *Milvus* and *Lucerna*. It is a ſpecies of the *Trigla* and is diſtinguiſhed by Artedi, by the name of the *Trigla*, with the head a little aculeated, and with a ſingular fin, placed near the pectoral fins.

ACCIPITER, the hawk, in the Linnæan ſyſtem of zoology, the name of one whole order of birds: The diſtinguiſhing character of which, is their having a hooked or crooked beak. Of this order there are three genera, the parrot, the owl, and the falcon, diſtinguiſhed by their ſeveral marks. *Linnæus*, Syſtem. Natur. p. 44. See PARROT, *&c.*

ACCIPITRINA, in botany, a name by which ſome authors have expreſſed the hawk-weed, and others the flix-weed, or *Sophia Chirurgorum*. *Ger.* Emac. Ind. 2.

ACCISMUS, denotes a feigned refuſal of ſomething which a perſon earneſtly deſires. The word is Latin, or rather Greek Ακκισμος; ſuppoſed to be formed from *Acco*, the name of a fooliſh old woman, famous in antiquity, for an affectation of this kind. V. *Bayl.* Dict. Crit. T. 1. in Voc. *Acco*.

Acciſmus is ſometimes conſidered as a virtue, ſometimes as a vice, which Auguſtus and Tiberius, practiſed with great ſucceſs. V. *Clapmar.* de Arcan. Imper. c. 16. p. 66.

Cromwell's refuſal of the crown of England, may be brought as an inſtance of an *Acciſmus*.

ACCISMUS, is more particularly uſed in rhetoric, as a ſpecies of irony. *Alſt.* Encycl. T. 1. p. 378.

ACCLAMATION, (*Cycl.*)—*Acclamation*, in a more proper ſenſe, denotes a certain *formula* of words, uttered with extraordinary vehemence, and in a peculiar tone, ſomewhat reſembling a ſong frequent in the antient aſſemblies. V. *Schlemm.* de Acclamationibus Veterum. Gen. 4°. 1665. *Pitiſc.* Lex. Antiq. T. 1. p. 12. *Aquin.* Lex. Milit. T. 1. p. 6.

Acclamations were uſually accompanied with applauſes, with which they are ſometimes confounded though they ought to be diſtinguiſhed; as

Acclamation was given by the voice, applauſe by the hands; add, that *Acclamation* was alſo beſtowed on perſons abſent, applauſe only on thoſe preſent. *Acclamation* was alſo given by women, whereas applauſe ſeems to have been confined to men. *Ferrar.* de Acclam. & Plauſ. l. 1. c. 8. *Pitiſc.* loc. cit.

Acclamations are of divers kinds; eccleſiaſtical, military, nuptial, ſenatorial, ſynodical, ſcholaſtic, theatrical, *&c.* We meet with loud *Acclamations*, muſical and rhythmical *Acclamations*, *Acclamations* of joy and reſpect, and even of reproach and contumely. The former, wherein words of happy omen were uſed, were alſo called *laudationes & bona vota*, or good wiſhes: the latter *execrationes & convicia*. Suetonius furniſhes an inſtance of this laſt kind in the Roman Senate, on occaſion of the decree for demoliſhng the ſtatues of Domitian, when the fathers, as the hiſtorian repreſents it, could not refrain from contumelious *Acclamations* of the deceaſed. *Suet.* in Domit. c. 23. §. 2.

The like were ſhewn after the death of Commodus, where the *Acclamations* run in the following ſtrain, *hoſti patriæ honores detrahantur, parricidæ honores detrahantur; hoſtis ſtatuas undique, parricidæ ſtatuas undique, gladiatoris ſtatuas undique*, &c. *Ferrar.* l. 4. c. 5. *Pitiſc.* loc. cit.

The formula, in *Acclamations*, was repeated ſometimes a greater, ſometimes a leſſer number of times. Hence we find in Roman writers, *Acclamatum eſt quinquies, & vicies*, five and twenty times; ſometimes alſo *ſexagies* and even *octuagies*, ſixty and eighty times. *Aquin.* Lex. Milit. T. 1. p. 6.

Acclamations were not unknown on the theatres in the earlieſt ages of the Roman commonwealth; but they were artleſs then, and little other than confuſed ſhouts. Afterwards they became a ſort of regular concerts. That mentioned by Phædrus *lætare incolumis Roma ſalvo principe*, which was made for Auguſtus, and proved the occaſion of a pleaſant miſtake of a flute player called *princeps*, ſhews that muſical *Acclamations* were of uſe in that emperor's reign. *Revertentem ex Provincia modulatis carminibus proſequebantur*, ſays Suetonius, who gives another inſtance in the time of Tiberius: a falſe report of Germanicus's recovery being ſpread through Rome, the people ran in crouds to the capitol with torches and victims ſinging, *Salva Roma, Salva Patria, Salvus eſt Germanicus*.

Nero, paſſionately fond of Muſic, took eſpecial care to improve and perfect the muſic of *Acclamations*. Charmed with the harmony wherewith the Alexandrians who came to the games celebrated at Naples, had ſung his praiſes, he brought ſeveral over to inſtruct a number of youth, choſen from among the knights and people, in the different kinds of *Acclamations* practiſed at Alexandria. Theſe continued in uſe as low as the reign of Theodoric; but the people did not always make a ſingle chorus, ſometimes there were two, who anſwered each other alternately: thus when Nero played on the theatre, Burrhus and Seneca, who were on either hand, giving the ſignal by clapping, 5000 ſoldiers called Auguſtals, began to chant his praiſe, which the ſpectators were obliged to repeat. The whole was conducted by a muſic-maſter called *Meſochorus* or *Pauſarius*.

The honour of *Acclamations*, was chiefly rendered to emperors, their children, and favourites; and to the magiſtrates who preſided at the games. Perſons of diſtinguiſhed merit alſo ſometimes received them, of which Quintilian gives us inſtances in Cato and Virgil. The moſt uſual forms were *Feliciter, longiorem vitam, annos felices*. The actors themſelves, and they who gained the prizes in the games of the circus were not excluded the honour of *Acclamations*. V. *Laurent.* Polymath. l. 2. c. 12. *Chokier* Fax. Hiſtor. l. 2. c. 11. *Lipſ.* Elect. l. 2. c. 10. *Ferrar.* l. 2. c. 20.

To theatrical *Acclamations* may be added thoſe of the ſoldiery, and the people in time of triumph. The victorious army accompanied their general to the capitol, and among the verſes they ſung in his praiſes frequently repeated Io TRIUMPHE, which the people anſwered in the ſame ſtrain. It was alſo in the way of *Acclamation*, that the ſoldiers gave their general the title of IMPERATOR, after ſome notable victory: a title which he only kept till the time of his triumph. See the article IMPERATOR.

The *Acclamations* of the ſenate are ſomewhat more ſerious than the popular ones, but aroſe from the ſame principle, *viz.* a deſire of pleaſing the prince or his favourites; and aimed likewiſe at the ſame end, either to expreſs the general approbation and zeal of the company, or to congratulate him on his victories, or to make him new proteſtations of fidelity. Theſe *Acclamations* were uſually given after a report made by ſome ſenator, to which the reſt all expreſſed their conſent by crying OMNES, OMNES; or elſe, ÆQUUM EST, JUSTUM EST: ſometimes they began with *Acclamations* and ſometimes ended with them without other debates. It was after this manner that all the elections and proclamations of emperors, made by the ſenate, were conducted; ſomething of which practice is ſtill retained at modern elections of kings and emperors, where *vivat rex, vive le roy*, and long live the king, are cuſtomary forms. V. *Ferrar.* l. 6. c. 3.—11. *Briſſon.* de Formul. l. 4. p. 349. *Ferrar.* l. 7. c. 4, 5, and 6. ſeq. *Briſſ.* de Formul. l. 2. See ELECTION.

The Greeks borrowed the cuſtom of receiving their emperors in the publick places from the Romans. Luitprand relates, that at a proceſſion where he was preſent, they ſung to the emperor Nicephorus πολλα ετη, that is, many years; which Codin expreſſes by το ψαλλειν το πολυχρονιον, or by το πολυχρονιζειν, and the wiſh or ſalute by πολυχρονισμα. And at dinner, the Greeks then preſent wiſhed with a loud voice to the emperor and Bardas, *ut Deus annos multiplicet*, as he tranſlates the Greek. Plutarch mentions an *Acclamation* ſo loud, upon occaſion of Flaminius's reſtoring liberty to Greece, that the very birds fell from heaven with the ſhout. The Turks practiſe ſomething like this on the ſight of their emperors, and grand viziers, to this day. *Baxt.* Gloſſ. Antiq. Rom. *Smith*, Obſ. on Conſtantin. Phil. Tranſ. N°. 155. p. 442.

For the *Acclamations*, wherewith authors, poets, &c. were received, who recited their works in publick; it is to be obſerved the aſſemblies for this purpoſe, were held with great parade in the moſt ſolemn places, as the capitol, temples, the Athæneum, and the houſes of great men. Invitations were ſent every where in order to get the greater appearance. The chief care was that the *Acclamations* might be given with all the order and pomp poſſible. Men of fortune who pretended to wit, kept able applauders in their ſervice, and lent them to their friends. Others endeavoured to gain them by preſents and treats. Philoſtratus mentions a young man named Vavus, who lent money to the men of letters, and forgave the intereſt to ſuch as applauded his exerciſes. Theſe *Acclamations* were conducted much after the ſame manner as thoſe on the theatre, both as to the muſic and the accompanyments: they were to be ſuited both to the ſubject and

the perſon. There were particular ones for the philoſophers, for orators, for hiſtorians, and for poets. It would be difficult to rehearſe all the forms of them; one of the moſt uſual was *Sophos*, which was to be repeated three times. Martial comprehends ſeveral other uſual forms in this verſe.

Graviter, Cito, Nequiter, Euge, Beate.

Neither the Greeks nor Romans were barren, on this head. The names of gods and heroes were given thoſe whom they would applaud; it was not enough to do it after each head of diſcourſe, chiefly after the exordium, but the *Acclamations* were renewed at every fine paſſage, frequently at every period, with which the authors were ſometimes ſo fatigued, that they were obliged to beg quarter of the audience. On the other hand it was death to them, if the audience were not loud enough in their praiſe. Paulus Samoſatenus in his pulpit would even break out into reproaches againſt his hearers, if they did not ſhake their handkerchiefs with ſufficient zeal, which was one method of applauding. Such *Acclamations* were not only honourable, but uſeful to thoſe who ſpoke in public, when their memory failed, for on ſuch occaſions the people redoubled their *Acclamations*, to give them time to recover themſelves.

The *Acclamations* wherewith the ſpectators honoured the victories of the Athletæ, were a natural conſequence of the impetuous motions which attended the Gymnaſtic games. The cries and *Acclamations* of the people, ſometimes expreſſing their compaſſion and joy, ſometimes their horror and diſguſt, are ſtrongly painted by divers poets and orators. See *Burette*, Mem. 3. ſur les Athletes in Mem. de Liter. de l'Acad. Roy. des Inſcript. T. 1. p. 330. ſeq.

Acclamations made alſo a part of the ceremony of marriage. They were uſed for the omens ſake; being the *Læta omina*, ſometimes ſpoken of before marriage, in Roman writers.

Acclamation, at firſt practiſed in the theatre, and paſſing thence to the ſenate, &c. was in proceſs of time, received into the acts of councils, and the ordinary aſſemblies of the church. The people expreſſed their approbation of the preacher variouſly; the more uſual forms were *Orthodox! third Apoſtle*, &c. V. *Arnd.* Lex. Ant. Eccl. p. 272. *Bing.* Orig. Eccleſ. l. 14. c. 4. *Ferrar.* de Rit. Sacrar. Concion. l. 2. c. 23. Id. de Acclamat. l. 5. c. 1. ſeq.

Theſe *Acclamations* being ſometimes carried to exceſs, and often miſplaced, were frequently prohibited by the antient doctors, and at length abrogated; tho' they appear to have been in ſome uſe as low as the time of St. Bernard.

ACCLAMATION is alſo applied among antiquaries to certain medals; whereon, the people are repreſented expreſſing their joy for ſome conſiderable favour.

In this ſenſe, *Acclamation* is alſo uſed to denote the vows repreſented on medals, for the proſperity of the emperor and commonwealth.

ACCLAMATION alſo denotes a method of election, practiſed in the academy of *Arcadi*. See ACADEMY.

Acclamation, in this ſenſe, is when the votes are not given in ſecret, as is practiſed on other occaſions, but *viva voce*. Cardinals, princes, vice-roys, and embaſſadors are elected by *Acclamation*.

The members thus choſen, aſſume the title *Arcade acclamato*, a dignity ſomewhat ſuperior to the reſt. *Giorn.* de Letter. d'Ital. T. 14. p. 137. ſeq.

ACCLAMATION, in rhetoric, is a figure of ſpeech, thus called by the Latins, by the Greeks *Epiphonema*. *Thomas*, Erot. Rhet. c. 25. p. 55. *Voſſ.* Elem. Rhetor. c. 20. p. 39. See EPIPHONEMA *Cycl.*

ACCOLADE, (*Cycl.*)—Antiquaries are not agreed, wherein the *Accolade* properly conſiſted.—The generality ſuppoſe it to be, the embrace, or kiſs, which princes antiently gave the new knight, as a token of their affection.—Whence the word *Accolade*, q. d. a claſping, or taking round the neck [a]. A very ingenious author [b] will rather have it to be a blow on the chine of the neck, given on the ſame occaſion. Fauchet, ſeems to reconcile the two opinions: he ſuppoſes it to be the kiſs; but withal, imagines the kiſs to be intended as a ſtroak on the cheek, *En leur baillant ſur la joue.*—The ceremony being only an imitation of that practiſed among the Romans, in the manumiſſion of their ſlaves, where it is known a blow was given [c].—[[a] *Skinner*, Etymol. Voc. Antiq. in Voc. [b] *Caſeneuv.* Orig. Franc. [c] *Colomb.* Theat. d'Honneur. *Aubert.* ap. Richel. in Voc.] See the article MANUMISSION, *Cycl.*

The *Accolade* is of ſome antiquity, in which ſoever of the two ſenſes it be taken.—Greg. de Tours writes, that the kings of France, even of the firſt race, in conferring the gilt ſhoulder belt, kiſſed the knights on the left cheek.

For the *Accoleé*, or blow, John of Saliſbury, aſſures us, it was in uſe among the antient Normans: by this it was that William the conqueror conferred the honour of knighthood on his ſon Henry.

At firſt, it was given with the naked fiſt; thus Lambertus Ardenſis, deſcribing the manner in which Baldric, count de Guines, was created knight by Thomas a Becket, ſays, *eidem comiti in ſignum militiæ gladium lateri et calario ſui militis pedibus aptavit, & alapam collo ejus inflixit.* But this was afterwards changed into a blow with the flat of a ſword, on the ſhoulder of the knight.

Salmonet, and after him the continuators of Morery, mention an order in England, called knights of the *Accolade*; ſo called from the manner of their creation. The order here meant is that of knights batchelors, or *equites aurati*. But the name, if ever, is now no longer known among us.

ACCOLEE' is ſometimes uſed as ſynonimous with *Accolade*. See the article ACCOLADE.

Accoleé is alſo uſed in heraldry in divers ſenſes, when two things are joined together, as two ſhields divided at the flanks, they are ſaid to be *Accoleé*. *Niſbet*, Eſſay on Armories, c. 5. p. 62.

Accoleé is alſo uſed in ſpeaking of lions, dogs, and other animals, which have collars, or crowns about their necks; as the lion in the arms of the name of Ogilvy.

Engliſh heralds ordinarily ſay, *collared*, or *gorged* with an open crown, inſtead of *Accoleé*.

Others uſe the term *Accoleé*, when two kews, battons, maces, ſwords, &c. are ſaltier wiſe, behind the ſhield. *Niſbet*, Eſſay on Armor. in Ind.

ACCOMMODATION, (*Cycl.*)—The primitive church accommodated multitudes of Jewiſh, and even heathen ceremonies and practices to chriſtian purpoſes; but the Jews had before done the ſame by the Gentiles: ſome will even have circumciſion, the tabernacle, brazen ſerpent, &c. to have been originally of Egyptian uſe, and only accommodated by Moſes to the purpoſes of Judaiſm. *Saurin.* Diſſert. O. Teſt. T. 1. p. 506.

Spencer maintains, that moſt of the rites of the old law, were an imitation of thoſe of the gentiles, and particularly of the Egyptians; that God, in order to divert the children of Iſrael from the worſhip they payed to the falſe deities, conſecrated the greateſt part of the ceremonies performed by thoſe idolaters, and had formed out of them a body of the ceremonial law; that he had indeed made ſome alterations therein, as barriers againſt idolatry; and that he thus accommodated his worſhip to the genius and occaſions of his antient people. To this condeſcenſion of God, according to Spencer, is owing the origin of the tabernacle in general, and particularly that of the ark. *Saurin.* l. c. *Spencer* de Legib. Hebræor. Diſſ. 1. l. 3. p. 32.

ACCOMPANYMENT, (*Cycl.*) in muſic, denotes the inſtruments which accompany a voice, to ſuſtain it, as well as to make the muſic more full.

The *Accompanyment* is uſed in recitative, as well as in ſong; on the ſtage, as well as in the choir, &c. The antients had likewiſe their *Accompanyments* on the theatre; they had even different kinds of inſtruments to *accompany* the chorus, from thoſe which accompanied the actors in the recitation. *Boſ.* Reflex. Crit. ſur la Poeſ. &c. §. 42. p. 442. Ex *Diomed.* de Art. Gram. l. 3.

The *Accompanyment*, among the moderns, is frequently a different part or melody, from the ſong it accompanies. It is diſputed whether it was ſo among the antients [a]. It is generally alledged, that their *Accompanyments* went no farther than the playing in octave, or in antiphony to the voice: the Abbe Fraguier, from a paſſage in Plato [b], pretends to prove, that they had actual ſymphony, or muſic in parts. But the learned Abbe's arguments are far from being concluſive, as is ſhewn by the jeſuit de Cerceau [c], and by Monſieur Burette [d]. —[[a] *Malc.* Treat. of Muſ. c. 14. Sect. 6. p. 588. ſeq. [b] De Legib. l. 7. [d] *Cerceau*, Diſſert. ſur la Muſique des Græcs. Mem. de Trev. 1725. p. 1780. ſeq. or Bibl. Franc. T. 7. p. 115. ſeq. [c] In Hiſt. Acad. R. Inſcr. T. 2. p. 190. ſeq.

ACCOMPLICE (*Cycl.*)—By the law of Scotland, the *Accomplice* can only be proſecuted after the conviction of the principal offender: Unleſs the acceſſion of the *Accomplice* is immediate, in *ipſo actu*, ſo as in effect to render them co-principal. *Mackenz.* and *Bayne.*

By the general rule, the *Accomplice* ſuffers the ſame puniſhment with the principal offender. Yet if he be remarkably leſs guilty, juſtice will not permit equal puniſhment.

In the law of England, the word acceſſary is uſed for *Accomplices* in crimes.

It is diſputed among the Roman canoniſts, in what caſes it is allowed a confeſſor to diſcover the *Accomplices* revealed to him.

The council of Sens, and ſeveral other ſynodical ſtatutes, expreſsly prohibit the revealing of *Accomplices*. Yet ſome writers contend for a contrary practice. Vid. Act. Erud. Lipſ. 1710. p. 439. *Freſn.* Trait. du Secret. de Confeſſ. c. 12. Mem. de Trev. 1711. p. 2092. Theor. & Pract. des Sacrem. T. 2. c. 5. Mem. de Trev. 1714. p. 1435.

ACCOMPLISHMENT, (*Cycl.*)—is principally uſed in ſpeak- of events foretold by the Jewiſh prophets, in the old teſtament, and fulfilled under the new.

We ſay a literal *Accompliſhment*, a myſtical or ſpiritual *Accompliſhment*, a ſingle *Accompliſhment*, a double *Accompliſhment*, a Jewiſh *Accompliſhment*, a chriſtian, a heathen *Accompliſhment*.

The ſame prophecy is ſometimes accompliſhed in all, or ſeveral of thoſe different ways; thus of ſome of the prophecies of the old teſtament, the Jews find a literal *Accompliſhment* in their own

own hiſtory, about the time when the prophecy was given: the Chriſtians find another in Chriſt, or the earlieſt days of the church: the heathens another in ſome of their emperors: the Mahometans another in their legiſlator.

Friſchmuth gives an account of divers prophecies of the Old Teſtament, which the muſſulmen hold received their *Accompliſhment* in Mahomet. *Friſch.* Diſſ. in Theſaur. Theol. Philol. Works of the Learned, T. 4. p. 29.

There are two principal ways of *accompliſhing* a prophecy; *directly*, and by *accommodation*. See ACCOMMODATION, and PROPHECY, *Cycl.* and *Suppl.*

Some authors ſpeak of *Accompliſhments* before the prophecy, and of others cotemporary with it, as well as after it. Thus that paſſage of Moſes, "In the beginning God created the "heavens and the earth," is by them conſidered as a prophecy, which was *accompliſhed* at the creation. *Eder.* Oecon. Bibl. l. 2. p. 208.

'Tis difficult to judge of the miſſion of a prophet, from the *Accompliſhment*, or Non-*Accompliſhment*, of his predictions; ſince, beſides that the prophet is uſually dead before the *Accompliſhment* come in courſe, we find that God is often diverted from fulfilling his prophecies, by the repentance or obduracy of the perſons, in whom they were to be *accompliſhed*; as in the caſe of the judgment of Nineveh. *Stilingfl.* Orig. Sacr. Ouv. des Scav. Mars, 1690. p. 306.

ACCOUNT, or ACCOMPT, (*Cycl.*).—There are divers kinds of *Accounts* among merchants, as perſonal, real, imaginary, general, particular *Accounts*, &c.

Perſonal ACCOUNTS, are thoſe which diſcover what each perſon, or ſubject, with whom a man has dealings on credit, owes to, or has owing to him.

Real ACCOUNTS, are thoſe whereby a dealer diſcovers what effects are on hand at any time, and what is gained or loſt on each.

Every Account is diſtinguiſhed into two parts, for which two oppoſite pages are aſſigned of one folio or opening; the name of the perſon with whom a man has *Account* being written on the top of each, with the word debtor on the left-ſide, and creditor on the right.

A *perſonal Account* is to contain on the debtor ſide what the perſon owes me, and the payments I make to him; and on the creditor ſide, all that I owe to him, and the payments he makes of his debts to me.

A *real Account* muſt contain on the debtor ſide the quantity and value of what was upon hand at the beginning of the *Account*, and all afterwards received, with the coſts and charges thereof; and on the creditor ſide, the quantity and value of what is diſpoſed of, or any way taken out of it, with the returns it has made us.

Imaginary ACCOUNTS, are then brought in to make a balance between credit and debt, and in caſes where the real and perſonal *Accounts* will not in the articles belonging to them make, as they uſually do, ſuch balance.

The chief of theſe is the *Account* of *profit* and *loſs*; on the debtor ſide of which are entered all loſſes, and on the creditor ſide all gains. Such alſo is the *ſtock Account*, &c.

Sundry ACCOUNTS, when one *Account* is balanced by ſundry; *i. e.* when one debtor or creditor for a ſum, and *ſundry Accounts* creditors or debtors for the parts of the ſum; it is entered under the head of to, or by, *ſundry Accounts*.

General ACCOUNTS, are thoſe where all the goods of the ſame name are put into one *Account*. Vid. *Malc.* Treat. of Book-keeping.

Particular ACCOUNTS, are thoſe where each ſpecies, or ſubdiviſion of things under the ſame name, have their ſeparate *Account*.

Open ACCOUNT, is uſed for an *Account* not liquidated or ſettled.

ACCOUNT *in bank*, is a fund of money, which merchants, or others, place in the common caſh of a bank, to be in readineſs for the payment of bills of exchange, promiſſory notes, purchaſes, and other debts contracted in the courſe of buſineſs. Such payments are made by transferring part, or the whole of the ſum lodged in the bank to to the creditor; who hereby is entered creditor of the bank in his place. *Savar.* Dict. Com. T. 1. p. 1440. voc. *Compte*.

ACCOUNT *current*, amounts to the ſame with an open *Account*.

Opening an ACCOUNT with any one, ſignifies the placing him, for the firſt time, in the great book. This is done by writing his name, ſurname, and place of reſidence, in large characters, and afterwards charging him with articles, either of debtor or creditor, as affairs turn up.

When an *Account* is opened with any perſon in the great book, his name is to be entered at the ſame time in the index, or alphabet book, with the page wherein his *Account* is to be found. *Savar.* Dict. Com. T. 2. p. 1439.

Placing a ſum to an ACCOUNT, is to enter down in the great book the ſeveral particulars for which a perſon becomes either debtor or creditor.

Examining an ACCOUNT, is the reading it exactly over, pointing the ſeveral articles, and verifying the computation, in order to find whether there be any error, and whether the ſum total, or the balance, be juſt.

Caſting up, or cloſing an ACCOUNT, is the ſtating and ſettling of it, to find the balance: this is called alſo *balancing or ſettling an Account*.

Accounts are *cloſed* in the great book on two occaſions: the firſt, when it is required to terminate an affair entirely, either with debtors or creditors, in order to learn what is due. The ſecond, when it is neceſſary to carry on the *Account* to another page of the ſame book, or to a new book, for want of room.

Balance of an ACCOUNT, is the ſum by which the debt exceeds the credit, or *vice verſa*, upon ſtating or ſettling of it. *Savar.* lib. cit.

ACCOUNT is more particularly uſed for the method of computing time: in which ſenſe, the word is ſynonymous with ſtyle.

We ſay the Engliſh, the foreign *Account*, the Julian, the Gregorian, the new and the old *Account*. Biſhop Beveridge gives us the different *Accounts* of Time. *Beveridg.* Inſt. Chron. l. 2. Phil. Tranſ. N°. 47. p. 958.

ACCOUNTS are kept in different kinds of denominations in different countries: as in pounds ſterling in England; in livres and ſols in France; in roupees in India; in milrees in Portugal; in Barbadoes, till of late, their *Accounts* were kept in pounds of ſugar, and the laws of the colony allowed all debts to be paid in that ſpecie. Anſw. to Groans of Plantat. p. 3.

Books of ACCOUNTS, of merchants and tradeſmen, are conſidered as a ſort of private inſtruments, and in the civil law, and law of merchants, are allowed to make a half proof. The Reaſon is, that merchants are often under a neceſſity of dealing on truſt, without note or writing. Hence the ſuppletory oath of the merchant, with his book of *Accounts*, is admitted abroad as a full proof againſt his chapman. But in England this is under ſome limitation. *Gail.* l. 2. obſerv. 20. and 23. See alſo Stat. 7. *Jac.* I. c. 12.

Auditing an ACCOUNT, is the examining and paſſing an *Account* by an officer appointed for the purpoſe. See AUDITOR, *Cycl.*

Round ACCOUNT, is that which conſiſts chiefly of round ſums, or numbers; as tens, dozens, ſcores, hundreds, &c.

Broken ACCOUNT, is that which conſiſts chiefly of fractions.

ACCOUNT, in common law, denotes a writ or action which lies againſt a perſon, who by his office ought to give an *Account*, but refuſes.

A writ or action of *Account* properly lies only againſt bailiffs, receivers, and guardians in ſocage; though others are alſo brought in as a ſecondary intendment. Terms de Ley, fol. 8.

ACCROCHE', in heraldry, denotes a thing's being hooked into another. *Coats*'s Herald. p. 6.

ACCROCHING, in old law books, the act of incroaching or uſurping on another's right. 25. *Ed.* III. Stat. 3. c. 8. *Skin.* Etym. Forinſ. in voc.

The word is originally French, *Accrocher*, which ſignifies to faſten a thing by a hook.

ACCUBATION, a poſture of the body, between ſitting and lying. *Briſſ.* de Verb. Signif. p. 9. *Chauv.* Lex. Philoſ. p. 11.

The word comes from the Latin, *Accubare*, compounded of *ad*, to, and *cubo*, I lie down.

Accubation, or *Accubitus*, was the table poſture of the Greeks and Romans; whence we find the words particularly uſed for the lying, or rather as we call it, ſitting down to meat.

The Greeks introduced this poſture. The Romans, during the frugal ages of the republic, were ſtrangers to it. But as luxury got footing, this poſture became adopted, at leaſt by the men; for as to women, it was reputed an indecency in them to lye down among the men: though afterwards this too was got over. But children did not lye down, nor ſervants, nor ſoldiers, nor perſons of meaner condition; but took their meals ſitting, as a poſture leſs indulgent. V. *Auct.* cit. apud Fabric. Bibl. Antiq. c. 19. §. 2. p. 565.

The Roman manner of diſpoſing themſelves at table was this: a low round table was placed in the cænaculum, or dining-room, and about this uſually three, ſometimes only two beds, or couches; according to the number of which, it was called *biclinium*, or *triclinium*. Theſe were covered with a ſort of bed-cloaths, richer or plainer, according to the quality of the perſon, and furniſhed with quilts and pillows, that the gueſts might lye the more commodiouſly. There were ordinarily three perſons on each bed; to crowd more was eſteemed ſordid. In eating they lay down on their left ſides, with their heads reſting on the pillows, or rather on their elbows. The firſt lay at the head of the bed, with his feet extended behind the back of the ſecond; the ſecond lay with the back of his head towards the navel of the firſt, only ſeparated by a pillow, his feet behind the back of the third; and ſo of the third, or fourth. The middle place was eſteemed the moſt honourable. Before they came to table, they changed their cloaths, putting on what they called *cænatoria veſtis*, the dining garment, and pulled off their ſhoes, to prevent fouling the bed. V. *Pitiſc.* Lex. Antiq.

ACCUBITOR, (*Cycl.*)—The *Accubitor* was the head of the youths of the bed-chamber, and had the cubicularius and procubitor under him. *Pitiſc.* Lex. Antiq.

ACCUMULATION, (*Cycl.*)—In the antient agriculture, *Accumulation* denotes the operation of covering up the roots of trees, by throwing on them the earth that had been before dug from them. *Salmaſ.* Exerc. ad Solin. p. 519.

In which ſenſe, *Accumulation* ſtands oppoſed to *Ablaqueation*. See ABLAQUEATION.

ACCUMULATION *of arms*, *cumulatio armorum*, is uſed by antient heralds, for what the moderns call *quartering* of arms. *Niſbet.* Herald. c. 7. p. 87. See the article QUARTERING, *Cycl.*

ACCUMULATION *of degrees*, in an univerſity, is uſed for the taking of ſeveral degrees together, and with fewer exerciſes, or nearer to each other, than the ordinary rules allow of. See DEGREE, *Cycl.*

Wood gives numerous inſtances of *Accumulators*, *i. e.* perſons who *accumulated*, or took degrees by *Accumulation*, at Oxford. *Wood*, Athen. Oxon. T. 2. p. 974. *Faſt.* T. 1. p. 179, 190, 255. T. 2. p. 95, 103, 106.

ACCUSATION, (*Cycl.*)—Writers on politics treat of the benefit and the inconveniencies of public *Accuſations*. Various arguments are alledged, both for the encouragement and the diſcouragement of *Accuſations* againſt great men. Nothing, according to Machiavel, tends more to the preſervation of a ſtate, than frequent *Accuſations* of perſons truſted with the adminiſtration of public affairs. This, accordingly, was ſtrictly obſerved by the Romans, in the inſtances of Camillus, accuſed of corruption by Manlius Capitolinus, &c. *Accuſations*, however, in the judgment of the ſame author, are not more beneficial than calumnies are pernicious; which is alſo confirmed by the practice of the Romans. Manlius not being able to make good his charge againſt Camillus, was caſt into priſon. *Machiav.* de Repub. l. 1. c. 7. p. 35.

The antient Roman lawyers diſtinguiſhed between *poſtulatio*, *delatio*, and *Accuſatio*: for firſt, leave was deſired to bring a charge againſt one, which was called *poſtulare*; then he againſt whom the charge was laid, was brought before the judge, which was called *deferre*, or *nominis delatio*: laſtly, the charge was drawn up, and preſented, which was properly the *Accuſatio*. *Voſſ.* Etym. Lat. *Danet.* Dict. Antiq. in voc. *Accuſare*.

The *Accuſation* properly commenced, according to Pædianus, when the *reus*, or party charged, being interrogated, denied he was guilty of the crime, and ſubſcribed his name to the *delatio* made by his opponent. *Calv.* Lex. Jur. p. 17.

In the French law, none but the *Procureur general*, or his deputies, can form an *Accuſation*, except for high treaſon, and coining, where *Accuſation* is open to every body. In other crimes, private perſons can only act the part of denouncers, and demand reparation for the offence, with damages. *Trev.* Dict. Univ. T. 1. p. 92.

There are three ways of entering an information in the tribunal of the inquiſition. The firſt, by way of inquiſition, when a private perſon, applying to the inquiſitor, declares he will neither be denunciator, nor *Accuſer*, but that common fame gives out, that ſuch and ſuch a perſon is an heretic: the ſecond, by way of *Accuſation*, when the informer takes on him the office of *Accuſer*, which rarely happens; becauſe, in this caſe, the *Accuſer* is obliged to prove, and expoſes himſelf to the *lex Talionis*, in caſe his information prove falſe. The laſt, and moſt uſual way, is, by *Denunciation*, that is, by naming thoſe who know the fact. Holy Inquiſit. c. 8. ſect. 1 and 2. p. 104. ſeq.

A Chineſe, of the province of Nanquin, having loſt his only daughter, notwithſtanding the prayers and offerings he had made at the ſhrine of an idol, whoſe power had been magnified to him by the Bonzes, brought an *Accuſation* in form againſt the idol; which, by a decree of the ſovereign council of Pekin, was condemned accordingly to perpetual exile, its temple razed, and the Bonze ſeverely puniſhed. *Bayl.* Contin. des Penſées ſur la Comet. Jour. des Scav. T. 35. p. 205.

ACE, in gaming, a card, or the ſide of a die, marked with a ſingle point.

The word comes from the French *As*, which ſignifies the ſame. Hence the term, *ames Ace*, when two dice are both thrown *Aces*.

ACENTETUM, or ACENTETA, in natural hiſtory, a name given by the antients to the pureſt and fineſt kind of rock cryſtal. They uſed the cryſtal in many ways, ſometimes engraving on it, and ſometimes forming it into vaſes and cups, which were held next in value to the *murrhina vaſa* of thoſe times. The cryſtal they obtained from the mines of Cyprus was much eſteemed, but often faulty in particular parts, having hairs, cracks, and foulneſſes, which they called ſalts, in the midſt of the large pieces. Pliny tells us, that when it was uſed for engraving on, the artiſt could conceal all theſe blemiſhes among the ſtrokes of his work; but when it was to be formed into cups and pretious vaſes, they always choſe the *Acentatum*, that is, the pure cryſtal, which had no flaws or blemiſhes.

ACEPHALUS, or ACEPHALOUS, (*Cycl.*)—The *lumbricus latus*, or joint worm, was long taken to be *acephalous*: the who firſt gave it a head was Tulpius, and after him Fehr; the former even makes it *biceps*, or two-headed. *Tulp.* Obſerv. Ed. 1651. *Fehr*, de Hiera Picra, p. 125. *Tyſon.* Lumbricus Latus, in Phil. Tranſ. N°. 146. p. 125.

ACEPHALUS is more particularly uſed in ſpeaking of certain nations, or people, repreſented by antient naturaliſts and coſmographers, as well as by ſome modern travellers, as formed without heads; their eyes, mouths, &c. being lodged in other parts.

Such are the Blemmyes, a nation of Africa, near the head of the Niger, repreſented to be by Pliny [a] and Solinus [b]; *Blemmyis traduntur capita abeſſe, ore & oculis pectore affixis.* Cteſias and Solinus mention others in India, near the Ganges, *ſine cervice, oculos in humeris habentes.* Mela [c] alſo ſpeaks of people, *quibus capita & vultus in pectore ſunt.* And Suidas, Stephanus Byzantinus, Vopiſcus, and others after them, relate the like. Some modern travellers ſtill pretend to find *Acephalous* people in America.

Marcus Mappus [d], a phyſician of Straſburg, has written the medical hiſtory of *Acephali*, on occaſion of the diſpute, whether the fœtus in utero derives its nouriſhment by the mouth, or the navel. The ſtory of entire nations of *Acephali* being alledged as an argument againſt the former opinion, this author undertook to refute it; and ſhews that the whole is a fable, invented by travellers, and propagated by geographers.

Several opinions have been framed as to the origin of the fable of the *Acephali*. The firſt is that of Thomas Bartholin, who turns the whole into a metaphor; being convinced, that the name *Acephali* was antiently given to ſuch as had leſs brain, or conducted themſelves leſs by the rules of prudence, than others. Olearius [e] rather apprehends, that the antient voyagers viewing certain barbarous people from the coaſts, had been impoſed on by their uncouth dreſs; for that the Samogitians, being ſhort of ſtature, and going, in the ſeveverity of winter, with their heads covered in hoods, ſeem at a diſtance as if they were headleſs. F. Lafitau [f] ſays, that by *Acephali* are only meant people whoſe heads are ſunk below their ſhoulders; ſuch as the natives of the Caribbees are found to be. In effect, Hulſius [g], in his epitome of Sir Walter Raleigh's voyage to Guaiana, alſo ſpeaks of a people which that traveller found in the province of Irvipanama, between the lakes of Panama and Caſſipa, who had no head or neck: and Hondius, in his map, marks the place with the figures of theſe monſters. Yet De Laet [h] rejects the ſtory; being informed by other hands, that the inhabitants of the banks of the Caora, a river that flows out of the lake of Caſſipa, have their head ſo far ſunk between their ſhoulders, that many believed they had their eyes in their ſhoulders, and their mouths in their breaſts.

But though the exiſtence of a nation of *Acephali* be ill warranted, naturaliſts furniſh ſeveral inſtances of individuals born without heads, by ſome luſus or aberration of nature. Wepfer [i] gives a catalogue of ſuch *acephalous* births from Schenckius, Licetus, Paræus, Wolfius, Mauriceau, &c.

Mappus [k] reduces them to two kinds; the firſt, properly called *Acephali*, being thoſe born without a head, or any thing in lieu thereof; the ſecond, leſs properly ſo called, having a ſort of heads, but thoſe imperfect, or half-formed; *e. gr.* ſome whoſe heads do not appear when they lye on their backs.—[a Hiſt. Nat. l. 5. c. 8. Id. ibid. l. 7. c. 2. b *Solin.* Polyhiſt. c. 45. & 65. c *Mela*, de Situ Orbis, l. 1. c. 4. Vid. *Wepfer.* in Ephem. German. dec. 1. an. 3. obſ. 129. p. 181. ſeq. d *Mapp.* Hiſt. Medic. de Acephalis, Argent. 1687. 4to. Jour. des Scav. T. 15. p. 538. e *Olear.* Itin. Moſcov. & Perſic. l. 3. c. 3. f *Lafitau*, Paral. des Mœurs des Sauv. Mem. de Trev. 1725. p. 237. g *Hulſ.* Epit. Itin. Raleigh, an. 1594. h *De Laet*, Deſcript. Americ. l. 17. c. 22. i In Ephem. Germ. l. c. p. 184. Ibid. Dec. 2. an. 9. obſ. 148. p. 258. k Jour. des Scav. T. 82. p. 276. See alſo *Borell.* cent. 4. obſ. 78.]

ACEPHALUS is alſo uſed, in poetry, for a verſe which is lame or defective, by wanting a beginning. *Martin.* Lex. Philol. T. 1. p. 8.

Some alſo give the name Ακεφαλος to all verſes which begin with a ſhort, inſtead of a long ſyllable. Bibl. Anc. Mod. T. 25. p. 385. ſeq.

ACER, in botany. See the article MAPLE.

ACERINA, in ichthyology, a name given by Pliny, and other of the old naturaliſts, to the fiſh we at this time call the *cornua*, and *aurata fluviatilis*, and in England the *Ruffe*. It is a genuine ſpecies of pearch, and is diſtinguiſhed by Artedi from all the other fiſhes of that genus, by having the back fin ſingle, and the head cavernous. See the articles CORNUA, AURATA, and PERCA.

ACERRA, (*Cycl.*)—By the laws of the twelve tables, the erecting of *acerræ* was prohibited. *Salmuth.* ad Pancirol. P. 1. Tit. 62. p. 343. *Feſt.* in Voc. *Pitiſc.* Lex. Ant.

The *Acerra* alſo ſignified a little pot, wherein the incenſe and perfumes were put, to be burnt on the altars of the gods, and before the dead. *Pitiſc.* Lex. Antiq.

The *Acerra* appears to have been the ſame with what was otherwiſe called *thuribulum*, and *pyxis*; ſome have alſo confounded it with the *pateræ*, in which libations were offered. *Cornut.* ad Perſ. Sat. 2. Vet. Schol. ad *Horat.* l. 3. Od. 8. *Voſſ.* Etym. p. 4.

We find mention of *Acerræ* in the antient church. The Jews had alſo their *Acerræ*, in our verſion rendered *cenſers*; and the romaniſts ſtill reſtrain them under the name of *incenſe pots*. *Tertull.* adv. Gent. c. 9. magr. notiz. Vocab. Eccleſ. p. 3.

In Roman writers, we frequently meet with *plena Acerra*, a full *Acerra*; to underſtand which it is to be obſerved, that people were obliged to offer incenſe in proportion to their eſtate and condition; the rich in larger quantities, the poor only a few grains: the former poured out *Acerras* full on the altar; the latter took out two or three bits with their fingers. V. *Briſſon.* de formul. l. 1. p. m. 25. *Marcill.* ad Perſ. Sat. 2. v. 5.

ACETABULUM, (*Cycl.*)—in botany, the name of a genus of ſea-plants, compoſed of leaves formed in the ſhape of a baſon, and making a ſort of inverted cone.

The ſpecies of *Acetabulum*, mentioned by Mr. Tournefort, are two. 1. The taller ſea *Acetabulum*, called *Androſace*, and 2. The ſmaller ſea *Acetabulum*, called the ſmaller *Androſace*. *Tourn.* Inſt. p. 569. See Tab. 1. of botany, Claſs 17.

ACETARY is uſed for an inner part in the ſtructure of certain fruits; thus called from the ſourneſs of its taſte. *Grew.* Anat. Veget. l. 1. c. 6. §. 3. p. 41.

The *Acetary* of a pear is a globular part, lying within the calculary, or choak, and ſurrounding the coar. It is of the ſame ſubſtance with the parenchyma or pulp, only that the bladders of which it conſiſts are ſmaller, and rounder than thoſe of the parenchyma: from whence however it ſeems to be derived. Whence it is ſometimes, alſo called, the *Inner Parenchyma*.

The quince alſo has an *Acetary*, reſembling, tho' leſs than, that of a pear.

ACETIFICATION is uſed by ſome chymiſts to denote the action or operation whereby vinegar is made. *Becher.* Phyſ. Subterr. l. 1. Sec. 5. c. 2. n. 124. p. 362. ſeq.

Acetification is a branch or ſpecies of fermentation, ariſing by expoſing vinous liquors in open veſſels, and a warm place, which turns them acid. Vid. Act. Lipſ. an. 1701. and an. 1703.

Acetification chiefly differs from the fermentation, whereby wine is made, in this, that the latter is effected by a gentler heat, ſufficient only to raiſe, and rarify the ſulphureous parts; whereas, in *Acetification*, there is what is ſufficient to raiſe and rarify the ſaline parts; which is the preciſe point, wherein *Acetification* conſiſts. *Becher.* Phyſ. Subterr. l. 1. Sect. 5. c. 2. n. 124. p. 362. ſeq.

ACETOSA, in botany. See the article SORREL.

ACETOSE. See ACETOUS, *Cycl.*

ACETUM (*Cycl.*)—*Acetum eſuriens*, in chemiſtry, a diſtilled vinegar, rectified with the help of verdigreaſe. It is made by diſſolving the common verdigreaſe in fine diſtilled vinegar, then evaporating the ſolution, and procuring the verdigreaſe again in form of cryſtals; and from this, by a proper degree of fire, diſtilling with a retort an acid ſpirit, which is the richeſt acid that can by any art be prepared from vinegar. Zwelfer, to whom this acid owes its name, affirms, that it maintains its acid qualities, after having diſſolved pearls or other of the alcaline abſorbents; but in this he is not to be credited. *Boerhaave*'s Chem. p. 138.

ACETUM *Portabile*. See the article VINEGAR.

ACHAC, in natural hiſtory, the name given by the people of the Philippine Iſlands, to a bird common there. It is of the ſize of a common hen; its belly, breaſt, and neck are of a pale brown, and its back of a duſky reddiſh colour; its wings are extreamly beautiful, being principally of a greeniſh blue colour; the tail is white, ſhort and continually in motion; the eyes are black, and the beak is thick and ſtrong, and is of a black colour, and obtuſe figure; the legs are reddiſh, and the claws black: when it makes any noiſe, it ſeems to utter the word phi, phi, very often repeated. It lives principally about the cultivated parts of the iſlands, and feeds on rice, and other vegetables, being properly of the partridge kind.

ACHALALACTLI, in zoology, the name of an American bird, deſcribed by Nieremberg, and remarkable for a chain or ring of ſilvery whiteneſs round its neck. It is of the ſize of a pigeon, its beak is ſharp and three fingers breadth long, and its head is ornamented with a very long creſt of a bluiſh black colour. The belly and under ſide of the wings are white, and the back and outſide of the wings are of the colour of the creſt, of a bluiſh black, and variegated with white ſpots; the tail is partly black, and partly blue. It is common about the lakes and rivers of Mexico, and feeds on ſmall fiſh. *Ray*'s Ornithol. p. 301.

ACHANDES, in ichthyology, a name given by ſome to the *Remora*. See REMORA.

ACHAOVA, in the materia medica of the antients, the name of an herb much celebrated in many diſtempers; but we are not aſſured at preſent, what is the plant that it truly belongs to. Some have eſteemed it, what is called in Egypt Uchove, an herb nearly reſembling chamomile, but lower, and with broader leaves, approaching to thoſe of feverfew, and of a faint, but not diſagreeable ſmell.

Aviſenna ſeems however to have meant a different plant, by this name, and probably the herb we call *Marum*; for he deſcribes it as being of a very acrid taſte and ſtrong ſmell, in ſome reſpects reſembling our origanum or wild majorum, but of a whiter colour. *Proſper.* Alpin. de Plant. Egypt.

ACHATES, in natural hiſtory, the ſtone popularly called *Agat*. See AGAT, *Cycl.*

Dr. Plot makes uſe of the word *Achat* in this ſenſe; on what authority we know not. V. Nat. Hiſt. *Stafford.* c. 4. §. 47. p. 175.

ACHATOR, in our old ſtatutes, is uſed for Pourveyor. See ACHAT and POURVEYOR, *Cycl.*

ACHE, in ſome old authors, a name given to the plant called *Apium paluſtre*, or *paludapium*, in Engliſh, *ſmallage*. *Ger.* Emac. Ind. 4.

ACHERNER, (*Cycl.*)—This word is alſo written *Acarnar*, and *Achernar*, ſometimes *Acharnahar*, and *Acharnaharim*. *Vital.* Lex. Mathem. Voc. *Acarnar*.

Acherner is the ſame with what is otherwiſe denominated *Phæton*, and by the Perſians, *Aulax*, that is ſafe. *Wolf.* Lex. Math. p. 1054. Voc. *Phæton*.

ACHETA, in natural hiſtory, a name by which the antients called the large ſpecies of *Cicada*, the nymphs of which they uſed to eat, and eſteemed an excellent food: the ſmaller kind, which ſeems to have been our middling ſort (for we have three kinds) they called *Tettigonia*. See CICADA.

ACHIÆNUS, or ACHÆINUS, in natural hiſtory, a word uſed by the antients to expreſs a ſtag or deer in the ſecond year's age. In the firſt, it was called *Nebrus*, in the third *Dicrotus*, and always after that *Ceraſtes*. *Pliny.*

ACHILLEA, in the materia medica of the antients, a name given to the gum, which we at this time know by that of *ſanguis draconis*, or dragons-blood.

The antient Greeks called this *Cinnabari*; and the uſe of that word for the mineral which we now call cinnabar, was only becauſe of its being of the ſame fine red colour with this gum. Aviſenna treating of the *Achillea*, ſays it is otherwiſe called ſanguis-draconis, and deſcribes it as a red gum, univerſally known in his time. Many have been of opinion, that the *Achillea* was an inſpiſſated juice of the plant of that name; but this paſſage of Aviſenna, added to there being no gum of the *Achillea* mentioned by any of the antients, ſufficiently explodes this opinion. The more probable account of the name is, that this very plant was called ſanguis draconis, becauſe of its leaves being uſually as red as blood; which peculiarity is mentioned in its deſcription by Dioſcorides, and all the antient writers. Now this plant being for this reaſon called ſanguis draconis, that name, and *Achillea*, became ſynonymous terms; and thence the name *Achillea*, as a ſynonymous one for ſanguis draconis, became given to the gum ſo called. *Aviſenna*, L. 4. c. 99.

ACHIOTL, in botany, a name given by ſome authors to the *Uraca*, or *Arnetto*, called *Orleana*, and *Orellana*, by other writers. See the following article.

ACHIOTTE, a red drug from America, uſed in dying, and in the preparation of chocolate.

The word is Braſilian, where it properly ſignifies the tree from whence this matter is procured [a]. *Ray* writes it *Acchiote* [b]. —[a *Trev.* Dict. Univ. T. 1. p. 101. [b *Ray*, Trav. p. 485.]

Achiotte is the ſame with what the French frequently call *Rocou*, and the Dutch *Orleane*. It has been commonly eſteemed a kind of argilla, or earth; but later obſervers find it a flower, or ſeed of a tree, which grows chiefly in very hot countries, as Yucutan, or Campeche, and Guatimala. It is about the ſize of a plumb-tree, only more tufted; its branches, being longer than the trunk. The fruit is encloſed in a rind like a cheſnut, except that it is of an oval figure. It begins to open croſs-ways from the middle to the top; and ſubdivides into four parts; having in the middle a beautiful carnation coloured flower. The tree has no leaves; but inſtead thereof ſhoots out filaments like thoſe of ſaffron, only bigger and longer. Between theſe grow little ſoft vermillion coloured grains, about the ſize of pepper-corns; which the indians, ſeperating from the filaments, bake in cakes of about half a pound each; in which form the drug is brought into Europe. *Savar.* Dict. Comm. T. 1. p. 13.

The poor people uſe *Achiotte* inſtead of ſaffron, others mixt it as an ingredient in chocolate, during the grinding of the cacoa, the quantity of two drams to a pound, to give it a reddiſh colour, &c. tho' this practice was formerly more frequent than at preſent; the opinion of its being an earth, which even Mr. Ray fell into, having diſcredited its uſe. Some alſo uſe it to dye wax of a vermillion colour. Phyſicians hold it a good cordial, and preſervative againſt retention of urine. V. Mem. de Trev. An. 1704. p. 1974.

F. Labat deſcribes the *Achiotte* ſomewhat differently; eſpecially, the preparation of it for dying. The tree according to him, produces yearly its crops of flowers, of a carnation colour; not unlike wild roſes. Theſe are ſucceeded by a kind of rough pods, or fruit reſembling cheſnuts, full of ſmall grains; which being fermented in water, and this water afterwards paſſed thro' a carribbe ſieve, it contracts a red colour. It is then boiled, ſcummed, ſet on the fire again and ſtirred; till at length it thickens, and will fall looſe from the ſpatula: which is the *Achiotte*, or *Rocou* in perfection: tho' to make it more beautiful, they have two

further proceſſes, which are deſcribed by F. Labat. V. *Labat*, Nouv. Relat. du Voy. des Iſl. Antill. Mem. de Trev. 1722. p. 637.

According to *Savary*, to procure the *Achiotte*, they ſhake out the grains in an earthen veſſel, ſoak and then waſh them in ſeveral repeated warm waters, till they have diſcharged all their vermillion colour; after which letting the water ſtand to ſettle, the fecula at the bottom is taken and formed into little cakes, and balls; which when pure, and not adulterated either with red earth, or fine brick-duſt, are highly valued. Some alſo uſe fire to boil the *Achiotte*, and give it a farther conſiſtence. V. *Savar.* Dict. Comm. T. 2. p. 1407. ſeq. Voc. *Rocou.*

ACHIROPŒTOS, a name given by antient writers to certain miraculous pictures of Chriſt and the virgin, ſuppoſed to have been made without hands. *Salmaſ.* Exerc. ad Solin. p. 816. *Du Cang.* Gloſs. Græc. T. 1. p. 161.

The word is Greek, Αχειροποιητος, q. d. *non manu factus*; Latin authors frequently write it *Acheropeta* [a], ſome *Acheropœta*, others *Acheiropſita*, and even *Antheropſita* [b].—[a *Magri.* Notiz. Vocab. Eccleſ. p. 3. *Schmid.* Lex. Eccleſ. p. 13. [b] Bibl. Germ. T. 20. p. 40.]

The moſt celebrated of theſe is the picture of Chriſt, preſerved in the church of Saint John Lateran at Rome; ſaid to have been begun by Saint Luke, but finiſhed by the miniſtry of angels. Anaſtaſius the librarian, Onuphrius Panvinius, and others, ſpeak of the great honours paid to the *Acheiropœtos* [a]. Rome being threatned by Aſtulphus, king of the Lombards, under Pope Stephen III. the pope had recourſe to prayers and proceſſions, in which the *Acheiropœtos* was carried devoutly, on his own ſhoulders, to the church of the virgin called *Præſepe* [b].—[a V. *Anaſtaſ.* in Vit. *Steph.* III. aliis II. ap. T. 3. Scriptor. Rer. Ital. p. 166. Bibl. *Germ.* T. 20. p. 40. ſeq. [b] Id. ib.]

ACHLIS. See MACHLIS.

ACHLYS, in medicine, a darkneſs, or dimneſs of ſight, ariſing from a ſmall *cicatricula* on the pupil, occaſioned by a ſuperficial ulcer on the *cornea*. *Blanc.* Lex. Med. p. 8. *Gorr.* Defin. Med.

The word is Greek, αχλυς, which literally ſignifies a kind of cloud, or thickneſs of air. *Caſtel.* Lex.

Achlys, is the ſame with what Latin writers call *Caligo*.

Some conſider the *Achlys*, as a ſpecies of amblyopia.

Others make the *Achlys* to be the ulcer itſelf, and define it a ſlight ſuperficial ulcer, appearing on the black of the eye of a bluiſh colour, not unlike a cloudy air. *Zuing.* Inſt. Medic. p. 2. §. 230. p. 189.

In a metaphorical ſenſe, *Achlys* alſo denotes a diſorder of the womb; anſwering to what Latin writers call *ſuffuſio uteri*. *Hippoc.* l. 2. de Morb. Mulier.

ACHOR, (*Cycl.*)—writers of medical obſervations afford divers anomalous inſtances of *Achores*, viz. Some are found even in aged people, others on the feet; others reſembling the venereal diſeaſe; others which diſappeared upon cutting the hair, and returned on its growing anew; others followed by a thickneſs of hearing; others by pannics; and others by a *gutta ſerena*. Their drying up has ſometimes been followed by a fever, their repulſion inwards by an epilepſy. V. *Albert.* Lex. Real. Obſerv. T. 1. p. 6. T. 2. p. 10.

ACHRAS, in botany, the name of a genus of plants, the characters of which are theſe. The cup is a perianthium compoſed of five erect leaves of an oval ſhape, but pointed at the ends, and remaining after the flower is fallen. The flower conſiſts of five petals, which are oblong, cordated and placed erect; the germen of the piſtillum is oval, and the fruit is an oval berry divided into five cells; the ſeeds are ſingle, very elegant, of an oval compreſſed figure, and with a point ſtanding out in one part. *Linnæi*, Gen. Plant. p. 519.

ACHYRONIA, in botany, the name given by Van Royen, and continued by Linnæus, to a genus of plants of the papilionaceous kind; the characters of which are theſe. The flower has a perianthium, divided into five ſegments at the edge, the upper one being longer than the reſt; the vexillum of the flower is compreſſed, hairy or rough on the outſide, and obtuſe; the alæ are lunated, obtuſe, and open, and are ſhorter than the vexillum; the carina is bifid, and its length the ſame as that of the alæ; the ſtamina are nine or ten filaments growing into a ſort of vagina; the antheræ are roundiſh, but ſomewhat oblong; the germen of the piſtil is oval; the ſtyle is ſimple, and aſcendent; the ſtigma is acute; the fruit is an oval oblong pod, containing a few kidney-ſhaped ſeeds. *Linnæi.* Gen. Plant. p. 346. *Royen.*

ACHYROPHORUS, in botany, the name of a genus of plants of the ſame characters with the hypochæris. See HYPOCHÆRIS.

ACIA, a term in the Roman ſurgery, about the meaning whereof, phyſicians and commentators are much divided.

Celſus ſpeaking of the healing of wounds, either by ſuture, or the fibula, ſays, each is beſt effected by means of a ſoft *Acia*, not too much twiſted, that it may ſit the eaſier on the body. *Ex Acia molli, non nimis torta, quo mitius corpori inſideat. Celſ.* de Medic. l. 5. c. 26. V. *Turneb.* Adverſ. 17, 21.

Some will have *Acia*, here, to be a corruption of *Acus*, and only to denote a needle [a]. But in what ſenſe can a needle be called *ſoft?* Others underſtand by *Acia*, the thread in the needle whereby the lips of the wound were to be ſowed [b]. But how is this applicable to the fibula? —[a *Pantin.* In. Not. ad loc. *Celſ.* p. 435. [b] *Caſt.* Lex. Med. p. 8.]

Again, ſuppoſing the *Acia* to do the office of thread, the matter of that thread is diſputed; ſome will have it a linnen, others a ſilken, and others a metalline one. V. *Gaſſend.* de de Vita Peireſk. l. 5. p. 437.

Boxhornius ſets all theſe opinions aſide, and will have the *Acia* to be the *Acus* of the fibula, or that part which pinched—In which view *Acia mollis* only imported, that it was not ſet ſo as to pinch too much. *Boxhorn.* ad *Plutarch.* quæſt. Rom. *Pitiſc.* Lex. Antiq. p. 16.

Chiflet, de Figuero, and Rhodius, have written treatiſes expreſsly on the *Acia* of Celſus; in the laſt of whom, we find collected every thing relating to the ſubject. Diſſ. de *Acia* ad Corn. Celſ. mentem Petav. 4to. 1639, republiſhed with additions by Tho. Bartholin. Haffn. 1672. V. Act. Medic. P. 2. p. 294.

ACICULÆ, in natural hiſtory, ſmall ſpikes, or prickles in form of needles, with which nature has armed ſeveral creatures. See Tab. of fiſhes, N°. 20. and Tab. of teſtacious and cruſtaceous animals, N°. 13. See alſo Tab. of Quadrupeds, N°. 15, 25, and 26.

ACID, (*Cycl.*)—*Acid* and alcali have been conſidered by ſome chemiſts, as the two athletæ of nature, the great inſtruments whereby all things were effected; and the cauſe not only of natural, but præternatural things, as diſeaſes and cures.

This hypotheſis, we chiefly owe to Tachenius, a German apothecary and chemiſt, and a follower of Helmont's ſyſtem; who publiſhed two books, to ſhew that all natural things are compoſed of alkali and *Acid*. The *Acid*, which he held was generated in the air, from the ſun, and contained in it the hidden ſeeds, or ſouls of all things, aſſociated the alkali to itſelf; and from hence, as a paſſive ſubject, aroſe the eſſe or forms of things. All this he pretended to prove by the authority of Hippocrates. He was followed by Swalve, and his doctrine has been ſince defended by others; but combated and refuted by Bohnius, Boyle, Bertrand, Pitcairn, Hoffman, *&c.*

Some have pretended to mend the hypotheſis of *Acid* and alkali, by altering it into *Acid* and *Viſcid*; which they will have to be the cauſes of all diſeaſes, and fluid alkali the inſtrument of all cures. This doctrine is aſſerted by Bontekoe and Blanchard, but refuted by Hoffman. V. Act. Erud. Lipſ. An. 1689.

In reality, tho' the terms *Acid* and alkali be new, the notions, at leaſt ſomething very like them, are met with in antient writers, who frequently aſcribe the origin of many diſeaſes to unnatural, ſour, and corroſive juices in the body. Hippocrates ſays further, that man and other animals conſiſt of two contrary principles, which yet concur in the effect, *viz.* fire and water; and that theſe in conjunction are ſufficient to give being to all things. Which words Tachenius interprets of his *Acid* and alkali, which he apprehends ſufficient to account for the production of all bodies, and all the appearances thereof. Plato is alſo brought to give ſome countenance to the opinion; he deſcribes the particles of fire as pyramidal, and proceeding hence to reaſon on its effects, ſays, that by the ſharpneſs of their angles, the ſubtilty of their ſides, the minuteneſs of their parts, and the rapidity of their motion, they penetrate and break the contexture of all bodies; all which coincides with the modern theory of *Acids*: add, that as water according to Hippocrates is a paſſive principle, which ſerves to take off the edge of fire, and make a temperate body in conjunction with it; ſo alkali is repreſented as a porous matter, fit to receive and ſheathe the ſharp points of an *Acid*. *Sanguinet.* Diſſ. ap. Phil. Tranſ. N°. 273.

Helmont aſſerts, that no *Acid* can be lodged naturally in any part of the human body, except the ſtomach; that if it extend further, it becomes unnatural, infects the ſweet and balſamic juices, and proves the cauſe of moſt diſeaſes.

In effect, the opinion of *Acidity* has ſo far prevailed, that all diſeaſes, acute as well as chronical, fevers, cachexies, dropſies, ſuppreſſion of the menſes, the venereal diſeaſe, rheumatiſms, cholics, pleuriſies, apoplexies, epilepſies, and what not, are derived from this univerſal ſource. Harris attributes the diſeaſes of infants, Aignan the gout, Ferrari melancholy, *&c.* to an *acid* cauſe. *Sanguinet.* Lib. cit. *Harris*, de Morb. Infant. Mem. de Trev. 1713. p. 1245. *Aignan.* Tr. de la Goute in Jour. des Scav. T. 39. p. 425. *Ferrari*, Reſp. ad Queſit. del Maraffa. p. 329. Giorn. de Letter. d'Ital. T. 14. p. 225, 232.

Pitcairn has a diſſertaion on the hypotheſis of *Acid* and alcali, wherein he maintains, that neither *Acids* nor alcali either cauſe or cure any diſorder, at leaſt beyond the *primæ viæ*. *Pitcairn*, Diſſert. Medic. 8vo. Jour. des Scav. T. 30. p. 331.

To correct the redundancy of *Acids* in the ſtomach, all alcalious, or urinary ſalts, both fixed, as of wormwood, centaury, carduus; and volatile, as ſpirit of ſal armoniac, ſpirit and ſalt of hartſhorn, ſcurvy-graſs, &c. are commended. Under correctives alſo come all fixed earthy or metalline concretes, which abſorb the *Acid*, as iron, ſaccharum ſaturni, antimony, and all oils and fat things, which obtund and inviſcate the parts of *Acids*, as ſpirit of wine, oil of cloves, &c.

Acids are commonly ranked in the number of reſolving medicines; but they have not this effect *per ſe*, in as much as they rather aſtringe and incraſſate: what they contribute towards reſolving, is either by repreſſing, as when by their gentle aſtriction they repel ſtagnant humours, or when joined with other medicines which facilitate a reſolution. *Junker*, Conſp. Therap. tab. 14. §. 8. p. 390.

Acids have been found uſeful in acute, inflamatory, putrid, and petechial fevers; alſo in the rheumatiſm, phthiſis, diabetes, and even, as ſome ſay, tertians: though others attribute the cauſe of all agues to them: they are particularly ſuppoſed to be endowed with an anti-aſthmatic virtue. *Albert.* Lex. Real. Obſerv. T. 2.

The Engliſh phyſicians are divided on the propriety of adminiſtring *Acids* in the ſmall-pox. *Woodward*, State of Phyſ.

Acids are alledged to be hurtful in coughs, and moſt of them, except the juice of lemons, in diſeaſes of the breaſt.

Sig. Poli, an Italian chemiſt, member of the academy of ſciences at Paris, publiſhed a treatiſe, entitled, *Il Triomfo de gli Acidi*, the triumph of *Acids*, wherein he undertakes to prove, that 'tis unjuſtly *Acids* are charged with being the cauſe of an infinity of diſeaſes; and that, on the contrary, they are the ſovereign remedy thereof. According to this author, *Acids* are abſolutely neceſſary to all the fermentations or digeſtions performed in the ſtomach, whether of aliments or medicines: and thoſe *Acids* which are noxious, only become ſuch, as being made from ſubſtances which abound too much in alcali's: yet the *Acids* never enter the blood, but are precipitated in the inteſtines, and go out with the excrements; all that paſſes the lacteals being only a fine ſpirituous vapour, raiſed by the natural heat, and formed of a ſmooth oil and volatile alcali. *Fontenel.* Elog. de Poli. See alſo Jour. des Scav. T. 38. p. 328. ſeq.

Several authors have pretended to determine the figure of *Acids*. The generality ſuppoſe them to be aſſemblages of ſpiculæ, or ſolid, oblong particles, ſharp pointed at both ends: their ſolidity is inferred from their diſſolving the hardeſt bodies; their ſharpneſs from their pungency on the tongue; and their being pointed at both ends ſpindle faſhion, from their penetrating bodies with eaſe, and retaining their fluidity in the coldeſt ſeaſons. *Senac.* Nouv. Cours de Chym. T. 1. Mem. de Trev. 1724. p. 210.

A late mechanical author is more preciſe in ſettling the figure and dimenſions of *Acid* particles, which he will have to be triangular, but hollowed, according to the dimenſions of the particles of water, within the interſtices whereof he ſuppoſes them formed. The arch of an *Acid*, according to him, is 60 degrees, but the ſhorteſt way only 45; its ſemidiameter is to the ſemidiameter of a particle of water, as 4 to 7; its altitude, to the ſemidiameter of the ſame watery particle, as 31 to 49; and its weight, as 5 to 18. *Sweedenborg.* Prodrom. Principior. Rer. Natur. in Act. Erud. Lipſ. 1722. p. 85. See Tab. of Microſcopical Objects, Claſs 3.

Acids, eſpecially foſſil, are reckoned correctors of opium, when it affects the head or lungs. See OPIUM.

The only animal *Acid* yielded from the freſh animal by diſtillation, ſo far as yet known, is the *Acid* ſpirit of piſmires; all other fleſh, fiſh, and inſects, which have been tried, yielding an urinous one. Diſtillation is not neceſſary for the obtaining the *Acid* juice from this animal, though it is the moſt convenient way of obtaining it in quantities. If a ſtick be thruſt into an ant-hill, the creatures will drop their *Acid* liquor, in large drops, upon it, and this, when ſmelt to, twinges the noſe like new diſtilled ſpirit of vitriol. It will make the blue flowers of ſuccory, borrage, &c. red. And this *Acid* obtained, either by diſtillation, or by throwing the living animals into water till it be ſufficiently impregnated with it, will, with lead, make a peculiar ſort of ſaccharum ſaturni, which on diſtillation will give back the *Acid* in its own form again. Phil. Tranſ. N°. 68.

Some are of opinion, that all mineral *Acids* differ only according to their degree of ſtrength; but this opinion is liable to difficulties.

In Borelli, de Mot. Animal. l. 2. prop. 224. we have ſeveral experiments on dogs, with the *Acid* of ſulphur, nitre, &c.

ACID *juice of tar*, that procured from tar by diſtillation. See TAR-WATER.

ACINARIA, in botany, a name given by ſome to the marſh whortle-berries, or *vaccinia paluſtria*. *Ger.* Emac. Ind. 2.

ACINODENDRON, in botany, the name given by Burman, in his Theſaurus, to a genus of plants, afterwards called *melaſtoma*. *Burman*, Theſaur. Zeyl. p. 363. See MELASTOMA.

ACINOS. See OCYMUM.

ACITLI, in zoology, the common Mexican name for the great creſted diver, common to Europe and America, and more uſually called by authors, the *lepus aqueus*, or water-hare. *Ray*'s Ornithol. p. 257. See LEPUS *Aqueus*.

ACKNOWLEDGMENT-*money*, a ſum paid, in ſome parts of England, by tenants, on the death of their landlords, as an *Acknowledgment* of their new lords. *Blount.*

ACLIDES, in the Roman military art, a kind of miſſive weapon, having a thong fixed to it, by which, after caſting it out of the hand, it might be drawn back again.

Servius deſcribes the *Aclides* as full of ſpiculæ, or eminences; whence the word may ſeem from ακιδες, of ακις, point. Others ſuppoſe it formed from αγκυλιδες, of αγκυλη, which alſo ſignified a dart.

The *Aclides* is generally deſcribed as a kind of dart or javelin. Scaliger makes it round, or globular, having a ſlender wooden ſtem whereby to poiſe it. It was full of ſpikes, and ſo would do miſchief both where it ſtruck, and in the withdrawing. Each warriour ſeems to have been furniſhed with two. Vid. *Serv.* ad Æn. l. 7. v. 730. *Voſſ.* Etym. p. 5. ſeq. *Aquin.* Lex. Mil. T. 1. p. 14. ſeq. *Pitiſc.* Lex. Ant. T. 1. p. 17.

ACLOWA, in botany, the name of a plant common in Guinea, and uſed by the natives to cure the itch. They rub it on the body, as we do our ungents. Petiver accounts it a kind of colutea, and has named it the Guinea *ſcorpioide colutea*, with leaves like the gum tragacanth ſhrub. Its leaves are very like thoſe of that plant, and ſtand in pairs on the ribs, to the number of twelve, ſixteen, or twenty on a rib. They ſtand at ſuch ſmall diſtances, that the whole compound leaf is but ſhort. Each of theſe ſingle leaves is oblong; the pods are long, ſmooth and ſtraight, and they terminate in a point; they are about four inches long, and of the thickneſs of a crow's quill. The ſeeds are brown and ſmall, but of a thick and turgid ſhape, and each is ſeparated from the reſt by a thin ſeptum, or tranſparent membrane. Philoſ. Tranſ. N°. 232.

ACMELLA. See AHMELLA.

ACOLCHICHI, in zoology, the Mexican name for a bird, deſcribed by Nieremberg under the name of the *pterophœnico Indiarum*. See PTEROPHOENICO.

ACOLIN, in zoology, the name of a bird, of the partridge kind, common in the Spaniſh Weſt-Indies. It is no larger than a ſtarling; its legs and feet are of a pale greeniſh colour, and its toes very long; its beak is yellow, and ſomewhat long; its head ſmall; its breaſt and belly are white; its ſides are ſpotted with brown, and its back and tail of a duſky yellowiſh brown; its tail is very ſhort, and both that and the back have ſome black ſpots, and ſome narrow ſtreaks of white. It frequents the ſides of lakes; and is ſuppoſed to feed on flies, worms, and other inſects, which are found about watery places. It is a tolerably well taſted bird. *Ray*'s Ornithol. p. 304.

ACOLUTHI, or ACOLYTHI, (*Cycl.*)—*Acolythus* was a title in the Grecian empire, given to the captain or commander of the *Varangi*, a body of guards appointed for the ſecurity of the emperor's palace. *Codin.* de Offic. Aul. Conſtant. c. 1. n. 51. & c. 5. n. 71. *Meurſ.* Gloſſ. Gr. Barb. p. 18. *Du Cang.* Gloſſ. Gr. T. 1. p. 41.

ACOLYTHIA, in the Greek church, denotes the office, or order of divine ſervice. *Du Cang.* Gloſſ. Græc. T. 1. p. 41. Voc. Ακολυθια.

The ſame name is alſo given to the prayers, ceremonies, hymns, and the like, whereof the Greek ſervice is compoſed. *Suic.* Theſ. Græc. T. 1. p. 163.

They are ſuppoſed to be ſo called Απο τυ Ακολυθειν, *a ſequendo*, from their ſequence or following each other; or becauſe of their cohering and agreeing well together.

ACONE, in the natural hiſtory of the antients, the name of a ſtone uſed as a whetſtone, and for ſeveral other purpoſes; but more uſually known among the Romans by the name *coticula*. See COTICULA.

ACONCROBA, in botany, a name given by the natives of Guinea to a plant, growing wild with them, and in great eſteem for its virtues in the ſmall-pox. They give an infuſion of it in wine. The leaves of this plant are opake, and as ſtiff as thoſe of the phillerey; they grow in pairs, and ſtand on ſhort foot-ſtalks; they are ſmall at each end, and broad in the middle; and the largeſt of them are about three inches in length, and an inch and quarter in breadth in the middle. They ſomewhat reſemble thoſe of our bay. They are of a duſky colour on the upper ſide, and of a pale green underneath.

ACONITE, (*Cycl.*)—ACONITUM, *Wolfsbane*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the polypetalous anomalous kind, conſiſting of five irregular leaves, and ſomewhat reſembling a man's head, with a hood or helmet on it. The upper petal ſeems to perform the office of a hood or helmet; the two lower leaves repreſent that part of the helmet which receives the lower jaw, and the two wings ſeem adapted to the upper part of the face, or the temples. From the center of the flower there ariſe two piſtils, ſhaped like feet, and received into the hollow of the upper petal or hood, as is alſo the piſtil, which finally becomes a fruit, compoſed of ſeveral membranaceous vaginæ collected into a head, and uſually containing angular and wrinkled ſeeds. See Tab. 1. of Botany, Claſs 11.

The ſpecies of *Aconite*, enumerated by Mr. Tournefort, are theſe. 1. The common yellow *Aconite*. 2. The great yellow *Aconite*, with thicker ſtalks and broader leaves. 3. The yellow *Aconite*, with lower ſtalks and ſmaller leaves. 4. The Pyrenæan *Aconite*, with large and deeply divided leaves. 5. The blue flowered *Aconite*. 6. The narrow leaved *Aconite*, with bending ſpikes. 7. The *Aconite* with bending ſpikes, with fewer flowers and deeply divided leaves. 8. The

Aconite with broader leaves and bending ſpikes. 9. The greateſt *Aconite* with bending ſpikes. 10. The common blue *Aconite*, commonly called blue monk's-hood. 11. The pale red flowered monk's-hood. 12. The white flowered monk's-hood. 13. The monk's-hood with blue and white variegated flowers. 14. The monk's-hood with purple and white variegated flowers. 15. The violet flowered monk's-hood. 16. The purple flowered monk's-hood. 17. The monk's-hood with very large purpliſh blue flowers. 18. The leſſer blue flowered monk's-hood. 19. The pyramidal many flowered monk's-hood. 20. The healing monk's-hood, called *anthora*. 21. The large Pyrenæan anthora, with dark green leaves and very large flowers. *Tournef.* Inſt. p. 424.

'Tis not agreed what the antient *Aconite* was, the antient botaniſts uſing the name with ſome diverſity; ſometimes even in a general ſenſe, to denote any poiſon; whence alſo *Aconitarius*, became ſynonymous with φαρμακοποωλης, a poiſoner. *Calv.* Lex. Jur. p. 18. *Du Cang.* Gloſſ. Lat. T. 1. p. 45. Dioſcorides only makes two kinds of *Aconite*; the firſt the ſame with the *thelyphonium*, the ſecond the proper *Aconite*. In ſtrictneſs there appears to have been but one ſpecies of *Aconite*, which reſembled the thelyphonium in its virtue and effects, but differed from it in leaf, colour, ſoil, root, &c. Vid. *Salmaſ.* Exerc. ad Solin. T. 2. p. 881. ſeq. *Gorr.* Med. Defin. p. 16. ſeq. voc Ακονιτον.

Some compare the poiſon of the *Aconite* to that of the napellus [a]. Others ſeem to make it of the ſame kind with that of the ſalamander [b]. Dr. Mead will have it to agree with the cicuta [c]. 'Tis the root alone that is hurtful [d]; for its leaves and fruit are ſaid to be innocent [e].—[[a] Ephem. Germ. Dec. 1. an. 2. p. 82. [b] *Plin.* Hiſt. Nat. T. 2. l. 29. c. 4. p. 505. [c] *Mead*, of Poiſons. Jour. des Scav. T. 47. p. 64. [d] *Salmaſ.* lib. cit. p. 882. [e] *Vater.* Phyſ. Exper. in app. c. 3. §. 2. p. 870.]

ACONITI, Ακονιτι, is an appellation given to ſome of the antient *athletæ*, but differently interpreted. Mercurialis underſtands it of thoſe who only anointed their bodies with oil, but did not ſmear themſelves over with duſt, as was the uſual practice. M. Burette will have it to ſignify thoſe who conquered eaſily without duſt, *q. d.* απονιτι, αμαχει, with little ado. Vid. *Burette.* in Mem. de l'Acad. des Inſcript. T. 1. p. 294. ſeq.

ACONTIAS, (*Cycl.*)—in zoology, the name of a ſpecies of ſerpent, called alſo *jaculum*, or the dart ſnake, from its manner of vibrating its body in the manner of a dart. Bellonius found one of theſe in the iſland of Rhodes, which he deſcribes in this manner. It is about three hands-breadth long, and of the thickneſs of one's little-finger. Its colour is a milky grey on the back, variegated with ſmall black ſpots, like ſo many eyes; and on the belly it is perfectly white. The neck is wholly black, and from that two milk white ſtreaks run all the way along the back to the tail; the black ſpots alſo are each ſurrounded with a ſmall circle of white. It is found in Egypt alſo, and Lybia, and in the iſlands of the Mediterranean. *Ray*'s Synopſ. Anim. p. 290.

ACONTIUM, in antient writers, a kind of Grecian dart, or javelin, ſomewhat reſembling the Roman *pilum*. *Aquin.* Lex. Milit. *Salmaſ.* Exerc. ad Solin. T. 2. p. 1017.

ACOPA, in botany, a name given by Dioſcorides, and ſome other authors, to the *trifolium paludoſum*, or buck-bean.

Acopa is alſo uſed to denote medicines againſt laſſitude. *Acopum*, Ακοπον, from α privative, and κοπος, wearineſs.

ACOPIS, the name of a ſort of foſſil ſalt, deſcribed by Pliny, and ſaid to have been uſed by the antients, mixed with oil and heated, to rub over the limbs to cure wearineſs. The deſcription Pliny gives of it is a very odd one. He ſays, it was of a light, porous and ſpungy texture, reſembling the pumice, and that it was variegated with gold coloured ſpots. All that is poſſible to collect from this, is, that it might be an impure ſort of the *natrum*, or nitre of the antients, ſuch as is now found about Smyrna, and uſed inſtead of ſoap; this is of a lax ſpungy texture, and naturally of a greyiſh white, but it is ſubject to be tinged by accidents; and poſſibly what Pliny calls *Acopis*, might be only ſuch of it as was accidentally ſpotted with an admixture of a yellow ochreous earth.

ACORN, in natural hiſtory and agriculture, denotes the fruit of trees of the oak kind.

The *Acorn*, according to Dr. Grew, is the nut of an oak, with this only difference, that beſides the cup it ſtands in, it has only a leathern or parchment cover, inſtead of a ſhell. And hence it is, that whereas the kernel of a nut is ſweet, that of an *Acorn* is of a very rough taſte; the auſtere parts of the ſap, which in a nut are drained off into the ſhell, being here imbibed by the kernel itſelf. *Grew*, Anat. of Plants, l. 4. c. 4. §. 8.

Writers on huſbandry give rules concerning ſeminaries or nurſeries of *Acorns*, the propagating, ſowing, or planting of *Acorns*. Vid. *Evel.* Sylv. c. 2. *Hought.* Collect. N°. 466. T. 3. p. 139.

For timber, thoſe *Acorns* are to be choſen as ſeed which are moſt ſolid and heavy, not thoſe which are biggeſt.

Acorns were the food of the firſt ages; but when corn was found out, *Acorns* were neglected. They are of little uſe in our days, but to fatten hogs, and other cattle, and poultry. Yet among the Spaniards the *Acorns*, *glans Iberica*, is ſaid to have long remained a delicacy, and been ſerved up in the nature of a deſert. *Hought.* N°. 480. p. 168. *Plin.* Hiſt. Nat. l. 16.

In dearths, *Acorns* have been ſometimes dried, ground into meal, and baked into bread.

The inhabitants of Chio held out a long ſiege, without other food. But they are ſaid to breed headachs and ventoſities, and to be hard of digeſtion [a]. A decoction of *Acorns* is reputed good againſt dyſenteries and cholics. A peſſary of them is ſaid to be good in immoderate fluxes of the menſes [b].—[[a] *Barthol.* Act. Med. T. 2. obſ. 57. [b] *Gorr.* Med. Defin. voc. Βαλανος.]

ACORUS, (*Cycl.*)—in the materia medica, a name by which ſome authors have called the great galangal. *Dale*, Pharm. p. 252.

Acorus *adulterinus*, in the materia medica, the name of the root of the *iris lutea paluſtris*, or common yellow water-flag flower. *C. Bauhin.* Pin. p. 34.

ACOUSMATICI, an appellation given to ſuch among the diſciples of Pythagoras, as were ſtill under the five years probation. V. *Gentzken.* Hiſt. Philoſ. p. 47.

The *Acouſmatici*, ακουσματικοι, are ſometimes alſo called *Acouſtici*, ακουστικοι; by Latin writers, *Acuſtici*. The *Acouſmatici* ſtood oppoſed to the *mathematici*, who were thoſe initiated into the ſecrets of ſcience; and the *Acouſmatic* philoſophy, to the mathematic. *Voſſ.* de Sect. Philoſ. c. 6. §. 18. p. 35.

The *Acouſmatici* were inſtructed by bare poſitive precepts and rules, without reaſons or demonſtrations; theſe precepts they called *Acouſmata*, which were divided into three kinds. The firſt, Such as aſſerted what ſome thing is; *e. gr.* what is the ſun, the moon, the tetractys, or the like. The ſecond, Such as told what is moſt ſuch a thing; *e. gr.* what is moſt juſt? to ſacrifice: what is the moſt powerful? reaſon: what is the trueſt? that men are wicked. The third preſcribed what is to be done, and what not; *e. gr.* that we ought to beget children; that we are to put off the right ſhoe firſt: that we ought not to go in the common road, &c. Such were the Pythagorean *Acouſmata*; and thoſe among his diſciples who retained the greateſt fund of theſe, were eſteemed the wiſeſt men. *Stanley*, Hiſt. Philoſ. P. 9. p. 519.

Some have denied the appellation of Pythagoreans to be due to the *Acouſmatici*, in regard many of theſe had their learning not immediately from Pythagoras, but from Hippaſus, who, according to ſome, was of Crotona, but according to others, of Metapontium. *Jamblich.* de Vit. Pythag. c. 18. p. 54. *Stanl.* loc. cit.

ACOUSTIC *veſſels*. In the antient theatres there were a kind of *Acouſtic* veſſels, made of braſs, ſhaped in the bell faſhion, which being of all tones within the pitch of the voice, or even of inſtruments, rendered the ſounds more audible, ſo that the actors could be heard through all parts of theatres, which were even 400 feet in diameter. *Vitruv.* de Archit. l. 5. c. 5. *Boindin.* in Mem. de Trev. 1709. p. 30.

Acoustic *duct*, *ductus acouſticus*, is applied to the external paſſage of the ear; called alſo *meatus auditorius*.

Acoustic *nerve*, *nervus acouſticus*, is the ſame which we otherwiſe call the *auditory* nerve.

Acoustic *diſciples*, among the antient Pythagoreans, thoſe more frequently called *Acouſmatici*. *Voſſ.* de Sect. Philoſ. c. 6. §. 18. p. 35. See the article Acousmatici.

ACRE, (*Cycl.*)—An *Acre* is 10 ſquare chains, of 22 yards each, that is, 4840 ſquare yards. And a mile being 1760 yards ſquare, a mile ſquare will be found to contain 640 *Acres*.

Houghton gives a table of the number of *Acres* to a houſe in each county of South-Britain, which is found to vary in the Engliſh counties, from $3\frac{1}{2}$ *Acre*, the proportion in Middleſex, and $17\frac{1}{2}$ in Surry, to 49 *Acres* in Southampton. In the Welſh counties, from 51 *Acres*, as it is found in Flintſhire, to 193, as in Merionethſhire. *Houghton*, Collect. N°. 28. T. 1. p. 80. ſeq.

Dr. Grew attempts to aſcertain the number of *Acres* in England, which, according to him, amounts to 46 millions and 80000. Phil. Tranſ. N°. 330. p. 266. ſeq.

Sir William Petty reckons but 28 millions; others 29 millions.

And by an account of the number of *Acres* in each county, ſuppoſed to be taken from ſome old regiſter, the number of *Acres* in England amounted only to $39\frac{1}{4}$ millions. But Dr. Grew ſhews, that this is too little.

The province of Holland is ſaid to contain but one million of *Acres*; and was thought formerly to contain 2 millions 400,000 ſouls. But by the more acurate computations of Mr. Kerſſeboom, that province does not contain one million of ſouls. If England were as well peopled in proportion, it would contain 46 millions of inhabitants; that is, perhaps, above five times as many as it now contains.

The Scotch *Acre* contains four Scotch roods, and bears proportion to that of the Engliſh by ſtatute, as 100,000 to 78,694, regard being had to the difference betwixt the Scotch and Engliſh foot. Treat. Pract. Geom. p. 86. See Foot.

ACRID, in natural hiſtory, denotes any thing ſharp or pungent to the taſte.

Antient naturaliſts diſtinguiſh two kinds of *Acrid* taſtes; the firſt proceeding from hot and dry, as that of pepper; the ſecond from hot and moiſt, as that of garlic.

Acrid,

Acrid, according to Grew, properly belongs to the claſs of compound taſtes. It is not ſimply ſour or pungent; there being bodies not *Acrid*, which yet are pungent, *e. gr. arum*: nor is it ſimply hot; for there are many hot bodies which are not *Acrid*, as the roots of zedoary, yarrow, and contrayerva.—The characteriſtic therefore of *Acritude* conſiſts in pungency joined with heat. *Grew*, Diſc. of Taſtes, c. 1. §. 21. p. 281.

Acrid bodies, by the pungency and tenuity of their parts, incide, digeſt, heat, open, irritate, purge, cauſe appetite, &c.

The eating of *Acrid* foods with thoſe intentions, is particularly called by the Greeks drimyphagia. *Gorr.* Def. Med. p. 116. in Voc. Δριμυφαγια.

Acrid things are hurtful to the head and eyes, and contrary to bilious temperaments; but advantageous to pituitous ones. *Abercromb.* de Dignoſcend. Medic. Plant. Virib. ap. Giorn. de Letter. de Parm. 1688. p. 185.

ACROAMATIC, in the Ariſtotelian hiſtory, imports the ſame with *Acroatic*. *Voſſ.* de Sect. Philoſ. c. 17. §. 9. See the article ACROATIC.

ACROAMATIC, in a more general ſenſe, denotes a thing ſublime, profound, or abſtruſe. In which ſenſe, it ſtands oppoſed to exoteric.

We ſay *acroamatic* philoſophy, *acroamatic* theology, an *acroamatic* method, *acroamatic* interpretation, &c.

Few ſects, or profeſſions, but have had two ways of teaching, if not two ſorts of doctrine, an *acroamatic* for adepts and proficients; and an exoteric for novices [a]. We find traces of this among the heathen as well as chriſtian divines, philoſophers, and chemiſts. Hence the ceremonies of initiations, and ablutions, the diſcipline of ſecrecy; and hence alſo the origin of fables, ænigma's, parables, ſymbols, &c [b]. —[a Vid. *Zeidler*, *de gemino docendi more*, *exoterico & acroamatico paſſim*. An analyſis of which is given in Reimman, Syſt. Antiq. Literar. P. 3. Sec. 2. p. 134. b *Bac.* de Augment. Scient. l. 6. c. 2. opp. T. 1. p. 166.]

ACROAMATIC, is ſometimes alſo uſed in a more general ſenſe for any thing kept ſecret, or remote from popular uſe.

In which ſenſe Reimman gives the title *Bibliotheca Acroamatica*, to a deſcription of the MSS. of the library of Vienna, abridged from the vaſt commentaries of Lambecius and Neſſelius. *Reimman*, Bibl. Acroam. Hannov. 1712. 12°.

ACROAMATICI, a denomination given the diſciples, or followers of Ariſtotle, &c. who were admitted into the ſecrets of the inner or *acroamatic* philoſophy. *Scheffer.* de Philoſ. Ital. c. 10. Bibl. Choiſ. T. 10. p. 174.

ACROATIC, Ariſtotle's lectures to his diſciples were of two kinds, *exoteric*, and *acroatic*, Ακροατικα. The *acroatic* were thoſe, to which only his own diſciples and intimate friends were admitted; whereas the exoteric were publick or open to all; but there are other differences. The *acroatic* were ſet apart for the higher and more abſtruſe ſubjects; the exoteric were employed in rhetorical and civil ſpeculations. Vid. *Salmaſ.* ad Epict. p. 228. ſeq.

Again, the *Acroatics* were more ſubtile and exact, evidence and demonſtration being here aimed at; the exoterics chiefly aimed at the probable and plauſible. The former were the ſubject of the mornings exerciſes in the Lyceum, the latter of the evenings: add that the exoterics were publiſhed, whereas the *Acroatics* were kept ſecret, being either entirely concealed, or if they were publiſhed, it was in ſuch obſcure terms, that few but his own diſciples would be the wiſer for them. Hence when Alexander complained of his præceptor for publiſhing his *Acroatics*, and thus revealing what ſhould have been reſerved to his diſciple; Ariſtotle anſwered, that they were made publick and not publick, for that none who had not heard them explained by the author, *viva voce*, would underſtand them. Vid. *Gell.* l. 2. c. 5. *Plut.* in Alex. *Stanley*, Hiſt. Philoſ. P. 6. c. 8.

ACROBATICA, or ACROBATICUM, an antient engine, whereby people were raiſed aloft, that they might ſee more conveniently about them. *Pitiſc.* Lex. Antiq. Rom. T. 1. p. 18.

The *Acrobatica* among the Greeks, amounted to the ſame with what was called ſcanſorium among the Latins. *Vitruv.* Archit. 10. c. 1. p. 204.

Authors are divided as to the office of this engine. Turnebus and Barbarus [a], take it to have been of the military kind, raiſed by beſiegers, high enough to over look the walls, and diſcover the ſtate of things on the other ſide. Baldus rather ſuppoſes it a kind of moveable ſcaffold, or cradle contrived for raiſing painters, plaiſterers, and other workmen, to the tops of houſes, trees, &c. Some ſuſpect that it might have been uſed for both purpoſes [b].—[a Ad Loc. Vitruv. b *Bald.* Lex. Vitruv. p. 5. *Aquin.* Lex. Milit. T. 1. p. 15. *Buleng.* de Theat. l. 1. c. 22.

ACROCHIRISMUS, Ακροχειρισμος, among the antients, a kind of gymnaſtic exerciſe, wherein the two parties contended only with their hands and fingers, without cloſing, or engaging the other parts of the body. V. *Lang.* Epiſt. Medic. l. 1. Ep. 52. p. 240. *Scal.* Poet. l. 1. c. 22. *Caſtel.* Lex. Med. in Voc.

The word is alſo written *Acrochireſis*, and *Acrochiria*, it is originally Greek, formed from Ακροχειρ, the part employed in this combat, which ſome would needleſsly reſtrain to the tips of the fingers; tho' the etymon does not make this neceſſary.

Some make this a diſtinct exerciſe from wreſtling [a], and ſuppoſe it to have given the denomination *Acrochiriſtæ*, to a peculiar ſet of athletæ who profeſſed it [b]. Others with more probability conſider it as only a ſpecies, or branch of wreſtling; ſome will have it to have been properly only a prelude to a wreſtling bout, wherewith the athletæ began to try each others ſtrength, and bring their arms into play [c].—[a V. *Mercurial.* de Art Gymnaſt. l. 3. c. 5. b *Bud.* in Pandec. p. 96. *Lang.* l. c. c *Burette*, in Mem. Acad. Inſcrip. T. 4. p. 337.]

This exerciſe made part of the pancratium. Pauſanius ſpeaks of a famous pancratiaſt, named Soſtrates, who got the ſirname *Acrocherſites*, or *Acrocheiriſtes*, from his having overcome all his antagoniſts at the *Acrochiriſm.*—It appears to have been in uſe in the age of Hippocrates, who aſcribes to it a virtue of extenuating the reſt of the body, and making the arms fleſhy. *Caſtell.* Renov. p. 12.

ACROCHORDON, a painful ſpecies of wart, very prominent and pendulous, having a large head with a ſmall pedicle, or baſe. *Zuing.* Inſtit. Pathol. §. 349. p. 210. *Caſt.* Lex. Med. p. 12. See WART, *Cycl.*

Theſe are alſo called *Penſiles Verrucæ*, or hanging warts, and ſtand diſtinguiſhed from *Seſſiles Verrucæ*, or *Myrmecia*.

Others deſcribe the *Acrochordon*, as a harder, rougher ſort of wart, growing under the cutis, very callous, and uſually of the ſame colour with the ſkin; ſmall at bottom and bigger upwards, but rarely exceeding the ſize of a bean. *Gorr.* Def. Med. p. 18. *Celſ.* de Medic. l. 5. c. 28. *Caſt.* Lex. Med.

ACROCORION, in botany, a name uſed by ſome authors for the ſeveral ſpecies of the ſpring crocuſes. *Ger.* Emac. Ind. 2.

ACROE, in botany, the name given by the natives of Guinea, to a kind of ſhrub, which they uſe in wine, as a reſtorative and analeptick. It is of the trifoliate kind, and has ſomewhat of the appearance of the corallodendrous, but it is not prickly; the middle or end leaf ſtands on a pedicle of an inch long, the other two leaves have no pedicles at all. Phil. Tranſ. N°. 232.

ACROMONOGRAMMATICUM, among poets, denotes a kind of poem, or compoſition, wherein each ſubſequent verſe commences with the ſame letter, with which the verſe preceding terminates.

ACRONYCHAL, (*Cycl.*)—Among antient writers, a ſtar was properly ſaid to be *acronychal*, or to riſe *acronychally*, which roſe in the evening, when the ſun was ſet. Greek writers, it is true, uſe the term Ακρονυχιος indifferently, in ſpeaking either of evening or morning, by reaſon both are conſidered as Ακρα της νυκτος, the extremities of the night. And hence, among them we find *acronychal* applied to the riſing and ſetting of the ſtars, either in the morning or evening. But the antients were more diſtinct, and by the Ακρονυκτιος rather meant the firſt beginning or approach of night, than the end or period of it; and accordingly among them, the ſtars which roſe in the evening, not thoſe in the morning, were ſaid to riſe *acronychally*. V. *Salmaſ.* Exercit. ad Solin. p. 720.

ACRONYCHAL is ſometimes alſo applied improperly, to any riſing or ſetting of a ſtar, during the night, or while the ſun is below the horizon. *Wolf.* Lex. Math. Voc. *Ortus*.

ACRONYCHAL is likewiſe an appellation more peculiarly given to the ſuperior planets, Saturn, Jupiter, and Mars, when they were come to the meridian of midnight.

ACROSTIC, (*Cycl.*)—Among eccleſiaſtical writers, *Acroſtics* denote the ends of verſes of pſalms, which the people ſang by way of chorus, or reſponſe to the præcentor or leader of the pſalm. This was called ſinging *Acroſtics*, *Acroſtichia*, which is a ſpecies of pſalmody, uſual in the antient church. V. *Bingh.* Orig. Eccleſ. T. 1. l. 14. c. 1. §. 12. p. 666.

Acroſtic in this ſenſe amounts to the ſame with *Hypopſalma*, *Diapſalma*, *Acroteleution*, and *Ephymnion*, which are all terms of the ſame ſignification.

Tho' an *Acroſtic* properly ſignifies the beginning of a verſe, yet it is ſometimes alſo uſed for the end or cloſe of it; as by the author of the conſtitutions, when he orders one to ſing the hymns of David, and the people to ſing after him the *Acroſtics* or ends of the verſes.

It does not however denote preciſely the end of the verſe, but ſomething added at the end of a pſalm, or ſomething frequently repeated in the courſe of a pſalm, anſwering to our *Gloria Patri*.

Some pretend to find *Acroſtics* in the pſalms, particularly in thoſe called Abcdarian pſalms. V. le Clerc. in Bibl. Choiſ. T. 9. p. 242. *Du Hamel.* ad Pſalm. 25. Nouv. Rep. Lett. T. 29. p. 511.

ACROSTICUM, in the Linnæan ſyſtem of botany, the name of a genus of capillary plants, the character of which is, that the fructifications are not diſpoſed in any regular manner on the leaves, as in moſt of the other capillary plants; but they are ſo placed as to form a heap, covering the whole underſide of the leaf: the *ruta muraria* is of this kind.

ACROSTOLIUM, in antiquity, an ornament of the prow, or forecaſtle of a ſhip, chiefly of war; ſometimes ſhaped like a buckler, a helmet, or an animal, but more frequently turned circular or ſpiral [a]. The antients had divers decorations or additional parts to their ſhips, called by a general name Κοσμηματα, thoſe on the prow were more particularly called στολος, of which the extreme part alone was denominated *Acroſtolium* [b].—[a *Pitiſc.* Lex. Antiq. Rom. T. 1. p. 18. b V. *Hoffm.* Lex. Univ. T. 1. p. 47. *Salmaſ.* Exerc. ad Solin. p. 572. ſeq.]

The *Acroſtolium*, Ακροστολιον, in the prow correſponded to the *Apluſtre*, in the poop of the ſhip. See APLUSTRE.

Some authors apply the word *Acroſtolium*, indifferently to the decorations of the prow, and of the poop; others extend the *Acroſtolia* to all the decorations of the poop [c]; and even Feſtus and others, confound the *Acroſtolia* with the *Roſtra*. But the more exact diſtinguiſh in all thoſe caſes [d].—[c *Aquin.* Lex. Milit. T. 1. p. 15. d V. *Scheff.* de Milit. Naval. l. 2. c. 6.]

To the *Acroſtolia* may be referred the *Anſerculus*, mentioned by Bayfius; and alſo thoſe poliſhed ſteel pieces reſembling a duck's neck, uſed by the Venetians at the heads of their Gondolas.

The *Acroſtolia* were torn from vanquiſhed ſhips, and faſtened to the conqueror's, as a ſignal of victory [e]. We frequently find them repreſented on the reverſes of antient medals. An *Acroſtolium* is alſo ſeen in the famous ſculpture of the apotheoſis of Homer [f].—[e *Diod. Sicul.* l. 20. c. 53. *Scheff.* de Milit. Nav. l. 2. c. 6. f V. *Moreau de Mautour.* ap. Mem. de Litterat. de Saleng. Contin. T. 7. p. 443. ſeq.]

ACROTELEUTIC, among eccleſiaſtical writers, denotes the end of a verſe or pſalm; or ſomething added thereto to be ſung by the people. *Bingh.* Orig. Eccleſ. T. 1. l. 14. c. 1. §. 12. p. 666. ſeq.

In which ſenſe *Acroteleutic* amounts to the ſame with Acroſtic, Hypopſalma, Diapſalma, Epode, &c.

The *gloria patri* is by ſome writers called the *Acroteleutic* to the pſalms; becauſe always uſed to be repeated by the people at the end of each.

Hence the word *Acroteleutic*, is ſometimes alſo uſed as ſynonymous with doxology. *Sozom.* Hiſt. Eccleſ. l. 8. c. 8. and l. 5. c. 19. *Du Cang.* Gloſſ. Græc. T. 1. p. 45.

ACROTERIA, (*Cycl*).—*Acroteria*, among antient phyſicians, was uſed to denote the greater extremities of the body, as the head, hands, and feet.

The *Acroteria* growing cold in acute diſtempers, is held a prognoſtic of death; as indicating a decay of the vital flame, either by reaſon of a coagulation of the blood, or too great a conſumption of it before.

Ariſtotle alſo uſes *Acroteria*, for the tips or extreme parts of the fingers, covered by the nails; ſometimes alſo for the eminences of the bones. *Gorr.* Def. Med. p. 18. *Caſt.* Lex. Med. p. 13.

ACROTERIASM, Ακρωτηριασμος, among antient phyſicians, the act of cutting off the extreme parts of the body, when putrified, by a ſaw.

Several writers deſcribe the operation of *Acroteriaſm*. V. *Gorr.* Def. Med. p. 18. *Caſt.* Lex. Med p. 13. *Aquapend.* in Op. Chirurg. *Hildan.* Tr. de Gangren.

ACROTHYMIA, in ſurgery, the name of a large tumor in the fleſh, riſing in the ſhape of a wart, tho' ſometimes depreſſed and flat. *Heiſter*'s Surgery, p. 323.

ACT *of Faith*, (*Cycl.*) — The *Auto de Fe*, may be called the laſt act of the inquiſitorial tragedy; it is a kind of gaol-delivery, appointed as oft as a competent number of priſoners in the inquiſition are convicted of hereſy, either by their own voluntary, or extorted confeſſion; or on the evidence of certain witneſſes. The proceſs is thus: in the morning, they are brought into a great hall, where they have certain habits put on, which they are to wear in the proceſſion. The proceſſion is led up by dominican friars, after which come the penitents, ſome with ſan benitoes, and ſome without, according to the nature of their crimes; being all in black coats without ſleeves, and bare-footed with a wax candle in their hands. Theſe are followed by the penitents who have narrowly eſcaped being burnt, who over their black coats have flames painted with their points turned downwards, *Feugo revolto*. Next come the negative, and relapſed, who are to be burnt, having flames on their habit pointing upwards; after theſe come ſuch as profeſs doctrines contrary to the faith of Rome, who, beſides flames pointing upwards, have their picture painted on their breaſts, with dogs, ſerpents, and devils, all open mouthed, about it. Each priſoner is attended with a familiar of the inquiſition, and thoſe to be burnt have alſo a jeſuit on each hand, who are continually preaching to them to abjure. After the priſoners, comes a troop of familiars on horſe-back, and after them the inquiſitors, and other officers of the court, on mules; laſt of all, the inquiſitor general on a white horſe, led by two men with black hats and green hat-bands.

A ſcaffold is erected in the *Terreiro de Paio*, big enough for two or three thouſand people; at one end of which are the priſoners, at the other, the inquiſitors. After a ſermon made up of encomiums of the inquiſition, and invectives againſt hereticks, a prieſt aſcends a deſk near the middle of the ſcaffold, and having taken the abjuration of the penitents, recites the final ſentence of thoſe who are to be put to death; and delivers them to the ſecular arm, earneſtly beſeeching at the ſame time the ſecular power, not to touch their blood, or put their lives in danger.

The priſoners being thus in the hands of the civil magiſtrate, are preſently loaded with chains, and carried firſt to the ſecular goal, and from thence in an hour or two brought before the civil judge, who, after aſking in what religion they intend to die, pronounces ſentence, on ſuch as declare they die in the communion of the church of Rome, that they ſhall be firſt ſtrangled, and then burnt to aſhes; on ſuch as die in any other faith, that they be burnt alive.

Both are immediately carried to the *Ribera*, the place of execution, where there are as many ſtakes ſet up, as there are priſoners to be burnt, with a quantity of dry furz about them. The ſtakes of the profeſſed, that is, ſuch as perſiſt in their hereſy, are about four yards high, having a ſmall board towards the top for the priſoner to be ſeated on. The negative, and relapſed being firſt ſtrangled and burnt, the profeſſed mount their ſtakes by a ladder; and the jeſuits after ſeveral repeated exhortations, to be reconciled to the church, part with them, telling them they leave them to the devil, who is ſtanding at their elbow to receive their ſouls, and carry them with him into the flames of hell. On this a great ſhout is raiſed, and the cry is, let the dogs *beards be made*, which is done by thruſting flaming furzes faſtened to long poles againſt their faces, till their faces are burnt to a coal, which is accompanied with the loudeſt acclamations of joy. At laſt, fire is ſet to the furz at the bottom of the ſtake, over which the profeſt are chained ſo high, that the top of the flame ſeldom reaches higher than the ſeat they ſit on, ſo that they rather ſeem roaſted than burnt. There cannot be a more lamentable ſpectacle; the ſufferers continually crying out, while they are able, *miſericordia per amor de Dios*: yet it is beheld by all ſexes, and ages, with tranſports of joy and ſatisfaction. See *Gedd.* View of Inquiſ. ap. Miſcel. Tract. T. 1. p. 442. ſeq. *Limborch.* Hiſt. Inquiſ. l. 4. *Le Clerc.* Bibl. Univ. T. 23. p. 463. ſeq. Relat. de l'Inquiſ. de Goa. c. 20. ſeq. Ouv. des Scav. Oct. 1687. ſeq. Act. Erud. Lipſ. Sup. T. 1. p. 70. Mem de Trev. Sept. 1701. p. 64. ſeq.

ACTS *of the ſenate*, *Acta Senatus*, among the Romans, were minutes of what paſſed and was debated in the ſenate houſe.

Theſe were alſo called *Commentarii*, and by a Greek name ὑπομνηματα. They had their origin in the conſulſhip of Julius Cæſar, who ordered them both to be kept, and publiſhed. The keeping them was continued under Auguſtus, but the publication was abrogated. Afterwards all writings, relating to the decrees or ſentences of the judges, or what paſſed and was done before them, or by their authority, in any cauſe, were alſo called by the name *Acta*. In which ſenſe we read of civil *Acts*, criminal *Acts*, intervenient *Acts*, *Acta civilia*, *criminalia*, *intervenientia*, &c. V. *Suet.* in Auguſt. c. 36. *Pitiſc.* Lex. Antiq. Voc. *Acta*.

ACTS *of the People*, *Acta populi*, among the Romans, were journals or regiſters of the daily occurrences, as aſſemblies, trials, executions, buildings, births, marriages, deaths, &c. of illuſtrious perſons, and the like.

Theſe were otherwiſe called *Acta publica*, and *Acta diurna*, or ſimply *Acta*.

The *Acta* only differed from annals in that only the greater and more important matters were in the latter, and thoſe of leſs note in the former. V. *Tacit.* Annal. xiii. 31. *Pitiſc.* Lex. Ant. Voc. *Acta*.

Their origin is attributed to Julius Cæſar, who firſt ordered the keeping and making publick the acts of the people; ſome trace them higher, to Servius Tullius, who to diſcover the number of perſons, born, dead, and alive, ordered that the next of kin, upon a birth, ſhould put a certain piece of money into the treaſury of *Juno Lucina*; upon a death, into that of *Venus Libitina*: the like was alſo to be done upon aſſuming the *Toga Virilis*, &c. Under Marcus Antoninus, this was carried further; perſons were obliged to notify the births of their children, with their names, and ſurnames, the day, conſul, and whether legitimate or ſpurious, to the præfects of the *Ærarium Saturni*; to be entered in the public *Acts*. Tho' before this time the births of perſons of quality appear to have thus been regiſtred. V. *Suet.* in Jul. c. 20. n. 1. *Capitol.* in Marc. c. 9. *Suet.* in Tib. c. 5. Calig. c. 8. *Pitiſc.* loc. cit.

Publick ACTS. The knowledge of publick *Acts* has been erected into a peculiar ſcience, called the *diplomatic*, of great importance to an hiſtorian, ſtateſman, chronologer [a], and even critic [b]. The preſervation of them was the firſt occaſion of erecting libraries [c].—[a *Leibnitz.* ap. Journ. des Scav. T. 23. p. 18. It. T. 46. p. 182. b Act. Erud. Lipſ. an. 1727. p. 530. *Morhoff.* Polyhiſt. Liter. l. 1. c. 3. xii. p. 23. c Bibl. Anc. Mod. T. 26. p. 31. *Reimman.* Introd. Hiſt. Liter. T. 2. p. 146.]

The ſtyle of *Acts* is generally barbarous Latin. Authors are divided as to the rules of judging of their genuineneſs, and even whether there be any certain rules at all? F. Germon

will have the greater part of the *Acts* of former ages to be ſpurious. Fontanini [d] aſſerts, that the number of forged *Acts* now extant is very ſmall. 'Tis certain there were ſevere puniſhments inflicted on the forgers and falſifiers of *Acts*.—[[d] Vind. Ant. Diplom. c. 5. Jour. des Scav. T. 34. p. 1018.]

The chief of the Engliſh *Acts*, or public records, are publiſhed by Rymer, under the title of *Fœdera*, and continued by Saunderſon: an extract whereof has been given in French by Rapin, and tranſlated into Engliſh, under the title of *Acta Regia* [e]. Great commendations have been given this work [f], and ſome exceptions made to it: as that there are many ſpurious *Acts* [g], as well as errors in it; ſome have even charged it with falſifications [h].—[[e] New Mem. of Liter. T. 2. p. 233. [f] Bibl. Choiſ. T. 16. p. 1. Journ. des Scav. T. 46. p. 182. [g] Journ. des Scav. T. 75. p. 537. [h] *Fennel.* in Journ. des Scav. T. 81. See alſo Act. Erud. Lipſ. an. 1728.]

The public *Acts* of France fell into the hands of the Engliſh after the battle of Poitiers, and are commonly ſaid to have been carried by them out of the country. But the tradition is not ſupported by any ſufficient teſtimony, and has even been ſhewn by M. Bruſſel to be falſe. V. Journ. des Scav. T. 84. p. 245. ſeq.

ACTS *of councils*. Theſe differed from canons, in that the latter contained only the reſults, or the laws and regulations agreed on, and drawn up in form; whereas the *Acts* included the preceding debates, motions, &c.

In the firſt collections of councils, only the bare canons were delivered. Afterwards they began to give the *Acts* as well as the canons.

Hence we have two kinds of ſynodical collections: one containing all the *Acts*, or tranſactions relating to matters of faith and doctrine; the other containing only the canons relating to diſcipline, properly called the book of canons. *Hoffman.* Lex. Univ. T. 1. p. 47.

ACTION, (*Cycl.*)—*Phyſical* ACTION, or the ACTION *of bodies* on each other, is a preſſure.

If a body be urged by equal and contrary *Actions* or preſſures, it will remain at reſt. But if one of theſe preſſures be greater than its oppoſite, motion will enſue towards the parts leaſt preſſed.

It is to be obſerved, that the *Actions* of bodies on each other, in a ſpace that is carried uniformly forward, are the ſame as if the ſpace were at reſt; and any powers or motions that act upon all bodies, ſo as to produce equal velocities in them in the ſame, or in parallel right lines, have no effect on their mutual *Actions*, or relative motions. Thus the motion of bodies aboard a ſhip, that is carried ſteadily and uniformly forward, are performed in the ſame manner as if the ſhip was at reſt. The motion of the earth round its axis has no effect on the *Actions* of bodies and agents at its ſurface, but ſo far as it is not uniform and rectilineal. In general, the *Actions* of bodies upon each other depend not on their *abſolute*, but *relative* motion.

Quantity of ACTION, in mechanics, is uſed for the product of the maſs of a body, by its velocity, and by the ſpace it runs through.

When a body is tranſported from one place to another, the *Action* is the greater, in proportion to the maſs, to the velocity, or rapidity of the motion, and to the ſpace through which the body is carried.

Monſ. de Maupertuis [a] lays it down as a general principle, that "whenever any change happens in nature, the quantity of *Action* neceſſary to produce this change is always the leaſt poſſible." And this, he ſays, is a law indicating the higheſt wiſdom.

From this general principle, and the common rule for finding a minimum by fluxions, he deduces the known laws of percuſſion, for hard and elaſtic bodies, and even the laws of reſt, as he calls them; that is, of the equilibrium, or equipollency of preſſures.

This ingenious author ſeems to think, that the laws of motion, thus deduced, afford a ſtronger proof for the exiſtence of God, or of a firſt intelligent cauſe, than the other arguments commonly alledged, and deduced from the order of nature. But we apprehend, that few metaphyſicians will be of his opinion. The proof of a God from the order of nature ſeems to depend on two principles. 1. That there is an order in nature. 2. That this order is contingent. For if this order was not contingent, but abſolutely neceſſary, as Spinoſa, and other atheiſts pretend, it ſeems that no ſufficient reaſon, from the order of nature, could be aſſigned for the exiſtence of a firſt intelligent cauſe. Now, Monſ. de Maupertuis not having eſtabliſhed the contingency of his principle of the minimum of *Action*, his argument ſeems defective in this reſpect; not to mention others.

Mr. Euler [b] has demonſtrated, that in the trajectories deſcribed by bodies urged by central forces, the velocity, multiplied by the element of the curve, is always a minimum. Monſ. Maupertuis [c] looks on this as an application of his principle, to the motion of the planets.—[[a] Mem. de l'Acad. de Berlin, 1746. T. 2. p. 290. [b] Method. Inven. Lin. Curv. Maxim. Minim. Proprietate gaudentes, in Supplem. [c] Lib. cit. p. 267.]

ACTRESS, ACTRIX, a female who *acts*, or does the office of an *Actor*. See ACTOR, *Cycl.*

Actreſſes, or women actors, were unknown to the antients, among whom men always performed the part of women: and hence one reaſon for the uſe of maſks among them. *Boindin.* in Mem. Acad. Inſcript. T. 7. p. 188. ſeq.

Actreſſes are even ſaid not to have been introduced on the Engliſh ſtage, till after the reſtoration of king Charles II. who has been charged with contributing to the corruption of our manners, by importing this uſage from abroad [a]. But this can be but partly true: the queen of James I. acted a part in a paſtoral; and Pryn, in his Hiſtriomaſtix, ſpeaks of women actors in his time as whores; which was one occaſion of the ſevere proſecution brought againſt him for that book [b].—[[a] Apol. du Charact. des Angl. ap. Bibl. Franc. T. 8. p. 27. [b] *Whitlock*, Memor. An. 1632. *Wood*, Athen. Oxon. T. 2. p. 434.]

ACTUARIUS, or ACTARIUS, primarily denotes a notary, or officer appointed to write down the acts or proceedings of a court, aſſembly, or the like. V. *Calv.* Lex. Jur. p. 34. *Aquin.* Lex. Mil. T. 1. p. 15. voc. *Actarii*. *Pitiſc.* Lex. Ant. T. 1. p. 23.

In the eaſtern empire, the *Actuarii* were properly officers who kept the military accounts, received the corn from the *ſuſceptores*, or ſtorekeepers, and diſtributed it to the ſoldiers. Theſe acted as a kind of brokers with the ſoldiers; made bargains with them for receiving their pay before it became due; for which there were fixed rates. *Aquin.* Lex. Mil. T. 1. p. 15. *Pitiſc.* Lex. Ant. T. 1. p. 23. *Du Cang.* Gloſſ. Lat. T. 1. p. 49.

ACTUARIUS was alſo a title of dignity, in the court of Conſtantinople, peculiar to phyſicians. *Du Cang.* Gloſſ. Gr. p. 46. voc. Ακτουαριος.

From an appellative, the word has become a proper name of a celebrated Greek phyſician, author of a treatiſe, ſtill extant, on urines. *Fabric.* Bibl. Græc. l. 6. c. 7. §. 7. T. 12. p. 635. ſeq.

ACUANITES, ACUANITÆ, antient heretics, called more frequently *Manichees*. See MANICHEE, *Cycl.*

They took the name from Acua, a diſciple of Thomas, one of the twelve apoſtles. V. Bibl. Univ. T. 24. p. 330.

ACUBENE, in aſtronomy, a name given by ſome to a ſtar on the ſouthern claw of Cancer. See CANCER, *Cycl.*

ACUHYATLI, in zoology, the name of a very large ſerpent, of a poiſonous quality, in America, more uſually known by its name of *cucuruca*, or *curucuca*. See CUCURUCA.

ACUITION, in grammar and proſody. See the article ACUTITION.

ACULEATE, ACULEATED, ſomething that has *Aculei*, or prickles. See ACULEI.

Naturaliſts divide fiſhes into thoſe with *aculeated* and non-*aculeated* fins. Phil. Tranſ. N°. 204.

ACULEATUS *longus*, in zoology, a name given by ſome to the *pugnitius marinus longus*, a ſmall prickly Weſt-India fiſh. See the article PUGNITIUS. *Willughby*, Hiſt. Piſc. p. 340.

ACULEI, among botaniſts, &c. denotes the prickles or ſpines of plants of the thorny kind.

The word is Latin, formed from *acus*, a needle.

Among zoologiſts, *Aculeus* is alſo uſed for the ſting of a bee, ſcorpion, or the like.

The word *Aculeus* is alſo uſed for certain parts of the *Echini marini*. See Tab. of Foſſils, Claſs 10.

ACULEI *pinnarum*. See the article PINNÆ.

ACULER, in the manege, is uſed for the motion of a horſe, when in working upon volts he does not go far enough forward, at every time or motion, ſo that his ſhoulders embrace or take in too little ground, and his croupe comes too near the center of the volt. Horſes are naturally inclined to this fault, in making demi-volts. *Guillet.*

ACUMEN, ὀξύτης, in the antient muſic, was uſed to ſignify a a ſound produced by the *Intention*, or raiſing of the voice.

Acumen differs from *Intention*, as the effect from the cauſe. Vid. *Ariſtoxen.* p. 10—13. Ed. Meibom.

ACUMINA, among the antients, denoted a kind of military omen, or auſpice, ſuppoſed to have been taken from the points or edges of darts, javelins, ſwords, or other weapons; viz. by examining whether they were bright or ſolid, ſharp or blunted. *Hoffman.* Lex. Univ. T. 1. p. 50. *Aquin.* Lex. Milit. T. 1. p. 16.

Of this opinion are Turnebus [a] and Valtrinus [b]. Cœlius Calcagninus [c] ſuggeſts another hypotheſis, viz. That *Acumina* ſignified ſtars, or flames, mentioned by Seneca, as ſometimes appearing over ſpears and other weapons. Others, with Leſcalopier, ſuppoſe this omen to have been taken from the *Acumina montium*, or tops of mountains; La Cerda, from the *roſtra*, or beaks of ſhips; Gevartius, from military enſigns ſtuck in the ground, according to the degree of eaſe or readineſs wherewith they were pulled out again. A German writer [d] has a diſcourſe expreſs on auſpices, wherein he adopts and defends this laſt opinion.—[[a] *Turneb.* Adverſ. l. 3. c. 12. [b] *I. Valtr.* de Re Milit. l. 1. c. 6. [c] *Calcagn.* Epiſt. [d] *Matth.* Diſp. de Auſp. Vet. Rom. ex Acuminib. ap. Nov. Liter. Lubec. an. 1705. p. 54.]

ACUPUNCTURE, or ACUPUNCTURATION, a method of curing many diſeaſes, by pricking ſeveral parts of the body with a needle, or inſtrument of that form.

This is practiſed every day by the Chineſe and Japaneſe, and other nations in that part of the world. They perform the operation with a large gold, or ſilver needle, which they ſtrike into the ſeveral parts of the body, either with their hand, or with a hammer made on purpoſe. It is extremely ſurprizing that ſo ſevere and deſperate an operation ſhould be practiſed ſo much by a people otherwiſe judicious, and that too in the head and breaſt, as well as in the abdomen, arms, legs, thighs, and many other parts of the body, nay even in the abdomen of women with child, when the fœtus is reſtleſs. *Heiſter*'s Surgery, p. 313.

The operators in the *Acupuncture* are called by a peculiar name, among the Chineſe, *Xinxieu*; among the Japaneſe, *Farriatte*.—In Kempfer, the former name is written *Jenſuſi*, the latter *Faritatte*. Act. Erud. Lipſ. an. 1684. p. 341. *Kempfer*, Amæn. Exot. Faſc. 3. obſ. 2. p. 585.

We ſometimes alſo find mention of an *Acupuncture* practiſed in Europe; but this amounts to no more than the perforating or opening a part, *e. gr.* the cornea, with the point of a needle; which has been done with good ſucceſs, for the cure of an *hydrophthalmia* and *hypopyon*. *Valentin.* in Ephem. Germ. dec. 2. A. 6. p. 159. ſeq.

For the Chineſe operation of *Acupuncture*, the needle is made long, ſharp, ſlender, of gold, or at leaſt ſilver, with a wreathed handle: it is to be conveyed either by the hand, or a little mallet, into the part, gently, a finger's breadth, or more, as the caſe requires, and to be held there the ſpace of thirty breathings, (if the patient can bear it) otherwiſe repeated punctures are rather uſed.

It is chiefly uſed in diſeaſes of the head and lower belly: it is applied to the head, in head-aches, lethargies, convulſions, epilepſies, diſeaſes of the eyes, &c. To the abdomen, in cholics, dyſenteries, want of appetite, hyſterical diſorders, ſurfeits, pains of the belly and joints, obſtructions of the liver and ſpleen, &c.

The ſurgeons keep images, wherein all the places in the body proper for the needle are deſigned by marks. M. Ten Ryne was an eye-witneſs of the uſe of this puncture on a ſoldier, who being afflicted with violent diſorders of the ſtomach, and frequent vomitings at ſea, ſuddenly relieved himſelf, by pricking a thumb's breadth deep into four different places about the region of his pylorus. *Ten Ryn.* Diſſ. de Acupunct. ap. Phil. Tranſ. N°. 148. p. 231. ſeq. *Kempf.* loc. cit.

ACUS, in ichthyography, the name of a long and ſlender ſea fiſh, of which there are two ſpecies, a larger and a ſmaller.

The larger is often a cubit long, and not thicker than a finger. Its ſnout is long, tubular, and not ſlit all the way up, but only open at the end; its eyes are prominent. From the head to the anus it is of an hexagonal figure, and from the anus to the tail it is ſquare. The anus is nearly in the middle of the body, and near it is a long longitudinal fiſſure for the eggs of the female. In all theſe reſpects it very much reſembles the hippocampus. It has two fins at the gills, and another on the back; theſe are all very ſmall, and the laſt, in particular, ſcarce diſcernible, unleſs when the fiſh is alive and in motion. Its tail is a ſmall ſingle fin. It has a hard variegated ſkin, and has ſo little fleſh about it, that it is not regarded as eatable. It is common in the Mediterranean, and is called by the Venetian fiſhermen *Biſcia*, that is, the viper fiſh. Its mouth is of a ſtrange figure, opening upward at the end of the ſnout. See Tab. of Fiſhes, N°. 25. *Rondelet*, de Piſc.

ACUS ſignifies alſo, with other authors, the *Belone* or *Paphix*, called in Engliſh the gar-fiſh, and by ſome the horn-fiſh. The two diſtinct kinds underſtood by this too general term, are diſtinguiſhed by the names of the authors who firſt named them; the tobacco-pipe fiſh, or that with the tubular noſe, being called the *Acus* of Ariſtotle; and the gar-fiſh, or that with the horizontal open mouth, the *Acus* of Oppian.

This laſt is in ſhape ſomewhat like the former, being very long and ſlender, with a round back, and a flat belly. Its noſe or ſnout is very long, pointed and ſharp, and its head flat. The back is of a greeniſh colour, and the ſides and belly of a ſilvery white. The head is of a bluiſh green, and there is an obſcurely purple dotted line, which runs all along the back. The under jaw is longer than the upper, and both are thick ſet with ſharp teeth. It has only one back fin, and its tail is forked. *Willughby*, Hiſt. Piſc. p. 231.

Bellonius has deſcribed another ſpecies of this fiſh, which is ſcaly, and has broader teeth, and is conſiderably larger than the common one, which either has no ſcales, or extremely minute ones. Its dotted line on the back is ſaid by ſome to be a ſingle row of ſcales; and theſe authors affirm, that the fiſh has no other. *Rondelet*, de Piſc. p. 26. See the article LACERTUS.

ACUS is alſo uſed by ſome authors for the *ammodytes*, or ſand-eel; a ſmall eel caught in the ſands. *Willughby*, Hiſt. Piſc. p. 113. See AMMODYTES.

ACUTE, (*Cycl.*)—*Acute-angled cone*, in geometry, is a right cone, the ſection of which, through its axis, is an *acute*-angled triangle.

ACUTELLA, in botany, a name uſed by ſome to expreſs the common *anonis*, or reſt-harrow, a ſmall prickly plant, with red or white flowers, and famous for its ſpreading and tough roots. *Ger.* Emac. Ind. 2.

ACUTITION, or ACUITION, in a general ſenſe, the ſame with acuating or ſharpening.

ACUTITION, in grammar, denotes the pronouncing, or marking a ſyllable with an acute accent. See ACUTE and ACCENT, *Cycl.*

The *Acuition*, ſays Gaza, is where the ſound is higheſt in the pronunciation of a word. — Short ſyllables are oftener acuted than long ones. V. *Gaz.* Gram. Inſtit. p. 64.

Manwaring cries out againſt the error of the moderns, in pronouncing acuted ſyllables in the Greek as long, when they are naturally ſhort. *Manwar.* Stichol. c. 14. p. 55.

ACUTITION, or *Acuition*, in medicine and chemiſtry, is uſed for ſharpening, or increaſing the force of any medicine. *Caſtel.* Lex. voc. *Acuitio.*

ACUTENESS, (*Cycl.*)—The cauſe or principle of the *Acuteneſs* of ſounds, is reſolved into the greater degree of tenſion of the ſonorous body; by virtue of which, its parts vibrate more ſwiftly, or make a greater number of returns in the ſame time. But this is not the only principle, ſounds being alſo more or leſs *acute*, according to the ſpecies of matter, and the leſs or greater quantity of it. Thus a ſilver body yields a more *acute* ſound than a gold one: one ſolid foot, than two; a ſhorter ſtring gives a more *acute* ſound than one that is longer, of the ſame matter, diameter, and tenſion. V. *Holder*, on Harmon. c. 2. p. 6. and c. 4. p. 56. ſeq. Jour. des Scav. T. 35. p. 549. *Hobb.* Elem. de Corp. c. 29. p. 279. ſeq. *Malcolm.* Muſic. c. 1. ſec. 1. §. 3. p. 16. ſeq. Ib. c. 14. ſec. 4. §. 1. p. 500. Id. c. 2. §. 1. p. 34. and c. 2. p. 44. See CHORD.

ACUTIATOR, in writers of the barbarous age, denotes a perſon that whets, or grinds cutting inſtruments; called alſo in antient gloſſaries, *Acutor*, Ακονιτης; *Samiarius*, *Coharius*, &c. *Du Cang.* Gloſſ. Lat. T. 1. p. 51.

In the antient armies there were *Acutiatores*, a kind of ſmiths retained for wetting or keeping the arms ſharp. *Aquin.* Lex. Mil. T. 1. p. 16.

ACYROLOGIA, denotes an improper acceptation, or expreſſion, wherein a word or phraſe is uſed in ſome unuſual or oblique ſenſe, hardly reducible to the rules of language.

The word is Greek, ακυρολογια, compounded of ακυρος, improper, and λογος, *ſermo*.

Such *e. gr.* is the word *ſpero* ſometimes uſed in Roman writers for *timeo*.

The *Acyrologia* bears a near affinity to the *Catachreſis*, inſomuch that divers terms and expreſſions, alledged as inſtances of the latter, are by others brought as examples of the former.

AD *beſtias*, in antiquity, is underſtood of a kind of puniſhment of criminals, condemned to be thrown to wild beaſts. Vid. *Kenn.* Rom. Ant. P. 2. c. 3. l. 20. p. 147. *Calv.* Lex. Jur. p. 36.

The term was alſo applied to a ſort of gladiators hired to fight with wild beaſts.

Theſe were otherwiſe called *beſtiarii*. *Calv.* loc. cit.

AD *extra*, a term uſed among ſchool divines, in ſpeaking of the eternal operations of the Godhead.

Acts or operations *ad extra*, are properly thoſe whoſe term or effect is not within the divine eſſence; by which they ſtand oppoſed to operations *ad intra*. Creation, preſervation, regeneration, converſion, renovation, &c. are actions of God *ad extra*. *Hebenſtr.* Metaph. P. 3. ſec. 2. c. 4 p. 703.

AD *intra*, among ſchool divines, is underſtood of thoſe acts of the divine being, whoſe term and effect is within his own eſſence.

In which ſenſe, acts or operations *ad intra*, ſtand oppoſed to thoſe *ad extra*.

AD *hominem*, among logicians, is underſtood of a kind of argument drawn from the belief or principles of thoſe we argue with, and which of conſequence muſt be concluſive to them, though otherwiſe diſbelieved by us; or, it is where a diſputant quits his own language and ſyſtem, and borrows that of his opponent, to convince him by turning his own prejudices or errors againſt himſelf. See ARGUMENT.

This the ſchoolmen call *argumentum ad hominem*, or Καθ' ανθρωπον. Bayle [a] made great uſe of the *argument ad hominem*. Sextus Empiricus argues *ad hominem*, from the popular opinions, to overthrow the popular ſyſtem [b].

The apoſtles themſelves appear to have argued *ad hominem* againſt the Jews, from methods of interpretation practiſed by them, and texts which they underſtood as ſpoken of the Meſſia, though in reality they were ſpoken of others [c]. This is what divines call the method or ſyſtem of accommodation. —[a Vid. Bibl. Choiſ. T. 12. p. 255. b Bibl. Anc. Mod. T. 14. p. 32. & 92. c Bibl. Choiſ. T. 27. p. 410. It. T. 23. p. 433. Nouv. Rep. Lett. T. 18. p. 524.] See ACCOMMODATION and ACCOMPLISHMENT.

AD *libitum*, is ſometimes uſed in muſic, for, *ſe piace*, at diſcretion. *Broſſ.* Dict. Muſ. p. 8.

AD *ludos*, in antiquity, a Roman ſentence, whereby criminals were condemned to entertain the people, either by fighting with beaſts, or with each other, and thus executing juſtice on themſelves. *Ken.* Rom. Ant. P. 2. l. 3. c. 10. p. 147. See GLADIATOR, *Cycl.*

AD *metalla*, in antiquity, the puniſhment of being doomed to work in the mines. *Ken.* Rom. Ant. P. 2. l. 3. c. 20. p. 147.

Criminals

Criminals condemned to this, were called *Metallici*. Leg. 10. Dig. de Pœnis.

AD *quiddities*, among ſchoolmen, include the relations, analogies, agreements, diſagreements, ſimilitudes, diſſimilitudes of things. See QUIDDITY, *Cycl.*

Ad quiddities are properly thoſe attributes of things, which anſwer to the queſtion, *ad quid?* to what? By which they differ from mere *Quiddities*, which anſwer to the queſtion, *quid ſit?* What is it? The latter inquire what things are in themſelves; the former what they are, *ad alia*. V. *Herb.* de Verit. p. 233.

AD *valorem*, is uſed in ſpeaking of the duties, or cuſtoms, paid by certain commodities; ſome things are rated by the weight, meaſure, tale, or the like; others pay *ad valorem*, according to their value, or worth ſworn to by the owner.

The duties *ad valorem*, formerly payable on books imported, ceaſed in 1723. Inſtead of which a duty of fourteen ſhillings *per* hundred weight on bound, and ſeven ſhillings on unbound books was impoſed. Stat. 9. *Georg.* 1. c. 19.

ADAGIO, (*Cycl.*)—Sometimes this word is repeated, as *Adagio, Adagio*, to denote a ſtill greater retardation in the time of the muſic. *Broſſ.* Dict. Muſ. p. 8.

The word literally imports ſoftly, leiſurely. Vocab. de la Cruſc. T. 2. p. 28.

ADAMANT, ADAMAS, (*Cycl.*)—*Adamas* is uſed in ſome antient naturaliſts, for the ſpume or ſcoria of gold; which is caſt away, as not being malleable. *Salmaſ.* Not. ad Solin.

This is particularly called, χρυσου αδαμας, and is miſtaken by Pliny, for the gemm of that name. Id. ibid. p. 1084.

ADAMANT is alſo uſed for a ſpecies of iron, denoting the hardeſt, or higheſt tempered part thereof. *Salmaſ.* Exerc. ad Solin. p. 1081. ſeq. 1084. and 1089.

This is ſometimes called the *adamantine* part of iron. *Salmaſ.* ibid.

Mr. Boyle more particularly gives the denomination, *Adamas lucidus*, to a diamond in his poſſeſſion, which had the faculty of ſhining in the dark; a property ſince diſcovered in many others, at leaſt when excited by friction. V. *Boyl.* Phil. Work. Abr. T. 1. p. 494. It. T. 3. p. 155.

ADAMANT is ſometimes alſo uſed for the magnet, or loadſtone. See MAGNET, *Cycl.* and *Suppl.*

In which ſenſe Skinner thinks it may be beſt derived from the French *Aimant*, which ſignifies the ſame. *Skinn.* Etym. in Voc.

ADAMANTII, in church hiſtory, a name given by ſome chriſtian hiſtorians to the followers of Origin [a], ſurnamed *Adamantius*, according to ſome; or rather, as Heuman ſays [b], whoſe name was *Adamantius*. In effect, we find ſeveral other *Adamantii*; a ſophiſt *Adamantius* [c], a martyr *Adamantius* [d], &c. —[a *Sagittar.* Introd. ad Hiſt. Eccleſ. T. 1. c. 31. Sec. 58. p. 1113. [b] *Heuman.* Via ad Hiſt. Liter. c. 4. §. 17. Not. p. 77. [c] *Fabric.* Bibl. Græc. T. 2. l. 3. c. 6. p. 171. [d] *Lipſ.* Var. Lect. c. 28. p. 884.]

ADAMI *Pomum*, (*Cycl*) The name Adam's apple, is given to a kind of fruit frequent in Italy, reſembling a lemon, ſaid to be a good remedy againſt the itch. Dict. Ruſt. T. 1. in Voc.

ADAMIC *earth*, *Terra Adamica*, is a name ſome have given to common clay; called alſo *terra Zoica*, *rubella* and *lutum. Woodw.* Meth. Foſſ. p. 4.

The occaſion of the name we ſuppoſe to be, that this is taken for the *Adamah*, or ruddy earth, of which the firſt man was formed. V. Act. Erud. Lipſ. an. 1703. p. 39.

Kunkel gives the name, *terra adamica*, to the earth, or mud, which ſettles to the bottom of water putrified on the land, and which it is ſaid, is capable of growing to ſuch a degree of hardneſs and ſolidity, as to equal the weight of ſome metals, and conſtitute ſtone, &c. This he ſuppoſes to be the univerſal principle of which all things were made. V. Mem. de Trev. an. 1724. p. 205. ſeq.

ADAMITES, (*Cycl.*) in church hiſtory, a name given by ſome writers to the firſt patriarchs, the ſons or deſcendants of Adam by Seth. In which ſenſe *Adamites* amount to the ſame with *Sethites*, and ſtand diſtinguiſhed from *Cainites*. There are divers traditions concerning the quarrels, wars, &c. between the *Adamites* and the *Cainites*. V. Obſerv. Halens. T. 10. Obſerv. 11. §. 26. p. 301. ſeq.

Some perſons, from a paſſage in St. Paul, have ſtarted an opinion concerning men before Adam, under the denomination of Preadamites. *Rom.* c. 5. v. 13. ſeq. See PREADAMITE, *Cycl.*

As to the ſect of the *Adamites*, mentioned in the Cyclopœdia, it is to be obſerved, that the Romaniſts and reformed have branded each other with having *Adamites* among them. Moreri affirms that there are *Adamites* in England, where they hold meetings in the night, and that their great principle is *jura, perjura, ſecretum prodere noli*, for which he has been cenſured by ſome of his own country-men. *Sorbier.* p. 17. V. *Micrel.* Hiſt. Eccleſ. l. 3. ſec. 1. §. 6. p. 883.

Furetiere ſpeaks of *Adamites* in Germany, for which he is cenſured by Le Clerc. *Bibl.* Choiſ. T. 16. p. 124. ſeq.

On the other hand, Danæus [a] affirms, that there are *Adamites* ſtill exiſting in Italy, who go naked by vow, in conſequence of the rules of their order; for which he is cenſured by Bayle [b]. —[a In *Auguſt.* de Heræſ. c. 31. [b] *Bayl.* Dict. Crit. T. 1. in Voc.]

The Lumbard *Adamites* appeared in the XIIth century, headed by Tandemius of Antwerp; but they do not appear to deſerve the name of a religious ſect, for that they are ſaid to have been a troop of military men, who raviſhed all the women they met with. They were otherwiſe called Langobardi. *Baron.* ad Ann. 1126. p. 12. *Pfaff.* Inſt. Hiſt. Eccleſ. Sæc. XII. c. 3. §. 1. p. 565.

The *Adamites* of Bohemia, commonly ſaid to have ariſen in the XVth century, are the ſame ſort which is otherwiſe called the *Fratres Bohemi*, and at other times, *Picards*, and *Waldenſes*.

A late ingenious writer, has ſhewn that the *Adamitiſm*, i. e. the nakedneſs of theſe people is a mere calumny, forged by their adverſaries, the Calixtines and papiſts, at the time when the Vaudois firſt ſhewed themſelves in that country [b]. —[a *Beauſobre*, Diſſ. ſur les Adamites de Boheme, ap. Bibl. Germ. T. 4. p. 118. It. T. 19. p. 73. [b] For further particulars concerning this ſect, See *Pfaff.* Hiſt. Eccleſ. Sæc. XV. c. 3. §. 2. p. 732. Ouvres des Sav. Aout, 1689. p. 511. Jour. des Scav. T. 35. p. 573. *Bayl.* Dict. Crit. Voc. *Picard* in Not. (*B*). *Arnd.* Lex. Eccleſ. p. 495. *Budd.* Iſag. ad Theolog. l. 2. c. 7. p. 1173.

ADAR, in the Hebrew chronology, the twelfth month of their eccleſiaſtical year, and the ſixth of their civil year. It contains only nine and twenty days, and anſwers to our *February*, and ſometimes enters into the month of *March*, according to the courſe of the moon. *Calmet* Dict. in Voc.

ADARCE, in the materia medica of the antients, a ſaltiſh humor concreting about the ſtalks of reeds, and other vegetable matter, in form of incruſtations. V. *Gorr.* Def. Med. p. 5. *Hardouin.* Not. ad *Plin.* l. 32. c. 9. *Caſtell.* Lex. Med. in Voc.

The word is alſo written, *Adarca*, *Adarcion*, *Adarcus*, Αδαρκη, Αδαρκιον, Αδαρκις. *Adarce* is ſometimes alſo called *Pericalamitum* and *Calamochium* [a], ſometimes λιμνησις, or λιμνιλις, or λιμνητρον, from the lakes and marſhes, where it is found; Hippocrates ſeems to call it οχομενιον, on account of the plenty in which it grew in the lake of that name [b]. In latter times, it is ſuppoſed to be known by the name *Balla marinum* [c].—[a *Caſtel.* Lex. Med. in Voc. *Adarce.* [b] *Salmaſ.* Exerc. ad Solin. p. 1301. *Martin.* Lex. Philoſ. T. 1. p. 12. [c] *Caſtel.* l. c.]

The antients ſpeak of *Adarce*, as chiefly produced in Cappadocia and Galatia, tho' we alſo read of it in Italy; and of a native kind produced in Indian reeds, much as ſugar in the cane.

The antients tempered the *Adarce* with other matters, and thus applied it externally, as a detergent and reſolver, againſt divers cutaneous foulneſſes, alſo for the teeth [d].

We alſo read of *Adarce*, growing out of the ſpume of freſh water [e].

Dr. Plot obſerved the freſh water *Adarce*, both in Oxfordſhire and Staffordſhire. [f].—[d V. *Dioſcor.* l. 5. c. 137. *Caſt.* Lex. Med. p. 15. [e] *Rulland.* Lex. Alchem. p. 6. [f] *Plot*, Nat. Hiſt. Oxfordſhire, c. 5. §. 141. Id. Staffordſhire, c. 5. §. 28.]

Tho' ſome have ſuppoſed the incruſtations, often ſeen about our ſprings, to be the ſame with the *Adarce* of the Greek phyſicians; this ſeems a miſtake, as theſe incruſtations poſſeſs none of the virtues, or properties of that ſubſtance; it being principally compoſed of ſea-ſalt, of which thoſe contain no particle, being merely a mixture of earth and ſpar. See SPAR.

ADARCON, *Adarconim*, an antient coin, mentioned in ſcripture, uſually of gold.

Adarcon, is the ſame with what is otherwiſe called *Darchmon*, both words being derived, as ſome think, from thoſe gold pieces coined by Darius, called Δαρεικοι; others ſuppoſe the word a corruption of the Greek δραχμη: the Septuagint renders it by δραχμη, the Latin tranſlation by ten thouſand, and the Engliſh, by drachm. 1 Chron. c. xxix. v. 7. Ezra c. iii. v. 27. Nehem. c. vii. v. 69, 70.

Hoſtus makes the *Adarcon* only equal to the Attic drachma; but biſhop Cumberland, after the ſcholiaſts of Ariſtophanes and Harpocration, twice as much. V. *Hoſt.* Hiſt. Rei. Numar. c. 4. p. 305. Eſſ. on Jew. Meaſ. &c. c. 4. p. 112. ſeq. See alſo *Calmet.* Dict. T. 1. p. 44. ſeq.

ADARME, in commerce, a ſmall Spaniſh weight uſed through their American provinces, equal to the ſixteenth part of an ounce. *Savar.* Dict. Com. T. 1. p. 22.

Stephens renders it in Engliſh by a dram. *Steph.* Span. Dict. in voc.

ADARTICULATION, in ſome phyſicians, is uſed for αρθρωδια; in others, for διαρθρωσις. *Caſt.* Lex. Med. p. 15. See ARTHRODIA, and DIARTHROSIS, *Cycl.*

ADCHER, in the materia medica, a name given by Avicenna and Serapion, to the Scænanthe, or camel's hay. This ſeems to have been at that time, the common Arabian name of this drug; but Garcias tells us, that in his time the Arabs called it *Adher*. The Greeks, who have borrowed the Arabick names for medicines, confirm the original word, being as we have it in Aviſenna, they all writing it *Adcher*, or *Edcher*. The Lexicon Saracenicum, has the word *Eletcher*, for the name of Scænanth: this, and the word *Aladcher*, and the word *Azcher*, being all uſed at times, as names of the

the ſame plant ſcænanth. It is to be obſerved, however, that the Arabians have not confined this word to the ſcænanth alone, but expreſs by it all the kinds of ruſhes. Thus,

Aviſenna tells us, that the *Adcher* is of two kinds, the one bearing no fruit, the other bearing a hard black fruit; this plainly belongs not to the ſcænanth, but the common ruſh, of which Dioſcorides has, in the ſame manner, deſcribed two kinds, thus differing from one another. What he adds afterwards, of chuſing by the ſmell and colour, is to be underſtood of the Arabian ruſh, or ſcænanth; and thus are Aviſenna and the reſt to be explained; the words ſchænos and *Adcher* ſignifying both the ſame thing, that is ruſh in general; and the epithet of ſweet-ſcentedneſs, and virtues as an aromatick, alone diſtinguiſhing that ruſh called ſcænanth, from the other common ruſhes. *Aviſenna.*

ADCORDABILES *denarii*, in antient law books, denote money paid by the vaſſal to his Lord, in the nature of a fine, upon the ſelling or exchanging of a feud. *Du Cang.* Gloſſ. Lat. T. 1. p. 54.

The word is formed from the French *accorder*, to agree.

ADCRESCENTES, in the Roman empire, denoted a kind of junior ſoldiery, or candidates of arms, entered in the army, but not yet put on duty; being to ſerve as a reſerve, to ſupply the places of ſuch as ſhould be loſt.

They were thus called from the verb *adcreſcere*, by reaſon of their growing up gradually to the legitimate rank; or becauſe the military bodies were increaſed, and recruited by the acceſſion of theſe. Cod. *Theod.* de Re Milit. Leg. 11. &, *de Tyron.* Leg. 6. ſeq. *Du Cang.* Gloſſ. Lat. T. 1. p. 54.

The *Adcreſcentes* are alſo called by Byzantine writers, *ſcholares*; by the purer Roman writers, *accenſi*, and *ſupplementa militum*; by Greek writers, σχολαζωλες. *Aquin.* Lex. Mil. T. 1. p. 17. See ACCENSI.

ADDACE, in natural hiſtory, the name by which the Africans call the common Antelope. *Ray*, Syn. Quad. p. 79. See the article GAZELLA.

ADDEPHAGIA, in medicine, a term uſed by ſome phyſicians, to denote a greedineſs in children, whereby they cram down new food, ere the old is digeſted. This is ſometimes alſo written corruptly, *Adephagia*. *Suid.* Lex. T. 1. p. 51. *Blanc.* Lex. Med. p. 12.

The word is compounded of the Greek, αδδη, *largiter*, much, and φαγω, *comedo*, I eat.

The Sicilians deified gluttony, worſhiping it as a goddeſs under the name *Addephagia*. *Ælian.* Var. Hiſt. l. 1. c. 27. *Rhodig.* l. 7. c. 11.

Some uſe *Addephagia* in a more extenſive ſenſe, for voraciouſneſs in the general, ſo as to comprehend the *bulimia*, *pica*, and *malacia*. V. *Junck.* Conſpect. Medic. Tab. 92. p. 603. Id. Tab. 93. p. 603.

Others ſeem to limit it to childrens immoderate eating of bread; the chief cauſe, as ſome alledge, of the worms. *Caſtell.* Lex. in Voc.

ADDER, in natural hiſtory, a venemous reptile of the ſerpent kind, more uſually called a *Viper*. See VIPER, *Cycl.*

ADDER is alſo ſometimes confounded with *Aſp*, Ασπις; thus the deaf *Adder*, ſpoken of in the Engliſh bible, is not properly the *Adder*, but the *Aſp*. V. *Calmet*, Dict. T. 1. voc. *Aſp.*

The *Adder* differs from the ſnake, in that the former is much ſhorter for its bigneſs, eſpecially his tail below the vent; that it is marked on the back, with black lines or ſpots, which the ſnake wants; that its belly is blackiſh, and of one colour, whereas the ſnake's is particoloured, of a pale yellow and blue; that it never grows to the bigneſs which ſome ſnakes attain to; and laſtly, that it is viviparous, whereas the ſnake is oviparous.

ADDER'S-TONGUE, in botany, a medicinal plant, ſo called, either from its reſembling or its curing the bite of a viper. *Cole*'s Acct. of Simpl. c. 27. p. 88.

Phyſicians more uſually call it *Ophioglosſum*, and reckon it a vulnerary, both internally and externally uſed. *Quinc.* Diſp. 12th. Edit. p. 117. See OPHIOGLOSSUM.

Farriers, &c. prepare an ointment of this herb, called *Adder's-tongue ointment*, uſed as a remedy againſt the bites of venomous beaſts. V. Dict. Ruſtic. T. 1. in voc.

Adder's-tongue, is applied by country people to cattle, when ſtung or bitten with any kind of venomous reptiles; as adders, ſcorpions, or by an hedge-hog, ſhrove or ſhrew, or the like. Dict. Ruſtic. in voc.

ADDEXTRATORES, or ADDEXTRARII, in the court of Rome, denote the popes mitre-bearers. *Schmid.* Lex. Eccleſ. p. 16. See MITRE, *Cycl.*

Some ſuppoſe them thus called, from *ad*, to, and *dextra*, right-hand, on account of their walking at the pope's right-hand, when he rides to viſit the churches. V. *Du Cange*, Gloſſ. Lat. T. 1. p. 55.

ADDICTI, in antiquity, inſolvent perſons, or thoſe who being ſentenced to pay a debt, but unable to do it, were adjudged to a kind of temporary ſervitude to the creditor.

In this ſenſe *Addicti* were a ſpecies of ſlaves, or *ſervi*; from whom, however, they differed in this, that a ſlave when diſcharged, became a *libertus*; whereas, an *Addictus* became *ingenuus*. Again, a ſlave could not be diſcharged without conſent of his maſter; whereas the *Addictus* was diſcharged of courſe, when his debt was ſatisfied. V. *Briſſ.* de Verbor. Signif. p. 11. *Pitiſc.* Lex. Antiq. T. 1. p. 15. *Calv.* Lex. Jur. p. 36.

ADDITION, (*Cycl.*)—ADDITION *of Ratios*, is uſed by ſome authors in the ſame ſenſe, as compoſition of ratios. See COMPOSITION and RATIO.

ADDITION, in muſic.—The note or mark of *Addition*, is a dot placed on the right ſide of a note, to ſignify, that the time of the ſound of ſuch note, is to be lengthened half as much more, as it would otherwiſe be.

A note of *Addition*, amounts to the ſame, with what is by ſome old Engliſh authors, called *prick of perfection*. *Playf.* Introd. Muſ. c. 2.

Thus a ſemibreve, when marked with a dot, is to be as long as three minims; the minim with a like dot, to be as long as three crotchets; the crotchet, as three quavers, &c. See CHARACTER, *Cycl.*

ADDITIONS, in heraldry, denote a kind of bearings, in coats of arms, wherein are placed rewards, or additional marks of honour.

In which ſenſe, *Additions* ſtand oppoſed to *abatements*, or *diminutions*. See ABATEMENT, DIMINUTION, and DIFFERENCE, *Cycl.*

Additions reſemble, but differ from, ordinaries. To the claſs of *Additions* belong a bordure, quarter, canton, gyron, pile, flaſques, hanches, voiders, ermine, and an eſcutcheon, gules, called alſo an *eſcutcheon of pretence*. On any of theſe may an *Addition* of honour be placed according to the pleaſure of the prince, or the fancy of the herald, which reward deſcends to none of the family, except the perſon's own direct line. In this manner, the arms of a kingdom have been ſometimes given, by way of *Addition*, to a private ſubject. *Carter.* Anal. of Hon. p. 107.

ADDITIONS, in diſtilling, a name given to ſuch things as are added to the waſh, or liquor, while in a ſtate of fermentation, in order to improve the vinoſity of the ſpirit, procure a larger quantity of it, or give it a particular flavour.

All things of whatever kind, thus added in the time of fermentation, are called by thoſe of the buſineſs, who ſpeak moſt intelligently, *Additions*; but many confound them with things of a very different nature, under the name of ferments. See FERMENT.

The *Additions* uſed in the diſtillery, may be reduced to four general heads. 1. Salts, 2. Acids, 3. Aromaticks, and 4. Oils. A little tartar, nitre, or common ſalt finely powdered, may be added to the liquor while fermenting, eſpecially in the beginning of the operation; or in their ſtead, a little of the vegetable, or finer mineral acids, may be dropped in at different times when found neceſſary. Theſe are of great uſe, eſpecially, in the fermenting ſolutions of treacle, honey, and the like ſweet and rich vegetable juices, which either wholly want an acid in themſelves, or have it in too ſmall a proportion, or have been robbed or diveſted of it. The proper acids for this purpoſe are, the juice of Seville oranges, or lemons, or the ſpirit of ſulphur, or Glauber's ſpirit of ſalt, or, what is greatly preferable to all theſe, a particular aqueous ſolution of tartar, a ſuccedaneum for which may be tamarinds, or the robs of ſome very acid fruits, or the *media ſubſtantia vini*. On this foundation ſtands that ingenious practice of uſing a ſuitable proportion of the ſtill bottoms, or the remaining waſh, in the ſubſequent brewing.

Theſe *Additions* are manifeſtly deſigned to give a vinous acidity, or to improve that naturally afforded by the ſubject, without any expectation of conſiderably encreaſing the quantity of the ſpirit. This laſt is the more immediate intent in the mixtures of aromaticks and oils, at the ſame time that they give, alter, and improve the flavour. *Shaw*'s Eſſay on Diſtillery.

All the pungent aromaticks have a ſurpriſing property of encreaſing the quantity of ſpirit; but their uſe requires a cloſe or compreſſed fermentation, and if the quantity intended be large, that the *Addition* be not made all at once, leſt the oilineſs of the ingredients ſhould hinder the operation. If the flavour be the only thing required from them, then they ſhould not be put in, till toward the end of the fermentation.

After the ſame manner, a very conſiderable quantity of any eſſential vegetable oil, may by proper management be converted into a ſurpriſingly large quantity of inflammable ſpirit; but great care in this caſe muſt be had not to drop it in too faſt, nor too much at a time; this might damp the fermentation: and indeed, the adding a large quantity of oil at once, is the common way of ſtopping the fermentation at any point required.

The beſt method of all others, of introducing the oil, ſo as to avoid all inconvenience, is to reduce it firſt to an eloeoſaccharum, by grinding it in a mortar, with a due quantity of fine ſugar in powder. The oil thus added with its particles diſunited, and in form of powder, will readily mix with the liquor, and immediately ferment with it.

A large proportion of rectified ſpirit, or of any other ſpirit, may, by prudent management, be alſo introduced into the fermenting liquor; and this will always come back with a large *Addition* to the quantity of ſpirit, that would otherwiſe have ariſen from the diſtillation. *Shaw*'s Eſſay on Diſtillery.

ADDITIVE, denotes ſomething to be added to another.

Geometricians ſpeak of *additive ratio's*; aſtronomers of *additive equations*, &c.

ADDITIVE *ratio* is uſed by ſome writers, for that whoſe terms are diſpoſed to addition, that is, to compoſition, in oppoſition to *ſubſtractive ratio*, whoſe terms are diſpoſed to ſubſtraction, *i. e.* to diviſion. Vid. *Hug. de Omeriq.* Anal. Geomet. P. 1. diſ. 1. in Philoſ. Tranſ. N°. 257. p. 352.

Suppoſe the line *a c* divided in the points *b* and *x*,

a *b* *x* *c*

the ratio between *a b* and *b x* is *additive*; becauſe the terms *a b* and *b x* compoſe the whole *a x*. But the ratio between *a x* and *b x* is ſubſtractive, becauſe *a x* and *b x* differ by the line *a b*.

ADDITIVE *equations*, in aſtronomy, thoſe which are to be added to the ſun's mean anomaly, in order to find the true one. V. Hiſt. Acad. Roy. des Scienc. 1720. p. 118. See EQUATION, ANOMALY, &c. *Cycl.*

ADDUCTOR, (*Cycl.*)—ADDUCTORS, in anatomy, thoſe otherwiſe called *adducent* muſcles. See ADDUCENT, *Cycl.*

The *Adductor* muſcle of the arm ſerves to approach it towards the trunk of the body; though Winſlow finds its office more complicated, and that it acts in concurrence with the flexors and extenſors, in the bending and extending the arm.

ADDUCTOR *pollicis*, in anatomy, a name given by Cowper, and ſome others, to a muſcle, called more properly by Albinus, and the generality of writers, the *Abductor indicis*; and by Winſlow, the *ſemi-interoſſeus indicis*.

ADDUCTOR *proſtatæ*, a name given by Santorini to a muſcle, which he alſo calls *levator proſtatæ*; and which Winſlow calls *proſtaticus ſuperior*. Albinus, from its office, has very properly called it *compreſſor proſtatæ*.

ADEB, in commerce, the name of a large Egyptian weight, uſed principally for rice, and conſiſting of two hundred and ten okes, each of three rotolos, a weight of about two drams leſs than the Engliſh pound. But this is no certain weight; for at Roſetto the *Adeb* is only one hundred and fifty okes. *Pocock*'s Egypt. p. 175.

ADEL *fiſh*, a name given by ſome nations to the *lavaretus*, or *albula nobilis*.

Theſe are generally treated of by authors as two different kinds of fiſh. But Artedi contends, that they are the ſame ſpecies, and diſtinguiſhes them by the name of the *coregonus*, with the upper jaw flat, and longer than the under; and with fourteen rays in the back fin.

ADELPHIANI, in church-hiſtory, a ſect of antient heretics, ſo called from their leader *Adelphius*.

They were ſingular in this, that they kept the ſabbath as a faſt. V. *Bingh.* Orig. Eccleſ. l. 20. c. 3. §. 5. *Opp.* T. 2. p. 300.

Many idle and extravagant opinions are attributed to them, with what juſtice may be hard to ſay. V. *Arnd.* Lex. Ant. Eccleſ. p. 475. *Budd.* Iſag. Theol. l. 2. c. 7. p. 1058. *Prateol.* Elench. Heret. p. 7.

ADELSCALC, in antient cuſtoms, denotes a ſervant of the king. *Du Cang.* Gloſſ. Lat. T. 1. p. 55.

The word is alſo written *Adelſcalche*, and *Adelſcalcus*. It is compounded of the German *Adel*, or *Edel*, noble, and *Scalc*, ſervant.

Among the Bavarians, *Adelſcalcs* appear to have been the ſame with royal *thanes* among the Saxons, and thoſe called *miniſtri regis* in antient charters. V. *Spelm.* Gloſſ. p. 10.

ADENANTHERA, in botany, the name of a genus of plants, the characters of which are theſe. The perianthium is very ſmall, and is compoſed only of one leaf divided into five ſegments at the edge. The flower conſiſts of five leaves, and is of a campanulated form. The petals are pointed and ſeſſile, and they turn inwards, and are hollowed underneath. The ſtamina are ten erect tubulated filaments, a little ſhorter than the flower; and the anthoræ are roundiſh and incumbent, and bear on their exterior apex a globoſe glandule. The germen of the piſtil is oblong and gibbous on the back in the lower part. The ſtyle is tubulated, and of the length of the ſtamina, and the ſtigma is ſimple. The fruit is a long compreſſed pod, in which are ſeveral round ſeeds. *Linnæi*, Gen. Plant. p. 183. Hort. Malab. Vol. 6. 14. *Royen.* Hort. Lugd. Bat. p. 462.

ADENOGRAPHY, that branch of anatomy which deſcribes the glands, and glandular parts of the body.

The word is compounded of the Greek, αδην, gland, and γραφω, *ſcribo*, I deſcribe.

Adenography is the ſame with what ſome others call *Adenology*, or the adenological part of anatomy. V. *Douglas*, Myogr. Comp. p. 212.

Nuck [a] and Wharton [b] have written expreſly on the *Adenographia*.—[[a] Adenographia Curioſa, & Uteri Feminei Anatome nova, Lugd. Bat. 1692. 8vo. an extract of which is given in Act. Erud. Lipſ. 1692. p. 97. [b] Adenographia, ſeu Deſcriptio Glandularum totius Corporis, Lond. 1656. 8vo. Amſt. 1659. See its character and eulogy in Wood, Athen. Oxon. T. 2. p. 522.]

ADENOSUS *abſceſſus*, in medicine, a crude hard tubercle, difficult of diſcuſſion, and reſembling the appearance of a gland. *Caſt.* Lex. Med.

ADERAIMIN. See ALDERAIMIN.

ADFILIATION, ADFILIATIO, is uſed to ſignify a Gothic cuſtom; where a perſon remarrying, who has children by a former bed, renders them capable of inheriting equally with the common children of both the parties.

This is done by agreement, and is otherwiſe called, by ſome, *adoptio per matrimonium*. *Kulpis.* ap. Journ. des Scav. T. 34. p. 325.

This cuſtom is ſtill retained in Germany, under the name *Einkindſchafft*, and *unio prolium*.

But the learned Heineccius obſerves, that the *unio prolium* is not an adoption. V. *Heinec.* Elem. Juris Germ. T. 1. §. 161.

ADHATODA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the perſonated kind, conſiſting of one leaf, and is divided into two lips, the upper of which is crooked, or bent upwards and backwards, the lower is divided into three parts. The piſtil riſes from the cup of the flower, and is fixed into the lower part of the flower, in the manner of a nail; this afterwards becomes a club-faſhioned fruit, or capſule of a flatted form, divided into two cells, and containing a number of ſmall compreſſed and heart-faſhioned ſeeds. See Tab. 1. of Botany, Claſs 3.

The ſpecies of *Adhatoda*, enumerated by Mr. Tournefort, are theſe. 1. The Ceyloneſe *Adhatoda*. 2. The ſmaller flowered *Adhatoda*, called by the people of Malabar, *Bem-curini*. 3. The *Adhatoda* with the upper lip of the flower extremely narrow, and bent upwards and backwards: this is called, by the people of Malabar, *Carim-curini*. 4. The herbaceous *Adhatoda*, with leaves like thoſe of enchanters nightſhade, and a very ſmall fruit. *Tournef.* Inſt. p. 175.

ADHESION, (*Cycl.*)—Dr. Deſaguliers has given experiments of the *Adheſion* of leaden bullets to each other: the cauſe of which is reſolved into the principle of attraction [a]. See ATTRACTION, *Cycl.*

The argument drawn from the *Adheſion* of two poliſhed planes, urged in behalf of the weight and preſſure of the atmoſphere [b], might be objected to, as this preſſure is not ſufficient to produce the effect, and that poliſhed bodies will adhere very ſtrongly, even in an exhauſted receiver [c]. However, it is certain, that the air contributes in part to this *Adheſion*.

Anatomiſts ſometimes obſerve *Adheſions* of the lungs to the ſides of the thorax, the pleura, and the diaphragm, which give occaſion to various diſorders.

We alſo read of *Adheſions* of the dura mater to the cranium [d]; of the ſtone to the bladder: though ſome combat this laſt as a chimera [e]; at leaſt the inſtances of it appear to be rare [f], in compariſon of the noiſe that has been made about it.—[[a] Phil. Tranſ. N°. 389. p. 345. [b] V. *Hawkſb.* Exper. p. 88. [c] V. *Hugen.* Oper. Vol. 1. p. 775. [d] Giorn. de Letter. d'Ital. T. 20. p. 374. [e] *Douglas*, Lithot. c. 2. Mem. Liter. de Gr. Brit. T. 13. p. 200. [f] Jour. des Scav. T. 43. p. 416.]

We have alſo ſeveral caſes of *Adheſions* of the inteſtines, mentioned in the Philoſophical Tranſactions, N°. 481. p. 288.

ADHIL, in aſtronomy, a ſtar, of the ſixth magnitude, upon the garment of Andromeda, under the laſt ſtar in her foot.

ADHOA, in antient cuſtoms, denotes what we otherwiſe call *relief*. See RELIEF, *Cycl.*

In which ſenſe, we ſometimes alſo find the word written *Adoha*, *Adhoamentum*, and *Adhogamentum*. *Du Cang.* Gloſſ. Lat. T. 1. p. 57.

ADJACENT, (*Cycl.*)—ADJACENT *angles*, in geometry, are thoſe ariſing from the continuation of one of the ſides of an angle. See ANGLE, *Cycl.*

ADIANTUM, *Maidenhair*, in botany, the name of a genus of plants, the characters of which are theſe. The flowers are not diſcovered. The ſeeds are contained in ſpherical capſules, placed in the ſinuſes and complications of the leaves, and ſurrounded each with an elaſtic ring, which contracting, burſts the capſule, and ſcatters abroad the minute ſeeds. To this it is to be added, that the leaves of the maidenhairs have all one general appearance, by which they are eaſily diſtinguiſhed at ſight, from the other plants of the fern kind. See Tab. 1. of Botany, Claſs 16.

The ſpecies of *Adiantum*, enumerated by Mr. Tournefort, are theſe. 1. The coriander-leaved *Adiantum*, called the true *Adiantum*, or maidenhair, and the Montpelier capillaire. 2. The great Scotch coriander-leaved *Adiantum*. 3. The leſſer Scotch *Adiantum*, with obtuſe and deeply cut leaves. 4. The American *Adiantum*, called the Canada capillaire. 5. The many rooted procumbent *Adiantum*, with pellucid leaves, and ſeeds in ſmall globules, called the little rock maidenhair, with bifid and trifid leaves. 6. The *Adiantum* with hexagonal leaves. 7. The three leaved blunt *Adiantum*. 8. The Italian *Adiantum*, with multifid leaves. 9. The ſmalleſt *Adiantum*, with various leaves. 10. The elegant branched Chineſe *Adiantum*, with fan-like leaves of a reddiſh colour. 11. The moſſy *Adiantum*, with the appearance of ſtone liverwort. 12. The branched *Adiantum*, with ſquare ſhaped dentated leaves. 13. The creeping prickly ſhrub *Adiantum*. 14. The much branched *Adiantum*, with

leaves like the common kind. 15. The *Adiantum* with white lunated marks. 16. The finely divided *Adiantum*. 17. The low trifoliate creeping *Adiantum*. 18. The *Adiantum* with leaves divided into very deep ſegments. 19. The *Adiantum* with capillaceous leaves. And, 20. The climbing *Adiantum*, with finely divided and retuſe leaves. *Tournef.* Inſt. p. 543.

In the Linnæan ſyſtem of botany, the general character of the *Adianta* is, their having the fructifications in form of oval ſpots, diſpoſed in cluſters under the reflected tops of the leaves.

The Engliſh uſually write *Adianthum*, apparently from a miſtaken etymology, as if derived from ἀνθος, flower. The true orthography is *Adiantum*, in Greek ἀδιαντον; formed from the privative α and διαινω, *humecto*; in regard, as ſome ſuggeſt, its leaves do not grow wet with the rain, but ſtill appear dry; or, as others think, from its growing to the inner walls, and margins of wells. V. *Voſſ.* Etym. p. 8. *Martin.* Lex. Philol. T. 1. p. 12. *Blanc.* Lex. Med. p. 13. *Lemery*, Dict. des Drogues, p. 14.

Adiantum is alſo called καλλιτριχον, *callitrichum*, and πολυτριχον, *polytrichum*, from its effect in tinging the hair, and making it grow thick.

Adiantum is the ſame with what we popularly call maiden-hair, and the *capillus veneris* of the ſhops; though ſome pretend to diſtinguiſh between the two.

Others give it the name *terræ capillus*; and others, that of *ſupercilium terræ*. *Gorr.* Def. Med. p. 5, 6.

The *Adiantum* is eſteemed a great pectoral, and gives name to a ſyrup, much in uſe for that intention [a]. It is alſo ſaid to be a remover of obſtructions, both of the kidneys and the menſes, though little uſed in thoſe intentions. Its eſſence is by ſome commended in hypochondriac and hyſteric complaints [b].—[a *Quinc.* Diſpenſ. P. 2. ſec. 4. b *Junck.* Conſp. Med. tab. 29. p. 189.]

ADIANTUM *aureum*, called alſo *Muſcus capillaris*, *Polytrichum aureum medium*, C. B. *Polytrichum nobile*, *vel primum*, *Polytrichum Apulei aureum*, &c. in Engliſh, *Golden maiden-hair*, is of the moſs kind. It grows in heathy and boggy ground. It is a good ſudorific, and its infuſion drank hot is recommended againſt pleuriſies [c]. Camerarius gives a relation of this plant riſing ſpontaneouſly out of the ruins of a town burnt down in Germany; as the *Eriſymum vulgare* did from the ruins of London [d].—[c *Lemery*, Dict. des Drog. p. 14, 15. d Ephem. Germ. dec. 3. an. 5. obſ. 17. p. 47.]

ADIT, (*Cycl.*) in a general ſenſe, denotes the approach to, or entrance of any thing.

The word is originally Latin, *aditus*, formed from *adire*, to go to.

In which ſenſe, we meet with *Adit* of a houſe, *Adit* of a theatre, of the circus, &c. *Salmaſ.* Exerc. ad Solin. p. 916.

ADITS *of a theatre*, *Aditus theatri*, in antiquity, were doors on the ſtairs, whereby perſons entered from the outer portico's, and deſcended into the ſeats. *Vitruv.* l. 5. c. 3. *Pitiſc.* Lex. Ant. T. 1. p. 26. *Baxt.* Gloſſ. p. 35.

ADIT, *in ſhips*, in antiquity, was a ſpace in the upper part, where the ſhip was wideſt, at which people entered, antiently called *Agea*. *Pitiſc.* loc. cit. & p. 55. in voc. *Agea*.

ADIT *of a mine* amounts to the ſame with *Cuniculus*, or *Drift*, and is diſtinguiſhed from *Airſhaft*. Phil. Tranſ. N°. 69. p. 2104. See AIR-SHAFT.

The *Adit* is uſually made on the ſide of a hill, towards the bottom thereof, about 4, 5 or 6 feet high, and 8 wide, in form of an arch; ſometimes cut in the rock, and ſometimes ſupported with timber, ſo conducted, as that the ſole or bottom of the *Adit* may anſwer to the bottom of the ſhaft, only ſomewhat lower, that the water may have a ſufficient current to paſs away, without the uſe of the pump. *Pett.* Hiſt. of Mines, c. 2. p. 2.

Damps and the impurity of the air are the great impediments againſt driving *Adits* above 20 or 30 fathoms, by reaſon of the neceſſity, in this caſe, of letting down air-ſhafts from the day to meet the *Adit*, which are often very expenſive, both on account of the great depth of mines, and the hardneſs of the mineral ſtrata to be cut through. The beſt remedy againſt this, is that practiſed in the coal-mines near Liege, where they work their *Adits* without air-ſhafts: the manner of which is deſcribed by Sir Robert Moray. Vid. Phil. Tranſ. N°. 5. p. 79. See AIR-SHAFT.

ADIT *of a mine* is ſometimes uſed for the air-ſhaft itſelf, being a hole driven perpendicularly from the ſurface of the earth into ſome part of a mine, to give entrance to the air.

In this ſenſe, we ſometimes find it improperly written *Addit*. Phil. Tranſ. N°. 200. p. 738.

To draw off the ſtanding water in winter, in deep mines, they drive up an *Adit*, or air-ſhaft, upon which the air diſengages itſelf from the water, when it begins to run, with ſuch violence, as produces a noiſe equal to the burſting of a canon, daſhes every thing in the way againſt the ſides of the mine, and looſens the very rocks at a diſtance. Phil. Tranſ. N°. 26. p. 481.

ADJUNCT, (*Cycl.*)—ADJUNCT *gods*, or ADJUNCTS *of the gods*, among the Romans, were a kind of inferior deities, added as aſſiſtants to the principal ones, to eaſe them in their functions. Thus, to Mars was adjoined Bellona and Nemeſis; to Neptune, Salacia; to Vulcan, the Cabiri; to the good Genius, the Lares; to the Evil, the Lemures, &c. V. *Struv.* Synt. Ant. Rom. c. 1. p. 170. ſeq. Jour. des Scav. T. 39. p. 542.

ADJUNCTS, or ADJOINTS, in the royal academy of ſciences at Paris, denote a claſs of members, attached to the purſuit of particular ſciences.

The claſs of *Adjuncts* was created in 1716, in lieu of the *Eleves*: they are twelve in number; two for geometry, two for mechanics, two for aſtronomy, two for anatomy, two for chemiſtry, and two for botany.—The *Eleves* not taken into this eſtabliſhment were admitted on the foot of ſupernumerary *Adjuncts*. V. *Fontenel.* Hiſt. Acad Scienc. 1716. p. 3. ſeq. See ACADEMY, *Cycl.* and *Suppl*

ADJUTANT, (*Cycl.*)—The general of the Jeſuits has a ſelect number of fathers of that order reſiding with him, under the denomination of *Adjutants-general*; who have each their ſeveral province, or country, under their care, as France, England, &c. Their buſineſs is to inform the father-general of the occurrences of ſtate in ſuch countries; to which end, each of them have their correſpondents delegated, emiſſaries, viſitors, regents, provincials, &c. Pyrotech. Loyol. c. 2. p. 17. ſeq.

In the cavalry, each regiment has an *Adjutant*, and in the infantry, each battalion.

The *Adjutant* receives the orders every night from the brigade-major, which, after he has carried to the colonel, he delivers out to the ſerjeants. Where detachments are to be made, he gives the number each company muſt furniſh, and aſſigns the hour and place of rendezvous. He alſo places the guards, receives and diſtributes ammunition to the companies, and, by the major's order, regulates the price of bread, beer, &c. *Guillet*, P. 2. in voc.

ADJUTORIUM, (*Cycl.*)—Some authors uſe this word for a medicine intended only as auxiliary, or ſubſervient to another of more efficacy: in particular, after a due uſe of internals, for an external remedy, applied to a part affected, to aſſiſt in and compleat the cure. *Caſt.* Lex. Med. p. 17. *Blanc.* Lex. Med. p. 13.

ADLE *egg*, that which is not fecundified by the cock's tread. See EGG.

Minſhew derives the word from *idle*; ſuppoſing *adle egg* to have been originally written, *idle egg*, *q. d.* vain, empty, inſignificant. Skinner chuſes to deduce it from the Anglo-Saxon *Adel*, ſickneſs, *q. d.* a ſick or morbid egg. *Skin.* Etym. Angl. in voc.

Adle egg is the ſame with what is otherwiſe called a *ſubventaneous* one.

Adle eggs, after incubation, are found to contain a ſhapeleſs, globoſe, aſh-coloured body, not unlike a *mola*. Phil. Tranſ. N°. 87. p. 5080.

ADLEGATION, in the public law of the German empire, a right claimed by the ſtates of the empire, of adjoining plenipotentiaries, in public treaties and negotiations, to thoſe of the emperor, for the tranſacting of matters which relate to the empire in general. V. Mem. de Trev. 1706. p. 1928.

In which ſenſe, *Adlegation* differs from *Legation*, which is the right of ſending ambaſſadors on a perſon's own account.

Several princes and ſtates of the empire enjoy the right of *legation*, who have not that of *Adlegation*, and *vice verſa*. The biſhops, for inſtance, have the right of *Adlegation* in treaties which concern the common intereſt, but no right of *legation* for their own private affairs. The like had the duke of Mantua.

The emperor allows the princes of Germany the privilege of *legation*, but diſputes that of *Adlegation*. They challenge it as belonging to them *jure regni*, which they enjoy in common with the emperor himſelf. Ludwig has a diſcourſe expreſs on the ſubject, wherein the controverſy is treated at large. De Jure Adleg. Ordinum, S. R. I. Ital. 1704. 4to. An extract of it is given in Mem. de Trev. loc. cit.

ADLOCUTION, ADLOCUTIO, in antiquity, is chiefly underſtood of ſpeeches made by Roman generals to their armies, to encourage them before a battle. We frequently find theſe *Adlocutions* expreſſed on medals, by the abbreviature ADLOCUT. COH. V. *Pitiſc.* Lex. Antiq. T. 1. p. 27. *Urſat.* de Not. Rom. p. 4.

The general is ſometimes repreſented as placed on a tribunal; often on a bank or mount of turf, with the cohorts ranged orderly round him, in *manipuli* and *turmæ*. The uſual formula in *Adlocutions* was, *fortis eſſet ac fidus*. V. *Lindenbrog.* ad Marculf. l. 15. *Walk.* on Coin, P. 1. c. 10. p. 157. *Lipſ.* de Mil. Rom. l. 4. dial. 9. *Pitiſc.* loc. cit.

ADMANUENSES, in antient law books, denote perſons who ſwore by laying their hands on the book. *Du Cang.* Gloſſ. Lat. T. 1. p. 61. *Hoffm.* Lex. Univ. T. 1. p. 60.

The word is compounded of the Latin, *ad*, to, and *manus*, hand.

In which ſenſe, *Admanuenſes* amount to the ſame with laymen, and ſtand oppoſed to clerks, who were forbid to ſwear on the book, their word being to be reputed as their oath; whence they were alſo denominated *fide digni*.

ADMINICULATOR, in eccleſiaſtical writers, denotes an antient officer of the church, whoſe buſineſs was to defend the cauſe of widows, orphans, and others deſtitute of help.

help [a]. The *Adminiculator* is the ſame with what is otherwiſe called *Advocate* of the poor [b].—[a *Magri* Vocab. Eccleſ. p. 5. *Spelm.* Gloſſ. p. 11. *Du Cange*, Gloſſ. Lat. T. 1. p. 62. *Hoffm.* Lex. Univ. T. 1. p. 60. [b] *Micræl.* Hiſt. Eccleſ. l. 2. ſect. 2. p. 454.] See ADVOCATE.

ADMINISTRATION, (*Cycl.*)—The *Adminiſtration* of government denotes, or ought to denote, the attendance of the truſtees of the people on the intereſt and affairs of the people [a]. Syneſius [b], the emperor Conſt. Porphyrogenitus [c], and others, have written on the *Adminiſtration* of government.—[a Cato's Letters, T. 1. p. 98. It. T. 2. p. 3, 64. [b] *Syneſ.* de Regno bene Gerendo; a notitia of which is given in *Fabric.* Bibl. Græc. T. 8. l. 5. c. 22. p. 222. [c] *Conſt. Porphyr.* de Adminiſtrando Imperio; a notitia of it is given in *Fabric.* loc. cit. T. 6. l. 5. §. 17. p. 486. and in Hiſt. Crit. Rep. Lett. T. 7. p. 226.]

The two criterions of a good *Adminiſtration* in England, according to Trenchard, are, the keeping the nation out of foreign broils, and paying off the public debts; the latter of which depends on the former. Cato's Lett. T. 1. Pref. p. 27.

ADMINISTRATION is alſo uſed by anatomiſts, for the manner of diſſecting the parts of the body, particularly the muſcles. V. *Goclic.* Hiſt. Anat. §. 4. p. 4 & 38.

In which ſenſe, *Adminiſtration* is ſynonymous with *Encheireſis*, *Exerciſe*, &c.

Anatomical *Adminiſtrations* are not to be learned by oral precepts [a], but require ocular inſpection.—Galen [b], Harvey, and others [c], have diſcourſes expreſs under the title of anatomical *Adminiſtrations*.—[a *Dougl.* Myogr. in Pref. p. 10. [b] *Fabric.* Bibl. Græc. T. 3. p. 529. [c] *Wood*, Faſt. Oxon. T. 2. p. 56.]

ADMINISTRATION is alſo uſed for a Spaniſh ſtaple at Calao in Peru, a city on the coaſts of the ſouth-ſea, where all ſhips, allowed to trade on the coaſt, are obliged to unload their European goods, and pay certain duties. *Savar.* Dict. Comm. T. 1. p. 24.

ADMINISTRATOR, (*Cycl.*) is ſometimes uſed for the preſident of a province. *Hoffm.* Lex. Univ. T. 1. p. 60.

In a like ſenſe, we alſo find the word *adminiſtrans* uſed for the *rector provinciæ* [a].—Sometimes alſo the word *adminiſtratio* is uſed by a figure in the ſame ſenſe; much as *regnum* is uſed for *rex*, &c [b].—[a *Briſſ.* de Verb. Signif. p. 17. [b] *Spartian.* in Peſcen. Nig. c. 7. *Lamprid.* in Alex. c. 30. *Salmaſ.* Not. ad loc. and *Hoffm.* loc. cit.]

ADMINISTRATOR is alſo uſed for the advocate of a church.

ADMINISTRATOR is alſo uſed for a perſon appointed to receive, manage, and diſtribute the revenues of a hoſpital, or religious houſe.

In which ſenſe, we read of the *Adminiſtrators* of the *Hotel-Dieu*; *Adminiſtrators* of the hoſpital of St. John, in the order of Malta, &c. Jour. des Scav. T. 83. p. 12.

ADMINISTRATOR is alſo uſed for a prince who enjoys the revenues of a ſecularized biſhopric.

Yet this title does not hold univerſally: the king of England, as elector of Brunſwic-Lunenburg, for inſtance, is not called *Adminiſtrator*, but duke of Bremen and Verden; and the king of Pruſſia is not *Adminiſtrator*, but duke of Magdeburg, and prince of Halberſtadt. *De la Croix*, Geogr. Univerſ. P. 1. p. 141. Act. Erud. Lipſ. 1693. p. 116.

ADMINISTRATOR is alſo uſed for the regent or protector of a kingdom, during the minority of its proper prince, or even a vacancy of the throne.

In which ſenſe, we ſay the *Adminiſtrator* of Wirtemberg, of Sweden, &c [a]. Ferdinand king of Arragon was made *Adminiſtrator* of the kingdom of Caſtile, during the minority of Charles V. by the intereſt of cardinal Ximenes [b].—[a *Richel.* Dict. T. 1. p. 32. [b] Mem. de Trev. an. 1704. p. 679.]

'Tis diſputed, whether *Adminiſtrators* may be properly ſaid to be ſovereigns [a], and whether women be capable of the office in France, without infraction of the Salic law [b]?—[a *Vitriar.* Inſt. Jur. Publ. l. 1. c. 3. qu. 38. [b] *Hotom.* Franc. Gall. c. 20. p. 128.]

The pope pretends to the *Adminiſtration* of the empire, during a vacancy, by cenſure, or ſuſpenſion. We find an antient papal bull dated thus:—*Domino noſtro Papæ Alexandro Romanum Imperium tenente, & Hederico III. regnante* [a]. Some will allow the emperor himſelf for no more than *Adminiſtrator* of the empire, or director of the diets thereof [b].—[a Bibl. Anc. Mod. T. 26. p. 22. [b] *Boecl.* Notit. Imper. l. 22. c. 3. p. 383.]

ADMINISTRATOR, in the Engliſh law. See the *Cyclopædia*; and *Raſt.* Term. de Ley, p. 11. ſeq. and *Cowel*'s Interpr. in voc.

The origin of *Adminiſtrators* is derived from the civil law. Their eſtabliſhment in England is owing to a ſtatute made in the thirty-firſt year of Edward III. Till then, no office of this kind was known, beſide that of executor: in caſe of a want of which, the ordinary had the diſpoſal of goods of perſons inteſtate, &c.

We find many things in law books concerning the office, powers, privileges, &c. of *Adminiſtrators*; the diſtribution they are to make of the effects of the defunct among the relations; the property they have in the goods; how far they are accountable; in caſe of miſmanagement, how they are to make ſatisfaction *de bonis propriis*: how to plead, ſue, and be ſued; for the detail of which, we muſt refer to the Abridgments of the law.

ADMINISTRATIVE *power*, is uſed by ſome in contradiſtinction to dominion, or power in propriety.

'Tis contraverted whether the power given to Auguſtus were only *adminiſtrative*, or proper and immediate. The affirmative is aſſerted by Cocceius, who inſiſts, that the people never diveſted themſelves of the ſovereign power, to confer it on that emperor. Bibl. Germ. T. 19. p. 163.

ADMINISTRATRIX, ſhe that hath goods and chattels of an inteſtate committed to her charge, as an *Adminiſtrator*. See ADMINISTRATOR, *Cycl.* and *Suppl.*

ADMIRAL, (*Cycl.*)—ADMIRAL, in conchyliology, the name given by authors to a very beautiful, and very precious ſhell, of the voluta kind. See Tab. of Shells, N°. 10.

Of theſe the curious reckon four ſpecies. 1. The grand *Admiral*. 2. The vice *Admiral*. 3. The orange *Admiral*. And, 4. The extra *Admiral*.

The firſt of theſe is the moſt eſteemed, and has been ſold, in Holland, for five hundred florins the ſingle ſhell. It is of a very elegant and bright white enamel, and is variegated with bands of yellow, repreſenting, in ſome degree, the colours of the flags of a man of war at ſea; hence it obtained its name. It is of a very curious ſhape, and particularly elegantly formed about the head; the clavicle being exerted. There runs along the center of the large yellow band in this ſhell, a fine denticulated line, which is its diſtinguiſhing character.

The vice *Admiral* is an elegant ſhell, but its head is leſs beautifully wrought than in the *Admiral*, and its broad band wants the dentated line, ſo remarkable in that.

The orange *Admiral* has more yellow than either of the others.

The extra *Admiral* has the ſame bands with theſe, but they run one into another, and form a more mixed clouding.

ADMONITION, in eccleſiaſtical affairs, a part of diſcipline much uſed in the antient church [a]. It was the firſt act, or ſtep, towards the puniſhment, or expulſion of delinquents. In caſe of private offences, it was performed according to the evangelical rule [b], privately: in caſe of public offence, openly, before the church. If either of thoſe took place, for the recovery of the fallen perſon, all further proceedings, in the way of cenſure, ceaſed: if they did not, recourſe was had to excommunication.—[a Vid. *Bingh.* Orig. Eccleſ. T. 2. l 16. c. 2. §. 6. p. 31. *Calv.* Inſt. l. 4. c. 12. §. 2. [b] Matth. *c.* xviii. *v.* 15. ſeq.]

By the antient canons, nine monitories, or *Admonitions*, at due diſtance, are required before excommunication. In ſome caſes, the interval might be abridged, and only a ſingle one given. There is a kind of tacit *Admonition* ſuppoſed, even before excommunications *ipſo facto*. Jour. des Scav. T. 58. p. 258.

In the reformed churches, *Admonition* is chiefly to be adminiſtred in and by the *conſiſtory*. Act. of Synod. Charent. c. 5. p. 42.

The Romans had a military puniſhment, called *Admonitio fuſtium*, reſembling, in ſome reſpects, our whipping, or laſhing, being performed with a vine-branch. V. *Sichterman.* Diſſ. de Pœn. Milit. Rom. c. 12. Jour. des Scav. T. 41. p. 480. *Briſſon.* de Verb. Sign. and *Calv.* Lex. Jur.

ADMONITION is alſo uſed, in writers of the barbarous age, for the citation, or ſummoning a perſon to appear in a court of juſtice. *Du Cang.* Gloſſ. Lat. T. 1. p. 63. See CITATION, SUMMONS, *&c.*

ADMORTIZATION, among feudal writers, the act of reducing lands to mortmain. See MORTMAIN.

Admortization denotes the acquiſition of lands, by a monaſtery, college, church, chapel, or even lay corporation; by which ſuch lands ceaſe to be ſubject to certain dues and incumbrances, to which other feuds are liable, as relief, ward, marriage, and the like. V. *Du Cang.* Gloſſ. Lat. T. 1.

Admortization cannot take place without the conſent of the prince, or lord of the feud; to whom ſatisfaction ordinarily is made for the loſs he ſuſtains, by a payment of a third part of the whole price.

ADNATA, (*Cycl.*)—The *Adnata* ſprings from the pericranium, and grows to the exterior part of the tunica cornea, ſerving to connect the whole eye both to the palpebræ, and and the adjacent bones, and thus keep it faſt in the ſocket: whence it is alſo called *conjunctiva*.

To leave room for the viſible ſpecies to paſs thro' it, a little round aperture is left in the fore part, called the ſight, thro' which the iris, and pupilla appear. *Drake* Anthropol. l. 3. c. 11. p. 324.

The *Adnata* abounds with veins and arteries, which, though ordinarily not viſible, are conſpicuous in ophthalmies, which are properly inflammations of this part. The academiſts *naturæ curioſi* give the hiſtory of a dropſy of the *Adnata*, and its cure. Ephem. Germ. Dec. 3. an. 3. Obſ. 3. p. 4.

ADNATA, or ADNASCENTIA, among gardeners, denote thoſe off-ſets, which by a new germination under the earth, pro-

ceed from the lilly, narciſſus, hyacinth, and other flowers; and afterwards grow to true roots. The French call them *Cayeux*, Stalks. *Mill.* Gard. Dict. in Voc.

ADNOUN, ADNOMEN, or ADNAME, is uſed by ſome grammarians to expreſs what we more uſually call an Adjective. *Low.* Gram. Lat. p. 3, and 8.

The word is formed by way of analogy, to Adverb, in regard Adjectives have much the ſame office and relation to nouns, that Adverbs have to Verbs.

Biſhop *Wilkins* uſes the word *Adname* in another ſenſe, *viz.* for what we otherwiſe call a Præpoſition. *Real.* Charact. P. 3. c. 3. §. 1. p. 309.

ADONAI, one of the names of God in ſcripture: this word ſignifies properly *my Lords*, in the plural number, as *Adoni*, ſignifies *my Lord*, in the ſingular number. The Jews, who either out of reſpect, or ſuperſtition, do not pronounce the name of *Jehovah*, read *Adonai* in the room of it, as often as they meet with *Jehovah* in the Hebrew text. But the antient Jews were not ſo nice; there is no law which forbids them to pronounce the name of God. *Calmet.* Dict. in voc. *Hoffm.* Lex. Univ. T. 1. p. 62.

Adonai, is originally Hebrew, but adopted into the Engliſh and other modern tongues.

The word literally ſignifies Lord, and accordingly is rendered in the Septuagint by Κυριος, and in the vulgate by *Dominus*. *Herbert.* Relig. Gent. c. 3. p. 28. Trev. Dict. Univ. T. 1. p. 137. ſeq.

Adonai amounts to the ſame with *Jehova* or *Elohim*.

We find great diſputes in authors, concerning the uſe and acceptation of the word *Adonai*; particularly, whether it is always read for the word *Jehovah*.

This has given riſe to two oppoſite ſects among *Hebraiſts*, called *Adoniſts* and *Jehoviſts*. V. Mem. de Trev. an. 1709. p. 1120.

The *Baſilidians* ſeem to have made a *magic* uſe of the word *Adonai*, which is frequently found inſcribed on their gems, or *Abraxas*. V. *Montfauc.* Palæogr. Græc. l. 2. c. 8. p. 179. See ABRAXAS.

Adonai is a name ſometimes alſo applied to creatures, viz. angels and men. In which ſenſe, it frequently occurs in the *Hebrew* bible.

Ordinarily where it ſtands for men, it is put in the ſingular number, *Adoni*; or if in the plural, it is diſtinguiſhed by a ſhort *a*; whereas, when ſpoken of God, it is always written *Adonai*, with a Kametz, or long *A*. V. Jour. des Scav. T. 44. p. 549. See alſo Nouv. Rep. Lett. T. 53. p. 600. and Act. Erud. Lipſ. ann. 1685. p. 202. Mem. de Trev. ann. 1711. p. 2072. *Du Pin*, Bibl. Proteſt. T. 2. p. 270, 329.

ADONIA, (*Cycl.*) in antiquity, ſolemn feaſts in honour of *Venus*, and in memory of her beloved *Adonis* [a].

The *Adonia* were otherwiſe called *Salambo* [b]. The abbé Banier has a memoir expreſs on the hiſtory of the *Adonia* [c].

The *Adonia* were obſerved with great ſolemnity by moſt nations [d], Greeks, Phœnicians, Lycians [e], Syrians, Egyptians, &c.

From Syria, they are ſuppoſed to have paſſed into India [f]: The prophet Ezekiel is underſtood to ſpeak of them [g]. They were ſtill obſerved at Alexandria, in the time of St. Cyril [h]; and at Antioch in that of Julian the apoſtate, who happened to enter that city during the ſolemnity, which was taken for an ill omen [i]. Some pretend to diſcover certain traces of them in the Perſian feaſt Noroux [k].—[[a] V. *Meurſ.* Græc. Ferial. Pott. Archæol. Att. l. 2. c. 20. *Le Clerc* Bibl. Univ. T. 3. p. 13. See alſo *Suid.* Lex. T. 1. p. 55. in Αδωνια and Αδωνις, *Kuſt.* Not. ad eund. *Morer.* Dict. T. 1. p. 40. ſeq. *Hoffm.* Lex. Univ. T. 1. p. 62. *Calm.* Dict. T. 1. p. 48. ſeq. *Bayle*, Dict. T. 1. p. 81. ſeq. [b] *Lamprid.* in Vita Heliog. c. 7. [c] Mem. Acad. Inſcript. T. 4. p. 138. ſeq. [d] *Bayle*, loc. cit. [e] Nouv. Rep. Lett. T. 9. p. 323. [f] Id. T. 8. p. 991. [g] Ezek. c. viii. v. 14. [h] *Cyr.* in Eſai. l. 2. [i] *Am. Marcell.* l. 22. c. 9. [k] Nouv. Rep. Lett. T. 18. p. 544.]

The *Adonia* laſted two days; on the firſt of which certain images of *Venus* and *Adonis* were carried, with all the pomp and ceremonies practiſed at funerals; the women wept, tore their hair, beat their breaſts, &c. imitating the cries and lamentations of Venus, for the death of her paramour. This lamentation they called Αδωνια or Αδωνιασμος. Lucian, ſays the river Byblos bore a part in the ceremony, turning red at that time out of grief. *Lucian* de Dea Syria. Nouv. Rep. Lett. T. 37. p. 327.

The Syrians were not contented with weeping, but gave themſelves diſcipline, ſhaved their heads, &c. Among the Egyptians, the queen herſelf uſed to carry the image of *Adonis* in proceſſion.

St. Cyril, mentions an extraordinary ceremony practiſed by the Alexandrians: a letter was written to the women of Byblos, to inform them that *Adonis* was found again, this letter was thrown into the ſea, which did not fail punctually to convey it to Byblos in ſeven days; upon the receipt of which the Byblian women ceaſed their mourning. *Cyr.* ubi Supr. the like is related by *Procop.* Gaz. in comm. in Eſai. c. 18. *Bayle*, loc. cit.

The Egyptian *Adonia* are ſaid to have been held in memory of the death of Oſiris; by others, in that of his ſickneſs and recovery [l]. Biſhop Patrick dates their origin from the ſlaughter of the firſt born under Moſes [m].—[[l] Bibl. Univ. T. 3. p. 13. [m] Exod. c. xii. v. 30. V. *Patric.* ad loc. Nouv. Rep. Lett. T. 39. p. 577.]

ADONIAS, in botany, a name given by the antient Greek writers to the Anemone, from the tradition of its having been produced out of the earth by the tears of Venus, when lamenting the death of *Adonis*.

The antients had a vaſt variety of this flower, and were very fond of it in their garlands; Pliny tells us, of a bulbous rooted Anemone; but that being mentioned by no other author, and being contrary to the ordinary courſe of nature, in the ſtructure of plants, it is probable that there never was any ſuch plant; but that it is either an error of Pliny in ſome of his tranſlations from the Greek writers, or elſe a mere child of his own imagination. Theophraſtus, ſpeaking of the flowers uſed in garlands, mentions the wild or mountain anemone, and the woolly bulbocodium. Pliny ſeems to have had this paſſage in his eye, in one part of his account of the anemone, and probably has careleſsly joined together the anemone and the bulbocodium, and made one imaginary plant from them both.

ADONIC, (*Cycl.*)—We meet with *Adonics* by themſelves without ſapphics, as alſo ſapphics without *Adonics*.—The ſcheme of the *Adonic* verſe is thus,

$$- \smile\smile \;\Big|\; \begin{matrix} - \smile \\ \text{or} \\ - - \end{matrix}$$

For an inſtance of *Adonic* verſes, take the following from Bœthius, de Conſol. Philoſ. l. 1. p. 67.

Gaudia pelle,
Pelle timorem,
Spemque fugato,
Nec dolor adſit:
Nubila mens eſt,
Vinctaque frænis,
Hæc ubi regnant.

ADONIDES, in botany, are thoſe writers, who have given hiſtories, or catalogues of the plants cultivated in ſome particular place. *Linnæus*, Fund. Bot. p. 1.

ADONION, αδωνιον, among the antient botaniſts, a ſpecies of ſouthernwood according to Gorræus, which uſed to be ſet in pots, and ſerved as an ornament for gardens. *Gorr.* Def. Medic.

ADONIS, in zoology, the name of a ſmall fiſh, of the anguilliform kind, of a cylindric ſhape, and about ſix inches long; it is of a gold colour, mixt with a greeniſh hue in ſome parts, and in others with a reddiſh. It has on each ſide, a white ſtrait line running from the gills to the tail. Its gills are very remarkably ſmall, and many have ſuppoſed thence that it had none. It is remarkable for ſleeping on the ſurface of the water, and near the ſhores; and Rondeletius affirms, that he has ſeen of them ſleeping upon the dry rocks. *Geſner* de Piſc. p. 15.

Mr. Ray ſuſpects this fiſh, which is alſo called *exocætus*, to be the ſame with the exocætus of Bellonius, or the gottorugine. See GOTTORUGINE.

ADONIS *Flos*, pheaſant's eye, or red maithers, in botany. The characters of this plant are, the leaves are like fennel, or chamomile; the flowers conſiſt of many leaves, which are expanded in form of a roſe; and the ſeeds are collected into oblong heads.

There are three varieties of this plant, commonly called, 1. The common red bird's eye, or roſe a ruby. 2. The long leaved yellow bird's eye. 3. The hellebore rooted pheaſant's eye; or, the fennel leaved black hellebore.

ADONIS *Potio*, an antient beverage or drink made of wine, mixed with flower of roaſted ador; the ſame with what was otherwiſe called cyceon. *Salmaſ.* Exerc. ad Solin. p. 328. *Cagnat.* Var. Obſerv. c. 23. p. 198. *Hoffm.* Lex. Univ. T. 1. p. 64.

ADONISTS, a ſect, or party among divines, and critics, who maintain, that the Hebrew points ordinarily annexed to the conſonants of the word Jehovah, are not the natural points belonging to that word, nor expreſs the true pronunciation of it, but are the vowel points, belonging to the words *Adonai* or *Elohim*, applied to the conſonants of the ineffable name Jehovah; to warn the readers, that inſtead of the word Jehovah, which the Jews were forbid to pronounce, and the true pronunciation of which had been long unknown to them, they are always to read *Adonai*.

In this ſenſe *Adoniſts* ſtands oppoſed to Jehoviſts.

Druſius, Amama, Capellus, Buxtorf, Alting and Reland, are the principal among the *Adoniſts*; a collection of whoſe writings on the ſubject, together with thoſe of their oppoſers, has been lately publiſhed by the author laſt mentioned. Decaſſ. Exercit. Philol. de vera Pronunc. Nom. Jehovah, Traj. ad Rhen. an. 1707. 8vo. Extracts of it are given in Jour. des Scav. T. 44. p. 537. ſeq. Mem. de Trev. an. 1714. p. 694.

ADOPTIANI, (*Cycl.*)—The *Adoptiani*, are ſometimes called *Adoptionarii*; ſometimes Feliciani, Elipandiani, and Urgelatani;

gelatani. Their doctrine is also called the *Spaniſh hereſy*, from the names, country, &c. of the founders, and chief advocates of it.

The *Adoptiani* differ from the *Bonoſiani* chiefly in point of time, theſe latter having maintained much the ſame doctrine of the ſonſhip of Chriſt.—Whether the *Adoptiani* are Neſtorians, is a queſtion ſtrongly controverted among eccleſiaſtical writers. V. *Vogt*. Bibl. Hiſt. Hæret.

ADOPTION, (*Cycl.*) — *Adoption* was allowed among the Greeks to ſuch as had no iſſue of their own; excepting thoſe who were not Κυριοι ἑαυτων, *their own maſters*, *e. gr.* ſlaves, women, madmen, infants, or perſons under twenty years of age; who being incapable of making wills, or managing their own eſtates, were not allowed to *adopt* heirs to them. Foreigners being incapable of inheriting at Athens, if any ſuch were *adopted*, it was neceſſary firſt to make them free of the city. The ceremony of *Adoption* being over, the *adopted* had his name inrolled in the tribe and ward of his new father; for which entry a peculiar time was allotted, viz. the feſtival Θαργηλια.

To prevent raſh and inconſiderate *Adoptions*, the Lacedemonians had a law, that *Adoptions* ſhould be tranſacted, or at leaſt confirmed, in the preſence of their kings. The children *adopted* were inveſted with all the privileges, and obliged to perform all the duties, of natural children; and being thus provided for in another family, ceaſed to have any claim of inheritance, or kindred, in the family which they had left, unleſs they firſt renounced their *Adoption*; which, by the laws of Solon, they were not allowed to do, unleſs they had firſt begotten children, to bear the name of the perſon who had *adopted* them: thus providing againſt the ruin of families, which would otherwiſe have been extinguiſhed by the deſertion of thoſe who had been *adopted* to preſerve them. If the children *adopted* happened to die without children, the inheritance could not be alienated from the family into which they had been *adopted*, but returned to the relations of the *Adopter*.

It ſhould ſeem, that by the Athenian law, a perſon, after having *adopted* another, was not allowed to marry, without permiſſion from the magiſtrate: in effect, there are inſtances of perſons, who being ill uſed by their *adoptive* children, petitioned for ſuch leave. However this be, 'tis certain ſome men married after they had *adopted* ſons: in which caſe, if they begat legitimate children, their eſtates were equally ſhared between the begotten and *adopted*. *Pott*. Archæol. Græc. l. 4. c. 15. p 342. ſeq.

Beſides the formalities preſcribed by the Roman law, divers other methods have taken place; which have given denominations to divers ſpecies of *Adoptions*, among the Gothic nations, in different ages. As,

ADOPTION *by teſtament*, that performed by appointing a perſon heir by will, on condition of his aſſuming the name, arms, &c. of the *Adopter*.

Of which kind, we meet with divers inſtances in the Roman hiſtory. Vid. *Cycl*.

Some reſemblance of it we alſo find in the hiſtory of our own nation and age.

ADOPTION *by baptiſm* is that ſpiritual affinity which is contracted by godfathers and godchildren in the ceremony of baptiſm.

This kind of *Adoption* was introduced into the Greek church, and came afterwards in uſe among the antient Franks, as appears by the capitulars of Charlemaign.

The preſents which the godfathers made in this ſolemnity, called *filiolatus*, *filiolatium*, and *filiolagium*, are proofs of this practice. In reality, the godfather was ſo far conſidered as *adoptive* father, that his godchildren were ſuppoſed to be entitled to a ſhare in the inheritance of his eſtate. *Du Cang*. Gloſſ. Lat. T. 2. p. 438. in voc. *Filiolus*.

ADOPTION *by arms* was when a prince made a preſent of arms to a perſon, in conſideration of his merit and valour [a].—Thus it was that the king of the Heruli was *adopted* by Theodoric; Athalaric by the emperor Juſtinian; and Coſroes, nephew of the king of Perſia, by the emperor Juſtin.

This method of *Adoption*, practiſed in Germany, was called *barbarous*, by way of oppoſition to the Roman cuſtom.

The obligation here laid on the *adoptive* ſon was, to protect and defend the father from injuries, affronts, &c [b].—And hence the ceremony of dubbing knights took its origin, as well as name [c].—[a Vid. *Ol. Magn*. Epit. l. 8. c. 2 and 3. p. 264. ſeq. *Jornand*. de Reb. Getic. p. 140. *Caſſiod*. Ep. 2. l. 4. b V. Obſerv. Halenſ. T. 2. obſ. 3. §. 2. p. 43. c V. *Seld*. Titl. Hon. p. 865.]

The barbarous *Adoption* differed from the Roman, in that the latter was performed by writing, the former by the delivery of military weapons. It may be added, that the barbarous kind ordinarily gave no right of inheritance; though among the Franks, thoſe adopted *per haſtam* did inherit. Obſerv. Hal. loc. cit.

ADOPTION *by hair*, *Adoptio per capillum*, or *crinem*, was performed by cutting off the hair of a perſon, and giving it to the *adoptive* father. Vid. *Cycl*.

ADOPTION *by matrimony* is the taking the children of a wife or huſband, by a former marriage, into the condition of proper or natural children [a]; and admitting them to inherit on the ſame footing with thoſe of the preſent marriage. This is a practice peculiar to the Germans; among whom, it is more particularly known by the name of *Einkindſchaft* [b], among their writers in Latin, by that of *unio prolium*, or union of iſſues. But the more accurate writers obſerve, that this is no *Adoption* [c].—[a *Hartung*. ubi ſupra, p. 18. Nov. Liter. Germ. an. 1709. p. 457. *Gail*. l. 2. obſerv. 125. *Wood*, Inſt. Imper. Law, l. 1. c. 2. p. 125. b Bibl. Jur. Imper. c. 4. poſ. 1. §. 14. p. 309. c See ADFILIATION.]

Among the Turks, by the law of Mahomet, *Adoption* is no impediment of marriage [c]. The ceremony of *Adoption* is performed by obliging the perſon *adopted* to paſs through the ſhirt of the *Adopter*. Hence, among that people, to *adopt* is expreſſed by the phraſe, *to draw another through my ſhirt* [d].—[c Koran. c. 33. See alſo *Sale*, Not. ad loc. d *D'Herb*. Bibl. Orient. p. 47. in voc. *Ahrat*.]

It is ſaid that ſomething like this has alſo been obſerved among the Hebrews; where the prophet Elijah *adopted* Eliſha for his ſon and ſucceſſor, and communicated to him the gift of prophecy, by letting fall his cloak, or mantle on him.

But *Adoption*, properly ſo called, does not appear to have been practiſed among the antient Jews: Moſes ſays nothing of it in his laws; and Jacob's *Adoption* of his two grandſons, Ephraim and Manaſſeh, is not ſo properly an *Adoption*, as a kind of ſubſtitution, whereby thoſe two ſons of Joſeph were allotted an equal portion in Iſrael with his own ſons.

Some have conſidered the law among the Iſraelites, by which one brother was under an obligation to marry the widow of another, who died without children, as a kind of *Adoption*; the children born of the ſecond marriage being looked upon as belonging to the deceaſed brother, and going by his name. V. *Calmet*'s Dict. in voc. *Adoption*.

'Tis the uſual opinion, that *Adoption* and emancipation are aboliſhed in all countries governed by cuſtomary laws; particularly in Germany. M. de Kulpis [e] has ſhewn the contrary; and as the *Adoption* of princes ſhould ſeem moſt liable to ſuch an abolition, in regard *Adoptions* are only fictions of the civil law, which ſeems hereby to infringe on the natural law, to which alone princes are ſubject, that author gives a curious detail of inſtances of ſuch *Adoptions* of princes, both in antient and modern hiſtory, among the Jews, Romans, Goths, Franks, Germans, Spaniards, Italians, &c. In effect, the ſeveral pretenſions of the French, Spaniards, and houſe of Auſtria, to the kingdom of Naples, are founded on no other than the ſucceſſive *Adoptions*, which their laſt queen Joan made of princes of the houſe of Anjou and Arragon, for her heirs and ſucceſſors [f].—[e Vid. *Kulp*. Diſſ. Acad. 4. de Adoptione & Emancipatione Principum. Jour. des Scav. T. 34. p. 323. ſeq. f Mem. de Trev. an. 1721. p. 1438. ſeq.]

Adoption is ſtill ſaid to ſubſiſt, in ſome meaſure, even among private perſons in Xaintogne, and ſome provinces of France. *Trev*. Dict. Univ.

In our own hiſtory, king Stephen, to put an end to the diſputes about the ſucceſſion, *adopted* Henry II. as his ſon and ſucceſſor, in excluſion of his own ſon William, who was induced by oath to acknowledge the new right of ſucceſſion [g]; the charter of which *Adoption* is ſtill extant in Brompton. Queen Elizabeth alſo promiſed to *adopt* Mary queen of Scots, and procure her to be declared heir aparent to the Engliſh throne by act of parliament, on condition of her marrying the earl of Leiceſter [h].—[g *Bromp*. Coll. 1037. Bibl. Anc. Mod. T. 21. p. 149. h *Mackenz*. Scot. Writ. T. 3. p. 149.]

ADOPTION is alſo uſed, in theology, for a federal act of God's free grace; whereby thoſe that are regenerate by faith, are admitted into his houſhold, and entitled to a ſhare in the inheritance of the kingdom of heaven. V. *Pfaff*. Inſt. Theol. P. 2. c. 8. §. 4. p. 477.

ADOPTION is ſometimes alſo uſed, in ſpeaking of the antient clergy, who had a cuſtom of taking a maid or widow into their houſes, under the denomination of an *adoptive* or ſpiritual ſiſter, or niece. *Du Cang*. Gloſſ. Lat. T. 1. p. 66. See ADOPTIVE.

ADOPTION is alſo uſed in ſpeaking of the admiſſion of perſons into certain hoſpitals, particularly that of Lyons; the adminiſtrators whereof have all the power and rights of parents over the children admitted. Mem. de Trev. 1713.

ADOPTION is alſo uſed for the reception of a new academy into the body of an old one.

In which ſenſe, *Adoption* amounts to much the ſame with *Incorporation*.

The French academy of Marſeilles was adopted by that of Paris; on which account, we find a volume of ſpeeches extant, made by ſeveral members of the academy of Marſeilles, deputed to return thanks to that of Paris, for the honour. V. Bibl. Franc. Sept. 1726. p. 203. ſeq.

In a ſenſe, not unlike this, *Adoption* is alſo applied by the Greeks, to the admitting a monk, or brother, into a monaſtic community; ſometimes called ſpiritual *Adoption*. V. *Du Cang*. Gloſſ. Græc. in voc. Αδελφοποια, Αδελφοποιησις, Αδελφοποιτια, Αδελφοῖης πνευματικη.

ADOPTIVE, (*Cycl.*)—In eccleſiaſtical writers we find *adoptive* women, or ſiſters, *adoptivæ fœminæ*, or *ſorores*, uſed for thoſe

handmaids of the antient clergy, otherwiſe called *ſubintroductæ*, and Συνεισακται. The third canon of the council of Nice is entitled *de ſubintroductis*, i. e. *adoptivis ſororibus*. Obſerv. Halenſ. T. 6. p. 244. *Du Cange*, Gloſſ. Lat. T. 1. p. 66.

ADOPTIVE *arms*, are thoſe which a perſon enjoys, by the gift or conceſſion of another, and to which he was not otherwiſe entitled.

Theſe are otherwiſe called *arms of adoption*; and by this ſtand contradiſtinguiſhed from *arms of alliance*, which the bearers, as general heirs, may carry, or not carry, at pleaſure: whereas *arms of adoption* are indiſpenſably required by the adopter to be marſhalled with the perſon's own, as a condition of ſome honour, or eſtate left him. *Niſbet* on Herald. c. 8. p. 112.

ADOPTIVE is alſo uſed to expreſs a thing borrowed or taken from another. In which ſenſe, we ſometimes meet with *adoptive hair*, by way of oppoſition to natural hair; and *adoptive gods*, by way of contradiſtinction to domeſtic ones.

Clemens Alexandrinus makes uſe of an odd argument againſt the lawfulneſs of *adoptive* hair, viz. that it prevents the prieſt's benediction, by laying his hands on the head, from taking effect on the proper ſubject, the bleſſing, in this caſe, being tranſmitted to him to whom the hair naturally belonged. Jour. des Scav. T. 60. p. 523.

The Romans, notwithſtanding the number of their domeſtic, had their *adoptive* gods, taken chiefly from the Egyptians: ſuch were Iſis, Oſiris, Anubis, Apis, Harpocrates, and Canopus. Many private perſons, on their own authority, erected temples to theſe, which were afterwards demoliſhed by order of the ſenate; and being reſtored at the ſolicitation of the augurs, were again demoliſhed, and again reſtored by Auguſtus. Mem. de Trev. 1706. p. 1747.

ADORATION, (*Cycl.*)—The Romans practiſed *Adoration* at ſacrifices, and other ſolemnities; in paſſing by temples, altars, groves, &c. at the ſight of ſtatues, images, or the like, whether of ſtone or wood, wherein any thing of divinity was ſuppoſed to reſide. Uſually there were images of the gods placed at the gates of cities, for thoſe who went in, or out, to pay their reſpects to. *Pitiſc.* Lex. Ant. T. 1. p. 29. ſeq. *Turneb.* Adverſ. l. 18. c. 6. *Muret.* Var. Lect. l. 10. c. 1. *Kipping.* Antiq. Rom. l. 1. c. 9. §. 5. *Salmuth.* ad Pancirol. p. 433.

In the ſymbols of Pythagoras, *Adoration* is enjoined to be performed in a ſitting poſture, genuflexion being then unknown. Nouv. Rep. Lett. T. 39. p. 294.

The ceremony of *Adoration* among the antient Romans was thus: the devotee having his head covered, applied his right hand to his lips, the fore-finger reſting on the thumb, which was erect, and thus bowing his head, turned himſelf round from left to right [a]. The kiſs thus given was called *oſculum labratum*: for ordinarily they were afraid to touch the images of their gods themſelves with their profane lips. Sometimes, however, they would kiſs their feet, or even knees, it being held an incivility to touch their mouths: ſo that the affair paſſed at ſome diſtance. Others pretend, that they firſt ſtretched out the hand, and afterwards drew it back to their lips; but it rather appears, that the contrary order was obſerved [b]. Saturn, however, and Hercules, were *adored* with the head bare; whence the worſhip of the laſt was called *inſtitutum peregrinum*, and *ritus Græcanicus*, as departing from the cuſtomary Roman method, which was to ſacrifice and *adore*, with the face veiled, and the cloths drawn up to the ears, to prevent any interruption in the ceremony, by the ſight of unlucky objects [c].—[[a] *Salmaſ.* Exerc. ad Solin. p. 936. [b] *Pitiſc.* loc. cit. *Plin.* Hiſt. Nat. l. 28. c. 2. *Apul.* Apol. p. 496. *Lipſ.* Elect. n. 6. [c] *Hoffm.* Lex. Univ. T. 1. p. 63. *Danet.* Lex. Ant. in voc. *Plut.* Queſt. Rom. 11. & 13. *Serv.* ad 3 Æneid. v. 407.]

Sometimes alſo proſtration, or falling on the face, and ſometimes kneeling, were practiſed; ſometimes they turned towards the ſun, and ſometimes to the eaſt. V. Act. Erud. Lipſ. ann. 1694. p. 331.

Other circumſtances of *Adoration* were the putting crowns, garlands, and the like, on the ſtatues or images *adored*; ſitting down by them, praying them, in ſoft trembling murmurs, to be favourable, *faveas mihi*.

The Gauls, inſtead of turning about to the right hand, after the Roman manner, thought it more religious to turn to the left. *Plin.* Hiſt. Nat. T. 2. l. 28. c. 2. p. 444. *Salmaſ.* Exerc. ad Solin. p. 236.

The Jewiſh manner of *Adoration* was by proſtration, bowing, and kneeling [d]. Pinchon has a diſcourſe expreſs on the form of the Jewiſh *Adoration* [e]. The Chriſtians adopted the Grecian rather than the Roman method, and *adored* always uncovered. The ordinary poſture of the antient Chriſtians was kneeling [f], but on Sundays, ſtanding. In this they conformed to the heathens, that a peculiar regard was had to the Eaſt, to which point they ordinarily directed their prayers; which occaſioned a belief among the heathens, as if they *adored* the ſun. Something of this uſage is ſtill retained, as appears by the poſition of our churches. A late author has diſcovered an error of the builders in this reſpect; many of our antient churches being found to vary ſeveral degrees from the true eaſt and Weſt [g].—[[d] Mem. de Trev. an. 1705. p. 530. [e] *Pinchon* de Form. Adorat. Ind. [f] Bibl. Anc. Mod. T. 4. p. 23. [g] *Plot*, Nat. Hiſt. of Stafford. c. 9. §. 55. p. 362. ſeq.]

ADORATION is more particularly uſed for the act of praying, or preferring our requeſts, or thankſgivings to God.

Brouër a Nyedek has a diſſertation expreſs on antient and modern *Adorations*. De Populorum Veter. ac Recent. Adorationib. Amſt. 1713. 8vo. Extracts of it are given in Journ. des Scav. T. 54. p. 425. ſeq. & Act. Erud. Lipſ. ſup. 6. p. 80. ſeq. Mem. de Trev. 1715. p. 207.

ADORATION is alſo uſed for certain extraordinary civil honours, or reſpects, which reſemble thoſe paid to the deity, yet are given to men. *Calm.* Dict. T. 1. p. 51. Trev. Dict. Univ. Mem. de Trev. an. 1706. p. 1030.

We read of *Adorations* paid to kings, princes, emperors, popes, biſhops, abbots, &c. *Adorations* paid to the purple, to the perſon. *Adoration* by kneeling, by falling proſtrate, kiſſing feet, hand, garment, &c.

The Perſian manner of *Adoration*, introduced by Cyrus, was by bending the knee, and falling on the face at the prince's feet, ſtriking the earth with the forehead, and kiſſing the ground. This ceremony, which the Greeks called προσκυνειν, Conon refuſed to perform to Artaxerxes, and Caliſthenes to Alexander the great, as reputing it impious and unlawful.

The *Adoration* performed to the Roman and Grecian emperors, conſiſted in bowing, or kneeling at the prince's feet, laying hold of his purple robe, and preſently withdrawing the hand, and clapping it to the lips. Some attribute the origin of this practice to Conſtantius. It was only perſons of ſome rank or dignity that were entitled to the honour. Bare kneeling before the emperor to deliver a petition, was alſo called *Adoration*. V. *Hoffm.* Lex. Univ. T. 1. p. 63. *Pitiſc.* Lex. Antiq. T. 1. p. 29. ſeq. *Calv.* Lex. Jur. p. 43. *Briſſ.* de Verb. Signif. p. 21. ſeq. and the authorities there cited.

The practice of *Adoration* may be ſaid to be ſtill ſubſiſting in England, in the ceremony of kiſſing the king's, or queen's hand, and in ſerving them at table, both being performed kneeling.

ADORATION is more particularly uſed for kiſſing one's hand in preſence of another, as a token of reverence. Hiſt. Acad. Inſcr. T. 2. p. 104.

The Jews *adored* by kiſſing their hands, and bowing down their heads; whence in their language *kiſſing* is properly uſed for *Adoration*. *Calm.* Dict. Bibl.

ADORATION is alſo uſed among Roman writers, for a high ſpecies of applauſe given to perſons, who had ſpoken or performed well in public. See ACCLAMATION.

We meet with *Adoration* paid to orators, actors, muſicians, &c. The method of expreſſing it was, by riſing, putting both hands to their mouth, and then returning them towards the perſon intended to be honoured. Hiſt. Acad. des Inſcr. T. 1. p. 142.

ADORATION is alſo uſed in the court of Rome, for the ceremony of kiſſing the pope's feet. Jour. des Scav. T. 73. p. 370.

The introduction of *Adoration* among the Romans is aſcribed to the low flattery of Vitellius, who upon the return of C. Cæſar from Syria, would not approach him otherwiſe than with his head covered, turning himſelf round, and then falling on his face. Heliogabalus reſtored the practice, and Alexander Severus again prohibited it. Diocletian redemanded it, and it was, in ſome meaſure, continued under the ſucceeding princes, even after the eſtabliſhment of Chriſtianity, as Conſtantine, Conſtantius, &c. It is particularly ſaid of Diocletian, that he had gems faſtened to his ſhoes, that divine honours might be more willingly paid him, by kiſſing his feet. The like uſage was afterwards adopted by the popes, and is obſerved to this day. Theſe prelates finding a vehement diſpoſition in the people to fall down before them, and kiſs their feet, procured crucifixes to be faſtened on their ſlippers; by which ſtratagem, the *Adoration* intended for the pope's perſon, is ſuppoſed to be transferred to Chriſt. Divers acts of this *Adoration* we find offered even by princes to the pope. V. *Baldwin.* de Calceo, c. 27. Oeuvr. des Scav. Oct. 1700. p. 471.

Proteſtant authors have not failed to take occaſion, from this ceremony, of charging the popes with exceſſive pride, and even impiety, as if they laid claim to divine honours. Yet we are told, that in the antient church the ſame ceremony was practiſed to all biſhops; people kiſſed their feet, and ſaluted them with the phraſe προσκυω σε, *I adore thee* [b]. Roman catholics, in their turn, have brought the like imputation on ſome of their oppoſers. One of the articles againſt Varennes, that ſcourge of the tyranny, and concubinage of the clergy, was, that he made himſelf be *adored* as a god [c]. —[[a] *Heideg.* in Apoc. Proph. de Babyl. diſſ. 10. p. 442. ſeq. Nouv. Rep. Lett. T. 10. p. 636. [b] *Fileſan.* ap. Du Pin, Bibl. Eccleſ. T. 17. p. 117. [c] Bibl. Germ. T. 4. p. 156.]

ADORATION is alſo particularly uſed for the ceremony of owning, or paying homage to a new elected pope.

Adoration properly is payed only to the pope when placed on the altar, in which poſture the cardinals, conclaviſts, alone, are admitted to kiſs his feet. The people are afterwards admitted to do the like at St. Peter's church: the ceremony is deſcribed at large by Guicciardin. Nouv. Rep. Lett. T. 48. p. 424. Hiſt. Ital. l. 1.

In a like ſenſe, the ceremony of ſaluting the new abbot elect of St. Genevieve, is alſo called *Adoration*. V. Act. Erud. Lipſ. 1724.

ADORATION is alſo uſed for a method of electing a pope without ſcrutiny, or voting. See the *Cyclopædia*.

ADORATION is of divers kinds, and qualities; ſupreme and ſubordinate, mediate and immediate, abſolute and relalative, internal and external, ſecret and open.

External ADORATION is that performed and ſignified by ſome outward ceremonies. This coincides with what is otherwiſe called ritual *Adoration*.

Internal ADORATION, that conſiſting in the ſincere diſpoſition of mind to honour and obey God. This coincides with ſpiritual *Adoration*, called alſo *Adoration* in ſpirit and in truth.

Solemn ADORATION, that performed in public, with ſtated ceremonies preſcribed by authority. In oppoſition to private, or tacit, or implicit *Adoration*.

The ſolemn *Adoration* of the hoſt, by elevation and other ceremonies now in uſe, is allowed to be a modern thing, unknown before the 13th century, even by the biſhop of Meaux; tho' he aſſerts the internal, or eſſential part to have obtained in all ages; and to be implied in theſe expreſſions of the fathers, that the euchariſt is a terrible and adorable myſtery. V. Ouvr. des Scav. Oct. 1690. p. 73.

Supreme ADORATION, the higheſt degree of religious honour or worſhip rendered to a being, as ſuppoſing him the ſupreme God; in oppoſition to ſubordinate worſhip given to inferior beings [a]. The former amounts to the ſame with what ſome call *latria*, and ſtands oppoſed to *dulia* and *hyperdulia*. Arians and Socinians maintain, that *Adoration* abſolutely ſupreme, is due to none but God the Father. [b] Proteſtants charge Catholics with rendering ſupreme *Adoration* to images, &c. [c]—[a *Wendel.* Theol. Chriſt. l. 2. c. 4. p. 823. [b] Bibl. Choiſ. T. 25. p. 187. Ibid. T. 26. p. 430. ſeq. [c] Jour des Scav. T. 33. p. 961.]

Abſolute ADORATION, that rendered immediately to a being in conſideration of his own eſſential perfections, and terminating in himſelf. This coincides with immediate *Adoration*, and ſtands oppoſed to relative or mediate *Adoration*. The *Adoration* of God the Father is by ſome held alone abſolute, that of the ſon and holy ghoſt, ſay they, ought only to be relative to the Father, and centre or terminate in him [b]. We are to adore the Father, in the Son, by the Holy Ghoſt. Olearius has a diſſertation expreſs on the *Adoration* of the Father, by the Son [c].—[a Nouv. Rep. Lett. T. 40. p. 134. ſeq. [b] Journ. Liter. T. 1. p. 282. Mem. de Trev. An. 1713. p. 1295. [c] See an extract of it in Nouv. Liter. Germ. An. 1709. p. 72.]

Relative ADORATION is that worſhip paid to an object, as belonging to, or repreſentative of another.

In which ſenſe the Romaniſts profeſs to adore the croſs, not ſimply or immediately, which they allow would be idolatry, but in reſpect of Jeſus Chriſt, whom they ſuppoſe to be on it. The Jeſuits in China carry an image of Chriſt under their cloaths, and to this refer mentally the public *Adorations* they offer to Chacinchoan. V. *Paſcal.* Lettr. Provinc. 5.

Proteſtants generally hold the *Adoration* of the hoſt to be idolatrous. Indeed, if it be founded on a tranſubſtantiation of the ſpecies, as ſeveral of the Romiſh communion have allowed, the adorers can have but little ſecurity of its not being idolatry; ſince the miſſal mentions ſome 20 caſes, wherein it may be doubted, whether the converſion be really effected on account of defects in the matter, form, intention, or ordination of the miniſter. This charge others would evade, by founding the *Adoration*, not in the ſuppoſition of a tranſubſtantiation, but of a real preſence. It is ſufficient ſay they, there be any preſence of Chriſt to render the adoration legitimate. V. Work. of Learn. Vol. 2. p. 719.

Perpetual ADORATION is a kind of ſociety or aſſociation of devout perſons eſtabliſhed in Romiſh countries, who take their turns to pray before the euchariſt, regularly relieving each other, ſo that the ſervice never ceaſes day nor night.

The members of the perpetual *Adoration* anſwer to the Acœmeti in the eaſtern church. See ACOEMETI.

We find ſocieties under this denomination in France, Germany, Italy, &c. Thoſe in France are a ſort of parochial congregations. Each perſon is to pray an hour with a taper before him [a]. F. Bern. Cavalieri, preacher to the emperor, introduced the like uſage at Vienna, Milan, and ſeveral other cities, which ſpread ſo much, that in a few years, there were no leſs than 40000 members [b]. —[a V. *Aubert*, ap. *Richelet*. Dict. T. 1. p. 34. [b] Giorn. de Letter. d'Ital. T. 29. p. 377.]

Barbarous ADORATION is a term uſed in the laws of king Canute, for that performed after the heathen manner, who adored idols. *Du Cange*, Gloſſ. Lat. T. 1. p. 66.

The Romiſh church is charged with the adoration of ſaints, martyrs, images, crucifixes, relicks, the virgin and the hoſt; all which by proteſtants are generally aggravated into idolatry [a], on a ſuppoſition, that the honour thus paid to them is abſolute and ſupreme, called by way of diſtinction *Latria*, which is due only to God. Roman catholics on the contrary, explain them, as only a relative or ſubordinate worſhip called *Dulia* and *Hyperdulia*, which terminates ultimately in God alone [b].—[a V Fabric. Bibl. Ant. c. 3. §. 28. p. 281. Act. Erudit. Lipſ. An. 1688. p. 573. [b] V. Jour. des Scav. T. 33. p. 961. Id. T. 16. p. 576. *Du Pin.* Bibl. Eccleſ. T. 18. p. 162.]

May not the ſame be ſaid of the idol worſhip of the antient Heathens?

The Phænicians adored the winds, on account of the terrible effects produced by them; the ſame was adopted by moſt of the other nations, Perſians, Greeks, Romans, &c. Mem. de Liter. de Saleng. Contin. T. 1. P. 1. p. 51. ſeq.

The Troglodytes adored tortoiſes, as ſomething peculiarly ſacred [a]; ſeveral people adored weapons, and inſtruments of war. The Scythians, &c. adored ſwords, the Romans axes, the Arabs ſtones [b], the Indians adored vipers [c], the Bengaleſe [d] and Canadeſe the ſun, the latter of which nations is alſo ſaid to adore the croſs [e]. The Manta, a Peruvian people in the iſland of Puna, antiently adored a huge emerald, of the bigneſs of an oſtrich's egg, by offering to it other emeralds of a leſſer ſize. All which the prieſts kept for their own uſe; the doctrine, as Garcilaſſo obſerves, being founded on their avarice [f].—[a *Plin.* Hiſt. Nat. T. 1. l. 9. c. 10. p. 504. [b] Mem. de Trev. An. 1703. p. 2035. [c] Journ. des Scav. T. 45. p. 538. [d] Id. Tom. 39. p. 526. [e] Bibl. Univ. T. 23. p. 87, 92. *Le Clerc*, Relat. de la Gaſp. ap. Nouv. Rep. Lett. T. 23. p. 92. [f] *Garcil. de la Vega.* Hiſt. des Yncas, ap. Jour. des Scav. Juin. 1707. p. 457, 458.]

Several antient fathers, particularly Juſtin, Origin, and Clemens Alexandrinus aſſert, that God not only permitted the heathens to adore the ſun and ſtars, but that theſe luminaries were even given them for that purpoſe, to be the object of religious worſhip, prevent their falling into atheiſm, and ſerve as means to raiſe them to the true God [g]. This doctrine is founded on a paſſage in Moſes [h], where the Jews are forbid ſuch *Adoration*, as if the prohibition had been given to the Jews only, excluſive of the Gentiles.—[g *Whitby* Diſſ. de S. Script. Interpr. Sec. 5. p. 35. Jour. Liter. T. 6. p. 96. ſeq. Mem. de Trev. An. 1719. p. 82. [h] Deut. c. iv. v. 9.]

The Perſians chiefly paid their *Adorations* to the ſun and fire, ſome ſay alſo to rivers, the wind, &c. The motive of adoring the ſun was the benefits they received from that glorious luminary [i], which of all creatures has doubtleſs the beſt pretenſions to ſuch homage; the inſtitution of the fire-worſhip is uſually referred to Zoroaſter. The retainers to it are called Ignicolæ; by the Perſians, Ghebr, Ateſch, Pereſh [k].—[i *Le Vayer*, Dial. Scept. p. 290. [k] *De Herbel*, Bibl. Orient. p. 144. 726. in Voc. *Ateſch*, *Pereſh*.]

Dr. Hyde reduces the Perſian fire-worſhip to a ſubordinate kind of honour, or ſervice, which he calls pyrodulia, defending that people from any charge of pyrolatria, or idolatry of fire [l]. A late traveller into theſe parts does the ſame [m]. —[l *Hyde*, de Relig. Vet. Perſ. ap. Nouv. Rep. Lett. T. 22. p. 159. [m] *Gemelli Careri*, Voyage, ap. Jour. des Scav. T. 67. p. 473.]

The Greeks and Romans alſo adored fire under the name of Veſta. Pliny mentions the method of adoring lightening, which was by poppiſms, or gentle clappings of the hands. *Plin.* Hiſt. Nat. T. 2. l. 28. c. 2. alſo *Hardouin.* Not. ad loc.

The Jews have been charged by Heathens with adoring the vine [n], an aſſes head, &c. By Chriſtians, with adoring the book of the law; a charge which one of their rabbies has been at the pains to defend them from [o]. The *Adoration* of the golden calf, into which they fell in the wilderneſs, ſeems to have been borrowed, like many other of their ceremonies from the Egyptians [p].—[n *Gaffar.* Curioſ. Inv. in Pref. [o] *Manaſſ. ben Iſrael.* Vindic. Jud. [p] Bibl. Choiſ. T. 3. p. 160.]

The Egyptians are ſaid to have paid *Adoration* to divers animals, plants, fiſhes, &c. the crocodile, the ibis, onions, and I know not what. But thoſe were only ſymbolical, or relative acts of homage; they adored the ſun in a more peculiar manner, under the name of Oſiris. V. Ouvr. des Scav. Oct. 1699. p. 468.

It is diſputed, whether the Chineſe pay divine, or only civil honours to the ſtatues of Confucius, and their anceſtors. That people however, appear to adore heaven; whence the inſcription in all their temples, and which even the Chriſtians are ſaid to have retained in their churches, *King Tien i. e.* adore heaven. V. Nouv. Rep. Lett. T. 18. p. 665.

The Indians are ſaid to adore the devil. Some charge the ſame on the Bramins. V. Bibl. Univ. T. 6. p. 269. Hiſt. des Bramins, P. 2. c. 16. Bibl. Choiſ. T. 13. p. 202.

ADOSCULATION is uſed, by ſome naturaliſts, for a ſpecies of copulation, or impregnation, by mere external contact between the genital parts of the two ſexes, without intromiſſion. *Grew*, Anat. of Plants, c. 5. §. 9.

Such is that of plants, by the falling of the *farina fœcundans* on the piſtil, or uterus.

Divers kinds of birds and fiſhes are alſo impregnated by *Adoſculation*. V. *Grew*, loc. cit.

ADOSSEE is uſed, in heraldry, to denote two figures or bearings, placed back to back. Trev. Dict. T. 1. p. 143.

The arms of the duchy of Bar are two bars *adoſſee*. Dict. de l'Acad. Franc. T. 1. p. 25.

ADOXA, in botany, a name given by Linnæus to the genus of plants, called by other writers *Moſchatellina*. *Linnæi*, Gen. Plant. p. 172. See MOSCHATELLINA.

ADPERCEPTION, in the Leibnitzian ſtyle, denotes the act whereby the mind becomes conſcious to its ſelf of a perception. *Thummig*. Inſt. Pſych. §. 16.

ADQUISITUS, in ſome antient Latin writers of muſic, is uſed for the note, or chord, which the Greeks called προσλαμβανομενος. See DIAGRAM.

ADRASTIA, or ADRASTEA, in antiquity, an epithet given to the goddeſs Nemeſis, or Revenge. Vid. *Strab*. Geogr. l. 13. *Suid*. T. 1. p. 56. in voc. Αδραστια. *Kuſt*. Not. ad eund. *Hoffm*. Lex. Univ. T. 1. p. 64.

It was taken from king Adraſtus, who firſt erected a temple to that deity.

Authors make frequent appeals to the law of Nemeſis Adraſtia, which none may eſcape [a]; by which law, is meant no other than the irreſiſtible force of the cauſe of truth, and a right of vindicating the luſtre of it from all its adverſaries; eſpecially in aſcertaining the cauſes of things; ſo as at length to extort a confeſſion from the adverſaries themſelves [b].—[[a] V. *Gal*. de Uſu Partium, l. 6. c. 12. *Hoffm*. ad Gal. n. 374. [b] *Eraſ*. Adag. Chil. 11. cent. 6. ad 38. *Hoffm*. Lex. Univ. T. 1. p. 64.]

ADRASTIA *certamina*, in antiquity, a kind of Pithian games, inſtituted by Adraſtus king of Argos, in the year of the world 2700, in honour of Apollo, at Sicyon. *Heder*. Schul. Lex. p. 64.

Theſe are to be diſtinguiſhed from the Pithian games celebrated at Delphi.

ADRIANISTS, a branch of Anabaptiſts, the diſciples of Adrian Hamſtedius, in the ſixteenth century, who taught firſt in Zealand, and afterwards in England. Trev. Dict. Univ. T. 1. p. 146. ſeq. *Hoffm*. Lex. Univ. T. 1. p. 65. See ANABAPTIST, *Cycl*.

The *Adrianiſts*, beſides the common dogma of Anabaptiſm, are ſaid to have had ſome peculiar notions relating to the perſon of Chriſt.

Theodoret alſo mentions another elder ſect of *Adrianiſts*, a branch of the Simonians, or followers of Simon Magus, not ſpoken of by any other antient author. 'Tis probable they took their name from that of ſome diſciple of Simon. Dict. Trev. loc. cit.

ADRIUNE, in botany, a name given by the Arabian writers to the plant known at this time by the name of *Cyclamen*, or ſowbread. It has been ſuppoſed by many, that they uſed the word *artanita*, as we do, for a name of this plant; but though the word *arthanita*, or *harthanithe*, is frequent in their works, it appears, on enquiry, that it was the name of a very different plant; a kind of thiſtle, uſed in the cleaning of wooll, and called by the Greeks *ſtruthium*, and by the Romans *lanaria herba*. There is indeed a chapter of Aviſenna, in which the virtues of the *cyclamen*, and the deſcription of the *leontopetalon* of Dioſcorides, are adapted to the *arthanita*; but that author himſelf ſees the error of this, and lays the fault upon the tranſlator of Dioſcorides into Arabic, whoſe verſion both he and Serapion uſed inſtead of the original, and confeſſes that *arthanita* was at that time the name of the *Struthium*, and *Adriune* the name of the *Cyclamen*. *Aviſenna*, l. 2. c. 62.

ADROP, among alchemiſts, denotes either that preciſe matter, as lead, out of which the mercury is to be extracted for the philoſophers ſtone; or it denotes the philoſophers ſtone itſelf, inaſmuch as this is alſo called *Saturn* and *plumbum*, or lead. *Caſtellus*, in voc.

ADSCRIPTS is uſed, by ſome mathematicians, for the natural tangents, called alſo, by Vieta, *Proſines*. *Mackenzie*'s Scot. Writ. Vol. 3. p. 520.

ADSIDELA, in antiquity, a table at which the flamens ſat, when they offered ſacrifice. See FLAMEN, SACRIFICE.

ADSIGNIFICATION, among ſchoolmen, the act of noting, or ſignifying a thing, with the addition of the time when it happened. *Chauv*. Lex. Phil. p. 16. in voc. *Adſignificare*.

ADUAR, a kind of ambulatory village, wherein Arab families inhabit, in a ſort of tents, moveable on occaſion, as forage and proviſions ſuit. Some alſo write the word *Adouar*, and *Adouard*. There are reckoned thirty thouſand *Aduars* in the kingdom of Algiers. V. Jour. des Scav. T. 22. p. 638. *Steph*. Span. Dict. in voc.

ADVENTITIA *cœna*, in antiquity, an entertainment made by the friends of a perſon who had been travelling, by way of welcome at his return. This was otherwiſe called *cœna adventoria*. V. *Pitiſc*. Lex. Ant. voc. *Cœna*.

ADVENTITIOUS, (*Cycl*.)—*Adventitious foſſils*, are foreign or extraneous ones, found incorporated with others, to which they do not properly belong. Such are ſea-ſhells, &c. *Woodw*. Hiſt. Foſſ. T. 1. Pref. p. 16.

ADVENTURE, (*Cycl*.)—A Bill of *Adventure* is a writing ſigned by a merchant, atteſting that the property of goods ſhipped, or ſent away in his name, belongs to another, the *Adventure* or chance whereof the ſaid perſon is to ſtand, with a covenant to account to him for the produce of it. V. Lex. Mercat. p. 42. Treat. of Dom. of Sea, p. 585.

ADVENTURERS is particularly uſed for an antient company of merchants and traders, erected for the diſcovery of lands, territories, trades, &c. unknown.

The ſociety of *Adventurers* had its riſe in Burgundy, and its firſt eſtabliſhment from John duke of Brabant, in 1248; being known by the name of *the Brotherhood of St. Thomas à Becket*. It was afterwards tranſlated into England, and ſucceſſively confirmed by Edward III. and IV. Richard III. Henry IV, V, VI. and VII. who gave it the appellation of *Merchant Adventurers*. *Molloy*. de Jur. Marit. l. 3. c. 7. §. 3. p. 413.

We have ſeveral pieces extant concerning this company; of which Kennet gives an ample catalogue [a]. Such are, the act of parliament for erecting them into a corporation [b]; Letters patents of queen Elizabeth, for granting them divers privileges for fourteen years, for diſcovery of the trade to the Eaſt-Indies [c]; The emperor Rodolph's mandate, baniſhing and proſcribing all Engliſh merchant *Adventurers*, with their hurtful dealings, traffics, and contractings, dated at Prague, Aug. 1. 1597 [d]; Queen Elizabeth's letter to the mayor and ſheriff of London, aſſuring him that ſhe had demanded the emperor Rodolph's mandate to be revoked, or ſuſpended, and, in the mean time, commanded all the emperor's ſubjects to forbear traffic in England, and depart the realm [e]; Atteſtation of the town of Midleburgh, in behalf of the Engliſh company of merchants *Adventurers* there reſiding, dated 7th July, 1600 [f]. Wheeler has publiſhed a treatiſe of commerce, ſhewing the advantages ariſing by a well ordered trade, ſuch as that of the ſociety of merchants *Adventurers* [g].—[[a] Americ. Libr. p. 18, 230. ſeq. [b] Extat ap. Hakluit's Voy. p. 394. [c] Extat ap. Purchas's Pilgrim. T. 1. l. 3. p. 144. [d] Ap. Wheeler, Treat. of Comm. p. 80. [e] Ib. p. 130. [f] Ib. p. 176. [g] Lond. 1601. 4to.]

By our ſtatutes, *Adventurers* making ſettlements in any part of America belonging to the enemy, may obtain a charter from the king. Stat. 13. *Geo*. II. c. 4. ſect. 13.

ADVERBIAL, ſomething relating to *Adverbs*. We ſay an *adverbial* phraſe, *adverbial* expreſſion, &c.

ADVERBIAL *numbers* are ſometimes uſed, to denote once, twice, thrice, &c. *Alſted*. Lex. Philoſ. p. 3252.

ADVERSARIA, (*Cycl*.)—*Adverſaria* amounts to the ſame with *Opiſthographia*, ὑπομνημαλα, or *Memoriale*; and ſtands oppoſed to *Codex*; the former being for occaſional matters which were taken down haſtily, from which they were afterwards tranſcribed into the latter, in a fair, regular manner, for ſtanding uſe.

Morhof ſpeaks much of the uſe and advantages of ſuch *Adverſaria* to men of letters, wherein they may enter down whatever occurs to them worthy of notice, in their reading and converſation, in an eaſy manner, and in the order in which it occurs. This method of making collections, he ſhews, has great advantages over that of digeſting things under certain heads, or common places; although he adviſes, in imitation of merchants, to uſe both methods, viz. a day-book, or journal and leger. *Morhof*. Polyhiſt. l. 3. c. 1. p. 561. ſeq.

ADVERSARIA is alſo a title given to divers books, containing collections of miſcellaneous obſervations, remarks, &c. Bibl. Anc. Mod. T. 28. p. 233.

In which ſenſe, *Adverſaria* amounts to much the ſame with *variæ lectiones*, *variæ obſervationes*, *commentarii*, *lectiones antiquæ*, *loci communes*, *geniales dies*, *veſperæ*, *electa*, *miſcellanea*, &c. *Struv*. Bibl. Ant. §. 7. p. 13.

The works under this denomination are often confuſed, incorrect, full of repetitions, contradictions, &c. V. *Richer*. Obſtet. Anim. p. 171.

ADVERSARIA is alſo uſed for a commentary on ſome text, or writing.

This was ſo called, becauſe the notes were written on the *adverſe* or oppoſite page. *Hoffm*. Lex. Univ. T. 1. p. 67.

ADVERSATOR, in antiquity, a ſervant ſent to wait his maſter's returning from ſupper, and attending him home.

The rich had ſervants in this quality, to give them notice of ſtones, or dangerous places, at which they might be apt to ſtumble. *Pitiſc*. in voc. *Hoffm*. in voc. *Foris*.

ADULT, (*Cycl*.) in a general ſenſe, denotes a thing arrived at fullneſs, or maturity.

We find many things in authors concerning the diſeaſes, the regimen, the diet, &c. of *Adults* [a].—The Chineſe have a peculiar ſchool of *Adults* [b].—[[a] *Welſt*. de Ætate Adult. Paſſim. Act. Erud. Lipſ. 1725. p. 446. [b] V. Act. Erud. Lipſ. 1726. p. 236.]

In the practice of the primitive church, few were admitted to baptiſm till they were of years of diſcretion: St. Chryſoſtom, and St. Gregory Nazianzen, were not baptized before this

age. V. Bibl. Univ. T. 4. p. 118. *Du Pin*, Bibl. Eccleſ. T. 17. p. 95. Nouv. Rep. Lett. T. 45. p. 564.

Several conditions and preparations were required at the baptiſm of *Adults*, or catechumens, beyond what were uſed in that of infants. V. *Durand.* de Ritib. l. 1. c. 19. p. 154. *Bingh.* Orig. Eccleſ. l. 11. c. 5. §. 1. Works of the Learn. T. 3. p. 60. Bibl. Univ. T. 3. p. 507.

ADULT is alſo uſed, in civil law writers, for a youth between fourteen and twenty-five years of age. *Briſſ.* de Verb. Signif. in voc. *Adoleſcentes.*

In which ſenſe, *adultus* is ſynonymous with *juvenis*, *adoleſcens*, or *aduleſcens.*

ADULT *Plants*, a late author obſerves, differ from immature ones, in that they contain more oil, and leſs ſalt; and the ſame he judges will hold of men: but this requires farther examination. Vid. *Terenzoni* ap. Giorn. de Letter. d'Ital. T. 29. p. 317, 318.

ADULTERATION, (*Cycl.*) in matters of pharmacy, denotes a fraudulent corruption of drugs, or medicines, by ſubſtituting ingredients of leſs value, for the ſake of greater gain.

This practice the dealers in all the parts of medicine are but too well acquainted with. Pharmaceutical authors give numerous inſtances of *Adulterations*, both in ſimple and compound medicines. *Horſt.* Diſpenſ. Pharm. Univ. P. 1. l. 4. c. 17. *Goriſ.* Chymia ab inutili verborum pondere liberata. Jour. des Scav. T. 31. p. 1093.

French brandies are ordinarily *adulterated* in England, by the admixture of coarſer ſpirits of our own manufacture, as cyder, malt, melaſſes, and ſugar ſpirits. To detect the cheat, is the buſineſs of what they call *eſſay liquors*, &c. See PROOF, ESSAY, &c.

This *Adulteration* is little practiſed either in France or Holland, for want of cheaper ſpirits to *adulterate* withal, thoſe of melaſſes, or treacle, being prohibited in both countries: in the latter, they chiefly *adulterate* with ſpirits drawn from wine lees. *Shaw*, Eſſay on Diſtillat. §. 5. p. 134.

The *crimen Adulteratorum vinorum* is an offence, whereby wicked perſons, whether vintners, innkeepers, or even carriers, mariners, apothecaries, or others, impregnate their wines with noxious, or prohibited drugs, and hereby bring the healths and lives of men in danger, caſt a damp on the commerce of the place, defraud both buyers and ſellers, and occaſion various grievances to the community; and this for their own private gain. M. Weber, a German profeſſor, has a diſcourſe expreſs on this crime, occaſioned by the execution of a vintner at Stutgard, for ſelling ſour unripe wines, *adulterated* with noxious drugs, eſpecially litharge, contrary to a ſtrict prohibition of the duke of Wirtemberg. He enumerates the ſeveral laws and proviſions made againſt this crime, among the Romans, the Greeks, Germans, French, &c. particularly by the emperors Frederic III. Maximilian I. Rudolph II. &c. in the diets of Worms, Augſbourgh, &c. with the ſeveral penalties decreed by them, viz. pecuniary fines, forfeitures, whipping, *amende honorable*, and in ſome caſes death: alſo the divers manners of *adulterating*, as with water, milk, ſulphur, and, which is worſt of all, litharge. *Weber*, Diſp. Jurid. Crimen. Adulterator. Vinor. 4to. an. 1708. an extract of which is given in Nov. Liter. Germ. an. 1708. p. 433. ſeq.

By the Engliſh laws, the ſeller of *adulterated* wines forfeits 300 pounds. Stat. 1. *W.* & *M.* c. 34.

The emperor Frederic was very ſevere on the *adulterators* of wine with water; who, for the firſt offence, were mulcted a pound of gold; for the ſecond, loſt their right hand; and for the third, were hanged. Cantharus, the famous vintner of Athens, who gave occaſion to the proverb, *Cantharo aſtutior*, was put to death for no other crime. Conſtit. Sicul. l. 3. tit. 36.

The practice of *adulterating* wine with litharge ſpread much about the year 1696, in the duchy of Wirtemberg; and gave occaſion to great complaints and diſputes, an epidemical colic, which then raged, being attributed to it. V. *Camerar.* Diſp. de Colic. Tubing. 1698.

ADULTERATION *of coin* properly imports the making, or caſting, of a wrong metal, or with too baſe or too much alloy.

In which ſenſe, *adulterating* is ſomewhat leſs extenſive than *debaſing*, which includes diminiſhing, clipping, &c.

Evelyn gives rules and methods, both of *adulterating* and detecting *adulterated* medals, &c. *Evel.* Diſſ. on Medals, c. 6. p. 209. ſeq.

Adulterations of coins are effected divers ways, as, by forging another ſtamp, or inſcription; by mixing impurer metals with the gold, or ſilver: moſt properly, by making uſe of a wrong metal, or an undue alloy, or too great an admixture of the baſer metals with gold, or ſilver. Counterfeiting the ſtamp, or clipping and leſſening the weight, do not ſo properly come under the denomination of adulterating. *Hoffm.* Lex. Univ. T. 1. p. 68. in voc. *Adulterare.* Act. Erud. Lipſ. an. 1696. p. 87.

The *adulterating* of gems is a curious art, and the methods of detecting it no leſs uſeful. Vid. *Nichols*, Lapid. p. 18. ſeq.

ADULTERESS, a woman who commits *adultery.*

Adultereſſes are ſuch either by the canon, or civil law.

According to the former, a woman is an *Adultereſs* who either being herſelf married converſes carnally with another man; or being ſingle herſelf, converſes with a man that is married.

According to the latter, ſhe is not an *Adultereſs*, if ſhe be not herſelf in the married ſtate, though ſhe converſes with a man that is. The crime in this caſe was more properly called *ſtuprum* than *adulterium:*

Hence, among the Romans, the word *Adultera*, Adultereſs, differed from *pellex*, which denoted a ſingle woman, who cohabited with a married man: and *pellex* differed from *concubina*, which ſignified her who had only to do with an unmarried man. The former was reputed infamous, and the latter innocent. V. *Heinec.* Com. ad Leg. Jul. ap. Jour. des Scav. T. 82. p. 123. *Cujac.* Obſerv. 20.

The Jews had a particular method of trying, or rather purging an *Adultereſs*, or woman ſuſpected of the crime, by making her drink the bitter waters of jealouſy; which, if ſhe were guilty, made her ſwell.

The hiſtory of the *Adultereſs* acquitted by Chriſt, as related in St. John, has occaſioned great diſputes among critics and commentators. V. *Calm.* Dict. Bibl. T. 1. p. 54.

Many have doubted of its authenticity; ſuſpecting it for an interpolation of the text made by Papias, either from the Goſpel of the Nazarenes, in which alone it was found in the time of Euſebius, or at moſt, from apoſtolical tradition. The reaſons of the ſurmiſe are, that it was not in the text in the time of Euſebius; that it is ſtill wanting in moſt of the antient Greek MSS. particularly in the Alexandrian, and in the Syriac and Coptic verſions, though found in the Latin and Arabic copies; that it was unknown in the antient Greek church, though owned by the Latins, and even found in St. Irenæus; that it is omitted by the Greek fathers, in their commentaries on this book, as St. Chryſoſtom, Cyril, &c. though the Latin fathers, as Jerom, Auguſtine, &c. ſpeak of it as authentic; that Euthymius is the only Greek who mentions it, and he does it with this addition, that it is not found in the beſt copies. Beza ſeems to reject it, Calvin adopts it; F. Simon doubts of it, Grotius explodes it; F. St. Honore, and others, defend it. M. Le Clerc ſuggeſts, as if it had been borrowed from an obſcene adventure of Menedemus in Diogenes Laertius; for which he has undergone ſome ſevere reflections. Origen is ſaid to have expunged it out of many copies. Scherzer has a treatiſe expreſs on the woman that was an *Adultereſs.* For the particulars, ſee *Scherz.* Hiſt. Adulteræ, ex Joan. *c.* viii. Lipſ. 4to. 1671. Ouvr. des Scav. Sept. an. 1706. p. 404. ſeq. Nouv. Rep. Lett. T. 15. p. 245. It. T. 23. p. 176. It. T. 44. p. 56. Bibl. Anc. Mod. T. 7. p. 202. Jour des Scav. T. 22. p. 580. Bibl. Choiſ. T. 16. p. 294. *Honor. de St. Marie*, Reflex. ſur Regl. de Crit. diſſ. 2. p. 119. *Mackenz.* Scot. Writ. T. 2. p. 313. Mem. de Trev. an. 1710. p. 802. Bibl. Univ. T. 12. p. 436. *Du Pin*, Bibl. Eccleſ. T. 29. p. 318. It. in Diſſ. Prelim. l. 2. c. 2. §. 6. *Simon*, Not. ſur le Nouv. Teſt. T. 2. p. 54. Act. Erud. Lipſ. an. 1704. p. 82. It. an. 1708. p. 5. Vid. *Le Clerc*, Not. ad Hammond, in loc. *La Croze*, Diſſ. Hiſtor. p. 56. Hiſt. Crit. Rep. Lett. T. 9. p. 342. Jour. Liter. T. 12. p. 136.

ADULTERINE, (*Cycl.*)—ADULTERINE *marriages*, in St. Auſtin's ſenſe, denote ſecond marriages, contracted after a divorce.—That father has a celebrated treatiſe on *adulterine marriages*, wherein he undertakes to ſhew the unlawfulneſs of them. His arguments have been examined and refuted by Schilter. De Adulterinis Conjugiis, &c. cum Notis Schilteri. Extracts of it are given in Act. Erud. Lipſ. 1698. p. 339. ſeq. and in *Du Pin*, Bibl. Eccleſ. T. 3. p. 226.

ADULTERINE *writings* denote ſpurious, or ſuppoſititious ones. —Thus we read of *adulterine* dialogues of Plato. Eſſ. de Liter. T. 2. p. 46.

ADULTERINE *coins* are thoſe which are either debaſed as to quantity, or counterfeit as to quality. See ADULTERATION.

Divers rules are given for diſtinguiſhing *adulterine* coins from genuine ones. V. Act. Erud. Lipſ. 1694. p. 229.

ADULTERINE *balance*, *adulterina ſtatera*, among civilians, denotes an unequal or fraudulent one.

ADULTERINE *key*, *adulterina clavis*, is a falſe or counterfeit one.—*Adulterinum ſignum* is that made with another ſeal, &c. *Briſſ.* de Verb. Signif. *Calv.* Lex. Jur.

ADULTERINE *children* are not eaſily diſpenſed with for admiſſion to orders. Thoſe are not deemed *adulterine*, who are begotten of a woman openly married, through ignorance of a former wife being alive. *Du Cange*, Gloſſ. Lat.

By a decree of the parliament of Paris, *adulterine children* are declared not legitimated by the ſubſequent marriage of the parties, even though a papal diſpenſation be had for ſuch marriage, wherein is a clauſe of legitimation. Act. Erud. Lipſ. an. 1685. p. 156.

ADULTERY, (*Cycl.*)—Moraliſts, and canoniſts, and divines, have diſtinguiſhed ſeveral ſpecies of *Adultery*, as,

Manifeſt ADULTERY, that wherein the parties are caught ἐν ἔργῳ, in the fact, or as ſome expreſs it, *Res in Re.*

On

On such occasions, strangers or people not interested in the family, have been allowed to accuse, and prosecute women for *Adultery*, either if committed during a husband's long absence, or thro' his connivance.

Occult or *secret* ADULTERY, that kept concealed from the knowledge of the world, and only divulged to a confessor or the like.—In the canon law this is most favourably dealt with; persons were admitted to penance for this, and absolved, who were refused it for the open kind. *Du Cange*, Gloss. Lat. T. 1. p. 75. seq.

Presumptive ADULTERY, that which is only discovered or inferred from certain signs, or indications. Such are the parties being found in bed together, *Nudus cum Nuda*.

Interpretative, or *reputed* ADULTERY, denotes an act which tho' properly not included under the denomination, yet is reputed as equivalent thereto, and accordingly punished as such.

Thus mixed marriages between Christians and Jews, *e. g.* between a christian man, and a jewish woman, are put by the laws of Arcadius, and Honorius, on the footing of *Adultery*. *Fabric.* Lux Verit. c. 13. p. 281. Observ. Halens. T. 10. Obs. 10. §. 26. p. 372.

So also second marriages are called by some fathers, as Athenagoras, and St. Ambrose, an honourable or better sort of *Adulteries*. *Budd.* Isag. Theol. l. 2. c. 4. p. 621. Bibl. Rais. T. 1. p. 300. seq. & 323.

Improper ADULTERY includes other extraordinary cases and species; such are the commerce with a woman only espoused, not actually married; with a married woman who lives as a common whore; with a married woman taking her for single; with a putative wife, or concubine, taking her for a real wife; and with a nun, who by her vows is doomed espoused.

Figurative ADULTERY, that intended only to represent, or prefigure another fact, or convey some other instruction. This coincides with typical, or allegorical *Adultery*, and stands opposed to actual. Thus David's *Adultery* is said by St. Ambrose to be a type of Christ, who notwithstanding his former wife the jewish church, married the Gentiles [a]. So also the *Adultery* of Mars and Venus, is turned into an allegory by naturalists, moralists, alchemists [b], &c.—[[a] Nouv. Rep. Lett. T. 54. p. 233. [b] *Bossu.* du Poem. Epiq. l. 5. c. 2. p. 413.]

Single ADULTERY is that where only one of the parties is married, in contradistinction from double *Adultery*, which is, where both parties are married. *Calv.* Lex. Jurid. 117. c. 8.

Incestuous ADULTERY, that wherein the parties are related within the third degree of consanguinity.

Licit ADULTERY, that not prohibited by any express or known Law.

It has been disputed whether *Adultery* be *malum in se*, or only *malum prohibitum*, i. e. evil in itself, or only rendered evil, by virtue of positive laws, and prohibitions [c]. St. Ambrose and some others have maintained, that *Adultery* was not criminal before the mosaic law [d].—[[c] *Hobb.* de civ. c. 6. §. 16. p. 110. [d] V. *Budd.* Isag. l. 2. c. 4. p. 634. Id in Hist. Eccles. Par. 1. Sec. 1. T. 2. p. 106.]

It has been controverted, whether *Adultery* may be lawfully committed in war, with the enemies wives [e]? The answer is in the negative, and the authorised practice of civilized nations is agreeable to this. It has also been a famous question, whether it be lawful for a woman to commit *Adultery* with the consent of her husband, and for the procuring some great good to him? St. Austin apparently allows of it, at least, does not condemn it. His reasons are, that as married people have a right to the use of each others bodies, they may transfer that right to whom they please; a doctrine which he allows indeed, will not generally hold under the gospel, but concludes, there may be particular cases, wherein it may lawfully take place, as to save the life of a husband, or wife [f]; as in the celebrated case of Acindymus governor of Antioch [g]. This father places the essence of *Adultery*, in the desire of carnal pleasure, a principle which will involve equally the greater part of people lawfully married, under the crime of *Adultery* [h].—[[e] *Vitriar.* Inst. Jur. Nat. Lib. 3. c. 4. Quest. 13. [f] *August.* de Serm. Dom. in Mont. l. 1. c. 16. §. 49. ejusd. de Civ. Dei. l. 16. c. 25. [g] *Bayle*, Dict. Crit. T. 1. p. 64. seq. in Voc. *Acindymus*. [h] V. *Barbeyrac* Traité de la morale des Peres. c. 16. Pref. Stat. Rep. Lett. T. 2. p. 23. seq. Bibl. Raison. T. 3. p. 70.]

On the like footing stands that other dispute, whether it be lawful for one of the parties married to commit *Adultery*, with the consent of the other, for the sake of having children? Of which we have instances in Abraham, who on this account conversed with Hagar; and of Cato, who for the same reason lent his wife Marcia to his friend Hortensius. The like was allowed among the Greeks: thus by the laws of Athens, an heiress was permitted, in case she found her husband defective, to make use of his nearest relation [i]. Lycurgus introduced the like practice among the Spartans, as the best expedient to prevent jealousy; laughing at those who thought the violation of their bed such an insupportable affront, as to revenge it with cruel murthers and wars. He even encouraged people who had handsome wives, and were in no great likelihood of having a breed themselves, to admit healthy, able bodied men to converse with them; the issue of such conversations was esteemed and loved by them as if they were their own [k]. Only kings were exempt from this law, to preserve the royal blood unmixt.—[[i] *Potter*. Archæol. l. 4. c. 12. T. 2. p. 298. [k] *Strab.* Geogr. l. 7.]

Pollman, a German professor, has a dissertation on the husband's right to alienate his wife's body to another's use. V. Nouv. Liter. Germ. An. 1707. p. 316.

Illicit ADULTERY, that which is expressly contrary to some obligatory law: such, according to the generality of casuists, is all *Adultery*, proper, improper, single, double, open, and occult; by reason of a natural baseness or turpitude in the thing, as well as its being a violation of conjugal faith, and injury to our neighbour.

In effect, punishments have been annexed to *Adultery* in most ages and nations, tho' of different degrees of severity. In many it has been capital, in others venial, and attended only with slight pecuniary mulcts. Some of the penalties are serious, and even cruel, others of a jocose and humorous kind. Even contrary things have been enacted as punishments for *Adultery*. By some laws, the crimimals are forbid marrying together, in case they become single; by others, they are forbid to marry any besides each other; by some, they are incapacitated from ever committing the like crime again; by others, they are glutted with it till it becomes downright nauseous. See the *Cyclopædia*, and Act. Erud. Lipsi. An. 1690. p. 325. Id. 1687. p. 6. Bibl. Univ. T. 11. p 179.

Among the rich Greeks, adulterers were allowed to redeem themselves by a pecuniary fine; the woman's father in such cases, returned the dower he had received from her husband, which some think, was refunded by the adulterer. Another punishment among those people was, putting out the eyes of adulterers. *Potter*, ubi supr. p. 301. seq.

The Athenians had an extraordinary way of punishing adulterers, called παραλιλμῶ· αραφανοιδωσις, practised at least on the poorer sort, who were not able to pay the fines. This was an awkward sort of empalement, performed by thrusting one of the largest raddishes up the *anus* of the adulterer, or in defect thereof, a fish with a large head called *Mugil*, Mullet. Alcæus is said to have died this way, tho' it is doubted whether the punishment was reputed mortal. Juvenal and Catullus speak of this custom, as received also among the Romans, tho' not authorized by an express law, as it was among the Greeks. V. *Salmuth.* ad Pancirol. P. 2. Tit. 2. p. 87. *Pott.* lib. cit. p. 304. *Bayle* Dict. Crit. T. 1. p. 135. in Voc. *Alcee*. *Hoffm.* Lex. Univ. *Suid.* Lex. T. 3. p. 40. and 252. in Vocib. παραλιλλείαια, ραφανις. *Juv.* Sat. 10. v. 317. *Catull.* Epig. 15.

Among the Mingrelians, adultery is punished with the forfeiture of a hog, which is usually eaten in good friendship between the gallant, the adulteress, and the cuckold. *Chardin*, Voy. T. 1. p. 47. Bibl. Chois. T. 23. p. 359. Nouv. Rep. Lett. T. 8. p. 1068.

In some parts of the Indies, it is said any man's wife is permitted to prostitute herself to him who will give an elephant for the use of her; and it is reputed no small glory to her, to have been rated so high. *Montaigne*, Ess. l. 3. c. 5. p. 878.

Adultery is said to be so frequent at Ceylon, that not a woman but practises it, notwithstanding its being punishable with death. Bibl. Univ. T. 23. p. 237.

Nor does it seem to have been less familiar among the antient Egyptians, inasmuch as when their blind king Pheron was told by an oracle, that he could only recover his sight by washing his eyes in the water of a woman, who had never known man, beside her own husband; it was a long time e'er all Egypt could afford him a drop for the purpose. V. *Herodot.* ap. Hist. Acad. Inscript. T. 1. p. 241. Nouv. Rep. Lett. T. 52. p. 29.

Among the Japonese, and divers other nations, *Adultery* is only penal in the woman [a]. Among the Abyssinians, the crime of the husband is said to be only punished on the innocent wife [b]. In the Marian islands on the contrary, the woman is not punishable for *Adultery*; but if the man go astray, he pays severely: the wife and her relations waste his lands, turn him out of his house, &c. [c]—[[a] *Turner*. Hist. Relig. p. 484. [b] *Lobo*, Voyage d'Abyss. ap. Bibl. Rais. T. 1. p. 59. [c] Nouv. Rep. Lett. T. 25. p. 321.]

It is controverted whether, among the Romans, *Adultery* was allowed to be compounded? Noodt shews that it might, after the crime was rendered capital, not before; which seems directly to thwart the constitution of the emperors Diocletian and Maximian, where *Adultery* is declared the only capital crime excepted from composition. M. Noodt takes the words *excepto adulterio*, for an interpolation. De Transact. & Pact. Crim. ap. Jour des Scav. T. 33. p. 1139. Ouv. des Scav. Oct. 1704. p. 469. Bibl. Chois. T. 4. p. 306. seq.

By an edict of the emperor Antoninus, the husband was not allowed to bring an action of *Adultery* against his wife, unless he himself were innocent; the reason given for it is very natural, *periniquum enim videtur esse ut pudicitiam vir ob uxore exigat, quam ipse non exhibeat*. V. Mem. de Trev. 1723. p. 1179. Bibl. Univ. T. 25. p. 95.

There are various conjectures concerning the antient punishment of *Adultery* among the Romans. Some will have it to have been made capital, by a law of Romulus, and again by the twelve tables. Others, that it was first made capital by Augustus; and others, not before the emperor Constantine. The truth is, the punishment in the early days was very various, much being left to the discretion of the husband and parents of the *adulterous* wife, who exercised it differently, rather with the silence and countenance of the magistrate, than any formal authority from him. Thus we are told the wife's father was allowed to kill both parties, when caught in the fact, provided he did it immediately, killed both together, and, as it were, with one blow. The same power ordinarily was not indulged the husband, except the crime were committed with some mean, or infamous person; though, in other cases, if his rage carried him to put them to death, he was not punished as a murderer [d]. On many occasions, however, revenge was not carried so far, but mutilating, castrating [e], cutting off the ears, noses, &c. served the turn. The punishment allotted by the *lex Julia*, was not, as many have imagined, death; but rather banishment, or deportation, being interdicted fire and water: though Octavius appears, in several instances, to have gone beyond his own law, and to have put *Adulterers* to death. Under Macrinus, many were burnt at a stake [f]. Constantine first by law made the crime capital [g]. Under Constantius and Constans, *Adulterers* were burnt, or sewed in sacks and thrown into the sea. Under Leo and Marcian, the penalty was abated to perpetual banishment, or cutting off the nose. Under Justinian, a further mitigation was granted, at least in favour of the wife, who was only to be scourged, lose her dower, and be shut up in a monastery: after two years, the husband was at liberty to take her back again; if he refused, she was shaven, and made a nun for life: but it still remained death in the husband [h]. The reason alledged for this differencce is, that the woman is the weaker vessel. Matthæus declaims against the empress Theodora, who is supposed to have been the cause of this law, as well as of others procured in favour of the sex from that emperor [i].—[d *Gell.* Noct. Att. l. 10. c. 23. *Ridley*, View of Civ. Law, p. 130. e *Simon*, Impot. Conjug. c. 9. th. 2. p. 16. seq. f *Capitol.* in Vit. Macrin. c. 12. Bibl. Univ. T. 25. p. 232. l. 30. c. de *Adulter.* g *Noodt*, ubi supra. *Brisson.* ad Leg. Jul. de Adulter. p. 150. *Bayle*, Dict. in voc. *Sengebers*, n. B. h Nov. 117. c. 8. Nov. 134. c. 10. Observ. Halens. T. 12. p. 218. i *Matth.* de Crimin. p. 377.]

Under Theodosius, women convicted of this crime were punished after a very singular manner, viz. by a public constupration; being locked up in a narrow cell, and forced to admit all the men to their embraces that would offer themselves. To this end, the gallants were to dress themselves on purpose, having several little bells fastened to their cloaths, the tinkling of which gave notice to those without of every motion. This custom was again abolished by the same prince. *Socrat.* Hist. Eccles. l. 5. c. 18. *Brantome*, Mem. T. 3. p. 282. seq. *Bayle*, Dict. Crit. T. 1. p. 411. in voc. *Babelot*, Not. (C.)

In England, *Adultery* is reckoned a spiritual offence, that is, cognizable by the spiritual courts. The common law takes no farther notice of it, than to allow the party grieved an action of damages. This practice is often censured by foreigners, as making too light of a crime, the bad consequences of which, public as well as private, are so great. But, perhaps this penalty, by civil action, is more wisely calculated to prevent the frequency of the offence, which ought to be the end of all laws, than a severer punishment. He that by a judgment of law is, according to circumstances, stripped of great part of his fortune, thrown into prison till he can pay it, or forced to fly his country, will, no doubt, in most cases, own, that he pays dearly for his amusement.

It is much disputed, whether *Adultery* dissolves the bond of matrimony, and be a sufficient cause of divorce, so that the parties may marry again. k This was allowed in the antient church, l and is still continued in the Greek, m as well as the Lutheran and Calvinist churches. Romanists, however, disallow of it, and the council of Trent n even anathematized those who maintain it; though the canon of anathematization was mitigated in deference to the republic of Venice, in some of whose dominions, as Zant, Cephalonia, &c. the contrary usage obtains. The difference arises, in a great measure, from this; that in St. Matthew's gospel, Christ is represented as disallowing divorce in any case, except that of fornication, (by which is to be understood *Adultery*) whereas the other evangelists, in reciting the same transaction, omit the exception. The question then is, *utri credetis?* which will you believe? Protestants prefer Matthew, Papists Mark, &c. The ecclesiastical courts in England so far agree with the Papists, that they only grant a divorce *a mensa & thoro*, in case of *Adultery*; so that a compleat divorce, to enable the parties to marry again, cannot be had without an act of parliament. —[k *Du Pin*, Bibl. Eccles. T. 8. p. 16, 115, 127. seq. Act. Erud. Lipf. an. 1698. p. 340. l Nouv. Rep. Lett. T. 1. p. 511. Act. Erud. Lipf. an. 1687. p. 377. m Jour. des Scav. T. 72. p. 614. n Nouv. Rep. Lett. T. 12. p. 93.]

By a council of Nantes, marriage was declared dissolved by *Adultery*, but the innocent party was not allowed second marriage [o]. In after times, leave was given the innocent party alone; and afterwards the same was also allowed the criminal party [p].—[o Act. Erud. Lipf. 1687. p. 377. p *Brouer.* de Jur. Connub. ap. Jour. des Scav. T. 58. p. 20.]

ADULTERY is also used in antient customs, for the punishment, or fine imposed for that offence, or the privilege of prosecuting for it. *Spelm.* Gloss. p. 19.

In which sense, *Adulterium* amounts to the same with what the Saxons called *Legerwita.*

ADULTERY is sometimes used, in a more extensive sense, for any species of impurity, or crime, against the virtue of chastity: and in this sense divines understand the seventh commandment.

ADULTERY is also used, especially in Scripture, for idolatry, or departing from the true God, to the worship of a false one.

ADULTERY is also used, in ecclesiastical writers, for a person's invading, or intruding into a bishopric, during the former bishop's life. The reason of the appellation is, that a bishop is supposed to contract a kind of spiritual marriage with his church. *Du Cange*, Gloss. Lat.

The translation of a bishop from one see to another was also reputed a species of *Adultery*; on the supposition of its being a kind of second marriage, which, in those days, was esteemed a degree of *Adultery*. This conclusion was founded on that text of St. Paul, *Let a bishop be the husband of one wife*, by a forced construction of church for wife, and of bishop for husband. *Du Cange*, loc. cit.

ADULTERY is also used, in antient naturalists, for the act of engrafting one plant upon another.

In which sense, Pliny speaks of the *Adulteries* of trees, *arborum adulteria*, which he represents as contrary to nature, and a piece of luxury, or needless refinement. Ouvr. des Scav. Juin. 1695. p. 458. Mem. de Trev. 1724. p. 2257.

ADVOCARIA, in middle age writers, a tax paid the lord, for his protection; sometimes also called *Salvamentum.* *Du Cange*, Gloss. Lat. T. 1. p. 88.

ADVOCATE, ADVOCATUS, (*Cycl.*)—Among the Romans, when a trial came on, the parties usually invited all their friends, of any interest or authority, to assist them with their countenance and protection, in order to render the judges, &c. favourable: these were the original *Advocati.* V. *Ascon.* in Cicer. Verin. *Calv.* Lex. Jur.

Advocates took their first origin from the *jus patronatus.* The patricians performed the office for their clients among the plebeians [a]. Upon entering an action, the parties frequently petitioned the prætor to grant them *Advocati*, which was done accordingly [b]. On this occasion, Cicero [c] relates a pleasant answer of a Sicilian, who having a very rich, but silly and ignorant person assigned him for a patron, addressed the prætor thus: *Quæso, prætor, adversario meo da istum patronum: deinde mihi neminem dederis.*—[a V. Bibl. Franc. T. 4. p. 133. b *Pitisc.* Lex. Ant. *Briss.* de Verb. Signif. voc. *Advocationes.* c De Orat. l. 2. *Briss.* de Form. l. 5. p. 358.]

The *Advocates* were seated in rows, on equal benches; and when it came to any one's turn to speak, he stood up; though some of the more distinguished, we are told, had the privilege of speaking seated. Their ordinary habit was the *toga*; whence we find them frequently distinguished by the name *Togati:* though, on some occasions, they pleaded in the *penula.* *Baxt.* Gloss. Ant. Rom. *Pitis.* loc. cit.

We find great complaints of the ignorance of *Advocates* under Valens and Valentinian; and of their tyranny and frauds under most of the emperors: no names have been thought bad enough for them; public robbers, hawks, hungry dogs, vultures in gowns, &c. V. *Ammian. Marcellin.* l. 30. c. 4. *Groning.* Diss. de Næv. Corp. Jur. §. 9. *Meibom.* Præf. ad Vogler. Introd. p. 125. Misc. Lipf. T. 4. p. 209. Jour. des Scav. T. 38. p. 165.

'Tis controverted, whether an *Advocate* may lawfully meddle with the procuration, or soliciting of causes. M. le Sure has a discourse expres to shew he may, nay, and in some cases ought, without either depreciating the dignity of his office, or incroaching on that of the proctors, &c. *e. gr.* in behalf of his friends, relations; but then he is to do it *gratis.* Vid. Jour. des Scav. T. 86. p. 55. seq.

'Tis disputed, whether an *Advocate* is obliged to defend all causes committed to him [d]; and whether, notwithstanding the oath he has taken, he may, in good conscience, undertake the defence of a cause, which he knows to be bad [e]. Cicero maintains the affirmative, agreeably to the principles of the academics [f]. The like has also been solemnly decided by the states of Friezeland, with this restriction, that the *Advocate* say or do nothing, but at the expres requirement of the parties. But Papinian chose rather to have his head cut off, than undertake the defence of Caracalla's murder of his brother Geta. Schertzer has a dissertation expres on the point, wherein he maintains the negative against Cicero [g].—[d *Albert.* Jurispr. Med. P. 1. p. 392. §. 2. e Act. Erud. Lipf. 1689. p. 304. f Vid. Nouv. Rep. Lett. T. 52. p. 311. g De Patrono malæ Causæ. V. Nouv. Liter. Germ. an. 1706. p. 278.]

Advocates are usually supposed to have a privilege of lying [h]: yet it is disputed, whether they are allowed to make use of false colours, tricks, stratagems, &c. even in behalf of a cause which they are convinced is good [i]. Casuists generally deny it.—[h *Puffendorff*, Jus. Nat. & Gent. p. 264. i *Bronchorst.* de Reg. Jur. p. 218, 220. Act. Erud. Lipsi. an. 1693. p. 338.]

Advocates say, that their fees are *honorarium*, *non mercenarium*; and accordingly, the *Advocates* of the chief courts of Paris have waved the right of bringing actions for their fees, piquing themselves on taking nothing but what is voluntary [a]. The German lawyers are less delicate; they pretend not only to a right of action, but to the preference to all other creditors in the same cause, and to a right of retaining their clients writings till the fees are paid [b].—[a Ouvr. des Scav. Mai 1706. p. 194. Jour. des Scav. T. 49. p. 294. b Act. Erud. Lipsi. an. 1696 p. 65.]

Juridical ADVOCATES, in the middle age, were those who from attending causes, in the court of the Comes, or count of the province, became judges themselves, and held courts of their vassals thrice a year, under the name of the *tria placita generalia*.

In consideration of this further service, they had a particular allowance of one third part of all fines, or mulcts imposed on defaulters, &c. which was called *tertia bannorum pars*, *tertius denarius*, *tertia pars compositionum*, *tertia pars legum*, or *emendarum*, &c. Besides a proportion of diet for themselves and servants.

Elective ADVOCATES, those chosen by the abbot, bishop, or chapter, a particular licence being had from the king, or prince for that purpose. The elections were originally made in the presence of the count of the province.

Nominative ADVOCATES, those appointed by a king, or pope. Sometimes the churches petitioned kings, &c. to appoint them an *Advocate*; at other times, this was done of their own accord. By some regulations, no person was capable of being elected *Advocate*, unless he had an estate in land in the same county.

Military ADVOCATES, those appointed for the defence of the church, rather by arms and authority, than by pleading and eloquence.

These were introduced in the times of confusion, when every person was obliged to maintain their own by force; bishops and abbots not being permitted to bear arms, and the scholastic or gowned *Advocates*, being equally unacquainted with them, recourse was had to knights, noblemen, soldiers, or even to princes.

But the office became greatly abused, insomuch that from being *Advocates*, they proved the tyrants and oppressors of their churches. History is full of complaints against them, and of royal regulations, and papal laws for restraining, and keeping them within bounds. They had their settled stipends, and allowances, of provision, perquisites, &c. which not contented with, they invaded the church lands themselves, appropriated many of them to their own uses, and made them hereditary in their families. V. *Matth.* de Nobil. l. 2. c. 28. Bibl. Univ. T. 1. p. 97. *Du Pin.* Bibl. Eccles. T. 17. p. 242. It. T. 10. p. 136. Jour. des Scav. T. 86. p. 56. Act. Erud. Lipsi. 1683. p. 58. Bibl. Germ. T. 6. p. 163.

Feudal ADVOCATES. These were of the military kind, who, to tie them the firmer to the interest of the church, had lands granted them in fee, which they held of the church, and did homage, and took an oath of fidelity to the bishop or abbot. These were to lead the vassals of the church to war, not only in private quarrels of the church itself; but in military expeditions for the kings service, in which they were the standard-bearers of their churches. *Aquin.* Lex. Milit. Mem. de Trev. 1712. p. 1338.

Supreme or *Sovereign* ADVOCATES were those, who had the authority in chief, but acted by deputies, or subordinate *Advocates*. These were also called principal, greater, and sometimes general *Advocates*.—Such in many cases were kings, &c. when either they had been chosen *Advocates*, or became such by being founders, or endowers of churches.—Thus Charlemaign had the title of *Advouee*, or *Advocate* of St. Peter's. And Bolandus mentions some letters of pope Nicholas, by which he constituted king Edward the confessor, and his successors, *Advocates* of the monastery at Westminster, and of all the churches in England.

Princes had also another title to *Advocate*-ship, some of them pretending to be *Advocati nati*, of the churches within their dominions. The German emperors claimed great authority in the electing of a pope, on account of their quality of *Advocate* of the universal church; a quality which has been much contested them. V. Nouv. Rep. Lett. T. 13. p. 742. Bibl. Anc. Mod. T. 20. p. 215. Act. Erud. Lipsi. 1688. p. 148.

Subordinate ADVOCATES, those appointed by other superior ones, acting under them, and accountable to them.

These were called by various other names, as *Sub-advocates*, *Pro-advocates*, *Post-advocates*, *Vice-advocates*, *Second Advocates*, *Sub-defensores*, *Sub-advocatores*, *Advocati infeudati*, *Advocati feudales*, and *minor Advocates*.

There were divers reasons for the creation of these subordinate *Advocates*; as, the superior quality of the principal *Advocate*, his being detained in war, or being involved in other affairs; but chiefly the too great distance of some of the church lands, and their lying in the dominions of foreign princes. On these and the like considerations, they became multiplied to such a degree, as grew exceedingly burthensome to the churches; there being a several *Advocate* for almost every estate, or farm; instead of defenders, they proved the severest oppressors. This put the bishops, &c. upon an expedient, which was, by imposing a condition at the time of electing an *Advocate*; that he should not have the power to appoint a *Sub-advocate*, without the consent of the church. In the council of Rheims held in 1148, the power of *Sub-advocates* was totally abrogated.

Matricular ADVOCATES were the *Advocates* of the mother, or cathedral, churches. V. *Du Cange*, Gloss. Lat. in Voc. *Advocati*. T. 1. p. 78. seq.

Regular ADVOCATES, those duely formed and qualified for their profession, by a proper course of study, the requisite oath, subscription, licence, &c.

ADVOCATIA, in the feudal law, the procuration of some public business, committed by a superior to his substitute. *Hotoman.* de Verb. *Feud. Calv.* Lex. Jur.

ADVOCATIA is also used for the patronage and protection of a church, college, monastery, and the like.

In which sense it amounts to the same with *Advowson*. See ADVOWSON, *Cycl.*

ADVOCATIA is also used for the protection or defence of lay persons, estates, &c. *Du Cange*, Gloss. Lat. T. 1. p. 88. Trev. Dict Univ. T. 1. p. 163. in Voc. *Avouerie*.

ADVOCATION, *Advocatio*, in the civil law, the act of calling another to our aid, relief, or defence. *Pitisc.* Lex. Ant. T. 1. p. 33. *Calv.* Lex. Jurid. p. 47. See ADVOCATE, *Cycl.* and *Suppl.*

Letters of ADVOCATION, in the law of Scotland, those granted by the Lords of session, upon complaint of a person sued before an incompetent judge. By these letters, the lords of session advocate, that is, call that cause from the incompetent judge to themselves.

If after letters of *Advocation* are intimated to that judge, he yet proceeds, his decree will be null, as given *spreto mandato*. *Mackenzie*, Instit. B. 1. Tit. 2.

ADVOCATURA, in writers of the middle and barbarous age, denotes an inferior kind of jurisdiction, exercised by advocates within the districts of their respective churches, &c. The word is sometimes used as synonymous with *Advocatia*. *Du Cange*, Gloss. Lat. T. 1. p. 90.

ADVOWSONS, (*Cycl.*)—Colleges holding more *Advowsons* in number, than a moiety of the fellows, are not capable of purchasing more [a]. Grants of *Advowsons* by papists are void [b]. —[a See Stat. 9. Geor. 2. c. 36. Sect. 5. b See Stat. 11. Geor. 2. c. 17. Sect. 5.]

ADY, in natural history, a name given to the palm-tree of the island of St. Thomas. It is a tall tree, with a thick, bare, upright stem, growing single on its root, of a thin light timber, and full of juice. The head of this tree shoots into a vast number of branches, which being cut off, or an incision being made therein, afford a great quantity of sweet juice, which fermenting, supplies the place of wine, among the Indians.

The fruit of this tree is called by the Portuguese *Caryoces* and *Carioſſe*; and by the black natives, *Abanga*. This fruit is of the size and shape of a lemon, and contains a kernel, which is good to eat. The fruit itself is eat roasted, and the raw kernels are often mixed with mandioc meal. These kernels are supposed very cordial. An oil is also prepared from this fruit, which answers the purpose of oil, or butter, in Europe.

This oil is also used for anointing stiff, and contracted parts of the body. V. *Ray*, Hist. Plant.

ADYNAMON, among antient physicians, a kind of weak factitious wine, prepared with must boiled down with water; to be given patients, to whom genuine wine might be hurtful.

The word is originally Greek, ἀδυναμον, q. d. *invalidum*, from its want of strength. *Gorr.* Defin. Med. in Voc.

ÆCHMALOTARCHA, (*Cycl.*)—The eastern Jews had their princes of the captivity, as the western Jews their patriarchs. By the eastern Jews are meant those who are settled at Babylon, in Chaldæa, Assyria, Persia; and they who dwell in Judæa, Italy, Egypt, and other parts of the Roman empire were called western Jews. There was no prince of the captivity before the end of the second century. Huna was the first invested with this character, about the time abovementioned: the office continued till the eleventh century. The princes of the captivity had their residence at Babylon; there they were installed with ceremony, held courts of justice, &c. See more of them in *Basnage*, Histoire des Juifs, l. 1. c. 4. *Calmet*, Dict.

The Jews are still said to have an *Æchmalotarcha* at Babylon, but without the authority of the antient ones; if such an officer be now in being, Prideaux says, he is no more than their *Alatarcha* at Alexandria, their *Ethnarch* at Antioch, or their *Episcopus Judæorum* in England; that is, the head of their sect in that place, without sword or sceptre, or any

power of coercion, ſave what the Jews voluntarily allow him. *Prideaux*, Connect. P. 2. l. 9. p. 934.

ÆDILATE, ÆDILATUS, in antiquity, the dignity or magiſtracy of Roman *Ædiles*. See ÆDILE, *Cycl.*

This is otherwiſe called *Ædilitas*, Ædility. In inſcriptions we find it repreſented by the abreviature AED. *Urſat.* de Not. Rom. p. 4.

ÆDILITIUM *Edictum*, among the Romans, was that whereby a remedy was given a buyer, in caſe a vitious, or unſound beaſt, or ſlave were ſold him. It was called *Ædilitium*, becauſe the preventing of frauds in ſales and contract, belonged eſpecially to the Curule *Ædiles*. *Calv.* Lex. Jur.

ÆDITUUS, in antiquity, the keeper of a ſacred manſion, who had the care of the offerings and ornaments of the deity venerated therein.

The word is compounded of *ædes* and *tueor*, I defend; q. d. *a tuendis Ædibus*: originally it was written, *Æditimus*. *Gell.* Not. Att. l. 12. c. 10.

The *Ædituus* is the ſame with what Scævola calls *Hierophylax*, the Latins ſometimes *Ædilis*, and the Greeks Νεωκορος; anſwering to the ſexton among us.

The *Æditui*, among the Romans, were officers of diſtinction, being the depoſitaries not only of the treaſure, but of the public acts, or records.—The *Æditui* had their ſeveral cells, near the temples, the cuſtody of which was committed to them. *Struv.* Ant. Rom. c. 11. p. 518. & c. 12. p. 638.

The female deities had a woman officer of the ſame kind, under the denomination *Æditua*. *Danet.* Dict. Ant. in voc.

ÆGAGROPILA, or ÆGAGROPILUS, in natural hiſtory, a ball generated in the ſtomach of the *Rupicapra*, or *Chamois goat*, hard on the outſide, and conſiſting of a ſubſtance like hair. *Caſt.* Lex. Med. p. 18. See *Hair* BALL.

The word is Greek, Αιγαγροπιλος, from αιγαγρος, the rupicapra, or rock goat, and πιλος, a ball.

The *Ægagropilus* is ſometimes called *Bezoar Germanicum*, or the German bezoard. It is a ball found in the ſtomach of does and goats in Germany, which ſome have pretended to be formed of the *doronicum*, or leopards-bane, on which theſe animals feed; but it is now certain, that this ball conſiſts only of hairs which they ſwallow. The like are found in the ſtomach of cows, hogs, &c. and are of no medicinal value; though, from the falſe opinion concerning their original, ſome have celebrated them in looſeneſſes, hæmorrhages, &c. becauſe of the plants whence they conceived them to be formed.

Some have been whimſical enough to recommend theſe *Ægagropili* in vertigo's, becauſe the goats which produce them climb very ſteep rocks, without being giddy. Vid. *Geoffroy*, Mat. Med.

ÆGELETHRON, in botany, is a name uſed by ſome authors for the common *mercurialis*, or Engliſh mercury, an eatable wild herb. *Ger.* Emac. Ind. 2.

ÆGIAS, Αιγιας, in antient Greek phyſicians, denotes a white ſpeck on the pupil of the eye, occaſioning a dimneſs of ſight; either ariſing from an excrementitious humour, or from the relicts of the cicatricula of an ulcer on the part. *Caſtel.* Lex. Med.

This is the ſame with what others write *Aigis*, and ſome *Aiglia*. *Gorr.* Def. Med. p. 9. in voc. Αιγλιη.

ÆGILOPS, (*Cycl.*)—The *Ægilops* is difficult of cure: before it has reached the lachrymal paſſages, it is managed like other ulcers. Galen orders it to be treated with actual cauteries, introduced through a cannula [a]: which method is ſtill uſed, where the bone is foul; where it is not, collyriums and aſtringents may ſuffice [b]. The ſame author notes, that others chuſe rather to bore a hole through the bone, and diſcharge the matter thus. Albinus has a diſſertation expreſs on the *Ægilops* [c].—[a V. *Goelic.* Hiſt. Chir. Vet. §. 66. p. 51. b *Horn.* Microtec. p. 80. See alſo Ephem. Germ. cent. 5. app. p. 138. *Zuinger.* Pædoiatr. Obſ. 29. p. 155. ſeq. *Shaw*, Pract. Phyſ. p. 45. *Allen*, Synopſ. Medic. c. 10. §. 47. p. 265. c A notitia of it is given in *Goelic.* Hiſt. Chir. Recent. §. 534. p. 343.]

The name *Ægilops* is alſo given to a kind of oat, called alſo *cerris*, and by the Latins *feſtuca*, the flour of which mixed with honey, has been reputed a remedy for this diſeaſe. *Gorr.* Def. Med. p. 9. *Blanc.* Lex. Med. p. 14. ſeq.

The *Ægilops* is the *avena ſylveſtris*, the wild oat, common among corn. *Dale*, Pharm. &c. p. 263. See BROMUS.

ÆGILOPS is alſo uſed for the *Holme oak, with great acorns*; the *Cerrus mas majore glande* [a], *Quercus calyce echinato, glande majore*, αιγιλωψ *Idæorum*, *Aſpris Maurorum*, *Cerrus Latinorum* [b].—[a Vid. *Parkinſ.* Theatr. p. 1387. b *Caſp. Bauhin.*]

At Venice, they make cups of the acorns of this tree; which is alſo uſed, as we do oak-bark, to dreſs leather. *Ray*, Hiſt. Plant.

The cup of this acorn is an inch and an half in diameter, and ſomewhat leſs in depth. Theſe cups are alſo uſed, inſtead of galls, to die woollen cloth black. Id. ibid.

ÆGINETA, in botany, the name given by Linnæus [a] to a genus of plants; the characters of which are theſe. The cup is an oval inflated, and coloured ſpathle; it is univalve, and opens longitudinally near the top. The flower conſiſts of one petal. Its baſe is large, round, and inflated. The tube is ſhort, cylindric, and open; and the mouth is ſmall, but expanded, and turns back at the edge. The ſtamina are four crooked filaments; two of them are of the length of the flower, and the other two a little ſhorter. The antheræ are oblong, and ſtand cloſe to one another at their tops. The germen of the piſtil is oval; the ſtyle is ſubulated, and of the length of the ſtamina; and the ſtigma is large, round, and bending. The Hortus Malabaricus [b] is the only work in which we have a deſcription of this plant; and there the fruit and ſeed are not mentioned. Without theſe, however, the flower gives a very evident proof of its being a genus wholly diſtinct from all others.—[a *Linn.* Gen. Plant. p. 304. b Hort. Malab. Vol. 11. p. 47.]

ÆGLEFINUS, in zoology, the name given, by the generality of authors, to the *haddock*, called by others the *onos*, or *aſinus antiquorum*. It is a well known fiſh, and ſeems of a middle nature between the cod and the whiting. It is black on the back, and covered with ſmall ſcales, and has a black line running along each ſide from the gills to the tail. Under this line, in the middle of the ſides, and a little below the gills, it has on each ſide a black ſpot, pretended to have been made by the finger and thumb of St. Peter, in one of theſe fiſh, and to have been from thence propagated through the whole ſpecies. A like idle tale there alſo is, of the faber, or John Dory. The eyes are large, and there is a ſhort beard under the chin. The jaws are both furniſhed with teeth, as is alſo a part of the roof of the mouth, as in the common cod-fiſh. Its fins are of the ſame number and ſituation with thoſe of the cod; but its tail is forked. *Geſner*, de Piſc. p. 100.

ÆGLEUS, in botany, a term of diſtinction for the white chamæleon thiſtle. It is derived from the Greek αιγληεις of Galen; by which word he diſtinguiſhes the white chamæleon, which was an eſculent and medicinal plant, from the *erebennus*, or ἐρεβεννος, which was what we call the black chamæleon thiſtle, and was eſteemed poiſonous.

ÆGOBOLIUM, in antiquity, the ſacrifice of a goat offered to Cybele. V. Act Erud. Lipſ. an. 1703. p. 83. Mem. de Trev. 1703. p. 1331. It. 1705. p. 1001. *Struv.* Syntagm. Antiq. Rom. c. 10. p. 485.

The *Ægobolium* was an expiatory ſacrifice, which bore a near reſemblance to the *taurobolium* and *criobolium*, and ſeems to have been ſometimes joined with them.

The notion of an *Ægobolium* ſeems to have been firſt ſtarted by Reineſius, from the copy of an antient inſcription, wherein were the following words [a]; CRIOBOLIUM & AEMOBOLIUM MOVIT; where he takes *Æmobolium* for a corruption of *Ægobolium*. Van Dale, and ſome others, allow the correction; but M. de Boze explodes both it and the *Ægobolium*, aſſerting *Æmobolium*, for a mere effuſion of blood, to be the genuine reading [b].—[a Inſcript. p. 212. b Mem. Acad. Inſcript. T. 4. p. 117.]

ÆGOCEPHALUS, in zoology, the name by which the generality of authors call the bird, known in England by the name of the *godwit*, or in ſome places the *ſtone plover*, the *yarwherp*, or *yarwhip*. It is ſomewhat larger than the woodcock. Its head is covered with feathers black in the middle, and of a greyiſh brown, with ſome rediſhneſs at the edges; its neck and throat are of a rediſh brown; its breaſt is of a duſky whitiſh, and its back variegated with black, white, and yellowiſh red, the middle of all the feathers being black. The male has black tranſverſe ſtreaks on its breaſt and throat, which the female wants, and are of a plain greyiſh colour; and the rump is either white with black ſpots, or has a large triangular white ſpot on it, pointing upwards. The beak is ſomewhat longer than the ſnipe's; but the legs are ſhort. It is frequent on the ſandy ſhores of the ſea, where it walks very erect and boldly. *Ray*'s Ornithol. p. 214, 218.

ÆGOMANTIA, in antiquity, a ſpecies of divination performed by means of a goat. V. *Buleng.* l. 3. de Divinat. c. 22. p. 215.

ÆGONYCHUS, in natural hiſtory, a name mentioned by Pliny, as ſynonym of the *lithoſpermum*, or gromwell.

It had this name given it, by the Greek writers, from the words αιγος ὀνυξ, the claw or hoof of a goat.

The antients had another name for this plant, of the ſame ſort or origin, which was *Exonychon*: by this they expreſſed its being like the exterior part of the human nails on the fingers. The hardneſs and ſcaly nature of the ſeeds, gave the idea of the reſemblance of a nail, or hoof. *Pliny*, l. 26. c. 11.

ÆGOPHTHALMUS, the *goat's eye-ſtone*, a name given, by ſome authors, to thoſe pieces of agat, or other ſemipellucid gems, as have circular ſpots in them reſembling the eyes of that animal, in colour, and in their round figure.

ÆGOPOGON, in botany, a name uſed by Tragus, and ſome others, to expreſs the *common meadowſweet*, or *ulmaria*. *Ger.* Emac. Ind. 2.

ÆGREFINUS, in zoology, a word more uſually ſpelt *Æglefinus*, and uſed as a name for the common haddoc. *Bellonius*, de Piſc. p. 104. See the article ÆGLEFINUS.

ÆGYPTIACUM, (*Cycl.*)—The German diſpenſaries have another compoſition called *Ægyptiacum Compoſitum Magiſtrale*,

giſtrale, or *Hildani*, wherein treacle, mithridate, camphor, &c. are ingredients. *Junck.* Lex. Chym. Pharm. P. 2. p. 414.

White *Ægyptiacum* is a compoſition of lilly roots mixed up with aromatics: it is mentioned by Hippocrates, and is the ſame with what other antients call *Cicinum*. It was uſed by the ladies of thoſe days to ſmear over their faces, to preſerve their complexions. *Gorr.* Def. Med.

Hippocrates alſo ſpeaks of another unguent under the ſame name, compoſed of the flowers of the Egyptian thorn.

Farriers make a red, as well as black kind, of much the ſame ingredients, only with ſome difference in the proportions; uſed eſpecially to ſoften the hoofs of a horſe, when too hard. V. Dict. Ruſt.

ÆGYPTILLA, in natural hiſtory, the name of a ſtone deſcribed by the antients, and ſaid, by ſome authors, to have the remarkable quality of giving water the colour and taſte of wine. This ſeems a very imaginary virtue, as are indeed too many of thoſe in former ages attributed to ſtones.

The deſcriptions left us of this remarkable foſſil tell us, that it was variegated with, or compoſed of, veins of black and white or black and blueiſh, with ſometimes a plate or vein of whitiſh red. The authors of theſe accounts ſeem to have underſtood by this name the ſeveral ſtones of the onyx, ſardonyx, and camæa kind, all which we have at preſent common among us, but none of which poſſeſs any ſuch ſtrange properties.

ÆHOITULLA, in zoology, the name of an Eaſt-Indian ſpecies of ſerpent, found frequently in the iſland of Ceylon; it is a very long and ſlender ſnake ſometimes wholly of a fine green, ſometimes green and white, and lives principally on trees and among buſhes. *Ray*'s Synopſ. Anim. p. 332.

ÆINAUTÆ, in antiquity, ſenators of Miletus, who held their deliberations on board a ſhip, far from ſhore, and till matters were reſolved upon, never returned to land. *Plut.* in Queſt. Rom. *Calv.* Lex. Jur.

The word is Greek, Αἰναυται; q. d. *ſemper nautæ*, always mariners.

AELQUAPPE, in zoology, the common name, among the German nations, of a fiſh of the muſtela kind, the viviparous eelpout, called by Schonefeldt *Muſtela vivipara*, and in ſome places, aelpute, aelmoder, and aelmutter. It is uſually of a foot long or more. Its ſkin is perfectly ſmooth, and the colour of its back and head a browniſh yellow, marked with blotches of black; the colour of the back grows paler on the ſides, and on the belly is whitiſh. It has four gills on a ſide, and the head is ſhaped like that of the eel; the back fin reaches the whole length of the body, terminating near the tail. The belly fin begins at the anus, and reaches to the extremity of the fiſh, ending in a fine ſlender and ſomewhat reddiſh tail. Beſides theſe, it has two pair of fins, one at the bottom of the gills, which are ſomewhat broad, and the other very fine and ſlender under the throat. The young are often found alive in this ſpecies, to the number of three hundred in one individual; they are found of two fingers breadth long, and live ſome time after taken out. *Schonefeldt*, Ichthiogr.

AEM, or AM, a liquid meaſure uſed at Amſterdam, and thoughout Germany.—The *Aem* of Amſterdam is equal to four ankers or $\frac{1}{6}$ of a ton; amounting to about 250 or 260 Paris pints. The German *Aem* is different in different towns; the common one is equal to 20 vertels, that of Heidelberg to 12. *Savar.* Dict. Comm. T. 1. p. 26. ſeq.

ÆMOBOLIUM, in antiquity, the blood of a bull, or ram offered in the ſacrifices, called *Taurobolia* and *Criobolia*.

In which ſenſe the word occurs in antient inſcriptions, Reineſius and Vandale take it for a corruption, and alter it to *Ægobolium*. M. de Boze defends the *Æmobolium*. V. Mem. Acad. Inſcrip. T. 3. p. 117. Mem. de Trev. 1705. p. 2087. See ÆGOBOLIUM.

ÆNEATORES, in antiquity, the muſicians in an army; including thoſe who played trumpets, horns, *Litui*, *Buccinæ*, &c. *Kenn.* Ant. Rom. P. 2. l. 4. c. 11. p. 208. *Pitiſc.* Lex. Ant. T. 1. p. 42.

The word is formed from *æneus*, on account of the brazen inſtruments uſed by them.

ÆNIGMA, (*Cycl.*)—Some repreſent the *Ænigma* as the ſame with *gryphus*, but the more exact writers make a diſtinction; tho' wherein the difference lies is not agreed on. Some make it conſiſt in this, that the *Ænigma* properly imports ſomething merry, or jocoſe, and *gryphus* a ſubject more grave and profound [a]. Others reduce the difference to this, that in the *gryphus* there is ſomething captious, and capable of leading into a ſnare, which is not found in the *Ænigma* [b].—[[a] *Pollux*, ap. Scal. Poet. l. 3. c. 83. p. 319. [b] Mem. de Trev. Sept. 1701. p. 173.]

The *rebus* is alſo ranked by ſome in the number of *Ænigma's*.

In a general ſenſe, every dark ſaying, every difficult queſtion, every parable, may paſs for an *Ænigma*. Hence obſcure laws, are called *Ænigmata Juris*.

The alchemiſts are great dealers in the ænigmatic language, their proceſſes for the philoſophers ſtone, being generally wrapped up in riddles. e. gr. *Fac ex mare et fœmina circulum, inde quadrangulum, hinc triangulum, fac circulum et habebis lapidem philoſophorum.* Barchuſen, has publiſhed an explication of the riddles of chemiſts, alchemiſts, phyſicians, &c. Acroamata, Traj. Bat. 1703. 8°. an extract of it is given in Act. Erud. Lipſ. 1704. p. 348. ſeq.

Among the *Ænigma's* of chemiſts, that called the ſybelline *Ænigma* is famous, of which we find a copy in a MS. of Stephanus Alexandrinus. V. Miſcel. Berol. T. 1. Art. 2. p. 19. ſeq. *Fabric.* Bibl. Græc.

Ενιέα γεαμμαῖ' ἔχω, τέτρασύλλαϐός ειμι, νόειμε.
Αι τρεῖς αι πρῶται δυό γεάμμαῖ' ἔχυσιν ἑκάςη,
Ἡ λοιπὴ δὲ τα λοιπα, καὶ εἰσὶν ἄφωνα τα πέντε.
Τῶ παντὸς δ' αριθμῶ ἑκατονταάδες εἰσὶ δὶς ἑπτά,
Καὶ τρεῖς τρὶς δεκάδες καὶ δὶς τρία. Γνῶς δὲ τίς ειμι;
Ὄυκ ἀμύντος ἔση τῆς παᾳ ἐμῶ σοφίης.

Thus tranſlated by M. Leibnitz,

Literulis noſcor quadriſyllabus ipſe novenis:
Syllaba habet binas, niſi quod tenet ultima ternas.
Vocales quatuor, quinis non propria vox eſt.
Bis ſeptem vicibus numerum centuria totum
Ingreditur, decadeſque novem, tum bis tria. Si me
Noveris, hinc aditus ad ſacra noſtra patent.

Stephanus gives a myſtical ſolution of this *Ænigma*. Moret will have it ſignify the name Jehovah, which according to him comprehends the number 1696 abating one, the number contained in the *Ænigma*. Brentius maintains that the whole ſum amounts to 1711, and that it repreſents the word φοσφορος. The generality underſtand it of the word arſenic, or ΑΡΣΕΝΙΚΟΝ. M. Leibnitz gives a very artful ſolution of it in this ſenſe, by only ſuppoſing the A to ſtand for a thouſand, and 1 for unity, as we ſometimes find them uſed by grammarians.

Another *Ænigma* of the ſame character is that of Baſil Valentine, in high Dutch, thus tranſlated alſo by Mr. Leibnitz.

Quinque libros fecit divino numine Moſes,
Quos numerus Joſuæ ſuſcipit inde minor.
Tres muta populis patriarchæ voce loquuntur,
Unicus hos teſtis vera dediſſe probat;
Nil agit, hæc qui non attenta mente revolvit
Nec quinquaquinta quinque ſubeſſe videt.
Sunt tamen illa duo, queis ſi millena ſubirent,
Divitias ſapiens ſine parare poteſt.
Naſcenti quinos comites aſſiſtere cernes,
Quinque etiam comites mox morientis erunt.
Sunt quatuor, quorum nutu ſententia fertur:
Judicio prodit res tamen una ſuo.

By which is to be underſtood vitriol, or *VICTRIOLUM*; in which manner vitriol is often written by the Germans, from a corrupt etymology, as ſuppoſing it derived from *victoria*. V. Miſcel. Berol. T. 1. Art. 2. p. 19. ſeq. *Fabric.* Bibl. Græc. l. 6. c. 7. p. 696.

Among the divers ſpecies of revelation, enumerated by divines, there is one called the *ænigmatical*. Vander Hard maintains at large, that the whole book of Jonah is *ænigmatical*, particularly, that by the prophet himſelf, is to be underſtood the Jewiſh nation; by his being caſt into the ſea in a ſtorm, and ſwallowed by a whale, the Jews being carried into captivity; by his prayer in the fiſhes belly, the Jewiſh exiles ſupplications in their captivity; by the fiſhes vomiting him up, their return into their own country, &c. V. *Ænigmata ſacra*, Francof. 1624. 12°. *Ænigmata Priſci Orbis*, Helmſt. 1723. Fol. p. 294. ſeq. *A Seelen*, Medit. exegit. P. 2. p. 33. ſeq.

F. Meneſtrier has attempted to reduce the compoſition and reſolution of *Ænigma's* to a kind of art, with fixed rules, and principles, which he calls the philoſophy of *ænigmatic* images.

The ſubject of an ÆNIGMA, or the thing to be concealed, and made a myſtery of, he juſtly obſerves, ought not to be ſuch in itſelf; but on the contrary, common, obvious and eaſy to be conceived. It is to be taken, either from nature, as the heavens, or ſtars; or from art, as painting, the compaſs, a mirror, or the like.

The form of ÆNIGMA's conſiſts in the words, which, whether they be in proſe or verſe, contain either ſome deſcription, a queſtion, or a proſopopœia. The laſt kind are the moſt pleaſing, inaſmuch as they give life and action to things, which otherwiſe have them not. To make an *Ænigma* therefore, two things are to be pitched on, which bear ſome reſemblance to each other; as the ſun, and a monarch; or a ſhip, and a houſe; and on this reſemblance is to be raiſed a ſuperſtructure of contrarieties to amuſe and perplex. It is eaſier to find great ſubjects for *Ænigmas* in figures than in words, inaſmuch as painting attracts the eyes, and excites the attention to diſcover the ſenſe. The ſubjects of *Ænigma's* in painting, are to be taken either from hiſtory or fable; the compoſition here is a kind of metamorphoſis, wherein, *e. gr.* human figures are changed into trees, and rivers into metals. This converſion however, does not depend merely on caprice, there muſt be ſomething of ſuitableneſs, and even erudition to authorize it. Thus the battle of Conſtantine,

tine, againſt Maxentius may be taken for the ſubject of an *Ænigma*, to repreſent the game of cheſs: the ſign which appeared in the heavens with the words, *in hoc ſigno vinces*, may properly enough repreſent the ſecret of this game, which conſiſts in ſaving the king; it is much eaſier to turn mythology into *Ænigma's*, than hiſtory. Accordingly ſeveral have imagined, that the conqueſt of the golden fleece, was no other than the tranſmutation of metals; and that the fable of Circe, was the art of chemiſtry in *Ænigma*.

ÆNIGMA's of pure invention are a kind of poetry, and more ſubtle than thoſe drawn from mythology; ſince here the matter itſelf is to be created; inſtead of adopting ſome hiſtory or received fable, ſomething probable is feigned, the chief action whereof is known, *e. gr.* a ſhipwreck, a conflagration, an amphitheatre, or the like.

It is eſſential to *Ænigma's*, that the hiſtory or fable, under which they are preſented, be known to every body; otherwiſe it will be two *Ænigma's* inſtead of one; the firſt of the hiſtory or fable, the ſecond of the ſenſe it is to be taken in. There are few ſubjects more proper for *Ænigma's*, than the hiſtories of the old teſtament, *e. gr.* the creation of the world, the formation of Eve, the ſacrifices of Abel or Abraham, the deſtruction of Sodom, and the like. Prints of the metamorphoſes, and other fables, may alſo furniſh *Ænigma's*.

Another eſſential rule of the *Ænigma* is, that it only admit of one ſenſe. Every *Ænigma* which is ſuſceptive of different interpretations, all equally natural, is ſo far imperfect. What gives a kind of erudition to an *Ænigma*, is the invention of figures, in ſituations, geſtures, colours, &c. authorized by paſſages of the poets, the cuſtom of artiſts in ſtatues, baſſo relievo's, inſcriptions, and medals.

In foreign colleges, eſpecially thoſe of the Jeſuits, the explication of *Ænigma's* makes a conſiderable exerciſe, and that one of the moſt difficult and amuſing, where wit and penetration have the largeſt field. By explaining an *Ænigma*, is meant the finding a motto correſponding to the action and perſons repreſented in a picture, taken either from hiſtory or mythology. The great art of this exerciſe conſiſts in the choice of a motto, which either by itſelf, or the circumſtances of time, place, perſon who ſpeaks, or thoſe before whom he is ſpeaking, may divert the ſpectators, and furniſh occcaſion for ſtrokes of wit; alſo in ſhewing to advantage, the conformities between the figure and thing figured, giving ingenious turns to the reaſons employed to ſupport what is advanced, and in artfully introducing pieces of poetry to illuſtrate the ſubject, and awake the attention of the audience. F. le Jay has given a diſſertation expreſs on the rules and method of explaining *Ænigma's* in painting, in Bibl. Rhetor. See Mem. de Trev. 1716. p. 1212.

For the ſolution of *Ænigma's*, it may be obſerved, that thoſe are eaſieſt gueſſed, which conſiſt only of ſome letter of the alphabet, diſpoſed in ſeveral words; ſince, if they be of any length, by examining the oppoſite terms, we readily find out the letter intended. But 'tis otherwiſe with *Ænigma's* founded on the properties, motions, and qualities of a ſubject, which muſt be well known to ſolve them.

Ænigma's expreſſed by figures are more difficult to explain than thoſe conſiſting of words, by reaſon images may ſignify more things than words can; ſo that to fix them to a particular ſenſe, we muſt apply every ſituation, ſymbol, &c. and without omitting a circumſtance.

As there are few perſons in hiſtory, or mythology, but have ſome particular character of vice or virtue, we are, before all things, to attend to this character, in order to divine what the figure of a perſon repreſented in a painting ſignifies, and to find what agreement this may have with the ſubject whereof we would explain it. Thus, if Proteus be repreſented in a picture, it may be taken to denote inconſtancy, and applied either to a phyſical or moral ſubject, whoſe character is to be changeable, *e. gr.* an almanac, which expreſſes the weather, the ſeaſons, heat, cold, ſtorms, and the like.

The colours of figures may alſo help to unriddle what they mean: white, for inſtance, is a mark of innocence, red of modeſty, green of hope, black of ſorrow, &c.

The number may alſo contribute to aſcertain the meaning of an *Ænigma*; ſince there are ſome things which are ſingle in their kind, as the phœnix, ſun, world; which therefore become proper to ſignify monarchy. There are other things which are of ſome determinate number, *e. gr.* the four elements, five ſenſes, ſeven planets, nine muſes, twelve apoſtles, &c. When the ſame numbers are found in the natural, or artificial things, to which the figures of an *Ænigma* are applied, 'tis a ſtrong indication of the juſtneſs of the ſolution.

When figures are accompanied with ſymbols, they are leſs precarious; theſe being, as it were, the ſoul of *Ænigma's*, and the key that opens the myſtery of them. Of all the kinds of ſymbols which may be met with in thoſe who have treated profeſſedly on the ſubject, the only truly *ænigmatical* are thoſe of Pythagoras, which, under dark proverbs, hold forth leſſons of morality; as when he ſays, *ſtateram ne tranſilias*, to ſignify, do no injuſtice. Vid. *Meneſtr.* Philoſ. des Imag. Enigmat. 12mo. Paris 1694.

But it muſt be added, we meet with ſome *Ænigma's* in hiſtory, complicated to a degree which much tranſcends all theſe rules, and has given great perplexity to the interpreters of them. Such is that celebrated antient one, *Ælia, Lælia Criſpis*, about which many learned have puzzled their heads. There are two examplars of it; one found 120 years ago, on a marble near Bologna; the other in an antient MS. written in Gothic letters, at Milan. 'Tis controverted between the two cities, which is to be reputed the more authentic.

The Bononian *Ænigma*.

D. M.
Ælia Lælia Criſpis,
Nec vir, nec mulier,
Nec androgyna,
Nec puella, nec juvenis,
Nec anus,
Nec caſta, nec meretrix,
Nec pudica,
Sed omnia:
Sublata
Neque fame, neque ferro,
Neque veneno,
Sed omnibus:
Nec cœlo, nec terris,
Nec aquis,
Sed ubique jacet.
Lucius Agatho Priſcius,
Nec maritus, nec amator,
Nec neceſſarius;
Neque mœrens, neque gaudens,
Neque fiens,
Hanc,
Nec molem, nec pyramidem,
Nec ſepulchrum,
Sed omnia
Scit & neſcit, cui poſuerit.

That is to ſay, *To the gods manes, Ælia Lælia Criſpis, neither man nor woman, nor hermaphrodite, neither girl, nor young woman, nor old, neither chaſte, nor a whore, but all theſe: killed neither by hunger, nor ſteel, nor poiſon, but by all theſe: neither reſts in heaven, nor on earth, nor in the waters, but every where. Lucius Agatho Priſcius, neither her huſband, nor lover, nor friend; neither ſorrowful, nor joyful, nor weeping, certain, or uncertain, to whom he rears this monument, neither erects her a temple, nor a pyramid, nor a tomb, but all theſe.* In the MSS. at Milan, inſtead of *D. M.* we find *A. M. P. P. D.* and at the end, the following addition.

Hoc eſt ſepulchrum intus cadaver non habens,
Hoc eſt cadaver ſepulchrum extra non habens,
Sed cadaver idem eſt & ſepulchrum.

We find near fifty ſeveral ſolutions of this *Ænigma* advanced by learned men. Marius Michael Angelus maintains, *Ælia Lælia Criſpis* to ſignify rain-water falling into the ſea. Ri. Vitus firſt explained it of Niobe turned to a ſtone, afterwards of the rational ſoul, and afterwards of the Platonic idea; Jo. Turrius, of the *materia prima*; Fr. Schottus, of an eunuch; Nic. Bernandus, of the philoſophers ſtone, in which he is followed by Borrichius; Zach. Pontinus, of three human bodies in the ſame ſituation, and buried by three different men at the ſame time; and Neſmondius, of a law-ſuit; Jo. Gaſ. Gerartius, of Love; Zu. Boxhornius, of a ſhadow [a]; P. Terronus, of muſic; Fort. Licetus, of generation, friendſhip, and privation; M. Ov. Montalbanus, of hemp; Car. Cæſ. Malvaſia [b], of an abortive girl promiſed in marriage; Fr. Maſtrius, of an hermaphrodite; Pet. Mengulus, of the rule of chaſtity, preſcribed by the founder of the military religion of St. Mary; M. de Ciconia, of pope Joan; Heumannus, of Lot's wife [d]; and laſtly, J. C. S. an anonymous writer in the Lipſic Acts, of the Chriſtian church [e].—[a] Allegoria Peripatetica de Generatione Amicitia & Privatione in Ariſtotel. Ælia Lælia Criſpis, Patav. 1630. 4to. [b] Ælia Lælia Criſpis non Nata reſurgens, Bonon. 1683. 4to. Extracts of it may be ſeen in Act. Erud. Lipſ. 1684. p. 263. ſeq. Giorn. de Lettr. de Parm. T. 1. p. 68. Jour. des Scav. T. 13. p. 192. [c] Monum. Ælia Lælia Criſpis, ſive Celeber. Ænigmatis Bononienſis Hiſtoria Explicat. Bonon. 1706 & 1717. 4to. Extracts of which are given in Act. Erud. Lipſ. 1706. p. 88. ſeq. Nov. Liter. T. 2. p. 225. [d] Diſſ. de Fato Uxor. Loti. V. Act. Erud. Lipſ. 1720. p. 7. ſeq. [e] Act. Erud. Lipſ. an. 1727. p. 332. See alſo *Miſſon*, Nouv. Voy. d'Ital. T. 3. p. 270. *Kuſt.* Bibl. Nov. Libror. 1698. p. 636. ſeq.]

In imitation of this, we find another *Ænigma* propoſed in the Journal of Parma, which has exerciſed ſeveral of the wits of Italy, and given occaſion to many philoſophical and philological ſpeculations. Giorn. de Letter. de Parm. an. 1690. p. 193. ſeq.

Hic
Terra jacet & cœlo manet
Vir non vir
Qui
Mare horrens & mari hærens

Nomen
Et amiſit & non amiſit
Alienum ſumeret, proprium dimiſit
Homo & mulier
Neque dico
Mas & fœmina
Nec hermaphroditus
Qui
Virgo non caruit prole
Qui
Non pater non mater
Filium habuit
Quandoque vero pater
Nunquam vere mater
Quod eſſe non potuit bis eſſe voluit
Quia
Quod bis eſſe potuit eſſe noluit.

ÆNIGMATICAL, ſomething that relates to, or partakes of, the nature of *Ænigma's*. See ÆNIGMA.

The philoſophy of the Druids was altogether *ænigmatical*. V. *Rowl.* Mon. Antiq. p. 61. See DRUIDS, *Cycl.*

The antient ſages in general affected an *ænigmatical* way of writing [a], to conceal their doctrines from the populace. The Romans in Nero's time were obliged to have recourſe to the like method, though for different reaſons [b]. The *ænigmatical* characters of the Egyptians were a ſpecies of hieroglyphics, conſiſting of ſuch as bore no natural reſemblance to the things they repreſented. Such was the beetle, uſed to expreſs the ſun; the ſerpent, to repreſent the ſtars [c].—[a Mem. de Trev. an. 1718. p. 763. b Ibid. an. 1719. p. 559. c Id. an. 1704. p. 988.] See HIEROGLYPHIC, *Cycl.*

We read of an *ænigmatical* medal preſented by the Huguenots to Henry III. [d] Schott has publiſhed an explication of an *ænigmatical* coin of the emperor Auguſtus, concerning which, antiquaries have been long divided [e].—[d Mem. de Trev. 1704. p. 2127. e Explic. d'une Medaille Enigmatique d'Auguſt. Berl. 1711. 4to. *Le Clerc*, Bibl. Anc. Mod. T. 3. p. 212. Jour. des Scav. T. 51. p. 535.]

ÆNIGMATOGRAPHER, or ÆNIGMATIST, a maker or explainer of *Ænigma's*. See ÆNIGMA.

Hardouin, Vander Hardt, &c. are great *Ænigmatiſts*. Heumannus ſeems to have proved, that the famous *Ænigmatographer* Sympoſius, or Sympoſitus, as the name is ſometimes written, is no other than the eloquent father Lactantius; and Sympoſius only a corruption of the *Sympoſium*, or banquet mentioned by St. Jerom [b], to have been written by that author. In reality, it appears, by the preface to the *Ænigma's*, that they were propoſed at a banquet; beſides, St. Jerom informs us, that Lactantius's book was written in hexameter verſes; ſo is the book of *Ænigma's*. Laſtly, Cœlius Firmianus, which is the ſirname of Lactantius, is alſo that of the imaginary Sympoſius. 'Tis more than probable, therefore, this laſt came no otherwiſe to be a poet, than Articulus Smalcaldienſis, and Alcoranus, to be heretics [c].—[a *Fabric.* Bibl. Lat. l. 4. c. 1. p. 208. b Catal. Script. Eccleſ. c. 80. c Bibl. Germ. T. 2. art. 7. p. 152. ſeq.]

ÆNIGMATOGRAPHY, ÆNIGMATOGRAPHIA, the art of making and reſolving, or of collecting *Ænigma's*. See ÆNIGMA.

The word is compounded of Αινιγμα and γραφειν, to deſcribe.

ÆNIGMATOGRAPHY, otherwiſe called *Ænigmatology*, may be divided into general and particular. The firſt gives rules concerning the nature, kinds, compoſition, and uſe of *Ænigma's*: the ſecond conſiders the *Ænigma's* in particular ſciences, or languages, Greek, Latin, Hebrew, philological, philoſophical, theological, &c.

Nic. Reuſner has a treatiſe, under the title of *Ænigmatographia* [a], containing the *Ænigma's* of Sympoſius, Lorichius, Hadormarius, &c [b].—[a Francf. 1602. 12mo. b *Fabric.* Bibl. Lat. l. 4. c. 1. p. 208. *Heum.* Præf. ad Sympoſ. Lactant. Amæn. Litt. T. 1. p. 477. ſeq.]

ÆNITTOLOGIUS, in poetry, a kind of verſe, conſiſting of two *dactyls*, and three *trocheus's* Such is, *Scal.* Poet. P. 2. c. 24.

Prælia dira placent truci juventæ.

ÆOLIC, (*Cycl.*)—The ÆOLIC *digamma* is a name given to the letter F, which the *Æolians* uſed to prefix to words beginning with vowels, as Foινος, for οινος; alſo to inſert between vowels, as οFις, for οις. *Verwey.* Nov. Via Docend. Græc. l. 8. c. 4. §. 4.

ÆOLIC *verſe*, *carmen Æolicum*, a kind of meaſure, conſiſting firſt of an *iambic*, or *ſpondee*, then of two *anapeſts*, divided by a ſyllable, and laſtly, a ſyllable common.

This is otherwiſe called *Eulogic*, and, from the chief poets who uſed it, *Archilochian* and *Pindaric*. V. *Scal.* Poet. l. 2. c. 16. p. 142.

Its type is $\frac{\text{— } \upsilon}{\text{— —}} \mid \upsilon\,\upsilon\,\text{—} \mid \text{—} \mid \upsilon\,\upsilon\,\text{—} \mid \frac{\text{—}}{\upsilon} \mid$

E. gr. *O ſtelliferi conditor orbis.*

ÆOLIPILE, (*Cycl.*)—Dr. Plot gives an inſtance where the *Æolipile* is actually uſed to blow the fire: the lord of the manor of Eſſington, is bound by his tenure to drive a gooſe every New-year's-day three times round the hall of the lord of Hilton, while Jack of Hilton (a brazen figure having the ſtructure of an *Æolipile*) blows the fire. *Plott*, Nat. Hiſt. Stafford. c. 6. §. 65. p. 433.

In Italy it is ſaid, that the *Æolipile* is commonly made uſe of to cure ſmoaky chimneys: for being hung over the fire, the blaſt ariſing from it carries up the loitering ſmoak along with it.

F. Merſennus, and ſome others, have made uſe of this machine, to meaſure the gravity and degree of rarefaction of the air. But this method is liable to conſiderable objections. Vid. *Merſen.* Phænom. Pneum. prop. 29. *Boyle*, Phyſ. Mech. exper. 36. *Heinric.* Epiſt. ad Boyl. in fin. *Paulin.* Obſerv. p. 127. ſeq.

Some late authors have diſcovered a ſtill more extraordinary uſe, to which the frauds of the heathen prieſthood applied the *Æolipile*, viz. the working of ſham miracles. Beſides Jack of Hilton, which had been an antient Saxon image, or idol, M. Weber ſhews, that *Pluſter*, a celebrated German idol, is alſo of the *Æolipile* kind; and in virtue thereof, could do notable feats; being filled with a fluid, and thus ſet on the fire, it would be covered with ſweat; and as the heat increaſed, would at length burſt out into flames. Vid. *Staube*, Pluſterus Vet. Germ. Idol. Jour. des Scav. T. 61. p. 593.

ÆORA, in the medical writings of the antients, is uſed for geſtation; which ſort of exerciſe was often preſcribed by the phyſicians of thoſe days. Other exerciſes conſiſted principally in the motion of the body, but in the *Æora* the limbs were at reſt, while the body was carried about and moved from place to place, in ſuch a manner as the phyſician preſcribed. It had therefore the advantages of exerciſe, without the fatigue of it. *Aetius*, Tetrab. Serm. 1. c. 6.

This exerciſe was promoted ſeveral ways: ſometimes the patient was laid in a ſort of hammoc, ſupported by ropes, and moved backward and forward; ſometimes his bed run nimbly on its feet. And beſide theſe, the ſeveral ways of travelling were accounted ſpecies of the *Æora*, whether in the litter, in a boat or ſhip, or on even ground in a chariot.

ÆQUABILE *diatonum*, in muſic. See GENUS.

ÆQUILIBRATOR *regis*, in ſome writers of the middle age, denotes the king's preceptor, or governor; ſo called, becauſe he balanced, or kept his pupil ſteady. *Du Cange*, Gloſſ. Lat. T. 1. p. 92.

ÆRA (*Cycl.*) amounts to the ſame with *epocha*; though ſome authors make a difference between them: but wherein it conſiſts, they do not agree. A late critic aſſigns this difference, that in ſtrictneſs of ſpeech, *epocha* is that fixed point where an *Æra* made uſe of commences. Thus the 26th February, 747 (abating fifty-ſeven days) before the Chriſtian *Æra*, may be ſaid to be the *epocha* of the *Æra* of Nabonaſſar. Within this *Æra* other epocha's may be noted; as that of the death of Auguſtus, that of the death of Alexander, &c. But theſe cannot properly be called *epocha's* of the *Æra* of Nabonaſſar. V. Bibl. Germ. T. 5. p. 172.

Vallemont makes another difference, viz. that an epocha is a point fixed by chronologers, and an *Æra* a like point, only fixed by the popular uſage of a country, or nation. Perhaps it might not be amiſs, if chronologers would keep to this difference; but 'tis, certain the current of them hitherto uſe the two words promiſcuouſly. V. *Vallem.* Elem. de l'Hiſt. l. 1. p. 6. See EPOCHA, *Cycl.*

The Spaniſh *Æra* was introduced after the ſecond diviſion of the Roman provinces, between Auguſtus, Anthony, and Lepidus, in the year of Rome 714, the 4676th year of the Julian period, and the 38th year before Chriſt. In the 447th year of this *Æra*, the Alani, the Vandals, Suevi, &c. entered Spain. We find frequent mention of it in the Spaniſh affairs; their councils, and other public acts, being all dated according to it. Some ſay it was aboliſhed under Peter the IVth. king of Arragon, in the year of Chriſt 1358, and the Chriſtian *Æra* ſubſtituted in its place. Mariana obſerves, that it ceaſed in the year of Chriſt 1383, under John I. king of Caſtile. The like was afterwards done in Portugal.

If to any year of the Spaniſh *Æra* we add the number 4675, the ſum is the Julian year; or if from the ſame year we ſubtract 38, the remainder is the year of the Chriſtian *Æra*. V. *Strauch.* Brev. Chron. B. iv. c. 37.

ÆRA is alſo uſed, in ſome writers of the barbarous age, for any year.

In which ſenſe, we meet with *entering down the Æra*, the eleven hundred and eighth *Æra*, &c. *Du Cange*, Gloſſ. Lat. T. 1. p. 92.

Chriſtian ÆRA. It is generally allowed by chronologers, that the computation of time from the birth of Chriſt, was not introduced till the ſixth century, in the reign of Juſtinian, and is commonly aſcribed to Dionyſius Exiguus. See *Petav.* Doctrin. Temp. l. 12. c. 2, 3. *Bever.* Inſt. Chron. l. 2. c. 10. *Strauch.* Breviar. Chron. l. 4. c. 40. quæſt. 4.

ÆRARIUM (*Cycl.*) differs from *fiſcus*, as the firſt contained the public money, the ſecond that of the prince. Yet the two are ſometimes uſed promiſcuouſly for each other. *Calv.* Lex. Jur. p. 50. Jour. des Scav. T. 34. p. 67.

ÆRARIUM *ſanctius* was an appendage to the former, added on occaſion of the growth of the Roman ſtate, when there was not room enough for lodging all the public monies, and the public acts, which were depoſited with it. *Calv.* loc. cit. *Pitiſc.* Lex. Ant. T. 1. p. 45.

It was called *ſanctius*, becauſe placed in an inner and ſafer part of the temple; or becauſe in it was lodged the *aurum viceſimarium*, or twentieth, which was kept as a fund, or reſerve, for extreme neceſſity of the ſtate. On which account it was alſo called *ærarium viceſimarium*.

ÆRARIUM *Ilithiæ*, or of *Juno Lucina*, was erected by Servius Tullius, ſixth king of the Romans, and compoſed of money paid in by parents, for the birth of each child. *Dion. Halicarn.* l. 4. *Pitiſc.* Lex. Ant. T. 1. p. 45.

ÆRARIUM *privatum*, or the privy-purſe, contained the money and effects which the prince was maſter of before his acceſſion to the empire [a]. This was under the care of the *comes rerum privatarum* [b].—We meet alſo with *Ærarium juventutis*, *veneris*, *libitinæ*, and other leſſer treaſuries, *Æraria minora*, in the provinces. [[a] *Guther.* de Offic. Dom. Aug. l 3. c. 18. *Pitiſc.* Lex. Ant. T. 1. p. 45. [b] *Calv.* Lex. Jur. p. 50.]

ÆRARIUS, in antiquity, an officer inſtituted by Alexander Severus, for the diſtribution of the money given in largeſſes to the ſoldiery, or people. *Pitiſc.* Lex. Ant. T. 1. p. 45.

ÆRARIUS was alſo uſed for a perſon whoſe name was ſtruck out by the cenſors from the *album*, or liſt of his century, and was only conſidered as a citizen ſo far as to make him ſubject to pay taxes, *æra*, without being entitled to any privileges, or advantages from the common-wealth. Liv. dec. 3. l. 9.

Hence the phraſes, *ærarium facere*, *inter ærarios referre*, *ærariis eximere*, &c.—Not only Plebeians, to whom ſome have reſtrained it, but alſo knights and ſenators were ſubject to this kind of degradation. V. *Kenn.* Rom. Ant. P. 2. l. 3. c. 7. p. 113.

The *Ærarii* were incapable of making a will, of inheriting, of voting in aſſemblies, of enjoying any poſt of honour or profit, in effect were only ſubject to the burdens, without the benefits of ſociety; yet they retained their freedom, and were not reduced to the condition of ſlaves. To be made an *Ærarius* was a puniſhment inflicted for ſome offence, and reputed one degree more ſevere than to be expelled a tribe, *tribu moveri*.

ÆRARIUS is alſo uſed for a perſon employed in coining [a], or otherwiſe working braſs [b].—[[a] *Hoſt.* Hiſt. Rei Nummar. T. 1. l. 1. p. 15. [b] *Pitiſc.* Lex. Ant. T. 1. p. 46. *Calv.* Lex. Jur. p. 50.]

Theſe are ſometimes called *Ærarii fuſores*: at other times *Ærarius* is diſtinguiſhed from *fuſor*; the former anſwering to what we now call copper-ſmiths, the latter to founders.

ÆRARIUS is alſo applied to a ſoldier who receives pay. *Hoſt.* Hiſt. Rei Nummar. T. 1. l. 1. p. 15. *Calv.* Lex. Jur. p. 50. See SOLDIER, *Cycl.*

ÆRATA AQUA. See the article ZIMENT-WATER.

ÆRICA, or *Erica*, in natural hiſtory, a name given by Gaza and others to the common herring.

AEROGRAPHY, a deſcription of the air, or atmoſphere, its limits, dimenſions, properties, &c. V. Mem. de Trev. 1725. p. 1993. *Caſtel.* Mathem. Univ. p. 185.

This amounts to much the ſame with aerology, unleſs we ſuppoſe the latter to enter into the rational, and the former to confine itſelf to a deſcription of the more obvious affections thereof.

AEROLOGY, the doctrine or ſcience of the air, and its phænomena. V. Jour. des Scav. T. 24. p. 97.

AEROLOGY, called alſo the *Aerologica*, makes a part of the regimen of health, or the branch of medicine called by ſome *diaſoſtica*, or the non naturals. *Linden.* Manuduct. ad Medicin. p. 91. ſeq.

AEROMANCY (*Cycl.*) included the buſineſs of augury, and *auſpicia*; the rules of prediction from uncommon winds, ſtorms, ſhowers, and other prodigies. V. *Pott.* Antiq. Græc. l. 2. c. 18. p. 351.

Modern authors ſpeak of a more rational *Aeromancy*, meaning by it, the art of foretelling the changes and variations in the air, and weather, winds, ſtorms, and the like.

Morhof advances conſiderations for reducing *Aeromancy* to a certainty, by means of a regular ſeries of meteorological obſervations. But tho' many ſuch have been inſtituted with great care in many parts, this art has hitherto made a very ſmall progreſs.

Barometers, thermometers, hygrometers, and anemometers, are of conſiderable uſe in this kind of *Aeromancy*. *Morhorf.* Polyhiſt. Philoſ. l. 2. P. 2. c. 18. * 7. ſeq.

Mizoldus has publiſhed a body of rules for foretelling ſtorms, &c. drawn partly from vulgar obſervation, and the experience of mariners, partly from aſtrological conſiderations; under the title of *Aeromantia*. Francof. 1613. 12°. *Morhof.* ubi ſupra.

AERONAUTICA, the pretended art of ſailing in a veſſel thro' the air, or atmoſphere, ſuſtained as a ſhip in the ſea.

AEROPHYLACEA, in natural hiſtory, denotes ſubterraneous receptacles of air or wind. The word is of Greek origin, compounded of Αηρ, air, and φυλαχη *cuſtodia*, keeping.—In which ſenſe *Aerophylacea* ſtand contradiſtinguiſhed from *Hydrophylacea*, *Pyrophilacea*, &c.

Kircher ſpeaks much of *Aerophylacea*, or huge caverns replete with air, diſpoſed under ground, from whence thro' numerous occult paſſages, that element is conveyed, either to ſubterraneous receptacles of water, which are hereby raiſed into ſprings and rivers, or into the funds of ſubterraneous fire, which are hereby fed and kept alive for the reparation of metals, minerals, and the like. *Kirch.* Mund. Subterran. l. 2. c. 19. §. 1. and 4. p. 111. and 114. ſeq.

AEROSIS, Αερωσις, among the antient phyſicians, denotes the act whereby the blood is attenuated and converted into an *aura*, for the ſupport of the vital ſpirits, and the maintenance of the flame of life. *Caſtel.* Lex. Med. p. 21.

AEROSTATICA, is uſed by ſome authors for the ſcience called by others aërometry. See AEROMETRY, *Cycl.*

AEROSTATICA is properly the doctrine of the weight, preſſure, and ballance of the air and atmoſphere. *Leupold.* Theat. Static. P. 3. Act. Erud. Lipſ. 1726. p. 383.

ÆRUGO, (*Cycl.*)— The *Ærugo* of copper is the ſame with what is otherwiſe called *viride æris*.

Grew will have the turcois ſtone to be only a kind of petrified *Ærugo*. V. Act. Erud. Lipſ. 1682. p. 33.

Naturaliſts ſpeak of two kinds of *Ærugo*, one native, and the other factitious.

Native ÆRUGO is only the ſuperficial particles of the metal diſſolved, and intimately mixed with acid ſalts; in which form it is ordinarily found in copper mines, and other moiſt places. V. *Mercat.* Metalloth. arm. 4. c. 10. p. 72. *Lanciſ.* Not. ad loc.

The *Ærugo* of antient medals adds greatly to their value. It is ſometimes found of a blue, ſometimes of a crimſon, and ſometimes of a violet colour. It is ſaid to be inimitable by art; for as to that produced by ſal ammoniac and vinegar, it comes far behind it in beauty. The genuine kind inſinuates itſelf into the fineſt ſtrokes of the letters, &c. without effacing them, better than any enamel; it is only obſerved on braſs coins; for as to thoſe of ſilver, the *Ærugo* deſtroys them, and therefore is to be carefully ſcoured off with vinegar, or lemon juice. *Joubert.* Scienc. des Medail. Sec. 8. Act. Erud. Lipſ. 1694. p. 226.

Artificial *Ærugo* is what we more frequently call verdigreaſe. Ephem. Germ. dec. 3. an. 7. app. p. 164. *Caſtel.* Lex. Med. p. 21. See VERDIGREASE, *Cycl.*

ÆRUGO *Salis*, in natural hiſtory, a name given by *Pliny*, and ſeveral other antient authors, to a rediſh ſlimy matter, ſeparated from the Egyptian ſalt, called natrum, in the purifying it. We find this matter remain in the filter, on diſſolving and filtring the Egyptian nitre, at this time; it ſeems to be a mixture of a bituminus matter and a red earth, which had mixed themſelves among the cakes of the ſalt, during the time of their concreting from the water.

ÆRUSCATORES, in antiquity, a kind of ſharping ſtrollers, who got their living by tricks, telling fortunes and the like, much like modern gypſies. *A. Gell.* l. 14. c. 1. *Pitiſc.* Lex. Ant. T. 1. p. 46. ſeq.

The word is formed from *æruſcari* to beg, mump, &c.

The *Galli*, or prieſts of Cybele were called *æruſcatores magnæ matris*, and μητραγυρται, on account of their begging, or collecting alms in the ſtreets. To which end they had little bells whereby to draw peoples attention to them, much like ſome orders of mendicants abroad. *Hofm.* Lex. Univ. T. 1. p. 93. *Voſſ.* de Idol. l. 2. c. 55, and 56. *Mag.* de Tintinab. c. 7.

ÆRUSCATORES is alſo uſed for griping exactors or collectors of the revenue, who abuſe their office to the oppreſſion of the people. *Salmuth.* ad Pancirol. P. 1. Tit. 50. p. 237.

ÆS (*Cycl.*)—Æs *grave*, has been variouſly defined by critics, but is yet unaſcertained. Buddeus and Scaliger, followed by the generality, explain the term by copper in the maſs or lump, that is, uncoined; and taken in payments by the weight only. In which ſenſe, it amounts to the ſame with *Æs rude*, and ſtands oppoſed to *Æs ſignatum*. In this form it was that all ſpecies were paid in the early days of Rome. Vid. *Budd.* de Aſſe, l. 1. p. 178. and l. 2. p. 622. *Hoſt.* Hiſt. Rei Nummar. l. 2. p. 73. *Walker* on Coins, P. 1. c. 1. p. 3.

Others by *Æs grave* underſtand large pieces of copper coined, containing for inſtance, an *As*, or pound of that metal; ſuch as we find current in Sweden [a]. Theſe they aſſert bore the

title *Æs grave*, till ſuch time as they were reduced to a ſmaller ſtandard [b].—Gronovius, on the contrary, maintains, that the *As*, or pound weight did not acquire the appellation, *Æs grave*, till after their reduction. For what neceſſity could there be for calling theſe pieces *Æs grave*, heavy money, at a time when no ſmaller was known.—[[a] Philoſ. Tranſ. N°. 197. p. 1901. [b] *Salmaſ.* de Mod. Uſur. c. 6. and c. 16. *Voſſ.* Etym. in voc. *As.*]

After the reduction, authors, who had occaſion to ſpeak of the antient money, now out of uſe, could not better characterize, and diſtinguiſh it from the new ſort, which was lighter, than by calling it, *Æs grave*, heavy money. *Gronov.* de Pecun. Vet. l. 3. c. 15.

Kuſter rejects all theſe opinions, as errors which authors have fallen into, by confining themſelves to the compariſon of a heavier metal with a lighter one. The antients, he aſſerts, never meant, by *Æs grave*, any particular kind of copper money, differing in weight, or form, from other ſpecies of the ſame metal. The expreſſion is uſed by them, to denote any kind of copper money, compared with gold or ſilver; which, with regard to the bulk and ſize of the pieces, was much lighter, though of greater value. The term *Æs grave*, therefore, according to this author, was only introduced, after they had begun to coin gold and ſilver; for that the word *Æs*, being then common to all kinds of money, they could not make a particular application of it to copper money, without joining it to the adjective *grave*, heavy, which limited its ſignification, and removed the equivoque. We are not, therefore, to imagine, that when authors ſpeak of a kind of money, which they call *Æs grave*, in the earlieſt days of Rome, that there was any money which bore this denomination at that time; but that thoſe authors accommodating themſelves to the cuſtom of the age wherein they lived, when the name *Æs* was applied indifferently to any kind of money, found it neceſſary in ſpeaking of the antient money, which was only copper, and of conſiderable weight, to diſtinguiſh it from the new by the qualification of *grave*, heavy, joined with the general word *Æs*. *Kuſt.* Diſq. quid fuerit *Æs grave?* printed in his Diatribe Anti-Gronoviana, Amſt. 1712. 8vo. And in *Le Clerc*, Bibl. Choiſ. T. 24. p. 111. ſeq. Extracts and notitias of which are given in Jour. des Scav. T. 53. p. 254. Mem. de Trev. 1713. p. 924. It. 1714. p. 517. Hiſt. Acad. Inſcript. T. 2. p. 546.

But this ſyſtem, however plauſible, is rejected by ſeveral learned men, particularly Perizonius, and Mr. Ward [c]. The former has a diſſertation expreſs on the ſubject, wherein the opinion of Gronovius is further examined and defended [d].—[[c] Diſſ. de Aſſe, p. 18. ſeq. [d] Diſſ. de Ære gravi. Leyd. 1713. 12mo. An extract of which is given in Jour. des Scav. T. 55. p. 202. ſeq. See alſo *Pitiſc.* Lex. Ant. in voc. & Mem. de Trev. 1729. p. 1253.]

Æs *rude*, that unſhaped, or not faſhioned for any particular purpoſe.—Some will have this to be the ſame with *Æs grave*. —The money during the firſt ages of Rome was all of this kind. *Pitiſc.* Lex. Antiq. T. 1. p. 49. See Æs *grave*.

Others, by *Æs rude*, underſtand metal unſtamped; in oppoſition to *Æs ſignatum*, that ſtamped, or coined. *Hoſt.* ubi ſupra.

Æs *uſtum*, among chemiſts, is the ſame with what ſome call *Æs veneris*, or ſaffron of Venus; others, *Æs crematum*. *Caſtel.* Lex. Med.

There are various ways of preparing *Æs uſtum*: the moſt frequent is, by expoſing the plates to a reverberatory, or a potter's furnace, ſo long, till they will crumble into a powder [a]. Another is, by heating a long ſlip of copper in a vehement fire, till it ſparkles, then pulling it ſuddenly out, and applying a piece of ſulphur on it; this immediately liquifies the copper, which drops down in a veſſel of cold water, placed to receive it [b]. A third is mentioned in the *Cyclopædia*. See alſo *Lemeri*, Treat. des Drog. p. 15. A fourth is, by ſteeping the metal in a ſolution of ſalt, or ſtrong vinegar; then ſtratifying it with ſulphur, as above. After this, it is put in vinegar impregnated with ſal ammoniac. The like is repeated till the plates are conſumed. The vinegar being diſtilled from it, what remains is *Æs uſtum* [c].—[[a] Vid. *Junck.* Conſp. Chem. tab. 35. p. 907, 911. [b] *Junken*, Lex. Chem. Pharm. p. 10. ſeq. [c] Trev. Dict. Univ. T. 1. p. 167.]

Æs uſtum is very drying and deterſive, and, on that account, mixed with plaſters and ungents, for drying up fiſtulous ulcers, and the imbibing acrimonious humours, or ſanies. It alſo ſerves to eat off dead fleſh; to which end, it is ſaid they heat it red hot in the furnace nine times, and quench it as often in linſeed oil. But it is apt to render the bones carious. Vid. *Junck.* Conſp. Chirurg. p. 252, 257, 271.

Flos Æris, called by the Greeks, χαλκυ ανθος, (ſometimes confounded by moderns with *chalcanthum*) is prepared of copper melted, and removed into other furnaces, wherein being expoſed to a further and greater heat, and vehemently agitated by bellows, it depoſites an infinite number of ſmall ſcales, like millet grains, which being ſeparated by lotion, make the *flos Æris*. *Rul.* Lex. Alchem. p. 2. *Caſt.* loc. cit. *Gorr.* Def. Med. p. 502. ſeq. in voc. χαλκυ ανθος.

Among the moderns, *flos Æris* is ſometimes uſed for *ærugo*, or verdigreaſe. See Verdigrease, *Cycl.*

Squamma Æris properly denotes flakes of that metal ſtruck off by the hammer, in the operations of the forge, &c. Vid. *Plin.* Hiſt. Nat. T. 2. l. 34. c. 11. p. 661. *Hardouin.* Not. ad loc. *Rul.* loc. cit. *Gorr.* loc. cit. p. 502. in voc. χαλκυ λεπις.

Per Æs *& libram* was a formula in the Roman law, whereby purchaſes and ſales were ratified. *Pitiſc.* Lex. Ant. T. 1. p. 49. ſeq. *Briſſ.* de Verb. Signif. p. 30. *Danet.* Lex. Ant. in voc.

Originally the phraſe ſeems to have been only uſed in ſpeaking of things ſold by weight, or by the ſcales; but it afterwards had place on other occaſions. Hence even in adoptions, as there was a kind of imaginary purchaſe, the formula thereof expreſſed, that the perſon adopted was bought *per æs & libram*. See Adoption.

Æs *caldarium*, a term uſed by the German mineraliſts, for a ſubſtance which ſometimes occurs to thoſe who work upon cobalt, and is uſed for the making the fine blue colour, called ſmalt.

Biſmuth ore is ſometimes ſo intimately mixed with cobalt, that they cannot be ſeparated from one another. In this caſe, when they have been roaſted together, and when the arſenic is ſeparated in flours, there remains, inſtead of the fixed earth of cobalt, a coarſe regulus of biſmuth, of a reddiſh colour; to ſeparate which from the earth, they muſt have recourſe to a ſecond operation. This mixed matter they ſometimes call, in general, *ſpeiſſe*; but more uſually they divide it into two parts, and call the under part *glockenſpeiſſe*, and the upper part *Æs caldarium*.

Æs *flavum*, *yellow copper*. The Roman authors have all mentioned the way of making braſs with calamine and copper: but their fineſt kind, which they called *orichalcum*, or *aurichalcum*, they diſtinguiſhed from the inferior ſorts, which had only the name of *Æs flavum*. Pliny tells us, that the Marian yellow braſs took up a very large quantity of the calamine in the preparation, and approached to the nature of the orichalcum. This ſeems plainly to ſpeak, the orichalcum to be a different metal; but this, perhaps, may be owing to an error of Pliny, who ſuppoſes, that there was once a native metal of this colour. This he calls orichalcum, in compariſon of which, he ſays, all the artificial ones are poor. But this is not ſupported by experience, or any other teſtimony. Pliny tells us, that the Roman ſeſterces were made of yellow copper, or *Æs flavum*; and the Aſſes, of the Cyprian *Æs*, that is, of the copper in its natural colour. Our medaliſts preſerve ſeveral of the ſeſterces of this *Æs flavum*, which Pliny ſays approached nearly to the orichalcum; and it is evident, that this very metal is called orichalcum by many authors of authority and credit. The Roman authors all mention the throwing *cadmia*, or calamine, into melting copper, to make it yellow; and the chemical writers among the Greeks all mention the ſame proceſs, as a thing well known. It is therefore not to be doubted, but that the *Æs flavum* and *orichalcum* were the ſame thing, only perhaps in different degrees of perfection, as made of different proportions of the two ingredients. See Brass.

ÆSALON, in zoology, the name of a ſpecies of hawk of the long-winged kind, called in Engliſh the *merlin*. It is the ſmalleſt of all the kawk kind, uſed in the diverſion of hawking. It is of about the ſize of the blackbird. Its beak is blue, and its eyes hazel; it has a wreath of whitiſh yellow feathers behind its head; its chin is white, and its back and wings of a duſky blackiſh brown. Its larger wing feathers are black, with brown ſpots; and its tail long, and variegated with tranſverſe ſtreaks of black and whitiſh brown. Its breaſt and belly are of a whitiſh brown, variegated with blackiſh brown ſpots. Its legs are long and yellow. It feeds on partridges and other birds. *Ray*'s Ornithology, p. 51.

ÆSCH, in zoology, a name by which ſome have called the grayling, or tumbler, a fiſh of the truttaceous kind, called in Latin *thymallus*. *Willughby*, Hiſt. Piſc. p. 187.

ÆSCHNA, in natural hiſtory, the name of a ſpecies of water fly, of an aſh colour, with four wings, and a long body, hairy near the tail.

ÆSCULAPII *anguis*, in zoology, the name of a harmleſs ſpecies of ſerpent, common in Spain and Italy, called alſo *paræa*. See Paræa.

ÆSTIVAL, (*Cycl.*)—Æstival *point* is that whereby the ſun's aſcent above the equator is determined. *Wolf.* Elem. Aſtron. §. 150.

Æstival *ſigns* are thoſe extended from the ſummer ſolſtitial point, *i. e.* the ſun's greateſt declination northward, to the interſection of the zodiac and equinoctial ſouthward, including Cancer, Leo, Virgo. *Wolf.* Elem. Aſtron. §. 152.

ÆSTIVAL *ſolſtice*, the time when the ſun enters the *æſtival* point. See Solstice, *Cycl.*

ÆSTUARY, (*Cycl.*)—Æstuary, in the antient baths, was applied to the occult paſſages, or openings from the *hypocauſtum*, or ſtove, penetrating into the chambers. *Pitiſc.* Lex. Ant. T. 1. p. 51.

ÆSYM-

ÆSYMNETIC *monarchy*, among antient writers on government, denotes a limited elective monarchy. *Ariſt.* Polit. c. 10. *Thomaſ.* Philoſ. Pract. tab. 44. & in Annot.

The word is originally Greek, formed from αισυμναω, *regno*, I govern.—An *æſymnetic* ſtate ſtands oppoſed to a barbaric, or hereditary one.

ÆTATE *probanda*, in law, a writ that lay to enquire whether the king's tenant, holding in chief by chivalry, were of full age to receive his lands into his own hands. It was directed to the eſcheator of the county; but is now diſuſed, ſince wards and liveries are taken away by the ſtatute *Car.* II. Reg. Orig. 294. *Blount*, *Cowel.*

ÆTHALE, αιθαλη, αιθαλος, in natural hiſtory, a name given by ſome writers to the *cadmia fornacum*, or tutty.

It had this name from its being the concreted ſoot, or vapour of the *lapis calaminaris* and copper, melted together, in the making of braſs.

They who tranſlate this word, by the Engliſh ſoot, miſtake its true meaning; for the Greeks have carefully diſtinguiſhed between this and ſoot, which they called, ασθολη, *aſbole*. What they expreſs by *Æthale*, is that fine and thin vapour of a bluiſh colour, which riſes in form of a flame, from the ſurface of the melted metal; and this concreting againſt the top and ſides of the furnace, either in botryoid cluſters, or in thin flakes, formed what they generally called *cadmia*, but ſometimes *Æthale*, the name of the vapour that formed it.

ÆTHER, (*Cycl.*)—Some of the antients, particularly Anaxagoras, ſuppoſed the *Æther* to be of the nature of fire. An opinion like which, divers moderns have entertained, who conceive *Æther* as no other than the matter of the ſun, or ſolar particles put in a violent rotatory motion, by the ſtrokes of the body of the ſun, from which they are emitted. V. *Verdries*, Phyſ. Proleg. §. 2. p. 6. It. P. 1. c. 4. §. 5. p. 108. Mem. de Trev. 1703. p. 172. Act. Erud. Lipſ. 1707. p. 361. Works of Learn. T. 7. p. 484.

Some repreſent the *Æther* as 7200 times more rare than air [a]. Others make it more denſe than gold itſelf: for the *Æther* is all *Æther*, whereas in gold there are numerous pores filled with other matter [b]. Some pretend that there are ſeveral ſpecies of *Æther*, of different degrees of ſubtilty [c]. Others reject them all, judging the rays of light ſufficient to anſwer all the purpoſes of an *ætherial* matter [d].—[[a] *Perrault*, Ouv. Div. de Phyſ. T. 1. Bibl. Choiſ. T. 1. p. 250. [b] *Hook*, Poſthum. Works, p. 172. [c] *Perrault* & *Hook*, ubi ſupra. [d] Act. Erud. Lipſ. 1701. p. 391.]

A late philoſopher eſtabliſhes two general principles of all bodies; the firſt, *Æther*, or radiating particles, whoſe motion is from the center towards the circumference: theſe he ſuppoſes continually ſupplied from the ſun and fixed ſtars. The ſecond, Air, compoſed of globular particles, the motion of which is from the circumference towards the center. Hence a ready ſolution of expanſive and contractile forces. *Rudiger*, Phyſ. Divin. & in Philoſ. Synth. p. 91. ſeq. Nouv. Rep. Lett. T. 54. p. 150. Mem. de Trev. 1718. p. 1082. Act. Erud. Lipſ. 1716. p. 345.

Des Cartes and Huygens account for gravitation, or the centripetal tendency of bodies, from the centrifugal power, and circular motion of the *Æther* [e]. The abbé de Catelan has a diſcourſe expreſs to overturn this ſolution [f]. Herman goes farther, and ſhews, that the centrifugal power of the *Æther* ſhould rather repel bodies from the earth, than impel them towards it [g]. James Bernouilli [h], in a treatiſe on the gravity of the *Æther*, takes a middle courſe, maintaining, that the ſubtile *ætherial* matter, diffuſed through the ſpaces above the atmoſphere, has its gravity, as well as the air itſelf; and that the two co-operating together, produce thoſe effects commonly attributed to the preſſure of the atmoſphere alone.—[[e] Mem. de Trev. an. 1721. p. 2087. It. an. 1722. p. 111. Id. an. 1723. p. 198. *Verdries*, loc. cit. c. 6. §. 11. p. 166. *Stair*, Phyſiol. Nov. Exper. 5. Act. Erud. Lipſ. an. 1686. p. 405. *Hook*, Poſthum. Works, p. 167. [f] V. Act. Erud. Lipſ. an. 1712. p. 357. ſeq. [g] Exerc. Francof. T. 1. Ex. 4. p. 79. Act. Erud. Lipſ. an. 1712. p. 45. [h] Cogit. de Gravitate Ætheris, Amſt. 8vo. an. 1683. Extracts of it may be ſeen in Journ. des Scav. T. 13. p. 87. ſeq. & Act. Erud. Lipſ. an. 1683. p. 106. ſeq.]

Dr. Hook, long ago, had ſome ſuſpicion, that the *Æther* permeated all bodies, was the medium of light, the fluid body in which the air is but as a tincture, that it cauſed gravity in the earth, or other cœleſtial bodies, aſſiſted in the action of fire and burning, and in the diſſolution of other bodies by menſtruums, in fermentation, and the like. *Hook*, Poſthum. Works, p. 29. See farther concerning the exiſtence of *Æther*, *Boyl.* Philoſ. Works abr. T. 2. p. 504. *Vater*, Phyſ. Exper. c. 2. p. 72. ſeq. Its fluidity, circulation, elaſticity, &c. *Vater*, ib. p. 75. ſeq. *Verdries*, P. 2. c. 3. §. 1. p. 293. *Hook*, loc. cit. p. 171. Its being the primum mobile, or ſource of all motion, *Verdries*, p. 6, 63, & 107. Its influence on the air, *Hook*, ib. p. 380. Impediment to the moon's motion, Id. ib. p. 191. Its being the cauſe of the planetary motions, Giorn. de Letter. d'Ital. T. 10. p. 6. ſeq. Of colours and refrangibility, &c. Ib. T. 23. p. 132. Of ſound, Ib. T. 9. p. 315. and Mem. Acad. Scienc. an. 1720, p. 50. Philoſ. Tranſ. N°. 100. p. 15.

The misfortune is, that theſe learned authors only aſſert, but do not demonſtrate.

ÆTHER, in chemiſtry. See the article SPIRITUS *ætherеus Frobenii*.

ÆTHERIAL, (*Cycl.*)—The antient Platoniſts and Pythagoreans ſuppoſe different bodies united within the human ſoul; viz. the groſs, or material one; a finer aerial one; and, 3dly, the fineſt of all which they call *ætherial*, cœleſtial, &c. σωμα αερανιον, Αιθεριον, αυγοειδες. *Cudworth*, Intell. Syſt. c. 4. Bibl. Choiſ. T. 8. p. 52.

Several authors conſider the ſoul as an *ætherial* ſubſtance [a]. Hippocrates himſelf ſeems of this opinion [b]. And hence modern phyſicians aſcribe many phænomena in the animal oeconomy, to the action of an *ætherial* ſubſtance [c]. Divers alſo conceive the animal ſpirits as of an *ætherial* nature [d].—[[a] Bibl. Choiſ. T. 6. p. 244. *Garman.* de Mirac. Mort. l. 2. tit. 10. §. 76. [b] Jour. des Scav. T. 85. p. 80. [c] Obſerv. Halenſ. T. 11. p. 28. Jour. des Scav. T. 85. p. 51. [d] Mem. de Trev. an. 1715. p. 1362.]

The Chaldees placed an *ætherial* world between the empyreum and the region of the fixed ſtars. Beſide which, they ſometimes alſo ſpeak of a ſecond *ætherial* world, meaning by it the ſtarry orb; and a third *ætherial* world, by which is meant the planetary region. *Stanl.* Hiſt. Philoſ. P. 15. p. 1040. ſeq.

ÆTHERIAL *phoſphorus* is a name generally given, by Bernouilli, to that called mercurial, or barometrical phoſphorus. V. Bibl. Anc. Mod. T. 8. p. 227. See PHOSPHORUS, *Cycl.*

ÆTHIOPIAN *crown*, in natural hiſtory, the name of a ſhell-fiſh, of the genus of the *dolium*, or *concha globoſa*. It is of a brown colour, but differs from the common ſhell of this genus, in having the top, or head, dentated, ſo as to repreſent a crown. See DOLIUM.

ÆTHIOPS, (*Cycl.*)—A new preparation of *Æthiops* is given by Cruger, a German phyſician, which is white and fair; and, on that account, called *Æthiops minerale ſanguine regis ablutum:* in oppoſition to which, he calls the dark, or vulgar kind, *Æthiops cum ſtercore ſuo*. Ephem. Germ. dec. 3. an. 7. obſ. 105. p. 173.

Authors are not agreed as to the merits of *Æthiops* mineral. Cheyne, and many more, commend it highly. Boerhaave, on the contrary, and ſome other authors, reject it as uſeleſs. V. *Gorris*, Mercur. Triumph. Act. Erud. Lipſ. an. 1717. p. 158. and *Boerhaave*'s Chem. Part 3.

ÆTHIOPS *albus*, in pharmacy, quickſilver rubbed with a double quantity of crabs-eyes, or of ſugar-candy, till it is extinguiſhed. This has been taken by ſome, without any ſenſible effect; yet a very ſmall quantity of it has raiſed a high ſalivation in others. Quickſilver extinguiſhed in prunels, has operated much the ſame way.

ÆTHIOPS *of Dr. Plummer*. See PLUMMER's *Æthiops*.

ÆTHYIA, in zoology, a name by which the old authors have called one of the web-footed fowl, ſeeming to be the *utamania* of Crete, or the common auk, or razor-bill. See the articles ALKA and UTAMANIA.

ÆTIOLOGICAL, ſomething that aſſigns the cauſe of an effect, or appearance. The *ætiological* part of phyſic, is otherwiſe called *Ætiology*.

ÆTIOLOGY (*Cycl.*) is uſed for a figure in rhetoric, whereby in relating an event, we aſſign alſo the cauſe of it. *Voſſ.* Elem. Rhetor. c. 16. p. 35. *Thomaſ.* Erot. Rhet. c. 25. p. 52.

In which ſenſe, *Ætiology* differs from *color*, as the former aſſigns the true cauſe, the latter only a feigned or ſpecious one.

The ſceptics were profeſſed opponents of all *Ætiology*, or argumentation from cauſes. *Sext. Emper.* Pyrrh. Hypotyp. l. 1. c. 25. *Stanl.* Hiſt. Philoſ. p. 787.

ÆTITES, (*Cycl.*) the *eagle-ſtone*. This foſſil ſubſtance has been much renowned for its imaginary virtues. There are two or three diſtinct genera of bodies, ſeveral of the ſpecies of which, at times, form the body called by this name. The *geodes*, when their earthy matter is pretty firmly united within them, and will rattle on ſhaking them, are not uncommonly called by this name; and much more frequently than theſe, the *heteropyræ*, a genus of the cruſtated ferrugineous bodies with hard and ſolid ſubſtances, ſerving for their nuclei, and ſometimes looſe in them. Theſe laſt are what are ſold in the German ſhops, under the name of *ætitæ*, and are there uſed ſometimes internally in medicine. See GEODES and HETEROPYRA.

But the fineſt and moſt valued of all the eagle-ſtones, are accidental ſtates of one or other of our common pebbles. Theſe are ſo far from being a peculiar ſpecies of foſſil, though uſually accounted ſuch, that they are not determinately of any one ſpecies of pebble. That, however, which moſt uſually furniſhes them, is the brown centered pebble, with whitiſh, bluiſh, and brown cruſts. See CALCULI.

The plain hiſtory of this remarkable foſſil is this. The central nucleus of many ſpecies of pebbles, peculiarly of this, is coarſer than the reſt of the ſtone, that is, it is made up of more

more earth and leſs cryſtal; the natural conſequence of which muſt be, that being of a more looſe and rare texture, it is in drying more apt to ſhrink than ſuch maſſes, as are compoſed of a harder and purer matter. The central nucleus in this ſpecies is alſo ſurrounded with a whitiſh cruſt, of a more looſe texture, and more ſubject to ſhrink in drying than even the nucleus itſelf; and being compoſed of more earth and leſs cryſtal, is alſo more friable and ſoft. The outer circles of this ſtone, are of a greatly harder ſubſtance. Whenever the earthy matter in the nucleus, and firſt cruſt of this pebble, a little exceeds its juſt proportion, the conſequence will be, that the ſtone will become an ætites. For the nucleus ſhrinking and contracting itſelf to a ſmall ſize on the evaporation of its fluid matter, muſt ſeparate itſelf from its firſt cruſt, and that alſo ſhrinking, muſt be drawn backward toward the other cruſts; whence the cavity will become larger between that and the nucleus, and conſequently, the nucleus will rattle in it when the ſtone is ſhaken. The pebble in this ſtate having been afterwards rolled about by waters, the nucleus has by rolling, broken to pieces all the inner cruſt, and is uſually found in the hollow of the ſtone, buried in a large quantity of a whitiſh powder.

Theſe eagle ſtones are not uncommon in our gravel-pits, but being, by their hollowneſs rendered leſs ſtrong than the ſolid pebbles we frequently find them broken; but on trying ſeveral of the whole pebbles of the ſame outer appearance, it is not uncommon to meet with a whole one. V. *Hill*'s Hiſt. of Foſſ. p. 517.

In the ſandy plain of Bhar bela ma, in Egypt, the *Ætites* is found two or three inches below the ſurface of the ground, and in mines or quarries, about half a mile diſtant from each other. F. Sicard relates the manner wherein the ſand is here metamorphoſed into ſtones. It is probable the earth emits a metalic, or petrifying fume, which ferments with the ſand it meets with, and in this fermentation forms it into roundiſh maſſes, ſtill gathering more and more ſand, till by degrees it hardens, and turns black by the heat of the ſun. Nouv. Mem. des Miſſ. T. 2. p. 75. Jour. des Scav. T. 62. p. 679. ſeq.

Langius explains the proceſs ſomewhat more minutely. The whole matter, he obſerves, does not become ſtony at once, but that next the ſurface firſt; either becauſe the ſtony juice does not reach to the center, or is not ſtrong enough to petrify the whole. While the internal parts are hardening, they ſhrink, and by this means occaſion a cavity, and thus ariſes the geodes. If the petrifying juice, after having hardened the ſuperficial parts, inſinuate to the centre, there is formed a nucleus, which ſhrinking likewiſe in the petrifaction, leaves a cavity, or vacancy between the two, and this is the *Ætites*. *Lang.* Hiſt. Lapid. Figurat. Helvet. p. 117. ſeq. Act. Erud. Lipſ. an. 1709. p. 21. ſeq.

The *Ætites* according to Sicard, while in its mine under ground, has three qualities. 1. It is ſoft and brittle as an egg. 2. It yields no ſound. 3. It is of a light violet, yellow, or aſh-colour. After continuing a while in the open air, it turns hard as coral, the internal matter dries and ſhrinks into leſs compaſs, ſo that when ſhaken it rattles; and its light colour turns to a deep brown, or dark.

See further concerning the hiſtory of the *Ætites* in Mercat. Metalloth. arm. 9. c. 22. *Nicholſ.* Lapid. P. 3. c. 54. p. 184. ſeq. *Plin.* Hiſt. Nat. T. 2. l. 36. c. 21. *Hardouin.* Not. ad loc.

Other particulars concerning the *Ætites* are alſo found in Bibl. Germ. T. 5. p. 113. Jour des Scav. T. 31. p. 385. Concerning its formation, in *Plott.* Nat. Hiſt. Stafford. c. 4. §. 11. The noiſe it yields, in *Mercat.* ubi ſupra, & *Lancis.* not. ad loc. Extraordinary kinds and figures of it, male, female, florid, angular, ridged, orbicular, amygdalate, oval, chalcedonian, flinty, *&c.* in *Grew*, Muſ. Reg. Societ. P. 3. Sec. 1. c. 5. p. 297. ſeq. *Woodw.* Hiſt. Engl. Foſſ. T. 2. p. 69. & 102.

The *Ætites* is alſo known by the names *Eutocium*, *Echites*, *Erodialis*, *Aquileius*, *& Lapis prægnans*; ſome rank it under the claſs of precious ſtones, to which it has no title. Some think it may come properly enough under that of figured ſtones. V. *Fabric.* Bibl. Græc. T. 4. l. 4. c. 29. p. 327.

The *Ætites* kind differs from the bezoar mineral, in that the coats or cruſts of the latter are cloſe and without any cavity within them; whereas thoſe of the former are looſe, and hollow within. See BEZOAR.

Pliny and others make the geodes a ſpecies of it, but the more exact diſtinguiſh between the two; limiting the *Ætites* to that which has another within it, and the geodes, to that which in lieu of a ſtone, has a ſoft matter within it. See GEODES.

Dr. Woodward places the diſtinguiſhing characteriſtic of the *Ætites*, in that it conſiſts of ſeveral cruſts, which have in them a cavity with matter in it, looſe and moveable; either firſt ſolid and ſtony called a *callimus*, which makes the *Ætites* properly ſo called; or ſecondly looſe, as ſand, ockre, chalk, or earth, which makes the *geodes*; or thirdly, liquid, which makes the *enhydros*. V. *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 1. p. 238.

It is uſual enough, ſays a modern virtuoſo, for ſtones, eſpecially thoſe of a globular or oval form, to have coat upon coat; and thoſe coats ſometimes very different from one another, ſome of them ſoft, ſome hard; nay ſometimes, after a long ſpace of time, one of theſe coats will ſhrink from another, after the manner of a kernel, when the ſhell grows dry; and then if the encloſed ſubſtance continue ſoft, and marly, the ſtone is called a geodes, if ſtony, it makes on of thoſe rattling ſtones called *Ætites*. *Thoreſby*, ap. Phil. Tranſ. N° 277. p. 1071.

ÆTNA-*Salt*, *Sal Ætnæ*, a name given by ſome authors to the ſal armoniac, which is found on the ſurface and ſides of the openings of *Ætna*, and other burning mountains after their eruptions; and ſometimes, on the ſurface of the ferrugineous matter which they throw out. This ſalt makes a very various appearance in many caſes; it is ſometimes found in large and thick cakes, ſometimes only in form of a thin powder, ſcattered over the ſurface of the earth and ſtones. Some of this ſalt is yellow, ſome white, and ſome greeniſh.

This ſalt is a concrete of nitre, ſulphur, and vitriol, burnt and ſublimed together; Borelli found once, a vaſt quantity of this ſalt on mount *Ætna*, and tried many experiments on it, particularly, as to its exploſive effects.

It is a generally received opinion, that ſal armoniac properly added to gun-powder, will greatly aſſiſt its exploſion; from this common opinion that author conceived, the *Sal Ætnæ* might have greatly aſſiſted in the exploſions and conflagrations of that mountain, and in the fluxing or melting the fabulous and other vitrifiable matter into the ſlags, which we find, on the eruptions, thrown out in great abundance.

For a trial of the effects of this ſalt, he added ſome of it to pulveriſed ſulphur and nitre, but he found to his amazement, that it was ſo far from being kindled by the fire; that it manifeſtly prevented the accenſion of the brimſtone, and ſalt petre, which were even extinguiſhed by it, as if water had been thrown upon them. The ſame was the effect where powdered charcoal was added, and hence he concludes, that this ſalt is ſo far from occaſioning the exploſions of that mountain, that it does not exiſt in it, but is formed during the burning. Phil. Tranſ. N°. 100.

ÆTOLARCHA, in antiquity, the prince or chief of the nation of the Ætolians. V. Miſc. Lipſ. T. 5. p. 184. Liv. 34, 23.

AFDELLES, in ichthyology, a name given by the Cretans to the fiſh called at Rome, *donzellina* and *zigurella*. It is the *Julis* of authors, and, according to the artedian ſyſtem, is a ſpecies of the *Labrus*. Artedi diſtinguiſhes it from the others, by the name of the *Palmar Labrus*, with variegated ſides, and two large teeth in the upper jaw.

AFFATOMIA, in antient laws, a kind of donation made by thruſting a wand into the perſon's boſom, to whom it was made. V. *Du Cange*, Gloſſ. Lat. T. 1. p. 98.

The word is alſo written *Adfatomia*, *Adfatimus*, *Affatimia*, &c.

AFFECTIO *Bovina* is a diſeaſe incident to cattle, occaſioned by a little worm, bred between the fleſh and the ſkin; which works its way over all parts of the body. *Le Clerc.* Hiſt. de la Medic. p. 777. Jour. des Scav. T. 75. p. 647. See WORM.

Dr. Friend charges M. Le Clerc with confounding the *Affectio Bovina* with the *Vena Medinenſis*, which Ætius, and Albucaſis expreſsly diſtinguiſh [a]. But the charge does not ſeem well grounded [b].—[[a] *Friend*, Hiſt. Phyſ. P. 1. p. 51. [b] V. Bibl. Anc. Mod. T. 27. p. 405.]

AFFETTUOSO, or *Con* AFFETTO, in the Italian muſic, is uſed to denote that kind of muſic, which muſt be performed in a very tender, moving, and affecting manner; and for that reaſon rather ſlow than faſt. *Broſſ.* Dict. Muſ. in voc.

AFFINITY, *Affinitas*,—(*Cycl.*) among civilians, ſtands diſtinguiſhed from kinſhip, *Cognatio*, or Conſanguinity, *Conſanguinitas*, as theſe ariſe from blood; from *Neceſſitudo*, which ariſes from offices, from *Gentilitas*, which ariſes from being of the ſame family, and ſurname. *Calv.* Lex. Jur. p. 52.

Affinity does not found any real kinſhip, it is no more than a kind of fiction, introduced on account of the cloſe relation between huſband, and wife [a]. It is even ſaid to ceaſe, when the cauſe of it ceaſes; hence a woman who is not capable of being a witneſs for her huſband's brother, during his life time, is allowed for a witneſs, when a widow, by reaſon the *Affinity* is diſſolved. Yet with regard to the contracting marriage, *Affinity* is not diſſolved by death, tho' it be in every thing elſe [b].—[[a] *Berger.* Diſq. de Matrim. Comprivign. [b] *Calv.* Lex. Jur p. 53.]

There is no proper *Affinity* between the kindred of the two married perſons, nor between the kindred of thoſe, who are in the ſecond or third degree of *Affinity*, nor even between the huſband and the wife. *Hartung.* exercit. p. 53. & *Calv.* Lex. Jur. p. 52.

There are no peculiar lines or degrees of *Affinity*, but it is reckoned after the ſame manner as conſanguinity; conſequently, differently in the civil, from what it is in the canon law. Whatever line or degree of conſanguinity, the kindred of one of the parties married are in, they are in the ſame line and degree of *Affinity* to the other. And again, in whatever line or degree of *Affinity* perſons are, in the firſt kind; they are in the ſame in the ſecond and third kinds of *Affinity*. Hence ariſe what we may call a direct and a collateral, an aſcending and a deſcending line of *Affinity*.

The degrees and terms of *Affinity* are chiefly, father in law, *i. e.* husband's or wife's father, in Latin *Socer*; ſtep father, *i. e.* mother's huſband, *Vitricus*; mother in law, *i. e.* huſband's or wife's mother; ſtep-mother, *i. e.* father's wife, *Noverca*; ſon-in-law, *Gener*; daughter-in-law, *Nurus*; ſtep-daughter, *i. e.* huſband's or wife's daughter by another marriage, *Privigna*; ſtep-ſon, *i. e.* huſband's or wife's ſon by a former marriage, *Privignus*; which two laſt conſidered in relation to each other are called *Comprivigini*; ſon-in-law, *i. e.* daughter's huſband; brother-in-law, *i. e.* huſband's brother, or ſiſter's huſband, *Levir*; wife's brother; brother's wife; ſiſter-in-law, *i. e.* huſband's or wife's ſiſter, *Gloſſ.* V. *Calv.* loc. cit.

As to the doctrine of the canoniſts concerning impediments to marriage ariſing from *Affinity*, See. *Lang.* Tract. de Nupt. & Divort. p. 21. Act. Erud. Lipſ. an. 1716. p. 78. *Henning.* de Grad. Matrim. Jour. des Scav. T. 49. p. 17. Act. Erud. Lipſ. 1705. p. 44.

In the Lutheran church, marriage within the ſecond degree of *Affinity*, either in the direct or collateral line is prohibited; ſo that a man is not here allowed even to marry the widow of his wife's brother, without a particular diſpenſation. *Lang.* loc. cit. Jour. des Scav. T. 62. p. 166.

It is diſputed, whether *Affinity* in the firſt degree be an impediment by the divine, or only by the poſitive laws? The negative is generally allowed; which is the foundation of the diſpenſations granted for marriages within it, by the pope, in the Romiſh countries, and by the ſovereign, in proteſtant ones. V. Jour. des Scav. T. 83. p. 180. It. T. 1. p. 180. Nouv. Rep. Lett. T. 2. p. 688. ſeq.

The Lutheran doctors have had a long diſpute concerning the marriage of *Comprivigni: i. e.* ſuppoſing a man who had children by a former wife, marries a woman who has children by a former huſband, whether this ſecond marriage becomes an impediment to that of the children by the firſt? The civil and canon laws, 'tis certain, know no ſuch impediment. Among the divines of the Lutheran perſuaſion, there are four different opinions concerning the point.—Some declare abſolutely, and without exception, againſt all marriages between *Comprivigni*; of which number is Cramer, who holds ſuch marriages prohibited by the divine law. Others aſſert, that they are all, without exception, lawful. Others take a middle courſe; maintaining, that ſuch perſons may lawfully marry when there are no children by the ſecond marriage; but that the birth, or even conception of a child by this marriage, is an impediment to the children of the former. Laſtly, others maintain that even in this caſe, marriage is not expreſsly forbid by the divine law, but that it is nevertheleſs better to abſtain from it, by reaſon of the general prohibition, *ad proximam ſanguinis tui non accedes.*

M. Berger has a diſſertation expreſsly on the ſubject, wherein, after ſtating the ſeveral opinions on the point, he declares for the laſt. Diſq. de Matrim. Comprivign. Lipſ. 1706. 4°. extracts of it are given in Jour. des Scav. T. 44. p. 330.—333. and in Mem. de Trev. an. 1710. p. 247.—252.

The foundation of this third opinion is a motive of decency, which it is apprehended does not allow, that a child born of the ſecond marriage, ſhould bear the title of brother or ſiſter, with regard to two others who are married together. The difficulty ariſes from the text in Leviticus; the nakedneſs of thy father's wife's daughter begotten of thy father, (ſhe is thy ſiſter) thou ſhalt not uncover; which as commonly underſtood, only forbids marriage between brothers and ſiſters of the ſame fathers. Bohlius alledges that the text in Leviticus is to be underſtood thus, thou ſhalt not marry the daughter of a woman, who has had children by thy father; grounding his opinion on this, that the Hebrew word *Moledech* (uſed by Moſes in the phraſe, thou ſhalt not marry her who is *Moledech Abicha*) is to be tranſlated by the participle active, in Latin, *parientis patri tuo*, bringing forth children to thy father; in as much as it may be taken for the participle of the active conjugation *Hiphil.* Levit. *c.* xviii. *v.* 11. Fabricius, Vanerius, Strychius and Thomaſius have eſpouſed this opinion, which yet the journaliſts De Trevoux pretend, deſtroys itſelf. Calavius, Carpzovius, Lud. De Dieu, and Cothman, profeſſor at Roſtoch, are the principal who have oppoſed it. V. Mem. de Trev. 1710. p. 249. ſeq.

AFFINITY, in the civil law, is divided into civil, that between free perſons, and ſervile, that between ſlaves.

Legitimate AFFINITY is that contracted by a proper and legal matrimony; or between ſlaves by *Contubernium.*

Illegitimate AFFINITY, that contracted out of legal marriage. *Affinity* may be contracted by an unlawful commerce; thus a perſon who has impregnated two ſiſters, is prohibited marrying either of them; thus an *Affinity* may commence between huſband and wife, by his lying with her ſiſter [a]. The duke of Wirtemberg-Montbeliard having had children by one ſiſter as a miſtreſs, and afterwards taking the other ſiſter for wife, the *Affinity* contracted by means of the former was made an objection to the validity of the marriage of the latter, and the legitimacy of her children, and conſequently their right of inheriting. But it was replied, that the laws of *Affinity* are not binding on ſovereign princes of the proteſtant profeſſion, but may be diſpenſed withal by them; and that the duke had given himſelf a diſpenſation [b].—[a *Henning.* de Grad. Matrim. c. 3. Act. Erud. Lipſ. 1719. p. 117. *Pitiſc.* Lex. Ant. T. 1. p. 54. [b] V. Jour. des Scav. T. 83. p. 179.]

True AFFINITY is that ſubſiſting, while the marriage between the two parties ſubſiſts.

Quaſi AFFINITY, that ſubſiſting either after the diſſolution of the marriage, as between a huſband, and his wife's daughter begot by another after her being divorced from him; or before the marriage is ſolemnized, as that between a father and a daughter, only eſpouſed, or betrothed to his ſon. V. Jour. des Scav. T. 58. p. 19.

AFFINITY *of the firſt kind*, that between the huſband, and his wife's kindred by blood; or between the wife, and her huſband's kindred by blood.

AFFINITY *of the ſecond kind*, that between the huſband, and his wife's relations by marriage; or between the wife, and her huſband's relations by marriage.

AFFINITY *of the third kind*, that between the huſband, and the relations of his wife's relations by marriage; or between the wife, and the relations of her huſband's relations by marriage.

Contius, Hotoman, and many others, have written expreſsly on the ſubject of *Affinity*. V. Bibl. Thuan. T. 1. 225. *Lipen.* Bibl. Jur. p. 11.

Affinity is ſometimes alſo uſed abuſively, for the relation between the huſband and wife. *Calv.* Lex. Jur. p. 52.

This is more properly called union, communion, propinquity, *&c.*

AFFINITY is alſo uſed figuratively, for a conformity, or agreement between one thing and another.

In which ſenſe the word ſtands oppoſed to diverſity, variety, oppoſition, *&c.*

Biſhop Wilkins gives tables, wherein things are claſſed according to their *Affinities*. V. *Real.* Charact. P. 2. p. 22.

Henckelius has a treatiſe expreſs, on the *Affinity* between vegetables and minerals. Lipſ. 1722. 8°. V. Act. Erud. Lipſ. an. 1723. p. 409. ſeq.

AFFINITY is more particularly uſed, in ſpeaking of the relation or ſimilitude beetween languages, occaſioned by their being derived from the ſame ſource.

There is an *Affinity* between dialects of the ſame mother-tongue, but none between mother-tongues themſelves, as being ſuppoſed of entirely different origins. *Wallis*, ap. *Greenw.* Engl. Gram. pref. p. 20.

Grammarians and etymologiſts find many *Affinities* between languages, and imagine many more; Hebrew being the reputed ſource of all others, there are few languages, but what have been obſerved to bear a near *Affinity* to it, not only the Greek, the Latin, the Runic, Saxon, Swediſh, German, and Welch; but even the Chineſe and the Laponic. V. *Thomaſſ.* Meth. Etud. Gram. l. 1. c. 7. Pref. p. 107. It. l. 3. c. 9. ſeq. *Rowl.* Mon. Antiq. p. 275.

Beſides the conformity between words of different languages, Grammarians conſider the *Affinity* between words of the ſame language formed from each other, *e. gr.* adjectives from ſubſtantives, participles from verbs, *&c.* Hence the claſs of paronyma, or conjugates. V. *Wallis*, Gram. Angl. c. 14. p. 102. ſeq.

Paſſerat has a celebrated work on the *Affinity* between letters [a], on which he put ſo great value, that he wiſhed no other piece of his had ever ſeen the light [b].—[a *De Literarum inter ſe cognatione & permutatione*, 1606. 8°. See an account of it. in Bibl. Anc. Mod. T. 7. p. 346. & *Colom.* Bibl. Choiſ. p. 44. [b] *Gillot.* Lett. 52. l. 1. a M. De la Scala. V. *Scalig.* Epiſt. 355. l. 4. ad Labb.]

AFFINITY is ſometimes uſed in chemiſtry, and other parts of natural knowledge, for the ſimilitudes, or like properties and powers of bodies.

M. Geoffroy has given a table of the different degrees of *Affinity* between moſt of the bodies employed in chemiſtry, combined various ways; whereby we may foretel the reſult of any mixture, what will be the iſſue of the combat, which will ſurmount, and which give way to the other. V. Mem. Acad. Scienc. An. 1718. p. 256, 269. Some objections to this table, with an illuſtration of it, are given in the memoirs for the year 1720. p. 24. and the Hiſt. p. 42. See RELATION.

AFFIRMATION (*Cycl.*)—The ſign of *Affirmation*, in logic, is the copula *is*, which denotes the connection between the two notions.—This copula is either expreſſed, or implied; in Latin, it is often implied, as in *Sol lucet*, q. d. *Sol eſt lucens.* V. *Wolf.* Logic. §. 206.

Some mechanical philoſophers pretend to reduce the judgment of the mind in *affirming*, to a diſpoſition, or modification of the brain, ariſing from the ſynchroniſm of the two vibrations of the fibres thereof, one of which repreſents the ſubject, the other the attribute of the *Affirmation*, or negation; or, in other words, from the ſynchroniſm, or equality of the vibrations excited in the fibres of the brain, whereby the idea of the ſubject is produced, with the vibration in the fibres of the brain whereby the idea of the attribute is excited. V. *Aſtruc.* Quæſt. Med. de Natur. & Præternat. Judic. p. 14. ſeq. Jour. des Scav. T. 68. p. 168.

But we apprehend, that it would be extremely difficult, if not impoſſible, to ſhew how a child learns to know, that two and two is four, by mechanical vibrations.

AFFIRMATION is of divers kinds, tacit, by words, by a nod, or geſture, &c.

In a civil law ſenſe, *Affirmation* may be divided into *ſimple*, which is that from which no obligation ariſes; and *qualified*, which infers an obligation.

The requiſites of this latter are, that it be, 1*mo.* deliberate and free; 2*do.* ſincere; 3*tio.* certain and ſpecific; 4*to.* clear and perſpicuous. V. *Pagenſtecher*, Diſſ. de Obligat. Affirm. Nov. Liter. Germ. 1705. p. 22. ſeq.

AFFIX, in grammar, a particle added at the beginning of a word, either to diverſify its form, or alter its ſignification.

The word is Latin, *affixus*, compounded of *ad* and *figo*, I fix.

In which ſenſe, *affix* amounts to much the ſame with *prefix*, and ſtands oppoſed to *ſuffix*.

We meet with *affixes* in the Saxon, the German, and other northern languages; but more eſpecially in the Hebrew, and other oriental tongues.

Wachter gives a liſt of ſeventy-five *affixes* in the German language, of various lengths, from a ſingle letter to two ſyllables, in Gloſſ. Germ. ap. Jour. des Scav. T. 86. p. 273.

The oriental languages are much the ſame as to the radicals; and differ chiefly from each other as to *affixes* and *ſuffixes*. Mem. Acad. Inſcrip. T. 9. p. 334.

The Hebrew *Affixes* are ſingle ſyllables, frequently ſingle letters, *prefixed* to nouns and verbs, inſtead of pronouns poſſeſſive; and contribute not a little to the brevity of that language. Mem. de Trev. 1705. p. 1842.

AFFLATUS literally denotes a blaſt of wind, breath, or vapour, ſtriking with force againſt another body.

The word is Latin, formed from *ad* and *flare*, to blow.

Naturaliſts ſometimes ſpeaks of the *Afflatus* of ſerpents.

Tully uſes the word figuratively, for a divine inſpiration. In which ſenſe, he aſcribes all great and eminent accompliſhments to a divine *Afflatus*.

The Pythian prieſteſs being placed on a *tripod*, or perforated ſtool, over a hollow cave, received the divine *Afflatus*, as a late author expreſſes it, in her belly; and being thus inſpired, fell into agitations, like a phrenetic; during which, ſhe pronounced, in hollow groans, and broken ſentences, the will of the deity. *Mackenz.* Scott. Writ. T. 2. p. 480.

This *Afflatus* is ſuppoſed, by ſome, to have been a ſubterraneous fume, or exhalation, wherewith the prieſteſs was literally inſpired. Accordingly, it had the effects of a real phyſical diſeaſe; the paroxyſm of which was ſo vehement, that Plutarch obſerves it ſometimes proved mortal.

Van Dale thinks this indecent attitude of the Pythia to be a fable, invented by Origen, and others of the firſt Chriſtians. Van Dale himſelf ſuppoſes the pretended enthuſiaſm of the Pythia to have ariſen from the fumes of aromatics. V. Mem. Acad. Inſcr. T. 4. p. 212. ſeq. where M. Hardion oppoſes Van Dale.

AFFORCEMENT, AFFORCIAMENTUM, in ſome antient charters, denotes a fortreſs, or work of fortification and Defence. *Du Cange*, Gloſſ. Lat. T. 1. p. 102. *Prin.* Animad. on Cok. p. 184. *Blount*, Law Dict. See FORTRESS, DEFENCE, &c. *Cycl.*

The word is derived from the barbarous Latin, *afforciare*, to ſtrengthen, confirm. V. *Brad.* l. 4. Tr. 1. c. 19. *Du Cange*, loc. cit.

Whence alſo *afforciatus*, is uſed for thickened, made cloſer and firmer, in ſpeaking of cloth. *Du Cange*, loc. cit.

In an antient chartulary, we find *Afforciamentum curiæ* uſed for the calling or ſummoning of a court, on ſome ſolemn or extraordinary occaſion. *Blount*, lib. cit.

AFFUIAGE, AFFUIAGIUM, in antient cuſtoms, a right of cutting fewel-wood in a foreſt, or the like, for maintaining family fire. *Du Cange*, Gloſſ. Lat. T. 1. p. 101. in voc. *Affuare*.

The word is derived from *affoer*, *q. d. affocare*, to make a fire, of *ad* and *focus*.

AFFUSION, the act of pouring ſome fluid ſubſtance on another body.

Dr. Grew gives ſeveral experiments of the luctation ariſing from the *Affuſion* of divers menſtruums on all ſorts of bodies. V. *Grew*, Diſc. of Mixt. Lect. 2. p. 238.

Divines and church hiſtorians ſpeak of baptiſm by *affuſion*; which amounts to much the ſame with what we now call ſprinkling. See BAPTISM.

AFOBA, in botany, a name given, by the natives of Guinea, to a kind of plant, of the genus of the *phaſeolus*, or kidney-bean. They uſe it pounded and mixed with oil, to cure the itch, and other cutaneous foulneſſes. It is more hairy than the common kinds, and its leaves are very ſmall. Philoſ. Tranſ. N°. 232.

AFRA *avis*, in natural hiſtory. See PINTADO.

AFRICANISM, the ſtyle, or manner, of writing peculiar to *African* writers.

We ſay the *Africaniſm* of Tertullian, of St. Auguſtin, &c. The characters of *Africaniſm* are heat, tumidity, exaggeration, violent figures, declamatory airs, &c. Some take Tertullian's repreſentation of the multitudes, ſtrength, and importance of the Chriſtians in his time, which he makes to be equal or ſuperior to that of the heathens [a], for an *Africaniſm* [b]. —[a *Tertull.* Apolog. c. 37. b V. *Moyle*, Lett. on Thund. Legion. Bibl. Angl. T. 14. p. 536.]

AFTER-*birth*, (*Cycl.*)—Authors ſpeak of a ſtrange kind of *After-birth*, of the mole kind, frequent among Dutch women, where it is called *ſuyger*, *q. d.* leech, by naturaliſts *mola volatilis*. The ſkeleton of one of theſe is repreſented by Thomas Bartholine. V. Ephem. Germ. dec. 1. an. 2. obſ. 160. p. 255. ſeq.

The *After-birth* of ripe children are brought away more eaſily than thoſe of abortions. See ſome reaſons for this in Medic. Eſſ. Edinb. Vol. 2. p. 239.

AFTER-*noon*, the latter half of the artificial day, or that ſpace between noon and night.

The antient Romans dedicated their *Afternoons* to diverſion, as their *forenoons* to buſineſs. The former were reſerved for pleaſure, and the enjoyment of life. But though it was the rule not to take any part of the *Afternoon* for buſineſs, nor any of the *forenoon* for pleaſure, yet ſome few of the more laborious magiſtrates made it a cuſtom to continue their occupation to the tenth hour, anſwering to our four o'clock, as is related of Aſinius Polio; but after that time, he would not ſo much as open a letter, from whatever quarter it came. This we have from Cicero. Cato, for all his ſeverity and application, would not break in upon his *Afternoon's* eaſe, even in his prætorſhip. Plutarch refutes it, as a reproach which ſome had faſtened on his memory, that he had kept on the bench in the *Afternoon*.

The uſual diverſions in which the Romans ſpent their *Afternoons*, were at the game called *pila*, and other exerciſes of the body, eſpecially walking, or riding. Theſe laſted till the eighth or ninth hour, anſwering to our three o'clock; which was the time for the baths. After bathing, they anointed and perfumed themſelves; and, about the tenth hour, went to *cœna*, ſupper, about three hours before ſun-ſet: which done, the day was ended at the public ſpectacles, theatrical, or amphitheatrical ſports; with muſic, ſinging, and the like. Vid. *Couture*, de la Vie Priv. des Rom. Mem. Acad. Inſcrip. T. 2. p. 405. Mem. de Trev. 1709. p. 1418.

AFTER-*ſwarms*, in ſpeaking of bees, are ſecondary or poſterior ſwarms, frequently found to quit the hives within a fortnight after the firſt.

Butler tells us, that the *After-ſwarms* differ from the prime, in that the latter are directed by the vulgar, or crowd of bees, whoſe only rule is the fulneſs of the hive; whereas the former are appointed by the ruling bees, and indicated by a noiſe, or call, which theſe make for the ſpace of two or three days, as it were to give warning to the common herd to prepare for a march. Within eight or ten days after the prime-ſwarm is gone, if the princeſs next in order find a competent number fledged and ready, ſhe begins to tune her treble voice, in a mournful and begging note, as if ſhe prayed the queen-mother to let them go; to which voice, if ſhe vouchſafe a reply, by tuning her baſe to the others treble, it marks her conſent: in conſequence of which, within a day or two after, if the weather allow, the new ſwarm appears. If the prime ſwarm be broken, the *after* will both call and ſwarm the ſooner, perhaps the next day; in which a third, ſometimes a fourth, ſucceeds in the ſame ſeaſon; but all uſually within a fortnight after the prime ſwarm. V. *Butler*, Hiſt. Bees, c. 5. n. 26. p. 75. ſeq.

AFTO, in botany, a name given, by the natives of Guinea, to a plant of the *eryſimum* kind, which they grind to powder, and take as ſnuff, to cure the head-ach. Petiver has called this plant the woody and woolly *eryſimum*, or hedge-muſtard of the coaſts of Guinea. Phil. Tranſ. N°. 232.

AGA, (*Cycl.*)—The *Aga* of the janizaries is an officer of great importance. He is the only perſon who is allowed to appear before the grand ſignor without his arms acroſs his breaſt in the poſture of a ſlave.

Eunuchs at Conſtantinople are in poſſeſſion of moſt of the principal poſts of the ſeraglio. The title *Aga* is given to them all, whether in employment, or out. *Herbel.* Bibl. Orient. p. 67. See alſo *Aquin.* Lex. Milit. T. 1. p. 27. Trev. Dict. Univ. T. 1. p. 190. *Moreri*, Dict. Hiſt. T. 1. p. 50.

We find alſo *Aga's* in other countries. The chief officers under the Khan of Tartary are called by this name. And among the Algerines we read of *Aga's* choſen from among the *boluk baſhi's*, (the firſt rank of military officers) and ſent to govern in chief the towns and garriſons of that ſtate. Mem. de Miſſ. T. 1. p. 118.

The *Aga* of Algiers is the preſident of the divan, or ſenate. For ſome years the *Aga* was the ſupreme officer, and governed the ſtate in the place of baſhaw, whoſe power dwindled to a ſhadow. But the ſoldiery riſing againſt the *boluk bachi's*, or *Aga's*, maſſacred moſt of them, and transferred the ſovereign power to the calif, with the title of *Dey*, or king. Mem. de Trev. Sept. an. 1703. p. 1597. ſeq.

AGALLOCHUM, a medicinal wood imported from the Eaſt-Indies, uſually in ſmall bits, of a very fragrant ſcent.

The word is Greek, αγαλλοχον, from the verb αγαλλομαι, I exult, or boaſt; in alluſion to the excellency of its odour.

AGAL-

AGALLOCHUM is otherwiſe called *Lignum aloes* and *Xyloaloe*, q. d. aloe-wood, not that it is produced from the common aloe plant, which yields the inſpiſſated juice of that name. It is the produce of a tree of a very different kind, growing in the Eaſt-Indies, particularly Sumatra and Cochinchina. Some call it likewiſe *Lignum Paradiſi*.

The *Agallochum* ſpoke of by the antients, is thought not to be the ſame as ours: theirs reſembled the aloes-wood, but was different.

The *Agallochum* is of a bluiſh purple colour, marked with veins and ſpots, very heavy and bitter; when burnt it yields drops of an aſtringent liquor, and a ſweet aromatic fume. It is hot and drying, and eſteemed a great ſtrengthener of the nerves in general, but particularly of the head and ſtomach. V. *Quinc.* Diſpenſ. P. 2. Sect. 1. p. 77. *Gorr.* Def. Med. p. 1. *Caſt.* Lex. Med. p. 24. *Blanc.* Lex. Med. p. 17. *Savar.* Dict. Com. T. 1. p. 34. ſeq.

AGALMATA, in antiquity originally denoted the ornaments of temples, and ſtatutes; but came afterwards to be popularly uſed for the ſtatues and temples themſelves. V. *Salmaſ.* Exerc. ad Solin. p. 192. *Pitiſc.* Lex. Ant. T. 1. p. 55.

AGAPIS *Lapis*, in natural hiſtory, a name given by antient writers, to a ſtone of a duſky yellow, or the colour of a lion's ſkin; it was held in great eſteem in many nations, on account of its ſuppoſed virtues, as an anodyne and vulnerary. It was ſaid to take off the pain of wounds, on being moiſtened with water and applied to them; and was one of the many ſtones in thoſe dark times, ſuppoſed to have a power of curing the bites of ſerpents and other venomous creatures.

AGARENI, or AGARENIANS, a name given by ſome to the followers of the religion of Mahomet.

The word is derived from Agar, or Hagar, handmaid of Abraham, and mother of Iſhmael.

Prateolus [a], and after him divers modern writers [b], conſider *Agareni* as the name of a religious ſect, anſwering to what we otherwiſe call Mahometans, tho' improperly; it ought rather to be eſteemed the name of a people, *viz.* the Arabs, called alſo Iſhmaelites, and by later writers Sarazens.—[a *Elench.* Hæret. l. 1. n. 17. p. 12. ſeq. b *Hoffm.* Lex. Univ. T. 1. p. 104. Trev. Dict. Univ. T. 1. p. 192.]

AGARIC, (*Cycl.*)—in botany, the name of a genus of plants, the characters of which are theſe. The whole ſtructure and ſubſtance reſembles the common muſhroom, and it grows uſually out of the trunks of trees.

The Latin name of *Agaric* is *Agaricum*, αγαρικον, not *Agaricus*, as ſome write it. V. *Burgrav.* Lex. Med. in voc.

The ſpecies of *Agaric* enumerated by Mr. Tournefort, are theſe.

1. The common *Agaric*. 2. The horſeſhoe *Agaric*. 3. The ear ſhaped *Agaric*, commonly called *Jews ears*. 4. The ſquammoſe various coloured *Agaric*. 5. The lichen like variegated *Agaric*. 6. The hard black orbiculated *Agaric* of the aſh. 7. The endive like *Agaric*. 8. The great eſculent *Agaric*. 9. The *Agaric* reſembling the Fallopian tube. 10. The foliated buck's horn *Agaric*. 11. The early, creſted, blueiſh white *Agaric*. 12. The great creſted wood *Agaric*. 13. The great branched wood *Agaric*. 14. The hairy jagged *Agaric*. 15. The blueiſh green excavated oak *Agaric*, or Dædalian *Agaric*. 16. The black digitated ſmall *Agaric*. 17. The ſmall black digitated *Agaric* with white tops. 18. The ſmall autumnal black bifid *Agaric*. *Tournef.* Inſt. p. 562.

Iſidore plainly declares the *Agaric* of the antients, to have been wholly different from the *Agaric* of theſe times; he ſuppoſes it to be the root of the *vitis alba*, or white vine, a name by which he underſtands white bryony root. Heſychius deſcribes it as a root, and Galen plainly ſpeaks of it as a root. See GARICON.

Agaric was a purge in much eſteem among the antients, but it has very diſervedly fallen into diſrepute of later years; for it is very ſlow and tedious in its operation, and in its long ſtay in the ſtomach, frequently occaſions vomitings and unſupportable nauſeas, which are often ſucceeded by ſweats and faintings which laſt a long time; and after all this, it leaves upon the ſtomach a laſting diſreliſh for food. The antients, not having ſo many purging medicines to chooſe out of as we have, were not very nice in their potions of this kind.

Mr. Boulduc, who was very curious in his experiments on all the purgative medicines, did not omit this in his diſquiſitions; he tried upon it the two great diſſolvents, the aqueous and the ſulphureous, he drew a tincture from it with ſpirit of wine; this was of an inſupportable taſte and ſmell, and a ſingle drop of it, received upon the tongue, would ſet a perſon a vomiting, and give a diſtate to every thing for the whole day. Farther experiments proved, that the bark of the *Agaric* was the only part that contained the purgative virtue, the farinaceous internal ſubſtance being uſeleſs. So that whenever *Agaric* is to be uſed, it would be beſt to take only the bark; but this is ſo nauſeous, that it ought never to be given alone, but mixed with other purgatives. Water alone extracts nothing from *Agaric*; but with the addition of ſalt of tartar, its makes a ſort of mucilaginous liquor with the *Agaric*, which, after ſome time ſtanding, becomes clear at top, and depoſits fæculæ of a ſolid conſiſtence at the bottom. From the clear liquor ſwimming at top, there may be ſeparated by evaporation, a reſinous extract of a good conſiſtence: this purges much more gently than the tincture with ſpirit of wine, and without giving thoſe intolerable nauſeas. The matter which ſettled to the bottom, appeared on tryal to be only the earthy part of the *Agaric*, and not at all purgative. Diſtilled vinegar, uſed inſtead of ſalt of tartar and water, gives an extract of the ſame kind, and poſſeſſed of the ſame virtues, but in ſmaller quantity.

Agaric affords on diſtillation a large quantity of volatile ſalt, with a very ſmall quantity of eſſential ſalt; and the *caput mortuum* contains very little fixt or lixivial ſalt.

In the writings of the moſt antient phyſicians, we find the name *Agaric*, and we often wonder at its being made an ingredient in compoſitions, which ſeem of a contrary intention to thoſe that might be expected to be anſwered by this drug, which we generally look on as a nauſeous bitter and purgative. But it is an error to ſuppoſe, the *Agaric* of the antients the ſame as ours; and a ſtrict enquiry into the works of Dioſcorides, Theophraſtus, and the other old authors will prove it to be ſo.

We very well know that the ſubſtance, which we call *Agaric*, is a ſort of fungus, or muſhroom, growing on the trunk and branches of the Larix or Larch tree, and on ſome other trees. But Dioſcorides plainly tells us, that *Agaric* is a root, or at leaſt, that this drug was uſually ſuppoſed to be ſo; it is not to be imagined that any body could miſtake ſuch a light porous ſubſtance, as what we call *agaric*, for a root, or indeed take it for any thing elſe than what it really is, a fungus. But this is not all that makes againſt it in this author; he adds, that it was like the root of ſilphium; we are therefore to have recourſe to the deſcription of the ſilphium, in order to know what was the ſhape and figure of the *Agaric* of thoſe times. Theophraſtus ſays, that the root of the ſilphium was a cubit long, and had a protuberance or head at the top, which ſtood prominent out of the ground; it is plain that our *Agaric* is of no ſuch ſhape as this, and therefore, not the ſame with the *Agaric* of Dioſcorides, and of the antients in general. Another reaſon is, the ſcarcity of it in Greece: our *Agaric* is common on the larch and other trees in Greece, Italy, and other parts of Europe; and therefore the Greeks needed not to have ſent from far for it, as it is evident they did: the name is ſufficient to prove this. Dioſcorides tells us, that this drug had its name from the place where it grew, which was in Sarmatia; he has indeed left us a falſe ſpelling of the word, and as the text ſtands, it is ſaid to come from Agria in Sarmatia: but were this the caſe, the name would have been Agricon or Agriacon, not Agaricon. The interpreters have miſtaken ſo far as not to ſuppoſe Agria the name of any peculiar place, but have explained the paſſage, by ſaying, that it grew in the wild and uncultivated places of Sarmatia. Stephens indeed ſays, Agroi ſignifies a people, living between the mountains of Hæmus and Rhodope; and Strabo makes them a people of the Mæotis. Ptolemy leads us to the truth, by telling us, that there is a river and promontory called Agarus, in the European Sarmatia; and that thence the Agarican ſheep ſo famous for their taſte, were brought into Greece. This agrees with the account Dioſcorides gives of the place, whence the *Agaric* was brought, which tho' he miſpels it, yet he ſays truly that it was in Sarmatia. It appears from the whole, that the antient Greeks ſent a great way for their *Agaric*, and their not knowing whether it was a root, or ſome other vegetable production, is a ſufficient proof of its not being our *Agaric*, which both then and now grows commonly in their country.

Tho' the *Agaric* of Dioſcorides, therefore, is not the ſame with the *Agaric* of theſe times, yet many have been of opinion, that the *Agaric* of Pliny, and of the authors ſince his time, is the ſame with ours. His words ſeem to expreſs this too clearly to leave any doubt; but as they accuſe him of an error, they are not ſuch expreſs teſtimonies, as they ſeem at firſt ſight. He ſays, that the glandiferous trees, as the oak, and others of that kind, are the principal ones which produce *Agaric*, and that this *Agaric* is a white ſweet-ſcented fungus, or muſhroom, good in antidotes. He adds, that it grows principally on the upper branches of trees; and that it ſhines in the dark, and is gathered by people employed for that purpoſe in the night time, diſcovering itſelf by the light it caſts forth at this time, and not being ſo eaſily found in the day. Dioſcorides ſays not a word about this ſort of *Agaric*, nor makes any mention of a fungus as being really that drug; yet in the account he gives of the male and female *Agaric*, and the opinions he cites of others, as to its origin, he has ſome things that may have given riſe to theſe words of Pliny. Dioſcorides ſays, ſome were of opinion, that *Agaric* was not a root, but that it was produced on ſome parts of trees, by putrefaction, in the ſame manner that fungus's were produced. Such was the opinion of his times, about the origin of fungus's; and it is plain that he diſtinguiſhes *Agaric* from a fungus, by comparing it to one.

This account of Dioſcorides ſeems to have given riſe to Pliny's hiſtory of the *Agaric*; and the *Agaric* of that author, tho' a fungous ſubſtance, ſeems not to have been truly a fungus

of itſelf, but that ſort of rotten wood, which we call touch-wood, and which often ſhines like fire in the night; a property that no fungus has. This ſhining rotten wood is common in many places; and as it is not to be diſtinguiſhed from other rotten wood by day-light, thoſe who were of opinion that it contained any peculiar medicinal virtues, were in the right to have it collected in the night. The female *Agaric* of Dioſcorides ſeems to have been this ſubſtance; for he deſcribes it as being of a ſpungy texture, and having ſtrait fibres, which this rotten wood always has. The oak, and other glandiferous trees, are alſo moſt remarkable for producing this touchwood; though the larix is the tree which produces the *Agaric*. The ſhining of this wood, when in its rotten ſtate, is accidental, not being always found in it.

Mineral AGARIC, *Agaricus mineralis*, in natural hiſtory, the name of a light, ſpungy, marley earth, called by others *marga Feroenſis*, and *lac lunæ*, and by the antients *terra*, or *creta Seleneuſiaca*. It had its antient name from the city Selinus in Sicily, near which it uſed to be found in great abundance; and its more modern one from its reſemblance to the vegetable *Agaric*, in its lightneſs, colour, and fungoſe texture.

It is an earth ſubject in itſelf to various admixtures, and mixing itſelf with various other bodies: it is, however, generally found pure, and is then abſolutely the ſame in all parts of the world.

It never conſtitutes of itſelf a ſtratum in the earth, but is found in the perpendicular fiſſures of the ſtrata of ſtones, and in a thouſand imperceptible cracks in them; at which the maſſes naturally break, and diſcharge this matter from them, in form of a white powder. It alſo ſometimes lines the roofs of caverns, and ſometimes lies, like the *terra Samia*, in large quantities, in the horizontal vacuities of theſe ſtrata. In theſe ſeveral places it is found, either in irregular maſſes, of a fine and pure white colour, porous, friable, and ſtaining the fingers, and adhering firmly to the tongue; or elſe in ſmaller, and ſomewhat firmer maſſes; or, laſtly, in a diſcontinuous ſtate, or in form of an impalpable powder, of a pure ſnow white.

Mineral Agaric ferments violently with acid menſtrua, and diffuſes immediately in water. It is often found ſtained with adventitious particles of other earths, &c. and is then altered in colour, and found browniſh, yellowiſh, or reddiſh; and is frequently received into the bodies of other foſſils, being very probably the moſt frequent debaſing earth of cryſtal. V. *Hill*'s Hiſtory of Foſſils, p. 40.

Some ſuppoſe *mineral Agaric* to have been known to the antients; and that it is the ſame with what they call *morocthus*, and *galactites*.

Formerly Switzerland was the only country known to produce this mineral; but, of late, it has been diſcovered in the territory of Nuremberg. Something very much like it has been obſerved among the ſtones near Rouen in France. V. Ephem. Germ. cent. 1. obſ. 2. p. 5. Jour. des Scav. T. 43. p. 381. ſeq.

It is uſed internally againſt hæmorrhages, the ſtrangury, gravel, and eſpecially dyſenteries; externally, to dry and heal old ulcers, ſtop defluxions of the eyes, &c. *Lang.* Idea Hiſt. Natur. Lapid. Figur. Helvet. c. 3. in Ephem. Germ. dec. 3. an. 9. app. p. 211. ſeq.

AGARICUS, in the Linnæan ſyſtem of botany, the term uſed to expreſs that genus of fungus's, which have no pedicle, but grow to trees, &c. by one ſide, and are therefore called horizontal fungus's, and are lamellated underneath: by this laſt character they are diſtinguiſhed from the *Boleti* of Linnæus which are thoſe horizontal fungus's which are porous underneath.

AGASYLLIS, in the materia medica, a name given by ſome of the antient Greek writers, to gum ammoniac; and by others, to the tree which produced that gum. By their deſcriptions of this medicine, it appears not to have been the ſame which we now know by this name.

AGAT (*Cycl.*)—The *Agat* is a peculiar and very extenſive genus of the ſemi-pellucid gems. The characters of which are, that they are variegated with veins and clouds, but have no zones, like thoſe of the onyx. They are compoſed of cryſtal, debaſed by a large quantity of earth, and not formed, either by repeated incruſtations round a central nucleus, or made up of plates laid evenly on one another, but are merely the effect of one ſimple concretion, and variegated only by the diſpoſition the fluid they were formed in gave to their differently coloured veins, or matters.

Theſe are a very numerous genus of foſſils, and ſubject to great variegations in their colours. They are, however, arranged into ſome order, according to the different colours of their ground.

Of thoſe of a *white ground*, there are three ſpecies. 1. The *dendrachates*, or *Mocoa-ſtone*. See DENDRACHATES. 2. The dull milky-looking *Agat*. This, though greatly inferior to the former in beauty, is yet a very beautiful ſtone. This is common on the ſhores of rivers in the Eaſt-Indies, and alſo in Germany, and ſome other parts of Europe. Our lapidaries cut it into counters for card-playing, and other toys of ſmall value. 3. The lead-coloured *Agat*, called the *phaſſachates*, by the antients. See the article PHASSACHATES.

Of the *Agats* with a *reddiſh ground*, there are four ſpecies. 1. An impure one of a fleſh coloured white. This is of but little beauty, in compariſon with many other *Agats*. The admixture of fleſh colour is but very ſlight, and it is often found without any clouds, veins, or other variegations; but ſometimes it is prettily veined, or variegated with ſpots of irregular figures, with fimbriated edges. It is found in Germany, Italy, and ſome other parts of Europe, and is wrought into toys of ſmall value, and often into the German gun-flints. It has been found, ſometimes, with evident large ſpecimens of the perfect moſſes bedded deep in it. 2. The ſecond of the red grounded *Agats*, is that ſpecies of a pure blood-colour, called *hæmachates*, or the *bloody Agat*, by the antients. See HÆMACHATES. 3. The third is the clouded and ſpotted *Agat*, of a pale fleſh colour, called the *carnelian Agat*, or *ſardachates*, by the antients. See SARDACHATES. 4. And the fourth, the red-lead coloured one, variegated with yellow, called the *coral Agat*, or *corallo-achates*, by the antients. See CORALLO-ACHATES.

Of the *Agats* with a *yellowiſh ground*. There are only two known ſpecies. 1. The one of the colour of yellow wax, called *cerachates* by the antients. 2. The other a very elegant ſtone, of a yellow ground, variegated with white, black, and green, called the *leonina*, and *leonteſeres*, by the antients. See LEONTESERES.

Laſtly, of the *Agats* with a *greeniſh ground*. There is only one known ſpecies, which was the *jaſpachates* of the antients. See JASPACHATES. *Hill*'s Hiſtory of Foſſils.

Some have attributed great medicinal virtues to the *Agat*; as, to reſiſt poiſon, eſpecially thoſe of the viper, the ſcorpion, and ſpider; to appeaſe thirſt, ſtrengthen the ſight, and I know not what. *Plin. Caſtel.* Lex. p. 8. *Ruland.* Lex. Alchem. p. 2.

Oriental *Agats* are ſaid to be all brought from the river Gambay. *Hamilton*, Account of Eaſt-India, c. 13. Preſ. State Rep. Lett. T. 2. p. 171.

A mine of *Agats* was lately diſcovered in Tranſilvania, of divers colours, ſome of a large ſize, weighing ſeveral pounds. Ephem. Germ. cent. 9. p. 427.

Agats have been diſtinguiſhed by other names, than thoſe before mentioned. Thus we find

Vermilion AGAT, that of a deep vermilion colour. This, in the text of Pliny, is called *Achates unius coloris*, which ſome correct by *minii coloris*. Hardouin prefers the antient reading. V. *Hardouin*, Not. ad Plin. l. 37. c. 10.

White ringed AGAT, *Achates perileucos*, diſtinguiſhed by black and white circles [a]. Plott mentions this under the denomination of *crow-ſtone* [b].—[a *Salmaſ.* ad Solin. Polyh. p. 94. b *Plott*, Nat. Hiſt. Staffordſh. c. 4. §. 47. p. 175.]

White AGAT, *leucachates*, that altogether white, or at leaſt diverſified with white ſtrokes, being frequently ſemi-tranſparent, and bearing a reſemblance to the white of an egg.

Vitreous, or *tranſparent* AGAT, of a thin ſtone-blue colour.

Leopardine AGAT, *Achates pardalios*, ſpotted like the ſkin of a leopard. This is otherwiſe called *pandalion*, *pantachates*.

Sapphirine AGAT, that of a ſky-blue colour, tranſparent; ſometimes found with *lapis lazuli*, and called alſo *ſapphiro-achates*.

Luminated AGAT, diſtinguiſhed by divers colours, as white, black, yellow, brown, placed over each other, at equal diſtances.

AGATS are alſo divided, with regard to the objects repreſented on them, into

Arboreſcent AGAT, *dendrachates*. See DENDRACHATES and DENDRITES.

This ſeems to be the ſame with what ſome authors call the *Achates*, with roſemary in the middle, and others, *Achates*, with little branches of black leaves. *Borrich.* Act. Haf. 1677. p. 206.

Horned AGAT, *cerachates*, is ſaid by ſome to be that which, by lines and ſpots, repreſents the figure of a horn [a]. Others explain the *cerachates* to be that ſpecies which has a waxy ſurface [b]. The difference ariſes from the etymon of the word. The former ſuppoſes it formed from the Greek, κερας, *cornu*, horn; the latter from the Latin, *cera*, wax.—[a *Worm.* Muſ. p. 90. b *Salmaſ.* loc. cit. p. 94. ſeq.]

Aphrodiſian AGAT, *Achates aphrodiſius*, is a term given by Velſchius to an *Agat* in his cuſtody, of a fleſh colour, on one ſide of which appears a half-moon, in great perfection, repreſented by a milky ſemicircle; on the other ſide, the phaſes of Veſper, or the evening ſtar; whence the denomination *aphrodiſius*. Ephem. Germ. Dec. 1. an. 1. obſ. 156. p. 296.

Corſoid AGAT, repreſenting human hair. *Salmaſ.* Exerc. in Solin. p. 539.

Arithmetical AGAT, repreſenting the numbers 4191, 191. V. *Settala*, Muſ. 81.

Aſtronomical AGAT, repreſenting the hemiſphere, with its ſeveral orbs, and the earth in the middle. To which head may be alſo referred an *Agat* mentioned by Borrichius, repreſenting the five orbs in great perfection. Act. Hafn. 1677. p. 208.

Elementary AGAT, conſiſting of four colours; blue, ſuppoſed to expreſs water; white, the air; red, the fire; and brown, the earth. *Velſch.* Hecat. 1. obſ. 42.

Anthropomorphous AGATS, thoſe wherein the figures of men or women are expreſſed. Such is that mentioned by Kircher, repreſenting a heroine armed [a]. That in the church of St. Mark at Venice, repreſenting a king's head adorned with a diadem. That other in the muſæum of the prince of Gonzaga, wherein the body of a man is ſeen, his head, neck, arms and legs, with all the cloaths, in a running poſture [b]. That mentioned by De Boot [c], wherein a circle appears ſtruck in brown, as juſtly as if done with a pair of compaſſes, and in the middle of the circle, the exact figure of a biſhop with a mitre on; but inverting the ſtone a little, another figure appears; and if turned yet further, two other figures appear, one of a man, the other of a woman. That mentioned by Rumphius, on the plane whereof is diſtinctly ſeen the figure of a pope at prayer, found in the ruins of an antient heathen temple near Rome [d]. But the moſt celebrated *Agat* of this kind is that of Pyrrhus, wherein were repreſented the nine muſes, each with their proper attributes, and Apollo in the middle playing on the harp: *Achates in qua IX muſæ & Apollo citharum tenens, non arte, ſed natura ſponte, ita diſcurrentibus maculis, ut muſis quoque ſingulis ſua redderentur inſignia* [e].—[a *Kirch.* Mund. Subter. l. 8. p. 30. b *Calceol.* Muſ. p. 21. c De Gem. l. 2. c. 95. d Theſ. Tab. E. Jour. des Scav. T. 50. p. 630. e *Plin.* l. 37. c. 3. See alſo *Hardouin*, Not. ad loc.]

In the emperor's cabinet is an oriental *Agat* of ſurprizing bulk, being faſhioned into a cup, whoſe diameter is a Vienna ell, abating two inches. In the cavity, is found delineated, in black ſpecks, B. XRISTOR. S. XXX.

Some account for the phænomenon from natural cauſes, after Kircher's manner, who had ſeen a like ſtone, in which were depicted the four letters uſually inſcribed on crucifixes, I. N. R. I. Some real crucifix he apprehends had been buried under ground, among ſtones and other rubbiſh, where the inſcription happening to be parted from the croſs, and to be received among a ſoft mould, or clay, ſuſceptible of the impreſſion of the letters, this came afterwards, by means of ſome lapidific juice, or fume, to be petrified [f]. In the ſame manner, that author ſuppoſes the *Agat* of Pyrrhus to have been formed. Others reſolve much of the wonder into fancy, and ſuppoſe thoſe ſtones formed in no other manner than the camieux, or Florentine ſtones [g].—[f *Kirch.* Mund. Subter. T. 2. l. 8. ſect. 1. p. 41. g *Velſch.* in Ephem. Germ. ubi ſupra, p. 296.] See CAMAIEU, *Cycl.*

To the claſs of anthropomorphous *Agats*, may alſo be referred an *Agat* in the library of Francfort, repreſenting the heart, lungs, and part of the veins of a man. *Koning.* Regn. Miner. p. 106.

Leucophthalmous AGATS, thoſe repreſenting the figures of eyes. Such is that mentioned by Velſchius [a], which he calls *ommatia*, or *omphophthalmus*: or thoſe by Cardan [b], and others, repreſenting the eyes of birds, fiſhes, wolves, called *lycophthalmi*; of goats, *ægophthalmi*; of oxen, *boophthalmi*.—[a Hecatoſt. 1. obſ. 22. b De Subtil. p. 290.]

AGATS are alſo divided with regard to the affinities they bear to other ſtones: hence the *jaſpachates*, *ſardachates*, &c.

We find alſo *onychates*, between an *onyx* and an *Agat*, compoſed not of zones, or balls, but of plates perſpicuous and aſh coloured. *Grew*, Muſ. Reg. Soc. P. 3. p. 289.

Oriental ſardonyx AGAT, of an oval figure, and a white colour, in the middle of which appears a body of water, which, upon ſhaking, is perceived to move [a]. This ſpecies is otherwiſe called *coccus*, *ovum ſolis*, *coccus paraquanorum*, *venter cryſtallinus*, *ætites gemmata* [b], &c. and may be referred to the *ætites* kind [c].—[a *Settala*, Muſ. p. 80. b *Johnſton*, Notit. Regn. Miner. tit. 2. c. 4. art. 2. p. 44. ſeq. c *Bauſch.* de Ætit. p. 23.]

To this kind may alſo be referred the *Agat* of Chili, which has cryſtals ſeen in it; and another called *berylloachates*, containing pieces of beryls.

ANTACHATES, that which in burning yields a ſmell of myrrh. This, though mentioned by Pliny among *Agats*, ſeems rather to belong to the head of ambers, or bitumens. Others write it *anchachates*; others, *ſtactachates*. *Salmaſ.* Exerc. ad Solin. p. 133.

See farther concerning the hiſtory of *Agats*, *Nicolſ.* Lapid. c. 26. p. 133. *Grew*, Muſ. p. 287. The figures of *Agats*, *Mercat.* Melloth, p. 375. ſeq. Their ſtructure, *Woodward*, Nat. Hiſt. Engl. Foſſ. T. 2. p. 16. Experiments on them in the burning-glaſs, Giorn. de Letter. d'Ital. T. 8. p. 282. The commerce and manufacture of *Agats*, *Hought.* Coll. T. 2. p. 41. The counterfeiting of *Agats* in glaſs, *Neri*, Art of Glaſs, l. 2. c. 37. p. 59.

Agats may be ſtained artificially, by a ſolution of ſilver in ſpirit of nitre, and afterwards expoſing the ſtone, for ſome hours, to the ſun. This operation ſucceeds beſt in whitiſh *Agats*.

But it is to be obſerved, that no art has hitherto been able to imitate the fineneſs and beauty of the vegetable repreſentations, formed by nature, in ſome *Agats*; ſuch as are commonly called *dendrites*. And though art ſhould attain to ſuch a perfect imitation of nature in this caſe, as to deceive the eye, yet might the difference be otherwiſe diſcovered.

For if an *Agat* be coloured by art, it will loſe a great part of its colour, by heating it; and this colour may again be reſtored, by adding the ſolution of ſilver in ſpirit of nitre.

Again, by putting a little aqua-fortis, or ſpirit of nitre, on the ſuſpected *Agat*, without expoſing it to the ſun, the artificial colours will diſappear in a night's time; and this colour may again be reſtored, by expoſing the ſtone to the ſun for ſome days. V. *Du Fay*, in Mem. Acad. Scienc. 1728.

But Monſ. de la Condamine has ſince obſerved, that even natural *Agats*, which, by the fineneſs of the lines repreſented upon them, were beyond all ſuſpicion of art, yet ſuffered a great change in their colours, by the application of aqua-fortis. It is true, the change did not happen ſoon, as in *Agats* ſtained by art, in which ten or twelve hours have been found ſufficient to diſcharge the colour. In natural *Agats* no change was obſerved for three or four days; but a *dendrites* put into aqua-fortis, having been forgot in a window, and expoſed to moiſt and rainy weather, was found very much changed, and the fainter parts of the vegetations were entirely effaced. V. Hiſt. Acad. Scienc. 1733. p. 35, 36. Edit. Amſt.

So that the trial of *Agats*, by aqua-fortis, ſeems precarious. However, ſo far remains true, that the artificial colours ſoon diſappear in ſuch a trial; whereas it requires ſome days to diſcharge the natural colours.

AGAT, among antiquaries, denotes a ſtone of this kind, engraven by art.

In which ſenſe, *Agats* make a ſpecies of antique gems; in the workmanſhip whereof, we find eminent proofs of the great ſkill and dexterity of the antient ſculptors. Several *Agats* of exquiſite beauty are preſerved in the cabinets of the curious. The facts, or hiſtories, repreſented in antique *Agats*, with how much addreſs ſoever conducted, are become, at this diſtance of time, many of them obſcure and dubious, and their explication difficult enough; whence divers miſtakes have been committed, and numerous conjectures and diſputes raiſed.

The great *Agat* of the apotheoſis of Auguſtus, in the treaſury of the holy chapel, antiently paſſed for a triumph of Joſeph, when firſt ſent from Conſtantinople to St. Lewis; and 'tis probable, there are ſtill in many churches, even among theſe held and worſhipped for relicts, many of the remains of paganiſm, which the ſimplicity of our anceſtors has, as it were, conſecrated [a]. An *Agat*, now in the French king's cabinet, had been kept ſeven hundred years, with great devotion, in the Benedictin abby of St. Evre at Toul, where it paſſed for a St. John the evangeliſt, carried away by an eagle, and crowned by an angel. Of late years, the heatheniſm of it having been detected, the religious would no longer give it place among their relicts, but preſented it, in 1684, to the king: the antiquaries of the academy find it the apotheoſis of Germanicus. Another *Agat*, in the ſame cabinet, which had formerly paſſed for a triumph of Joſeph in Egypt, has been lately found to repreſent Germanicus and Agrippina, under the figures of Ceres and Triptolemus [b]. A curious *Agat*, in the cabinet of the French king, has been the ſubject of the inquiries of the academy of inſcriptions [c]: it had been preſerved, for time immemorial, in one of the moſt antient churches of France, where it had paſſed for a repreſentation of paradiſe, and the fall of man; there being ſeen on it two figures reſembling Adam and Eve, with a tree, a ſerpent, and a Hebrew inſcription around it, taken from the third chapter of Geneſis, "The woman ſaw that the fruit was good, &c." The French academiſts, inſtead of our firſt parents, find Jupiter and Minerva repreſented by the figures; and as to the inſcription, find it of modern date, being written in a Rabbinical character, very incorrect, and poorly engraven. But after this diſcovery of the type, there ſtill remained great difficulty in the explication of it. Some underſtood it of the birth of Minerva, ſpringing compleatly armed out of Jupiter's head; others of the diſpute of that goddeſs with Neptune; others, in fine, of the birth of Erichthonus, and the fabulous traditions of the monſter half man half ſerpent, begot by Vulcan and the Earth. But the prevailing opinion was, that the *Agat* repreſented ſimply the worſhip of Jupiter and Minerva at Athens.—[a Vid. Hiſt. Acad. R. Inſcrip. T. 1. p. 338. b Id. ibid. p. 340—344. c V. Hiſt. Acad. Inſcrip. T. 1. p. 337—339.]

AGATS are ſometimes denominated from the ſubject repreſented on them.

Among the more curious, we meet with Tiberian *Agat*, *Achates Tiberianus*, a name given, by ſome, to the famous *Agat* in the treaſury of the French king's chapel, repreſenting the apotheoſis of Auguſtus, and the ſeries and portraits of the family of Tiberius and Julia, with divers foreign nations ſubdued in war; concerning which, many different explications and conjectures have been advanced by the learned. V. Act. Erud. Lipſ. 1684. p. 255—259.

Iſiac AGAT, *Achates Iſiacus annularis*, is a curious antique *Agat* at Rome, ſo called, as repreſenting the head of Iſis, and being ſet in a ring. Sig. Fontanini has given an explication of this *Agat*,

AGATHODÆMON, a beneficent genius, or dæmon. See DÆMON and GENIUS, *Cycl.*

The word is Greek, compounded of αγαθος, good, and δαιμων, dæmon.

Among antient writers, *Agathodæmon* is a denomination given to a kind of ſerpents, bred up and revered by the Egyptians, from an opinion of ſome ſanctity reſiding in them.

They are alſo called dragons, *dracones*, or *dracunculi*, and fabulouſly deſcribed as having wings.—They appear to be the ſame with thoſe otherwiſe called *ſirenes*. Vid. *Lamprid.* in Heliogab. c. 28. *Caſaub.* Not. ad Sueton. Ed. 2. *Bochart*, Hieroſ. P. 2. l. 3. c. 14 *Hoffm.* Lex. Univ. T. 1. p. 106.

AGE (*Cycl.*)—Dr. Woodward holds, that the ages to which men arrive, are proportional to the number of their lacteals. Mem. de Trev. 1725. p. 983.

AGE is alſo uſed for the duration of vegetable matters. In which ſenſe, we ſay the *Age* of roots, of leaves, of corn, of wine, &c. V. *Grew*, Anat. Plant. l. 2. p. 91. Id. ibid. l. 4. c. 5. p. 56. Mem. Acad. Scienc. 1708. p. 95. Hiſt. Crit. Rep. Lett. T. 1. p. 236.

Trees after a certain *Age* waſte. An oak at a hundred years old ceaſes to grow. The uſual rule for judging of the *Age* of wood, is by the number of circles which appear in the ſubſtance of a trunk, or ſtock, cut perpendicularly, each circle being ſuppoſed the growth of a year [a]; though ſome reject this method as precarious, alledging, that a ſimple circle is ſometimes the produce of ſeveral years; beſides that, after a certain *Age*, no new circles are formed [b].—[[a] Philoſ. Tranſ. N°. 43. p. 857. Bibl. Univ. T. 13. p. 197. & T. 1. p. 474. Mem. de Trev. 1711. p. 700. [b] Act. Erud. Lipſ. 1713. p. 146.]

AGE is alſo uſed for the duration of things inanimate, and even factitious.

In which ſenſe we ſay, the *Age* of a houſe, of a country [a], a ſtate, [b] a commonwealth, or the like. A late author propoſes a method of diſcovering the *Age* of the ſea, by the number of layers of incruſtated ſediment wherewith its bottom is lined [c].—[[a] *Rudbeck*, Atlant. ap. Nouv. Rep. Lett. T. 3. p. 66. [b] *Bodin*, de Repub. l. 4. c. 1. [c] Mem. Acad. Scien. 1710 p. 32.]

Some have laid it down as a rule with regard to the *Age* of ſtates, that none ſurvive thirteen hundred years [d]. Civilians eſtimate the *Age* of houſes, by the materials of which they are formed. Thus a ſtone houſe was reckoned the day it was built, as if it were to ſtand eighty years; ſo that, if it had coſt, *e. gr.* an hundred crowns, and were burnt down after ſtanding forty years, the value of it was diminiſhed one half [e]. A houſe built of burnt bricks was reputed immortal; whence Pliny calls the walls made of this ſtuff *parietes æternos* [f].—[[d] Nouv. Rep. Lett. T. 12. p. 196. [e] *Bodin*, ubi ſupra, l. 4. c. 2. p. 633. [f] *Plin.* Hiſt. Nat. l. 35. c. 14.]

AGE *of the world* denotes the time elapſed ſince the creation.

There are infinite diſputes among chronologers concerning the *Age* of the world, which ſome extend, others contract, beyond the ordinary term [a]. The followers of Herodotus, and the Hebrew, make it much leſs than thoſe who adhere to Cteſias and the Septuagint [b]. Sir Iſaac Newton has taken upwards of three hundred years from the world's *Age* [c]; for which, however, he has made a retribution elſewhere. F. Pezron has added above two thouſand years to it [d].—[[a] Vid. *Voſſ.* Caſtig. ad Script. Horn. de Ætate Mundi, Hag. 4to. 1659. Mem. de Trev. 1729. p. 1567. *Strauch.* Brev. Chron. l. 4. c. 1. p. 150. *Bodin*, de la Repub. l. 4. c. 2. p. 654. *Brown*, Vulg. Err. l. 6. c. 1. p. 233. Act. Erud. Lipſ. ſup. T. 7. p. 416. It. an. 1704. p. 141. Giorn. de Letter. d'Ital. T. 31. p. 52. [b] *Kuſter*, Bibl. Nov. Liter. 1699. p. 466. [c] V. Chronol. p. 204. Bibl. Franc. T. 14. p. 56. [d] L'Antiq. des Tems Retablie. It. Defenſe de l'Antiq. des Tems. Jour. des Scav. T. 15. p. 109. Nouv. Rep. Lett. T. 10. p. 648. *Du Pin*, Bibl. Eccleſ. T. 19. p. 156. ſeq. *Le Clerc*, Bibl. Univ. T. 24. p. 105.]

Divers methods have been uſed for computing the world's *Age*; as by the invention of letters [e], the origin and progreſs of ſciences [f], and the like. Some late writers have propoſed other methods; as by the growth of the ſoil of a country [g]; the increaſe of ſaltneſs of the ſea [h]; the ſlow motion of the ſun's apogee [i].—[[e] Hiſt. Crit. Repub. Lett. T. 9. p. 1. [f] Nouv. Repub. Lett. T. 40. p. 292. [g] *Rudbeck*, Atlant. Ap. *Hook*, Phil. Collect. N°. 4. p. 119. [h] *Halley*, in Phil. Tranſ. N°. 344. p. 296. [i] *Power*, Exp. Phil. p. 188.]

Golden AGE, the firſt ſtate of the world, according to the antient poets; ſuppoſed to be the time when Saturn reigned, and during which the ground produced plenty of every thing, without labour or tillage. Aſtræa, *i. e.* juſtice, then reſided on earth; men held all things in common, and lived in perfect friendſhip. This period is ſuppoſed to have laſted till Saturn was expelled from his kingdom. V. *Ovid*, Metamor. l. 1. v. 88. ſeq. *Heſiod*, Opp. & Dies, v. 108. ſeq. *Thomaſſin*, Meth. Etud. Poet. P. 1. l. 2. c. 16. p. 517. ſeq. Nouv. Rep. Lett. T. 4. p. 749.

This, and the three remaining poetic *Ages*, the *Silver*, the *Brazen*, and the *Iron Ages*, are too well known to need any deſcription. Dr. Hook has given us a phyſical explication of the four *Ages*. Vid. Poſth. Works, p. 379. ſeq. See alſo *Burnet*, Archæol. c. 5. p. 88. Mem. de Trev. 1724.

A late author, reflecting on the barbariſm of the firſt *Ages*, will have the order which the poets aſſign to the four *Ages* inverted; the firſt being a time of rudeneſs and ignorance, more properly denominated an *Iron*, than a *Golden Age*. When cities and ſtates were founded, the *Silver Age* commenced; and ſince arts and ſciences, navigation, commerce, &c. have been cultivated, the *Golden Age* has taken place.

Rocky or ſtony AGE, in ſome antient northern monuments, correſponds to the *Brazen Age* of Heſiod, and the Greeks; being called *Rocky*, on account of Noah's Ark, which reſted on mount Ararat. Whence men were ſaid to be deſcended, or ſprung, from mountains, or from Deucalion and Pyrrha, reſtoring the race of mankind, by throwing ſtones over their heads.

Aſhen AGE, the fourth *Age* of the northern poets; ſo called from a Gothic king, Madenis, or Mannus, who, on account of his great ſtrength, was ſaid to be made of aſh; or, becauſe in his time people began to make uſe of weapons made of that wood. Vid. *Rudbeck*, Atlant. P. 3. c. 4—9. Philoſ. Tranſ. N°. 301. p. 207.

Hiſtorical AGE, that which commenced from the firſt Olympiad, in the year of the world 3228, and ſtill continues.

This diviſion, it is to be obſerved, only holds good with regard to the Greeks and Romans, who had no hiſtories earlier than the firſt Olympiad. The Jews, Egyptians, Phœnicians, Chaldees, not to ſay the Indians and Chineſe, who pretend to much earlier monuments, will not be concluded by it. Bibl. Univ. T. 1. p. 246.

AGE *before the law*, among the Jews, called alſo the *Void Age*, *Sæculum inane*, was the ſpace of time from the creation to Moſes. The length of this is differently computed, according to the tradition attributed to Elias; this, as well as the two following ones, conſiſt each of two thouſand years. The uſual Jewiſh computation, as alſo thoſe of Scaliger and Uſher, are mentioned in the *Cyclopædia*; as are alſo ſome opinions about the duration of the *Age* of the law, and of the *Age* of grace. V. *Strauch.* Brev. Chron. §. 13. p. 5.

The Sibylline oracles, which, according to ſome, were alſo written by Jews, acquainted with the prophecies of the Old Teſtament, divide the duration of the world into ten *Ages*; and, according to Joſephus, each *Age* comprehended ſix hundred years. It appears, by Virgil's fourth eclogue, and other teſtimonies, that the *Age* of Auguſtus was reputed the end of theſe ten *Ages*, conſequently as the period of the world's duration. *Pezron*, Defenſe de l'Antiq. des Tems, p. 505. ſeq. Bibl. Univ. T. 24. p. 145. ſeq.

Preſent AGE, among Jewiſh writers, frequently denotes all the ſpace of time before the Meſſiah, in contradiſtinction from *future Age*, or *Agetocome*, the time after the coming of the Meſſiah.

Middle AGE denotes the ſpace of time commencing from Conſtantine, and ending at the taking of Conſtantinople by the Turks, in the fifteenth century. *Martin.* Dial. Geogr. in Pref. Mem. de Trev. an. 1729. p. 1359. See alſo Bibl. Univ. T. 12. p. 393. ſeq.

A late author chuſes rather to date the middle *Age* from the diviſion of the empire made by Theodoſius, at the cloſe of the fourth century, and extend it to the time of the emperor Maximilian I. at the beginning of the 16th century, when the empire was firſt divided into circles. But this ſeems more accommodated to the ſtate of Germany in particular, than of Europe in general.

We ſay, a medal of the middle *Age* [a]; the philoſophy of the middle *Age* [b]. Junker has publiſhed a geography of the middle *Age*, in High-Dutch [c], which 'tis a pity were not to be had in ſome more popular language. Cellarius [d] has given a hiſtory of the middle *Age*; Eccard [e] a body of the hiſtorians of the middle *Age*; *Du Cange* a gloſſary of the Latin of the middle *Age*, and another of the Greek.—[[a] Bibl. Univ. T. 24. p. 405. [b] *Reinhard.* Hiſt. Philoſ. p. 125. ſeq. [c] See extracts of it in Act. Erud. Lipſ. 1712. p. 371. ſeq. & Mem. of Liter. T. 6. p. 296. [d] Hiſt. Medii Ævi. See an extract of it in Act. Erud. Lipſ. 1688. p. 272. ſeq. & Giorn. de Letter. de Parm. an. 1688. p. 176. [e] Corp. Hiſt. Medii Ævi, T. 2. fol. See Jour. des Scav. T. 75. p. 86. & Act. Erud. Lipſ. an. 1723. p. 377. & 438.]

The middle is by ſome denominated the barbarous *Age*, and the latter part of it, the loweſt *Age*. Some divide it into

Non Academical AGE, the ſpace of time from the VIth to the IXth centuries, during which ſchools or academies were loſt in Europe.

Academical AGE, from the IXth century, when ſchools were reſtored and univerſities eſtabliſhed, chiefly by the care of Charlemaign. Obſerv. *Halens.* T. 6. Obſ. 18. §. 4. p. 144.

Milliary or *Millenary* AGE, *ſæculum milliarium*, or *millenarium*, on medals denotes the laſt year of a Millennium or thouſand year.

Several medals of the emperors Philip, ſtruck in the thouſandth year from the building of Rome, have this legend.

AGE is alſo uſed among antient poets for the ſpace of thirty years. *Averan.* Diſſ. in Anthol. Ep. 2. Giorn. de Letter. d'Ital. T. 24. p. 423.

In which ſenſe, *Age* amounts to much the ſame with generation.

Neſtor is ſaid to have lived three *Ages*, at the time when he was ninety.

New AGE, on antient medals, denotes the beginning, or firſt year of a new *ſæculum*, or century of years. V. Mem. de Trev. Jan. 1701. p. 133. ſeq.

AGE is alſo underſtood of the ſeveral degrees or periods of of human life.

Age is ranked among the *res naturales*, and as ſuch contributes to health or diſeaſe.

It is ſaid to be found by experience, that there are more perſons living between ſixteen and twenty-ſix years, than of any other age, or Decad in the life of man. On this principle Sir William Petty eſtabliſhes a rule, that the roots of every number of mens *Ages* under ſixteen, whoſe root is four, compared with this number four, ſhews the proportion of the probabilities of each man's arriving at ſeventy years of age. Thus it is four times more likely that one of ſixteen years ſhould live to ſeventy, than that a new born babe ſhould; and twice as likely that one of ſixteen ſhould reach that *Age*, as that one of four years ſhould do it, *&c.* *Petty*, Diſc. of Dupl. Propor. p. 82. ſeq. See Phil. Tranſ. N°. 196. p. 598. Jour. des Scav. T. 1. p. 613. Miſc. Lipſ. T. 11. Obſ. 221. p. 12. ſeq.

But it is to be obſerved, that the rules laid down by this gentleman, are often the reſult of haſty and incomplete inductions; and in this particular caſe, of two lives of ſixteen and four years of *Age*, the chance of the former's arriving to the *Age* of ſeventy, is ſo far from being double of the chance of the latter, that the proportion of the chances is but as 760 to 622. See *Halley*'s table of lives in *De Moivre*, Doctr. of Chanc. 2d. Ed. p. 253.

Age is more particularly underſtood of a certain ſtate, or portion of the ordinary life of man, uſually diſtinguiſhed by ſome conſiderable change in the temperament, or conſtitution. *Caſt.* Renov. p. 22. Voc. *Ætas*.

AGE is differently conſidered by naturaliſts from what it is by lawyers; and even in each of thoſe profeſſions we find various ſyſtems and diviſions of *Age*. Upon which the curious may conſult *Briſſon.* de Verb. Signif. *Calvin.* Lex. Jur. voc. *Ætas*. *Farnel.* Univ. Medic. l. 3. c. 10. *Chauvin.* Lex. Phil. voc. *Ætas*.

By the Roman law we find divers *Ages* aſcertained, *viz.*

Conſular AGE, or that wherein a perſon might regularly hold the conſulſhip, was the forty-third year, ſo that he might ſue for it in the forty-ſecond. Where it is to be obſerved, that it was not neceſſary either of thoſe years ſhould be expired, but only begun; beſides, that men of extraordinary merits towards the republic, were in this matter exempt from the ordinary laws. Hence Corvinus was conſul at twenty-three years, Scipio Æmilianus at thirty-ſix, and Pompey the great at thirty-five; others broke thro' the laws by violence, as C. Marius the younger, and Octavius Cæſar, who procured themſelves to be made conſuls, before twenty years of *Age*. *Macchiav.* Diſc. in Liv. l. 1. c. 60. p. 210. *Pitiſc.* Lex. Ant. T. 1. p. 52.

Judiciary AGE, or that wherein a perſon was capable of ſitting as judge, was not always the ſame; for by the *lex Servilia Glauciæ*, none was allowed to be choſen under thirty years of *Age*, or above ſixty. By ſome other laws the *Age* ſeems to have been limited to thirty-five, but reduced afterwards by Auguſtus to 30; tho' Pitiſcus ſuppoſes a miſtake here in the text, and that inſtead of thirty-five and thirty, it ought to be read twenty-five and twenty. *Pitiſc.* Lex. Ant. T. 1. p. 52.

Military AGE, or that wherein the Romans were obliged to enter themſelves in the army, was at ſeventeen years; at forty-five, they might demand their diſmiſſion. *Aquin.* Lex. Milit. T. 1. p. 26. ſeq. *Pitiſc.* loc. cit. *Bodin.* de Republ. l. 5. c. 5. p. 869.

Among the Lombards, the *Age* of entry was between eighteen and nineteen; among the Saxons, at thirteen. Bibl. Univ. T. 6. p. 336. ſeq.

AGE *for holding offices in the city*, as quæſtor, ædile, tribune of the people, *&c.* is not determined by the annal-laws of Villius, but appears to have been the twenty-ſeventh year.

For it was neceſſary that the perſon who claimed any urban employment, had firſt ſerved ten years without interruption in the army, commencing from the ſeventeenth year. Tho' ſome think the quæſtorſhip might have been held at twenty-five years. *Polyb.* l. 6. c. 17. *Pitiſc.* loc. cit.

Prætorian AGE, or that wherein a perſon might ſollicit for the prætorſhip, was at forty; two years earlier, than the *Age* required for conſul.

Legitimate AGE, denotes the *Age* of twenty-five, ſo called as ſome imagine, becauſe, youth were then by law allowed, to take the direction of their affairs into their own hands. *Briſſ.* Select. Antiq. ex Jur. civ. l. 3. c. 2.

Diſpenſation of AGE, *ætatis venia*, is a right which a perſon obtained from the prince, or ſovereign of ſetting aſide a tutor or curator, and taking the adminiſtration of his affairs into his own hands, before the legitimate *Age*. *Briſſ.* de Verb. Signif. p. 31. *Calv.* Lex. Jur. p. 52. in voc. *Ætatis Venia*.

Adoptive AGE, called alſo *plena pubertas*, requires the adopter to be eighteen years older than the perſon adopted, that there may appear a probability of his being a natural child. *Manut.* de Legib. c. 14. *Pitiſc.* Lex. Ant. T. 1. p. 51. in voc. *Ætas*. See ADOPTION, *Cycl.* and *Suppl.*

Matrimonial AGE, is defined by the time, wherein a perſon is deemed capable of natural procreation, which again is defined by the beginning of puberty.

Various methods have been in uſe for determining this *Age*. One ſect of antient Roman lawyers called Caſſiani, fixed it by the ſtate of the body, which Juſtinian and others after him, ſuppoſe to have been done by ſearch, or inſpection of the genital parts, at leaſt in the male ſex; for as to the female, it is pretended the twelfth year was the only guide, tho' others alledge that the eruption of the menſes ſerved inſtead hereof. The Proculiani, on the contrary, determined the puberty of males, by the expiration of the fourteenth year. Javolenus took a middle courſe, and made uſe of both methods. V. *Hartung.* Exerc. de Stat. Matrim. c. 2. p. 12. Nouv. Rep. Lett. T. 7. p. 784. It. T. 49. p. 230. Jour. des Scav. T. 66. p. 497. *Pitiſc.* loc. cit.

The *Age* of marriage has undergone divers modifications: in princes it is allowed earlier than in private perſons [a]; in ſome countries than in others [b]. In Perſia girls are married at nine, boys only at thirteen [c], in Holland, males are not allowed to marry without conſent of parents or curators, before twenty-five, girls not before twenty [d]; the Romans choſe to marry their wives young, for the advantage of having them innocent and tractable [e]. Others declaim againſt præmature marriages. Some have pretended to limit the other extreme of marriageable age to forty-five, but this too will be variable in different conſtitutions. We meet with inſtances of generation from ſixty to one hundred and four, or even one hundred and twenty-one years of *Age* [f]. In *Formoſa*, if we may truſt Pſalmanazar, women are not allowed to bear children before thirty-five or thirty-ſeven, and if any prove with child before that *Age*, the law orders an abortion to be procured in a very extraordinary manner [g].—[[a] Jour. des Scav. T. 51. p. 484. [b] Nouv. Rep. Lett. T. 44. p. 527. [c] Mem. of Liter. T. 3. p. 155. [d] Jour. des Scav. T. 30. p. 954. [e] Giorn. de Letter. d'Ital. T. 6. p. 99. [f] *Plott.* Nat. Hiſt. Stafford. c. 8. §. 3. p. 269. *Schenck.* Obſerv. Medic. T. 2. p. 89. [g] Nouv. Rep. Lett. T. 38. p. 57. Work of Learn. T. 8. p. 516.] See ABORTION.

The canon or eccleſiaſtical law alſo notes divers *Ages*, viz. of baptiſm, of ordination to prieſthood, which is not to be before twenty-four; nor to epiſcopacy before thirty-three. V. *Arnd.* Lex. Eccleſ. p. 214. *Du Pin.* Bibl. Eccleſ. T. 18. p. 10.

It is diſputed whether confirmation may be before ſeven years of *Age*. Jour. des Scav. T. 82. p. 116.

By an edict of the late king of France, the children of the reformed, were enabled to chooſe their religion at ſeven years of *Age* [h]. By the antient canons, the clergy were not allowed to have maid-ſervants in their houſes, till paſt the *Age* of child-bearing [i].—[[h] Ouvr. des Scav. Mar. 1695. p. 307. [i] *Sacy*, Not. ſur 1. Tim. c. 5. Jour. des Scav. T. 43. p. 375.]

AGED *of the mountain* is a title or denomination given to the chief or prince of the people called Aſſaſſins. Jour. des Scav. T. 83. p. 20. See ASSASSIN, *Cycl.*

AGEMA, in the antient military art, a kind of ſoldiery, chiefly in the Macedonian armies.

The word is Greek and literally denotes vehemence; to expreſs the ſtrength and eagerneſs of this corps. *Suid.* Lex. T. 1. p. 27. *Aquin.* Lex. Milit. T. 1. p. 28. *Pitiſc.* Lex. Ant. T. 1. p. 55.

Some will rather have *Agema* to have denoted a certain number of picked men, anſwering to a legion among the Romans, which is authoriſed by a paſſage in Livy; Arrian on the contrary, ſpeaks of the *Agema*, as a wing of horſe; not but the term is alſo applied to foot. *Liv.* Decad. 5. l. 2.

AGEMOGLANS (*Cycl.*)—The *Agemoglans* only differ from the Ichoglans, as the former are bred up for the lower, and the latter reſerved for the higher offices of the empire. *Tourneſ.* Voy. du Levant. T. 2. Lett. 13. p. 24. *D' Herbel.* Bibl. Orient. p. 69. Trev. Dict. Univ. T. 1. p. 197.

AGENDA, in a general ſenſe, denotes things to be done or performed, in conſequence of a man's duty.

The word is Latin, formed from *agere*, to do, and divines ſpeak of the *Agenda* of a chriſtian, meaning the things to be practiſed by way of contradiſtinction from *credenda*, or the things to be believed; the former imports the articles of obedience, the latter of faith.

AGENDA is alſo uſed for a book containing notes, or memorandums of things neceſſary to be done.

In which ſenſe, *Agenda* amounts to much the ſame with table-book, *&c.* An anonymous French author, has publiſhed the *Agenda* of a man of the world, containing maxims or rules, proper for the conduct of life. Tablettes. de l' Homme de Coſmop. 1715. an extract of which is given in Jour. Liter. T. 6. p. 174,—184.

AGENDA is more particularly uſed among eccleſiaſtical writers for the ſervice, or office of the church. We meet with *Agenda matutina & veſpertina*, morning and evening prayers; *Agenda diei*, the office of the day, whether feaſt or faſt day;

Agenda mortuorum, called alſo ſimply *Agenda*, the ſervice for the dead. V. *Du Cange*, Gloſſ. Lat. T. 1. p. 106.

AGENDA is alſo applied to certain church books, compiled by public authority, preſcribing the order and manner to be obſerved by the miniſters, and people, in the principal ceremonies, and devotions of the church, that all things may be done decently, and in order. V. Miſc. Lipſ. T. 8. Obſ. 165. p. 35. Mem. de Trev. Juin. 1702. p. 82. Nouv. Rep. Lett. T. 46. p. 418.

In which ſenſe, *Agenda* amounts to the ſame with what is otherwiſe called, ritual, liturgy, acalouthia, miſſal, formulary, directory, &c.

AGENFRIDA, in antient cuſtoms, denotes own lord, or he who has the abſolute property, and dominion of a thing.

The word is alſo written *Agenfriga*, and *agenfrie*. It is derived from the Saxon, *Agen*, own, and *Frea*, lord, maſter. V. *Spelm.* Gloſſ. p. 22. *Somn.* and *Skinn.* Etym. in voc. *Wilk.* Gloſſ. ad Legg. Angl. Sax. p. 389.

AGENHINE, in our old writers, ſignifies a gueſt that has lodged at an inn for three nights, after which time he is accounted one of the family. *Blount*, *Cowel.* See HOGHENHINE, *Cycl.*

AGENT (*Cycl.*)—It is a celebrated queſtion among philoſophers, and divines, whether man be a free, or a neceſſary *Agent?* It may be thus ſtated; man is a neceſſary *Agent* if all his actions are ſo determined by the cauſe preceding each action, that not one paſt action could poſſibly not have come to paſs, or have been otherwiſe than it was; nor one future action can poſſibly not come to paſs, or be otherwiſe than it ſhall be. On the contrary, man is a free *Agent*, if he be able at any time, under the circumſtances and cauſes he then is, to do different things; or in other words, if he is not ever unavoidably determined in every point of time, by the circumſtances he is in, to do that one thing he does, and not poſſibly to do any other.

Which of theſe two definitions agrees to man, is a queſtion of fact to be determined by what we experience in ourſelves, with regard to the operations of our own minds [a]. A late author pretends to reduce the latter definition to an abſurdity [b].—[[a] *Coll.* Philoſ. Enquir. Concern. Libert. p. 11. Jour. Liter. T. 10. p. 88. [b] *Cato*'s Lett. T. 4. p. 190. ſeq.] See LIBERTY, NECESSITY, WILL, *Cycl.*

AGENT is more particularly uſed in medicine, for a being which has motion within itſelf. *Caſt.* Lex. Med. p. 24.

In which ſenſe it ſtands oppoſed to patient, which receives motion from another; thus medicines are conſidered as *Agents*, or as acting on the body; by way of contradiſtinction from aliments, which are ſuppoſed rather to be acted on, than to act.

AGENT is ſometimes attributed to menſtruums, or ſuch bodies as in mixture have the greateſt ſhare of activity and motion. *Quincy*, Lex, Phyſ. Med. p. 12.

That internal *Agent* in man, whereby all the vital motions neceſſary to the preſervation and reſtoration of the body are managed, is by ſome called nature; by others *archæus*, *callidum innatum*, animal ſoul, vital ſpirit, or principle, &c. *Spreng.* Nat. Morb. Medic. in *Purm.* Chir. Cur. l. 3. c. 16.

AGENT is ſometimes alſo uſed in chemiſtry for what we more uſually call inſtrument. Jour. des Scav. T. 69. p. 350.

In which ſenſe, fire, water, air, earth, and menſtruums, are chemical *Agents*.

AGENTS *of the victualing-office* are officers under the commiſſioners, appointed to buy, and contract for proviſions, &c. Some of theſe are ſettled in the ports, where they have much the ſame office and authority, as the commiſſioners themſelves at London. V. *Maydm.* Nav. Specul. 4. p. 123.

AGENT *victualler* is uſed in the ſame ſenſe.

AGENT is more particularly uſed for the miniſter of a prince, or ſtate at another court.

In which ſenſe, *Agents* are commonly reputed a ſpecies of public miniſters, or embaſſadors; but they differ eſſentially, in that *Agents* are not inveſted with any repreſentative character, altho' intruſted with the affairs, and intereſts of their princes. See EMBASSADOR, ENVOY, *Cycl.*

AGENT is ſometimes uſed in writers of the middle age, for the king's miniſter or officer.

In which ſenſe, the king is ſaid to have ſent to his dukes, counts, and the reſt of his *Agents*. *Du Cange*, Gloſſ. Lat. T. 1. p. 107.

AGENTES *ad reſponſum*, among the Romans. See MAGISTER *Scrinii diſpoſitionum.*

AGENTES *in Rebus*, one of the ſchools, or ranks of officers in the court of the Conſtantinopolitan emperors, whoſe buſineſs was, to collect and convey the corn both for the army, and houſhold; carry letters, and meſſuages from court to all parts of the empire; regulate couriers, and their vehicles; to make frequent journeys, and expeditions thro' the provinces, have an eye to any motions, diſturbances, machinations tending that way, and give early notice thereof to the emperor. V. *Aquin.* Lex. Milit. T. 1. p. 28. *Pitiſc.* Lex. Ant. T. 1. p. 56. *Calv.* Lex. Jur. p. 53. *Hartung.* Exerc. 3. c. 14. §. 15.

The *Agentes in Rebus*, are by ſome made ſynonymous with our poſt-maſters, but their function was of greater extent. They correſpond to what the Greeks call Πυξοφοροι, and the Latins *Veredarii*. They differ from the *Frumentarii*, in little more than the name, being erected upon the ſuppreſſion of the *Frumentarii*, to ſupply their place, not long before the age of Conſtantine. V. *Aurel. Vict.* de Cæſar. c. 39. n. 44. *Pitiſc.* Lex. Antiq.

The *Agentes in Rebus* were of the number of the palatine officers, and as ſuch under the management of the *Magiſter officiorum*; tho' their employment was not confined to the court, for which reaſon they are ſometimes ſpoken of as different from the palatine officers.

There were divers orders or degrees of *Agentes in Rebus*, as *Tribuni*, *Primicerii*, *Senatores*, *Ducenarii*, *Biarchi*, *Circitores*, *Equites*, *Tyrones*, &c. thro' all which they roſe *gradatim*. Their chief was denominated *princeps*, which was a poſt of great dignity, being reckoned on a level with that of proconſul.

The *Princeps Agentium in Rebus*, reſided at Conſtantinople, others of them were diſpoſed in every part of the empire. They are alſo ſaid to have ſerved as interpreters. V. *Hartung.* loc. cit. c. 11. §. 14.

AGER, (*Cycl.*)—AGER *Vectigalis privatus*, in Roman antiquity, that whoſe property was granted to private perſons on the reſerve of a certain rent, or tribute.

AGER *Vectigalis publicus*, that whoſe property was reſerved to the public, and being let out to farm, the rents or profits accrued to the public treaſury.

AGER is alſo uſed for a certain portion or meaſure of land, antiently allowed in the diviſion of grounds to each citizen.

In the early days of the Roman ſtate, the *Ager* was only two *Jugera*, amounting to 1¼ Engliſh acre.—After the expulſion of the kings, ſeven *Jugera* were allowed a Plebeian. Under the conſulate of C. Licinius Stolo, in the year of Rome 376, a law was made to limit eſtates to 500 *Jugera*, or 330 Engliſh acres. Under Julius Cæſar another agrarian law was publiſhed, by which thoſe who enlarged their pittance of land, were to pay 50 *Aurei* to the public. V. *Arbuthn.* Diſſ. of Rom. Money, c. 1. *Baxt.* Gloſſ. p. 66. ſeq. *Hoffm.* Lex. Univ. T. 1. p. 108. Jour. des Scav. T. 21. p. 159. See AGRARIAN.

AGER is alſo uſed in middle age writers, for what we now call an acre. *Spelm.* Gloſſ. p. 22. *Du Cange*, Gloſſ. Lat. T. 1. p. 107. See ACRE.

AGER *Mineralium*, among chemiſts, denotes the element of water; conſidered as the field, or ſoil, wherein mineral bodies have their firſt root, and from whence they ſhoot their branches upon the earth. *Dorn.* Geneal. Mineral. c. 3. in Theat. Chem. T. 1. p. 571. *Caſt.* ap. Lex. Med. p. 24. See WATER, and MINERAL, *Cycl.*

Some conſider the *Uterus* as a kind of *Ager naturæ*, bearing a near reſemblance in point of office, to the earth itſelf, in receiving and foſtering the ſemen, &c. V. *Burggrav.* Med. p. 345. See UTERUS, *Cycl.*

AGERATUM, in botany, the name of a genus of plants, the characters of which are theſe; the flower is monopetalous, of the perſonated kind, and tubular in its lower part, and in the upper divided into two lips, the upper of which is bifid, and the lower divided into three ſegments. The piſtil ariſes from the cup, and finally becomes an oblong membranaceous fruit, divided into two cells, which contain a number of very fine ſeeds affixed to a placenta.

The ſpecies of *Ageratum* enumerated by Mr. Tournefort are theſe.

1. The ſmooth leaved ſerrated alpine *Ageratum*, with purple flowers. 2. The ſmooth leaved ſerrated alpine *Ageratum*, with white flowers. 3. The hairy ſerrated alpine *Ageratum*, with purple flowers. 4. The hairy alpine ſerrated *Ageratum*, with white flowers. 5. The American *Ageratum*, with the leaves and whole appearance of the rapunculus. *Tournef.* Inſt. p. 651. ſeq.

AGERATUM is an officinal plant, popularly called *maudlin.*

The word is originally Greek αγηραλον, compounded of the privative α and γηρας old age, on account of its flowers, which do not eaſily wither or grow old [a].

Ageratum bears a near reſemblance to the Coſtmary, from which it only differs, in that its flowers are formed into looſe umbels; there are divers ſpecies of it. The officinal is called *Ageratum foliis ſerratis*, C. B. or *Ageratum Luteum*, and is the ſame with the *Eupatorium Meſues*, ſo called on account of its virtue in diſeaſes and obſtructions of the liver [b].

Ageratum is of an aſtringent quality, and as ſuch recommended by Riverius, and others, againſt incontinence of urine; Geſner has alſo diſcovered a briſk purgative power in its [c] roots. But it is rarely preſcribed in the preſent practice.—[[a] *Lemery*, Dict. des Drog. p. 18. [b] *Quinc.* Diſpenſ. P. 1. Sec. 4. n. 257. *Mill.* Gard. Dict. in voc. [c] *Quinc.* ib. See alſo *Burggrav.* Lex. Med. T. 1. p. 346. ſeq. & *Junck.* Conſp. Therap. Tab. 20. p. 516.]

AGERATUS *Lapis*, in the materia medica of the antients, the name of a ſtone mentioned by Galen and other writers; and ſaid to be of the nature of the Phrygian ſtone, but more aſtringent; and as that was uſed in dying, this was in dreſſing of leather: we have no account of its external appearance, but probably it contained vitriol, and perhaps alum.

The great uſe of vitriol or copperas in the management of leather, is well known; and the ſtones which contain it, or Pyritæ, are every where common. The method uſed alſo in the

preparation of the *Phrygius lapis*, which was the wetting and ſlightly calcining it, muſt be very proper to make the vitriol contained in this appear and exert itſelf in the working with it. *Galen*, de Med. Simpl. L. 9. See alſo *Mercat.* Metaloth. Am. 9. c. 15. p. 240.

AGGADA, in Jewiſh antiquity, an ingenious tale, or ſtory; of which kind there are many in the Talmudt.

There are ſeveral books extant among the Jews under this title [a]. R. San-Iſrael Ben Juda has publiſhed *Novellas Aggadarum*, or new explanations of the ſtories and relations in the Talmud, diſcovering the hidden meanings thereof [b]. —[a Vid. *Wolf.* Bibl. Hebr. b Act. Erud. Lipſ. 1685. p. 1. ſeq.]

AGGER, in antient Latin writers, denotes the middle part of a military road, raiſed into a ridge, with a gentle ſlope on either ſide, to make a drain for the water, and keep the way dry.

AGGER is alſo uſed for the whole road, or military way. *Du Cange*, Gloſſ. Lat. T. 1. p. 107. ſeq.

Where high-ways were to be made in low grounds, as between two hills, the Romans uſed to raiſe them above the adjacent land, ſo as to make them of a level with the hills. Theſe banks they called *Aggeres*. Bergier mentions ſeveral in the *Gallia Belgica*, which were thus raiſed, ten, fifteen, or twenty feet above ground, and five or ſix leagues long. V. *Bergier*, Hiſt. des Chemins, l. 2. Mem. of Liter. T. 7. p. 35.

They are ſometimes alſo called *Aggeres calceati*, and now generally known by the name chauſſees, or cauſeways.

AGGER alſo denotes a work of fortification, uſed both for the defence and the attack of towns, camps, &c.

In which ſenſe, *Agger* is the ſame with what was otherwiſe called *vallum* [a], and in latter times *aggeſtum* [b], and among the moderns *lines*; ſometimes *cavaliers*, *teraſſes*, &c. —[a V. *Horſley*, Britan. Rom. l. 1. c. 8. p. 107. b *Pitiſc.* Lex. Antiq.]

The *Agger* was uſually a bank, or elevation of earth, or other matter, bound and ſupported with timber; having ſometimes turrets on the top, wherein the workmen, engineers, and ſoldiery were placed. It was alſo accompanied with a ditch, which ſerved as its chief defence.

The uſual materials, of which it was made, were earth, boughs, faſcines, ſtakes, and even trunks of trees, ropes, &c. variouſly croſſed, and interwoven ſomewhat in the figure of ſtars; whence they were called *ſtellati axes*. Where theſe were wanting, ſtones, bricks, tyles, ſupplied the office: on ſome occaſions, arms, utenſils, pack-ſaddles, were thrown in to fill up. What is more, we read of *Aggers* formed of the carcaſſes of the ſlain [c]; ſometimes of dead bones mixed with lime [d]; and even with the heads of ſlaughtered citizens [e]. For want of due binding, or ſolid materials, *Aggers* have ſometimes tumbled down, with infinite miſchief to the men. —[c *Valer. Max.* l. 7. c. 6. *Appian.* de Bell. Civ. l. 2. *Hirt.* de Bell. Hiſpan. *Joſeph.* de Bell. Judaic. l. 4. d *Spon.* Voy. P. 1. e *Ducaſ.* Hiſt. Byzant. c. 17.]

The beſiegers uſed to carry on a work of this kind nearer and nearer towards the place, till, at length, they even reached the wall. The methods taken, on the other ſide, to defeat them, were by fire, eſpecially if the *Agger* were of wood; by ſapping and undermining, if of earth; and, in ſome caſes, by erecting a counter *Agger*.

The height of the *Agger* was frequently equal to that of the wall of the place. Cæſar tells us of one he made, which was thirty feet high, and three hundred and thirty feet broad. Beſides the uſe of *Aggers* before towns, the generals uſed to fortify their camps with the ſame; for want of which precaution, divers armies have been ſurprized and ruined.

There were vaſt *Aggers* made in towns, and places on the ſea-ſide, fortified with towers, caſtles, &c. Thoſe made by Cæſar and Pompey at Brunduſium, are famous [f]. Sometimes *Aggers* were even built acroſs arms of the ſea, lakes, and moraſſes; as was done by Alexander before Tyre [g], and by M. Antony and Caſſius [h].—[f V. *Cæſar.* de Bell. Civ. l. 1. g *Q. Curt.* l. 4. h *Appian.* loc. cit.]

The wall of Severus, in the north of England, may be conſidered as a grand *Agger*, to which belong ſeveral leſſer ones. Beſides the principal *Agger*, or *vallum*, on the brink of the ditch, M. Horſley deſcribes another *Agger* on the ſouth ſide of the former, about five paces diſtant from it, which he calls the ſouth *Agger*; and another larger *Agger* on the north ſide of the ditch, called the north *Agger*. This latter he conjectures to have ſerved as a military way; the former, probably, was made for an inner defence, in caſe the enemy ſhould beat them from any part of the principal *vallum*, or to protect the ſoldiers againſt any ſudden attack from the provincial Britains. *Horſl.* Brit. Rom. l. 1. c. 8. p. 117.

AGGER *Tarquinii*, *Tarquin's Agger*, was a famous fence built by Tarquinius Superbus, on the eaſt ſide of Rome, to ſtop the incurſions of the Latins, and other enemies, whereby the city might be infeſted. V. *Pitiſc.* Lex. Ant. in voc.

AGGER is alſo uſed for the earth dug out of a trench and thrown up on the brink of it.

In which ſenſe, the chevalier Folard thinks the word to be underſtood, when uſed in the plural number, ſince we can hardly ſuppoſe they would raiſe a number of cavaliers, or terraſſes. V. Bibl. Raiſ. T. 5. p. 112.

AGGER is alſo uſed for a bank, or wall, erected againſt the ſea, or ſome great river, to confine or keep it within bounds.

In which ſenſe, *Agger* amounts to the ſame with what the antients called *tumulus* and *moles*; the Dutch, *dyke*; we, *dam*, *ſea-wall*.

The firſt hint of this kind of *Aggers* is ſaid to have been taken from ſwallows, which ſo ſtopped up one of the mouths of the Nile, with a vaſt continued cluſter of neſts, as to withſtand all the weight and force of that river. We find a title in the code *de Aggeribus Nili non rumpendis*. *Plin.* Hiſt. Nat. T. 1. l. 10. c. 33. p. 562. ſeq. *Hoffm.* Lex. Univ. T. 1. p. 109.

AGGER alſo denotes a heap of earth, raiſed over the graves of the antients. *Baxt.* Gloſſ. p. 67. ſeq. *Danet.* Lex. Ant. in voc.

In which ſenſe, it amounts to the ſame with *tumulus*; and is ſometimes alſo called *aggeſtum*. V. *Hoffm.* Lex. Univ. T. 1. p. 109. in voc. *Aggeſtum*.

AGGLUTINATION (*Cycl.*)—Some aſſign a difference between *Agglutination* and aſſimilation: in that ſpecies of leoproſy, called λευκη, there is an adheſion, or *Agglutination* of the nutriment, but no aſſimilation. In the anaſarcous dropſy, on the contrary, there is an adjunction, without any *Agglutination*; *i. e.* there is an afflux of new matter, or nouriſhment, but this ſo thin and watery, that it wants the due ſtiffneſs and tenacity to make it bind. *Gorr.* Def. Med. p. 390. in voc. προσφυσις. *Quinc.* Lex. Med. p. 12.

Some will have *Agglutination* to be effected by a ferment; others aſſert, that by reaſon of the glutinous quality of the chyle, a mere contact ſuffices to make it adhere to the parts. Nouv. Rep. Lett. T. 14. p. 1296.

AGGLUTINATION is uſed by ſome aſtronomers to denote the meeting of two or more ſtars in the ſame part of the zodiac. *Vital.* Lex. Math. p. 15.

AGGLUTINATION is more peculiarly underſtood of the ſeeming coalition of ſeveral ſtars, ſo as to form a nebulous ſtar. See NEBULOUS, *Cycl.*

AGGREGATE (*Cycl.*) is particularly uſed by ſome modern chemiſts, and naturaliſts, for a numerous collection of atoms, or minuteſt corpuſcles, whether homogeneous or heterogeneous, joined together by contiguity, without regard to the quality of ſuch atoms.

In which ſenſe, *Aggregate* differs from *text*, as the former ſuppoſes no particular ſituation, or poſition, of the corpuſcles, other than what ariſes from their proportion, and the relation they bear to the ambient bodies, among whom the coalition is formed. See TEXT.

Aggregate alſo differs from *mixt*, as the latter is formed immediately out of the principles of matter, ſo firmly united, as that it is very difficult, if not impoſſible, to ſeparate them.

Aggregate again differs from *compound*, as the latter is formed out of *mixts*, and is eaſily diſſolvable.

Aggregates then are the ultimate compounds, or the laſt effects of compoſition; they reſolve into compounds as their next ingredients, theſe into mixts, and mixts into ſimples, or principles; though, in ſtrictneſs, *Aggregates* may reſolve alſo into mixts, and mixts into ſimples, inaſmuch as they conſiſt of heterogeneous parts.

This doctrine and diſtinction of *Aggregates*, *mixts*, and *compounds*, is the foundation of the chemical theory of Beccher and Stahl; which laſt has traced it with great exactneſs. Hence has ariſen a new doctrine of earths, metals, &c. Vid. *Stahl*, Diſſ. de Temperam, c. 1. Eund. de Differ. *Mixti*, *Texti*, *Aggregati*, *Individui*, in Obſerv. Halenſ. T. 4. obſ. 14. §. 21. p. 314. ſeq. It. Philoſ. Princip. Chemiſt. P. 1. §. 1. *Shaw*, Not. ad Eund. p. 8 & 10. *Caſt.* Lex. Med. p. 24. *Burggrav.* Lex. Med. T. 1. p. 348.

AGIADES, a kind of Turkiſh ſoldiery, employed in fortifying of camps, ſmoothing of roads, and the like offices. *Meurſ.* Gloſſ. p. 7. *Du Cange*, Gloſſ. Gr. T. 1. p. 10. *Aquin.* Lex. Milit. T. 1. p. 31.

AGIASMA, among antient writers, is ſometimes uſed for the whole church, ſometimes for the more ſacred part, or *Bema*, wherein maſs was ſaid. *Du Cange*, Gloſſ. Græc. T. 1. p. 10. ſeq.

AGILENSZ, in botany, a name uſed, by ſome, for the common hazel. *Ger.* Emac. Ind. 2.

AGILITY (*Cycl.*)—Some define *Agility*, the art or habit of directing our ſtrength, *i. e.* of intending, or remitting it to advantage. *Placc.* Acceſſ. Ethic. c. 3. §. 24. ſeq. Miſc. Lipſ. T. 1. p. 277.

The improving of *Agility* was one of the chief objects of the inſtitution of games and exerciſes. The Athletæ made particular profeſſion of the ſcience of cultivating and improving *Agility*. V. Mem. Acad. Inſcript. T. 4. p. 441.

Agility of body is often ſuppoſed peculiar to ſome people; yet it ſeems not owing to any thing in their frame and ſtructure different from others, but entirely to practice. Our travellers are uſually ſurprized at the great *Agility* of the natives of Malabar; but Baldæus takes off the wonder, by telling us, that all the gentry, and all the military people there, are bred in a manner to render this eaſy to them; and, from the age

of seven, are used to have their sinews stretched, and to be anointed with ungents, to make them supple. The consequence of this, and of their practising from this early time all sorts of motion is, that they are able to turn and wind their body about every way. *Baldæus*, de Ind. Orient.

AGILLARIUS (*Cycl.*)—The *Agillarius*, or *heyward of a town*, or *village*, was to supervise the greater cattle, or common herd of beasts, and keep them within their due bounds; and was otherwise called *bubulcus*, *q. d.* cow-ward, (whence the reproachful term *coward.*)—If he were a cottager, or other servile tenant, he was exempted from the customary services, as being presumed to be always attending on his herd, as a shepherd on his flock, who had therefore the like privilege.

The *Agillarius of the lord of a manor*, or a *religious house*, was an officer appointed to take care of the tillage and harvest work, to pay the labourers, and see there were no incroachments made, or trespasses committed: the same in effect with what has been otherwise called *fieldsman*, and *tithingman*; and among us *bailiff*. *Kenn.* Gloss. ad Paroch. Ant. in voc. See BAILIFF, &c.

AGIO (*Cycl.*)—It is to be observed, that in cities where there are banks, money in bank is usually worth more than current cash, or money in specie.

This difference is various, at different times and places: at Amsterdam it was formerly 6 per cent [a]. Of late days it has been 3 or 4 per cent. so that, *e. gr.* 103 or 104 florins, are to be given current money, to have 100 florins in bank. At Venice the *Agio* is fixed at 20 per cent [b].—[a] Le Negoc. d'Amsterd. c. 1. p. 2. seq. [b] *Savar.* Dict. Comm. T. 1. p. 47. seq.

AGIO is also used for the profit arising from discounting a note, bill, or the like.

AGIO is also used, though with some impropriety, for the rate of exchange of a sum negotiated, whether to profit or loss.

AGIO *of assurance* is used, by some, for what we more usually call *policy of assurance*. *Savar.* Dict. Com. T. 1. p. 1, 48.

AGIOSYMANDRUM, a wooden instrument used by the Greek and other churches, under the dominion of the Turks, to call together assemblies of the people.

The word is compounded of αγιος, holy, and σημαγω, *significo*, I signify, denote.

The *Agiosymandrum* was introduced in the place of bells, which the Turks prohibited their Christian subjects the use of, lest they should make them subservient to sedition. Vid. *Hoffm.* Lex. Univ. T. 1. p. 109.

AGIST. To *agist the forest*, *agistare forestam*, is to take in cattle to pasture within the bounds of the forest, for one month, viz. fifteen days before Michaelmas, and as many after; when the running of cattle can be no prejudice to the game. See AGISTMENT.

In a like sense, they also say, *agistare boscum*, *silvam*, *campum*, *agistare animalia*, &c.

Our graziers still call the cattle, which they take in to keep by the week, *Gisements*, or *Juicements*.—To *gise*, or *juice* ground, is when the lord, or owner, feeds it not with his own stock, but takes in other cattle to *agist*, or feed on it. *Spelm.* Gloss. p. 22. *Du Cange*, Gloss. Lat. T. 1. p. 109. *Rast.* Terms de Ley, fol. 14. voc. *Agist.* *Cowel*, Interpr. in voc. *Kenn.* Gloss. ad Paroch. Ant. in voc.

AGISTMENT (*Cycl.*)—The duty and levy for repairing the banks and walls in Romney-marsh was particularly called *Agistamentum*; and the act of laying such a proportion of this duty on the several estates was called *Agistatio*. *Spelm.* Gloss. p. 22. *Du Cange*, Gloss. Lat. T. 1. p. 109.

AGITATION, (*Cycl.*) in physics, is often used for an intestine commotion of the parts of a natural body.

Fermentation and effervescence are attended with a brisk *Agitation* of the particles: heat is supposed, by some, to consist in the *Agitation* of the parts of the hot body: and hence some attempt to demonstrate the quantity of heat in bodies of the like texture, to be in a ratio compounded of the density of the bodies, and the duplicate ratio of the *Agitation* of their particles.—Hence also a method is deduced, of measuring the degree of *Agitation* of the particles of the air [a].—Mercury, by a brisk *Agitation* in vacuo, produces light; and hence that new species of phosphorus, called mercurial [b].—[a] Vid. *Herman.* Phoron. l. 2. c. 24. p. 366. seq. [b] V. *Hawksb.* Phys. Mechan. Exper. sec. 1. n. 4. p. 15. Jour. des Scav. T. 61. p. 513. It. T. 66. p. 104.

Sound is produced by a tremulous *Agitation*, excited first in the sonorous body, and communicated thence to the ambient air. V. *Herman.* ubi supra, l. 2. c. 23. p. 377.

AGITATION is one of the chief causes or instruments of mixtion: by the *Agitation* of the parts of the blood and chyle, in their continual circulation, sanguification is, in good measure, effected. Butter is made out of milk by the same means: in which operation, a separation is made of the oleous parts from the serous, and a conjunction of the oleous together. Digestion itself is only supposed to be an insensible kind of *Agitation*. The readiest way to dissolve sugar in wine, or other liquor, is to give the vessel a hasty turn, together with a smart knock against any hard and steady body, whereby all the parts of the sugar and liquor are put into a vehement *Agitation*. V. *Grew*, Disc. of Mixt. lect. 1. c. 4. p. 230.

AGITATION is reputed one of the symptoms of inspiration [a]. Petit informs us, that, in the last century, there arose in a church in Italy, for the space of a year, a vapour of an extraordinary kind, which put all the people into trembling and *Agitations*, and, unless they got away betimes, set them a dancing, with strange contortions and gesticulations. This seems to verify what has been related of the temple of Delphi [b].—[a] V. Act. Erud. Lipsi. an. 1692. p. 230. Nouv. Rep. Lett. T. 42. p. 332. Lett. Edif. T. 9. p. 66. [b] *Petit.* de Sybilla, l. 1. Nouv. Rep. Lett. T. 8. p. 1113.]

AGITATION is also used in medicine, for a species of exercise, popularly called *swinging*.

The antients held *Agitation* of the body necessary: in cases where the patient could not be moved from one place to another, they suspended him in his bed, and swang him backwards and forwards. *Cels.* de Medic. l. 2. Jour. des Scav. T. 57. p. 25.

Maurice prince of Orange found this method a relief against the severe pains of the gout and stone. Act. Erud. Lipsi. an. 1705. p. 42.

Bartholine mentions fits of the tooth-ach, deafness, &c. removed by vehement *Agitations* of the body. *Barth.* Act. Med. T. 5. obs. 126. p. 321.

AGITATIONS of the arms, and other parts, are found of especial use for dissolving concretions in the body. *Cast.* Lex. Med.

Among the Jews, there was one kind of sacrifice offered by *Agitation*, *i. e.* by waving towards the east, west, north, and south, to denote that God was to be served in every part of the earth.—This, in our version, is rendered a *wave-offering*. Vid. Exod. *c.* xxix. *v.* 24. It. *c.* xxxv. *v.* 22. Levit. *c.* ix. *v.* 21. *Hoffm.* Lex. Univ. T. 1. p. 110.

AGITATIVE, something that agitates or shakes another. See AGITATION.

AGITATIVE *force* of a pendulum, is that which produces motion in it.

The *agitative force* of the pendulum arises from three things. 1*mo*. The power of gravity. 2*do*. The weight fastened at the end of the rod. 3*tio*. The distance of that weight from the point of suspension; or, which amounts to the same thing, the length of the rod, or pendulum. V. Hist. Acad. Scienc. an. 1714. p. 127.

AGITATOR, in antiquity, a charioteer; or he who drove or directed a chariot, or horses in a race. *Pitisc.* Lex. Ant. T. 1. p. 60. See CHARIOTEER.

In which sense, *Agitator* amounts to the same with what the Romans called *auriga*, and we a coachman, driver, &c.

AGITATOR was more particularly used for him who drove in the public *Curule* games in the *circus*. *Pitisc.* Lex. Ant. T. 1. p. 60. *Schoetg.* Lex. Ant. p. 157. seq. in voc. *Aurigæ*.

The *Agitators* were distinguished, by their habits, into *Russati*, *Albati*, *Prasini*, and *Veneti*, which gave the rise and denomination to so many factions. Besides which, they had other marks, or ensigns of their family, corresponding to what we call arms.

The conquerors, besides the ordinary rewards, *braviæ*, as crowns, &c. had statues erected to them in the circus; on the bases whereof, their titles, atchievements, &c. were inscribed; several of which are still found among antient inscriptions, drawn in the following formulæ: *Vicit Sejuge*, *Septejuge*, *Bigas*, *Trigas*, *uno anno*, *alieno Principio*, *duobus introjugis*, &c.

It has been disputed, whether the *Agitators* were on the footing of mimes and pantomimes, and by law held infamous? Brissonius shews the negative; they did not become so till after the introduction of Christianity [a]. By a canon of the antient church, they were excluded from the communion, while they followed the profession [b]. Some alledge, for a reason of the exclusion, that they used to practise magic and enchantments, to retard and hinder their adversaries. Add, that the circus, wherein they performed, was adorned with the statues of false gods, and the whole tenor of the shews had a face of idolatry.—[a] *Brisson.* Select. ex. Jur. Civ. Ant. l. 1. c. 10. [b] V. Jour. des Scav. T. 34. p. 638. & *Hoffm.* Lex. Univ. T. 1. p. 110.]

Miliarian AGITATORS, *Agitatores miliarii*, were those who drove in the forum at Constantinople, a place adorned with statues, &c. after the manner of the circus at Rome, having a *milium*, or *miliarium*, in the middle. *Buleng.* de Circ. c. 52. *Pitisc.* Lex. Ant. T. 1. p. 60.

AGLAOPHOTIS, in botany, a name used, by some, for piony. *Ger.* Emac. Ind. 2.

AGLIA, αγλια, among antient physicians, a whitish cicatrix, or spot in the eye, formed by a congestion of humours. *Cast.* Lex. Med. p. 24.

AGMEN, in antiquity, properly denotes a Roman army in march. *Pitisc.* Lex. Ant. T. 1. p. 60. seq. *Aquin.* Lex. Milit. T. 1. p. 32. seq.

In which sense, it stands contradistinguished from *acies*, which denoted the army in battle array; though, on some occasions, we find the two words used indifferently for each other.

The

The Roman armies, in their marches, were divided into *primum Agmen*, anſwering to our vanguard; *medium Agmen*, our main-battle; and *poſtremum Agmen*, the rear-guard.

The order of their march was thus: after the firſt ſignal with the trumpets, &c. the tents were taken down, and the bagagge packed up; at the ſecond ſignal, the baggage was to be loaden on the horſes and carriages; and at the third ſignal, they were to begin their march. Firſt came the *extraordinarii*; then the auxiliaries of the firſt wing, with their baggage; theſe were followed by the legions. The cacavalry marched either on each ſide, or behind.

AGMEN *pilatum*, that diſpoſed in a narrow oblong form, or column; being withal cloſe and compact; thus called, as reſembling the figure of a *pila*, or peer. Vegetius compares it to that of a broach, or ſpit. This form was chiefly uſed in marching without their baggage, through bad ways, and cloſe countries. V. *Pitiſc.* Lex. Ant. T. 1. p. 61. *Voſſ.* Etym.

AGMEN *quadratum*, that ranged ſomewhat in a ſquare form; being the method ordinarily obſerved in the Roman armies. This was alſo called *Agmen grave*, by the Greeks Τελεσγωνος Ταξις [a]. The three lines, or columns, in which the army uſually marched, were conſiderably more in length, or breadth, than in depth: but as the baggage marched, ſomewhat in the ſame order, the whole approached to the figure of a ſquare [b]. —[a V. *Baxt.* Gloſſ. p. 69. b *Pitiſc.* loc. cit.]

AGMEN is alſo uſed for any number of perſons, or even animals, moving or advancing in ſome regular order. V. *Salmaſ.* de Re Milit. c. 17.

AGNANTHUS, in botany, the name given by Vaillant to a genus of plants, called afterwards *cornutia*, by Plumier and Linnæus. See CORNUTIA.

AGNEL, an antient French gold coin, firſt ſtruck under the reign of St. Louis, worth about twelve ſols, ſix deniers. V. *Le Blanc.* Hiſt. Monn. de France, ap. Act. Erud. Lipſ. Supp. T. 3. p. 184. Trev. Dict. Univ. T. 1. p. 204.

The *Agnel* is alſo called ſometimes *Mouton d'or*, and *Agnel d'or*.

The denomination is ſuppoſed to have ariſen from the figure of a lamb, or ſheep, ſtruck on one ſide.

AGNELET, an antient French ſilver coin, firſt ſtruck under Philip le Bel, worth about twenty ſols. Trev. Dict. Univ. T. 1. p. 205.

AGNOETISM, the diſtinguiſhing doctrine, or ſyſtem, of the *Agnoetæ*. See AGNOETÆ, *Cycl.*

There ſeems to have been two kinds of *Agnoetiſm*, and *Agnoetæ*, though uſually confounded. The firſt founded by Theophronius, an Eunomian, under the empire of Valens, who quitted his party, taught ſome erroneous tenets concerning God's preſcience, and its difference from knowledge: the latter, founded by Themiſtius the deacon of Alexandria. As to all which, the curious may conſult Obſerv. Halenſ. T. 1. obſ. 15. *Fabric.* Bibl. Græc. T. 8. l. 5. c. 18. *Niceph. Calliſt.* Hiſt. Eccleſ. l. 18. c. 11, 18, 45, 49, 50. *Pratæol.* Elench. Hæreſ. l. 1. p. 19.

AGNOMEN, (*Cycl.*)—There have been great diſputes among antiquaries, concerning the *Agnomina* of the Romans. Beſides the notion delivered in the *Cyclopædia*, divers others have been ſtarted. The generality of grammarians ſpeak of the *Agnomen* as a fourth name ſuperadded to the *cognomen*, or third name, on account of ſome extraordinary action, virtue, or the like: as *Africanus*, in Publius Cornelius Scipio Africanus; *Creticus*, in Quintus Cæcilius Metellus Creticus; *Fœlix*, in Lucius Cornelius Sylla Fœlix, &c. *Cantel.* Diſſ. 1. ad Valer. Max. Jour. des Scav. T. 8. p. 19. Nouv. Meth. Lat. p. 597.

But what refutes this notion, is, that theſe, and other names after the *cognomen*, or family name, are frequently called, by antient writers, *cognomina*, and not *Agnomina*. This led Sigonius to conclude the *Agnomen* and *cognomen* to be the ſame thing; notwithſtanding that Cicero expreſly diſtinguiſhes them. Others following Robortellus, take the *Agnomen* to be the ſame with the *nomen gentile*, or that belonging to the *Agnati*; which appears ſtill farther from the truth. A late author decides the difficulty, by making the *Agnomen* to be generally the ſame with the *cognomen*, though not always, but only in caſes of adoption.

According to this ſyſtem, *Agnomen* is the name which a perſon adopted retains after his adoption. It was a cuſtom among the Romans, for a perſon, when adopted into another family, to lay aſide all his other names, and only retain his family name, to which he added the *prænomen*, *nomen*, and *cognomen* of the adopter. Thus P. Cornelius Scipio, being adopted by Q. Cæcilius Metellus, laid aſide his *prænomen* Publius, and *nomen* Cornelius, and was called Q. Cæcilius Metellus Scipio. So alſo L. Calpurnius Piſo, being adopted by M. Pupius, was called M. Pupius Piſo. And M. Junius Brutus, being adopted by Q. Servilius Cæpio, was called Q. Servilius Cæpio Brutus. It follows, that Piſo and Brutus are here real *Agnomina*, as being *Agnata*, or belonging to the proper family of the perſon; whereas the other three are foreign, or ſuperadded on account of adoption. V. *P. Serv.* Miſcell. c. 8. *Pitiſc.* Lex. Ant. T. 1. p. 62. ſeq. See ADOPTION and ADOPTIVE, *Cycl.* and *Suppl.*

AGNOS, in ichthyology, a name given by Athenæus, and many other of the Greek writers, to that fiſh called *callyonymus*, or *uranoſcopus*. It is a ſpecies of the *trachinus*, and is diſtinguiſhed, by Artedi, from the reſt of that genus, by the name of the *trachinus* with a great number of beards growing from the lower jaws.

AGNUS *caſtus*, (*Cycl.*) is alſo called *agnon*, *vitex*, ſometimes *elæagnon*, *ſalix amerina*, *lygon*, *lygus*.

There are divers ſpecies of it. Pliny mentions two, the *greater*, called alſo the *white* kind, and the *leſſer*, or *black*. Miller ſpeaks of four; only one of which, called by botaniſts, *vitex foliis anguſtioribus*, *canabis modo diſpoſitis*, is pretty common in Engliſh gardens; the reſt are rare.

The *Agnus caſtus* is a ſmall ſhrub, which ſhoots ſeveral long, ſlender, flexible branches, covered with an aſh coloured rind; its leaves are long, narrow, pointed, and lanuginous, diſpoſed like thoſe of hemp; its ſeed round, about the bigneſs of pepper, and having a pungent aromatic taſte. Whence the French ſometimes call it *wild pepper*. It grows in waſte grounds, about the banks of rivers, and contains a great deal of ſalt and oil, but little phlegm.

AGNUS *caſtus* was eſteemed ſacred to Ceres, and is ſometimes repreſented on medals, in her hand.

To obviate looſe deſires, ſome of the Italian religious, to this day, not only fill the pillows they lye on with the leaves, bloſſoms, and ſeed of the ſame, but alſo tye ſome of its branches about their middle. Some of the nunneries in France are alſo ſaid to rear this plant in their gardens, for the ſame purpoſe. M. de la Barmondiere, curate of the ſeminary of St. Sulpice at Paris, uſed to have conſerves and electuaries made of the *Agnus caſtus*, which he diſtributed among his diſciples, as he found occaſion. Yet by its ſmell and taſte, as well as its operation as a diuretic and emmenagogue, one would rather ſuſpect that it ſhould have a contrary effect. Vid. *Plin.* Hiſt. Nat. l. 24. c. 9. *Hardouin.* Not. ad loc. *Lemeri*, Tr. des Drog. p. 18. *Chomel.* Dict. Œcon. T. 1. p. 39. *Mill.* Gard. Dict. in voc. *Burggr.* Lex. Med. T. 1. p. 350. ſeq. Mem. Acad. Inſcrip. T. 5. p. 53. Mem. de Trev. an. 1703. p. 258. Jour. des Scav. T. 45. p. 413. It. T. 47. p. 438. Phil. Tranſ. N°. 111. p. 249. *Evel.* Sylv. c. 20. §. 28.

AGNUS *Dei* (*Cycl.*)—The manufacture, or preparation of *Agnus Dei's* is carried on in the Vatican; and the Bernardins are the operators. A late traveller found a number of them hard at work in one apartment; ſome kneading the paſte, others rolling it, others ſtamping it, &c. In the next rooms were long tables full of *Agnus Dei's*, of all ſizes, in prodigious number, ready for the papal benediction. Vid. Mem. of Liter. T. 5. p. 272.

The origin of *Agnus Dei's* is uſually referred to the time of Conſtantin, or that of St. Chryſoſtom, or of pope Zoſimus, *i. e.* to the fourth or fifth century. Though P. de Vitry will have it much older; and pretends, that it came from apoſtolical tradition.

It ſeems antiently to have been a cuſtom for Chriſtians, to have theſe waxen images put in their coffins with them: accordingly the tomb of the empreſs, wife of Honorius, who died in the middle of the fifth century, being diſcovered in 1544, there is ſaid to have been found in it an *Agnus Dei*. V. Mem. de Trev. an. 1728. p. 1538.

The ceremony of conſecrating the *Agnus Dei's* bears ſome affinity to that of baptiſm, and is accordingly called by that name [a]. Onuphrius Panvinius deduces its origin from that ſacrament [b].—[a Jour. des Scav. T. 37. p. 371. b *Du Pin*, Bibl. Eccleſ. T. 16. p. 99.] See BAPTISM.

In the *Ordo Romanus* it is ſaid, that on Eaſter Saturday, the archdeacon of Rome pours melted wax into a veſſel, mixes a little oil with it, and after bleſſing it, pours it into moulds graven with the image of a lamb, to be kept till the Sunday in Albis, and then diſtributed by him to the people, to be burnt in their houſes as a preſervative from ill accidents. But of late days, this office is performed by the pope himſelf, and that not every year, as of old; but the firſt year of his pontificate, and every ſeventh year afterwards [a]. The *Agnus Dei*'s are received from the pontiff by the cardinals in their caps, and by the other prelates in their mitres, &c. with the utmoſt veneration; it being held a profanation to touch them with hands. At the ſame time parcels of them are ſent as a preſent to all the princes of the Romiſh communion. A brief, or order of pope Sixtus Vth. ſent with a box of *Agnus Dei*'s to the Doge of Venice, has been publiſhed by the journaliſts of that city: wherein we have an authentic account of the deſign, Uſe, &c. of *Agnus Dei*'s.—They are made of pure white virgin wax, ſays the brief, to denote the humanity of Chriſt, born of an immaculate virgin; the figure of the lamb impreſſed on them, repreſents that unſpotted lamb, who ſuffered for us upon the croſs. They are baptized or dipped by the pope in holy water, wherein balſam had been firſt put, to repreſent the report of a good name, which a chriſtian is to purchaſe by the innocence of his converſation, as alſo chriſm, by which charity the greateſt of all virtues is figured. The immerſion is accompanied with prayers, whereby the pontiff beſeeches God to ſanctify theſe images, and infuſe his hea-

venly

venly virtue into them, that they who keep and carry them worthily, and with faith, may have their ſins waſhed away, and moreover, that ſtorms, hail, whirlwinds, thunder, &c. may be prevented from injuring them, that evil ſpirits may be expelled, that no miſchief may befall them, no corruption of the air, no falling ſickneſs, no fire may moleſt them; that women with child may be preſerved with their young: in fine, that all may be ſecured from innundations of water, ſudden death, and all calamities. It is wiſely added, that tho' we are not to doubt, but in conſequence of theſe prayers, thoſe powers are actually communicated to them; yet thro' the want of faith in the poſſeſſors, they have not always the full effect [b].—[[a] *Du Pin.* Bibl. Eccleſ. T. 18. p. 69. [b] V. Giorn. de Letter. d' Ital. T. 17. p. 435. ſeq. See alſo further concerning the origin of *Agnus Dei*'s, Jour des Scav. T. 31. p. 252. Mem. de Trev. an. 1722. p. 2010. Their virtues, Act. Erud. Lipſ. Supp. T. 4. p. 224. Their myſtic meanings, *Du Pin*, Bibl. Eccleſ. T. 18. p. 68. The order of conſecrating them, *Magri*, Notiz. de Vocab. Eccleſ. in voc.]

Some authors alſo ſpeak of a kind of metalline *Agnus Dei*'s, hung to chapelets, or pater-noſters. *Schmid.* Lex. Eccleſ.

The *Agnus Dei* is ſaid to have been firſt brought into the miſſal, by pope Sergius I. Jour. des Scav. T. 31. p. 1101.

AGNUS *Scythicus*, in natural hiſtory, a kind of Zoophyte, or plant animal, ſaid to grow in Tartary, reſembling the figure and ſtructure of a lamb. See ZOOPHYTON, *Cycl.*

The *Agnus Scythicus*, or Scythian lamb, is alſo called *Agnus Vegetabilis*, the vegetable lamb; *Agnus Tartaricus*, the Tartarian lamb; and by the people of the country, *Borometz*, *Borametz*, or *Boranetz*.

The uſual account given of this extraordinary production is, that the Tartars ſow in their ground a ſeed reſembling that of melon, but leſs oblong; from whence ariſes a plant called by them Borometz, *i. e.* lamb, growing almoſt to the height of three feet, and having feet, hoofs, ears, and the whole head, excepting horns reſembling that animal. In lieu of horns it has a peculiar ſort of hair, not unlike horns; it is covered with a fine thin ſkin, which being pulled off, is worn by the natives as a cover for the head. The pulp within reſembles that of the Gammarus; and when wounded, a liquor ouzes out like blood. It lives as long as there is graſs and herbage around it; but when theſe are conſumed, it waſtes and dies. Add, that wolves are fond of it, while no other beaſts will feed on it. V. *Card.* de Subtil. Exerc. 181. Sec. 29. ſeq.

Deuſingius [a] ſeems to have been the firſt, who enquiring more narrowly into this vegetable monſter, ſuſpected the whole for a fable. His reaſons are, 1. that no credible author atteſts the having ever ſeen it, for as to what Wormius [b] relates from the travels of Eovald de Kleiſs, the elector of Brandenburgh's ambaſſador, who had a dried plant ſhewn him by a Tartar, to which grew a fruit, like the above deſcribed, covered with a curly fleece, it is no hard matter to conceive, how that miniſter might have been impoſed on; and as for the ſkins ſtill in ſeveral muſæums of Virtuoſi, they may be accounted for otherwiſe. 2. That Kempfer, when in the country, making diligent enquiry concerning the place where the Borometz grew, could hear of nothing like it.—[[a] *Deuſing. de Agno Vegetabili.* Ext. in Faſcic. Diſſ. Select. p. 598. ſeq. [b] *Worm.* Muſ. p. 190.]

Kempfer gives a probable account of the origin of this fable of the Scythian lamb: there is a peculiar kind of ſheep bred in the provinces near the Caſpian, remarkable for the fineneſs, ſoftneſs, and beauty of their ſkins; which on that account are much coveted for ornaments in apparel. The rich to diſtinguiſh themſelves, procure the ſkins of the youngeſt lambs, which are much ſuperior to thoſe of the grown ſheep; and their luxury in this reſpect is carried ſo far, that the dams are often killed while with young, for the ſake of abortive ſkins; the hair of which the ſkinners of that country have a way of forming into a fine cloſe down. By this means, after cutting off the extremities, the ſkin has ſcarce any appearance of leather, but reſembles rather a kind of vellum covered with a lanugo, which might well enough paſs among the ignorant for that of a melon. This is uſed for the lining of mitres, and ſometimes of gowns, robes, and the like. What confirms this account is, that the name Borometz appears to be a corruption of the Muſcovite Boranetz, called by the Poles Baranek, whoſe root in the Sclavonic, is Baran, which ſignifies a ſheep, or ram. *Kempf.* Obſerv. *de Agno Scythico, ſeu fructu Borometz.* Ext. in Diſſ. Inaug. & in Amæn. Exotic. Faſc. 3. Obſ. 1.

As to the plants ſhewn under this denomination, in ſome repoſitories of rarities, they appear to be originally the roots, or ſtalks of certain vegetables, probably of the capillary kind, covered with a woolly moſs, which naturally bearing reſemblance to the figure of a lamb, have been helped out and brought near to it by art and the addition of new parts. Much as thoſe *Homunculi*, or figures of men, of which Charletans make parade, are made out of the roots of Mandragoras, and Bryony; Sir Hans Sloane [a], and Breynius [b], give us the figures, and deſcriptions of ſuch Borometz's in their collections. It is from theſe plants that the Indian moſs is gathered, famous for its uſe in ſtaunching blood. Deuſingius, Kempfer, Breynius, and Libavius have written expreſsly on the *Agnus Scythicus* [c].—[[a] V. Phil. Tranſ. N°. 287. p. 861. [b] Diſſ. *de Agno Vegetabili Scythico*, in Phil. Tranſ. N°. 390. p. 353. ſeq. [c] Hiſt. *Agni Scythici.* For further particulars ſee *Kirch.* de Art. Magnet. p. 504. ſeq. *Bacon.* Hiſt. Natur. Cent. 7. n. 609. *Licet.* de Spontan. Vivent. Ortu. c. 45.]

AGOGA, in natural hiſtory, a ditch or drain for carrying off the water from a mine. *Plin.* Hiſt. Nat. l. 33 c. 4.

The word ſeems of Greek origin, derived from αγωγη, *ductus*, of αγω, *duco*, I draw. Tho' Hardouin [a], rather than not oppoſe Salmaſius [b], will have it derived from the antient Spaniſh; alledging that in ſome MSS. it is written *Agangas*. M. Durand [c], adopts this conjecture.—[[a] *Hardouin.* Not. ad *Plin.* loc. cit. [b] *Salmaſ.* Exerc. *Plin.* p. 1076. [c] *Durand.* Hiſt. Nat. d'or &c. ap. Bibl. Raiſ. T. 3. p. 32.]

AGOGE, Αγωγη, in the antient muſic, a ſpecies of modulation, wherein the ſounds or notes proceed by continuous degrees of the ſcale, both riſing and falling. As when we ſing, re, mi, fa, ſol, la; la, ſol, fa, mi, re.

Agoge anſwers to what the Latins call *Ductus*, and the Itali- *Conducimento*, and *di grado*: it ſtands contradiſtinguiſhed from *Ploce*, *Petteia*, &c.

Agoge makes the firſt part of the *Melopœia*, or art of modulating.

There are three ſpecies or caſes of this modulation; firſt when the ſounds follow each other from grave to acute, *i. e.* riſing as in ſinging, B C D E. This the Latins call *ductus rectus*, and the Italians *Conducimento retto.*

The ſecond, when they go from acute to grave, *i. e.* falling, as in the notes E D C B, called by the antients *ductus revertens*, and by the mordern Italians *Conducimento ritornante.*

The third when they riſe by flats and fall by ſharps, as in D, E, F *ſharp*, G, or, *vice verſa*, as in G, F *natural*, E *flat*, D. This the antients call *ductus circumcurrens*, and the Italians *conducimento circoncorrente. Euclid.* Introd. Harmon. p. 22. *Ariſtid. Quintil.* de Melop. l. 1. p. 28. Mem. Acad. Inſcrip. T. 7. p. 275. 277, and *Malc.* on Muſ. c. 14. §. 4. p. 542. *Broſſ.* Dict. Muſ. in voc.

AGON (*Cycl.*) — AGON *Adrianalis*, was that inſtituted at Athens, by the emperor Adrian; called alſo Παναθηναια, Παν-ελληνια, and Ολυμπια Αδριανια.

AGON *Iſelaſticus*, inſtituted at Puzzuoli by the emperor Antoninus Pius, and held every fifth year. It was a ſacred combat, and the victors at it were called *Hieronicæ*: they were to be received into the city, thro' a breach in the wall, made on purpoſe.

AGON *Muſicus*, that wherein either poets, or muſicians diſputed for the prize; ſuch was that dedicated by Ptolemy to Apollo and the muſes, with rewards aſſigned to the writers who gained the victory. Of this kind were alſo found in the Pythian, Nemæan and Iſthmian games; alſo in the Olympic games, after Nero's time, who firſt introduced a muſical *Agon* here; others were founded by the emperor Domitian, and others at Rome, Naples, Alba, &c.

We have an antient Greek writer extant, under the title of αγων Ομηρου και Ησιοδου, the *Agon* of Homer and Heſiod, ſuppoſed to be a narrative of the diſpute of theſe two poets, at the funeral of Amphidamas in Chalcis, before king Panidis brother of the deceaſed, who gave the prize, a tripod, to Heſiod.—Many antient authors make mention of this combat, ſome moderns have ſuſpected the whole for a fiction.

The learned Fabricius, tho' he ſuppoſes the book above-mentioned, to have been framed by ſome admirer of Heſiod; yet allows the reality of ſome ſuch diſpute, and thinks it might have happened when Homer was very old, and Heſiod young. But this opinion is liable to chronological difficulties. V. *Fabric.* Bibl. Græc. T. 1. l. 2. c. 8. §. 2. p. 370, 371.

AGON *Neronianus*, a quinquennial combat, called alſo *Neronian*, from the name of its inſtitutor, who here bore away the prize for playing on the harp, *Cithara. Pitiſc.* Lex. Ant. T. 1. p. 63.

AGON is alſo uſed for a place near the Tyber, otherwiſe called *circus flamineus*, wherein Curule games and combats were celebrated. *Aquin.* Lex. Milit. T. 1. p. 34. *Pitiſc.* Lex. Ant. T. 1. p. 63.

AGON is alſo uſed, by phyſicians, for the ſtruggle of death. V. *Caſt.* Lex. Med. *Burggrav.* Lex. Med. T. 1. See AGONY, *Cycl.* and *Suppl.*

AGONALIA (*Cycl.*)—The *Agonalia* appear to have been held thrice in the year, viz. on the 5th of the ides of January, on the 12th of the calends of June, and the 3d of the ides of December. V. *Struv.* Antiq. Rom. c. 8. p. 352. ſeq. *Urſat.* de Not. Roman. ap. Theſ. Ant. Grev. T. 11. p. 541.

AGONISMA, in antiquity, the palm or prize given the victor in a game or combat. *Aquin.* Lex. Milit. T. 1. p. 34.

AGONISTARCHA, in antiquity, ſeems to have been much the ſame with *Agonotheta* [a]; though ſome ſuggeſt a difference, making it the office of the former to preſide at, and direct the private exerciſes of the *Athletæ*, which they went thro' by way of practice, before they made their appearance on the public theatres or amphitheatres [b].—[[a] *Aquin.* loc. cit. in voc. *Agonotheta.* [b] *Pitiſc.* Lex. Ant. T. 1. p. 64.] See AGONOTHETA, *Cycl.* and *Suppl.*

AGONISTIC, *Agoniſtica*, the ſcience of what relates to the combats, or *Agones* of the antients.

In which ſenſe, *Agoniſtic* amounts to much the ſame with *Athletic*, and makes a branch of *Gymnaſtics*.

The preſident du Faur, or Faber, has publiſhed a learned work on the ſubject of *Agoniſtics* [a], much applauded by ſeveral critics [b]. Lydius has alſo a work entitled the *Agoniſtica ſacra*, being an explication of ſuch paſſages of ſcripture, and eſpecially in St. Paul's epiſtles, as relate or allude to the antient manner of combating.—A late author paſſes a ſevere cenſure on it, as wholly ſtollen from du Faur [c]. Yet it has been republiſhed with additions by Lomier [d].—[a Agoniſticon, ſeu de Re Athletica Ludiſque veterum, Lugd. 1595. fol. b *Baillet*, Jugem. des Scav. T. 2. P. 2. p. 131. ſeq. c V. *Reimman.* Catal. Bibl. Theol. p. 361. d An extract of the additions is given in Act. Erud. Lipſ. an. 1700. p. 536. ſeq.]

AGONISTIC, Αγωνιστικον, is alſo uſed among antient phyſicians for cold ſpring water.

The reaſon of the denomination is taken from the plentiful uſe of that element in the ſtate of an acute eryſipelaceous fever, wherein water was ſuppoſed to combat and ſtruggle with the febrile heat. *Gorr.* Def. Med. p. 4. *Caſt.* Lex. Med. p. 25.

AGONISTICI (*Cycl.*)—St. Auguſtin ſometimes calls this ſect by the name *Agoniſtrii*.

The *Agoniſtici* are alſo the ſame with thoſe otherwiſe called *Circuitores*, *Cercelliones*, *Catropitæ*, *Coropitæ*, and at Rome *Montenſes*.

AGONIUM, in Roman antiquity, was uſed for the day whereon the *Rex ſacrorum* ſacrificed a victim. The ſame name was alſo given to the place wherein the games were antiently celebrated. *Pitiſc.* Lex. Ant. T. 1. p. 64.

AGONOTHETA (*Cycl.*) amounts to the ſame with what was otherwiſe called Ἑλλανοδικος, *Hellanodicus*; ſometimes alſo *Æſymneta*, *Brabeuta*, *Agonarcha*, *Agonodica*, and *Athlotheta*.

Some make a difference between the *Athlotheta*, and *Agonotheta*; urging that the latter preſided only at the ſcenic games, and the former at the gymnic, but the diſtinction ſeems without foundation. V. *Fabri* Agoniſt. l. 1. c. 18. *Pitiſc.* Lex. Ant. T. 1. p. 64.

Middle age writers uſually confound *Agoniſtæ*, the combatants at the games, with the *Agonothetæ*, or preſidents of them. *Aquin.* Lex. Milit. T. 1. p. 34.

The *Agonothetæ* had the immediate charge of the manner of life, diſcipline, and morals of the *Athletæ*. It was they who examined, and admitted, or expelled them the ſociety, or order [a]. During the combats, the *Agonothetæ* were clothed in purple, and rode in a triumphal manner thro' the circus, holding in their hands an ivory ſceptre, with an eagle on it.—At firſt there was only one *Agonotheta*; in the fifth olympiad, a ſecond was added, and in the twenty-fifth olympiad, ſeven more.—Of theſe, three had the direction of the horſe-races; as many of the Pentathlos; and the reſt of the other exerciſes [b].—Van Dale has a diſſertation expreſs on the *Agonothetæ* [c].—[a V. Mem. Acad. Inſcrip. T. 2. p. 310. b Vid. *Scalig.* Poet. l. 1. c. 24. *Potter.* Archæol. l. 2. c. 21. T. 1. p. 441. c Diſſert. 7. de Agonothet. Hellanod. &c. V. Act. Erud. Lipſ. 1703. p. 90. ſeq.]

The name *Agonotheta* is ſtill retained in ſchools, and academies for him who defrays the charge of the prizes diſtributed. The founders of prizes are perpetual *Agonothetæ*. Trev. Dict. Univ. T. 1. p. 207. ſeq.

AGONUS, in zoology, a name uſed by the generality of authors, for the fiſh called by ſome *Sarachus*, by others *Chalcis*, and by others *Sardella*.

It is in many particulars very like the *Alauſa* or ſhad, called the mother of herrings, but ſmaller, never arriving at more than a foot in length; and is always lean and lank in ſpring, and fat in autumn. But the diſtinctions between it and the *Alauſa*, if real, are ſo very ſmall, that Mr. Ray, and many of the moſt accurate naturaliſts, have ſuſpected it the ſame fiſh, only in a different ſtate. *Ray*'s Ichthyograph. p. 226.

AGONY (*Cycl.*)—Much of the terror of death conſiſts in the pangs and convulſions wherewith the *Agony* ſeems attended; tho' we have reaſon to believe, that the pain in ſuch caſes is ordinarily not extremly acute; a courſe of pain and ſickneſs having uſually ſtupified, and indiſpoſed the nerves for any quick ſenſations. However various means have been thought of for mitigating the *Agony* of death. Lord Bacon conſiders this as part of the province of a phyſician, and that not only, when ſuch a mitigation may tend to a recovery, but alſo when there being no further hopes of a recovery, it can only tend to make the paſſage out of life more calm, and eaſy. Since complacency in death, which Auguſtus ſo much deſired, is no ſmall part of happineſs; our phyſicians, when a patient is deſperate, make it a point of conſcience to give him over, when they ought rather to be endeavouring to make him depart with more eaſe and tranquility. Accordingly the author laſt cited ranks *Euthanaſia*, or the art of dying eaſily among the *deſiderata* of ſcience; and does not even ſeem to diſapprove of the courſe Epicurus took for that end. *Bacon*, de Augm. Scient. l. 4. c. 2.

———*Hinc Stygias ebrius hauſit aquas.*

Opium has been applied for this purpoſe, with the applauſe of ſome, but the condemnation of more. V. Ephem. Germ. Dec. 2. An. 1. p. 41.

Baglivi promiſed a treatiſe expreſs, *de Medicina Agonizantium*, or the method of treating thoſe in the agonies of death [a]. Some think a medicine might be found out, which would alleviate the pains of death, without accelerating it, or which might even tend at the ſame time to retard it [b]. But perhaps one of the beſt recipe's for this end, is that of M. Patin, *viz.* abſtinence from all medicines.—[a V. *Bagliv.* de Medic. Solid. Can. 45. Act. Erud. Lipſ. 1707. p. 341. b *Shaw*, Treat. of Incur. Diſeaſ. p. 17.]

The method uſed by the Perſians is certainly very innocent, if it be not effectual: they make a practice of redeeming captive birds, and reſtoring them to liberty, as a ſure means of rendering their own migration into another ſtate eaſy. *Olear.* Itin. Perſ. l. 5. c. 22.

Among the Armenians, when a perſon is in the *Agony* of death, ſo that there is no hopes left, they think it an office of humanity to put him out of his pain, by laying him in a certain ſituation, to haſten his paſſage; and by cloſing his eyes and mouth, to prevent his breathing. V. Bibl. Univ. T. 1. p. 290.

AGORÆUS, in antiquity, an appellation given to thoſe deities, who had ſtatues in the public markets or *Fora*. The word is Greek, formed of αγορα, market, in which ſenſe, we meet with *Mercury Agoræus*, at Athens, Sicyon, Thebes, and Sparta, &c. *Minerva Agoræa*, αγοραια, was in extraordinary veneration among the Lacedemonians. V. *Hederic.* Lex. Mythol. *Suicer.* Theſ. T. 1. p. 65. ſeq.

AGORANOMUS (*Cycl.*)—The *Agoranomi*, at Athens, were ten in number, five belonging to the city, and as many to the Piræus; tho' others make them fifteen in all, of which they aſſign ten to the city. To theſe a certain toll or tribute was paid, by all who brought any thing to ſell in the market. They had the care of the vendibles, except corn, and were eſpecially concerned to ſee that no man wronged, or any way over-reached, another in buying or ſelling. *Potter.* Archæol. Attic. T. 1. l. 1. c. 15. p. 83.

AGRARIÆ *Stationes*, in the antient military art, corps of guards poſted in the fields, and in the open air. V. *Aquin.* Lex. Milit. T. 1. p. 35.

Theſe are alſo called ſimply *Agrariæ*, which in the text of Vegetius is corruptly written *Angariæ*. *Turneb.* Adverſ. l. 4. c. 7.

AGRARIÆ *Naves* was uſed for veſſels placed to keep watch, or guard. V. *Aquin.* lib. cit. p. 34.

AGRARIAN, (*Cycl.*) in a general ſenſe, ſomething relating to fields or lands. *Calv.* Lex. Jur. p. 56.

The word is originally Latin, *Agrarius*, formed of *Ager*, a field.

There are ſeveral antient writers extant, on *Agrarian* affairs, which have been collected together, and divers times publiſhed under the title of *Auctores legeſque rei Agrariæ, ſive finium regundorum.* The principal are Siculus Flaccus, Sex. Julius Frontinus, Agenus Urbicus, Hyginus, Varro, &c. An account of the editions, with the titles, &c. of each is given by Fabricius. V. *Fabric.* Bibl. Lat. T. 2. l. 4. c. 11. p. 573.

The Roman lands were of divers kinds, ſome conquered from the enemies, and not yet brought to the public account; others brought indeed to the public, but clandeſtinely uſurped by private great men: laſtly, others purchaſed with the public money in order to be divided. *Agrarian* laws, either for dividing lands taken from the enemy, or the public lands, or thoſe purchaſed with the public money, were eaſily paſſed without diſturbance; but thoſe whereby private rich men, were to be outed of their lands, and the common people put in poſſeſſion of what had been held by the nobility, were never attempted without great diſturbances. *Pitiſc.* Lex. Ant. T. 1. p. 56. ſeq. *Machiav.* Diſc. in Liv. l. 1. c. 37. *Hoffm.* Lex. Univ. T. 1. p. 114. Mem. de Trev. 1719. p. 764.

We have two orations of Cicero ſtill extant, *de Lege Agraria*, againſt a law of this kind propoſed by P. Servilius Rullus, in in the year of Rome 691. V. *Fabric.* Bibl. Lat. T. 1. l. 1. c. 8. §. 17.

Several have pleaded for the neceſſity of *Agrarian* laws, among us. William Sprigge [a], or as ſome ſay, Fr. Oſborne, has written expreſsly on the ſubject [b].—[a V. *Cat.* Lett. T. 1. p. 283. ſeq. b Mod. Plea. for Commonw. &c. the expediency of an *Agrarian* law. Lond. 1659. 4°. V. *Wood*, Ath. Oxon. T. 2. p. 997.]

But the author who ſeems to have entered deepeſt into the nature and uſe of *Agrarian* laws, is Harrington; he ſhews that the ballance of property in a ſtate cannot be fixed but by laws, and the laws whereby ſuch a proviſion is made are *Agrarian* laws. Now theſe are neceſſary to the ſtability of government, becauſe governments will, according to the diverſe ballance of property, be of diverſe or contrary natures, that is monarchical, or popular. Thus monarchy requires of the ſtandard of property, that it be vaſt or great; and of *Agrarian* laws, that they hinder receſs or diminution, at leaſt in ſo much as is thereby intailed upon honour. But popular government requires,

that the ſtandard be moderate, and that its *Agrarian* laws prevent accumulation.

This author thinks, that in a territory not exceeding England in revenue, if the ballance be in more hands than three hundred, it is declining from monarchy; and if it be in fewer than five thouſand hands, it is ſwerving from a commonwealth. V. *Harringt.* Works. p. 392.

The ſame writer defines an equal *Agrarian*, a perpetual law eſtabliſhing and preſerving the ballance of dominion by ſuch a diſtribution, that no one man, or number of men, within the compaſs of the few or ariſtocracy, can come to overpower the whole people, by their poſſeſſions in lands. Ibid. p. 54.

He alſo obſerves, that the people of Rome by ſtriving for an *Agrarian*, ſtrove to ſave their liberty; and that commonwealth, thro' want of ſuch a law, or the non-obſervance of it, came to ruin.

In the Grecian cities, the defect of an *Agrarian* was ſupplied by oſtraciſm.

In Venice, the council of ten, and the officers of pomp, reſtrain thoſe who might be too powerful; and theſe two orders in a commonwealth, where the gentry have but ſmall eſtates in land, are as much as needs be in lieu of an *Agrarian*.

Some German republics have no more to ſupply the place of this law, than that eſtates deſcending are divided among the children.—And the ſame law would eſtabliſh an *Agrarian* in England. Ib. p. 292, 293.

Agrarian laws may be framed different ways, as by intailing the lands upon certain families, without power of alienation in any caſe, as in Iſrael and Lacedemon: or, except with leave of the magiſtrate, as in Spain. But this by making ſome families too ſecure, as thoſe in poſſeſſion, and others too deſpairing, as thoſe not in poſſeſſion, may make the whole people leſs induſtrious.

Therefore Harrington prefers a law regulating eſtates, ſo that no man ſhall have above two thouſand pounds a year in land; and that the eſtates of thoſe who exceed this proportion, ſhall be divided in deſcending to their children, till the greater ſhare do not exceed 2000 *l. per annum.* This is the rule he lays down for his commonwealth of Oceana, by which he means his ſcheme for the government of England.

By this law Harrington intended that the property of land in England, ſhould never fall into fewer hands than 5000; as he computes the rents of this country to be ten millions. But if theſe rents, as is probable, amount now to twenty millions, it would follow that, by our author's rule, the land could never be in leſs than 10000 hands, which, according to his ſyſtem, muſt effectually ſecure the liberties of the people.

It would exceed the limits of our deſign, to enter into the full detail of all the reaſonings of this ingenious author, on the ſubject of *Agrarian* laws; we therefore refer to his works. See alſo the articles GOVERNMENT, PROPERTY, &c.

AGRESTA, in medicine, an unripe grape; otherwiſe called, *Omphax* and *Uva acerba*, by the French *Verjus*.

Agreſtæ are held cooling, deterſive, and aſtringent; they temper the acrimony of the bile, and chear the heart [a]. Eaten plentifully, they have been found to deſtroy worms [b].—[a *Lemery*, des Drog. p. 19. [b] *Vallisnieri*, Prim. Raccolt. d'oſſeroaz. p. 89. Giorn. de Letter. d'Ital. T. 5. p. 182.]

AGRESTA is ſometimes alſo applied to the juice of this fruit, more properly called *Omphacium*. *Caſt.* Lex. Med. p. 25. *Quinc.* Lex. Med. p. 12. *Burggr.* Lex. Med. p. 357. ſeq.

AGRICULTURE (*Cycl.*) is particularly uſed to denote the art of managing and improving fields, arable, paſture, and meadow.

In which ſenſe it ſtands contradiſtinguiſhed from gardening, the culture of the vineyard, of timber, woods, &c.

AGRICULTURE is alſo uſed in a more extenſive ſenſe, for the whole art of huſbandry. Phil. Tranſ. N°. 114. p. 320.

Agriculture, in this ſenſe, beſides tillage, comprehends feeding and the management of cattle, and the rural ſports, hunting, fiſhing, &c. Some even include under it the buſineſs of mines, coal-pits, and other ſubterraneous matter. *Walch.* Introd. Philoſ. l. 2. c. 7. §. 30. p. 611. ſeq.

Agriculture is ſaid to have been firſt invented, at leaſt perfected in Europe, by Ceres, queen of Sicily, in memory whereof, ſhe was placed among the principal divinities: ſhe taught the inhabitants of that iſland how to ſow all kinds of grain, particularly wheat, as well as the manner of reaping, grinding, and making bread. Till that time corn had only been conſidered like other herbs, and ſuffered to grow wild among the reſt, without any care taken to ſeperate, cultivate, or apply it to the nouriſhment of man. Sicily, where the ſoil is ſo fertile in corns, was the place where its uſe was firſt diſcovered; and from hence the knowledge of it was propagated into Italy, Greece, and the more northern parts of Europe. In conſequence of the new invention, Ceres firſt made a law, for diſtinguiſhing lands and poſſeſſions, which till then lay open and in common, that each perſon might reap the corn, he had been at the pains of ſowing. Vid. *Le Clerc.* Bibl. Hiſtor. T. 6. p. 62. ſeq.

The primitive *Agriculture* is ſtill ſaid to be ſubſiſting among the ſavages of America, who ſow, reap, and prepare the corn much as was done ſome thouſand years ago, e'er mills were invented. *Laſitau*, Paral. des Mœurs des Sauvag. ap. Mem. de Trev. 1725. p. 200.

During the firſt 500 years of Rome, the people employed all their intervals of peace in *Agriculture*; the difference of condition was not then at all perceived in the difference of occupation. The great were not leſs laborious than the poor, and thoſe two ranks ſo different from each other in the city, under the titles of Patricians and Plebeians, were united in the country under the common name of huſbandmen. Hiſtory is full of ſuch inſtances, not only in the firſt ages of the commonwealth, when it was uſual to take dictators, and conſuls from their farms; and from the low office of driving cattle, remove them to the command of legions; but alſo in thoſe flouriſhing days, when Rome had already ſubdued Italy, and began to be reſpected on the other ſide the ſea. It is trite that Q. Cincinatus was found plowing his ground, when news was brought of his being named dictator. But what is not ſo well known, Curius Dentatus, Fabricius, Attilius, Licinius Stolo, Cato the cenſor, and many others appear to have taken their ſurnames from that part of the country life, to which they had chiefly applied themſelves. For it is hence, according to Varro, Pliny, and Plutarch, that the families Aſinia, Vitellia, Suillia, Porcia, and Ovinia were ſo called; by reaſon of their authors or founders, who had diſtinguiſhed themſelves, by the breeding of ſuch animals. And thus others rendered themſelves famous by the culture of certain herbs, or pulſe; whence the denominations Fabius, Piſo, Cicero, &c. Vid. L'Abbe *de Couture*, in Mem. Acad. Inſcrip, T. 2. p. 388. Mem. de Trev. 1708. p. 1159.

It was reputed a kind of infamy to neglect or deſpiſe the culture of their grounds, and it was to praiſe a man, in Cato's judgment, to ſay he was much addicted to tillage. The inhabitants of the country were held in more eſteem than thoſe of cities; and accordingly the ruſtic tribes were allowed the preheminence, and it is ſaid to have been chiefly theſe that produced the braveſt ſoldiers. *Olivet*, ap. Jour. des Scav. T. 67. p. 653.

Agriculture firſt fell to decay in Italy towards the cloſe of the eighth century, on occaſion of the irruptions of the Lombards, under king Aſtolphus, and afterwards of the Hungari and the Sarazens, who ſpread terror and deſolation over the whole country. The Popes being forced to Avignon, could bring no remedy to the diſeaſe; and it is only within theſe two laſt centuries, that any meaſures have been taken in earneſt for cultivating the country about Rome. S. Nuzzi a learned Roman prelate, has a treatiſe on the ſubject, wherein he propoſes divers means for that end.

The firſt, to grant privileges to huſbandmen, after the example of Theodoſius, Arcadius, Honorius, and divers popes, as Clement VII, Sixtus IV, Julius II, Clement VIII, Paul V.

The ſecond by ſettling a vent for corn into other countries.

The third by introducing the culture of other plants beſides corn, as hemp, olives, millet, vines, mulberry-trees, &c. V. Mem. de Trev. 1703. p. 468,—472.

Agriculture has met with different fates in different nations; of all people the Jews ſeem to have been moſt entirely attached to it [a]. It was long neglected among the northern nations, as the Goths [b], Germans, Britons [c], &c; who choſe rather to ſubſiſt themſelves by the chace, the uſe of milk, fiſh, fowl, &c. The like ſtill obtains among the ſavages of Louiſiana, where the tillage of the ground is left to the women [d], the men being employed in hunting, &c. Among the Japaneſe, *Agriculture* retains its antient honour, and among the Chineſe is diſtinguiſhed and encouraged by the court beyond all other ſciences.—[a *Gundling*. Hiſt. Philoſ. Moral. c. 7. §. 3. p. 82. [b] *Rudbeck.* Atlant. ap. Phil. Tranſ. N°. 300. p. 2032. [c] *Conring.* de Habit. Corp. Germ. p. 53. ſeq. [d] Jour. des Scav. T. 67. p. 621.]

To encourage the people to *Agriculture*, the emperor of China yearly, at the beginning of ſpring, goes to plough in perſon, aſſiſted by all the princes and grandees of the empire. The ceremony is performed with great ſolemnity; and is accompanied with a ſacrifice, which the emperor, as high-prieſt, offers to Chang Ti, to produce a plentiful crop in favour of his people. To prepare himſelf for this ſacrifice, the emperor is to faſt, and abſtain from venery, the three days preceding; and the like preparation is to be made by thoſe who attend him. On the day of the ceremony, the emperor deputes ſome of his chief courtiers to the hall of his anceſtors, where, falling proſtrate, they give them notice, as if they were ſtill alive, that on the morrow he will offer the great ſacrifice. Divers tribunals have alſo a ſhare in the preparations: one is to provide the things to be offered; another compoſes the words, which the emperor is to rehearſe; a third is to aſſemble forty or fifty venerable aged huſbandmen, to be preſent when the emperor ploughs; as many young perſons, of the ſame profeſſion, are alſo brought, to put the plough-gear in order, harneſs the oxen, and prepare the ſeed corn. The emperor ſows five kinds of grain, which are thoſe moſt neceſſary in China, and under which all the reſt are included, viz. wheat, rice, beans, and two ſpecies of millet.

millet. Several great lords carry the ſeed to be ſowed, in rich boxes; and the whole court aſſiſts in ſilence. The emperor takes the plough in hand, and, after ſeveral goings and returns, gives it to a prince of the blood, he, in his turn, to another, till the field is ploughed. When all is over, the governor of Pekin makes frequent viſits to this field, inſpects the furrows, and ſeeks for ears extraordinary, and of good omen, of which he gives notice at court. The ſame officer is truſted with reaping this field; the corn of which being put in yellow bags, which is the imperial colour, is reſerved for the moſt ſolemn ceremonies, and ſacrifices, of the enſuing year, which the emperor offers to Tien, Chang-ti, and his anceſtors. V. Letter. Edif. T. 19. p. 386—392. Mem. de Trev. 1730. p. 232. ſeq.

Among the Spaniards, *Agriculture* is much neglected. Theſe people truſt wholly for their country operations to foreigners; crowds of whom come uſually from the neighbouring provinces of France, &c. to till their ground. What is more, the inhabitants of the two Caſtiles, we are told, depend on the poor peaſants of the mountains of Gallicia, for the reaping their corn; which latter, when their own crop of rye proves tolerable, never trouble themſelves about the Caſtilians, who, in this caſe, muſt want bread; which they chuſe rather to do, than gather their crop themſelves. *Vayrac*, Etat. Preſ. de l'Eſpagne, T. 1. Jour. des Scav. T. 64. p. 393. ſeq.

The Egyptians confide ſo much in the goodneſs of their ſoil, that they are ſcarce at any pains to till it. As ſoon as the water of the Nile is returned into its bed, the peaſants ſow their ground. All they have more to do, is only to mix ſand with the mud which the Nile has left, in caſe this has fattened the ſoil too much; and they fail not of a plentiful crop. Mem. de Miſſ. T. 2. p. 13.

In England, *Agriculture*, though much improved in ſome parts, may, in general, be ſaid to be far from perfection. Whatever huſbandmen are apt to conceive of their abilities, moſt of them believing they have brought it to the higheſt pitch in their reſpective countries, and howſoever froward in entertaining any thing new, yet 'tis certain, were they really ſo knowing as they pretend, or would admit of ſuch notices as might be communicated to them, we ſhould have no ſuch complaints of uncertain crops, ſmuts, mildews, and the like. But ſo unſkilful is the huſbandman, ſo ignorant in appropriating the grain to the ſoil, that he knows not ſo much as the grains for thoſe purpoſes, though near neighbours to him; much leſs are the grains of one country known to another.—Of which divers inſtances might be given in wheat, barley, &c. Vid. *Plot.* in *Hought.* Collect. T. 4. N°. 3. p. 33. ſeq.

It is to be wondered at, that *Agriculture* has never been a regular ſtudy, like other arts and ſciences, but left wholly for improvement to empirical practice. Several complaints of this kind have been made by antient as well as modern writers; and, as a remedy, the inſtitution of ſchools, colleges, &c. of *Agriculture*, has been propoſed, but hitherto without much effect: though ſome attempts of this kind have been made at London, Rome, Cambridge, Edinburgh, &c. Columella, and after him Mr. Cowley, lament, that while all arts and ſciences have their public ſchools and maſters, we ſhould never ſee or hear of any man who took upon him to profeſs teaching this ſo pleaſant, ſo virtuous, ſo honourable, ſo neceſſary art. Mr. Cowley wiſhed, that one college in each univerſity were erected, and appropriated to this ſtudy, as there are to phyſic and civil law. There would be no need of making a body of ſcholars and fellows, with certain endowments, as in other colleges; it would ſuffice, if, after the manner of halls in Oxford, there were only four profeſſors conſtituted, to teach the four parts. 1. Aration, and all things relating thereto. 2. Paſturage. 3. Gardens, orchards, vineyards, woods. 4. All parts of rural oeconomy; including the government of bees, ſwine, poultry, decoys, ponds; together with the ſports of the field, and the domeſtic conſervation and uſes of all that is brought in by induſtry from abroad. The buſineſs of theſe profeſſors ſhould not be, as is commonly practiſed in other arts, only to read pompous and ſuperficial lectures on Virgil's Georgic's, Pliny, Varro, or Columella, but to inſtruct their pupils in the whole method and courſe of this ſtudy; which might, perhaps, be gone through, with diligence, in a year or two.

Agriculture, 'tis certain, might be brought to much greater perfection in England, if farmers had opportunities and judgment to make experiments, or had ſome fixed place, where they might ſee examples of all kinds of huſbandry, as a ſchool, for their information.

The Royal Society, ſoon after its inſtitution, appointed a committee for *Agriculture*, to conſider of the hiſtory and improvement thereof; who began their work with drawing up certain heads of enquiry, to be diſtributed among perſons experienced in huſbandry, over the three kingdoms, in order to procure a faithful and authentic information of the knowledge and practice already obtained therein, with regard to ſoils, grain, ſeed, wheat, graſs, and the diſeaſes and annoyances thereof. V. Phil. Tranſ. N°. 5. p. 91, 94.

A ſociety has alſo been eſtabliſhed at Edinburgh, for the improvement of *Agriculture*, who have publiſhed a treatiſe on the ſubject, with great applauſe. Vid. Treatiſe concerning the beſt Manner of fallowing Ground, raiſing Graſs Seed, and training of Lint and Hemp, for the Uſe, &c. of the Linnen Manufacture, Edinb. 1720, 8vo. V. Preſ. Stat. Rep. Lett. T. 2. p. 317.

The authors on *Agriculture* are numerous. Beſides thoſe already cited, we find among the Greeks, Heſiod [e], Philo Judæus [f], Themiſtius [g], and others, publiſhed under the titles of Geoponics, Georgics, &c. See GEOPONICS, &c. Among the Latins, Celſus [h], Hyginus [i], Cato, Columella, and others, publiſhed under the title of *De Re Ruſtica*.—

[e V. Εργα και ἡμεραι, Opera & Dies. *Fabric.* loc. cit. l. 2. c. 8. §. 5. *Baill.* Jugem. des Scav. T. 3. P. 1. p. 285.

[f Περι Γεωργιας Νῶε, de Agricul. Noæ ad Gen. *c.* ix. *v.* 20. *Fabric.* Bibl. Græc. T. 3. l. 4. c. 4. §. 2. p. 107.

[g Θεσις ει γεωργιτεον, Utrum Agricult. danda ſit Opera; ſive Agricult. Laus. *Fabric.* ubi ſupra, T. 8. l. 5. c. 18. §. 3.

[h *Celſ.* de Agricult. libri quinque; & *Fabric.* lib. cit. l. 6. c. 9.

[i *Fabric.* Bibl. Lat. T. 1. l. 2. c. 1. p. 360.]

The antient Roman writers contain many things not hitherto common among us, and many others that have never been tried in our fields and gardens. Thus grafting in the root, which is found the readieſt way of propagating any plant; and the moſt certain ſpecies of that operation was but lately introduced by Dr. Agricola, from thoſe authors: and it is to be preſumed, many other things mentioned by them, if put in practice, would be found of no leſs uſe. Their farms are excellently deſigned, and there are beauties in their gardens, which we have not among us. Bradley has given us the ſubſtance of the antient Roman writers on *Agriculture*; and, to accommodate them to our own times and country, has reduced their calendar to ours, and ſhewn the difference between the ſeaſons of Italy and England: ſo that it will not be difficult to put their precepts in practice.

Among the Engliſh, beſides thoſe mentioned in the *Cyclopædia*, we have alſo the writings of Mr. Tull, and of Mr. Ellis, a practical farmer. Many particulars alſo relating to this art, are occaſionally delivered by the writers on natural hiſtory, oeconomy, trade, &c. See *Plot*, *Houghton*, the Philoſophical Tranſactions, &c.

AGRIFOLIUM, in botany, the holly-tree. See AQUIFOLIUM.

AGRIGINTINE *ſalt*, in natural hiſtory, a kind of eatable ſalt, famous among the antients for its not cracking in the fire, as common ſalt does. It might probably owe this quality to the fineneſs of the powder, in form of which it was generally uſed. But Pliny has added greatly to the miracle, by telling us, that though it did not crackle and leap in the fire, it did when thrown into water. Solinus has added even to this, by telling us, that it would readily melt in the fire. This cannot be a property of common ſalt, and therefore the author muſt have miſtaken the account of Pliny, or of ſome other writer, from whom he collected what he has ſaid about it.

AGRIMONOIDES, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral petals, arranged in a circular form, and growing out of the diviſions of the cup. This flower and its cup are alſo received into another cup, of a funnel-like ſhape, and fimbriated at the edges. The proper cup of the flower finally becomes a fruit of an oval form, pointed and enveloped by the outer cup, and uſually containing only one ſeed.

There is but one known ſpecies of this plant, which is the *Agrimonoides*, or *Agrimonia ſimilis*, the baſtard agrimony of authors. *Tourn.* Inſt. p. 301.

This plant is called by ſome *pimpinella folio Agrimoniæ*.

AGRIMONY, AGRIMONIA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral petals, which are arranged in a circular form, and ſtand upon a cup, which finally becomes an oblong echinated fruit, containing one or two oblong ſeeds.

The ſpecies of *Agrimony*, enumerated by Mr. Tournefort, are theſe. 1. The common wild *Agrimony*. 2. The ſweet ſcented *Agrimony*. 3. Sweet ſcented French *Agrimony*. *Tourn.* Inſt. p. 301.

The firſt ſpecies of this genus is frequent in dry paſtures, and flowers in June. The dried leaves make a very pleaſant infuſion, in the manner of tea; and are eſteemed a very great medicine in obſtructions of the liver and ſpleen. It is celebrated in the jaundice, and in cachectic caſes; and is given in coughs and catarrhs, and in ſuppreſſions alſo of the menſes.

It uſed to be a very common ingredient in the baths of the antients, prepared with the decoctions of detergent and emollient herbs.

Agrimony is otherwiſe called *Eupatorium veterum*, or *Græcorum*, or I. B.

From Mr. Geoffrey's analyſis of *Agrimony*, it appears that this plant contains very little ſalt of the ammoniacal kind,

ſince

ſince no concrete urinous ſalt is got from it, but the acid ſalt, wherewith it abounds, joined with earth, forms a concrete reſembling tartar, or ſalt of coral combined with a large proportion of ſulphur.

Agrimony has a ſaline taſte, ſubaſtringent and acid; its juice turns the tincture of Heliotropium to a faint red, ſo that its aſtringent and aperitive virtues ſeem both owing to the ſame auſtere ſalt. For tho' theſe effects ſeem contrary to one another, yet they often flow from one and the ſame principle, the ſtrengthening of the weak and lax fibres of the ſolid parts. Experience ſhews, ſays Geoffroy, that *Agrimony* has the virtues ſuppoſed to ariſe from its compoſition; for it is aſtringent, detergent, reſolvent, vulnerary, and aperient.

The country people uſe the common or officinal *Agrimony* bruiſed, or its juice, in contuſions, and freſh wounds. Etmuller ſays, it removes ſwellings and inflammations of the ſcrotum. Yet it is rarely found in ſhop compoſitions, though frequently preſcribed by the ſurgeons, in diſcutient and vulnerary fomentations.

The *ſweet ſmelling* AGRIMONY, *Agrimonia odorata*, is by ſome preferred, for medicinal purpoſes, to the former, as being more grateful to infuſe for pectoral decoctions. Vid. *Lemer.* Tr. des Drog. p. 19. *Quinc.* Diſpenſ. P. 2. ſec. 4. p. 113. *Ray*, Synopſ. Stirp. Britan. p. 99. *Junck.* Conſpec. Therap. p. 333. *Burggr.* Lex. Med. T. 1. p. 360. ſeq.

AGRIOCINARA, in botany, a name uſed by ſome authors for the coudy artichoak, the root of which is uſed inſtead of the *coſtos nigra*. *Dale*, Pharm. p. 104.

AGRIOMELENZANION, in the botanical writings of the antients, a word that has perplexed many of the later writers. Fuchſius frankly confeſſes, that he does not know what to make of it; and others, though not ſo honeſt, are found, on examination, full as ignorant. The Arabian writers Aviſenna and Serapion uſed the word *bedengian* for the fruit of the *pomum amoris*, a kind of eſculent nightſhade, or *ſolanum*, called by the old Greek writers, as Theophraſtus, &c. *ſtrychnos*, and only diſtinguiſhed from the other *ſtrychni*, or nightſhades, by its being deſcribed as wholeſome, not poiſonous. From this Arabic word *bedengian*, the Italians formed their word *melanzana*, and the late Greek writers their *melenzanion*, which they uſed as the name of the ſame fruit. This, when the plant was cultivated in gardens, was probably larger and fairer, than when it grew wild; but, in this latter ſtate, was not leſs uſed, but was diſtinguiſhed by the term *Agriomelanzanion*. If the Greeks, who uſe this word, or the *melanzanion*, would have appropriated them to the *pomum amoris*, and diſtinguiſhed theſe from the other nightſhades, they would have done a ſervice to the world.

AGRIOPHAGI, in antiquity, a name given to thoſe who fed on wild beaſts.

The word is Greek, compounded of αγριος, wild, ſavage, and φαγω, I eat.

The name is given, by antient writers, to certain people, real or fabulous, ſaid to have fed altogether on lions and panthers. Pliny [a] and Solinus [b] ſpeak of *Agriophagi* in Ethiopia, and Ptolemy [c] of others in India, on this ſide the Ganges.—[[a] *Plin.* Hiſt. Nat. T. 1. l. 6. c. 30. p. 347. [b] *Solin.* Polyhiſt. c. 33. See alſo *Salmaſ.* Exerc. ad Eund. p. 303, 385. [c] *Ptolem.* ap. Trev. Dict. Univ. T. 1. p. 211.]

AGRIPPA (*Cycl.*)—The etymon of this word, viz. *quaſi ægre parti*, given by Pliny [a], and generally followed by other authors, is diſputed by Salmaſius [b], who gives a very different origin; whence ariſes a different ſignification. He derives it from the Greek αγρευω, *venari*, and ιππος, *equus*, *q. d.* a hunter of horſes; which etymon, in effect, ſeems the beſt ſupported, inaſmuch as the word is ranged, by the grammarian Soſipater, among Greek words, and found accordingly in ſome antient Greek poets and ſcholiaſts.—[[a] *Plin.* Hiſt. Nat. T. 1. l. 7. c. 8. p. 377. ſeq. *Hardouin*, in Not. ad loc. Gell. l. 16. c. 16. [b] *Salmaſ.* Exerc. ad Solin. p. 23. Bibl. Univ. T. 5. p. 14. *Voſſ.* Etym. p. 15.]

Agrippa, notwithſtanding, is eſtabliſhed in the antient ſenſe, and retained by modern authors and midwives. Pliny ſuperſtitiouſly ſpeaks of this kind of birth, as reputed an omen of unhappineſs, which ſcarce ever failed of being accompliſhed, except in the inſtance of M. Agrippa, in whoſe life, however, he finds calamities enough to verify, rather than falſify the omen.

Daventer has a chapter expreſs of *Agrippa's*, or infants coming with their feet foremoſt, which, according to him, is one of the moſt convenient and ſafe ways for a mature birth. *Davent.* Midwif. improv. c. 45. p. 227. ſeq. See alſo *Burggrav.* Lex. Med. T. 1. p. 364. *Dionis*, *La Motte*, &c.

Agrippa gives the denomination to an ungent, deſcribed in the *Antidotarium Nicolai*, and in ſeveral other diſpenſatories, ſuppoſed, by ſome, to have been invented by Agrippa king of Judæa, but as others ſuſpect, by Julius Agrippa, a Roman phyſician. *Fabric.* Bibl. Græc. T. 13. p. 43.

AGRIPPINIANS, in church-hiſtory, the followers of *Agrippinus* biſhop of Carthage, in the third century, who firſt introduced and defended the practice of rebaptization. *Arnd.* Lex. Ant. Eccleſ. p. 465.

AGRIUM, in the materia medica of the antients, a name given to an impurer ſort of *natrum*. The purer ſort of this ſalt they called *halmyrhaga*, and the coarſer and dirtier *Agrium*. The former of theſe they had from Media, the latter from Thrace. *Hill's* Hiſt. of Foſſ. p. 390.

AGROM, a diſeaſe frequent in Bengal, and other parts of the Indies, wherein the tongue chaps and cleaves in ſeveral places, being extremely rough withal, and ſometimes covered with white ſpots. The Indians are very fearful of this diſeaſe, which they attribute to extreme heat of the ſtomach.

Their remedy is, to chew the black ſeeded baſilica, drink ſome chalybeated liquor, or the juice of large mint. Lett. Edif. T. 15. p. 416.

AGROSTEMA, in botany, the name given by Linnæus to a genus of plants, uſually confounded by other authors among the ſpecies of *lychnis*. See LYCHNIS.

The characters of the genus are theſe. The perianthium conſiſts of one leaf, which forms an oblong tube, of a coriaceous texture, and ribbed with ten ſtriæ. The limb of this, which is of the ſame length with the flower, is divided into five ſegments, which are ſlender and permanent. The flower conſiſts of five petals, the ungues of which are as long as the tube of the cup; the limb is obtuſe and expanded. The ſtamina are ten ſubulated filaments affixed to the ungues of the flower. The antheræ are ſimple. The germen of the piſtil is oval. The ſtyles are capillary, and are five in number: they are erect, and of the length of the ſtamina. The ſtigmata are ſimple. The fruit is an oblong capſule covered by the cup, and contains only one cell, in which are a number of ſpotted kidney-ſhaped ſeeds, in a looſe and free receptacle. *Linnæi*, Gen. Plant. p. 200. *Tournef.* Inſt. p. 175.

AGROSTIS, in the Linnæan ſyſtem of botany, the name of a diſtinct genus of plants, of the graſs kind; the diſtinguiſhing characteriſtics of which are theſe. The calyx is a pointed bivalve glume, containing only one flower. The flower is made of two pointed valves, ſhorter than the calyx, and has one of the valves larger than the other, and terminated by a beard, or awn. The ſtamina are three capillary filaments longer than the flower; the antheræ are ſplit at their ends. The germen of the piſtillum is roundiſh; the ſtyles are two, reflex and hairy; and the ſtigmata are of a like ſtructure. The flower cloſely ſhuts in the ſeed, and does not open to let it fall out. The ſeed is ſingle, roundiſh, and pointed at each end. *Linnæi*, Gen. Plant. p. 19.

Agroſtis is commonly uſed for the ſpecies of graſs called *quick-graſs*, or *couch-graſs*. It is a tall graſs, ſometimes above three cubits high; the leaves, which are for the moſt part rough, proceed from a long ſheath, four or five on a ſtalk, that is, one from each joint. The ſtalk bears an ear on its top, in the ſame ſituation as that of wheat, but thinner, and more inconſiderable, on all accounts, reddiſh, with a very ſhort beard. The ſeed is of an oblong figure, and of a dark colour. The roots, with reſpect to graſs, are ſomewhat big, creep far and wide, are hard, ſharp, and pungent at their extremities, and of a ſweet taſte. *Ray*, Synopſ.

This plant is ſaid to diſſolve ſtones, eſpecially bilious ones, and hence to cure oxen and ſheep that feed upon it.

AGROSTOGRAPHIA, in phyſiology, the hiſtory, or deſcription of gramens, or plants of the graſſy kind.

The word is compounded of the Greek, αγρωσις, *gramen*, graſs, and γραφη, deſcription.

AGROSTOGRAPHIA is alſo the title of a learned and laborious work of John Scheuchzer [a], containing an exact deſcription of about four hundred ſpecies of graſs; particularly dogs-tooth, cyperus, cyperoides, ruſhes, &c. all diſpoſed in a new method; yet the hiſtory is far from being compleat. As numerous as are the ſpecies of this one genus here rehearſed, there are great numbers wanting of thoſe indicated by Bauhin, Ray, Barrelier, Plukenet, &c. not to mention others in both the Indies. In effect, this is rather the *Agroſtographia* of Switzerland, as the author elſewhere calls it, than of the world. The publication of it was preceded by a *prodromus* [b], and an idea of an *Agroſtographia* [c].—[[a] V. Jour. des Scav. T. 70. p. 416—420. [b] V. An extract of it in Jour. des Scav. T. 43. p. 393. [c] V. An account of it in Jour. des Scav. T. 70. p. 176. ſeq. See alſo Nouv. Rep. Lett. T. 47. p. 113.]

AGRYPNIA, (*Cycl.*) in the Greek church, is uſed for the vigil of any of the greater feaſt days, obſerved by the monks and clergy. *Du Cange*, Gloſſ. Græc. T. 1. p. 20. ſeq.

AGUAGUIN, in botany, the name of a ſhrub among the Africans, who eſteem it greatly as a balſamic, and vulnerary. The leaves of this ſhrub reſemble thoſe of our common lilac; they grow alternately, and ſtand upon foot ſtalks of half an inch long; and when held up to the light, they ſhew a very fine texture of the ſmaller veins. Philoſ. Tranſact. N°. 232.

AGUAPECACA, in zoology, the name of a Braſilian bird, of the moor-hen kind. It is of the ſize of a pigeon, very long legged, and has a beak like that of the gallinaceous kind. Its back, and the upper part of its wings, are brown, and in each wing they have a ſharp horn, or prickle, ſerving for their defence. *Margrave*, Hiſt. Braſil.

AGUARA QUIYA, in botany, a Braſil plant, thought to be the *Solanum vulgare*, or common nightſhade, by Ray.

AGUARA PONDA, in botany, a plant otherwiſe called, *Viola ſpicata Braſiliana*. It grows to the height of a foot and an half, or more, with a ſmooth round green and jointed ſtalk. At each joint, come forth four, five, or more, narrow, ſerrated, pointed, green, and unequal leaves. The top of the ſtalk bears an ear a foot long, ſmooth, and covered with flowers of a fine violet azure; or the colour of our *viola martia*, conſiſting of five roundiſh leaves. The whole flower is not unlike the *viola martia*, and has ſomewhat of its ſmell. The root is ſtrait, of a moderate thickneſs, and ſhoots out into abundance of leſſer ones, and theſe again into filaments.

There is another kind, diſtinguiſhed by the wideneſs of its ear of flowers, which repreſents a helmet of a green colour. It is marked with cubic pits, from whence proceed azure flowers. *Ray*, Synopſ.

AGUE (*Cycl.*)—The quotidian *Ague* has its acceſſion καθ' ἡμέραν, or every day; the tertian παρὰ μίαν, every other day; the quartan διὰ δυο ἡμερῶν μεσων, every third day. Alexander Aphrodiſius alſo mentions the πεμπαῖον, or quintan, the ἑβδομαῖον, or ſeptenary; and the ἐναλαῖον, or novenary *Agues*. In all which it is obſervable, that the days of intermiſſion are fewer by two than the number, in the name of the *Ague*. Thus if the *Ague* be τριταῖος, the day of intermiſſion is but one; if τεταρταῖος, two, if πεμπαῖος, three, if ἑβδομαῖος, five, if ἐναλαῖος, ſeven, &c.

The cauſe and ſeat of *Agues* is variouſly aſſigned. Some with Sanctorius [a], ſuppoſe it ſeated in the capillary veſſels of the ſkin, which being ſtopped, a putrid lympha accumulated produces the ſymptoms. Others with Sylvius de la Boe [b], place it in an obſtruction of the pancreas, occaſioned by an accumulation of lympha in that part, which prevents the due diſcharge of the pancreatic juice into the duodenum, till that juice by its detention growing at length acrid, forces its way thro' the obſtructing lymph, and enters the duodenum, where mixing with the bile, and thus paſſing into the blood, it cauſes a feveriſh effervescence. Others aſcribe it to a defect in digeſtion, which furniſhing a crude ſour aliment, this as it enters the blood raiſes a fermentation, and according to the ſtock or quantity of it, occaſions the returns of the diſeaſe to be more or leſs frequent [c]. Others make the ſpleen the principal ſeat of *Agues*, which being deficient, the blood wants its due ferment, and thus becomes obſtructed in its circulation; whence the phænomena of the diſeaſe [d].—[[a] Static. Aphor. 95. Sec. 1. Jour. des Scav. T. 79. p. 365. It. T. 78. p. 421. [b] Jour. des Scav. T. 47. p. 285. See alſo T. 40. p. 439. [c] *Gaſtaldi*, in Jour. des Scav. T. 63. p. 236. See alſo T. 9. p. 36. [d] *Talb.* of the cauſe, &c. of *Agues*, c. 2. p. 20.]

Others, as Slare [e] &c. account for it from the mixture of a foreign acid with the volatile ſalt of the blood, which cauſes a congelation or coldneſs, on the going off of which a feveriſh heat enſues. Others as Wedelius [f], attribute *Agues* to a ſharp, ſour, bilious ferment in the *primæ viæ*, and inteſtinal glands, which paſſing thence, and fixing in the ſubcutaneous pores, diſcharges itſelf periodically into the blood.—[[e] Phil. Tranſ. N°. 150. p. 297. *Lemery*, ap. Jour. des Scav. T. 7. p. 206. [f] Jour. des Scav. T. 42. p. 268.]

We meet with divers other methods of curing *Agues*, beſides that by the cortex; as by means of tea, which taken an hour before the acceſs, is ſaid to remove the obſtruction, and correct the acidity [g]; by ſal volatile, which acts by attenuating the blood [h]: in the iſland of Tino, by an infuſion of flowers of little centaury [i]; not to mention arcanums and ſpecifics for this diſeaſe adminiſtred by royal authority [k]; or cures by ſtroaking [l], by charms [m], eſpecially by virtue of the word Abracadabra [n].—[[g] Jour. des Scav. T. 40. p. 434. [h] Phil. Tranſ. N° 145. p. 80. [i] Jour. des Scav. T. 8. p. 208. [k] Mem. de Trev. An. 1713. p. 1851. [l] *Wood*, Ath. Oxon. T. 2. p. 566. [m] *Friend*. Hiſt. Phyſ. T. 1. p. 85. Phil. Tranſ. N°. 178. p. 1289. [n] Mem. de Trev. Sept. 1701. p. 237.]

Etmuller gives divers inſtances of *Agues* cured by putting the patient in a fit of paſſion [o]. Others have been effected by a fright, a fit of drunkenneſs, &c. "Do we not often ſee "*Agues* cured by amulets and pericarpia? I myſelf, ſays Mr. "Boyle [p], was cured of a violent quotidian by applying to my "wriſts a paſte made of bay ſalt, new hops and blue currants, "which has alſo relieved many others both of quotidians and "tertians."—[[o] *Etmull.* Diſſ. de Ira. ap. Mem. de Trev. 1707. p. 922. [p] *Boyle*, Phil. Work Abr. T. 1. p. 80.]

As to the cauſe of the periods and returns of *Agues*, if it be granted that there is ſome morbific matter of a viſcous, or not eaſily diſſipable texture harboured in ſome part of the body, which requires a determinate time to be made fluid, and reſolvable, the cold fits of *Agues* need not appear ſurprizing, ſince tho' juſt before the fit, the ſame parcel of matter which is to produce it, was actually in the body; yet it was not by reaſon of its clammineſs actually reſolved into ſuch parts, and mixed with thoſe of the blood, and conſequently could not make ſuch a change in the motion of the fluid, as is felt in the cold fit of an *Ague*. So, in ſome other caſes, a ſmall quantity of matter being reſolved into minute parts, may produce a great ſenſe of coldneſs in a particular part of the body, which by reaſon of its ſtructure, may be particularly diſpoſed to be affected thereby, as hyſterical women complain of great coldneſs ſuddenly invading the head or back. And that if a cold vapour or matter be exceeding ſubtile, an inconſiderable quantity of it being diſperſed through the blood, may produce a great degree of coldneſs, appears from the effects of ſome poiſons, particularly the ſting of a ſcorpion, which frequently diffuſes an univerſal coldneſs. *Boyle*, Phil. Work Abr. T. 1. p. 555. ſeq.

Agues ſeem to be much altered from what they were among the antients, both as to their type, or form, and the method of cure; Phlebotomy which made the chief part of the cure among them, is now found rather prejudicial [a]. The old Engliſh proverb, an *Ague* in the Spring is phyſic for a king, Mr. Ray [b] ſhews is reducible to juſt phyſical principles. The The Italians have another proverb no leſs grounded on obſervation, *Febre quartana ammaza i Vecchii & i Giovani riſana*, A quartan *Ague* kills old men and cures young [c].—[[a] *Needh.* Medel. Med. c. 2. p. 19. ſeq. [b] *Ray*, Coll. Engl. Proverb. p. 32. [c] *Boyle*, loc. cit. p. 41.]

Streater [d], Talbor [e], Gaſtaldi [f], have pieces expreſsly on *Agues*: other particulars on the ſubject may be found in the writers on pathology, and the praxis medica [g].—[[d] Of an *Ague* and the curing thereof, Lond. 1641. *Wood*, Ath. Oxon. T. 2. p. 29. [e] Πυρετολογια, a rational account of the cauſe and cure of *Agues*, Lond. 1672. 12°. [f] Quæſt. Med. An Febrib. Intermit. Quinquina, &c. Par. 1717. 12°. An extract of which is given in Jour. des Scav. T. 63. p. 233. [g] See concerning the nature, cauſe and cure of *Agues*, *Cockb.* See Diſeaſ. p. 161. ſeq. Jour. des Scav. T. 75. p. 370. It. T. 45. p. 134. Phil. Tranſ. N°. 12. p. 210. *Boyle*, loc. cit. T. 1. p. 14. 80. It. T. 3. p. 548. 604. ſeq. 607. Their kinds and varieties, Jour. des Scav. T. 30. p. 873. It. T. 70. p. 75. Their frequency in Lincolnſhire, Phil. Tranſ. N°. 223. p. 351. Rarity in Scotland. *Boyle*, loc. cit. T. 3. p. 70, 71, 520.]

Tho' the bark be the moſt effectual remedy in this diſtemper, yet it has been known to cauſe worſe diſorders. See PERUVIAN.

AGUE *free* is a name given by ſome to ſaſſafras, on account of its febrifuge vertue. *Skin.* Etym. Bot. in voc. See SASSAFRAS.

AGUGLIA, (*Cycl.*) is ſometimes uſed by travellers for the obeliſks in Egypt, Conſtantinople, &c.

The word is Italian, and literally ſignifies needle. Some writers of the latter ages uſe *Aguglia* in the ſame ſenſe. *Du Cange*, Gloſſ. Lat. T. 1. p. 114.

AGUGLIA is alſo the name given by the Italian fiſhermen to the acus of Oppian, called in Engliſh the garfiſh. *Willughby*, Hiſt. Piſc. p. 232. See ACUS and LACERTUS.

AGUILLANEUF, or AUGUILLANEUF, a form of rejoicing, uſed among the antient Franks on the firſt day of the year.

The word is compounded of the French, *A*, to, *gui*, miſsleto, and *l'an neuf*, i. e. the new year.

Its origin is traced from a druid-ceremony: the prieſts uſed to go yearly in December, which with them was reputed a ſacred month, to gather miſsleto of the oak in great ſolemnity. The prophets marched in the front, ſinging hymns in honour of their deities; after theſe came a herald with a caduceus in his hand; theſe were followed by three druids a-breaſt, bearing the things neceſſary for ſacrifice. Laſt of all came the chief, or arch-druid, accompanied with the train of people.

The chief druid climbing the oak, cut off the miſsleto with a golden ſickle, and the other druids received it in a white cloth; on the firſt day of the year, it was diſtributed among the people, after having bleſſed and conſecrated it by crying *Au Gui l'an neuf*, to proclaim the new year.

This cry is ſtill continued in Picardy, with the addition of *Plantez*, *Plantez*, to wiſh a plentiful year. In Burgundy and ſome other parts, the children uſe the ſame word to beg a new-year's gift.

Of later times the name *Auguillaneuf* was alſo given to a ſort of begging, practiſed in ſome dioceſes, for church tapers, on new-year's day, by a troop of young people of both ſexes, having a chief &c. It was attended with divers ridiculous ceremonies, as dancing in the church, &c. which occaſioned the ſynods to ſuppreſs it. V. *Merul.* Coſmog. P. 2. l. 3. c. 11. *Thierſ.* Tr. des Jeux. *Menage*, Etym. p. 12. *Aubert*, ap. *Richel.* Dict. T. 1. p. 52. *Moreri*, Dict. Hiſt. T. 1. p. 65.

AGUL, in botany, a ſmall ſhrub very prickly. Its leaves are longiſh, and reſemble thoſe of the knot graſs. It abounds with flowers of a reddiſh colour. Theſe are ſucceeded by red huſks. Its root is long, and of a purple colour.

This plant is otherwiſe called *Alhagi maurorum*, by Rauwolf: it grows in Arabia, Perſia, and Meſopotamia.

Manna is found on it leaves, as large as the grains of coriander, of the ſame taſte and ſmell as ours, but it melts if the ſun ſhines upon it. The leaves of this plant are purgative. *Lemery*, Dict. des Drog.

AGURAH, in Jewiſh antiquity, the twentieth part of an antient ſilver ſhekel. *Cumberl.* Eſſ. Jew. Meaſ. c. 4. p. 138. Bibl. Univ. T. 5. p. 182. ſeq. See SHEKEL, *Cycl.*

The *Agurah* is the ſame with what is otherwiſe called *Gerah* and *Keſhitah*. The Septuagint tranſlation renders it ὀβολος.

AGUSADURA, in antient cuſtoms, a fee due from vaſſals to their lord for the ſharpening their plowing tackle.

Antiently the tenants in ſome manors were not allowed to have their rural implements ſharpened by any but whom the lord appointed; for which an acknowledgement was to be paid, called *Aguſadura*, in ſome places *Aguſage*: which ſome take to be the ſame with what was otherwiſe called *Reillage*, from the antient French *Reille*, a plow-ſhare. *Du Cange*, Gloſſ. Lat. T. 1. p. 114.

AGUTI, in zoology, the name of an American animal, much reſembling the Guinea pig, as we call it, having the characters of the rat kind, with the voice and hair of the hog.

The hairs are very hard, thick and gloſſy, and are of a mixt colour, of a reddiſh and brown with more or leſs black; thoſe on the belly however are yellowiſh; its head and whiſkers are like thoſe of the rabbit kind, but that the noſe is ſharper, and the upper chop longer than the under one, as in the hog kind; the upper lip is ſplit as in the hare, and the legs are naked, or have at the utmoſt only a few ſcattering hairs on them; the fore feet have four toes, and the hinder ones ſix, and theſe are much longer than the fore legs; its tail is very ſhort, and its eyes prominent; its voice altogether reſembles the grunting of a hog. It is a very voracious animal, devouring its food with extream eagerneſs, and uſing its fore feet for hands in the manner of the ſquirrel. It runs very ſwiftly, and is very expert at digging, ſo that it ſoon buries itſelf in the earth. When provoked, it raiſes all the hair of its back upright, and ſtrikes the earth with its hinder feet. *Ray*, Syn. Quad. p. 226.

AGUTI TREVA *inſulæ Marignanæ*, in botany, a plant mentioned by De Laet. It has the leaves of the orange tree, only thinner, a dewy flower, a large fruit, with a greeniſh rind, which contains kernels like thoſe of the pomegranate, thin, ſweet, and not ill taſted. *Ray*, Hiſt. Plant.

AGUTIGUEPA *Obi Braſilienſibus*, in medicine, the name given by many authors to the arrow root, or *Sagittaria alexipharmaca* of the Weſt Indies. *Margrave*, p. 23. *Piſo*. p. 224.

AGYEI, in antiquity, a kind of obeliſk conſecrated to Apollo, and placed in the veſtibles of houſes, for the ſecurity thereof.

The *Agyei* were no other than huge ſtones, or perhaps ſometimes timber, having either a circular or ſquare baſis, and terminating in a point at the top, ſacred to Apollo, or as ſome ſay, to Bacchus, as protector of the high ways. Others will have them to have been erected to both thoſe deities. V. *Suid.* Lex. T. 1. p. 41. *Pitiſc.* Lex. Ant. T. 1. p. 65. *Baxt.* Gloſſ. p. 72.

AGYNIANI, in church hiſtory, a ſect who condemned all uſe of fleſh, and marriage, as not inſtituted by God, but introduced at the inſtigation of the devil.

The word is compounded of the privative α, and γυνη, woman. They are ſometimes alſo called *Agynnenſes*, and *Agynii*; and are ſaid to have appeared about the year 694. It is no wonder they were of no long continuance. Their tenets coincide in great meaſure with thoſe of the *Abelians*, *Gnoſtics*, *Cerdonians*, and other preachers of chaſtity and abſtinence. *Prateol.* Elench. Hæreſ. l. 1. n. 18. p. 13. *Arnd.* Lex. Eccleſ. p. 491.

AGYRTÆ, in antiquity, a kind of ſtrolling impoſtors running about the country, to pick up money by telling fortunes at rich mens doors, pretending to cure diſeaſes, by charms, ſacrifices, and other religious myſteries; alſo to expiate the crimes of their deceaſed anceſtors, by virtue of certain odours and fumigations; to torment their enemies, by the uſe of magical verſes and the like.

The word is Greek Αγυρται, formed of the verb αγυρω, I congregate; alluding to the practice of Charletans, who gather a crowd about them. *Magri*, Vocab. Eccleſ. p. 8.

AGYRTÆ, among the Greeks, amount to the ſame with *Æruſcatores*, among the Latins, and differ not much from gypſies among us. *Lang.* Epiſt. Medic. 33. l. 1. p. 141. *Voſſ.* Etym. p. 15. Ejuſd. Inſtit. Orat. l. 4. c. 6. *Pitiſc.* Lex. Ant. T. 1. p. 65. *Hoffm.* Lex. Univ. T. 1. p. 117. *Burg.* Lex. Med. T. 1. p. 366. ſeq.

AHALOTH, in the materia medica, a name uſed by ſome writers for the *lignum aloes*, or aloes wood. It is the Hebrew name.

AHANIGER, in ichthyology, a name given by Albertus, and and others, to the fiſh called by authors *Acus vulgaris*, and by us the garfiſh. The ſhape of this fiſh, which is very long and ſlender, has cauſed it to be confounded with the *Syngnathus*, or tobacco-pipe fiſh, called alſo *acus*; but they differ extreamly when examined; that being a true ſpecies of the *Syngnathus*, and this of the *Eſox* or pike. See ESOX.

AHOUAI, in botany, the name of a genus of plants, the characters of which are theſe.

The flower conſiſts of one leaf, and is of the funnel faſhioned kind, and divided into ſeveral ſegments at the edge; from the cup there ariſes a piſtil, which is fixed in the manner of a nail to the lower part of the flower, and finally becomes a fleſhy and pear faſhioned fruit, containing a trigonal ſtone with its kernel.

The ſpecies of *Ahouai* mentioned by Mr. Tournefort are theſe. 1. The *Ahouai* of Thevet, or the apple-leaved poiſonous *Ahouai*. And 2. The Nerium-leaved *Ahouai*. *Tournef.* Inſt. p. 658. See alſo *Miller*, Gardn. Dict. Vol. 2. in voc.

AHMELLA, in botany, the name given by the Ceyloneſe to a plant famous for its virtues, as a lithontriptic, and diuretic; it is a ſpecies of bidens, or water hemp agrimony. Its flowers are large, and reſemble thoſe of the marygold; they grow in large numbers on the tops of the ſtalk, and of the large branches, and are ſucceeded by oblong ſeeds, which have the ſame ſort of points at one end with thoſe of our common bidens, and all the other plants of that genus. The ſtalks are ſquare, and the leaves ſtand in pairs, and are in ſhape like thoſe of the common nettle.

It firſt got into uſe in the iſland of Ceylon, and other parts of the Eaſt-Indies as a diuretic; and thence obtained among the Europeans, under the great character of a certain cure for the ſtone. The ſeeds contain the principal virtues.

It is very probable that tho' this plant may not come up to the character which was at firſt given of it, yet both it and all the other plants of the ſame genus, may have very conſiderable virtues in working by urine. We have one ſpecies of it very common in all parts of England, about watry places; and eaſily known by its ſeeds, in Autumn, ſticking to the cloths and ſtockings of people who go near the plant; by means of the three points at the end, which are ſharp and bearded. It would be worth while to try whether theſe ſeeds poſſeſs virtues worthy notice in phyſic, for at preſent they are neglected.

This plant and the others of the ſame genus are called by the name *bidens*, from the teeth or prickles at the ends of the ſeeds, but the word ſhould be *tridens*, for there are three of them. V. Phil. Tranſ. N°. 257. p. 365.

AHICCYATLI, in zoology, the name of an American ſerpent, approaching to the nature of the Hæmorrhous and rattleſnake, but larger than the former, and wanting the rattle of the latter; it is as fatal in the effect of its poiſon, as any known ſpecies of ſerpent. *Ray*, Syn. Anim. p. 287.

AIAIA, in zoology the name of a Braſilian bird, of the *Platea*, or ſpoonbill kind, called by the Portugueſe *Colhorado*. It is exactly of the ſame ſhape, and much of the ſame ſize with the European ſpoonbill, and its beak is in the very ſame manner broad at the end. It is of a pale but very bright and ſhining fleſh colour, on the back and wings; the other parts of its body are perfectly white; it is common about the ſhores of rivers, and its fleſh is very well taſted. *Margrave*, Hiſt. Braſil.

AJAX, in antiquity, a furious kind of dance, in uſe among the Grecians; intended to repreſent the madneſs of that hero, after his defeat by Ulyſſes, to whom the Greeks had given the preference in his conteſt for Achilles's arms.

Lucian, in his treatiſe of dancing, ſpeaks of dancing the Ajax. There was alſo an annual feaſt called *Ajantia*, Αιαντεια, conſecrated to that prince, and obſerved with great ſolemnity in the iſland of Salamis, as well as in Attica; where, in memory of the valour of Ajax, a bier was expoſed, ſet out with a compleat ſet of armour. *Potter*, Archæol. Attic. l. 2. c. 20.

AICHMALOTARCHA. See ÆCHMALOTARCHA, *Cycl.* and *Suppl.*

AID (*Cycl.*)—The *Aids*, or aſſiſtances of divine grace which are offered to man, have been the ſubject of much diſpute betwixt Janſeniſts and Jeſuits; for the compoſing whereof, a celebrated congregation was erected at Rome under the title of congregation of *Aids*, *Congregatio de Auxiliis*.

Some divines after St. Auguſtine, diſtinguiſh two kinds of *Aids*, viz. *ſine quo*, and *quo*.

Auxilium ſine quo, that which the mind is at liberty either to uſe or refuſe; ſuch is ſuppoſed to have been the *Aid* miniſtred to man in the ſtate of innocency, while his mind and will were ſound and upright.

Auxilium quo amounts to what is otherwiſe called efficacious grace, which ſurmounts and ſubdues the will; ſuch, according to the Calviniſts and Janſeniſts, is ſuppoſed to be the *Aid* miniſtred by grace, in the preſent fallen ſtate of human nature. Jour. des Scav. T. 33. p. 1047.

AIDS, in antient cuſtoms, are divided into legitimate and free.

Legitimate AIDS are thoſe impoſed by authority of law, or antient cuſtom; theſe are ſometimes alſo denominated *Legitimæ Talliæ*, *Leaux Aydes*, *Aydes Couſtumieres*, and *Auxilia Communia*. Of which kind are the capital *Aids*, *Aids de Relief*, *de Marriage*, &c.

AID *de Relief*, *Auxilium pro Relevio ſeu Racheto*, is that due from the tenants in fee, upon the death of the Lord Meſn, to his heir, towards the charge of a relief of the fee, of the ſuperior Lord.

Capital AID, *Ayde Chevel*, or *Auxilium Capitale*, mentioned in the Cyclopædia, was alſo called *Taille Seigneurale*, and *Aid* of Chivalry. We alſo meet with *Auxilium pro Militia Domini*, *Aid* for the lords being knighted; and *Auxilium pro Militia Fratris*, for his brothers being dubbed.

Authors have been under ſome miſtake on this head; the generality ſuppoſe, that the chivalry or knighthood here ſpoken of, was ſome particular order conferred by the king. Berand, and Baſnage ſuppoſe it, in Normandy, to have been the order of the Holy Ghoſt; their ſyſtem is, that the oldeſt ſons of

the Norman Lords were antiently created knights, with certain ceremonies, which depended on the king. Having obſerved that Francis I, Henry II, and Henry III. levied this *Aid* in favour of their eldeſt ſons; and that in the age of the two former of thoſe princes, the order of St. Michael, and in the age of the laſt, the order of the Holy Ghoſt, were the king's orders, they concluded that the form of creation of knights, which gave a title to this *Aid*, was variable; that the form of the two orders juſt mentioned had been ſubſtituted to the more antient one; and conſequently, that the *Aid* of chivalry was only now due, where the lord was made a knight of the king's order.

A later writer has overturned this origin, and ſhewn, that the orders of knighthood now in vogue bear no relation to the *Aid* of chivalry, mentioned in this cuſtom. This *Aid* is, in reality, a feudal right, and derives its origin from the primitive law of feuds, which is much prior to any order of knighthood. Chivalry, according to this author, amounts to little other than what we commonly call military ſervice, or the profeſſion of arms. To make a ſon a knight, was only to fit him out with the arms and acouterments proper for a *miles*, or horſeman; to put him into the military rank, and make him, like other knights of fees, fit for ſerving in war. The occaſion of this *Aid* then was, to defray the expence of the new equipage. What confirms this account is, that it is plain, from antient cuſtom, that the making a ſon a knight depended altogether on the father, not on the king, as the dubbing, or creating of knights of orders eſſentially does. De Jort has a diſſertation expreſs on the capital *Aid* of Normandy. This *Aid* is well known in the Engliſh law books, under the name of *Aid pur faire fitz chevaler*; by which, as De Jort rightly ſays, no particular order was meant. V. Diſſ. ſur les Aides Chevels de Normandie, appellez Aides Coutumieres, Rouen 1706. 12mo. An extract of it is given in Jour. des Scav. T. 36. p. 71. ſeq.

There were alſo *Aids* for the king's, or lords going the firſt time to the war, *Auxilia pro militia domini*, or *pro militia*. *Aids* for maintaining the lords war, *Auxilium ad guerram domini manutenendam*: ſometimes alſo called, *pro expeditione*, paid on the king's undertaking an expedition abroad, and ſometimes denominated *Ayde de l'oſt*.

Aid for attending the emperor, *Auxilium pro eundo ad imperatorem*, was paid in ſome provinces of France and Germany.

The biſhops alſo received *Aids*, *Auxilia epiſcopi*, ſometimes alſo called *conſuetudines epiſcopales*, *denarii paſchales*, *ſynodales*, & *pentecoſtales*. Some were to be paid at the time of their conſecration, called *Auxilia pro conſecratione*; others, when they had a king to entertain, *Auxilium pro corredo ſuo*; others, when they were called by the pope to his court, or to a council, or by the king to his army; others, when they went to receive the *pallium* called *Auxilium pallii*.

A kind of feudal *Aids* are ſtill levied in Germany, &c. under the title of *collectæ*. V. Jour. des Scav. T. 65. p. 450.

In Congo, an *Aid* is levied for the queen, the firſt night of her marriage; the ſubjects are all rated by their beds, with one meaſured in ſpans for the purpoſe. V. Bibl. Univ. T. 2. p. 374.

AIDS, in French laws, denote a duty paid on all goods ſold and tranſported either out of, or into the kingdom.

In this ſenſe, *Aids* anſwer to what the Latins call *vectigalia*, a *vehendis mercibus*, and are paid by all kinds of perſons, privileged, or non-privileged; by which they differ from *tailles*, taxes, which are only paid by the peaſants, being a ſort of capitation, anſwering to what the Latins call *tributum*. The farm of the *Aids* was formerly diſtinct from, but now united to, that of the *gabelles*, and other impoſts. Trev. Dict. Univ. T. 1. p. 216. ſeq.

Court of AIDS, a ſovereign court eſtabliſhed in ſeveral cities of France, for the management and direction of the taxes, gabelles, and *Aids*, impoſed on ſeveral ſorts of commodities, eſpecially wine; and to which belongs the cognizance and juriſdiction of all cauſes relating thereto.

There are thirteen courts of *Aids* ſeated at Paris, Rouen, Bourdeaux, Aix, Montpellier, &c [a]. The principal is that at Paris. It was firſt erected by king John I. in 1355, when it only conſiſted of one chamber. Henry II. in 1551, added a ſecond chamber; and Lewis XIII. in 1635, a third. This court is compoſed of preſidents, counſellors, advocates, and procureurs-general [b]. Jacquin has a treatiſe on the court of *Aids* of Paris [c]. Chevillard [d] has alſo publiſhed a draught of the court of *Aids*. Corbin and Philippi give edicts and regulations relating to the court of *Aids*.—[[a] V. *Vallem.* Elem. de l'Hiſt. T. 1. p. 226. [b] Mem. de Trev. 1707. p. 1228. Works of Learn. T. 4. p. 376. [c] Mem. de Trev. 1707. p. 1226. ſeq. [d] *Le Long*, Bibl. Hiſt. p. 733.]

AIDS, in the manege, are otherwiſe called, by ſome writers, *cheriſhings*.

AIEREBA, in zoology, the name of a fiſh of the *paſtinacha marina* kind, but differing from all the others, in that the form of its body is regularly round, or oval, and its head placed far within the verge of its thin part. It is common in the weſtern ocean; but is not much eſteemed for the table, being more looſe and flabby in its fleſh than the other kinds. *Margr.* Hiſt. Braſ. p. 123.

AIGHENDALE, a liquid meaſure in Lancaſhire, containing ſeven quarts. *Hought.* Collect. T. 1. p. 132.

AIGITHALUS, Αἰγίθαλος, in zoology, a name by which ſome of the old authors called the *parus*, or titmouſe. See PARUS.

AIGRETTA, in zoology, a name uſed by ſome authors, as the name of a diſtinct ſpecies of heron, but ſeeming to be no other than a ſynonym of the *gaza giovane*, or *ardea alba minor*, the ſmall white heron. *Bellonius*, de Avibus. See GAZA *giovane*.

AILERONS, in natural hiſtory, petty-wings, a French term, expreſſing two ſmall ſhelly ſubſtances, reſembling parts of wings, or young and juſt growing wings, and found in the two-winged flies, ſituated at the root of the larger wings. *Reaumur*, Hiſt. Inſect. T. 4. p. 218.

The word is a diminutive of the French, *Aile*, wing.

AILES *vitrees*, in natural hiſtory, a French term, uſed to expreſs the wings of a ſeries of inſects, which ſeem of a middle nature, between the fly and the butterfly kind, and are therefore called *papilion mouches* by theſe writers. The wings of theſe inſects are in part covered with duſt, or ſcales, and in part free from it, and tranſparent. In theſe free parts they look glaſſy; whence their name, ſignifying *glaſſy wings*.

AIPIMIXIRA, in zoology, the name of an American fiſh, more uſually known by the name of *pudiano*. It is a ſmall fiſh, of the ſhape of a pearch, with a purple back, and yellow ſides and belly. *Margrave*, Hiſt. Braſil. See PUDIANO.

AIR (*Cycl.*)—By the ingenious experiments of the reverend Mr. Hales, it appears, that *Air* is inſpired by vegetables, not only at their roots, but alſo through ſeveral parts of their trunk and branches; and this *Air* may be ſeen aſcending, in great plenty, through the ſap of the vine, in tubes affixed to them at the bleeding ſeaſon.

Mr. Boyle made many experiments on the *Air*, and found, that a quantity of this fluid was producible, from ſeveral ſorts of vegetables, by putting them into exhauſted and unexhauſted receivers, where they continued, for ſeveral days, emitting great quantities of *Air*. Some account of this is given in the Cyclopædia.

Mr. Hales ſince attempted to find more exactly the quantity of *Air* that might be obtained from different ſubſtances. And this he affected, by making hydroſtatical gauges of retorts and boltheads, in the manner deſcribed in his excellent Vegetable Statics, chap. 6.

From theſe experiments it appears, that a very conſiderable quantity of permanent *Air* was produced by diſtillation from animal ſubſtances; not only from the blood and fat, but alſo from the horns, and other ſolid parts of animals. In particular, it was found, that half a cubic inch of fallow deer's horn, weighing 241 grains, contained 33 grains of factitious *Air*; which is near one ſeventh part of the whole horn.

In theſe experiments it was obſervable, that the particles of new *Air* were detached from the blood and horns, at the ſame time with the white fumes, which conſtitute the volatil ſalt; and that this volatil ſalt, which mounts with great activity in the *Air*, is ſo far from generating true elaſtic *Air*, that, on the contrary, it abſorbs it. It appears, in particular, that a dram of volatil ſalt of ſal armoniac abſorbed two cubic inches and an half of *Air*. Phoſphorus alſo was found to abſorb *Air*.

Vegetable ſubſtances produce *Air* in great plenty. Indian wheat, for inſtance, produced one fourth of its weight of *Air*. Peaſe produced ſomething more than one third of their weight. But camphor neither generated nor abſorbed *Air*; agreeable to what Mr. Boyle found, when he burnt it in vacuo.

Brandy gives very little *Air*; but well water gives about a fiftieth part; and Pyrmont water double that proportion.

The quantity of *Air* in nitre is about one eighth part. From Rheniſh tartar there aroſe about one third of the whole in *Air*; and ſalt of tartar gave nearly one ninth of its weight.

A good part of the *Air* thus raiſed from ſeveral bodies, by the force of Fire, is apt gradually to loſe its elaſticity, by ſtanding ſeveral days. The reaſon of which is, that the acid ſulphureous fumes raiſed with that *Air*, reſorb and fix the elaſtic particles. But Mr. Hales obviated this inconvenience, by making the *Air* raiſed in diſtillation paſs through water to the top of the receiver, in the manner deſcribed chap. 6. exper. 77. of his Vegetable Statics. By this means, the acid ſpirit, and ſulphureous fumes, were intercepted, and retained in the water; in conſequence of which, the new generated *Air* continued in a more permanently elaſtic ſtate, ſo as not to loſe above one fifteenth, or one eighteenth of its elaſticity, and that chiefly the firſt twenty-four hours. After this, the remainder continued in a conſtantly elaſtic ſtate; excepting the *Air* of tartar, which, in ſix or eight days, loſt conſtantly above one third of its elaſticity, after which, the remainder was permanently elaſtic.

That the great quantities of this fluid, thus obtained, are true *Air*, and not a mere flatulent vapour, Mr. Hales aſſured himſelf by ſeveral experiments; by which it appeared, that there

there was no difference of ſpecific gravity diſcernable between the true and factitious *Air*, neither was there any difference found between their elaſticities.

The *Air* was thus produced by means of fire; but the production, fixation, and abſorption of *Air*, may alſo ariſe from efferveſcence and fermentation, by the mixture of variety of ſolids and fluids. And this method of producing, of abſorbing, and of fixing the elaſtic particles of *Air*, by efferveſcence and fermentation, ſeems to be more according to nature's uſual way of proceeding, than the other by fire. Thus half a cubic inch of oyſter-ſhell, and a cubic inch of oil of vitriol, generated thirty-two cubic inches of *Air*. But a cubic inch of lemon juice, and near an equal quantity of ſpirit of hartſhorn, *per ſe*, that is, not made with lime, did, in four hours, abſorb three or four cubic inches of *Air*; and the following day, it remitted or generated two cubic inches of *Air*; the third day, turning from very warm to cold, it again abſorbed that *Air*, and continued in an abſorbing ſtate for a day or two.

It alſo appears, from the ſame ingenious author's experiments, that there is great plenty of *Air* incorporated into the ſubſtance of vegetables, which, by the action of fermentation, is rouſed into an elaſtic ſtate. Thus forty-two cubic inches of ale from the tun, which had been ſet to ferment thirty-four hours before, generated, from the 2d of March to the 9th of June, 639 cubic inches of *Air*, with a very unequal progreſſion, more or leſs, as the weather was warm, cool, or cold, and ſometimes upon a change from warm to cool, it reſorbed *Air*, in all, thirty-two cubic inches. Peaſe, wheat, and barley, do alſo, in fermentation, generate great quantities of *Air*.

That this *Air* ariſing in ſuch great quantities, from fermenting and diſſolving vegetables, is true permanent *Air*, is certain, by its continuing in the ſame expanded elaſtic ſtate for many weeks and months; which expanding watery vapours will not do, but ſoon condenſe when cold. And that this new generated *Air* is elaſtical, appears not only from its dilating and contracting with heat and cold, as common *Air* does, but alſo by its being compreſſible, in proportion to the incumbent weight, as Mr. Hales found, by two ingenious experiments. See Veget. Stat. chap. 6. exper. 88, 89.

If to the *Air* generated from a veſſel of any vegetable liquor, by fermentation, we add the *Air* that might afterwards be obtained from it, by heat, or diſtillation; and to that alſo the vaſt quantity of *Air*, which is found to be contained in the tartar which adheres to the ſides of the veſſel; it will follow, that *Air* makes a very conſiderable part of the ſubſtance of vegetables, as well as of animals.

But it is reaſonable to think, that moſt of theſe active particles of the new generated *Air* were in a fixed ſtate in the vegetable ſubſtance, before they were rouſed and put into an active repelling ſtate, by fermentation and fire. For if they were in an elaſtic ſtate, in an apple, for inſtance, of ſixteen ſquare inches ſurface, this fruit generating forty-eight times its bulk of *Air*, this *Air*, when compreſſed in the apple, muſt conſequently be forty-eight times, at leaſt, more denſe than common *Air*, and therefore cannot be retained by a force leſs than forty-eight times the weight of our atmoſphere; which, upon a ſurface of ſixteen ſquare inches, would amount to 11776 pounds. Now, the expanſive force of the compreſſed *Air* muſt alſo be equal to this, action and reaction being equal. But ſo great a force muſt tear the apple to pieces. It ſeems therefore, that moſt of theſe particles of *Air* were in a fixed ſtate, ſtrongly adhering to, and wrought into the ſubſtance of the apple; although, on the other hand, it be evident, from ſome of Mr. Hales's experiments, that innumerable bubbles of *Air* inceſſantly riſe through the ſap of vines, and that we may therefore preſume, there is a conſiderable quantity of *Air* in vegetables, upon the wing, and in a very active ſtate, eſpecially in warm weather, which increaſes their activity. V. Veget. Stat. exper. 34, 38.

Air may alſo be produced from mineral ſubſtances, by the action of fire in diſtillation; and the ingenious author ſo often quoted ſhews us alſo, by many experiments, that great plenty of *Air* is generated by ſome fermenting mineral mixtures, abſorbed by others, and by others alternately generated and abſorbed; and it was remarkable, that the ſame mixtures changed from generating to abſorbing, and, *vice verſa*, ſometimes with, and ſometimes without any ſenſible alteration of the temperature of the *Air*. *Hales*, Veget. Stat. exper. 90, 91, &c.

Some mixtures have a very ſtrong abſorbing effect. Thus two cubic inches of lime, and an equal quantity of ſal armoniac, abſorbed 115 cubic inches of *Air*. *Hales*, ib. exper. 100. Filings of iron alſo, with ſpirit of nitre, either with an equal quantity of water, or without water, abſorbed *Air*, but moſt without water; whereas one fourth of a cubic inch of filings of iron, and a cubic inch of oil of vitriol, with three times its quantity of water, generated 108 cubic inches of *Air*. Id. exper. 94.

Burning and flaming bodies, as alſo the reſpiration of animals, deſtroy the elaſticity of the *Air* in part [a]. Thus burning of nitre, although it produce a large quantity of new *Air*, yet the elaſticity of this *Air* daily decreaſes, in the ſame manner as Mr. Hauksbee [b] obſerved the *Air* of fired gun-powder to do.—[a *Hales*, Exper. 102. b Phyſico-Mechan. Exper. p. 83.]

By the burning of rags dipped in melted brimſtone, in a cloſe veſſel, one tenth of the whole *Air* of the veſſel was abſorbed. And it was obſervable, that more *Air* in proportion was abſorbed in ſmall veſſels than in large ones. The like happens by the burning of a candle. And the *Air* abſorbed by burning brimſtone, or the flame of a candle, does not recover its elaſticity again. *Hales*, ib. exp. 104.

A groſs *Air* loaded with vapours, is more apt, in equal times, to loſe its elaſticity in greater quantities, than a clear *Air*. Mr. Hales obſerved, as to the burning of candles in cloſe veſſels, that where the veſſels are equal, and the ſize of the candles unequal, the elaſticity of more *Air* will be deſtroyed by the large, than by the ſmall candle. And where candles are equal, there moſt *Air*, in proportion to the bulk of the veſſel, will be abſorbed in the ſmalleſt veſſel; though, with equal candles, there is always moſt elaſtic *Air* deſtroyed in the largeſt veſſel, where the candle burns longeſt.

The ſame author tells us, he was never able to deſtroy the whole elaſticity of any included bulk of *Air*, whether common or factitious. The reaſon of which he takes to be, that when any quantity of *Air* is ſaturated with abſorbing vapours to a certain degree, no more elaſtic *Air* is abſorbed, notwithſtanding that the ſame quantity of abſorbing ſubſtances would, in a larger quantity of *Air*, have abſorbed much more. Ib. exper. 106. in fin.

Dr. Mayow found, that a mouſe abſorbed one fourteenth of the whole *Air* in a glaſs veſſel. Mr. Hales tried the experiment with a full grown rat. The creature lived about fourteen hours, in which time, the quantity of elaſtic *Air* abſorbed was above one twenty-ſeventh of the whole, and nearly the ſame with what was abſorbed by a candle. And in theſe experiments with animals, as alſo in the caſe of burning brimſtone and candles, more *Air* was found to be abſorbed in large veſſels, than in ſmall ones; and *vice verſa*, more *Air*, in proportion to the capacity of the veſſel, was abſorbed in ſmall than in large veſſels. Ib. exper. 107.

The elaſticity of the *Air* is alſo greatly deſtroyed by the reſpiration of human lungs. See RESPIRATION and LUNGS.

The ſudden and fatal effect of noxious vapours has generally been ſuppoſed to be wholly owing to the loſs and waſte of the *vivifying ſpirit of Air*. But this effect may not unreaſonably be alſo attributed to the loſs of a conſiderable part of the *Air*'s elaſticity, and the groſſneſs and denſity of the vapours, with which the *Air* is charged; for mutually attracting particles, when floating in ſo thin a medium as *Air*, will readily coaleſce into groſſer combinations. And this effect of vapours having not been duly obſerved before, it was concluded that they did not affect the *Air*'s elaſticity; and that, conſequently, the lungs muſt needs be as much dilated in inſpiration by this, as by a clear *Air*. But Mr. Hales found, by an experiment made on himſelf, that the lungs will not riſe, and dilate as uſual, when they draw in ſuch noxious *Air*, which decreaſes faſt in its elaſticity. For having made a bladder very ſupple by wetting of it, and then cut off ſo much of the neck, as would make a hole wide enough for the biggeſt end of a large foſſet to enter, to which the bladder was bound faſt; and having blown up the bladder, he put the ſmall end of the foſſet into his mouth, and, at the ſame time, pinched his noſtrils cloſe, that no *Air* might paſs that way, ſo that he could only breathe to and fro the *Air* contained in the bladder, which, with the foſſet, contained ſeventy-four cubic inches. In leſs than half a minute, he found a conſiderable difficulty in breathing, and was forced to fetch his breath very faſt; and, at the end of the minute, the ſuffocating uneaſineſs was ſo great, that he was forced to take away the bladder from his mouth. Towards the end of the minute, the bladder was become ſo flaccid, that he could not blow it above half full, with the greateſt expiration he could make; and, at the ſame time, he could plainly perceive that his lungs were much fallen, in the ſame manner as when we breathe out of them all the *Air* we can at once. Hence it appeared, that a conſiderable quantity of the elaſticity of the *Air* in the bladder and his lungs was deſtroyed; and that when the ſuffocating quality of the *Air* of the bladder was greateſt, it was with much difficulty that he could dilate his lungs a very little.

The ingenious author thinks, from this, and ſeveral other experiments, that the life of animals is preſerved rather by the elaſtic force of the *Air* acting on their lungs, than by its vivifying ſpirit; and that candles and matches ceaſing to burn, ſoon after they are confined in a ſmall quantity of *Air*, ſeems not to be owing to their having rendered that *Air* effete, by having conſumed its vivifying ſpirit; but ſhould rather be owing to the great quantity of acid fuliginous vapours, with which that *Air* is charged, which deſtroy a good deal of its elaſticity, and very much clog and retard the elaſtic motion of the remainder. See *Animal* LIFE and FIRE.

It ſeems evident alſo, from Mr. Hales's experiments, that the matter often loſt in the chemical analyſes of bodies is elaſtic *Air*, a very active principle in fire, but not elemental fire, as Lemery, and other chemiſts, ſuppoſe. See FIRE.

The elaſticity of the *Air* is greatly deſtroyed by ſulphureous bodies; and great plenty of *Air* is united with ſulphur in the oil of vegetables. But ſulphur in a quieſcent fixed ſtate in a large body, as a roll of brimſtone, does not abſorb the elaſtic *Air*. And it is to be obſerved, that as ſulphur thus attracts *Air*, this fluid will alſo attract ſulphur. See SULPHUR.

Air is found in much greater proportion in the ſolid parts of vegetables, than in their fluid parts. See VEGETABLE.

Since we find ſuch great quantities of elaſtic *Air*, generated in the ſolution of animal and vegetable ſubſtances, a good deal muſt conſtantly ariſe from the diſſolving of theſe elements in the ſtomach and bowels, which diſſolution it greatly promotes. See DIGESTION.

The *Air* is very inſtrumental in the production and growth of animals and vegetables, both by invigorating their ſeveral juices, while in an elaſtic active ſtate; and alſo by greatly contributing in a fixed ſtate, to the union and firm connection of the ſeveral conſtituent parts of thoſe bodies, *viz.* their water, ſalt, ſulphur, and earth. This band of union, in conjunction with the external *Air*, is alſo a very powerful agent in the diſſolution and corruption of the ſame bodies; for it makes one in every fermenting mixture: now the action and reaction of the aëreal and ſulphureous particles, is in many fermenting mixtures ſo great as to excite a burning heat, and in others a ſudden flame. And it is by the like action and reaction of the ſame principles, in fuel and the ambient *Air*, that common culinary fires are produced and maintained.

Since then *Air* is found ſo manifeſtly to abound in almoſt all natural bodies; ſince we find it ſo operative and active a principle in every chemical operation; ſince its conſtituent parts are of ſo durable a nature, that the moſt violent action of the fire, or fermentation, cannot induce ſuch an alteration of its texture, as thereby to diſqualify it from reſuming, either by the means of fire, or fermentation, its former elaſtic ſtate, unleſs in the caſe of vitrification, when with the vegetable ſalt and nitre, in which it is incorporated, ſome of it with other chemical principles may, perhaps, be immutably fixt: ſince this is the caſe, may we not with good reaſon adopt this now fixt, now volatile proteus, among the chemical principles, and that a very active one, as well as acid ſulphur; notwithſtanding it has been hitherto over-looked, and rejected by chemiſts, as no way entitled to that denomination? *Hales*, Veget. Stat. Chap. 6. in fin. See farther of the properties of *Air*, in the articles VAPOUR, FERMENTATION, VEGETATION, ATMOSPHERE, LUNGS, RESPIRATION, WATER, ICE, SULPHUR, FIRE, *&c.*

The ingenious author ſo often cited has given the general name of *Air* to the fluid ariſing from animal, vegetable, and mineral ſubſtances, by diſtillation, fermentation, exploſion, as in gun-powder, *&c.* And tho' his experiments prove this factititious *Air* to be a permanent elaſtic fluid, and to be of the ſame weight, and elaſticity as the *Air* we breathe; yet ſome doubt might remain, as to this factitious or artificial *Air* being entirely the ſame with natural *Air*, and of its being able to ſerve the ſame purpoſes of life in animals. On the contrary, from ſome experiments made by Mr. Cotes, and others, it ſeems that the effects of artificial *Air* are different from the effects of common *Air*. Thus in particular, it appeared that artificial *Air* did not reſtore the power of motion to a bee, which had been put into an exhauſted receiver; yet when ſhe was expoſed to the open *Air*, in a little time ſhe began to move herſelf: and hence Mr. Cotes ſuſpects that artificial *Air* is unfit for the life of animals. This was farther confirmed by an experiment made on two flies included in a receiver, out of which the common *Air* being exhauſted, ſome gooſberry *Air* was made to ſupply its place. Afterwards two other flies were included in *vacuo*, but with this difference, that common *Air* was reſtored to them. The event was, that the latter flies thereby recovered their power of motion, which they had loſt in *vacuo*; but the former, in the factitious *Air*, remained irrecoverably dead. It appeared likewiſe by Mr. Cotes's experiments, that artificial *Air* is not only prejudicial to the life of animals, but to flame alſo. See *Cotes*, Hydroſt. and Pneumat. Lect. 16. Art. 5.

Nay, by ſome experiments it appears, that factitious *Air* is a greater enemy to animals, than a *vacuum* itſelf; and thence the laſt quoted excellent author ſeems to collect, that it kills by ſome venomous quality, and not only by the defect of common *Air*.

But it muſt be admitted, with Mr. Hales, that the noxious qualities of factitious *Air*, whether made by fermentation, effervеſcence, or diſtillation, is not a ſufficient reaſon againſt its being true *Air*; becauſe it is well known, that common *Air* is frequently alſo impregnated with moſt noxious and deadly vapours. Thus the fumes which aſcend in the *Air* from fermenting wines, are very pernicious; thoſe alſo from burning brimſtone are moſt deadly; and ſuch alſo Mr. Haukſbee found *Air* to be, which had paſſed thro' heated iron and braſs tubes. But the *Air* which paſſed thro' a heated glaſs tube was not noxious; an argument that the vapours which aroſe from the iron and braſs were noxious, and not the hot *Air*. And it ſeems probable that the noxiouſneſs of new generated *Air*, either by fermentation, effervеſcence, or fire, as alſo common *Air* impregnated with the like fumes, is principally owing to thoſe fumes or vapours, and not to a diminution of the degrees of its elaſtiticy; which is the ſame in common and in factitious *Air*. V. Stat. Eſſ. Vol. 2. p. 317, 318.

We have already mentioned that *Air*, by being breathed becomes unfit for reſpiration; and this was proved from ſeveral experiments, made by the reſpiration of *Air* included in bladders. But leſt any inconvenience might ariſe from the rancid vapour of bladders, Mr. Hales, contrived to breathe the *Air* of an *Air*-pump receiver, by cementing a wooden foſſet to it. The reſult of the experiment was, that near two gallons of *Air*, which received no noxious fumes from the receiver; yet being breathed to and fro for two minutes and an half, became thereby unfit for reſpiration. Stat. Eſſ. Vol. 2. p. 319, 320. See alſo Phil. Tranſ. N°. 463.

Hence it is no wonder that the *Air* ſhould be infected, and apt to breed diſtempers in cloſe priſons; where not only the breath, but alſo the plentiful perſpiration of many confined together, ſtench the *Air*, and make it apt to breed what are called goal-diſtempers. This inconvenience might in a good meaſure be prevented, if goals were ſo contrived as to have a free paſſage for the wind to blow thro' them, and thereby communicate freſh *Air*; for want of which many unhappy perſons are deprived of life.

It has been found that *Air* which paſſed thro' cloths dipped in vinegar, could be breathed to and fro as long again, as the like quantity of *Air*, which was not thus purified; ſo that the ſprinkling the decks of ſhips with vinegar may refreſh the *Air*: and this is confirmed by experience. See *Hales*, Stat. Eſſ. Vol. 2. p. 321.

But where the ſtench and corruption of the *Air* is great, vinegar can be but of little benefit, and that only for a ſhort time; and nothing but a thorough ventilating the *Air*, can be an effectual cure. See VENTILATOR.

Air which has been breathed becomes moiſt, as is commonly known; and according to Mr. Hales's computation, the additional moiſture, to about two gallons of dry *Air*, by breathing it to and fro for two minutes and an half, is not one tenth of its weight. Now this additional moiſture in the *Air*, does not ſeem alone ſufficient to diſqualify it for reſpiration; for common *Air* has frequently one third, and ſometimes one half of its weight, of moiſture in it. And therefore, *Air* that has been breathed, is not diſqualified merely by additional moiſture; but by ſome bad quality in that moiſture. Mr. Hales ſuſpects among others, the groſſneſs of the exhalations from the lungs, which may hinder their free entrance into the minute veſicles. V. Stat. Eſſ. Vol. 2. p. 323, 324.

The effect of the *Air* in chemical ſolutions, is very different in different inſtances; if copper filings be put into a ſmall quantity of ſal armoniac, and two veſſels thus prepared, be one of them ſet in the exhauſted receiver of an *Air*-pump, and the other in the free *Air*; that in *vacuo* will be found not to be at all altered, in the ſame time in which that in the open *Air* is become of a fine blue. Hence the free acceſs of external *Air* certainly promotes ſolution in ſome caſes, where it ſeems to act by encreaſing the action of the menſtruum. But if another experiment be made, by pouring two ounces of diſtilled vinegar upon two drams of whole crabs eyes in the exhauſted receiver, and at the ſame time in another veſſel in the open *Air*; the ebullition is more violent in *vacuo* than in the open *Air*, and the gage of the *Air*-pump ſinks, and ſhews that *Air* has been generated in the conflict, as before-mentioned. And ſome of theſe mixtures produce *Air* in ſuch quantities and with ſuch violence, as to throw off the receiver of the *Air*-pump. V. *Shaw*, Chem. Lectures, p. 50.

Some philoſophers have ſuſpected that the *Air* may become impregnated with lapideſcent ſalts. Vid. Phil. Tranſ. N°. 481. p. 326.

We read of a man dead in appearance, but recovered by diſtending his lungs with *Air*; this was done by blowing into his mouth, and ſtopping his noſtrils. See the caſe in Medic. Eſſ. Edinb. Vol. 5. Art. 55. or the abridgm. Vol. 2. p. 399, and alſo p. 240. of Vol. 1.

Air refracts the rays of light, like other fluids, and tranſparent bodies; and according to Mr. Haukſbee's experiments and computations, the line of incidence in *vacuo*, is to the line of refraction into common *Air*, as 1000000 to 999736. *Hauksb.* Phyſ. Mech. Exp. p. 225. *Smith*'s Optics in the Rem. Art. 410. See REFRACTION.

This refractive power of the *Air*, its trembling motion, and that of the interſperſed vapours, are the cauſe of the twinkling of ſtars. See STAR.

AIR *inflammable.* See the article DAMPS.

AIR-BLADDER, a kind of veſicula found in the bodies of fiſhes, by means whereof they are enabled to ſubſtain themſelves in any depth of water, and either to riſe or ſink therein at pleaſure.

The *Air-bladder* is the ſame with what is otherwiſe called the *ſwim* or *ſwimming-bladder.*

The diſcovery of the uſe of the *Air-bladder* took its riſe from reflecting, that a bubble of air in riſing from the bottom of a fluid continually dilates till it reaches the top, by reaſon of the continual diminution of the weight, or preſſure of the incumbent water. For the air in the bladder, is like the bubble,

bubble, more or leſs compreſſed according to the depth the fiſh ſwims at, and takes up more or leſs ſpace; and conſequently the body of the fiſh, part of whoſe bulk this bladder is, is greater or leſs according to the ſeveral depths, tho' it retains the ſame weight. The rule of hydroſtatics is, that a body heavier than ſo much water, as is equal in quantity to the bulk of it, will ſink; a body lighter, will ſwim: a body of equal weight will reſt in any part of the water. By which rule if the fiſh in the middle region of the water, be of equal weight with an equal bulk of the water, the fiſh will reſt there, without any tendency either upwards or downwards; and if the fiſh be deeper in the water, its bulk becoming leſs by the compreſſion of the bladder, and yet retaining the ſame weight, it will ſink and reſt at the bottom: on the other ſide, if the fiſh be higher than the middle region, the air dilating itſelf, and the bulk of the fiſh conſequently increaſing, without any increaſe of the weight, the fiſh will riſe and reſt at the top of the water.

Perhaps the fiſh by ſome action can emit air out of the bladder, and afterwards out of its body; and alſo when there is not enough, take in more air, and convey it to this bladder; in which caſe it will be no wonder, that there ſhould be always a fit proportion of air in the bodies of all fiſhes, to ſerve their uſe according to the depth of water they live in: perhaps alſo by ſome muſcle, the fiſh can contract this bladder beyond the preſſure of the weight of water; and perhaps it can by its ſides, or ſome other defence, keep off the preſſure of the water, and give the air leave to dilate itſelf. In theſe caſes, the fiſh will be helped in all intermediate diſtances, and may riſe or ſink from any region without moving a fin. Phil. Tranſ. N°. 114. p. 310.

If the *Air-bladder* of a fiſh be pricked or broken, the fiſh preſently ſinks to the bottom, unable either to ſupport or raiſe itſelf up again. Flat fiſhes, as ſoles, plaiſe, *&c.* which always lie groveling at the bottom, having no *Air-bladder*.

In moſt fiſhes there is a manifeſt channel, leading from the gullet, or upper orifice of the ſtomach to the *Air-bladder*, which doubtleſs ſerves for conveying air into it. In a ſturgeon Mr. Willughby obſerved, that upon preſſing the bladder, the ſtomach preſently ſwelled; ſo in that fiſh it ſeems the air paſſes freely both ways. Poſſibly the fiſh while alive may have a power to raiſe up this valve, and let out air on occaſion.

All the cartilaginous kind want *Air-bladders:* by what means it is they aſcend and deſcend in water, is yet unknown. The cetaceous kind, or ſea beaſts, are alſo without the *Air-bladder:* indeed, as theſe differ in little from quadrupeds, but the want of feet; the air which they receive into their lungs in inſpiration, may ſerve to render their bodies equiponderant to water; and the conſtriction or dilatation of it, by the help of the diaphragm, and muſcles of reſpiration, may poſſibly aſſiſt them to aſcend, or deſcend in the water, by a light impulſe thereof with their fins[a]. Moſt of the eel kind have bladders, yet they can hardly raiſe themſelves in the water, by reaſon of the length and weight of their tails: the *Air-bladder* being near their heads, may help them to lift up their heads and fore part[b].—[[a] *Ray*, Wiſd. of God in Creat. P. 1. p. 26. [b] Phil. Tranſ. N°. 115. p. 349. ſeq.]

There is great diverſity in *Air-bladders*, in reſpect of figure, ſubſtance, ſituation, and connexion, in different fiſhes.

In ſome, the *Air-bladder* is divided into two, *e. gr.* in carps; and in others, into three. Needham maintains, that all fiſhes which have teeth in their jaws, have only a ſingle *Air-bladder*; whereas thoſe without teeth have a double one, or which amounts to the ſame, the *Air-bladder* of theſe laſt is divided into two cells. Sig. Redi refutes this diſtinction; giving inſtances of fiſhes with teeth, whoſe *Air-bladder* is double; and of others without teeth, who have only a ſingle *Air-bladder*. V. Nouv. Rep. Lett. T. 43. p. 282. ſeq.

The water ſnake in lieu of a bladder, has a large membranous air-bag on its back, which it empties and fills with air at pleaſure, by an apperture, which it can ſhut very cloſe, from without inwards, by means of a ſort of valve, ſo that the leaſt globule of water cannot enter without its conſent. By this artifice it can enlarge or leſſen the bulk of its body, and inhabit all depths of the water[c]. Tho' a conjecture has been advanced by Mr. Ray, that it is by the help of water which they take in, and let out, by two holes in the lower part of their abdomen, near to the ventricle. They ſink in the water, by letting in ſome of it, at theſe holes; the orifices whereof are opened and ſhut at pleaſure, by means of proper muſcles. The water being thus received into the cavity of their abdomen, by which they preponderate the water, and deſcend. When they would aſcend again, a compreſſion is made by the muſcles of their abdomen, and the water forced out again, at leaſt ſo much as ſuffices to give the degree of levity wanted[d].—[[c] V. Jour. des Scav. T. 22. p. 264. [d] *Ray*, Wiſd. of God. P. 2. p. 346.]

AIR-GUN. See WIND-GUN.

AIR-SHAFTS, among miners, denote holes or ſhafts let down from the day to meet the adits, and furniſh freſh air.

The damps, want and impurity of air, which occur when adits are wrought 30 or 40 fathom long, make it neceſſary to let down *Air-Shafts*, in order to give the air liberty to play thro' the whole work, and thus diſcharge bad vapours, and furniſh good air for reſpiration: the expence of which ſhafts in regard of their vaſt depths, hardneſs of the rock, drawing of water, *&c.* ſometimes equals, nay exceeds the ordinary charge of the whole adit.

Sir Robert Murray deſcribes a method, uſed in the coal mines at Liege, of working mines, without *Air-ſhafts*. Phil. Tranſ. N°. 5.

When the miners at Mendip have ſunk a groove, they will not be at the charge of an *Air-ſhaft*, till they come at ore; and for the ſupply of air have boxes of elm exactly cloſed, of about ſix inches in the clear, by which they carry it down above twenty fathom. They cut a trench at a little diſtance from the top of the groove, covering it with turf and rods diſpoſed to receive the pipe, which they contrive to come in ſide-ways to their groove, four feet from the top; which carries down the air to a great depth. When they come at ore, and need an *Air-ſhaft*, they ſink it four or five fathom diſtant, according to the convenience of the breadth, and of the ſame faſhion with the groove, to draw as well ore as air. Phil. Tranſ. N°. 39. p. 769.

AIR-THREADS *of ſpiders*. See AIR-THREADS.

AIR-VESSELS in plants, are certain canals, or ducts, whereby a kind of reſpiration is effected in vegetable bodies. See PLANT, RESPIRATION, *&c.*

Air-Veſſels ſtand diſtinguiſhed from ſap-veſſels; the former anſwering to the trachea, and lungs of animals, the latter to their lacteals, and blood-veſſels.

Dr. Grew has an inquiry into the motion and cauſe of the air in vegetables; wherein he ſhews that it enters them various ways, not only by the trunk, leaves, and other parts above ground, but at the root. For the reception, as well as expulſion of air, the pores are ſo very large in the trunks of ſome plants, as in the better ſort of thick walking canes, that they are viſible to a good eye without a glaſs; but with a glaſs, the cane ſeems as if it were ſtuck full of large pinholes; reſembling the pores of the ſkin in the ends of the fingers, and ball of the hand. In the leaves of the pine, thro' a glaſs they make an elegant ſhow; ſtanding almoſt exactly in rank and file, throughout the length of the leaves.

But tho' the air enters in part at the trunk and other parts, eſpecially in ſome plants; yet its chief admiſſion is at the root: much as in animals, ſome parts of the air may continually paſs into the body and blood by the pores of the ſkin; but the chief draught is at the mouth. If the chief entrance of the air were at the trunk; before it could be mixed with the ſap in the root, it muſt deſcend; and ſo move not only contrary to its own nature, but in a contrary courſe to the ſap: whereas by its reception at the root, and its tranſition from thence, it has a more natural and eaſy motion of aſcent.

The ſame is farther argued, from the fineneſs and ſmallneſs of the diametral apertures in the trunk, in compariſon of thoſe in the root; which nature has plainly deſigned for the ſeparation of the air from the ſap, after they are both together received thereinto. *Grew*, Anat. of Root. c. 3. p. 127.

Air-Veſſels are found in the leaves of all plants, and are even diſcoverable in many without the help of glaſſes: for upon breaking the ſtalk, or chief fibres of a leaf; the likeneſs of a fine woolly ſubſtance, or rather of curious ſmall cob-webs, may be ſeen to hang at both the broken ends. This is taken notice of only in ſome few plants, as in ſcabious, where it is more viſible: but may alſo be ſeen more or leſs in moſt others, if the leaves be very tenderly broken. This wool is really a ſkein of *Air-veſſels*, or rather of the fibres of the *Air-veſſels*, looſed from their ſpiral poſition, and ſo drawn drawn out in length. Id. ibid. c. 4. p. 155.

That air is inſpired by vegetables, has been fully proved by Mr. Hales, in his ſtatical eſſays; and he has in many inſtances ſhewn, that air freely enters the veſſels of trees, and that it is in great abundance wrought into their ſubſtance. But as to particular *Air-veſſels* in plants, he ſeems to ſpeak doubtfully; he ſays by way of queſtion, may not the uſe of thoſe ſpiral wreaths, that are coiled round the inſides of thoſe veſſels, which are ſuppoſed to be *Air-veſſels*, and which are manifeſtly to be ſeen in ſeveral trees; as alſo in the leaves of the vine and ſcabious, may not theſe be deſigned by nature to promote the quicker aſcent of *Air*, by being in ſome meaſure conformed to its elaſtic contortions? For ſuch ſpiral wreaths ſeem to be altogether uſeleſs, for promoting the aſcent of any liquor, as the ſap, which aſcends moſt freely thro' innumerable other capillary veſſels, having no ſuch ſpiral coils in them. Not that we are to ſuppoſe the air in its elaſtic ſtate actually to touch, and thereby to be determined in the courſe of theſe ſpirals, as any liquor would be. But as the rays of light, when they are reflected from a ſolid body, are found to be reflected, without actually touching the reflecting body in the point of reflection; ſo it is not unreaſonable to ſuppoſe, that elaſtic air may, like light, be diverted from one courſe, and ſo be determined to another, by the ſolid bodies it approaches without touching them, but rebounding like light from thoſe ſolid bodies near the point of contact.

Mr. Hales has obſerved, that theſe ſpirals are coiled in a courſe oppoſite to the courſe of the ſun, that is, from Weſt to Eaſt. V. Static. Eſſ. Vol. 2. p. 265, 266.

AIRANI, in church-hiſtory, an obſcure ſect of Arians, in the fourth century, who denied the conſubſtantiality of the Holy Ghoſt with the Father and the Son.

They are otherwiſe called *Airaniſtæ*, and are ſaid to have taken their name from one *Airas*, who diſtinguiſhed himſelf at the head of this party, in the reigns of Valentinian and Gratian. V. *Prateol.* Elench. Hæreſ. l. 1. n. 21.

AIRING, in the general ſenſe of taking, or going into the freſh air, is too well known to need any explanation.

The word is particularly uſed for exerciſing horſes in the open air; which is of the greateſt advantage to theſe animals. It purifies the blood, purges the body from groſs humours, and enures the creature to fatigue, ſo as not to be hurt by it, when much greater than on theſe occaſions; and it teaches him, as the jockies expreſs it, how to make his wind rake equally, and keep time with the other motions of his body. It alſo ſharpens the ſtomach, and keeps the creature hungry; which is a thing of great conſequence, as hunters and racers are very apt to have their ſtomach fall off, either from want of exerciſe, or from the too violent exerciſe which they are often expoſed to.

If the horſe be over fat, it is beſt to air him before ſun-riſe, and after ſun-ſetting; and, in general, it is allowed by all, that nothing is more beneficial to theſe creatures, than early and late *Airings*.

Some of our modern managers, however, diſpute this; they ſay, that the cold of theſe times is too great for the creature, and that if, in particular, he is ſubject to catarrhs, rheums, or the like complaints, the dews and cold fogs, in theſe early and late *Airings*, will be apt to increaſe all thoſe diſorders. Nature, we ſee, alſo points out the ſun beams as of great uſe to theſe animals; thoſe which are kept hardy, and lie out all night, always running to thoſe places where the ſunſhine comes, as ſoon as it appears in a morning.

This ſhould ſeem to recommend thoſe *Airings* that are to be made before ſun-ſet, and a little time after ſun-riſe; and as to the caution, ſo earneſtly inculcated by Markham, of uſing theſe early and late *Airings* for fat horſes, it is found unneceſſary by many; for they ſay, that the ſame effect may be produced by *Airings* at warmer times, provided only that they are made longer; and that, in general, it is from long *Airings* that we are to expect to bring a horſe to a perfect wind, and ſound courage. *Markham*'s Compl. Farrier. *Solleyſel*, Horſeman.

AJUGA, in botany, the name of a genus of plants, according to Linnæus, which are called by Tournefort, and other authors, *bugala*. *Linnæi*, Gen. Plant. p. 263. See BUGALA.

AJURU-CATINGA, in zoology, the name of a Braſilian parrot. It is of the ſize of a pullet, and is all over of a very fine bright green; its eyes are red, and the ſkinny circle about them is white; its beak and legs are alſo white. *Margrave*, Hiſt. Braſil.

AJURU-CURAU, in zoology, the name of a Braſilian ſpecies of parrot, of the ſize and ſhape of the common green parrot, of which there are two kinds. The firſt an extremely beautiful one, with a blue crown; the throat and ſides of the head are of a fine yellow, and all the reſt of the body of a chearful green; the long wing-feathers are half black, and half of a fine ſtrong yellow, and at their ends variegated with blue and green; and the tail edged with red, black, and blue.

The other kind has the ſame colours differently diſpoſed; its head is yellow, with a whitiſh caſt; the throat and ſides of the head about the eyes are of a clearer yellow; and there is a ſea-green ſpot near the head.

Beſide theſe, there is alſo yet another variety, the ſpecies of which have all the colours of the firſt kind, but have an admixture of black about the head, a yellow ſpot on the crown, another of the ſame colour below the eyes, and a blue one under the throat. *Ray*, Ornithol. p. 76.

AJURU-PARA, in zoology, the name of a Braſilian ſpecies of parrot, of a ſmall ſize, all over of a beautiful green, and with white legs, a white beak, and white ſkinny circles round its eyes. *Margrave*, Hiſt. Braſil.

AIZOON, in botany, a name given by ſome authors to houſeleek. *Chabræus*, p. 538.

ALA, (*Cycl.*) in botany, a name given, by the Latin writers of medicine, in the later ages, to the *helenium*, or elecampane. Iſidore, ſpeaking of the aromatic herbs in common uſe in his time, mentions *helenium*, or elecampane, which, he ſays, was vulgarly called *Ala*. The modern Spaniards and Portugueſe call it *Alla*. And Macer gives *Inula* as the true name of the elecampane plant; but ſays, that the common people of his time called it *Ala*, and the phyſicians *helenium*. Pliny mentions a plant called *Alum*; but this was of a very different genus, being, according to his own account, a ſpecies of wild garlic, growing in the fields and under hedges. In another place he gives *Alum*, or *Alus*, as a name uſed by the Romans for the plant called by the Greeks *ſymphytum petræum*, or rock comfrey. It is probable that the two former of theſe plants obtained the names *Ala* and *Alum*, *ab halando*, from ſmelling very ſtrong; the one being uſed for its ſweet ſmell, and the other known by its ſtrong odour. *Pliny*, l. 26.

ALA has ſeveral other different ſignifications. It moſt frequently is uſed to expreſs the hollow of the ſtalk of a plant, which either the leaf, or the pedicle of the leaf, make with it; or it is that hollow turning, or ſinus, placed between the ſtalk, or branch of a plant, and its leaf, from whence a new offſpring is wont to put forth. Sometimes it is taken alſo for a little branch, as when we ſay, a ſtock, or ſtem of a plant is armed with many *Alæ*; becauſe theſe ſmall branches ſtand out from it, in form of ſo many wings.

ALÆ is alſo uſed to ſignify thoſe petals, or leaves of the papilionaceous flowers, placed between thoſe others which are called the *vexillum* and the *carina*, which make the top and bottom of the flower. Inſtances of flowers of this ſtructure are ſeen in the flowers of peas and beans, in which the top leaf, or petal, is the *vexillum*, the bottom the *carina*, and the ſide ones the *Alæ*.

ALÆ is alſo uſed for thoſe extremely ſlender and membranaceous parts of ſome ſeeds, which appear as wings placed on them, as in the *plumeria*, the fruit of the trumpet flower, the fruit of the maple, and the like, which are called by botaniſts *alated* ſeeds.

ALÆ is, finally, uſed alſo for thoſe membranaceous expanſions, which run all the way along the ſtems of ſome plants, which are therefore called *alated* ſtalks. *Miller*'s Gard. Dict.

ALÆ, in anatomy, is ſometimes applied to the armpits, otherwiſe called *axillæ*. Theſe parts abound with glands, and are great receptacles of humours; whence a rank ſmell ſometimes exhales, called *fœtor alarum*. *Caſtel.* Lex. Med.

ALA is alſo applied to the proceſs of the *os ſphenoides*. See SPHENOIDES, *Cycl.*

ALABARCHA, in antiquity, a kind of magiſtrate among the Jews of Alexandria, whom the emperors allowed them to elect, to have the ſuperintendency of their policy, and decide differences and diſputes which aroſe among them.

The origin is much conteſted; ſome derive it from the Hebrew *Hereb*, a mixture, or mob of people, and ſuppoſe it to have been given by the gentiles of Alexandria, in the way of deriſion [a]. Others derive it from *Alaba*, ink; on which footing, *Alabarcha* is ſuppoſed to import a ſecretary, or collector of duties on cattle carried out of the country: or, as others think, an officer like our *agiſtor*, who had the care of the cattle taken to graze in the king's foreſt, and collected the money due for the ſame [b]. Fuller deduces it from the Hebrew or Syriac *Halaph* and *Arcin*, *q. d.* intendant, or delegate of the ſovereign. Rhenferd rather chuſes to fetch it from *Harab*, a rabbin, or doctor of the law, and the Greek, Αρχης, chief. Le Clerc thinks it may come from Αραβος, noiſe, or tumult, as denoting the chief of a noiſy, or tumultuous people, ſuch as the Jews were repreſented to be.—[a Bibl. Anc. Mod. T. 17. p. 112. b *Calv.* Lex. Jur. p. 57. *Pitiſc.* Lex. Ant. T. 1. p. 67.]

Some are not ſatisfied with any of theſe origins: it is certain the dignity of *Alabarch* was pretty common in Egypt, being mentioned by Juvenal [c]; and that the emperors Valens, Gratian, and Theodoſius, ſpeak of certain cuſtoms, or impoſts on ſalt, in Egypt, called *Alabarchia* [d]. It is not improbable therefore, that the word originally ſignified an Egyptian officer, who had the inſpection of the duty on ſalt; and that it was afterwards given, by way of contempt, to the chief, or governor of the Alexandrian Jews [e].—In this view, *Alabarcha* will derive its origin from the Greek, αλς, ſalt, and αρχης, chief.—[c *Juv.* Sat. 1. v. 129. d V. *Pitiſc.* Lex. Ant. T. 1. p. 67. *Calv.* Lex. Jur. p. 57. e *Calmet.* Dict. Bibl. T. 1. p. 84.]

In this ſenſe *Alabarcha* amounts to the ſame with what is otherwiſe called *Arabarcha*, ſometimes *Genarcha*, and ſometimes alſo *Ethnarcha*; though Bacchius thinks, that the *Ethnarch* and *Alabarch* were originally different officers. Giorn. de Letter d'Ital. T. 22. p. 69. See ETHNARCHA, *Cycl.*

Rhenferd has a diſſertation expreſs on the Jewiſh *Alabarcha*, in Op. Philol. diſſ. 14. An extract of it is given in Bibl. Anc. Mod. T. 17. p. 111.

ALABASTER (*Cycl.*)—It is diſputed to what claſs of ſtones *Alabaſter* is to be referred. Agricola ranks it among marbles [a]; to which Hoffman objects [b], on account of the ſoftneſs of *Alabaſter*, which rather ſeems to claim a place for it among earths. Yet Schroeder [c], and ſome others, conſider it as a crude, or imperfect kind of marble.—[a De Nat. Foſſ. l. 7. b Paralip. Offic. c. 72. c Pharmac. l. 3. c. 8.] See ALABASTRITÆ.

The fineneſs and clearneſs of this ſtone, renders it, in ſome meaſure, tranſparent; whence it has been ſometimes alſo employed for windows. There is a church at Florence ſtill illuminated by *Alabaſter* windows; inſtead of panes of glaſs, there are ſlabs of *Alabaſter* near fifteen feet high, each of which forms a ſingle window, through which the light is conveyed. *Monfauc.* Dial. Ital. ap. Nouv. Rep. Lett. T. 28. p. 137.

Naturaliſts alſo mention divers extraordinary kinds of *Alabaſter*, *ſoft*, *yellow*, *variegated*, *Indian*, *Caramanian*, *German* [d], &c. Grew [e] ſpeaks of a *baſtard Alabaſter*, ſpotted, which he calls *Gypſum variegatum*, whereof there are divers ſorts and colours in the repoſitory of the Royal Society. Theſe all make a ſtrong efferveſcence with ſpirit of nitre.

They are found in Burgundy, Miſnia, &c. Of theſe lightly burnt, is made that which is popularly called plaiſter of Paris. —[d *Grew*, Muſ. P. 3. ſec. 1. c. 6. p. 319. *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 1. It. T. 2. p. 6. *Ruland.* Lex. *Ferrant. Imperat.* Hiſt. Nat. l. 24. c. 13. ſeq. e Muſ. Reg. Soc.]

Antient authors ſpeak much of the medicinal virtues of *Alabaſter*, as a diſcutient f. Some recommend it as a ſpecific in a dyſentery g. But modern phyſicians ſcarce allow it in either of thoſe characters. Yet ſome diſpenſatories ſtill retain a preparation of it, under the title of *Unguentum Alabaſtrinum*, preſcribed for the head-ach h.—[f *Nicol.* Lapid. P. 3. c. 66. p. 217. g *Boot.* de Gem. l. 2. c. 270. h *Burgr.* Lex. Med. p. 374. ſeq. *Zuing.* Comp. Medic. p. 553.]

ALABASTER is alſo uſed for a vaſe, wherein odoriferous liquors were antiently put. *Gorr.* Def. Med. p. 19. *Pitiſc.* Lex. Ant. T. 1. p. 67. *Calm.* Dict. Bibl. p. 174. ſeq.

The reaſon of the denomination is, that veſſels for this purpoſe were frequently made of the *Alabaſter* ſtone, which Pliny, and other antients, repreſent as peculiarly proper for this purpoſe.

Several critics will have the box mentioned in the goſpels as made of *Alabaſter*, to have been of glaſs a. And though the texts ſay, that the woman broke it, yet the pieces ſeem miraculouſly to have been united, ſince we are told, the entire box was purchaſed by the emperor Conſtantine, and preſerved as a relick of great price b.—[a *Caſaub.* Exerc. 14. §. 13. p. 244. Jour. des Scav. T. 3. p. 77. It. T. 25. p. 604. Miſc. Lipſ. T. 11. obſ. 228. p. 177. ſeq. *Calm.* Dict. Bibl. p. 174. b *Baron.* An. c. 32. *Suid.* Lex. Miſ. Lipſ. loc. cit.]

Others will have it, that the name *Alabaſter* denotes the form, rather than the matter of this box. In this view they define *Alabaſter*, by a box without a handle, deriving the word from the privative α and λαβη, *anſa*, handle.

ALABASTER is alſo ſaid to have been uſed for an antient liquid meaſure, containing ten ounces of wine, or nine of oil. *Epiphan.* ap. Beverin. de Ponder. & Menſur. p. 115.

In this ſenſe, the *Alabaſter* was equal to half the ſextary.

ALABASTRA, (*Cycl.*) in botany, amount to the ſame with calyx, or flower cup, before it be expanded. What Pliny calls *Alabaſtra*, an antient poet calls *pyramides*. The denominations are taken from the form of the antient ungent veſſels, which the young flower in this ſtate reſembled. *Hardouin.* in Not. ad Plin. loc. cit.

Some, with Jungius, explain *Alabaſtra*, by the globe, or roundiſh bud of the roſe juſt peeping out. *Mill.* Gard. Dict. in voc.

ALABASTRITÆ, *Alabaſters*, in natural hiſtory, the name of a genus of foſſils allied to the marbles, and defined to be ſtones compoſed of large ſeparate concretions, of great brightneſs, and an elegant, but ſhattery ſtructure, not very hard, not giving fire with ſteel, fermenting with and ſoluble in acids, and calcining in a ſlight fire.

Of this genus we have only three known ſpecies.

1. A white, ſhattery, lucid kind, called *Lygdine* marble by the antients. See LYGDINUM *marmor*.

2. A bright, ſhattery, yellowiſh white one, called *Phengites* by the antients. See PHENGITES.

3. A yellow and reddiſh variegated ſhattery kind, which was what they called ſimply *Alabaſter*. See ALABASTER, *Cycl.* and *Suppl.*

The *Alabaſter* of the antients was therefore a very different ſubſtance from what our workmen commonly call by that name, which is any ſpecies of white marble; though ſome of them have alſo called this the oriental alabaſter.

It is a very remarkably bright glittering and pellucid ſtone, of an extremely elegant, but very ſhattery texture, but of a moſt extremely agreeable variety and diſpoſition of colours. Its ground is a fine clear pale yellow, between that of honey and amber, pellucid and bright as the phengites, and of the ſame ſhattery ſtructure. It is beautifully variegated with arched and undulated veins, ſome broader and others narrower, and ſome of a pale reddiſh hue, others whitiſh, and others of a very agreeable pale brown. The whole makes a very elegant ſtone, and though but ſoft and friable, yet is capable of a very fine poliſh. It is found in Egypt at this time, as it was alſo in the times of the antients; but we have alſo great abundance of it in Cornwal, and ſome other parts of England.

The antients called this ſtone alſo *onyx*, and *marmor onychites*, partly from its having its variegations diſpoſed in a ſort of onyx order, and partly from its being uſed like the gem of that name, for making boxes for perfumes, &c. V. *Hill*'s Hiſt. of Foſſ. p. 492.

ALABASTRITES is often uſed as ſynonymous with *Alabaſter*. But Anſalmus Boetius diſtinguiſhes between *Alabaſter* and *Alabaſtrites*, in making the criterion of the former to be ſo ſoft, that it may be cut with a knife; and of the latter, that it is ſo hard that it cannot be ſo cut. *Nicol.* Lapid. P. 3. c. 69. p. 215.

Grew ſpeaks of a ſort of *Alabaſtrites*, repreſenting the tranſverſe ſection of the trunk of a tree. *Grew*, Muſ. Reg. Societ. P. 3. ſec. 1. p. 268.

ALABASTRUM *dendroide*, in natural hiſtory, a name given by authors to a ſpecies of alabaſter, found in great abundance in the province of Hohenſtein, and famous for the elegant delineations of trees, and other figures deſcribed in it. It is a foſſil ſtone, and often is compoſed of laminæ, ſo thin as ſcarce to equal thick paper; theſe eaſily part horizontally from one another, and may be ſeparated in divers thickneſſes. Theſe all ſhew, on both ſides, beautiful landſcapes. The delineations of trees, ſhrubs, and herbs, are all in black. Theſe are moſt elegantly regular, and are ſeen growing on the banks of rivers, on rugged mountains, or from the ruins of old buildings; all which are figured with great elegance. Over theſe there is a repreſentation of clouds, of various forms and figures, and of all the natural colours, black, white, blueiſh, and tinged in ſeveral parts with ſtreaks of fire colour. The colours in theſe very often repreſent all the beauties of the clouds painted by a ſetting ſun. Other pieces frequently repreſent vaſt caverns in the earth, natural caſcades of rivers, and almoſt infinite variety of other natural proſpects, with the ſame regularity and beauty. The colours are principally grey, black, reddiſh, and white. *Ritter.* de Alabaſt.

ALACUOTH, among Arabian phyſicians, an infirmity of the nerves, whereby a perſon in the act of venery, lets go at the ſame time his *fæces*. *Aviſen.* ap. Caſtel. Lex. Med. p. 27.

ALADINISTS, a ſect among the Arabs, anſwering to free-thinkers among us.

The *Aladiniſts* multiplied greatly under the two learned kings Almanſor and Miramolinus. *Naud.* Arcan. Stat. c. 4. p. 372.

ALALCOMENIUS, in antient chronology, the Bæotian name for the Athenian month *Mæmacterion*, which was the fourth of their year, and anſwered to the latter part of our September and beginning of October. See the articles MÆMACTERION and MONTH.

ALAMANNICUM, in antiquity, a tribute impoſed on the people by the emperor Alexias Angelus, for raiſing the ſum of ſixteen talents of gold, to be paid the *Alamanni*, as the conditions of a peace ſtipulated with them. *Du Cange*, Gloſſ. Græc. T. 1. p. 48.

The eccleſiaſtics themſelves were not exempted from this tax. *Nicet.* in Alex. l. 1. n. 8.

ALAMODALITY, *Alamodalitas*, is defined, by a late writer, a ſtudy, or endeavour to accommodate a man's ſelf in point of behaviour, dreſs, converſation, and other actions of life, to the reigning taſte of cuſtom, from a motive of complaiſance, and to avoid the imputation of ill-breeding.

ALAMODALITY *of writing*, *Alamodalitas ſcribendi*, is defined, by the ſame perſon, a particular ſtudy, or endeavour of learned men to adapt the productions of their minds, both as to the choice of ſubject, and the manner of treating it, to the genius or taſte of the times, in order to render them more acceptable to the readers.

A German writer, under the name of Geamoenus a, has a diſſertation expreſs on *Alamodality* in writing, which he even maintains to be, in ſome meaſure, *jure divino*, from a precept of St. Paul b, which, according to ſome good MSS. and learned commentators, is to be read, *ſerving the time*, Τω καιρω δουλευοντες; though the Engliſh tranſlators follow another reading, and for καιρω, ſubſtitute Κυριω, *the Lord*. This writer enlarges on the neceſſity of conforming to the taſte of the time, and traces the different taſtes and faſhions of writing, which have had their turn in Germany, from Luther to the preſent time, viz. the Polemic, the Aſcetic, the Satyric, the Romantic, the Moral, the Hiſtorical, and the Philological, which have each had their age, or period.—The ſame diverſity he obſerves to have prevailed in the manner of writing, preaching, &c. Luther's time he calls the Heroic age, which was ſucceeded by the Synthetic, or Schematic, and that by the Laconic, or Sententious, which he calls the Engliſh method. The laſt was the age of Journals, or periodical pieces, the preſent may be called the Dictionary age.—[a *Geamoeni*, de Alamodalitate Scribendi, ap. Miſc. Lipſ. T. 5. obſ. 99. An extract of it is given in Jour. des Scav. T. 65. p. 6. ſeq. b Rom. *c.* 12. *v.* 11.]

A LA MODE, (*Cycl.*) a phraſe originally French, importing a thing to be in the faſhion, or mode.

The phraſe has been adopted not only into ſeveral of the living languages, as the Engliſh and High-Dutch, but ſome have even taken it into the Latin. Hence we meet with *Alamodicus* and *Alamodalitas*. A learned German a has a ſerious enquiry whether it be lawful to dance *Alamodicé*, by which he means French dancing. Zach. Grapius has a diſſertation expreſs on *Alamodic*, or artificial ſermons b.—[a Nov. Liter. Lubec. 1705. p. 3. b Roſtoc. 1704. An extract is given in Nov. Liter. Lub. 1704. p. 261. ſeq.]

Writers on cookery give the preparation of *Alamode*, or larded beef. *Collins*, Salt and Fiſh. p. 132.

ALANFUTA, in the Arabian phyſic, the name given to a vein between the chin and under lip, antiently uſed to be opened

againſt a ſtinking breath. *Avicen.* ap. Caſt. Lex. Med. p. 27.

ALAPOULI, in natural hiſtory, the name of an Eaſt-Indian tree, a ſpecies of the bilimbi, which is uſed in medicine as a purge and vomit, mixt with the ſeeds of muſtard. *Bout.* Med. Ind.

ALAQUECA, a medicinal ſtone brought from the Indies, in ſmall gloſſy fragments; much praiſed by ſome for its efficacy in ſtopping hæmorrhages, when applied externally. *Lemer.* Dict. des Drog. in voc. and *Boyle's* Works Abr. Vol. 1. p. 79.

ALARAF, in the Mahometan theology, the partition wall that ſeparates heaven from hell.

The word is plural, and properly written *Al Araf*; in the ſingular it is written *Al Arf*. It is derived from the Arabic verb *Arafa*, to diſtinguiſh. *Sale*, Prelim. Diſc. to Koran. Sect. 4. p. 94.

Al Araf gives the denomination to the ſeventh chapter of the alcoran, wherein mention is made of this wall; Mahomet ſeems to have copied his *Al Araf*, either from the great gulf of ſeparation mentioned in the new teſtament, or from the Jewiſh writers, who alſo ſpeak of a thin wall dividing heaven from hell.

Mahometan writers differ extreamly, as to the perſons who are to be found on *Al Araf*. Some take it for a ſort of Limbus for the patriarchs, prophets, *&c.* others place here ſuch whoſe good and evil works ſo exactly balance each other, that they neither deſerve reward nor puniſhment. Others imagine this intermediate ſpace poſſeſſed by thoſe, who going to war without their parents leave, and ſuffering martyrdom there, are excluded paradiſe for their diſobedience, yet eſcape hell becauſe they are martyrs. Id. ibid. p. 95.

ALARM (*Cycl.*)—*Alarms* are either true, that is, founded on juſt notice, or falſe.

Falſe ALARMS are frequently given by an enemy, either to fatigue the other's army, or by way of diverſion; to keep themſelves ſafe and quiet from attacks. To remedy the inconveniences of formal *Alarms*, and prevent the horror, and confuſion of trumpets, and noiſe of warlike cries, the captains uſually give the *Alarm*, by ſilent advice, without noiſe. *Cruſ.* Milit. Inſtruc. for Cavalr. P. 3. c. 8.

Falſe Alarms are ſometimes occaſioned by fearful or negligent centinels; and ſometimes deſignedly by diligent officers, to try the diſpoſition and readineſs of the guards. In war the piquet guard has been often called out haſtily, by way of trial, what might be expected from them, in caſe of real danger. *Guill.* Gent. Dict.

Falſe Alarms have been ſometimes, for reaſons of ſtate, propagated deſignedly through a whole nation; ſuch was the *Alarm* of the Iriſh invaſion in 1688, which in one night ſpread thro' the whole iſland: ſuch alſo was that of the Moreſcoes in Spain, which in one day run thro' that vaſt kingdom, tho' founded on nothing: one city or town gave the *Alarm* to another, all were deceived and deceivers in their turn. *Gedd.* Miſcell. Tract. T. 1. p. 155.

The *Alarm*-place, in a camp, garriſon, or the like, is alſo called the *Rendezvous*. V. *Cruſ.* Milit. Inſtruct. Caval. P. 3. c. 5. p. 32. See RENDEZVOUS, *Cycl.*

ALARM, in fencing, denotes a ſtep, or ſtamp made on the ground with the advancing foot.

This coincides with what is otherwiſe called an appel, or challenge.

In practice, the *Alarm* is frequently diſadvantageous, as it retards the motion of the feint, and gives the adverſary a better opportunity to parry it. When only a ſlow feint is intended to ſift, and try the adverſary how it will take with him, the motion of the ſword hand, may in this caſe, be attended with the appel, or *Alarm* of the advanced foot; but for a feint, where execution is really intended to follow, the *Alarm* is beſt let alone. *Hope*, New Meth. of Fenc. c. 4. p. 102.

ALARM is alſo uſed for an inſtrument to awaken perſons at a certain hour: one very ſimple contrivance of this kind, is that uſed by weavers. See WEAVER'S *Alarm*.

ALARM-*Bell*, that which is rung to call the people together on ſome ſuch occaſion as a fire, mutiny, or the appearance of an enemy. This is what the French call *Toeſin*.

ALASCANI, in church hiſtory, a ſect of Antilutherans, whoſe diſtinguiſhing tenet, beſides their denying baptiſm, is ſaid to have been this, that the words, *This is my body*, in the inſtitution of the euchariſt, are not to be underſtood of the bread, but of the whole action, or celebration of the ſupper.

They are ſaid to have taken the name from one Joannes a Laſco, a Poliſh baron, ſuperintendent of the church of that country, in in England. *Prateol.* Elench. Hæret. l. 1. p. 28.

ALASTROB, among alchemiſts, denotes lead [a]; tho' ſome will have it to ſignify calx [b].—[[a] *Rul.* Lex. Alch. p. 25. [b] *Johnſ.* Lex. Chem. p. 12.]

ALATED quadrupeds. See the article QUADRUPED.

ALATERNUS, in botany, the name of a genus of trees, the characters of which are theſe. The flower conſiſts only of one leaf, and is of a funnel like ſhape, divided into four ſegments, and of a ſort of ſtellar form; from the bottom of this flower there ariſes a piſtil, which finally becomes a fruit or berry, uſually containing three ſeeds, which are gibboſe on one ſide, and angular on the other.

The ſpecies of *Alaternus* enumerated by Mr. Tournefort are theſe. 1. The common tall *Alaternus*. 2. The *Alaternus* with ſmaller leaves. 3. The golden *Alaternus*, or *Alaternus* with leaves variegated with a bright yellow. 4. The ſilvery *Alaternus*, or *Alaternus* with leaves variegated with white. 5. The Montpelier *Alaternus*, with deeply divided leaves. 6. The ſmall box-leaved *Alaternus*. 7. The broad leaved Spaniſh *Alaternus*. 8. The thorny box-leaved American *Alaternus*. *Tournef.* Inſt. p. 595.

ALAUDA, in zoology, the name of a genus of birds, called in Engliſh larks, and diſtinguiſhed from others of the ſlender beaked ſmall birds, by having the claw of their hinder toe of a very remarkable length, and by ſinging very ſweetly as they fly to vaſt heights in the air. We have in England, four ſpecies of this bird.

1. The common *Lark*. 2. The wood *Lark*. 3. The tit-*Lark*. And 4. The ſmall creſted *Lark*. And beſide theſe there are ſeveral exotic ſpecies of birds, properly reducible to this genus as the *Locuſtella*, *Calandra*, *Spipola*, *Spipoletta*. See LOCUSTELLA, *&c.*

The common lark is well known, and not leſs eſteemed for its delicacy at table, than for its ſinging. It is very fat in winter, and taken in prodigious numbers; it builds on the ground, and lays four or five eggs.

The wood lark is ſmaller than the common lark, and is ſhorter bodied; it generally flies in large flocks, and as it is in the air ſings with a voice more like that of the blackbird, than of the common lark. It has a circle of white feathers like a crown, reaching from one eye to the other acroſs the head; the tip of its tail is white; and it ſits on trees. Theſe are its diſtinctions from the common lark.

The tit-lark is called by authors the *Alauda pratorum:* this ſits upon trees like the wood lark, is ſmaller than the common lark, and has more of a duſky greeniſh hue, and is leſs beautiful in its colour than the common lark. It is thought that we have in England, beſide the common ſpecies of tit-lark, another kind, which differs from the common kind, in that it is larger, has leſs greenneſs in its colouring, has paler coloured feet and ſhorter heels.

The laſt or creſted lark, is the *Alauda criſtata minor* of authors: this is like the large foreign creſted larks, but is much ſmaller; its creſt is very long in proportion to its ſize, and its feet are red. It is all over of a pale brown colour, and is ſeen in flocks in the northern parts of England. *Ray*, Ornithol. p. 149—152. See LARK.

In the Linnæan ſyſtem of zoology, the *Alauda*, or lark, makes a diſtinct genus of birds, of the order of the *Paſſeres*: the characters of which are, that the tongue has a rim or margin round it, and is membranaceous and pointed; the beak is ſtrait and pointed; the maxillæ equal in ſize; and the claw of the hinder toe is longer than any of the other toes. *Linnæus*, Syſtem. Nat. p. 49.

ALAUDA *non criſtata*, a name by which ſome of the authors in ichthyography have called the *Galletto*, commonly called in Engliſh the bullard. *Rondelet*, De Piſc.

ALAUDA *marina*, the ſea lark, in zoology, a name by which French authors uſually call the bird, known in Engliſh by the name of the ſtint. See STINT.

ALB (*Cycl.*)—*Albs* were not only worn by prieſts, but even by laymen living in monaſteries. *Du Cange*, Gloſſ. Lat. in voc. *Alba*.

The *Alb* is otherwiſe called *Camiſia Poderis Talaris*, and *Subucula*.—In the Roman order it is denominated *Linea dalmatica*.

The ſacerdotal *Albs* were ſometimes variouſly enriched with embroidery, *&c.*

Paſchal ALB, *Alba Paſchalis*, that wherein the biſhop antiently appeared during the ſolemnities of Eaſter, and even of other holy days. Id. Ibid.

ALB is alſo uſed for the white garment, worn in the antient church by thoſe newly baptized, as a mark of the innocence and purity which they profeſſed. *Du Cange*, in voc.

The wearing a garment of this colour was to denote their having paſſed out of darkneſs into light; the catechumens were plunged naked into the font, and at their emerging were habited in *Albs* at the expence of the church. Theſe they wore for eight days, during which time they were called *Albati*, and *in Albis poſiti*.—The laying down the *Alb* on the eighth day, was performed with ſome ceremony. *Clem. Alexand.* Pædag. l. 1. c. 6.

ALBS, *Albæ*, is ſometimes uſed in eccleſiaſtical writers for what we call Eaſter-week.

It takes the name hence, that the antient Neophytes, baptized on Eaſter-day, wore *Albs* this week; the Sunday enſuing is ſtill called in divers liturgies, *Dominica in Albis*.

The diſtribution of *Agnus Dei*'s is performed with great ceremony on the Sunday in *Albis*. *Du Pin*, Bibl. Eccleſ. T. 18. p. 68. ſeq. See AGNUS *Dei*.

ALB is alſo uſed to denote a Turkiſh coin, otherwiſe called *Aſper*. *Bobov.* on Turk. Liturg. Sect. 3. p. 123. *Hyde*, Not. ad Eund. See ASPER, *Cycl.*

ALBA *Terra*, among alchemiſts, denotes the philoſopher's ſtone, compounded of mercury and ſulphur. Theat. Chem. T. 4. p. 721, 727. ſeq. ap. *Caſt.* Lex. Med. p. 28.

ALBAHURIM, in the Arabian aſtrology, a figure of ſixteen ſides, anſwering to the moons courſe, from the beginning of a diſeaſe to its end. *Vital.* Lex. Math. p. 16. ſeq.

This is otherwiſe called by Latin writers, *Figura ſexdecim Laterum*.

The *Albahurim* is a matter of capital conſideration among the aſtrological phyſicians, who, on this, ground their critical

tical days; particular attention it ſeems is to be had to the ſtate of the patient on thoſe days, when the moon is in the angles of the *Albahurim*: from theſe chiefly are their prognoſticks taken. *Vital.* Lex. p. 16. and p. 188.

ALBANENSES. (See ALBIGENSES, *Cycl.*)—Some will have theſe to have been the ſame ſect, others different; but they who are for the diverſity attribute the ſame opinions to both: only making the *Albanenſes* to have been prior in reſpect of time, as having been found towards the cloſe of the VIIIth century, whereas the *Albigenſes* appeared not till the XIIth century. *Prateol.* Elench. l. 1. Tit. 22. p. 17. ſeq. *Du Cange*, Gloſſ. Lat. T. 1. p. 122. ſeq.

ALBANI, in middle aged writers, denotes ſtrangers or foreigners; anſwering to what we call aliens. *Du Cange*, Gloſſ. Lat. T. 1. p. 123. ſeq.

The origin of the word is deduced by Walafrid Strabo [a], from the Scotiſh nation, which was antiently called by the name *Albani*; and being ſuch determined ramblers into other countries, the word became an appellative: ſo that an Alban and a foreigner became ſynonymous terms. And hence alſo ſome, not improbably, derive the French *Aubain* [b].—[a In Vit. S. Gal. l. 2. c. 47. b *Trev.* Dict. Univ. T. 1. p. 256.]

ALBANI, in antiquity, a college of *Salii* or prieſts of Mars, inſtituted by Tarquin, and denominated from mount *Albanus*, the place of their reſidence. V. Ouvr. des Scav. Jan. 1709. p. 27.

ALBANUM, among chemiſts, denotes ſalt of urine. *Rul.* Lex. Alch. p. 25.

ALBARA or ALBORA, among phyſicians, a mixt ſpecies of malignant itch, compounded of the morphew, ſerpigo, and lepra. *Paracelſ.* de Ulcer. c. 42. ap. *Caſt.* Lex. Med. p. 28.

The *Albora* partakes moſt of the nature of the leproſy; ſome make it the ſame with the leuce, vitiligo, or morphew. *Walth.* Sylv. Med. p. 1059.

ALBARDEOLA, in zoology, a name given by many authors to the platea, or ſpoon-bill; a bird approaching to the nature of the heron. See PLATEA.

ALBARII, in antiquity, properly denoted thoſe who gave the whitening to earthen veſſels, *&c.* In which ſenſe they ſtood contradiſtinguiſhed from *dealbatores*, who whitened walls. *Baxt.* Gloſſ. p. 76.

ALBARIUM *Opus*, in the antient building, the incruſtation or covering of the roofs of houſes with white plaiſter, made of mere lime.

This is otherwiſe called *opus album.* It differs from *tectorium*, which is a common name given to all roofing or ceiling, including even that formed of lime and ſand, or even lime and marble; whereas *Albarium* was reſtrained to that made of lime alone. *Pitiſc.* and *Du Cange*, in voc.

ALBATI *Equi*, in antiquity, was a denomination given to thoſe horſes in the games of the *Circus*, which were diſtinguiſhed by white cloths or furniture. *Aquin.* Lex. Milit. T. 1. p. 37.

In which ſenſe, *Albati* ſtands contradiſtinguiſhed from *Ruſſati*, *Praſini*, and *Veneti*.

Several authors have miſtakenly ſuppoſed that *Albati* referred to the colour of the horſes; whereas in reality *Equi Albati*, might be of black, brown, or other colour.

ALBELEN, in zoology, the name of a fiſh of the truttaceous kind called alſo *Albula*, and much reſembling the *Ferra*. It is caught in the German and other lakes, and is found from five or ſix to twelve pound weight, but that more rarely. Its colour is a fine ſilvery white, whence it has its name, but it is a little way on the back browniſh and duſky. The head is ſmall; the mouth of a moderate ſize, and without teeth; the eyes are moderately large, and ſilver coloured; the belly, from the firſt to the ſecond pair of fins, is flatted a little, not running to an edge; the ſides are divided by a dotted line running from the head to the tail, and nearer the back than the belly. It is a fine firm and well taſted fiſh. *Willughby*'s Hiſt. Piſc. p. 184.

ALBELLUS. See the article MERGUS.

ALBERTISTS, a ſect of ſcholaſtics denominated from their leader *Albertus Magnus*. *Thomas* Introd. Phil. Aul. c. 1. §. 64. *Reinhard.* Hiſt. Philoſ. p. 132.

ALBESIA, a kind of ſhield uſed by the antient *Albenſes*, a nation of the Marſi. *Feſt.* in voc.

Theſe were otherwiſe called *Decumana*, as being very large; reſembling the *fluctus Decumani*.

ALBICILLA, in natural hiſtory, a name given by ſome authors to that ſpecies of eagle commonly called *Pyrargus*, from the whiteneſs of part of its tail. *Willughby*'s, Ornithol. p. 31.

ALBIGENSES (*Cycl.*)—This ſect had their name, it is ſuppoſed, either by reaſon there were great numbers of them in the dioceſe of Albi, or becauſe they were condemned by a council held in that city. In effect it does not appear that they were known by this name, before the holding of that council. *Limborch*, Hiſt. Inquiſ. l. 1. c. 8. Bibl. Univ. T. 23. p. 372. It. T. 20. p. 202.

The *Albigenſes* were alſo called *Albiani*, *Albigeſei*, *Albii*, and *Albanenſes*, tho' ſome diſtinguiſh theſe laſt from them. *Thomaſ.* Hiſt. Sapient. & Stult. p. 46. See ALBANENSES.

Other names given to them are, Henricians, Abelardiſts, Bulgarians, *&c.* ſome on account of the qualities they aſſumed; others on that of the country, from whence it is pretended they were derived; and others on account of perſons of note, who adopted their cauſe, as Peter de Brius, Arnold de Breſſe, Abelard, Henry, *&c.* Berengarius, if not Wickliff himſelf, is by ſome ranked in the number. Jour. des Scav. T. 3. p. 330. ſeq. Bibl. Univ. T. 3. p. 33.

The *Albigenſes* are frequently confounded with the *Waldenſes*, from whom however they differ in many reſpects, both as being prior to them in point of time, as having their origin in a different country, and as being charged with divers hereſies, particularly Manicheiſm, from which the *Waldenſes* are exempt. *Limborch*, loc. cit. Ouvr. des Scav. Mai. 1693. p. 508. Mem. de Trev. 1713. p. 703. Act. Erud. Lipſ. 1693. p. 324. See VAUDOIS, *Cycl.*

Several proteſtant writers have vindicated them from that imputation. And ſome, inſtead of heretics, find not only forerunners of the reformation in them, but ſaints and martyrs. Certain authors even aſſert to find them prefigured, among the heavenly hoſt, in the apocalypſe. Yet Limboreh finds himſelf obliged, from certain acts of the inquiſition of Thouloufe, paſſed between the years 1307 and 1323, publiſhed in 1692, to allow in part the Manicheiſm of the *Albigenſes*.

In order to this, he diſtinguiſhed two kinds of *Albigenſes*; one tainted with that hereſy, the other orthodox. Some however except againſt any concluſion drawn from the faith of theſe acts, in as much as they were made by their profeſſed enemies, perſons who were under a neceſſity to repreſent them as highly criminal; in as much as they were reſolved to put them to death. The truth rather ſeems on Dr. Allix's ſide, who ſhews, that a great number of Manichees, did ſpread over the weſtern countries from Bulgaria, and ſettled in Italy, Languedoc, and other places, where there were alſo *Albigenſes*; by which means being both under the imputation of hereſy, they came, either by ignorance or malice, to be confounded, and called by the ſame common name, tho' in reality entirely different. *Allix*, Rem. Hiſt. Piedm. c. 15. Act. Erudit. Lipſ. 1691. p. 261.

At the beginning of the XIIIth century, they had intereſt enough to engage the kings of England and of Arragon, to defend them againſt the Croiſes. Peter king of Arragon was killed in a battle which he fought on their behalf; at the head of an army of an hundred thouſand men. The viſcount De Beziers, and the count De Thouloufe, rather choſe to loſe their dominions than abandon the *Albigenſes*. Philip Auguſtus king of France ſtill ſupported the croiſade; Louis VIII. marched in perſon againſt the *Albigenſes*, and St. Louis finiſhed their entire deſtruction, which was one of his chief titles to ſanctity. But the perſon who diſtinguiſhed himſelf moſt by his zeal and exploits againſt the *Albigenſes*, was Simon count De Montfort. The chief miſſionaries whoſe preachings ſupplied the army with Croiſes, were Arnaud arch-biſhop of Narbone, Guy biſhop of Carcaſſon, James De Vitri doctor of Paris, and St. Dominic, founder of the order of friars Predicants, and of the inquiſition. Mem. de Trev. 1704. p. 97. ſeq.

Other errors imputed to the *Albigenſes* by their opponents, the monks of thoſe days, were, that they admitted two Chriſts, one evil, who appeared on earth; the other good, who has not yet appeared. That they denied the reſurrection of the body, and maintained human ſouls to be dæmons impriſoned in our bodies, by way of puniſhment for their ſins; that they condemned all the ſacraments of the church, rejected baptiſm as uſeleſs, held the euchariſt in abhorrence; excluded the uſe of confeſſions and penance, maintained marriage unlawful, laughed at purgatory, prayers for the dead, images, crucifixes, *&c.* *Du Pin*, Bibl. Eccleſ. T. 11. p. 169.

With regard to their manner of living, we may conſider the *Albigenſes* as of two kinds, the perfect, and the believers. The former profeſſed to live in continence, abſtained from fleſh, eggs, cheeſe, abhorred lying, and never ſwore. The latter lived like other men, but were nevertheleſs perſuaded they ſhould be ſaved by the faith of the perfect, and that none of them who received impoſition of hands from theſe ſhould be damned. *Du Pin*, loc. cit.

See further concerning the hiſtory of the *Albigenſes*, *Prateol.* Elench. Hær. The perſecutions, wars, and croiſades raiſed againſt them, *Limborch*, Hiſt. Inquiſit. l. 1. c. 8. ſeq. Act. Erud. Lipſ. 1693. p. 324. ſeq. *Kuſter*, Bibl. Nov. Libr. T. 3. p. 33. *Du Pin*, Bibl. Eccleſ. T. 10. p. 166. Jour. des Scav. T. 26. p. 109. It. T. 28. p. 481. Bibl. Choiſ. T. 27. p. 42. Holy Inquiſ. c. 3. Sect. 1. p. 51. Ouvr. des Scav. Jan. 1694. p. 238. The lawfulneſs of perſecuting them, Jour. des Scav. T. 13. p. 105. Colloquies and councils againſt them, *Allix*, Rem. Hiſt. *Albigenſ.* c. 15. ſeq. Act. Erud. Lipſ. 1693. p. 173. The reality of their Manicheiſm defended, *Boſſuet*, Hiſt. des Variat. des Egliſ. Proteſt. l. 11. Act. Erudit. Lipſ. 1689. p. 159. Ouvr. des Scav. Sept. 1688. p. 82. Nouv. Rep. Lett. T. 14. p. 1262. Mem. de Trev. 1708. p. 1493. It. 1710. p. 959. It. 1711. p. 1637. It. 1713. p. 703. It. 1722. p. 702. Jour. des Scav. T. 76. p. 565. Their Manicheiſm refuted, *Allix*, ubi ſupra, c. 11. Act. Erud. Lipſ. an. 1693. p. 171. *Allix*, Rem. Hiſt. Piedm. c. 15. Act. Erud. Lipſ. 1691. p. 261. *Baſnage*, Hiſt. de la Relig. c. 4. & 5. Act. Erud. Lipſ. 1690. p. 399.

Ouvr. des Scav. Jan. 1690. p. 221. seq. Bibl. Choiſ. T. 27. p. 44. Their Manicheiſm admitted in part, *Limborch*, loc. cit. Act. Erud. Lipſ. 1702. p. 332. *Thomaſ.* Hiſt. Sapient. & Stult. c. 4. p. 44. Their merits as reformers, Act. Erud. Lipſ. 1693. p. 173. seq. Mem. de Trev. 1717. p. 1375. Bibl. Univ. T. 9. p. 33. As ſaints and martyrs, Hiſt. Crit. Rep. Lett. T. 4. p. 19. Jour. des Scav. T. 35. p. 385.

ALBIGENSES is alſo a name ſometimes given to the followers of Peter Vaud, or Waldo.

In this ſenſe, *Albigenſes* is ſynonymous with what we more properly call *Waldenſes*, or poor men of Lions. See WALDENSES, *Cycl.*

In this ſenſe is the word applied by Camerarius, Thuanus, and divers other writers. The reaſon ſeems to be, that the two parties agreed in their oppoſition to the papal innovations and incroachments, though in divers other reſpects ſaid to be different enough [a]. The biſhop of Meaux [b] labours hard to ſupport a diſtinction between the two ſects, alledging that the *Albigenſes* were heretics and Manichees, whereas the Waldenſes were only ſchiſmatics, not heretics; being ſound as to articles of faith, and only ſeparating from the church of Rome on account of ceremonies and diſcipline. Dr. Allix [c] endeavours to ſet aſide the diſtinction, and ſhews, that both of them held the ſame opinions, and were equally condemned and held for heretics; and this not for points of faith, but for declaiming againſt the papal tyranny and idolatry, and holding the pope to be the Antichriſt. Which laſt, according to M. de Meaux, conſtitutes nothing leſs than Manicheiſm. —[a *Thomaſ.* Hiſt. Sapient. & Stult. c. 4. p. 48. seq. b Ubi ſupra. c Rem. Hiſt. Piedm. c. 20. Act. Erud. Lipſ. 1691. p. 262. seq.]

In this ſenſe the Lollards and Wickliffites in England were not only Albigenſes, but Manichees. *Allex*, ubi ſupra, p. 201. seq. Act. Erud. Lipſ. 1693. p. 175.

ALBINI, in antiquity, the workmen employed in what was called *Opus Albarium*. See the article ALBARIUM *Opus*.

Theſe are otherwiſe denominated *Albarii*. They make a different profeſſion from the *Dealbatores*, or whiteners. *Pitiſc.* in voc. See ALBARII.

ALBITROSSE, the name of a large ſea bird, common about Jamaica, and in many other places. This is a thieviſh creature, and principally feeds on the prey which another ſea bird, called the *booby*, provides for itſelf.

It is ſaid that the head of the *Albitroſſe* changes from brown to a fine ſcarlet, while it ſits on its eggs, and afterwards becomes brown again.

ALBOGALERUS, in Roman antiquity, a ſacerdotal cap, or ornament, worn by the *flamen dialis*.

This is otherwiſe called *galerus*.

The *Albogalerus* was made of the ſkin of ſome white victim ſacrificed to Jupiter; on the top of which was a decoration of olive branches. *Feſt.* in voc.

ALBORAK, in the Mahometan theology, the beaſt on which the prophet rode, in his extraordinary aerial journies.

The word is Arabic, *Al-borak*, which literally denotes ſplendour; alluding to the extraordinary brightneſs of this beaſt [a]; or, as others ſay, to its great quickneſs, which was equal to that of lightning itſelf [b].—[a *D'Herbel.* Bibl. Orient. p. 578. b Life of Mahom. p. 47. seq.]

The Arab commentators give many fables concerning this extraordinary vehicle. It is repreſented as of an intermediate ſhape and ſize, between an aſs and a mule. A place, it ſeems, was ſecured for it in paradiſe, at the interceſſion of Mahomet; which, however, was, in ſome meaſure, extorted from the prophet, by *Alborak*'s refuſing to let him mount him, when the angel Gabriel was come to conduct him to heaven.

ALBORO, in zoology, a name by which the *erythrinus*, a ſmall red fiſh, caught in the Mediterranean, is commonly known, in the markets of Rome and Venice. *Willughby*, Hiſt. Piſc. p. 311. See the article ERYTHRINUS.

ALBUCUS, in botany, a name uſed by ſome for the white aſphodel. *Ger.* Emac. Ind. 2.

ALBUGINEA *tunica*, (*Cycl.*) in anatomy, is the third coat of the teſticles; ſo called from its colour, which is white.

It is a ſtrong thick membrane, very ſmooth on the outer ſurface; the inner, which adheres to the ſubſtance of the teſticle, being rough and uneaven. Into its upper part are inſerted blood veſſels, nerves, and lymphatics, which from thence ſend divers branches into the ſubſtance of the teſticles. V. *Keil.* Anat. c. 2. ſec. 15. p. 93. *Drake*, Anthropol. l. 1. c. 19. p. 119. See TUNICA.

ALBUGINEUS is applied, by ſome, for the aqueous humour of the eye. *Caſt.* Lex. Med. p. 28.

ALBUGO (*Cycl.*)—This diſeaſe of the eye is otherwiſe called λευκωμα, ὑπηλον, ἕλκος, παραλαμψις, *leucoma*, *hypoulon*, *helcos*, and *paralampſis*; by Celſus, *ulcus ſupercreſcens*; by others, *ulcus ſubnaſcens*; by others, *cicatrix ſupereminens*.—It differs from ἕλκη, or cicatrix, in that the latter infects only the black of the eye, or the pupil. It differs from the αἰγις, αἰγιας, or αἰχλιη, of Hippocrates, in that theſe denote only a whitiſh concretion of viſcid matter, growing on the outer ſurface of the cornea, and eaſily curable. It differs alſo from the *ungula*, *pterygium*, *pterygotomum*, *tela*, pin, and web, in that theſe are only external, ſlight, or ſuperficial ſpecks, whereas the *Albugo* is thicker and harder, and penetrates into the ſubſtance of the part. It differs from *unguis* and *onyx*, ονυξ, in that theſe import an abſceſs, or ſuppuration of the cornea [a].—Laſtly, it differs from the *coiloma*, in that this latter is ſeated in the *tunica albuginea*, not in the *cornea*; though ſome affect to make theſe two the ſame, in order to diſtinguiſh the *Albugo* from the *pterygium*, the latter of which they ſuppoſe ſeated in the *cornea*, as the former in the *albuginea* [b].—[a *Woolhouſ.* Quadrag. Operat. Chirurg. c. 1. Ephem. Germ. cent. 5. app. p. 131. seq. b *Kenned.* Ophthalm. c. 13. Jour. des Scav. T. 56. p. 260.]

The *Albugo* then, is a whitiſh, denſe, opake ſpot, or film, growing on the *tunica cornea*, and obſtructing the ſight.

It oftenest ariſes as a ſcar after an inflammation, or ulcer of that part, particularly in the ſmall-pox; ſometimes from a congeſtion of tough, impacted humours. The *unguis* alſo, if neglected, or wrong treated, ſometimes degenerates into an *Albugo*.

The *Albugo* is by moſt looked upon as incurable; though ſome pretend to effect its cure by a ſort of myſterious ſtone, called *lapis divinus* [c]. Coward mentions the juice of granates and juſquiamnus, as of good ſervice for reducing the *Albugo* from its white colour to a brown one, more approaching the natural colour of the eye [d]. — [c Mem. de Trev. 1707. p. 731. d *Cow.* Ophthalm. in Jour. des Scav. T. 39. p. 130.]

Heiſter obſerves, that as in ſeveral other claſſes of diſorders belonging to the eyes, ſo in this we meet with a great deal of confuſion, by a miſapplication and reduplication of ſeveral names, which are often uſed to import the ſame diſeaſe; whence ariſe difficulties and miſtakes, and errors in the method of cure.

The moſt eminent ſurgeons and phyſicians mean by *Albugo*, *leucoma*, *nebula*, *nubecula*, a ſort of whitiſh ſpots in the cornea, though they appear not always alike, and of the ſame kind, being ſometimes larger or ſmaller, thicker or thinner, more or leſs pellucid and protuberant.

The cauſes of theſe are various. They may ariſe, 1. From an obſtruction of the pellucid veſſels of the cornea, and inſpiſſation of their juices, proceeding from a violent inflammation of the eye. 2. From a ſuppuration, and then an induration of theſe juices in the cornea, after an inflammation; ſo that, by degrees, it becomes more opake, as it hardens, putting on a whitiſh hue; and hence has been ſometimes miſtaken for an *unguis*. 3. Theſe ſpots may ariſe from an eroſion, or ulcer. 4. From puſtules in inflammatory diſorders. 5. From the ſmall-pox. 6. From ſcars left after punctures in the cornea, by ſwords, knives, glaſs, &c. 7. From burns. 8. From cauſtic ſubſtances falling into the eye. 9. Theſe ſpots may alſo be formed by a peculiar tunic growing to the eye itſelf.

The cure is various, according to circumſtances. If the diſorder ariſes from inſpiſſated humours, an attenuating diet and medicines, eſpecially ſudorific decoctions and infuſions; together with phlebotomy, ſcarifications, bliſters, and pediluvia, are uſeful. Cold and aſtringent collyria, eſpecially thoſe of white vitriol, are here pernicious; whereas warm applications are of the greateſt ſervice. But if theſe diſorders be of long ſtanding, there is little or no hope of a cure.

If the diſorder proceeds from abſceſſes, or a ſuppuration of matter, after an inflammation, betwixt the laminæ of the cornea, which they elevate like a pea, or pearl, whence they are ſometimes called *pearls*, an inciſion ought to be made into the cornea, to diſcharge the included matter. But neither this nor any other method will ſucceed ſo as to preſerve the eye-ſight clear, if the matter be lodged deep.

If the puſtules take their riſe from burns, or the ſmall-pox, the contained matter muſt be diſcharged, and the pellicle muſt be removed with *alum. uſt. cum ſacchar. cand. & ovor. teſt. pp.* applied every day to the cornea.

Spots in the cornea ariſing from wounds, ſcars, or the abuſe of vitriolic *collyria* are ſeldom curable. See *Heiſter*'s Surgery, P. 2. ch. 58.

ALBULA, in ichthyology, a genus of fiſhes of the truttaceous kind, having no teeth.

There are ſeveral ſpecies of this, the *Albula parva*, called *Albete*; the *Albula nobilis* of Schonefeldt; the *Albula cærulea*, called *Bozola*; and the *Albula minima*, diſtinguiſhed from the reſt by its ſmallneſs, and the pale colour of its head.

Writers on theſe ſubjects ſeem, however, to have conſtituted more ſpecies than are of nature's making, in this genus. Several of their diſtinctions being only of the ſame fiſh, in its different ſtages of growth; the *ferra* and *lavaretus* are alſo plainly of the *Albula* kind; and it is not certain whether the differences of place, age, and ſeaſon, are not the origin of the diſtinctions even between theſe.

The only fundamental diſtinction nature ſeems to have placed between them is, that ſome are of the herring ſhape, as the *lavaretus*, and ſome of the ſalmon ſhape, as the *ferra*. But it requires an accurate and repeated examination of the ſeveral fiſh of theſe kinds, from different places, to ſay determinately what number of ſpecies there are of each. *Willughby*, Hiſt. Piſc. p. 186.

ALBULA *Indica*, the name of a ſmall fiſh, reſembling a herring, caught about the ſhores of the Eaſt-Indies, and called

by the Dutch there, the *wit-fiſh*. It is a ſcaly fiſh, much of the ſhape of a ſmall herring, with a large and thick head. Its back is brown, and its ſides and belly of a blueiſh yellow. It is caught, in great abundance, with nets, and is a very well taſted fiſh. *Ray*, Ichthyogr. Append. p. 3.

ALBULA *nobilis*, the name of one of the truttaceous fiſhes, caught in great plenty in the lakes of Germany, and other places. It is uſually caught of about two feet long, and is in ſhape very like the common ſalmon. Its back and ſides are of a duſky browniſh green colour, and its belly white. The mouth is large, but has no teeth; and the upper jaw is ſo much larger than the under, that its ſides fall over it when the mouth is ſhut. Its head is of a pale and faint blueiſh colour, and is ſpotted with a ſomewhat deeper blue. It has two fins on the back; one near the middle, the other but a finger's breadth from the tail. The tail is membranaceous, as in the reſt of the fiſh of this kind, and is a little forked. It has alſo two pair of fins on the under part; one near the gills, the other under the belly, and another behind the anus. The fleſh is firm, and well flavoured. *Schonefeldt*, de Piſc.

ALBULA is alſo a name given, by ſome naturaliſts, to mineral waters of the aluminous kind; hence endued with an aſtringent quality, and of uſe in wounds. *Gal.* Mat. Med. l. 8. c. 2. ap. *Caſt.* Lex Med.

The word is Greek, Αλβυλα, where it ſignifies the ſame.

ALBUM, in literary hiſtory, is uſed to denote a kind of table, or pocket-book, wherein the men of letters with whom a perſon has converſed, inſcribe their names, with ſome ſentence, or motto.

This is called by divers names and titles, as *Album amicorum*, *repoſitorium amicorum*, &c. *Schott.* ad Proverb. Vatican. App. 1. 80.

ALBUM, in antiquity, denotes a white table, or the like, whereon names, or other matters, were to be inſcribed, or entered.

In which ſenſe, the word is ſynonymous with the Greek, λευκωμα. Hence we meet with *Album prætoris*, *Album decurionum*, *Album judicum*, &c.

Album decurionum was the regiſter wherein the names of the *decuriones* were entered. This is otherwiſe called *matriculatio decurionum.*

Album prætoris, that wherein the *formulæ* of all actions, and the names of ſuch judges as the prætor had choſen to decide cauſes, were written.

Album judicum, that wherein the names of the perſons of thoſe *decuriæ*, who judged at certain times, were entered.

Album ſenatorum, the liſt of ſenators names, which was firſt introduced by Auguſtus, and renewed yearly. Vid. *Pitiſc.* Lex. Antiq. T. 1. p. 69.

The high-prieſt entered the chief tranſactions of each year into an *Album*, or table, which was hung up in his houſe for the public uſe.

ALBUM, in natural hiſtory, is uſed for the white of an egg; more properly called *Albumen*. *Caſt.* Lex. Med. p. 28.

ALBUM, among chemiſts, is uſed for white lead, properly called *ceruſs*. *Caſt.* Lex. in voc.

ALBUM is alſo uſed, among alchemiſts, for a tincture pretended to tranſmute metals. *Caſt.* Lex.

ALBUM is alſo applied, in pharmacy, as a title, or epithet of divers compound medicines. Thus we meet with *unguentum album cum camphora*, &c. V. Pharmacop. Londin.

ALBUM *græcum*, (*Cycl.*) is otherwiſe called *Album canis*, and *ſtercus canis officinale.*

Some ſpeak of its uſe internally, in the angina, and other inflammations; as alſo in the dyſentery, cholic, &c.—Divers preparations of it are given by pharmaceutical writers. Vid. *Junck.* Conſpec. Therap. tab. 20. p. 518.

ALBUM *nigrum* is uſed, among medical writers, for mice dung, by ſome alſo called *muſcerda*. *Etmull.* Colleg. ad Schrod. in App. T. 1. p. 795. *Caſt.* Lex. Med. p. 28. *Blanc.* Lex. Med. p. 23.

ALBUM *oculi*, among anatomiſts, denotes the *tunica adnata*; ſometimes alſo called *Albugo*; popularly the white of the eye. *Caſtel.* Lex. Med. p. 28.

ALBUMEN, (*Cycl.*) in natural hiſtory and medicine, a white, clear, viſcid liquor, in an egg, which every where encompaſſes the *vitellus*, or yolk.

Albumen amounts to the ſame with what the Greeks call λευκωμα, and λευκον; the Latins, *album ovi*, *albor*, ſometimes *ovi candidum*, *albugo*, and *albumentum*; the French, *glaire*; the Engliſh, popularly, *white of an egg*. Anaxagoras calls it ορνιθος γαλα, that is, bird's milk. Vid. *Scribon.* p. 24, 26. *Rhod.* Lex. Scriben. *Caſt.* Lex. Med. p. 29.

There are properly two *Albumens* obſervable in an egg, each incloſed in its ſeparate membrane; the one *external*, next the ſhell, which being of a thin conſiſtence, upon breaking the the cortex, runs out; the other *internal*, immediately ſurrounding the yolk, which being of a denſer ſubſtance, retains its place and figure, after the effuſion of the former: to this end, it is guarded by a fine thin membrane, too ſubtle to be perceived by the eye; which being broken, this too falls out. The two ends of the egg are chiefly poſſeſſed by the internal *Albumen*. In general it is obſerved, that there is moſt *Albumen* in the obtuſe end of an egg, leſs in the acute end, and leaſt in the reſt. V. *Harv.* de Gener. c. 11. p. 41.

The *Albumen* is a thickiſh, viſcous humour, miſcible with water, inſipid and inodorous, affording no indications, either of an alcaline, or an acid nature; ſo that though applied to the moſt ſenſible part, as the eye, it excites not the leaſt pain. When expoſed to a gentle heat, as that of a healthy man's body, it grows continually more and more liquid, till at length loſing all its conſiſtence, it diſſolves into a liquor reſembling urine; at the ſame time, it waſtes ſenſibly; and, at laſt, leaves nothing but a thin pellicle, reſembling paper. *Boerhaave*, New Meth. Chem. P. 3. proc. 96. p. 206.

The *Albumen*, if applied to a degree of heat ſomething greater, inſpiſſates and hardens into a whitiſh, concrete, flaky ſubſtance, with the loſs of ſome of its finer fluid part, which eſcapes in form of a fume.

In effect, if an egg be laid on coals not the moſt intenſely hot, the ſame finer fluid will be found ſenſibly to tranſude the pores of the ſhell. Add, that if ſpirit of wine be poured on the freſh *Albumen* of a new laid egg, a coagulation is immediately produced, as if by fire; and this the more perfectly, as the ſpirit and the *Albumen* are more intimately mixed. By this means, the white of an egg is defended from all putrefaction. *Boervaave*, loc. cit. proc. 98. p. 207.

Diſtilling the *Albumen* by a retort in a ſand heat, till it be brought to a dryneſs, it yields an incredible quantity of water, which has moſt of the properties of the whole maſs. Id. ibid. proc. 99. p. 208.

The white of an egg makes an extraordinary menſtruum. Being boiled hard in the ſhell, and afterwards ſuſpended in the air by a thread, it reſolves and drops down into an inſipid ſcentleſs liquor, which appears to be that anomalous unaccountable menſtruum, ſo much uſed by Paracelſus; and will, though it contain nothing ſharp, oleaginous, or ſaponaceous, make a thorough ſolution of myrrh; which is more than either water, oil, ſpirits, or even fire itſelf, can effect. *Boerhaave*, loc. cit. P. 2. p. 358. ſeq. But ſee the article MYRRH.

The origination of the *Albumen* is ſomewhat obſcure.—'Tis matter of common obſervation, that eggs, while in the ovaries of their birds, *e. gr.* of hens, conſiſt only of a yolk, without any *Albumen*; and in eggs, when boiled, 'tis apparent there is only a contiguity, no connection between the two parts, ſince they are eaſily ſeparated, without a rupture of any thing, except in the places where the chalazæ are found. The reſult of the lateſt obſervations on this ſubject is, that the vitellus being deſcended into the ovary, the cavity of the ovary diſtils the matter of the *Albumen*, and glues, or annexes it to the ſurface of the yolk. V. *Harv.* de Generat. Anim. exerc. 14. p. 57. *Bellin.* de Mot. Cord. p. 40; *Burggr.* Lex. Med. in voc.

The office and uſe of the *Albumen* has occaſioned much controverſy. The generality ſuppoſe it to ſerve as nutriment to the chick, while *in ovo* [a]; though others attribute this office to the yolk [b]. The truth ſeems chiefly to lye on the ſide of the former: the *Albumen* is the matter whereof the chick is formed, and ſuſtained till within a few days before hatching; at which time it begins to feed on the yolk [c].—[[a] V. *Harv.* ubi ſupra. [b] *Belling.* Tract. de Fœt. c. 8. Bibl. Angl. T. 2. p. 70. [c] V. Ephem. Germ. Dec. 2. an. 10. obſ. 4. p. 13.]

A late author pretends to reduce the office of the *Albumen*, to the ſerving as a defence to the fœtus againſt accidents, and affording room for its members to ſtretch and grow in. *Belling.* ubi ſupra. c. 10. Bibl. Angl. T. 2. p. 73.

Several have held the *Albumen* a mere inorganical maſs. Malpighi [d], and others [e], ſhew a regular texture in it: at firſt it conſiſts of a congeries of minute veſſels, perfectly like thoſe whereof the vitreous humour of the eye is compoſed. This diſpoſition is changed by incubation: the brooding heat of the hen diſſolves and liquifies the *Albumen*, and fits it to become a nutriment to the embryo.—[[d] De Format. Pull. It. de Ovo incub. *Burggr.* loc. cit. [e] *Maitre Jan*, Obſerv. ſur le Format. du Poulet. Jour. des Scav. T. 74. p. 556, 560. ſeq.]

'Tis diſputed, whether the whites of eggs be a wholſome food? The generality of phyſicians reject them, as indigeſtible. Others reſtrain their prohibition to thoſe which are much hardened by the fire, while in a ſofter ſtate they cannot but be at leaſt innocent; if they be the ſuſtenance of the tender embryo's, the chickens. Ephem. Germ. ubi ſupra.

ALBUMINA, or whites of eggs, are of ſome uſe in medicine, tho' rather externally, in the preparation of collyriums for the eyes, and *anacollemata*, on account of their cooling, agglutinating, and aſtringent quality, than internally; yet Hippocrates preſcribed them in feveriſh caſes, by way of a refrigerative. In ſuch caſes, they ſhould ſeem to be peculiarly prohibited: it being a known experiment, that an egg will boil, (if we may ſo call it) at leaſt turn hard, by only being held in the hands of a perſon in a fever; and the effects of ſuch induration, it naturally enough follows, from what has been aboveſaid, can by no means be ſerviceable to ſick perſons. *Hipp.* l. 3. de Morb. c. 30. p. 12.

Albumina are uſed for burns [a], and in ſome mixtures with bole armeniac, &c. for conſolidating freſh wounds, and under bandages, and compreſſes to prevent the luxation of bones after reduction [b]. A late writer recommends them as a ſecret in the jaundice [c].—[a *Junck.* Conſp. Therap. Tab. 13. p. 379. b *Zwinc.* Diſpenſ. P. 2. Sec. 12. p. 204. c Ephem. Germ. dec. 3. An. 2. Obſ. 35. p. 43.]

Beſides medical, the whites of eggs have alſo their chemical uſes, *e. gr.* for the clarifying of liquors; to which purpoſe, being mixed, and incorporated with the liquors to be clarified, and the whole afterwards boiled, the whites of eggs are by this means brought together, and hardened, and thus carry off the groſs parts of the liquor along with them.

ALBURN, (*Cycl.*) the Engliſh name of a colour partaking of red and white.

Skinner derives the word in this ſenſe, from the Latin *Albus*, and the Italian *Burno*, from *Bruno*, brown. *Skin.* Etym. Angl. in voc.

ALBURNUM, in phytology, the exterior part of the wood of a tree, next the bark. *Plin.* Hiſt. Nat. l. 16. c. 38. *Docton.* Hiſt. Stirp. Pempt. 1. l. 1. c. 1. *Caſt.* Lex. Med. p. 29. See the article BARK.

The word is formed from *Albus*, white, on account of its colour.

The *Alburnum* is the ſofteſt, freſheſt part of the wood, anſwering to what ſome call *Blea*. Pliny compares it to the fat in men.

ALBURNUS, in zoology, the name of a freſh water fiſh, commonly known in Engliſh by the name of the bleak.

It is a ſmall fiſh, commonly of the length of ones finger, and never exceeding five or ſix inches. Its body is ſomewhat compreſſed and broad, and its head very ſmall. It is covered with very ſmall ſcales of a fine ſilvery white, which readily fall off; its back however is a little greeniſh. It is common in our rivers, and in thoſe of Germany and elſewhere, and is eſteemed a well taſted fiſh. It is moſt in ſeaſon in September. *Geſner*, de Aquat. p. 93.

ALBURNUS *Lacuſtris*, in ichthyology, a name given by the writers who have copied Geſner's errors, to the *Ballerus* of the antients, or the *Pallerus*, or *Pleyſta* of the moderns. It is a ſpecies of the ſame genus with the *Alburnus*, but has no right to be named from it, being of a very different figure, more reſembling the bream than the *Alburnus*, tho' neither very greatly. It is called by Artedi the *Cyprinus* of a very broad and thin ſhape, with forty rays in the *Pinna Ani*.

Mr. Ray thinks the *Alburnus Lacuſtris*, to be the ſame with the common *Caraſſius*. V. *Ray*'s Ichth. p. 249.

ALBUS *Piſcis*, the white fiſh, in ichthyology, a name by which Salvian has called the fiſh more uſually called the *Capito Lacuſtris*; and ſeeming the ſame with the blue chub, or as it is more frequently called, the jentling. *Willughby*, Hiſt. Piſc. p. 257. See JENTLING.

This fiſh is a ſpecies of the cyprinus, called by the Italians *Albo*. See CYPRINUS.

ALCAID, (*Cycl.*) in matters of policy, an officer of juſtice among the Moors, Spaniards and Portugueſe.

The word is alſo written *Alcade*, *Alcalde* and *Alcayd*. Sometimes alſo *Alvacide*.

It is originally Arabic, compounded of the particle *Al*, and the verb *Kad*, or *Akad*, to rule, govern, adminiſter.

The emperor of Morocco's court conſiſts chiefly of ſeven or eight *Alcaids*, his devoted ſlaves.

In ſome places the *Alcaids* are little elſe than the emperor's tax-gatherers. Jour. des Scav. T. 22. p. 641, and 645. Bibl. Angl. T. 13. p. 145.

Alcaid, among the Spaniards, *&c.* is a kind of inferior judge, or miniſter of juſtice, who takes cognizance of cauſes in the firſt inſtance.

The Spaniſh *Alcaid* anſwers in good meaſure to the French prevoſt, and the Engliſh juſtice of peace. V. *Chevign.* Scienc. de Perſ. de Cour. T. 3. p. 180.

They had alſo their *Alcaid* of the whores, who took cognizance of caſes of whoredom, and adultery. This officer was otherwiſe called *Alcaid* of honour. *Du Cange*, Gloſſ. Lat. in voc.

ALCANNA, or ALCANA, (*Cycl.*) a dying drug, brought from Egypt and the Levant, being the leaves of a plant, called by botaniſts *Liguſtrum Ægyptiacum*, or the Egyptian privet.—The Egyptians call it *Elle hanne*.

The colour drawn from theſe leaves is either red or yellow, according to the manner of the preparation; yellow when ſteeped in common water, and red when infuſed in vinegar, or allum-water.

The people of Cairo, make a conſiderable traffic of theſe leaves; which they reduce to a powder called *Archenda*, much uſed by the women to dye their nailes, and hair of a golden yellow hue [a].—From the berries of *Alcanna* an oil is extracted, of a very agreeable ſmell, and ſome uſe in phyſic, as a calmer, called oil of *Cyprus*, a name which is ſometimes alſo given to the plant [b].—[a Trev. Dict. Univ. T. 1. p. 262. b *Savar.* Dict.Comm. T. 1. p. 65.]

ALCANNA is alſo a denomination given by ſome to iſinglaſs, or Icthyocolla. *Savar.* Dict. Comm. T. 1. p. 65. See ICTHYOCOLLA.

ALCANTARA (*Cycl.*)—The Spaniſh antiquaries vary much in their accounts of this order. The Jeſuit Mendo fixes its origin in 1156, Barboſa in 1176. The chronicles of the order relate, that Ferdinand king of Leon took it under his protection in 1176; that pope Alexander III. confirmed it the year following; that Lucius III, in 1184, gave it the order of St. Benedict; and that Nugnez Ferdinand, in 1218, gave it the city *Alcantara*, from whence it took the name.

Carro de Forres, and Franc. de Bades affirm, that it was at firſt called the order of St. Julian del Pereyro, from the name of the city where it was founded; but that the preciſe year of its inſtitution is not known. Trev. Dict. T. 1. p. 262.

The knights of *Alcantara* make the ſame vows as thoſe of Calatrava, and are only diſtinguiſhed from them by this, that the croſs fleurdeliſce which they bear over a large white cloak, is of a green colour: they poſſeſs thirty ſeven commendaries.

By the terms of the ſurrender of *Alcantara* to this order, it was ſtipulated, that there ſhould be a confraternity between the two orders, with the ſame practices and obſervances in both; and that the order of *Alcantara*, ſhould be ſubject to be viſited by the grand maſter of Calatrava. But the former ſoon got free from this engagement, on pretence that their grand maſter had not been called to the election of that of Calatrava, as had been likewiſe ſtipulated in the articles.

The hiſtory of this order is chiefly taken up in expeditions againſt the Moors, and broils with their neighbours. V. *Helyot.* Hiſt. des Ord. Monaſt. T. 6. Mem. de Trev. an. 1720. p. 150. ſeq. See CALATRAVA, *Cycl.*

ALCE, the elk, in zoology. See ELK.

ALCEA, in botany, the name of a genus of plants, the characters of which are the ſame with thoſe of the mallow, but that this has always deeply divided leaves. See MALVA.

The ſpecies of *Alcea*, enumerated by Tournefort, are theſe. 1. The common larger vervain mallow with red flowers. 2. The common larger *Alcea* with whitiſh flowers. 3. The common *Alcea* with hairy coverings to the ſeeds. 4. The rounder leaved jagged *Alcea*. 5. The cinquefoil, or hemp-leaved *Alcea*. 6. The larger tall *Alcea*. 7. The hairy *Alcea*. 8. The white flowered hairy *Alcea*. 9. The little Sicilian *Alcea* with ſmall flowers. 10. The ſlender curled leaved *Alcea*. 11. The ſmall procumbent ſea *Alcea*, with leaves like the geranium. 12. The great fig-leaved garden roſe *Alcea*. 13. The white flowered great fig-leaved garden roſe *Alcea*. 14. The yellow flowered great fig-leaved garden roſe *Alcea*. 15. The violet flowered great fig-leaved garden roſe *Alcea*. 16. The purple flowered great fig-leaved garden roſe *Alcea*. 17. The pale red flowered great fig-leaved garden roſe *Alcea*. 18. The black flowered great fig-leaved garden roſe *Alcea*. 19. The great fig-leaved garden roſe *Alcea*, with black rough flowers. The eight laſt are uſually ranked among the holly-oaks, or roſe-mallows. 20. The very hairy American *Alcea*. *Tournef.* Inſt. p. 98.

The word *Alcea*, αλκεα, is Greek, formed of αλκη, *auxilium*, help.

The *Alcea* is a medicinal herb: the officinal kind of it is called *Alcea vulgaris major*; by ſome, *herba Simeonis*, *canabis ſylveſtris*, *herba hungarica*, and *malva verbena*, in Engliſh, vervain mallow. Its virtues are much the ſame with thoſe of the mallow, only a degree weaker than either of them. It is uſed as an emollient. Dioſcorides mentions the root drank with wine, or water, as a remedy againſt dyſenteries and ruptures. *Lemery*, Trait. des Drog. p. 22. *Burggr.* Lex. Med. T. 1. p. 400. ſeq. See MALVA.

ALCEA *Veſicaria*, the *Bladder-Alcea*, in botany, the name of a ſpecies of *Ketmia*. See the article KETMIA.

ALCEDO *Vocalis*, in zoology, a name by which Bellonius, Aldrovandus, and ſome others, have called the reed ſparrow. *Aldrovand.* l. 20. c. 62. See the article JUNCO.

ALCHEMIST, a perſon who practiſes or profeſſes *Alchemy*.

The word is alſo written *Alchymiſt* ſometimes *Alchimiſt*, or even *Archimiſt*.

Alchemiſts are otherwiſe called ποιηται, *Poetæ*, q. d. Makers, and χρυσοποιηται, goldmakers; ſometimes *Ariſtæ*, popularly ſoufleurs, or blowers, adepts, goldmakers, goldfinders. Nouv. Rep. Lett. T. 35. p. 554.

The office of *Alchemiſts*, as aſſigned by ſome authors, is of great extent: to them it belongs to explain the principles, the properties, and qualities of all metals, and the ſeveral alterations theſe are capable of; to teach the manner of converting impure and groſs metals into gold and ſilver; to give even to precious ſtones the degree of perfection they want; to preſerve the human body in perfect vigour, and cure the moſt dangerous and deſperate deſeaſes incident thereto. Nouv. Rep. Lett. T. 11. p. 1178.

Adam, Enoch, Noah, Cham, Moſes, John the Evangeliſt, and other Patriarchs, and Apoſtles, are ranked in the number of *Alchemiſts*.

There is an apocryphal book ſtill extant aſcribed to Miriam, ſiſter of Moſes, on the practice of the philoſopher's ſtone. The ſages make that propheteſs a moſt expeditious operatrix; it is ſaid ſhe could finiſh the whole affair in three days, nay, in three hours, according to the verſe, *Maria lux roris ligam ligat tribus horis*. *Schmid.* Pſudo Vetus Teſtam. ap. Nov. Liter. Germ. 1708. p. 362. ſeq.

Democritus the Abderite, Ariſtotle, Hermes, &c. are alſo reputed to have been *Alchemiſts*. *Fabric.* Bibl. Græc. l. 6. c. 7. ſect. 17. It. l. 1. c. 10. T. 1. p. 66. ſeq.

We have had ſevere laws againſt the practice of *Alchemy*, and the multiplying of metals, as much as againſt coining. Rymer furniſhes us a licence for practiſing *Alchemy*, granted by Edward the fourth, in 1476. V. *Rym.* Fæder. T. 12. Bibl. Anc. Mod. T. 9. p. 67.

Great complaints are made concerning the obſcurity and myſteriouſneſs, the frauds and impoſtures, the folly, vanity, miſery, &c. of *Alchemiſts*. The Italians have a proverb, *Non ti fidiare all Alchemiſta povero, o medico amalato*; never truſt thyſelf to a poor *Alchemiſt*, or an unhealthy phyſician. *Agripp.* de Vanit. Art. c. 90. *Eraſm.* Colloq. p. 269. *Caſſaub.* in Credul. p. 15. Mem. de Trev. 1726. p. 594. Jour. des Scav. T. 73. p. 326.

The writer of Mr. Leibnitz's elogy ſpeaks of a ſociety of *Alchemiſts* at Nuremberg; who lived in great ſecrecy, and wrought on the philoſopher's ſtone. Mr. Leibnitz had a ſtrong deſire to be of the body, but the difficulty was to have a competent acquaintance with the myſteries of the ſcience, to procure him admiſſion. For want of this, he had recourſe to ſome books of *Alchemy*, out of which he picked all the moſt quaint, obſcure expreſſions, and thence compoſed an epiſtle unintelligible to himſelf, which he addreſſed to the preſident of the ſociety, demanding to be admitted, on this proof of his ſkill and proficiency. The author of the letter, it was preſently granted, muſt be an adept; accordingly, he was received with honour into the laboratory, and the poſt of ſecretary committed to him. *Fontenell.* Elog. de Leibnitz.

Kircher, fully inſtructed in all the ſecrets of chemiſtry, has diſplayed at large the ſeveral artifices and impoſtures of *Alchemiſts*; yet how many have been duped by them, ſince that time? M. Geoffroy has lately publiſhed a new detection; which will be at leaſt of this uſe, to ſhew that treachery and avarice, as induſtrious and inventive as they are, have diſcovered no new device theſe hundred years; but that inadvertency and forgetfulneſs on the part of mankind, ſupply the want of new artifices on the part of impoſtors. It may even be doubted, whether by publiſhing theſe myſteries of iniquity, authors do more good, or harm. It is well known moſt of the modern *Alchemiſts* and Charletans learnt their tricks in Kircher. Men ſeem naturally more inclined to be deceived than to be undeceived. An author who inſtructs men in what is evil, with a deſign to give them an averſion for it, is always ſure to teach the evil, but is not always ſure to give the averſion.

An *Alchemiſt* puts into a crucible, the matter which is to be converted into gold; this he ſets on the fire, blows it, ſtirs it it with rods; and, after divers operations, gold is found at the bottom of the crucible, inſtead of the matter firſt put in: this there are a thouſand ways of effecting without any tranſmutation. Sometimes it is done by dextrouſly dropping in a piece of gold concealed between the fingers, ſometimes by caſting in a little of the duſt of gold, or ſilver, diſguiſed under the appearance of ſome elixir, or other indifferent matter: ſometimes a crucible is uſed which has a double bottom, and gold put between the two; ſometimes the rod uſed to ſtir the matter is hollow, and filled with the duſt of the metal deſired; at other times there is metal mixed with the charcoal, the aſhes of the furnace, or the like. *Kirch.* Mund. Subterran. l. 11. and 12. *Geoff.* in Mem. Acad. Scienc. 1722. p. 81. *Fontenel.* Hiſt. 16. p. 52. Mem. de Trev. 1722. p. 1627. ſeq.

ALCHIMILLA, *Ladies-Mantle*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the apetalous kind, being compoſed of a number of ſtamina, ariſing out of a funnel ſhaped cup, which is divided into ſeveral ſegments at the edge. The piſtil which ſtands in the center of theſe, finally becomes one or more ſeeds, contained in a capſule, which was originally the cup of the flower.

The ſpecies of *Ladies-Mantle*, enumerated by Mr. Tournefort, are theſe.

1. The common ladies-mantle. 2. The ladies-mantle with white flower cups. 3. The leſſer alpine ladies-mantle. 4. The common little ladies-mantle. 5. The little hoary alpine ladies-mantle. 6. The little cinquefoil alpine ladies-mantle, with fimbriated leaves. 7. The leaſt mountain ladies-mantle, called by the French *errepercepi*, or parſly piert. 8. The cinquefoil ladies-mantle, with leaves ſilvery underneath. 9. The procumbent *Alchimilla*, with graſſy leaves and ſmall flowers, called by ſome the narrow-leaved knot graſs. 10. The erect graſſy-leaved ladies-mantle, with ſmall flowers. 11. The graſſy-leaved *Alchimilla*, with larger flowers. 12. The toad-flax-leaved *Alchimilla*, with white cups: and 13. The toad-flax-leaved *Alchimilla*, with yellow cups. *Tournef.* Inſt. p. 405.

The ſpecies of this plant are all recommended as vulneraries, and incraſſants; and authors in general aſcribe to the common kind very conſiderable efficacy, in ſtopping the floodings of the menſes, and the *fluor albus*.

The name *Alchimilla* is ſaid to have been given this plant by alchemiſts, among whom it has been much tortured, from an expectation of finding ſomething extraordinary in it.

The officinal kind is called *Alchimilla vulgaris*; ſometimes *Pes, Patta*, or *Leonis, Planta, Pſiadium, Stella herba, Stellaria, Leontopodium, Droſera* and *Droſtum*; in Engliſh, ladies-mantle.

A diſtilled water and a conſerve, have formerly been procured from its flowers; but they are now out of uſe. Some apply it externally in the *vomica pulmonum*. *Lemery*, Tr. des Drog. p. 24. *Burggr.* Lex. Med. T. 1. p. 401. ſeq. *Junck.* Conſp. Med. p. 178.

ALCHIMILLA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe. The cup is a tubular perianthium, remaining till the ſeed ripens; it is compoſed of one leaf, divided at the extremity into eight ſegments alternately larger and ſmaller. It has no petals; the ſtamina are four very ſmall erect, pointed filaments, inſerted in the rim of the cup; the antheræ are roundiſh; the germen of the piſtillum is of an oval figure; the ſtyle is ſlender, of the length of the ſtamina, and inſerted on the baſis of the germen; the ſtigma is of a globoſe figure. The neck of the cup ſhutting together, makes it ſerve in the place of a fruit, containing a ſingle compreſſed ſeed of an elliptic figure. *Linnæus*, Gen. Plantar. p. 52.

ALCHITRAM, among the alchemiſts, denotes ſometimes the oil of juniper, ſometimes liquid pitch, and ſometimes arſenic prepared by ablution. *Rul.* Lex. Alch. p. 26. *Caſt.* Lex. Med. p. 29.

This is otherwiſe written *Alchieram* and *Alchitran*; ſometimes *Alchytran* and *Alkytran*.

ALCHYMY (*Cycl.*)—The word is alſo written *Alchimy*; and by the modern Greeks, *Archemia*. Some will have its genuine orthography to be *Halchymia*.

The curious may conſult the following authors concerning the origin, progreſs, and pretenſions of *Alchymy*.

Firmicus Matern. Matheſ. l. 3. c. 15. *Borrichius*, de Ort. & Progreſſ. Chem. Hafn. 1668. 4°. Ejuſd. Hermet. Ægypt. & Chym. Sapient. paſſim. *Conringius*, de Hermet. Medicin. 1669. An extract of which is given in *Heuman*, Act. Philoſ. T. 2. p. 662. ſeq. *Plinii*, Hiſt. Natur. l. 33. c. 14. *Boerhaave*, Elem. Chem. T. 1. p. 9. ſeq.

As alſo *Pancirollus*, de Reb. Memor. P. 2. Tit. 7. *Salmuth.* Annot. ad Eund. p. 137. ſeq. *Fabricii.* Cod. Pſeudepigr. Vet. Teſt. T. 1. p. 304. ſeq. *Langii.* Epiſt. Medic. l. 1. Ep. 53. Jour. des Scav. T. 37. p. 27. ſeq. *Senac.* Nouv. Courſ. de Chimie, T. 1. in Pref. Jour. des Scav. T. 74. p. 81. It. T. 75. p. 644. It. T. 44. p. 267. *Lambecii* Prodrom. Hiſt. Liter. l. 1. c. 4. p. 13. ſeq. Bibl. Anc. & Mod. T. 20. p. 398. The reality and poſſibility of *Alchemy*, *Niewentit*, Relig. Philoſ. p. 291. ſeq. Civil laws relating to *Alchemy*, *Pettus*, Hiſt. Miner. p. 103.

We have numerous writings on *Alchemy*, in Greek, Latin, Engliſh, High-Dutch, &c. under the titles of introductions, elements, practices, proceſſes, myſteries, examinations, vindications, revelations, &c. Among the Greeks, the chief are Heliodorus, Syneſius, Zozimus, Pappus, Theophraſtus, Oſtanus, Archelaus, Olympiodorus, Stephanus, Democritus, Pelagius, Eugenius, Johannes Archiereus, Iſis, Agathodæmon, Jamblichus, Comarius, Dioſcurus, Cleopatra, Michael Pſellus, and divers anonymous authors under the appellations of Chriſtianus, Hierotheus, &c. all preſerved in MS. in ſeveral libraries, particularly the French king's library at Paris, the imperial library at Vienna, the Vatican at Rome, the Eſcurial at Madrid, and others at Venice, Milan, Gotha, &c.

Theſe authors appear to have been partly heathens, and Jews, but the greater part Chriſtians, and chiefly monks, living at Alexandria, and Conſtantinople, from the fifth century downwards. The collection appears to have been firſt brought into Italy in the fifteenth century, by the Greek refugees, who came for ſhelter there, upon the taking of Conſtantinople by the Turks. The genuineneſs of many of them is much diſputed by Reineſius, and others; tho' defended by Morhof. Leo Allatius had a deſign to have publiſhed them: his failure herein has been much lamented by ſeveral; two of them, *viz.* Heliodorus and Syneſius, have actually ſeen the light by the care of Fabricius.

[Vid. *Fabric.* Bibl. Græc. l. 6. c. 8. T. 12. p. 747. ſeq. *Borrich.* de Ort. Chem. p. 97. *Labb.* Bibl. Nov. MSS. p. 129. *Monfauc.* Palæogr. Græc. l. 5. c. 6. p. 374. Nouv. Rep. Lett. T. 45. p. 489. *Caſaub.* Exerc. in Baron. c. 10. p. 70. *Lambec.* Comment. Biblioth. Vindolo. l. 6. p. 168. ſeq. *Cyprian.* Catal. Codic. MSS. Bibl. Goth. p. 71. and 87. *Reineſ.* Judic. de Collect. MSS. Chemic. Græc. ap. *Cyprian.* & *Fabric.* loc. cit. *Morhof.* Polyhiſt. Liter. l. 1. c. 11. n. 16. p. 100. ſeq. *Boerhaave*, Elem. Chem. P. 1. p. 12. ſeq. *Fabric.* Bibl. Græc. T. 6. p. 789. Id. ibid. T. 8. p. 232.]

The Engliſh alchemiſts, who have written on the ſcience in their own language, are Norton, Ripley, Pearce the black monk, Carpenter, Andrews, Charnock, Blomefield, Kelly, and Robinſon. Others, as Dr. Dee, &c. have written in Latin, who have been all publiſhed together with notes, &c. by Elias Aſhmole; which editor has alſo publiſhed a piece of his own on the ſubject, and tranſlated another of Dr. Dee's. See *Wood*, Athen. Oxon. and the Theatr. Chym. Britan.

The beſt writers in *Alchemy*, according to the judgment of Boerhaave, are Geber, Morienus, Roger Bacon, Ripley, Raim. Lully, Bern. count Treviſanus, John and Iſaac Holandus, Sendivogius, Baſil Valentine, Artephius, Paracelſus, Irenæus Philalethes, and Van Helmont. See *Boerhaave*'s Chemiſtry.

Albinus, Manget, and others, have publiſhed collections of writers in *Alchemy*, under the titles of Bibliothecas [a], Theatres [b], and Turbas [c], of chemiſts. Garlandia and Rulandus have given dictionaries of *Alchemy* [d]. Borellus, Borrichius, &c. catalogues of writers in *Alchemy* [e]. —[[a] *Nath. Albin.* Bibliotheca Chemica, Genev. 1653. & 1673. *Jo. Jac. Mangeti*, Biblioth. Chem. Curioſ. ſeu Rerum ad Alchemiam pertinentium Theſaurus inſtructiſſimus, Tom. duo, Genev. 1703. fol. See a liſt of the authors in Act. Erud. Lipſ. 1702. p. 233. ſeq. & Jour. des Scav. T. 31. p. 803. ſeq. [b] Theatrum Chemicum, Argent. 1613, 1622. & 1661. 6 vol. 8vo. containing an hundred and thirty-three authors; a notitia of which is given in Catalog. Bibl. Endter. p. 137. [c] Theatrum Chemicum Britannicum, containing the Engliſh writers above-mentioned, Lond. 1652. 4to. Vid. *Wood*, Athen. Oxon. T. 2. n. 676. p. 889. Turba Philoſophorum, 2 vol. 8vo. Baſil. 1562, 1610. containing thirty-two authors; a liſt of which is given in Bibl. Endter. p. 144. [d] *Jo. de Garlandia*, Expoſit. Synonymorum in Arte Alchymiſtica, printed, together with his Alchymiæ Compendium, Baſil 1560. Vid. *Du Cange*, Gloſſ. Lat. in Præf. p. 37. *Mart. Rulandi*, Lexicon Alchemiæ, Francof. 1612. 4to. [e] *Petri Borelli*, Bibliotheca Chymica, ſive Catalogus Librorum Philoſophicorum Hermeticorum, Par. 1654. 12mo. It contains an account of about four thouſand writers. *Olai Borrichii*, Conſpectus Scriptorum Chemicorum illuſtrium. Hafn. 1697. 4to. See alſo a further liſt of *alchemical* authors in *Hendr.* Pandect. Brandenb. *Lipen.* Bibl. Phil. It. Bibl. Med. Catal. Bibl. Endter. paſſim. Bibl. Thuan. T. 2. p. 184. *Read.* Catal. Sion Coll. Libr. p. 291. ſeq.]

ALCHEMY is alſo uſed, in a leſs proper ſenſe, for the art of common chemiſtry. See CHEMISTRY.

In which ſenſe, Libavius has publiſhed *a Practice of Alchemy*, deſcribing the preparations of the chief chemical medicines. *And. Libavii*, Praxis Alchemiæ, h. e. de artificioſa Præparatione Præcipuorum Medicamentorum, Francof. 1604. 8vo.

ALCIBIADIUM. See ALCIBIUM.

ALCIBIUM, in botany, a word uſed ſometimes by the antients, as an epithet, for a kind of *echium*, or viper's bugloſs, and ſometimes as the name of a peculiar plant. The firſt of theſe is no other than the common echium, which is called by ſome *echium Alcibium*, and by others *echium Alcibiadium*. But Nicander expreſly diſtinguiſhes the other from this, and ſays, that it was a different plant, and was ſimply called *Alcibium*, without the word *echium*. He ſays, that this had its name from a perſon ſo called, who being aſleep in the threſhing floor in ſummer, was bitten by a viper in the groin, and cured himſelf by this herb. We have no account of this plant, by which it is poſſible to gueſs what kind it was of; and Pliny confeſſes himſelf not to know it, or be able to find any account of it in the writers of the times before him; ſo that if Nicander is right in diſtinguiſhing it from the *echium*, ſo called, we have wholly loſt the knowledge of the plant. *Nicander*, de Theriaca.

ALCMANIAN (*Cycl.*)—Some authors aſſign other *Alcmanian* verſes, compoſed of three *dactyls*, and a long ſyllable [a].

E. gr. *Munera lætitiamque Dei.*

Others give an *Alcmanian*, compoſed of a *dactyl*, *ſpondee*, and another *dactyl*, and a long ſyllable [b].

E. gr. *Ne dubita nam vera fides.*

—[[a] Trev. Dict. Univ. T. 1. p. 264. [b] *Alſted.* Encycl. T. 1. p. 520. See alſo *Martin*, Lex. Philol. T. 1. p. 23. voc. *Alcman.*]

ALCOA *arbor*, in botany, a name uſed, by ſome authors, for the tree brought from St. Helena, the wood of which emulates the colour and texture of ebony. *Ray*'s Hiſt. Vol. 3. p. 520.

ALCOHOL (*Cycl.*) is otherwiſe written *Alchool*, *Alcool*, *Alkol*, and *Alcol*.

Rolfink [a] and Wedelius [b] diſpute much on the etymon of this word.—[[a] *Rolf.* Chym. l. 4. ſec. 8. [b] *Wedel.* Pharm. Acroam. l. 1. ſec. 1. c. 3. p. 16. ſeq.]

Jungken deſcribes various methods of preparing *Alcohol* of wine, from Helmont, Boyle, Glauber, Le Mort, &c. *Jungk.* Lex. Chym. Pharm. P. 1. p. 13. ſeq.

ALCOHOL is alſo uſed, by modern chemiſts, for any fine highly rectified ſpirit. *Caſtel.* Lex. Med. p. 29. See SPIRIT *rectified.*

ALCOHOL, in the Arabian aſtrology, is when a heavy ſlow-paced planet receives another lighter one within its orb, ſo as to come in junction therewith. *Vital.* Lex. Math. p. 18.

ALCOHOLIZATION, in chemiſtry, the rectification of a vinous ſpirit. *Teichm.* Elem. Chem. P. 1. c. 4. p. 2.

This is otherwiſe called *Alcooliſation.*

Alcoholization, according to Starkey, denotes the circulation of a volatile ſpirit on a fixed alkali, till ſuch time as out of the two ariſes one only neutral body, different from both the former. *Alcoholization* is one way of volatilizing alkali's. *Starkey*, p. 128. Mem. de Trev. an. 1706. p. 246.

ALCOHOLIZATION is alſo uſed for pulverization. *Juncker*, Conſp. Chem. tab. 12. p. 313. See PULVERIZATION, *Cycl.*

ALCOHOLISED is underſtood of things which are reduced to an *Alcohol.*

In this ſenſe, we meet with *alcoliſed* ſpirits, *alcoliſed* powders, &c.

This is otherwiſe written, *alcoolized*, and amounts to much the ſame as ſubtilized, rectified, &c.

According to Starkey's doctrine, as there are three kinds of ſpirits, acid, urinous, and vinous, we may alſo make three kinds of *alcoholized* alkali's, which are diſtinguiſhed by the names of *arcanum ponticitatis*, *arcanum microcoſmi*, and *arcanum famech.* *Starkey*, p. 128. Mem. de Trev. loc. cit.

ALCOLA is uſed, by alchemiſts, for the tartar of urine. *Caſt.* Lex. Med. p. 30.

Alcola is found in three different forms; viz. 1. Reſolved, or reduced into an impalpable ſubſtance. 2. Sandy, or voided under the appearance of ſmall grains of whitiſh or reddiſh ſand. 3. Mucilaginous, or viſcous. *Paracelſ.* de Urin. Indic. l. 1. tr. 2. c. 1. ſeq. ap. Caſt. Lex.

ALCOR, in aſtronomy, a ſmall ſtar adjoining to the large bright one in the middle of the tail of the Great Bear. Phil. Tranſact. N°. 283. p. 848. *Wolf.* Elem. Aſtron. §. 236. Edit. 1. See URSA *major*, *Cycl.*

The word is Arabic.—It is a proverb among the Arabians, applied to one who pretends to ſee ſmall things, but overlooks much greater, *Thou canſt ſee* Alcor, *and yet not ſee the full moon.* *Vital.* Lex. Math. p. 19. *Wolf.* Lex. Math. p. 34.

ALCORAN (*Cycl.*)—Some take this word to denote a collection, and ſuppoſe the name was given to this book, as being a collection of the looſe chapters, or ſheets, out of which it was firſt formed.

This opinion, to which Salmaſius adheres [a], is refuted by Mr. Sale [b] from this conſideration, that the name *Koran* is not only given to the whole compoſition, but to any part, or portion of it, conſequently cannot properly import a collection. M. Ancillon ſuggeſts, that the word is not a noun, but a verb, ſignifying *confeſſus eſt*, or *correxit*, and importing either a confeſſion of faith, or a correction of the Old and New Teſtament [c]; but this will hardly be adopted by any.—[[a] Exerc. ad Solin. in Proleg. [b] Prelim. Diſc. to Koran, §. 3. p. 56. ſeq. [c] *Ancill.* Melang. P. 1. p. 78. Act. Erud. Lipſ. 1698. p. 288.]

The *Alcoran* is known by divers other names, ſome of which are mentioned in the Cyclopædia. It is ſometimes alſo called *al Moſhaf*, *q. d.* the volume; *al Kitab*, the book; *Tanzil*, a thing deſcended from above; *Kelam Scheref*, the noble word; *Ketaz aziz*, the precious book. *Sale*, lib. cit. p. 57. Trev. Dict. Univ. T. 1. p. 264.

The form in which any paſſage of it is quoted by any of the Mahometan writers, in their works, is by writing in a large character, or in red letter, the two words *Coulho taala*, God ſays, without marking either chapter or verſe.

The work is divided into an hundred and fourteen *ſuras*, or chapters, and the ſuras ſubdivided into little verſes, or ſigns, called *ayat*; which are all compoſed in a broken interrupted ſtyle, reſembling proſe rather than verſe, though generally reckoned, by learned men, in the latter claſs.

Mr. Sale aſſures, that it is written in proſe, but that the ſentences generally conclude in a long continued rhime, for the ſake of which, the ſenſe is often interrupted, and unneceſſary repetitions made. The Arabs are ſo delighted with this jingling, that they employ it in their moſt elaborate compoſitions, which they embelliſh with frequent paſſages of, and alluſions to, the *Alcoran*; ſo that it is next to impoſſible to underſtand them, without being well verſed in this book.

The diviſion into ſura's is but of a late ſtanding. Neither the ſura's, nor the verſes, are actually marked in any of their copies, though, in ſome MSS. the number of verſes in each chapter is ſpecified after the title.

Beſide the diviſions of chapter and verſe, which are unequal, the Mahometans have divided the *Alcoran* into ſixty equal portions, called *hizb*, or *ahzab*, each of which is ſubdivided into four equal parts. This ſeems to be an imitation of the Jews, who have a like diviſion of their *Miſchna*, into ſixty portions, or *maſſiototh*. But the more uſual diviſion of the *Koran*, is into thirty ſections only, called *ajza*, each of twice the length of the former, and ſubdivided, like them, into four parts. Theſe diviſions are for the uſe of the public readers of the *Alcoran*, in the royal temples, and chapels adjoining to them, wherein are the tombs of their great men. Of the thirty readers belonging to every chapel, each reads his ſection every day; ſo that the whole *Alcoran* is read over once a day. *Sale*, lib. cit. p. 59.

After the title at the head of each chapter, excepting the ninth, is prefixed the formula, "In the name of the moſt "merciful God," called by the Mahometans *Biſmallah*, wherewith they conſtantly begin all their books and writings, as the diſtinguiſhing mark of their religion.

Twenty-nine of the chapters of the *Alcoran* have this further peculiarity, that there are certain letters of the alphabet prefixed to them. In ſome a ſingle letter; in others, two or more. Theſe letters are ſuppoſed, by the true believers, to conceal divers profound myſteries, the underſtanding whereof has been communicated to no man, their prophet excepted. Yet ſome have pretended to find their meaning, by ſuppoſing the letters to ſtand for ſo many words, expreſſing the names, attributes, and works of God. Others explain theſe letters from the organ made uſe of in their pronunciation; others from their value in numbers. Thus there are five chapters, whereof one is the ſecond, which begins with theſe letters, *A*, *L*, *M*. which ſome imagine to ſtand for *Allah*, *Latif*, *Magid*; God is gracious, and to be glorified. Others for *Ana*, *Li*, *Minni*; To me, and from me, viz. belongs all perfection, and proceeds all. Others for *Ana*, *Allah*, *Alam*; I am the moſt wiſe God. Taking the firſt letter to denote the beginning of the firſt word, the ſecond the middle of the ſecond, and the third the laſt of the third word. Others for *Allah*, *Gabriel*, *Mahomet*: the firſt, the author; the ſecond, the revealer; the third, the preacher of the *Alcoran*. Others pretend, that as the letter *A* belongs to the lower part of the throat, the firſt of the organs of ſpeech; *L* to the palate, the middle organ, and *M* to the lips, the laſt organ; ſo theſe letters denote, that God is the beginning, middle, and end. Others, that as the numerical value of theſe three letters is ſeventy-one, they denote, that in the ſpace of ſo many years, the religion preached in the *Koran* ſhall be fully eſtabliſhed. Golius conjectures, that theſe letters were put there by the copieſt, for *Amar li Mahomede*, *i. e.* at the command of Mahomet. *Gol.* Append. ad Gram. Erpen. p. 182. *Sale*, Prelim. Diſc. to Koran, ſect. 3. p. 60.

The *Alcoran* is allowed to be written with the utmoſt elegance and purity of language, in the dialect of the Koreiſhites, the moſt noble and polite of all the Arabians, but with ſome mixture of other dialects. It is the ſtandard of the Arabic tongue, and, as the orthodox believe, and are taught by the book itſelf, inimitable by any human pen; and therefore inſiſted on as a permanent miracle, greater than that of raiſing the dead, and alone ſufficient to convince the world of its divine original; and to this miracle did Mahomet himſelf chiefly appeal, for the confirmation of his miſſion, publicly challenging the moſt eloquent ſchoolmen in Arabia, to produce a ſingle chapter comparable to it. A late ingenious and candid writer, who is a very good judge, allows the ſtyle of the *Alcoran* to be generally beautiful and fluent, eſpecially where it imitates the prophetic manner, and ſcripture phraſe; conciſe, and often obſcure; adorned with bold figures, after the eaſtern taſte; enlivened with florid and ſententious expreſſions; and, in many places, eſpecially where the majeſty and attributes of God are deſcribed, ſublime and magnificent. *Sale*, lib. cit. p. 61.

To the pomp and harmony of expreſſion ſome aſcribe all the force and effect of the *Alcoran*; which they conſider as a ſort of muſic, equally fitted to raviſh and amaze, with other ſpecies of that art [d]. In this Mahomet ſucceeded ſo well, and ſo ſtrangely captivated the minds of his audience, that ſeveral of his opponents thought it the effect of witchcraft and enchantment, as he himſelf complains [e].—[d *Caſaub.* of Enthuſ. c. 4.

[e] Alcor. c. 15, 21, &c.

Others have attributed the effect of the *Alcoran* to the frequent mention of rewards and puniſhments; heaven and hell occur almoſt in every page [f]. Some ſuppoſe, that the ſenſual pleaſures of paradiſe, ſo frequently ſet before the imaginations of the readers of the *Alcoran*, was what chiefly bewitched them [g]. Though, with regard to theſe, there is great diſpute whether they are to be underſtood litterally, or ſpiritually [h]. Several have even allegorized the whole book. The ſame has happened among Jews and Chriſtians. In every ſect there are, from time to time, perſons of an imagination too fine, to be contented with the common ſyſtem, which is only accommodated to the multitude. Hence the tribe of allegoriſts, myſtics, cabaliſts, &c.—[f Mem. de Trev. 1725. p. 648. Bibl. Franc. T. 9. p. 198. [g] New Mem. of Liter. T. 5. p. 11. [h] Bibl. Univ. T. 10. p. 94. ſeq.]

The moſt elegant paſſage in the whole *Alcoran*, in the judgment of all the commentators, is that in the chapter of *Hud*, wherein God, to put a ſtop to the deluge, ſays; "O "earth, ſwallow up theſe waters! and thou, O heaven, "withdraw thy rain! And immediately the water abated; "the decree was fulfilled; the ark reſted on the mountain, "and a voice was heard, Woe to the ungodly." Al Kor. c. 11. p. 180. *Herbel.* Bibl. Orient. p. 87. ſeq.

The *Alcoran*, beſides the inconveniencies to which all books of revelation are ſubject, viz. to be differently underſtood and interpreted, has ſome peculiar ones. Mahomet placed the ſtreſs and merit of his *Alcoran* on the excellency of the ſtyle. This is ſubject to inconveniencies: the compoſition and arrangement of words admits of infinite varieties, and it can never be abſolutely ſaid, that any one is the beſt poſſible. Accordingly Hamzah Benahmed wrote a book againſt the *Alcoran*, with at leaſt equal elegancy [i], and Moſelema another, which even ſurpaſſed it [k], and occaſioned a defection of a great part of the muſſelmen.—[i V. Jour. des Scav. T. 13. p. 280. [k] Ouvr. des Scav. Nov. 1708. p. 494.]

The *Alcoran* is held not only of divine original, but eternal and uncreated, remaining, as ſome expreſs it, in the very eſſence of God. The firſt tranſcript has been from everlaſting by God's throne, written on a table of vaſt bigneſs, in which are alſo recorded the divine decrees, paſt and future. A copy from this table, in one volume, on paper, was ſent down to the loweſt heaven, in the month of Ramadan, on the night of power. From whence it was delivered out to Mahomet by parcels, ſome at Mecca, and ſome at Medina. Though he had the conſolation of ſeeing the whole once a year, and in the laſt part of his life twice. Ten new chapters were delivered entire, the greater part only in ſeparate periods, which were written down from time to time by the prophet's amanuenſis, in this or that part, of this or the other chapter, as he directed. The firſt parcel that was revealed, was the five firſt verſes of the ninety-ſixth chapter, which the prophet received in a cave of Mount Harah, near Mecca. *D'Herbel.* lib. cit. p. 85.

This method was formed on that of the Jews, who hold that the law was alſo given to Moſes by parcels. *Milt.* de Mahom. Antimahom. p. 365. *Sale*, lib. cit. p. 65.

There are great diſputes as to the time and manner of the deſcent of the *Alcoran*. Some will have it to have only begun to deſcend on the night above-mentioned. Others aſſert, that it arrived that night at the end of its journey: while other maintain, that it was only taken down that night from the table of the divine decree, which the muſſelmen call *Louh-al Mahfoudh*, or the *well kept table*, *i. e.* the ſecret book, or regiſter. This night, according to the Mahometans, returns yearly; but they are not agreed as to the preciſe time of its return. Some place it in one month, ſome in another; the generality in the month Ramadan. This opinion, however probable, not being certain, they obſerve nine ſeveral nights, for greater ſecurity, in memory of it.

This eternity and increation of the *Alcoran*, has occaſioned vehement diſputes, having been oppoſed by many, particularly by the ſect of the Motazalites, and the followers of Almozdar, who ſtuck not to accuſe thoſe who held the *Alcoran* to be increated, as infidels, and aſſerters of two eternal beings. The diſpute occaſioned great calamities. Some of the kaliphs of the family of Abas, publiſhed an edict, declaring the *Alcoran* to be created; and ſeveral were whipt, impriſoned, and put to death, for holding the contrary. But the edict was afterwards revoked, and men left at liberty to think on the point as they pleaſed. *D'Herbelot*, lib. cit. p. 85. ſeq.

The *Alcoran* has not wanted for cenſors and detractors, even among the Arabs, ſome of whom have denied any thing miraculous in the book, except the prophecies; adding, that as to the point of eloquence, the Arabians were able, without inſpiration, to have done ſomething equal, or even ſuperior to it. This was the opinion of the Motazalites, and particularly of Almozdar and Alnodham. *Sale*, lib. cit. p. 67. ſeq.

The general aim of the *Alcoran* was, to unite the profeſſors of the three different religions, then followed in Arabia, idolaters, Jews, and Chriſtians, in the knowledge and worſhip of one God, under the ſanction of certain laws, and the outward ſigns of ceremonies, partly of antient, and partly of novel inſtitution, enforced by the conſideration of rewards and puniſhments, both temporal and eternal, and to bring all to the obedience of Mahomet, as the prophet and embaſſador of God, who was to eſtabliſh the true religion on earth, and be acknowledged chief pontiff in ſpiritual matters. The chief point therefore inculcated in the *Alcoran*, is the unity of God, to reſtore which, the prophet confeſſed was the chief end of his miſſion. The reſt is taken up in preſcribing neceſſary laws and directions, frequent admonitions to moral and divine virtues, the worſhip and reverence of the ſupreme being, and reſignation to his will. One of their moſt learned commentators diſtinguiſhes the contents of the *Alcoran* into allegorical and literal; under the former are comprehended all the obſcure, parabolical, and ænigmatical paſſages, with ſuch as are repealed, or abrogated; the latter, ſuch as are clear, and in full force. Vid. *Golii*, Append. ad Gram. Erpen. p. 176. *Sale*, lib. cit. p. 62. ſeq.

The moſt excellent moral in the whole *Alcoran* is alſo allowed, by interpreters, to be that in the chapter *Al Araf* [l], *i. e.* ſhew mercy, do good to all, and diſpute not with the ignorant; or, as Mr. Sale renders it, Uſe indulgence, command that which is juſt, and withdraw far from the ignorant [m]. Mahomet, according to the authors of the *Keſchaf*, having begged of the angel Gabriel a more ample explication of this paſſage, he received it in the following terms: "Seek him who turns thee out, give to him who takes from "thee, pardon him who injures thee; for God will have "you plant in your ſouls the roots of his chief perfections." —[l *D'Herbel.* p. 88. [m] Al Koran, c. 7. p. 138.]

'Tis eaſy to ſee, that this commentary is copied from the Goſpel.—In reality, the neceſſity of forgiving enemies, though frequently inculcated in the *Alcoran*, is of a later date among the Mahometans, than among the Chriſtians; and among thoſe latter,

than among the heathens. But it matters not ſo much who had it firſt, as who obſerves it beſt. The caliph Haſſan, ſon of Hali, being at table, a ſlave unfortunately let fall a diſh of meat reeking hot, which ſcalded him ſeverely; the ſlave preſently fell on his knees, rehearſing theſe words of the *Alcoran*, "Paradiſe is for thoſe who reſtrain their anger." I am not angry with thee, anſwered the caliph. "And for thoſe who "forgive offences againſt them," continues the ſlave. I forgive thee thine, replies the caliph. "But above all, for "thoſe who return good for evil," adds the ſlave. I ſet thee at liberty, rejoin'd the caliph, and I give thee ten dinars. *Saadi*, ap. Mem. de Trev. 1705. p. 1137.

There are alſo a great number of occaſional paſſages in the *Alcoran*, relating only to particular emergencies. For this advantage Mahomet had in the piece-meal method of receiving his revelation, that whenever he happened to be perplexed and gravelled with any thing, he had a certain reſource in ſome new morſel of revelation. It was an admirable contrivance of his, to bring down the whole *Alcoran* at once, only to the loweſt heaven, not to earth; ſince, had the whole been publiſhed at once, innumerable objections would have been made, which it would have been impoſſible for him to ſolve; but as he received it by parcels, as God ſaw fit they ſhould be publiſhed for the converſion and inſtruction of the people, he had wherewithal in petto, to anſwer all emergencies, and extricate himſelf from all difficulties. *Sale*, lib. cit. p. 63. ſeq.

To give an inſtance, Naſſer Ben Hareth pretended to queſtion the authority of the *Alcoran*; Mahomet declined to enter into a diſpute on the head, but appealed to God for the truth of his doctrine; the former joined with him in this appeal, pronouncing the following words. "Lord, if what "Mahomet ſays come from thee, rain ſhowers of ſtones "upon us, and over-whelm us, as thou formerly didſt to "Abraham the Abyſſinian; and puniſh us ſeverely in the "next world." This was a fair trial of the *Alcoran*; and there ſeemed ſome neceſſity for a miracle to maintain its divinity. But an eaſier expedient ſerved: the angel Gabriel came down in the nick of time, and brought a new verſe to the following effect. "God does not care, O Mahomet, to "puniſh them, while thou art among them." On which paſſage the commentators take notice, that it has not been uſual for God to puniſh a people by extermination, while one of his prophets, or envoys was among them. This Naſſer, who puſhed Mahomet ſo vigorouſly, is never mentioned by Muſſulmen without execrations. *D' Herbel.* p. 86.

The Muſſulmen dare not ſo much as touch the *Alcoran*, without being firſt waſhed, or legally purified; to prevent which, an inſcription is put on the cover or label; *Let none touch but they who are clean.* It is read with great care and reſpect; being never held below the girdle. They ſwear by it, take omens from it on all weighty occaſions; carry it with them to war, write ſentences of it in their banners, adorn it with gold and precious ſtones, and knowingly ſuffer it not to be in the poſſeſſion of any of a different religion. Some ſay that it is puniſhable even with death, in a Chriſtian to touch it; others that the veneration of the Muſſulmen, leads them to condemn the tranſlating it into any other language as a prophanation; but theſe ſeem to be aggravations. The Mahometans have taken care to have their ſcripture tranſlated into the Perſian, the Javan, the Malayan, and other languages, tho' out of reſpect to the original, theſe verſions are generally if not always interlineated. *Reland*, de Relig. Mahom. p. 265. *Sale*, lib. cit. p. 69.

It is not enough with the Muſſulmen, that the *Alcoran* be the object of the ſtudy of men, but it muſt be that of their favourite brutes, as cats, horſes, and camels [n]. Its reception has been very different in different countries. In Turky it makes their eccleſiaſtical law, in Perſia their civil law [o], in Spain it has been burnt [p], in Italy prohibited [q], in Tartary thrown to horſes [r].—[[n] Jour. des Scav. T. 62. p. 272. [o] Act. Erud. Lipſ. 1695. p. 278. [p] *Gomez.* Vit. Ximen. Amæn. Liter. T. 1. p. 357. *Gedd.* Miſc. Tract. T. 1. p. 11. Jour. des Scav. T. 21. p. 424. [q] Act. Erud. Lipſ. 1699. p. 249. [r] *Gen.* Hiſt. Tart. T. 1. p. 110.]

The paſſages in the *Alcoran*, which are contradictory to each other, are ſolved by the Mahometan doctors from the doctrine of abrogation. They pretend that God commanded many things in the *Alcoran*, which for good reaſons he afterwards revoked.

In one ſenſe the *Alcoran* cannot be ſaid to be a bad book, ſince it is founded on the bible. A learned Jeſuit finds it ſo far from being hurtful to chriſtianity, that he has even liſted it into the chriſtian cauſe, and drawn proofs from it for the truths of the goſpel. P. de Colonia in Mem. de Trev. 1719. p. 613. See further concerning the Hiſtory of the *Alcoran*, *Boulainviliers*, Vie de Mahom. p. 258. Act. Erudit. Lipſ. 1694. p. 382. It. 1692. p. 331. ſeq. Its excellency and uſe, *Boulainvil.* lib. cit. p. 348. *Reland*, Relig. Mahom. in Pref. Jour. Liter. T. 10. p. 29. Its Characters and Confuſion, Ouvr. des Scav. Sept. 1704. p. 419. Jour. des Scav. T. 37. p. 39. It. T. 48. p. 87. ſeq. Its Obſcurity and Difficulties, Mem. de Trev. 1714. p. 1147. Its Doctrine of Chriſt, Phil. Tranſ. N°. 154. p. 433. See alſo *Poſtellus* on its conformity with the Goſpel. Contradictions in it, how ſolved. *D' Herbel.* p. 87.

ALCORAN is alſo figuratively applied to certain other books full of impieties and impoſtures.

In this ſenſe we meet with the *Alcoran* of the Cordeliers, which has made a great noiſe. Wherein St. Francis is extravagantly magnified, and put on a level with Jeſus Chriſt.

The *Alcoran* of the Cordeliers, is properly an extract of a very ſcarce book, entitled the conformity of the life of the ſeraphic father St. Francis, with the life of Chriſt, publiſhed in 1510. 4°. Since at Bologna in folio [s]. Eraſmus Albertus, being by the elector of Brandenburg appointed to viſit a monaſtery of Franciſcans, found this book; and being ſtruck with the extreme folly and abſurdity of it, collected a number of curioſities out of it, and publiſhed them under the title of the *Alcoran* of the Franciſcans, with a preface by Martin Luther [t]. This was afterwards tranſlated into French [u], and Latin [x], and publiſhed with additional extracts.—[[s] *Liber Aureus Inſcriptus Liber Conformitatum Vitæ beati ac ſeraphici P. Franciſci ad Vitam Jeſu Chriſti Domini noſtri, denuo editus correctus & illuſtratus a J. Jer. Bacchio Utinenſi, Sodali Franciſcano Doctore Theol. Bonon.* 1590. fol. [t] Altenb. 1542. 4°. [u] L' Alcoran des Cordelieres Extrait. mot a mot de ce malheureux Livre des Conformitez de St. Francis, &c. Gen. 1560. 2 Vol. 8°. [x] *Alcoranus Franciſcanorum*, Gen. 1578. 8°. Amæn. Liter. T. 3. p. 161. ſeq. *Lomier*, de Biblioth. p. 140. Mem. of Liter. T. 3. p. 33. Not.]

ALCORAN is alſo uſed in a more limited ſenſe, for a portion or chapter of the Koran. *Sale*, ubi ſupra. p. 56.

In which ſenſe, the word is ſynonymous with *Sura*.

ALCORANISTS, among Mahometans, thoſe who adhere ſtrictly to the letter or text of the *Alcoran*, from an opinion of its ultimate ſufficiency and perfection [a]. The Perſians are generally *Alcoraniſts*, as admitting the alcoran alone for their rule of faith. The Turks, Tartars, Arabs, &c. beſides the alcoran, admit a multitude of traditions [b].—[[a] *D' Herbel.* Bibl. Orient. p. 87. [b] *Pfaff.* Theol. Jud. & Moham. p. 397. Bibl. Univ. T. 7, p. 242.]

The *Alcoraniſts*, among Mahometans, amount to much the ſame with the Textuaries among the Jews. The *Alcoraniſts* can find nothing excellent out of the alcoran; are enemies of philoſophers, metaphyſicians, and ſcholaſtic writers. With them the alcoran is every thing.

ALCYON, (*Cycl.*) a name given by the antients to the Iſpida, or king-fiſher. See ISPIDA.

ALCYONIUM, in botany, the name of a genus of plants the characters of which are theſe. They are of a very irregular ſtructure, often very hard, and ſometimes ſoft; uſually of a cruſtaceous or vermiculated appearance, and affording no viſible ſeeds or flowers.

The ſpecies of *Alcyonium*, enumerated by Mr. Tournefort are theſe:

1. The hard *Alcyonium*, or firſt *Alcyonium* of Dioſcorides. 2. The ſoft *Alcyonium*, or fourth *Alcyonium* of Dioſcorides. 3. The ſtuppoſe *Alcyonium*. 4. The tuberous *Alcyonium*. 5. The hard, hat-faſhioned *Alcyonium*. 6. The great hard arboreſcent *Alcyonium*. 7. The perforated, red ſtuppoſe *Alcyonium*. 8. The purple vermiculated *Alcyonium*. 9. The white vermiculated *Alcyonium*. 10. The yellow vermiculated *Alcyonium*. 11. The capillaceous, curled and vermiculated *Alcyonium*. 12. The Engliſh vermiculated *Alcyoninm*, called by Mr. Ray, the long cylindric cord-like Fucus. *Tournef.* Inſt. p. 577.

ALCYONIUM is alſo a name given by Loyd, to a peculiar kind of foſſil coral, of the Aſtroites kind, found in Wales. It is very plentiful in that country, and puts on the appearance of a ſort of marble, being bedded in a marbly matter for its matrix. It is never found lodged in the ſtrata, but always in looſe nodules of ſix, nine, or twelve inches in diameter, and when poliſhed makes a very beautiful appearance. When cut horizontally, and when perpendicularly, it puts on two very different appearances. It is the ſame ſtone that De Boot has deſcribed, under the name of the firſt aſtroites. In its recent ſtate, it is a ſort of white coral, growing plentifully in the ſeas about Jamaica; and it is as frequently found foſſil in England, and is often buried in maſſes of a ſort of flint, ſo hard and beautiful, that it will take a poliſh like an agate. There are beſides this, many other things which are plentiful in their recent ſtate, in the ſeas about Jamaica; and are as common foſſils with us in England, in the inland countries, and in places near no ſeas, nor any other place, where they could have grown in their recent ſtate, even if they had been in that ſtate the produce of this iſland. The univerſal deluge alone can account for theſe changes. Philoſ. Tranſ. N°. 252. p. 188.

ALDABARAM, in oſteology, a name given by ſome to the ſeſamoide bones in the great toe. See SESAMOIDEA, *Cycl.*

ALDARU, in botany, a name given by Aviſenna, Serapion, and other writers of the Arabian nation, to the lentiſk tree. Aviſenna ſays, that *Aldaru* is the name of that kind of the turpentine tree, which produces the largeſt fruit. But Serapion, on the other hand, tells us that the turpentine tree is of two kinds, the one cultivated, and the other wild; and that the wild kind is called lentiſk, and has leaves and fruit

fruit like the common turpentine tree, only ſmaller. Abuanifa ſays, that in ſome places the turpentine tree grows wild on the mountains, and grows to as large a ſize as an oak, bearing proportionably large fruit; and Theophraſtus tells us, that in Syria, the turpentine grows to a large and lofty tree, tho' in other countries it be but a low ſhrub. The whole difference therefore between theſe authors may be, that the wild turpentine tree, and not the lentiſk, produces thoſe large fruit, which Aviſenna ſpeaks of; and indeed on comparing the whole chapter of Aviſenna, with the Greek of Dioſcorides, from which it is taken, it will be found ſo full of errors, that it will not appear wonderful he ſhould have ſaid wrong in this article.

ALDEBAC, in the materia medica of the antient Arabian phyſicians, the name by which they have called bird-lime. They place this among the vegetable poiſons, and always tranſlate the ἡ ἰξίας of Dioſcorides by this word, or by the word *debac*, without the particle *Al*. In this, they are much to be preferred to Pliny, who always tranſlates ἰξίας, *Viſcum*; whereas they only tranſlate it ſo, where the Greeks meant it ſo, that is, where they uſed it as a ſubſtantive feminine; but where they uſed it as a maſculine adjective, they have properly diſtinguiſhed it, and tranſlated it by the chamæleon thiſtle. This was evidently the ſenſe of the Greek writers, who in this ſenſe mention it as a ſafe remedy, and who called the white chamæleon thiſtle by this name, not from its poſſeſſing the qualities of bird-lime, but from its yielding a viſcous juice, which in time hardened into a ſubſtance like maſtick, and was uſed to hold in the mouth, to ſweeten the breath.

ALDEBARAN (*Cycl.*) is otherwiſe called *Lampas*, *Oculus Tauri*, in Engliſh the bull's eye. The Romans gave it the name *Palilitium*, from its riſing at the time when their feaſt called *Palilia* was celebrated. *Plin.* Hiſt. Nat. l. 18. c. 26.

ALDERAIMIN, in aſtronomy, a ſtar of the third magnitude on the right ſhoulder of Cepheus. See CEPHEUS, *Cycl.*

ALDHAFERA, in the Arabian aſtronomy, denotes a fixed ſtar of the third magnitude, in the lion's mane. *Vital.* Lex. Math. p. 19. ſeq.

ALDII, in antiquity, ſervants who attended their maſters in expeditions to the wars. *Aquin.* Lex. Milit. T. 1. p. 38.

Theſe were otherwiſe called *Aldiones*, *Aldionii*, and *Aldionarii*.

ALE (*Cycl.*)—The word *Ale* is originally Daniſh, *Ael*, by which name the liquor is ſtill called in that language. *Verſteg.* Antiquit. c. 3. p. 49.

We have different accounts of the origin of *Ale*. Some after Pliny derive it from the Egyptians, who it is even ſaid aſcribed the invention to one of their gods, *viz.* Dionyſius the ſon of Ammon, that is to Bacchus himſelf, who firſt diſcovered the method of making a potable liquor, by fermenting the water of the Nile with ſome of the grains of that country. Others, after Tacitus, maintain it to have been of German origin, tho' uſed alſo among the antient Gauls, and other more northern nations. Jour. des Scav. T. 67. p. 273. *Plin.* Hiſt. Nat. l. 22. c. 25. *Hardouin*, Not. ad Eund.

Ale is ſuppoſed to be much the ſame with what was known among the antients, by the names of *Zythum* and *Curmi*.

Pale ALE, that prepared of malt ſlightly dried.

Brown ALE, that made from malt higher dried, or roaſted.

The latter is found purer, thinner, and more fluid, the former ſtronger of the malt, and more viſcid. *Quinc.* Diſpenſ. P. 2. Sect. 13. p. 216.

Ale is generally held more diuretic than beer, in regard *Ale* is ſmoother, more ſoftening and relaxing, ſo that where urine is to be promoted by facilitating the paſſage, *Ale* is moſt likely to effect it. *Quinc.* Diſpenſ. P. 2. Sect. 13. p. 215.

Ale, it is ſaid, fouls the glands, ſtuffs the veſſels with ſlime and viſcidity, makes the body unweildy and corpulent, and paves the way for cachexies, jaundice, aſthmas, and incurable dropſies; fills the urinary paſſages with ſlough and matter of as ill conſequence as gravel itſelf. But may it not be aſked what proof there is of this? And whether all the diſeaſes aſcribed to *Ale*, be more than what may ariſe from a diet too plentiful in proportion to the exerciſe of a perſon?

Pale ALE brewed with hard waters, as thoſe of ſprings and wells, is judged the moſt wholeſome in regard the mineral particles, tend to prevent the coheſions of thoſe drawn from the grain, and enable them to paſs the proper ſecretions the better; ſofter waters, as thoſe of rivers, and rain, ſeem better ſuited to draw out the ſubſtance of high dried malts, which retain many igneous particles, beſt abſorbed in a ſmooth vehicle. *Quinc.* loc. cit.

In Staffordſhire, they have a ſecret of fining *Ale*, in a very ſhort time. Plot conjectures it to be done by adding alum, or vinegar in the working. *Plot*, Nat. Hiſt. Stafford. c. 9. §. 72.

Ale is prepared various ways, and of various ingredients, as of wheat, rye, millet, oats, barley, the berries of the quick bean, &c. *Bruckman*, ap. Act. Erud. Lipſ. 1722. p. 545. ſeq. *Evelyn*, Sylv. c. 15. §. 2.

Some have found that the juice which bleeds from the birch or ſycomore, is of great uſe on this occaſion, applied inſtead of water. It makes one buſhel of malt go as far as four in the common way. *Evelyn*, c. 16. §. 4.

Some have a method of preparing *Ale*, ſo that it will keep carried to the Eaſt or Weſt-Indies. The ſecret is by maſhing twice with freſh malt, boiling twice; and after ſhipping it, putting to every five gallons two new laid eggs whole, to remain therein. It is ſaid, that in a fortnight's time, the ſhells will be diſſolved; and the eggs become like wind eggs: and that afterwards the white would diſappear, and the yolk remain untouched. Phil. Tranſ. N°. 27. p. 495.

Ale brewed of white malt abounds in a ſalt and crude tartar, and on this account is found to heat too much, and, as ſome ſay, fatten, render the blood viſcid, and load the reſpiration, create obſtructions in the viſcera, diſpoſe to the ſtone, &c.

Yet the *Ale* of Koerenigs Lutter in Brunſwick is famous, and tho' made of white malt, is, by its panegyriſts, pretended to have the contrary of all theſe effects. *Bruckman*, loc. cit.

The conſumption of *Ale* in England is incredible. A late author makes it amount to the value of four millions yearly; including Great Britain, and Ireland. Plan of Engl. Comm. p. 202. ſeq.

ALEA, in Roman antiquity, ſignifies in general games of chance. V. *Pitiſc.* Lex. Ant in voc.

ALEA, in a more limited ſenſe, is applied by Roman writers to a particular game played with dice, in a pair of tables, ſomewhat after the manner of our back gammon, or tric trac. Inſtead of our men, they played with white and black ſtones, which were moved this way or that, as the dice directed.

Alea in this ſenſe appears to have been the ſame game with what the Greeks called *Pettia* and *Chivia*; the Romans ſometimes *Tabula*, *Teſſara*, and XII. *Scripta*. Giorn. de Letter. de Parm. 1690. p. 230. ſeq.

This game of *Alea* is very imperfectly delivered by antient writers. Agathias Scholaſticus [a] deſcribes it the fulleſt, but ſo obſcurely, that ſeveral of his commentators frankly own they underſtand nothing of the matter. Salmaſius undertook to explain this matter, but did not ſucceed. Corn. de Paw, has publiſhed a work expreſs on the ſubject, by which a better idea may be formed of the manner of playing at this game [b].

—[a Epigram. in Anthol. Græc. l. 1. c. 61. b Diatribe de *Alea* Veter. ad Epigr. Agath. Scholaſt. Utr. 1726. 12°. An Extract of it is given in Bibl. Anc. Mod. T. 24. p. 222.]

ALEATORIUM, in Roman antiquity, was the place where they played at alea.

The *Aleatorium* was near the *Sphæriſterium*; that the ſportſmen when tired with the pila, or more robuſt exerciſes, might refreſh themſelves in the *Aleatorium*. *Pitiſc.* Lex. Ant. in voc.

ALEC, in ichthyology, a name given by Gaza, in his commentaries on Ariſtotle, to the fiſh called by that author mainis, and by Ovid *Menerela*. This is the *Mæna* of the Latin ichthyologiſts, and is called by the Venetians *Menelo*, and *Menela*. The fiſh is properly of the ſparus kind, according to the Artedian ſyſtem, and is diſtinguiſhed from the other ſpecies of that genus, by having four large teeth, its ſides variegated, and a large black ſpot on each. See SPARUS.

ALECTORIA (*Cycl.*)—This is otherwiſe called *Alectorius Lapis*, ſometimes *Alectorolithos*, in Engliſh the cock-ſtone.

The more modern naturaliſts hold the *Alectorius Lapis* to be originally ſwallowed down, not generated in the ſtomach or gizzard of cocks and capons. It is known that many of the fowl kind make a practice of ſwallowing pebbles, as it is ſuppoſed to be of ſervice in the buſineſs of trituration and digeſtion. In two oſtriches diſſected ſome time ago, there were found above a hundred in each ſtomach [a]. It is in vain therefore that ſome have laboured to account for the origination of this ſtone in the ſtomach from the hypotheſis of alkali, and acid [b].—[a *Worm.* Muſ. *Lancis* Not. ad Mercat. Metalloth. Arm. 8. c. 6. p. 182. ſeq. Giorn. de Letter. d' Ital. T. 32. p. 150. Bibl. Ital. T. 1. p. 140. b *Plin.* Hiſt. Nat. l. 37. c. 10. p. 787. *Iſid.* Orig. l. 16. c. 13. *Mercat.* Metalloth. loc. cit. *Gorræi*, Deff. Med. p. 19. *Caſtel.* Lex. Med. p. 30. *Nichols*, Lapid. p. 173. See PALUMBELLARUM *Lapis*.

ALECTORICARDITES, in natural hiſtory, a name given by Plot, to a figured ſtone reſembling a pullet's heart, with the fat near the baſis of it, and the coronary veſſels deſcending from it. *Plot*, Nat. Hiſt. Stafford. c. 5. §. 7. p. 180.

The word is compounded of the Greek Αλεκτωρ, cock, and καρδια, heart.

ALECTORIUS *Lapis*, in natural hiſtory. See ALECTORIA.

ALECTORIUS *Lapis*, is alſo uſed for a ſmall ſpecies of Bufonites, or disjunct ſegment of a palate of a fiſh approaching to the nature of the *Chelidonius Lapis*.

ALECTOROMANTIA, (*Cycl.*) an antient kind of divination, formed by means of a cock.

This is otherwiſe called *Alectryomantia*, *Alectryomancy*. The word comes from the Greek Αλεκτωρ, a cock, and μαντεια, divination.

There appear to have been divers ſpecies of *Alectryomancy*. In ſome the augury was taken from the crowing of cocks; wherein regard was had to the time of the day, as whether before before noon or after, to which ſome added the conſide-

ration

ration of the ſign the ſun was in, and the motion of the moon [a]. Others ſpeak of a kind of *Alectryomancy*, performed with the help of a ring [b]. But the ſpecies moſt ſpoken of by authors was performed as follows. A circle was made on the ground, and divided into twenty-four equal parts, in each of which was written one of the letters of the alphabet, and upon each of theſe letters was laid a grain of wheat: this done, a cock was turned looſe into the circle, and careful obſervation made of the grains he picked.—The letters correſponding to theſe grains were afterwards formed into a word, which word was to be the anſwer deſired.—[[a] V. Philoſ. Tranſ. N°. 162. p. 707. [b] *Ammian. Marcellin.* l. 29. c. 1. Jour. des Scav. T. 51. p. 593.]

It was thus, according to Zonaras, that Libanius, and Jamblicus ſought who ſhould ſucceed the emperor Valens; and the cock eating the grains anſwering to the ſpaces ΘΕΟΔ. Several whoſe names began with thoſe letters, as Theodotus, Theodiſtes, Theodulus, *&c.* were put to death; which did not hinder, but promote Theodoſius to the ſucceſſion [c]. But the Story however current, is but ill ſupported: It has been called in queſtion by ſome, and refuted by others from the ſilence of Marcellinus, Socrates, and other hiſtorians of that time [d].—[[c] V. *Zonar.* Annal. p. 744. *Cedren.* p. 257. *Kircher*, Œdip. Ægyp. P. 2. p. 472. ſeq. *Voſſ.* de Philoſ. p. 167. *Bulling.* de Divin. l. 3. c. 40. *Potter*, Archæol. Attic. l. 2. c. 18. p. 352. Jour. des Scav. T. 18. p. 337. [d] V. *Marcellin.* l. 29. c 1. *Socrat.* l. 4. c. 19. *Sozom.* l. 6. c. 31. *Niceph.* Hiſt. Eccleſ. l. 11. c. 45. *Fabric.* Bibl. Græc. l. 4. c. 28. §. 2. Id. ibid. l. 5. c. 10. §. 1.]

Prætorius has a diſcourſe expreſs on *Alectryomancy*. *Francof.* 1681. 4°. *Fabric.* Bibl. Antiq. c. 12. p. 410.

ALEGER, a name given to an inferior ſort of vinegar, made of ale, or malt liquor, inſtead of wine. Power has given a deſcription of the eels in *Aleger*. V. *Power*, Exper. Philoſ. Obſ. 3. p. 32.

ALEIPHA, in the materia medica of the antients, a word uſed for all fatty bodies whatever. The oils of vegetables, and fat of animals were all called by this general name. But theſe ſimple ſubſtances were not the only ones called by it, for it is very frequently uſed to expreſs any ſort of medicated oil impregnated with aromatick vegetables; but its general acceptation in this ſenſe, was for ſuch compoſitions as were intended to anoint the body; and therefore, they were properly only vegetable or animal fats, impregnated with the lighter parts of plants, and not clogged with an addition of powders, nor with wax or any thing of that kind, which might have given them the conſiſtence of ointments. The antient phyſicians were very fond of theſe compoſitions, which they uſed either to ſome diſeaſed part only, or to the whole body, and after they had made the patient uſe the warm bath to relax and open the pores. *Hippocrates.*

ALEMBIC (*Cycl.*) is the ſame with what is otherwiſe called *Lembic*, *Helm*, *Galea*, *Pileus*, *Capitellum*, and *Ambix*. This laſt name ſeems to have been the moſt antient; Dioſcorides [a] ſpeaks of it, and aſſures us, they had a method in thoſe days of extracting the mercury from cinnabar, by ſublimating it in an ambix [b].—[[a] *Dioſcor.* l. 5. c. 110. [b] *Le Clerc.* Hiſt. de Medic. P. 3. l. 1. Nouv. Rep. Lett. T. 24. p. 407. Jour. des Scav. T. 75. p. 643.]

The open *Alembic* is called alſo Roſtratus, that is beaked. This diſcharges its vapour thro' a beak or noſe, into a recipient. The blind *Alembic* is uſed in ſublimation, being ſometimes alſo perforated at top to let the vapour aſcend.

German chemiſts deſcribe methods of colouring liquors in their paſſage thro' the *Alembic*. Ephem. Acad. N. C. dec. 2. An. 3. Obſ. 28. p. 83. ſeq.

Some naturaliſts ſuppoſe rocks and mountains to do the office of *Alembics*, with regard to the waters of the ſea, which they thus raiſe to the ſurface of the earth; and hence the the origin of ſprings and rivers [c]. Others reject this hypotheſis of natural *Alembics*, and ſuppoſe ſprings to be formed from vapour [d]. Dr. Halley adopts this laſt opinion, yet retains the *Alembics*, only inverting their uſe. He ſuppoſes the tops or external parts of hills, to collect the vapour wherewith the atmoſphere is loaded and ſerve as it were for *Alembics* to diſtil freſh water for the uſe of man and beaſt [e].—[[c] *Scheuch.* Hiſt. Alp. 2. p. 45. ſeq. Phil. Tranſ. N°. 316. p. 146. *De la Hire* in Hiſt. Acad. Scienc. An. 1703. p. 5. [d] Giorn. des Letter. d'Ital. T. 25. p. 349. [e] Phil. Tranſ. N°. 192. p. 473.]

See SPRING, VAPOUR, RIVER, &c. *Cycl.*

ALEMBROTH, in the writings of the alchemiſts, a word uſed for a ſort of fixed alkaline ſalt, which had the power of the famous alcaheſt, in diſſolving bodies, opening the pores of moſt or all known ſubſtances, and thence, as well as by deſtroying ſulphurs, promoting the ſeparation of metals from their ores.

The word is ſaid to be of Chaldee origin, and its natural meaning to be *clavis artis*, the key of art.

The word is alſo written *Alembrot*, ſometimes *Elebrot*. It is otherwiſe called *ſal fuſionis*, and *ſal fixionis*.

Alembroth is repreſented as partaking of the nature of halonitrum, and alum: it is ſaid to be extracted from a peculiar ſort of earth reſembling coagulated blood, found on the mountain Olympus in Cyprus. Libavius gives divers methods of preparing it, *Ruland.* Lex. Alch. p. 29. ap. *Caſtel.* Lex. Med. p. 30. *Libav.* Synt. Arcan. Chem. l. 8. c. 28.

Some alſo call ſalt of tartar *Alembroth deſiccatum.*

ALENON, a word uſed by ſome of the old medical writers, as a name for the oil of ſweet almonds.

ALEORE, Αλεωρη, a word uſed by the old medical writers, for an intermiſſion of eaſe, from the raging pains of any violent acute diſtemper. *Hippocrates.*

ALEUROMANCY, *Aleuromantia*, is the ſame with what was otherwiſe called *Alphitomantia*, and *Crithomantia*. *Ælian.* de Animal. l. 8. c. 5. *Fabric.* Bibl. Antiq. c. 12. p. 410.

Aleuromancy was an antient kind of divination performed by means of meal or flower.

ALEXANDERS, in botany, a genus of umbelliferous plants. See SMYRNIUM.

ALEXANDRIAN, in a particular ſenſe, is applied to all thoſe who profeſſed or taught the ſciences in the ſchool of Alexandria.

In this ſenſe, Clemens is denominated Alexandrinus, tho' born at Athens. The ſame may be ſaid of Apion, who was born at Oaſis; and Ariſtarchus by birth a Samothratian. *Johnſ.* de Script. Hiſt. Philoſ. l. 1. c. 2. §. 6.

The chief *Alexandrian* philoſophers, were Ammonius, Plotinus, Origen, Porphyry, Jamblicus, Sopater, Maximus, and Dexippus. Id. ib. l. 3. c. 16. §. 2.

ALEXANDRIAN is more particularly underſtood, of a college of prieſts, conſecrated to the ſervice of Alexander Severus, after his deification. Lampridius relates, that notwithſtanding Severus was killed by Maximin, the ſenate proſecuted his apotheoſis; and, for regularity of worſhip, founded an order of prieſts or *ſodales*, under the denomination of *Alexandrini*. V. Act. Erud. Lipſ. 1684. p. 41.

ALEXANDRIN (*Cycl.*)—*Alexandrins* are otherwiſe called dodecaſyllables; and are peculiar to the modern poetry. We find them in the Engliſh, French, Italian, and German poets; but moſt in the French, who generally compoſe their tragedies and Epic poems in this verſe. The Italians appear to have been the firſt who uſed it. Maffei mentions a MS poem, in the library of Verona, written about the year 1200, compoſed of *Alexandrins*. But they have been long diſuſed by the writers of that country. The like may be ſaid of the Engliſh.

The advantages of the *Alexandrin* verſe, are its keeping the rhimes from coming ſo near, and conſequently hindering them from being ſo much perceived. To this may be added, that coming nearer to the nature of proſe, it is fitter for theatrical dialogue, and ſupplies the office of the antient iambics, better than any other verſe in rhime. V. Contin. des Mem. de Saleng. T. 2. P. 1. p. 438. Jour. des Scav. T. 82. p. 381. It. T. 75. p. 222. Bibl. Ital. T. 2. p. 299. Mem. de Trev. 1730. p. 755. Nouv. Liter. T. 5. p. 3.

Alexandrins fell into diſuſe among the antient French poets, from which Ronſard firſt retrieved them, and brought them into vogue. That author ſpeaks much in their praiſe, as the only verſe fit for great ſubjects, as anſwering to the antient heroic, or hexameter verſe. If he did not compoſe his Franciad in them, he aſſures us it was not the effect of his own choice, but the commands he had received from Charles IX. who was fond of the common verſe. Ronſard even promiſed after that prince's death, to make his Franciad walk on Alexandrian feet, that is, to tranſlate it into this meaſure. But the ſame poet, in his latter days, recanted all this, confeſſing that he had been deceived in ſuppoſing the Alexandrian verſes to have correſponded to the antient heroics, which the common verſes rather do; that the *Alexandrins* rather anſwer to the Senarii of the antient Tragic poets; that they are too low and proſaic for great ſubjects, too rambling and diffuſive, and by the eaſineſs of their compoſition give too much ſcope to tattle; on the whole, that they are only fit for tranſlation, where they afford great advantages for expreſſing the ſenſe of the original. Notwithſtanding this we find moſt of the French epic, dramatic, as well as elegiac and paſtoral pieces, compoſed in this verſe. V. *Menag.* Orig. Franc. in voc.

ALEXANDRINUM, in the antient phyſick, is uſed for a kind of green ſalve, or drawing plaiſter, a deſcription of which is given by Celſus. V. *Celſ.* de Art. Med. l. 5. c. 19. *Gorr.* Med. Defin. p. 19. *Caſt.* Lex. Med. p. 31.

ALEXICACUS, ſomething that preſerves the body from harm or miſchief. The word is Greek, αλεξικακος, compounded of αλεξω, I drive away, and κακον, *malum*, evil.

Alexicacus amounts to much the ſame with alexiterial. Conſt. Rhodocanaces gives the name more peculiarly to the ſpirit of ſea-ſalt, and has publiſhed a work under that title. *Alexicacus*, ſpirit of ſalt or of the world, which vulgarly prepared is called the ſpirit of ſalt. Lond. 1664. 4°.

ALEXICACUS, in antiquity, was an attribute of Neptune, whom the tunny-fiſhers uſed to invoke under this appellation, that their nets might be preſerved from the ξιφιας, or ſword-fiſh, which uſed to tear them, and prevent the aſſiſtance, which it was pretended the dolphins uſed to give the tunnies on this occaſion. Hiſt. Acad. Inſcript. T. 2. p. 21.

ALEXIPHARMIC (*Cycl.*)—Phyſical authors afford many particulars relating to the *Alexipharmic* quality of myrrh [a], the

Alexipharmic ſcorzonera [b], the origin of the *Alexipharmic* virtue of bezoar [c], which ſome aſcribe to the animals feeding on contrayerva, and other plants of the ſame tendency. The reaſon why *Alexipharmics* deſtroy worms [d], &c.—Perlinus [e], and others, have treatiſes expreſs on *Alexipharmics*. Nicander [f], an antient Greek poet, has a work ſtill extant on the ſame ſubject, written in verſe; tho' Plutarch [g] diſputes it the title of a poem, as being a plain narrative without fiction.—[[a] *Poliſ.* Myrrhol. Sect. 1. c. 7. p. 21. [b] Ephem. Acad. N. C. Dec. 2. an. 1. obſ. 181. [c] Phil. Tranſ. N°. 305. p. 2202. [d] *Konig.* in Ephem. Acad. N. C. dec. 2. an. 5. obſ. 99. [e] *Lipen.* Bibl. Med. p. 11. [f] V. *Fabric.* Bibl. Græc. l. 3. c. 26. §. 3. [g] *Plut.* de Audiend. Poet. p. 16.] See MYRRH, SCORZONERA, BEZOARD, &c.

Alexipharmics are deemed proper correctors of opium, when it produces ſickneſs, naúſeas, &c. See OPIUM.

ALEXITERIAL, (*Cycl.*) in medicine, ſomething that has the nature, or does the office of an amulet. *Wolf.* Scrutin. Amulet. c. 1. Giorn. de Letter d'Ital. 1690. p. 164. See AMULET, *Cycl.* and *Suppl.*

Alexiterial is more particularly uſed for a remedy againſt poiſons. *Gorr.* Def. Med. p. 20. *Caſt.* Lex. Med. p. 31. *Blanc.* Lex. Med. p. 26. *Burggr.* Lex. Med. T. 1. p. 407. voc. *Alexipharmaca.*

Quincy [a] ſays, the name is ordinarily applied to medicines given in fevers; which is confounding *Alexiterics* with *Alexipyretics* [b].—[[a] Lex. Med. p. 16. [b] *Burggr.* Lex. Med. T. 1. p. 410.]

ALFAQUES, among the Spaniſh Moriſcoes, were the clergy, or thoſe who inſtructed them in the Mahometan faith. *Gedd.* Miſc. Tracts, T. 1. p. 111.

The *Alfaques* differed from the Morabites, who anſwered to monks, or religious, among Chriſtians. Mem. de Trev. 1704. p. 523.

ALFDOUCH, a name given by the Moors to a ſort of vermichelli, which they make of flour and water, and are very fond of in their entertainments.

ALFECCA, in aſtronomy, a name given to the ſtar commonly called *Lucida coronæ.*

ALGA, in botany, the name of a genus of plants growing under water, and of the ſame kind with the ſea fucus's, but that they are compoſed of very long and narrow graſſy leaves, or of long capillaceous filaments.

The ſpecies of *Alga*, enumerated by Tournefort, are theſe. 1. The common narrow leaved *Alga*. 2. The ſmall graſſy leaved *Alga*. 3. The very narrow leaved, naked *Alga*. 4. The branched, ſeeding, narrow leaved, graſſy *Alga*. 5. The ſea *Alga*, with extremely narrow leaves. 6. The graſſy river *Alga*, with extremely long leaves. 7. The green capillaceous leaved *Alga*. 8. The black capillaceous leaved *Alga*. And, 9. the yellowiſh capillaceous leaved *Alga*. *Tourn.* Inſt. p. 569.

The *Alga's* are ſome marine, or growing in the ſea; others fluviatile, or produced in rivers; others fontal, growing in ſprings; and ſome again grow on ſtones at the bottom of the water; others on ſhells by the ſhore; others even float on the ſurface of the water.

One of the moſt conſiderable of the tribe of *Alga's*, is the common, called *Alga marina*; ſometimes alſo *Alga anguſtifolia vitriariorum*, as being uſed in the glaſs-works like kali.

Its aſhes afford great plenty of fixed ſalt.

Some ſpeak of its medicinal properties as aperient, vulnerary, and deſiccative. *Lemery*, Tr. des Drog. p. 25.

Alga is popularly known in Engliſh by the name of *wreck*, as being generally conceived rather as excreſcences, than as regular plants.

ALGA *graminea*, in botany, the name of a genus of plants, which grow in the ſea, and are of an herbaceous, not ſtony texture, have long and narrow graſſy leaves, and produce their ſeeds in the joinings of their ſeveral leaves. It is commonly called in Engliſh *graſs-wreck*, and is common on all our ſhores. *Ray*, Meth. Acuta, p. 4.

Dioſcorides recommends it in the gout and inflammations.

ALGALI, a name given, by ſome of the old chemical writers, to nitre.

ALGAROT (*Cycl.*)—The word is otherwiſe written, *Algaroth*, *Algeroth*, *Algarel*, and *Algerel*. Some will have it not of Arabic, but Italian origin, deriving it from a phyſician of Verona, named *Algaroth*, who firſt invented the preparation.

There are divers ways of preparing *Algarot*, as by precipitating the butter, or by diſtilling antimony, together with the ſweet ſublimate, or white precipitate of mercury. *Lemery*, Treat. de l'Antimoine, P. 3. p. 172. ſeq. Mem. de Trev. 1707. p. 1161. ſeq. It. p. 2092. ſeq. *Le Mort.* Coll. Chym. Leid. c. 57. proc. 3. & 4. *Caſtel.* Lex. Med. p. 31.

ALGAVAREIA, the language antiently ſpoken by the Moriſcoes in Spain. *Gedd.* Miſc. Tract. T. 1. p. 23.

The *Algavareia* was a ſort of Arabic, and ſtood contradiſtinguiſhed from the *Aljameia*. See ALJAMEIA.

ALGEBRA (*Cycl.*) has often been accuſed of obſcurity; and the geometrical methods of the antients have by many, eſpecially in England, been preferred to the modern uſe of *Algebra* in geometry. But, on this occaſion, a great maſter of both methods has very juſtly obſerved, that the modern improvements made either in geometry, or in philoſophy, are, in a great meaſure, owing to the facility, conciſeneſs, and great extent of the methods of computation, or *algebraic* part. It is for the ſake of theſe advantages, that ſo many ſymbols are employed in *Algebra*, the number and complication of which (together with the greater care there has been taken in treating of geometry, after the excellent models left us by the antients) have contributed more to occaſion the preference that is often aſcribed to geometry, in reſpect to perſpicuity and evidence, than any eſſential difference that can be ſuppoſed to be between them. *Algebra* is a general kind of arithmetic, which is the very thing that renders its uſefulneſs ſo univerſal; nor can this be ſuppoſed to derogate from its evidence, for we have no ideas more clear or diſtinct, than thoſe of numbers; and hence often acquire more ſatisfactory and certain knowledge from computations, than from conſtructions. It may have been employed to cover, under a complication of ſymbols, abſtruſe doctrines, that could not bear the light ſo well in a plain geometrical form; but, without doubt, obſcurity may be avoided in this art, as well as in geometry, by defining clearly the import and uſe of the ſymbols, and proceeding with care afterwards. Vid. *Mac Laurin's* Flux. B. 2. See NEGATIVE-*ſign.*

ALGEBRAISM, or ALGEBRISM, is affectedly uſed, in ſome writers, for algebra itſelf. In which ſenſe, we read of the application of *Algebraiſm.* Mem. de Trev. 1722. p. 1193.

ALGIABARII, a Mahometan ſect of predeſtinarians, who attribute all the actions of men, good or evil, to the agency or influence of God.

The *Algiabarii* ſtand oppoſed to the *Alkadarii*. See ALKADARII.

They hold abſolute decrees, and phyſical premotion. For the juſtice of God in puniſhing the evil he has cauſed, they reſolve it wholly into his abſolute dominion over the creatures. *Abulpharag.* Hiſt. Dynaſt. ap. Lehman. Obſerv. Budd. Inſt. p. 195.

ALGOIDES, in botany, a name given, by Vaillant, to a genus of plants, called by Micheli and Linnæus, *zannichellia. Vaill.* a. J. 1719. T. 1. F. 1. See ZANNICHELLIA.

ALGONQUIN, one of the chief American languages, ſpoken eſpecially in Canada, or New France. The *Algonquin* is one of the two principal languages ſpoken in the Northern America, the other is the *Huron.*

It takes its name from an antient people of the ſame denomination, now almoſt extinct, the Troquois being the only remains.

The *Algonquin* tongue is ſpoken, with ſome diverſity of dialects, by moſt of the natives from the river St. Laurence to that of Miſſiſſippi. *Lafiteau*, Parall. des Moeurſ. ap. Nouv. Mem. de Litter. T. 1. p. 254.

The baron la Hontan [a] has given a little dictionary of the *Algonquin* language. Reland [b] has alſo given a gloſs on ſeveral words of the ſame.—[[a] Mem. de l'Amer. Septent. Hag. 1703. [b] Diſſ. Miſc. P. 3. diſſ. 2. Act. Erud. Lipſ. 1708. p. 439.]

ALGOR is uſed, by ſome medicinal writers, to denote a preternatural coldneſs or chilneſs in a part. Muys ſpeaks, in this ſenſe, of an *Algor* of the arm, attended with an *atrophy.*

ALGORAB, a fixed ſtar, of the third magnitude, in the right wing of the conſtellation *Corvus.* *Vital.* Lex. Math. p. 21.

ALGOSAREL, in botany, a name uſed by Avicenna, and ſome other authors, for the common wild carrot, or *Daucus Sylveſtris.* *Ger.* Emac. Ind. 2.

ALHABOR, among the Arabian aſtronomers, is that ſtar commonly called *Sirius.* *Vital.* Lex. Math. p. 22. ſeq.

ALHEN, in natural hiſtory, a name by which Dr. Shaw, and others, have called a genus of plants, ſince named by Linnæus *Lawſonia.* See LAWSONIA.

ALHIRTO, in aſtronomy, a fixed ſtar, of the third magnitude, in the conſtellation Capricorn. This is otherwiſe called *Roſtrum Gallinæ.* Near this ſtar, in the year 1600, appeared a new ſtar, which laſted twenty-one years, and then diſappeared again. *Vital.* Lex. Math. p. 22.

ALI gives the denomination to a ſect, or diviſion, among the Mahometans, who adhere to the right of ſucceſſion of *Ali*, the fourth caliph, or ſucceſſor of Mahomet, and the reform of muſſelmaniſm introduced by him. Vid. Mem. de Trev. 1720. p. 1618. ſeq. *Sale*, Prelim. Diſc. to Koran. ſec. 8. p. 178. *D'Herbel.* Bibl. Orient. in voc.

The ſectaries of *Ali* are more particularly called *Schiites*, and ſtand oppoſed to the *Sunnites*, or ſect of *Omar*, who adhere to the law, as left by Mahomet, Abubeker, and Omar.

Ali was couſin of Mahomet, and ſon-in-law of that prophet, having married his daughter Fatimah. After Mahomet's death, great diſputes aroſe about the ſucceſſion; many ſtood for Ali, but Abubeker was preferred, and elected the firſt kaliph. Ali took his turn, after the death of Othman.

The Perſians are the chief adherents to the ſect of Ali, whom they hold to have been the legitimate ſucceſſor of Mahomet, and Abubeker an uſurper. On the contrary, the Turks are of the ſect of Omar, and hold Ali in execration, having raiſed a furious civil war among the muſſulmen.

Mem. de Trev. 1715. p. 397. Bibl. Angl. T. 3. p. 155. & 356.

The Perſian emperors of the family of Sophi, pretend to be the direct deſcendants from Ali; but the deſcent is very darkly made out. Bibl. Raiſ. T. 2. p. 397.

The diſtinguiſhing badge of the followers of Ali, is a red turban, which is worn by the Perſians, who are hence called in deriſion, by the Turks, *Kiſilbachi*, *q. d.* red heads. Mem. de Trev. 1715. p. 386.

Ali is reputed the author of divers works, particularly a Centiloquium, in great repute among the Arabs and Perſians; part of which has been publiſhed in Engliſh by Mr. Ockley. V. Bibl. Angl. T. 1. p. 349. ſeq.

ALJAMEIA, is a name which the Moriſcoes in Spain give to the language of the Spaniards.

Among other articles agreed on by the junto, which was appointed by the emperor Charles V. in 1526, in favour of the Moriſcoes, this was one, That the Moriſcoes ſhould no longer ſpeak Algavareia, *i. e.* Mooriſh, or Arabic, but ſhould all ſpeak *Aljameia*, *i. e.* Spaniſh, as it was called by the Moors, and all their writings and contracts ſhould be in that language. *Geddes*, Miſc. Tract. T. 1. p. 23.

ALIARBUCHA, in natural hiſtory, the Arabian name for a large kind of rat, common in that country, and good to eat, according to Bochart, who thinks it the ſame as the *Schaphan*, mentioned in Leviticus, and there declared unclean. Levit. xi. 5. See CHOEROGRYLLUS.

ALICA, in the antient phyſic and diet, a kind of food, but the various accounts given of it by authors, make it uncertain what it was; ſome repreſenting it as a ſort of grain, and others as an aliment made of grain.

The Greek word for *Alica* was χονδρος, which term, and πτισσανη, ſeem to have been general names for all ſpelt or hulled grain, beaten or ground into a pulp. The author of the Geoponics, dedicated to Conſtantine, gives another method of preparing the *Alica*, viz. by ſteeping barley in hot water, then preſſing it, mixing it with gypſe and a white ſand, and laſtly ſifting it. The ſalubrity of which preparation will bear ſome doubt, on account of the noxious quality of the gypſe. Such is the *Alica* repreſented to be by Foeſius. It was uſed as a food in ſeveral diſeaſes, not unlike our water-gruel. *Plin.* Hiſt. Nat. T. 2. l. 18. c. 11. & 17. It. T. 2. l. 22. c. 25. p. 286. *Caſtel.* Lex. Med. p. 31. ſeq. *Voſſ.* Etym. p. 28. *Gorr.* Def. Med. p. 511. ſeq. in voc. χονδρος.

Galen and Oribaſius make the *Alica* a kind of wheat. Pliny is not conſiſtent with himſelf, making it in one place a natural ſeed, as lentils, &c. and in another ſomething factitious.

Ray, in his hiſtory, ſays the *Alica* differs from the χονδρος, as the genus from the ſpecies.

ALICES, in medicine, ſpots preceding the ſmall-pox. *Caſtel.* Lex. Med. p. 32.

ALICULA, in antiquity, a kind of puerile habit worn by the Roman children. V. *Pitiſc.* in voc. *Voſſ.* Etymol.

The *Alicula* was a ſort of *chlamys*: ſome explained it by *tunica manicata*.

ALIDES, in the Mahometan hiſtory, the deſcendants of *Ali*, otherwiſe called *Fatimites*.

The *Alides* had a long ſtruggle with the Ommiades, for the kaliphate, or ſucceſſion of Mahomet; which is the Mahometan papacy. See ALI.

ALJEMBUT, or, as ſome write it, *Gembut*, a name given by the Arabians, Aviſenna, and others, to a ſpecies of acacia, which they alſo called the Nabathæan pod, and ceration, or ſiliqua, and which ſome have ſuppoſed to be the ſame with the common carob; but they expreſly diſtinguiſh it, by ſaying, that it is an aſtringent; whereas the other is gently purgative, and that the fruit of it was given in hæmorrhages. Nay, Iſidore goes ſo far as to ſay, that the acacia juice of the ſhops was made of its fruit, while unripe. *Aviſenna*.

ALIEN (*Cycl.*)—A great queſtion aroſe in king James the firſt's time, Whether the *poſt nati*, *i. e.* thoſe born in the liegance of Scotland, after the acceſſion of that prince to the Engliſh throne, were *Aliens*, or denizens? The king, by proclamation, pronounced them all, *ipſo facto*, naturalized by his acceſſion. *Elleſmere*, Caſe of Poſt Nati, p. 5. ſeq. Vid. King *James*'s Speech to Parliament, March 1607. See alſo *Coke*'s Reports, Calvin's Caſe.

It has been much controverted, whether the law which excludes foreigners from inheriting, extends to the right of ſucceſſion to the crown? This was one of the difficulties ſtarted againſt the right of Mary queen of Scots to the Engliſh ſucceſſion. The advocates for that princeſs inſiſt, that the inheritance of the crown is excepted from the general law. In effect, the *infantes du roy* have a particular exception in their favour, in the very time of the ſtatute, *de natis ultra mare*. *Leiceſt.* Commonw. p. 127. ſeq.

Aliens are uſually divided by our lawyers into friends and enemies; to which ſome add a third kind, viz. *Alien* infidels.

ALIEN is ſometimes uſed, in middle age writers, for exempt. *Du Cange*, Gloſſ. Lat. T. 1. p. 134.

ALIEN-*amy* denotes a foreigner the ſubject of ſome prince in friendſhip with us.

ALIENS *duty*, an impoſt laid on all goods imported into England by *Aliens*, or denizens, and even on certain goods imported by natural ſubjects, if they be brought on foreign bottoms, over and above what is paid for the ſame goods imported by Britiſh, and in Britiſh ſhipping. 12 Stat. *Car.* II. *Crouch*, View of Cuſt. p. 6.

Aliens duty is otherwiſe called *petty cuſtoms*, and *navigation duty*.

Fiſh dried, or ſalted, and codfiſh, or herring not caught in Britiſh veſſels, and cured by Britiſh, pay a double *Aliens duty*. *Crouch*, lib. cit. p. 7.

ALIEN *priories* were a kind of cells to great abbies abroad, chiefly in Normandy, &c. endowed by Engliſhmen, who being ſmitten with devotion for ſome outlandiſh ſaint, or ſhrine, made donations to them of lands, tithes, churches, &c. upon which monaſteries were erected, and peopled chiefly by colonies of foreign monks from the mother abby, governed by the abbot thereof; ſo that neither a prior, nor a monk, could be made without his conſent. Upon breaking out of wars, the king uſually ſeized on the *Alien priories*, took their lands into his own hands, and frequently let them out to farm to the religious, for a certain rent.

The number of *Alien priories* in England was very great. Moſt of the Cluniac monaſteries belonged to this claſs.—They were ſometimes naturalized, and cut off from their foreign dependance, by the king's patents. A large number of them were ſuppreſſed, in 1414, by the parliament at Leiceſter, under Henry V. what remained fell with the firſt at the general diſſolution. Vid. *Dugd.* Monaſt. Abr. p. 44. It. p. 69. It. p. 119. *Steph.* Supp. to Dugd. T. 2. p. 12. ſeq. It. p. 231. Bibl. Anc. Mod. T. 1. p. 303.

ALIENATION (*Cycl.*)—By the laws of the antient Jews, lands could only be *alienated* for the ſpace of fifty years. At each return of the jubilee, all returned again to the primitive owners, or their deſcendants, to whom the lands were originally allotted, at the firſt diſtribution of Canaan. *Cuneuſ.* de Republ. Jud. ap. Mem. de Trev. 1717. p. 212.

By the ſtatute of Edward I. a bar was put to *Alienations*, by what we call *entails*, which is an expedient for procuring *perpetuities* in families; but a counter expedient was deviſed, by the judges, to defeat the intent of it, called a *recovery*, whereby the entails are cut off. See PERPETUITY, ENTAIL, RECOVERY, &c. *Cycl.*

The kingdom of England was, by king John, alienated and conveyed to the pope; but the *Alienation* was afterwards declared null by parliament, becauſe done without parliamentary conſent [a].—The crown of Scotland was alienated by king Baliol to Edward the firſt, for a ſum of money; but the Scots reclaimed againſt the ſame, partly as tranſacted without their privity, but more as denying that prince's title [b].—[[a] Vid. Mem. Liter. de la Gr. Bret. T. 7. p. 125. [b] V. Bibl. Choiſ. T. 23. p. 307.]

The *Alienation* of things ſacred to profane uſes, is, in ſome caſes, lawful; *e. gr.* where it is done by authority of the ſovereign, and for ſome good purpoſe of the ſtate; and where it conduces to the putting a period to a war, or the like.

Juſtinian allows of ſelling or pledging the ſacred veſſels for the redemption of captives; and even, in caſe of a ſuperfluity of ſuch utenſils, permits the ſelling them to pay the debts of the church. The heathens did not diſpute the ſovereign's right to diſpoſe of conſecrated things. There is nothing, ſays Plutarch, more ſacred than offerings dedicated to the gods, and yet no body ever ſaid but that the people might make uſe of them, and remove them from one place to another, as often as they thought convenient. To the like purpoſe, Seneca obſerves, that temples themſelves are ſometimes ſtripped for the benefit of the ſtate, *pro republica plerumque templa nudantur*. Divers other teſtimonies, of the ſame kind, are produced by Grotius [c]. What has been ſaid concerning the profaning of ſacred things, will hold ſtill more ſtrongly concerning the ſecularizing of eccleſiaſtical things; ſince theſe latter are not properly conſecrated, and conſequently are not *jure divino*. Church goods are only ſeparated from the ordinary commerce of the world, in quality of public goods, and as belonging to the church, which makes part of the ſtate: much after the ſame manner, as ſecular goods belonging to the public, may not be alienated and employed for private uſes [d].—[[c] *Grotius*, de Jur. Bell. l. 3. c. 5. §. 1. n. 3. [d] *Coccei*, de Evocat. Sacror. p. 43. ſeq. Bibl. Germ. T. 1. p. 75. ſeq.]

This point was largely diſcuſſed in the debates about the peace of Oſnaburgh; where the court of Rome moved heaven and earth to prevent the *Alienation* of the revenues of divers biſhoprics, abbies, &c. from the church, but in vain.

The *Alienations* of church lands at the reformation, was of vaſt benefit to this nation. Upon the acceſſion of queen Mary, the prieſts flattered themſelves with the hopes of a reſtitution of thoſe lands; eſpecially when cardinal Pool was ſent legat, to negotiate the reſtoration of papal power. The parliament, indeed, paſſed a bill in favour of that power, but inſerted a clauſe in it, that the *Alienations* of church goods ſhould be all ratified, and that the poſſeſſors ſhould not

not be liable to any cenſure, or proſecution, on account of them.

No artifice was left untried by Julius III. to elude this clauſe: it was offered, that the poſſeſſors of ſuch lands ſhould be acquitted for all that was paſt, and even for all the moveables which had come into their hands; but a reſtitution in form was demanded of all the immoveables. The reconciliation being like to ſplit on this rock, the legat was at length impowered to ratify the article as it ſtood in the bill; but, at the ſame time, denounced the divine judgments on the poſſeſſors of ſuch lands. Pope Julius dying before the affair was ended, his ſucceſſor, Paul IV. abſolutely refuſed to confirm what the legat had agreed on, and proteſted, that it was not in the power of the pope to permit ſuch a thing. *Rapin*, Extr. de Rymer, T. 15. Bibl. Anc. Mod. T. 17. p. 257. *Burnet*, Suppl. Hiſt. Reform. l. 5. Jour. Liter. T. 7. p. 248.

ALII *multi*, or ALII *de regno*, are phraſes which often occur in our antient records and hiſtorians. Their meaning has occaſioned much diſpute. Dr. Brady will have them ſignify only tenants *in capite*; which Mr. Tyrrhel endeavours to refute, and ſhew that they denote the whole commons of the kingdom. *Tyrrh.* Hiſt. Engl. T. 4. App. p. 14. ſeq. and p. 37. ſeq.

ALIMA, among mineraliſts, a kind of ſand found in gold mines, out of which lead is extracted. *Rul.* Lex. Alch. p. 29. *Caſt.* Lex. Med. p. 32.

ALIMENTARY (*Cycl.*)—ALIMENTARY *duct*, *Ductus Alimentalis*, amounts to the ſame with what Bartholine, and ſome others, rather chuſe to call *via*, or *canalis alimentorum*, the channel of aliments. Philoſ. Tranſ. N°. 130. p. 771. *Barth.* Act. Med. T. 5. p. 103.

The whole length from the throat to the anus is but one continued duct, though often variouſly diſtinguiſhed, according to nature's different intention, in the ſeveral ſpecies of animals. It is moſt plain and ſimple in the acus marinus, where you have neither oeſophagus, nor ſtomach, but only a ſtrait paſſage, and that too without any valves, only growing a little more taper towards the anus. In divers fiſh there is no oeſophagus, in ſome but a very ſhort one. In other animals it is not only long, but, by its ſwellings in ſome places, acquires different names; as the ingluvies, or crop in birds, the paunch, or μεγαλη κοιλια, in quadrupeds: and of the ſame kind ſeem to be theſe ſwellings in the gullet of the rattle-ſnake, which do the office of receptacles, for retaining what food the ſtomach cannot yet well receive; which ſeems the more requiſite, ſince they feed but at one time of the year.

The whole *ductus alimentalis*, from its uſes, may be ordinarily divided into four parts. 1. That which conveys the food, called the oeſophagus. 2. That which digeſts, or corrodes it, called the ſtomach. 3. That which diſtributes the chyle, called the inteſtines. 4. That which empties the fæces, called the rectum. Phil. Tranſ. N°. 144. p. 32. and 33.

This duct is ſaid to be the true characteriſtic of an animal, or *proprium quarto modo*; there being no animal but has it, and whatever has it, being properly enough ranged under the claſs of animals. Plants receive their nouriſhment by the numerous fibres of their roots, but have no common receptacle for digeſting the food received, or for carrying off the recrements. But in all, even the loweſt degree of animal life, we may obſerve a ſtomach, and inteſtines, even where we cannot perceive the leaſt formation of any organ of the ſenſes, unleſs that common one of feeling, as in oyſters. Phil. Tranſ. N°. 269. p. 776. ſeq.

Dr. Wallis brings an argument from the ſtructure of the *alimentary* tube in man, to prove that he is not naturally carnivorous. To the cogency of which, Dr. Tyſon makes ſome objections. V. Philoſ. Tranſ. N°. 269. p. 777. ſeq.

ALIMENTATION is uſed, by ſome naturaliſts, for what we more ordinarily call *nutrition*. V. *Bacon*, Nat. Hiſt. cent. 7. §. 602. *Opp.* T. 3. p. 120.

ALIMOS, in botany, a name given, by ſome of the Greek writers, to the common liquorice. It has been thus called, from its quality of palling the appetite, and making it inſenſible either of hunger or thirſt. There has been ſome confuſion among the later authors, owing to the confounding this *Alimos* with the *Halimos*, which is the ſea-purſlain, ſo called from its growing in ſalt places. The property of the *Alimos* in preventing thirſt, muſt, however, always be ſufficient to diſtinguiſh it from this plant. The tranſlators of the Greek phyſicians, not knowing that liquorice was the thing called by them *Alimos*, took it to be ſome new plant, and have rendered it, by the word *aurio*, which therefore ſtands with them as the name of a plant unknown to us, though it means only liquorice. *Dioſcorides.*

ALINDESIS, in the antient gymnaſtic medicine, a kind of exerciſe, wherein perſons being beſmeared with oil, rolled themſelves naked in the duſt. *Lang.* Epiſt. Medic. l. 1. ep. 15. p. 236. *Caſtel.* Lex. Med. p. 32.

The word is Greek, Αλινδησις, ſometimes alſo written Αλινδος.

ALIOS *baton*, in ichthyology, a name given, by Ariſtotle, to the ſtrange fiſh called, by Artedi, *Lophius*, and by others *rana piſcatrix*. See LOPHIUS.

ALIPÆNOS, in the antient phyſic, an appellation given to dry, topical medicines, or ſuch as have no fat mixed with them.

The word is ſometimes alſo written *Alipantos*. It is purely Greek, αλιπαινος, compounded of the privative α, and λιπαινειν, *pingueſcere*, to fatten. In which ſenſe, *Alipæna* ſtands oppoſed to *lipara*, or plaiſters, which have fat in their compoſition; called alſo, by Celſus, *lenia*.

Galen gives the name αλιπη, to the remedies applied to freſh wounds, to check the inflammation, and haſten their healing. *Gal.* de Comp. Medic. per Grad. l. 1. c. 15. *Celſ.* de Art. Med. l. 5. c. 19. *Caſt.* Lex. Med. p. 32. *Lang.* Epiſt. Med. l. 1. epiſt. 77. p. 421.

ALIPILARIUS, or ALIPILUS, in antiquity, an officer belonging to the baths, who, by means of wax, and waxen plaiſters, took off the hairs from the *alæ*, or armpits.

The *Alipilus* anſwered to what the Greeks called ἀξωπαχιστης.

The antient Romans made it a point of cleanlineſs to keep the armpits clear and ſmooth. In after times, they went further, and took off the hair from their arms, legs, and other parts, with pitch and roſin, and by the *volſella*, an inſtrument for that purpoſe. *Petit.* ad Leg. Attic. p. 301. *Fabric.* Bibl. Græc. l. 5. c. 26. *Caſt.* in voc. *Alipili*. *Voſſ.* Etym. p. 18. in voc. *Alipilus*.

ALIPTA, in the antient gymnaſtics, an officer appointed to anoint the *Athletæ*.

In which ſenſe, the *Aliptæ* amount to the ſame with what are otherwiſe called *Unctores*, and *Jatraliptæ*. Vid. *Buret.* Hiſt. Ath. l. 1. Mem. Acad. Inſcr. T. 2. p. 292. See JATRALIPTES.

ALIPTA is ſometimes alſo uſed, in a leſs proper ſenſe, for the director, or ſuperintendant of the exerciſes of the *Athletæ*.

In which ſenſe, *Alipta* is ſynonymous with *gymnaſtes*, and *pædotriba*. *Buret.* Hiſt. Athlet. l. 1. Mem. Acad. Inſcr. T. 2. p. 302.

ALIPTERIUM, αλειπτηριον, in antiquity, a place in the antient *paleſtræ*, where the *athletæ* were anointed before their exerciſes.

The *Alipterium*, or *Alipterion*, was otherwiſe called *elæotheſion*, and *unctuarium*; ſometimes alſo *ceroma*. *Lang.* Epiſt. Med. l. 1. ep. 51. p. 234. *Buret.* Mem. Acad. Inſcr. T. 2. p. 292. See ELÆOTHESIUM.

ALIQUOT *part* (*Cycl.*)—Hobbs ſeems to confound the notion of an *aliquot* part with that of a commenſurable.—For that every *aliquot* part is commenſurable with its whole. Dr. Wallis corrects him for it, and ſhews the difference. In effect, every *aliquot* part is a commenſurable, but not *vice verſa*. Thus four is commenſurable with ſix, but is not an *aliquot* part of it. Phil. Tranſ. N°. 41. p. 827. See COMMENSURABLE, *Cycl.*

ALISMA, in botany, a name given by ſome to the *plantago aquatica*, or water plantain. *Dill.* Cat. Giſſ. p. 227.

ALITES, in antiquity, a name given to thoſe birds which afforded auguries by their wings and flight. *Feſt.* de Verb. Signif. p. 10.

In this ſenſe, *Alites* ſtand oppoſed to *oſcines*, or birds which gave auguries by their mouths, by ſinging, or croaking, &c.

To the claſs of *Alites*, belong the buzzard, oſprey, &c. To that of *oſcines*, the crane, raven, owl, &c. *Voſſ.* Etym. p. 18. in voc. *Ales*. *Pitiſc.* Lex. Ant. T. 1. p. 72.

The word is Latin, formed from *ala*, a wing.

ALKA, in zoology, the name of a water bird, of the diver kind, called, in different parts of England, the *auk*, the *razor-bill*, and the *murre*. It approaches to the ſize of the common duck; and its head, neck, back, and tail, are all black; its belly and breaſt, and up half-way of the throat, is white; but the upper part of the throat is of a duſky browniſh, or blackiſh purple; the wings are variegated with black and white. Its bill is two fingers breadth long, and is flatted ſideways and narrow, and has a deep furrow on its upper part; the upper chap alſo is hooked and hollow, and receives the under one into it, as into a ſort of ſinus; they are both of the ſame length, and are both marked with two tranſverſe furrows. It has, from the form of its beak, got the name of the *razor-bill*. Its legs are black, its feet webbed, and it has no hinder toe.

It builds in the rocks on the ſea-coaſts, and makes no neſt, laying its eggs in ſome hollow of the naked rock. The eggs are very large, and are white, with black ſpots. *Ray*'s Ornithol. p. 243.

ALKADARII, a ſect among the Mahometans, who deny any eternal, fixed, divine decrees.

The word is formed from the Arabic, *Alkadar*, which ſignifies decree.

The *Alkadarii* are a branch of *Moatazalites*.—They ſtand oppoſed to the *Algiabarii*. See ALGIABARII.

The *Alkadarii* are aſſertors of free-will; hold that man is veſted with a ſufficient power to do good or ill; is capable of meriting and demeriting, and ſhall be rewarded or puniſhed accordingly. *Abulpharag.* Hiſt. Dynaſt. 9. ap. Lehman. obſ. in Budd. Inſt. Philoſ. c. 4. p. 195.

ALKAHEST (*Cycl.*)—The *Alkaheſt* is variouſly defined by chemical authors: by ſome as an univerſal diſſolvent, or *ſolvens benedictum*, which radically diſſolves gold, ſilver, &c. and fermenting together with them, produces an univerſal medicine;

cine [a]. By others as a mercurial liquor, which by a ſimilitude of parts, penetrates the texture of mixed bodies, deſtroys their coheſion, and without undergoing any re-action, or loſing any part of its ſtrength, divides them into ſeveral ſubſtances [b]. By others as a ſaline, inodorous, homogeneous fluid, indifferently diſpoſed with regard to all mixts, which it penetrates like a wedge, and reduces them into their true elements, without communicating any thing to, or receiving from, the the bodies ſo diſſolved. By Helmont, as the principal and moſt ſucceſsful among ſalts, which having obtained the higheſt degree of ſimplicity, purity, and ſubtility, alone enjoys the faculty of remaining unchanged and unimpaired, by the ſubjects it works on, and of diſſolving the moſt ſtubborn, and untractable bodies, as ſtones, gems, glaſs, earth, ſulphur, metals, &c. into real ſalt, equal in weight to the matter diſſolved; and this with as much eaſe, as hot water melts down ſnow.—[[a] Ephem. Acad. N. C. Dec. 3. An. 3. app. p. 103. [b] *Wedekind.* Diſp. de *Alkaheſt.* Erf. 1685. c. 2. §. 4.]

The *Alkaheſt* differs from *aqua regia* and other menſtruums, as theſe latter operate by corroſion; the former by a kind of ſympathy, or conſent of parts, whereby it eaſily inſinuates itſelf among the ſulphureous parts of bodies. Mem de Trev. 1708. p. 331. See DISSOLUTION, *Cycl.* and MENSTRUUM, AQUA-REGIA, &c. *Cycl.* and *Suppl.*

It differs from fixed alkalies volatilized, in that the former is ſuppoſed to volatilize the bodies it diſſolves, whereas the latter coagulates them [c].—It differs from the mercury of the philoſophers, in that the former is a ſalt, the latter real mercury: add that the philoſophical mercury is a metal which only acts on metals; whereas the *Alkaheſt* diſſolves all bodies, but without uniting radically with any of them; and ſo as ſtill to remain ſeparable from them [d].—It alſo differs from the mercury of the philoſophers, as the former, according to Becher, conſiſts of mercurial earth intimately mixed with water; whereas the latter conſiſts of a mercurial and ſulphurous earth, as its principles [e]. Faber [f], indeed, and ſome others, make the *Alkaheſt* and philoſophical mercury to be the ſame. —[[c] Mem. de Trev. p. 328. [d] Mem. de Trev. 1704. p. 1865. [e] *Bech.* Phyſ. Subter. Sect. 6. c. 8. p. 540. *Stahl.* Philoſ. Princip. Chem. Supp. §. 1. p. 38. *Junck.* Conſpec. Chem. Tab. 28. p. 634. [f] Manuſc. Chem. c. 30. Ephem. Acad. N. C. Dec. 2. An. 8. app. p. 112.] See MERCURY.

Some diſtinguiſh two kinds of *Alkaheſts*, ſimple and compound. —Simple is that compounded of the acids of metals, pure and rendered volatile with the ſpirit thereof.—Compound, that made of the acid of minerals, and the pure and ſaline parts of animals, and vegetables. *Faber.* lib. cit. p. 113.

The *Alkaheſt* is ſaid to be heavy, as being ſalt without any phlegm; volatile as being pure ſpirit without any mixture; its ſmell is weak, as not being compounded of heterogeneous parts; it is alſo ſaid to be immortal, as not being alterable by its action. *Pelletier*, in Mem. de Trev. 1704. p. 1867.

The *Alkaheſt* is repreſented as an inſtrument of uſe for preparing divers remedies. All the medicinal virtues found in animals, vegetables, metals, minerals, pearls, ſtones, are by this menſtruum extracted from the other matters. By this a ſpecific againſt the gout may be drawn from hellebore, a febrifuge from colocynthis; and other ſovereign remedies, from myrrh, aloes, ſaffron, &c. all which are indeed procurable on eaſier terms, without the *Alkaheſt*, but much inferior in virture. Gold which ſtands all the trials of the fire, being digeſted in the *Alkaheſt*, and the menſtruum drawn off, remains at the bottom of the veſſel, in form of a fuſible ſalt. The ſame liquor being cohobated ſeveral times on the ſalt; this latter becomes volatile, and being raiſed by diſtillation, forms two kinds of *Aurum potabile*; of two different colours, the one red, which is the *Tinctura hæmatina*, the higheſt preparation of gold, by ſome repreſented as an univerſal medicine. By the *Alkaheſt* are alſo prepared *Argentum potabile*, and the wonderful oil of Venus and mercury, whereof chemiſts relate ſuch wonders. *Pellet.* in Mem. de Trev. 1704. p. 1867.

The different conjectures of chemiſts, with relation to the matter of the *Alkaheſt*, are innumerable. Boerhaave ſeems to expect it from the ſea-ſalt, and mercury together.—Few bodies but ſome alchemiſts or other has fixed on, as the object of his reſeaches after the *Alkaheſt*. Some have wrought on equinoctial dew; others on rain-water, others on talc, others on zink, others on antimony itſelf.—Poterius and Glauber confined themſelves to nitre; Beguinus did the ſame, only concealing it under the name of hermaphrodite ſalt. Angel. Sala, Sir Kenelm Digby, and ſeveral others held for vitriol. The diſciples of Paracelſus, commonly chooſe ſea-ſalt; Sandivorgius, Tachenius, Beverovicius, Boyle, and ſome others, water. Pollemannus, Mullerus, &c. built all their hopes on black lead; others preferred flint; ſome Potters varniſh [g]. Helmont pretends, that the *Alkaheſt* is prepared from common ſalt and raddiſh juice, unleſs his words are to be taken figuratively. Becher will have it made of a moſt penetrating mercurial earth; others of a foliated earth of tartar, and an urinous ſalt, combined, digeſted, and circulated together; others of ſpirit of wine, and ſalt of urine, coupled in due form; others of ſublimate mercury, and vitriol; others of the ſame mercury, and highly rectified ſpirit of wine, frequently cohobated; others of the ſapa of urine, expoſed to the magnetiſm of the air, &c [h].—[[g] *Martini*, in Mem. de Trev. 1707. p. 1452. [h] *Junck.* Conſpect. Chem. Tab. 7. p. 202.]

The generality of chemiſts take the *Alkaheſts* of Paracelſus and Van Helmont, for the ſame; ſome others conclude them to be entirely different things. It is certain theſe two authors ſpeak of their reſpective *Alkaheſts*, in terms very different. Paracelſus only ſpeaks of his as a medicine for the liver, which would prevent diſorders of that viſcus, or even ſupply, and reſtore it if entirely gone.—Van Helmont chiefly ſpeaks of his, as a menſtruum which would diſſolve all bodies.—Cnoeffelius, after an exact compariſon of the ſeveral paſſages of Van Helmont, wherein the *Alkaheſt* is mentioned, concludes, that what he elſewhere calls *Ignis gehennæ*, is not the ſame liquor with that which Paracelſus calls by the name of *Alkaheſt*; but with that which Paracelſus calls his corroſive ſpecific, which appears to be a different thing from his *Alkaheſt*: ſince Paracelſus never uſed his ſpecific internally, nor does Helmont, in all his writings, mention one word concerning the internal uſe of his *Alkaheſt*; tho' he commends it externally for the leproſy. And it appears from Paracelſus himſelf, that it was only on account of its external application, that he ranked it among medicines. *Paracelſ.* p. 817.

On the whole, it appears, that a diſtinction is by all means to be made between the *Alkaheſt* of Raym. Lully, mentioned by Helmont, the medicinal *Alkaheſt* of Paracelſus, the corroſive ſpecific of that author, and the diſſolving *Alkaheſt* of Helmont, however authors have generally confounded them; and by this means involved a thing, already myſterious enough in itſelf, in a darkneſs more than cimmerian [i]. It rather appears that Paracelſus, by his *Alkaheſt*, meant a ſpecific purgative, prepared of tartar and vitriol, for expelling peccant matter of all kinds lodged in any part of the body [k].—[[i] *Cnoeffel.* in Ephem. Germ. Dec. 1. An. 4. Obſ. 108. p. 104.—106. [k] Id. ibid. p. 108.]

The moſt celebrated forms and preparations for Helmont's *Alkaheſt* are thoſe given by Starkey, Zwelfer, Cnoeffelius, Glauber, and Pelletier; to which may be added, that of a late anonymous French chemiſt.

Starkey will have the *Alkaheſt* of Van Helmont to be made of urine; in which opinion he is ſupported by Philalethes, and ſeconded by a late ingenious author, M. le Pelletier of Rouen, who ſhews the conformity of this ſyſtem with Helmont's mind. Diſeaſes, according to that chemiſt, ariſing from a diſturbance of the archæus, are only to be cured by compoſing the ſame; and the body of the archæus, *i. e.* the vital ſpirit, being ſaline, it follows, that the remedies made uſe of to appeaſe it muſt be of the ſame nature. But urine is known to be a ſaline agent: add, that life, according to the ſame ſyſtem, being only fire, or light; and ſickneſs only a decay or impairing of that light; where ſhall we find a matter more fit for this purpoſe, to rekindle this fire, or light; ſince urine itſelf is in great meaſure fire, as appears from its volatile ſalt burning quite away, and the phoſphorus which is prepared from it.—The the only difference between Starkey and Philalethes is, that the former prepares his *Alkaheſt* from urine alone; and the latter, from the ſalt of urine, with the admixture of a little human blood. *Pellet.* lib. cit. Jour. des Scav. T. 34. p. 837.

Starkey was lead to the diſcovery of his *Alkaheſt* by meditating on theſe words of Van Helmont: "the matter of this "diſſolvent, is both baſe, and precious. It coſts nothing. "All men have it in their power. Adam carried it with "him, when he went out of Paradiſe. It is concealed in "in the microcoſm, and very powerful in the macrocoſm.—In "fine it is human urine." V. Mem. de Trev. An. 1704. p. 1867.

But it ſeems incredible, that all the *Alkaheſts* above recited ſhould agree to urine, in what manner ſoever prepared. It ſhould ſeem, that all that can be had from urine, can only ſerve to extract the ſulphurs of bodies, to be afterwards volatilized, and is doubtleſs what Paracelſus means by his *Arcanum Microcoſmi*. To arrive at the true *Alkaheſt* of Paracelſus, and Helmont; it muſt firſt be known how to procure their *ſal enixum*; to reduce it into a ſweet alkali; then into a ſublimate; and laſtly, into the precious mercurial liquor, which has been the object of the inquiry of ſo many chemiſts. *De la Caze*, Lett. in Mem de Trev. 1707. p. 1463. ſeq.

Tho' the matter of *Alkaheſt* be explained by Starkey, the manner of preparing it, he owns, is ſtill difficult: in effect, he deſcribes it in terms only one degree leſs ænigmatic, than Van Helmont himſelf. All he has left us, as to the method of compoſing the *Alkaheſt*, is what follows.

This ſharp, ſubtile, penetrating ſpirit of human urine, by means of another intermediate ſpirit, not of a different ferment from its own, but centrally the ſame with it, muſt be united with an acid that is not corroſive, but perfectly agreeable to it. This acid muſt alſo be as volatile as the ſalt of urine, before it can unite intimately with it. The mixture, by repeated circulations, arrives at a due degree of purity, which entitles it to the denominations of the *Ens Primum* of ſalts, the moſt uſeful and glorious of all ſalts. M. Pelletier gives an explanation of all the ambiguous terms in this paſſage,

and deduces from it the whole myſtery of the *Alkaheſt*: it was not much more eaſy for him to divine the preparation from Starkey's words, than it was for Starkey to diſcover it from Van Helmont's. According to this author, urine is the remote matter of the *Alkaheſt*. The next matter of it is, three different ſpirits procurable from urine. The 1ſt. a vinous and inflammable ſpirit. The 2d. an urinous, or burning ſpirit. The 3d. a fermented ſpirit, which, according to Helmont, diſſolves without corroſion the duelec, or ſtone formed in the human body. The three ſpirits being indicated in the ænigmatic paſſage, cited from Starkey, it is inferred they are the next matter, whereof the *Alkaheſt* is compoſed. It may be added, that thoſe three ſpirits never appear but in form of two, the one ſimple, the other double, for that the volatile and vinous are never the one without the other in fermented urine.

Pelletier deſcribes at large the proceſs, whereby the *Alkaheſt* is to be procured on his principles, *viz.* by ſetting a quantity of urine of young healthy people, who drink only wine, to ferment thirty or forty days; then diſtilling it by a ſand heat, till one third part of it is raiſed; ſetting the fæces, which remain, to ferment thirty or forty days more; rectifying ſeveral times the ſpirit procured by the former operation, and only ſaving what riſes firſt: to which is to be put, an equal quantity of highly rectified ſpirit of wine; the whole to be ſhaken together in the veſſel, till a white coagulum is formed; then an equal quantity of ſpirit of nitre, to be added to the mixture, by which the whole will fix into a kind of ſal armoniac. The fæces of the firſt diſtillation, which had been ſet to ferment *de novo*, are next diſtilled a ſecond time; and only a fourth part ſaved: this to be continued, till the reſidue is found of the conſiſtence of honey; and the phlegm being thrown away, a cohobation is next to be made of this reſidue, with the fourth part of the ſpirit laſt extracted; and this cohobation to be continued, till the whole become of an uniform conſiſtence. The ſpirit thus procured is next to be rectified, and poured on ſal armoniac; and the whole ſet to digeſt in dung, for eight days. By which the ſalt will be reduced into a liquor. This being diſtilled in *Balneo mariæ*, to get out the phlegm, and what is left at the bottom being re-diſtilled to a dryneſs; if nothing remain after this diſtillation, you have the *Alkaheſt* in perfection: if any thing does remain, it muſt be diſtilled and cohobated, till ſuch time as the whole riſe in one homogeneous uniform liquor.

The chief objections to it are, that the ſpirit of wine in this caſe will not make a coagulum with the rectified ſpirit of urine, at leaſt, unleſs it have been firſt fermented with the urine, and ſeparated again, by diſtilling the urinous ſpirit: And that it may be doubted, whether ſpirit of nitre, poured on ſuch a coagulum, will fix it into a ſal armoniac. It does not appear, whether M. Pelletier has made the experiment; at leaſt, he ſeems to decline the reputation of it, as frankly foregoing his pretenſions to be an adept [l]. Some are not inclinable to take him at his word; while others [m] note certain defects in his proceſs, which intimate that it was not altogether out of modeſty, that he declined the title.—Others [n] are ſaid to have tried it without effect. But it is further objected to the whole proceſs, that it does not anſwer Van Helmont's deſcription; for that a mixture of three bodies of different kingdoms, can never produce a liquor perfectly homogeneous.—[[l] Mem. de Trev. ubi ſupra, p. 1876. [m] *Martini*, in Mem. de Trev. 1707. p. 1454. ſeq. [n] *De la Gaze*, Lett. in Mem. de Trev. 1707. p. 1465.]

A later chemiſt adopts likewiſe Starkey's hypotheſis of urine, but gives an explanation, and a proceſs ſomewhat different from thoſe of Pelletier. The material principles, of which the *Alkaheſt* is immediately to be compoſed, he ſuppoſes to be three; a volatile urinous ſpirit; an intermediate ſpirit, which is the eſſential oil of urine; and an acid not corroſive, which is the vinous ſpirit of urine itſelf. The oily ſpirit is to coagulate the ſalt, and the vinous ſpirit to diſſolve both, but to be united with them by fermentation. This operation is to be repeated, till the whole is reduced to an eſſence, entirely ſpirituous and firy; in a word, to a ſalt without phlegm.

In this ſyſtem, the preparation of the *Alkaheſt* is reduced to the ſame operations as the volatilization of fixed alkalies. In effect, that fixed alkalies volatilized, which are the uſual ſubſtitutes of the *Alkaheſt*, have a great diſſolving power, appears owing to the mixture of eſſential oils, ſpirit of wine, and ſal alkali. From whence it is inferred, that the *Alkaheſt* alſo derives its quality and power from the mixture of the eſſential oil, and vinous ſpirit of urine, united with the volatile ſalt of it. Mem. de Trev. 1708. p. 327. ſeq.

Hence it is, that the *Alkaheſt* volatilizes the bodies diſſolved by it, by reaſon the urinous ſalt ſtill retains its volatility; whereas fixed alkalies volatilized coagulate the bodies they diſſolve, by reaſon they ſtill retain ſomething of the fixity of the ſalt they were made from. Van Helmont gives an intimation of this ſyſtem, when he ſays, if you cannot attain the ſecret of our fire, *i. e.* the *Alkaheſt*, at leaſt, learn a thing which comes next it in excellence, *viz.* to render alkalies volatile, that by means of the ſpirits of theſe, you may be able to make your diſſolutions. Starkey, in ſpite of all his myſtery, has left ſome things that confirm the doctrine: immediately after explaining the method of volatilizing fixed ſalts, he ſubjoins, "that the ſame operation is to be performed for procuring the *Alkaheſt*:" he adds, "underſtand but this well, "and the ſecret of the *Alkaheſt* will not be unknown to you." Now it is certain the way of volatilizing fixed ſalt, is by means of eſſential oils, and vinous ſpirits, conſequently, *&c.*

The preparation of Helmont's *Alkaheſt*, or *Ignis gehennæ*, according to Cnoeffelius's ſyſtem, which ſuppoſes it the ſame with Paracelſus's *Specificum corroſivum*, is as follows.—"Take "*Aqua fortis*, rectified from its *caput mortuum*, one pound; "ſublimate mercury, and ſal armoniac, each two ounces; "mix them, that they may conſume each other; then take "*aqua mercurialis*, *ad pondus omnium*, and reſerve the liquor "for uſe; this corroſive is irreſiſtable by the diamond itſelf." —Thus far is from Paracelſus himſelf. But what this *aqua mercurialis* is, might create much doubt; to remove which we have the following proceſs given by Paracelſus, in the appendix to his greater ſurgery, under the title of, *aqua mercurii maximum arcanum*. "Take mercury ſublimated from "ſalt of tartar ſo often, till it riſes, which will be the ſeventh "time; alſo arſenic ſublimated, and ſal ammoniac, each one "pound; let them be drenched ſeveral times with oil of ſalt of "tartar: after which diſſolve them on a marble into water." This is *aqua mercurialis*. Vid. *Paracelſ.* Chirurg. Magn. App. 1685. Fol. p. 15.

Whether this celebrated *Alkaheſt* will perform all the wonders which Helmont has related of it, we will not ſay: but it is certainly no ways probable, that with ſuch a fiery preparation, Paracelſus could pretend to cure, or reſtore the liver!

Glauber's *Alkaheſt*, known in the ſhops by the title, *Alkaheſtum Glauberi*, is a preparation of fixed or alkalized nitre, the proceſs of which follows.—Melt a quantity of nitre in a crucible, by a vehement fire, and add from time to time a quantity of powdered charcoal; by this means the ſulphureous acid of the nitre being kindled by the ſulphur of the charcoal, a conflict and deflagration enſues. When it will no longer deflagrate, it is found a fixed alkaline ſalt of nitre; which expoſed to the open air, in a low, calm, cool place, will preſently begin to melt. As it runs, pour it off into a glaſs veſſel, and expoſe the reſidue a ſecond time to the air. Repeat this till the whole ſalt is liquified. The liquor thus procured being ſtrained, is found limpid, alkaline and thickiſh, reſembling oil of tartar *per deliquium* [o].—This liquor Glauber impoſed on the world, for an univerſal diſſolvent; as being found effectual for diſſolving bodies of all the three kingdoms. But ſince the ſecret of its preparation has been diſcovered, its value is much abated. Boerhaave aſſures us, that in all the experiments he has made with it, he has found nothing in it, but what is equally found in oil of tartar *per deliquium*.—Only that the former is more difficult of preparation, and coſts more. Its principal uſe is for diſſolving reſins and gums, which it opens in ſuch a manner, that with the further help of ſpirit of wine, a genuine tincture may be procured from them. —The method of applying it is, by ſetting the reſin to digeſt with the *Alkaheſt*, in an open glaſs, for the ſpace of twenty four hours, or to a dryneſs; then pouring on the ſpirit of wine, ſome inches deep above the reſin [p].—[[o] *Teichmey*, Inſtit. Chem. c. 13. p. 177. *Beerh.* Elem. Chem. P. 3. T. 2. Proc. 131. & 138. [p] *Junck.* Lex. Chym. Pharm. P. 1. p. 13.]

Zwelfer's *Alkaheſt*, *Alkaheſtum Zwelferi*, is a preparation of verdigreaſe, made by diſſolving it in ſix times the quantity of diſtilled vinegar; then filtrating, and ſetting it to cryſtalize. Theſe cryſtals being diſſolved in ſpirit of wine, ſtrained thro' paper, and ſet on fire, the fine particles of the copper are exhaled; or if the cryſtals be diſtilled, they yield a very concentrated vinegar, part of which burns like ſpirit of wine, the other part being acid, yet in ſome meaſure volatile: So that almoſt the whole of it may be again ſeparated.—This vinegar is a very powerful diſſolvent, in ſo much that it paſſed on Zwelfer for the *Alkaheſt* of Helmont. *Junck.* Conſpect. Chem. Tab. 35. p. 309. *Boerhaav.* New Meth. Chem. P. 2. p. 355.

But it ſhould ſeem natural, before men put themſelves into the ſearch of the *Alkaheſt*, that they enquire into the poſſibility of it?

Tho' we have the expreſs teſtimonies of Paracelſus, Helmont, Philalethes, Starkey, Faber, and others, that they were actually poſſeſſed of the ſecret, yet many among the later writers, as Boyle [q], Wedelius [r], Major, Martini [s], and others, perſiſt in holding it impoſſible, and even to involve contradictions.—[[q] Uſefulneſs of experim. Philoſ. P. 2. Sect. 1. [r] Pharmac. in Art. Form. Redact. l. 2. Sect. 6. c. 19. [s] Gen. Errant. c. 19.]

In effect, we find qualities directly contrary aſcribed to the *Alkaheſt*: ſome will have it very ſubtile, others extremely ponderous, ſo that it will not riſe in diſtillation. If it diſſolve all bodies, what can contain it, or hinder it from diſſolving its own veſſel? How can it be immortal, and unchangeable, while it contains ſalts, the points of which muſt wear away by continual friction againſt the bodies to be diſſolved? If it be volatile, it muſt evaporate when employed! If fatty, or viſcous, it muſt adhere to the bodies diſſolved by it, and thus loſe many of its parts! *Martini*, ubi ſupra, p. 1452.

The moſt frequent objection to its exiſtence is, in what kind of veſſel it is to be contained? If it be anſwered in a glaſs veſſel, there is at once a negation of its univerſality; ſince glaſs, except of a particular compact kind, cannot ſuſtain the diſſolving power of divers acid ſpirits, but, in a few hours, turns to a kind of magiſtery. Glauber [t] indeed enjoins, that a freſh thick glaſs be applied every ſix hours, to prevent the *Alkaheſt* from being ſpilt by diſſolving the glaſs; but, on this ſuppoſition, it cannot poſſibly ever be a pure liquor, but muſt be impregnated with the atoms, or corroded particles of the glaſs, and conſequently be a ſort of *vitrum potabile*. How abſurd, then, muſt that pretenſion of Glauber be, where he affirms, that the *Alkaheſt* was the fire of the Maccabees hid under the altar [u], and diſcovered many years after in a pit, in form of a thick oil?—If this were the *Alkaheſt*, how, or in what, had it been preſerved ſo long? and what hindered it from reſolving the pit into its firſt matter, and by eating itſelf a paſſage under ground, undermining the whole country? Wedekind would ſolve the inconſiſtency, by alledging, that divers things are requiſite to the operation of the *Alkaheſt*; that bodies, before applied to it for ſolution, are to undergo a preparation; if vegetables, by cutting, contuſing, raſping, &c. if ſtones, or the like, by trituration, alcoholization, &c. if metals, by lamination, calcination, &c. Beſides that in the operation, there is to be digeſtion, repeated cohobations, and even fire applied for a certain time. But this will not ſuffice; ſince it is agreed, that the preparations above-mentioned are only uſed for the eaſier and quicker ſolution; not that they are eſſentially neceſſary. If there be an *Alkaheſt*, it cannot fail, in proceſs of time, to reduce the glaſs into its firſt principles, without any previous preparation; though, with the help of an alcoholization, it might have effected it in leſs time. Nor can a long time be neceſſary for ſuch end, ſince there are other corroſive liquors, which will diſſolve glaſs in a ſhort time; which, in that caſe, muſt have much the preference to the *Alkaheſt*. Add, that if the *Alkaheſt*, according to the definition ſometimes given of it, only diſſolve the coheſion of mixts, it will follow, that the greater number of heterogeneous particles a mixt conſiſts of, the more fæces will be left at bottom; whereas it ought to have reſolved theſe fæces themſelves, nay all the matter of the three kingdoms, into their primitive matter, viz. water, &c. To reduce a mixed into ſeveral ſubſtances, is not ſo properly to diſſolve as to corrode it; the latter, *aqua regia* does to gold; the former is required from the *Alkaheſt*; which is not to reduce bodies into divers matters, but into their firſt, or elementary matter, which therefore is but one. And if this ſolvent require fire, digeſtion, cohobation, &c. to make it act, how ſhall we conceive it to operate without reaction, paſſion, &c. and, on ſuch ſuppoſition, what uſe would digeſtion be of [w]? —[[t] *Opp.* Miner. P. 10. p. 315. ſeq. [u] 2 Maccab. *c.* i. *v.* 19. [w] Ephem. Acad. N. C. dec. 3. an. 3. App. p. 101, 104.]

After all, who can doubt of the poſſibility of the *Alkaheſt*? All the objections ariſe only from the obſcurities of the proceſs, which has rendered ſucceſsleſs the attempts of moſt of thoſe who have undertaken to prepare it: our reader, therefore, 'tis to be hoped, will thank us for a new proceſs for making this wonderful liquor, in terms not eaſy to be miſtaken, by any of the genuine ſons of Hermes. If he read it with a mind duly prepared, and purged from thoſe heterogenities wherewith ſenſe ſometimes over-clouds the intellect. It is faithfully tranſcribed from an Egyptian marble, hewn by the author of the tomb of Semiramis, from the great pyramid.—Take then ſome ſubterraneous Adam, which is a metal not a metal, a marcaſite not a marcaſite, a mineral not a mineral, nothing and all things: take this Adam; and as the firſt Adam was commanded in the ſweat of his brow to eat his bread; do you proceed in the contrary method; ſee that your Adam be firſt well fed, and filled; that he eat to ſweat, and not ſweat to eat. When thoroughly ſated, cut off his limbs; thruſt him into a ſtove; and gradually raiſing the fire, ſweat him till he melt down to the very bones. This ſweat, when duely cleanſed, will be of a whitiſh-black colour, and taſte ſtrongly of a ſower ſweet. Infuſe the limbs in this ſweat; a fine golden, permanent tincture will be hereby had; into which a handful of mineral blood being caſt, well ſaturated with vegetable blood; a glittering ruddy colour will ariſe, far tranſcending that of a carbuncle. The mineral is then to be ſeparated from the vegetable blood, and ſet to bathe, till it has got wings, by means whereof it will flutter about perpetually. Having thus acquired an aerial nature, a lotion in *aqua cœleſtis*, condenſes it again into a heavy ſubſtance, more ponderous than gold, yet lighter than a feather; harder and more compact than a diamond, yet rarer, and more pervious than æther itſelf: which is the true *Alkaheſt*; wherewith, if you underſtand this proceſs, you may reſtore your Adam to life again.

Philaletha [x], Starkey, Pelletier [y], Martini [z], De la Caze [a], and others, have diſcourſes, dialogues, epiſtles, &c. on the ſubject of the *Alkaheſt*.—Divers particulars alſo relating to the ſame are occaſionally delivered by the writers on chemiſtry, the philoſophers ſtone, &c [b].

[x] L'Alkaheſt, ou le Diſſolvant Univerſel de Van Helmont, revelé dans pluſieurs Traitez, qui en decouvrent le Secret, Rou. 1706. 12mo. It is properly a collection of the beſt pieces on the *Alkaheſt*; comprehending ſome fragments extracted from Philaletha, wherein he deſcribes, after an ingenious manner, the ſecret of that diſſolvent: alſo five chapters of Starkey's Pyrothechnia; a dialogue on the *Alkaheſt*; and a poſthumous piece, wherein he ſhews how he diſcovered this liquor, and the manner of preparing it. Extracts of the work are given in Jour. des Scav. T. 34. p. 831. It. p. 1042. Mem. de Trev. 1704. p. 1861. Works of Learn. T. 8. p. 643. Suite du Traité de l'Alkaheſt, ou l'on rapport pluſieurs endroits des ouvrages de Georges Starkey, qui decouvrent la maniere de volatiliſer les Alkalis, & d'en preparer des remedes ſuccedanees ou approachants de ceux que l'on peut preparer par l'Alkaëſt, Rou. 1706. 12mo. Extracts of which are given in Jour. des Scav. T. 34. p. 189. ſeq. & Mem. de Trev. 1706. p. 239. [y] Remarques ſur la pretendue decouverte de l'Alkaëſt, donnie au public par M. le Pelletier; printed in Mem. de Trev. 1707. p. 1443. [z] Lettre a un de ſes Amis, avec des remarques ſur celle de .... Chirurgien, A. M. .... touchant la poſſibilite du Diſſolvant Univerſel; printed in Mem. de Trev. 1708. p. 1918. [a] Lettre à M. D. M. ſur ſes remarques contre M. le Pelletier; printed in Mem. de Trev. 1707. p. 1461. Anonymi Philalethæ Tract. de Liquore Alcaeſt; printed at the end of Werdig. Nov. Medic. Spirit. Curioſ. Hamb. 1688. 8vo. V. Giorn. de Letter. de Parm. 1689. p. 235. [b] See further concerning the origin of the *Alkaheſt*, *Helmont*, Tract. Arcan. Paracelſ. p. 481. It. in Tract. Arb. Vit. p. 485. It. in Tract. de Lithias, l. 3. c. 7. §. 23. p. 44. It. Tract. Form. Ort. §. 8. p. 92. It. Tract. Terra, §. 15. p. 35. It. Tract. Pot. Medic. §. 44. p. 296. Its matter and preparation, *Starkey*, Pyrotechn. l. 1. Act. Erud. Lipſ. Supp. T. 1. p. 180. Its exiſtence, *Baldwin*, Hermes Curioſ. c. 11. The ſecret of it not to be revealed, Tomb. Semiram. c. 6. Ephem. Acad. N. C. dec. 1. an. 4. App. p. 75.]

The word *Alkaheſt* ſeems to have been coined by Paracelſus, no writer of any kind having ever mentioned it before him. He ſays, it is a remedy of great effect upon the liver, reſtoring and fortifying it, and preventing dropſies, and other diſeaſes. He tells us, its proceſs is to reſolve it after it is coagulated, and then coagulate it again into a tranſmuted form. He adds, that though the liquor were to be given in caſes where the liver were all diſſolved, it would be able to ſupply the place of the liver in the human body; and therefore, that it is neceſſary for every phyſician to know this medicine, that he may be able to cure numerous diſeaſes of the liver, not curable by any other means.

This is the account of the *Alkaheſt* given by its author, who never ſeems to have hinted at any ſuch property in it, as its being an univerſal diſſolvent. But his ſucceſſor, Van Helmont, who always found hidden meanings in his works, diſcovered the ſecret, as he pretends, of this, and diſcovered theſe its amazing qualities.

All chemical ſolutions, as Boerhaave very juſtly obſerves, ſeem the effect of a latent attraction and repulſion betwixt the parts of the ſolvent and ſolvend, and conſequently the whole action depends upon a mutual relation and affinity between theſe two: and if this be the caſe, there can be no body, either natural or artificial, which can have a power of diſſolving all the reſt. *Boerhaave*'s Chem. p. 569.

Helmont, however, poſitively affirms the fact, and Mr. Boyle and many other great men, though they pretended not to believe the poſſibility of it, yet, by their numerous, though vain attempts, to diſcover it, ſeem to have, in ſecret, thought it might be.

It was the cuſtom of Paracelſus to tranſpoſe the letters in words, which he uſed as the names of his medicines, and ſometimes to join parts of different words into one; as in his names *ſutratar*, for tartar, given as a medicine to open obſtructions of the ſpleen, and *aroph*, for *aroma philoſophorum*, an affected name given, by ſome, to tartar. Hence ſome have imagined, that by this word *Alkaheſt*, he only meant *alkali eſt*, it is an alkali; intimating, that the baſis of the medicine was an alkali, though ſated with a proper acid in the preparation. Others have imagined, it was called *Alkaheſt*, from *ſaltz-geiſt*, ſpirit of ſalt, ſuppoſing the *Alkaheſt* the ſame with the *ſal circulatum* prepared from ſea ſalt, coagulated, reſolved, and again coagulated into a tranſmutated form: and others ſuppoſe it had its origin from *algeiſt*, that is, a perfect ſpirit made by coagulation, reſolution, and a ſecond coagulation. This agrees with the opinion of Faber, who takes it to be a pure mercurial, or metallic ſpirit, ſo united to its proper body, as thence to become one inſeparable and indeſtructible ſubſtance. All this, however, is but bare conjecture, and that upon no very ſolid grounds.

Paracelſus gives no ſynonyma for the *Alkaheſt*; but Helmont calls it ſometimes a thin and clear water; ſometimes a thick water; in which ſenſe, he ſuppoſes it like the thick water mentioned in the Maccabees, which was perpetual fire; and in other places he calls it an immutable diſſolving water. He

calls

calls it alſo *ignis aqua*, fire water, and *latex*, or clear water, reduced to the minuteſt atoms poſſible; and affirms, that all ſubſtances may be readily converted by it into a thin water: and, in other places, he calls it the infernal fire, or *ignis gehennæ*; he ſays, that native ſand reſiſts both art and nature for ſolution, and is never to be diſſolved in any other manner, than by the *ignis gehennæ*, or *Alkaheſt*; but this artificial watery fire, he ſays, converts ſand into ſalt. If Helmont follows Paracelſus cloſely, in applying this term *ignis gehennæ* as a ſynonymon of the *Alkaheſt*, we may thence arrive at ſome knowledge of what the *Alkaheſt* is, ſince this *ignis gehennæ* Paracelſus has explained himſelf pretty largely upon.

Helmont, in other places, ſays, that the *Alkaheſt* is the higheſt exalted, and moſt ſucceſsful of all ſalts, having obtained the utmoſt degree of purity and ſubtilty poſſible in nature; and hence he calls it the *ens primum* of ſalts, and the *ſal circulatum* of Paracelſus. Could Helmont's ſincerity be depended upon, we might from this alſo, compared with the works of Paracelſus, attempt to diſcover this wonderful menſtruum. The origin of the *Alkaheſt*, we are told by Helmont, is from art; he expreſly ſays, that nature has it not; he ſays, that a part of earth may, by art, be reduced to water, but that nature has no agent of power to do this; but the *Alkaheſt* alone can effect it.

Some have pretended themſelves poſſeſſed of this great menſtruum, and declared, that it was prepared by a very ſimple and eaſy proceſs; but this is a very different account from that of their maſter Helmont, who poſitively declares it the moſt tedious and difficult of all the chemical proceſſes; nor are they to pretend there are two or more different kinds of *Alkaheſts*, for Helmont poſitively affirms that there is but one.

The effects of this wonderful menſtruum are, that all ſenſible bodies are diſſolved by it, not excepting even gold and mercury, upon which no other ſubſtance can intimately act; ſtones, flint, ſand, gems, marcaſites, clay, earth, brick, glaſs, lime, ſulphur, &c. may all, according to Helmont, be tranſmuted by it into an actual ſalt, equal in quantity to their whole bulk; and plants, fleſh, fiſh, bone, and all other animal ſubſtances, are by it reſolved into their pure principles; but metals, on account of the equal commixture of their ſeminal matter, are very difficultly reduced to ſalt, and that no other menſtruum but the *Alkaheſt* can perform this. Charcoal is diſſolved by it into a clear water, which riſes all in diſtillation, leaving no fæces. The power of this menſtruum, as of all others, is greatly increaſed by fire, though only a very ſmall degree of it is neceſſary; for, according to the author, a charcoal made of oak being put into a glaſs, with an equal weight of the *Alkaheſt*, and hermetically ſealed, the whole was reduced to a clear and pellucid liquor, without fæces, by a three days digeſtion in *balneo mariæ*; and an equal quantity of cedar wood in chips, and of the *Alkaheſt*, being treated in the ſame manner, a week's digeſtion converted the whole into one homogene milky liquor, without any ſediment; and the *Alkaheſt* only poured upon mercury, and once diſtilled from it, leaves it behind in form of a ſolid maſs, eaſily reducible to a fixed powder, without either increaſing or diminiſhing its weight. It diſſolves the *ludus helmontii*, or *ſeptaria*, in a few hours, into a ſalt of equal weight with itſelf, and never requires any great degree of fire for any ſolution, itſelf riſing in diſtillation with the ſecond degree of heat of a ſand furnace, but not riſing in a *balneum mariæ*. *Boerhaave*'s Chem. p. 573.

Boerhaave obſerves, that there has never been any thing in all nature obſerved, or related, more ſurprizing than the phyſical change which theſe authors attribute to the action of this menſtruum; as it at once changes the whole ſubſtance of the ſubject into a different matter, without the leaſt alteration of weight in the operation. The maſs, after this operation, ſeems always to appear either in a fluid, or in a ſaline form, though with ſome difference; for we find, that quickſilver is only reduced by it into a ſolid pulveriſable maſs, which, on account of its great purity and ſimplicity, cannot be converted into ſalt; whence it radically reſiſts all the poſſible ſeparations of art, or nature, and therefore is perfectly indiſtructible. Theſe other bodies, therefore, when turned into an equal quantity of ſalt by the *Alkaheſt*, ſtill retain their peculiar qualities and virtues, depending on their ſeveral powers lodged in their ſeminal principles.

By this means, therefore, all theſe bodies turn to a ſaline volatile ſubſtance, which contains all their virtues, and is capable of commixion with all the animal fluids; and in this ſtate they are potable, in the true ſenſe of the word; for what the chemiſts mean by potable gold, is gold thus reduced to a ſaline and ſoluble ſubſtance, equal to itſelf in quantity, and capable of circulation through all the veſſels of the body. All the ſolutions of gold are only mixtures of gold in acids, its particles remaining unaltered, though ſuſpended in the liquor; but the true *aurum potabile* of the chemiſts is gold reduced to a liquor equal to itſelf in weight, and properly the *ens primum* of gold. *Boerhaave*'s Chem. p. 575.

The moſt remarkable, however, of all the properties of the *Alkaheſt*, is that of its being able to diſſolve all theſe bodies, without ever mixing itſelf among them, but remaining itſelf perfectly ſeparate from all their particles, and ſo neither increaſing nor diminiſhing their weight. This appears, by the example given by Helmont of the ſolution of the oak coal, which, when perfected, conſiſted of two different liquors; the liquor of the diſſolved coal riſing alone in diſtillation firſt, and leaving the ſolvent all behind, unaltered, either in quantity, or in any of its qualities. He expreſly affirms, that he never found any body to which the *Alkaheſt* would unite, being itſelf a pure ſubtile ſubſtance, reduced to its ſmalleſt poſſible particles, and therefore uncapable of all fermentation, or admixture; ſo that it produces its effects by a bare external action upon the ſubject, not by any admixture with it, and acts as the pureſt fire upon bodies, or as hot water in diſſolving ice.

Hence the *Alkaheſt* appears to have two very extraordinary properties, with reſpect to all other menſtruums. 1. That it does not act by attraction, or repulſion, but by a certain mechanical motion, contrary to that of all other menſtruums, unleſs, perhaps, we are to except fire. And, 2. That it conſtantly preſerves all the native properties of the bodies it diſſolves: yet Helmont ſays, that in diſſolving poiſons, it reduces them to wholeſome medicines, by bringing them into their firſt matter; but this is very difficult to underſtand.

When the *Alkaheſt* has thus reſolved all bodies into their volatile *ens primum*, ſo as to let them retain their ſeveral virtues, we are told, that if they are farther puſhed by this menſtruum, they loſe their ſeveral qualities, and become mere indolent and inſipid water; ſo that by applying the ſolvent too long, the former excellent productions are all deſtroyed: and hence it follows, that water is the ultimate principle of all tangible bodies, the *Alkaheſt* being unable to act any farther upon this water. This, however, is ready to receive the ſeminal matter of any other body, and thence to paſs itſelf into a new ſubſtance.

It ſeems extremely ſtrange, that this menſtruum, while it thus acts upon all bodies, itſelf ſhould remain unaltered by all. In this reſpect, it truly reſembles fire, which is the only known agent to which it can be compared.

It renders all bodies more volatile than itſelf, inſomuch, that whatever is diſſolved in it, is to be drawn over in diſtillation, in a bath heat, whereas itſelf is not to be raiſed, but in a certain ſtronger degree in ſand.

With all theſe properties, however, the *Alkaheſt*, as may be learnt from ſome paſſages of Helmont, has its equal. He ſays, in his enigmatical language, that one and the ſame liquor, *Alkaheſt*, ſubdues all the tangible bodies of the univerſe into their firſt life, without ſuffering any change in itſelf or any loſs of its virtue, being only ſubdued and changed by its equal. And, in another place, he adds, that mercury, freed from its original ſulphur, cleaving to its moſt internal part, is immutable in the fire, and immediately conſumes the ſeminal powers of all other bodies, except its equal.

This is the account Helmont has given, in different parts of his works, of his *Alkaheſt*, collected together. No antient philoſopher, chemiſt, or phyſician, has ſaid a word of any ſuch ſubſtance, nor any of the moderns ſeen the effects of it; yet the thing is, in itſelf, ſo deſirable, that all the late chemiſts have attempted the diſcovering it; and Boerhaave himſelf acknowledges, that he tried an incredible variety of experiments to this purpoſe.

Paracelſus had a liquor procured, by a tedious proceſs of circulation from ſea ſalt, wherein nature has placed the utmoſt perfection. This ſalt he, by incredible induſtry, reduced to an oil, which always kept fluid and unchanged; this oil he called the *ens primum* of ſalts, and the *ſal circulatum minus*, or leſſer circulated ſalt. The preparation is troubleſome, but pretty clearly deſcribed, and this preparation perfectly correſponds with what Helmont ſays, that the ſalts of bodies ſeveral times cohobated with the *ſal circulatum* of Paracelſus, turn to water; and hence he aſcribes the virtues of the *Alkaheſt* to the *ens primum* of ſalts. He alſo mentions the property of changing poiſons into medicines, and that of preparing the *ludus* with this ſalt.

But Paracelſus had another menſtruum, much more powerful, and much more difficult to be obtained, than the *circulatum minus*; this he calls the *circulatum majus*; he calls this the matter of mercurial ſalt, and the living fire. He acknowledges, that the higheſt fire, and celeſtial life, lie hid in common mercury; and ſays, the quinteſſence of mercury is celeſtial fire, if diſſolved with its parent, or the ſecret ſalt: when, therefore, theſe two are intimately combined by a ſtrong union, and brought to a high degree of purity, ſubtility, and volatility, they ſeem to make that wonderful mercurial water, which he deſcribes in his chapter of the ſpecific ſolvent, where he ſays, that gold dies therein, ſo as no longer to remain gold, whereas, in all other ſolutions, it is only intimately divided, but yet remains true gold in ſmall particles, being eaſily recoverable in its priſtine form, upon reduction. By this means, therefore, there is a perfect union made of water with water; for here are two kinds of water employed, the common water contained in the ſalt, and the metallic water contained in the mercury, though they are both ſuppoſed to have the ſame origin. All this ſeems to have been under-

underſtood in this very ſenſe by Van Helmont; and this the general account he and Paracelſus give of it.

Hence it is eaſy to ſee, that the *Alkaheſt* is not to be ſought for in human urine, nor in any production thereof; nor in tartar or any of its preparations, tho' it is ſaid that a ſubſtitute may hence be had for the principal; nor can the phoſphorus be ever ſuppoſed juſtly to be the *Alkaheſt*, becauſe it is repugnant to ſeveral of the properties and qualities, above laid down, from theſe authors. Glauber alſo in vain ſought the *Alkaheſt* in the fixed alkali of nitre; and Zwelfer in diſtilled vinegar ſeparated from the cryſtals of verdigreaſe; Rolfink had no juſt idea of it, when he ſuppoſed it to conſiſt of the fixed alkali of tartar for its baſis, mixed with ſome acid of the mineral vegetable or animal tribe; for ſalt of tartar with the vinegar of antimony, makes only a *tartarum tartariſatum*, and with acid whey only a better ſort of the ſame; nor does the addition of ſal armoniac much alter the matter. But no one ſeems better to have underſtood the mind of Paracelſus and Helmont in deſcribing the *Alkaheſt*, than Petrus Johannes Faber; in a paper of his publiſhed in the German ephimerides, he obſerves, that the liquor *Alkaheſt* is a pure mercurial metallick ſpirit, ſo cloſely connected to its own natural body, that theſe two become one inſeparable indeſtructible ſubſtance, deſtroying all things and turning them into their firſt matter. It is a true philoſophical mercury choſen from the mineral kingdom, and joined with its own pure body, whereby it becomes an inſeparable milky and butiraceous liquor, which penetrates and diſſolves all things.

Becher is alſo of the ſame opinion: he expreſly ſays, that he diſcovered in ſea-ſalt, a certain arſenical and mercurifying power, which, when ſeparated pure, would be the *Alkaheſt*, tho' a very different thing from the philoſophic mercury: and hence he takes mercury for a ſulphureous metallic ſubſtance, which of itſelf would be ſolid; but that it receives all its fluidity from the arſenical ſulphur of common ſalt. The pureſt quickſilver, he obſerves, being diſſolved in ſpirit of nitre and precipitated with ſpirit of ſea-ſalt becomes volatile, and diſpoſed to part with its mercury eaſily; conſequently ſea-ſalt, may convert the pureſt metals from their own fixed nature into true mercury. This is a ſubtile inſinuation, which Boerhaave wiſhes the author had given more fully.

Upon the whole, it does not appear plainly, that the *Alkaheſt* was ever put to all the teſts mentioned, or that all the great things recorded of its power were really experimented. The chemiſts are very apt to reaſon from analogy, and from one operation of a body to deduce more. Helmont complains that the vial of it once given him was taken away again; whence probably he did not make any great number of experiments with it; and Paracelſus is no where very particular in his accounts of his own ſolvents: however it is the advice of Boerhaave, to all who have leiſure, and love chemiſtry, to treat ſea-ſalt and mercury in every chemical way, in order to diſcover it; in which, tho' they ſhould not ſucceed, yet the knowledge obtained from the experiments, made with that intent, will well repay the trouble of them. *Boerh.* Chem. p. 580.

ALKAHEST is alſo uſed in a more extenſive ſenſe, ſo as to comprehend all fixed ſalts volatilized, and reduced into a quinteſſence.—Some judge it to be in this ſenſe, that the word is uſed by Paracelſus in the paſſages above cited.

In this view there are numerous *Alkaheſts*, all different from the univerſal one.

The former are ſo many particular menſtruums, each ſtronger or weaker than other; and which, at leaſt ſome of them, loſe part of their virtue, at each operation. Whereas the latter is ſuppoſed immutable, and to have as much force after a thouſand diſſolutions as at firſt. Hence it is that theſe writers ſpeak of three kinds of *Alkaheſts*, or diſſolvents, called, *Arcanum Microcoſmi*, *Arcanum ſamech*, *Arcanum Ponticitatis*. The firſt is certainly prepared from urine, which Philaletha, and after him others, have miſtakenly ſuppoſed to be the matter of the third. The ſecond is made from ſpirit of wine. For the third kind, *viz.* the *Arcanum Ponticitatis*, which is the moſt ſublime, and myſterious, an idea of it may be thus conceived. All mineral and metalline ſalts contain an acid, which by alcoholiſation with their fixed ſalt may be reduced to a quinteſſence, which makes the *Alkaheſt* now ſpoken of; otherwiſe called the catholic *Alkaheſt*, of which we have treated above.

The preparation of this is much the ſame with that of the leſſer *ſal circulatum*, only that there is ſome further ſecret in it known to few. With this, neutral ſalts are prepared, alkalized, ſublimated, and at laſt reduced into a mercurial eſſence, which conſtitutes as many *Alkaheſts* or diſſolvents, as there are ſalts on the earth. *De la Caze*, Lett. in Mem. de Trev. 1707. p. 1462. ſeq.

Lully's *Alkaheſt* ſeems to have been of a kind different from all the reſt: it is repreſented as a kind of mercurial gold, whereby he not only fixed mercury, but tranſmuted it into gold.—Of which Helmont makes frequent mention. Tract. Natur. Contr. Neſcia. §. 40. p. 108. It. in Demonſt. Theſ. §. 58. p. 409. It. Vita æterna. p. 452. It. in Art. Vit. p. 483. *Cnoeffel.* in Ephem. Acad. N. C. Dec. 1. An. 4. Obſ. 108. p. 108.

ALKAHESTIC is uſed by ſome to denote the quality of bodies which are powerfully ſolvent.

In which ſenſe, *Alkaheſtic* amounts to much the ſame with menſtruous; except that the former imports a greater degree of the ſolutive power, than the latter. See MENSTRUUM.

De Bernitz has given divers forms and proceſſes of *Alkaheſtic* liquors, after Helmont, Cnoeffelius, &c. One, for the reſolution of minerals; another for that of vegetables; and a third, for that of animal matters. Faſcic. Alter. Medicam. Singul. Tit. 27. Ephem. Acad. N. C. Dec. 1. An. 6. app. p. 139. ſeq. See SOLVENTS and SOLUTION.

ALKALI. See the article ALKALY.

ALKALINE, (*Cycl.*) in a general ſenſe, ſomething that has the properties of an alkali.

In this ſenſe we ſay, *Alkaline* ſalts, *Alkaline* ſpirits, *Alkaline* ſubſtances, &c.

The word is otherwiſe written, *Alcaline*, *Alkaleous*, *Alcalious*, *Alkalizate*, and *Alcalizate*, which all amount to the ſame thing.

Beſides *Alkaline* ſalts, there are many other bodies, which produce nearly the ſame effects, with acids; being diſſolved by them with ebullition and efferveſcence, and like fixed and volatile *Alkaline* ſalts, forming ſaline ſubſtances of different figures in their cryſtalizations.

Theſe *Alkaline* ſubſtances are of different natures. Some are merely earthy, as quicklime, marble, ſealed earths, &c. Others are metalline; among which ſome have their peculiar and appropriate acids to act on them, as gold, tin, and antimony, which diſſolve with *aqua regia*; ſilver, lead, and and mercury, with *aqua fortis*; others diſſolve with all ſorts of acids, as iron, copper, zink, biſmuth, &c. There are others of the animal claſs, conſiſting 1. Of ſtony matters found in the viſcera of certain ſpecies, as the *calculus humanus*, bezoard, crabs-eyes, &c. 2. Teſtaceous matters and ſhells, as pearls, oyſter-ſhells, cuttle-fiſh bones, the ſhells or coats of lobſters, crabs, &c. 3. The parts of animals which, by length of time or ſome other cauſe, are become ſtony, or even earthy, as the foſſil unicorns horn, &c. 4. Laſtly, almoſt all ſtony marine plants, as coral. *Homberg*, in Mem. Acad. Scienc. An. 1708. p. 411.

For the proportion of the diſſolving power in the *aqua regia*, and *aqua fortis*, claſſes of acids, ſee the article ALKALY.

The chemiſts have divers *Alkaline* concretes of great uſe, as cauſtics, ſolvents, &c. ſuch is that made of equal parts of nitre and martial regulus of antimony, ignited together in a crucible: another of the martial regulus of tartar; another of nitre calcined with quick lime. *Stahl.* Philoſ. Princ. Chem. P. 2. Sect. 1. p. 146—149.

ALKALINE is more peculiarly applied to ſalts which will perſiſt in, and bear a ſtrong fire, without flying away and vaniſhing in the air. In which ſenſe theſe *Alkaline* ſalts are ſaid to be fixed. *Meret*, Obſerv. on Neri. c. 6. p. 263. *Stahl.* Philoſ. Princ. Chem. P. 2. Sec. 1. p. 137. ſeq. *Techmey.* Inſtit. Chem. c. 13. p. 170. ſeq.

ALKALY, or ALKALI (*Cycl.*) The opinion that *Alkali's* ferment only with acids, ſeems too haſtily taken up; for the different *Alkali's* will ferment with one another: ſpirit of hartſhorn, ſpirit of urine, ſpirit of ſal armoniac, and other volatile ſpirits of the *alkaline* kind, when in the dry form of ſalts, all ferment with ſalt of tartar, or other fixed *Alkali's* of the lixivial kind. Nor are the acids wanting in properties of the ſame kind. Spirit of ſalt is an *Alkali*, in regard to ſpirit of nitre, and ferments with it; and many of the acids ferment with ſulphur. A ſpirit of ſulphur, may be prepared ſo concentrated, that it will ferment violently with water, which will become hot, and as it were boiling, on the mixing it with it; yet water is certainly neither an acid nor an *Alkali*. This concentrated ſpirit of ſulphur is made by rectifying by diſtillation, in a retort, the oil of ſulphur made by the bell: this being placed in a retort, in a ſand heat, there riſes firſt an inſipid water, and after that an extremely acid liquor; every drop of which as it falls into the water, has the ſame effect, as a piece of red hot iron would have. When the veſſels are cold, the liquor remaining in the retort will be found clear as cryſtal, and almoſt as heavy as quickſilver: this is the concentrated oil of ſulphur. Mem. Acad. Par. 1714.

Terreſtrial ALKALI is a term uſed to diſtinguiſh the common alkaline ſubſtances, ſuch as chalk, coral, and the like, from the fixt lixivial ſalts of plants, and other *Alkali's* which are ſaline, and diſtinguiſhed from theſe by that appellation. Mr. Homberg obſerving that the *Alkali's* of this kind were much preſcribed, and greatly depended upon in medicine, entered on ſome experiments in regard to them, to prove in what degree each of them poſſeſſed that quality, that the phyſician might know how far to depend on each in his preſcriptions. This he attempted to aſcertain by diſſolving them in ſeveral acids; whence it appeared plainly that all the acid ſpirits produced by chemiſtry, were far from being of the ſame nature, ſome of them diſſolving certain bodies, which, the others would not touch; and others diſſolving more or leſs of the ſame body.

The acid liquors, however, he obſerves, may be divided into two claſſes, the one containing all thoſe of the nature of *aqua fortis*, and the other all thoſe of the nature of *aqua regia*. It ſhould ſeem alſo, that the ſeveral acid humours which oc-

caſion diſorders in the human body, might be arranged under the ſame two claſſes, it appearing certainly that ſome certain *Alkali's* have the power of curing ſome of theſe diſorders, and other certain ones of others; neither of which will have the ſame effect on the other diſtemper. Thus the pox is cured by mercury, and the poiſon of the bite of the viper, by the volatile urinous *Alkali's*, neither of which could be expected to have ſuch a ſalutary effect in the other caſe. Mem. Acad. Par. 1700.

As the acids in the human body are therefore of theſe two different kinds, it did not appear ſufficient to this curious experimenter to determine the ſtrength of every terreſtrial *Alkali* in deſtroying an acid, but he determined to try which would deſtroy moſt of each of two acids, which might anſwer to each of the two before eſtabliſhed claſſes; which was eaſy to be known, by ſeeing how much of each *Alkali*, each acid would diſſolve, in a given quantity. The acids he choſe, as the ſpecimens of the two claſſes, were the ſpirit of nitre, for thoſe of the *aqua fortis* claſs, and the ſpirit of ſalt, for thoſe of the nature of the *aqua regia*. The ſpirits he uſed on this occaſion, he took care firſt to deflegmate ſo well, that the *aqua regia* would perfectly diſſolve pure gold, and the ſpirit of nitre pure ſilver. The *Alkali's* diſſolved in theſe were the following, and their proportions in ſolution as expreſſed below.

An ounce of this ſpirit of nitre diſſolved	An ounce of this ſpirit of ſalt diſſolved
4 drams 9 grains of crabs-eyes, readily.	3 drams of crabs eyes, readily.
3 drams 7 grains of coral, readily.	2 drams 20 grains of coral, readily.
2 drams 58 grains of mother of pearl, readily.	1 dram and 56 grains of pearls, readily.
1 dram 36 grains of oriental bezoar, ſlowly.	1 dram 60 grains of mother of pearl, readily.
1 dram 60 grains of occidental bezoar, leſs ſlowly.	46 grains of oriental bezoar, ſlowly.
2 drams 28 grains of human calculus, ſlowly.	51 grains of occidental bezoar, ſlowly.
3 drams 20 grains of oyſter-ſhells, quickly.	1 dram 24 grains of *calculus humanus*, ſlowly.
3 drams 28 grains of burnt hartſhorn, without any ſenſible ebullition.	2 drams 12 grains of oyſter-ſhells, readily.
2 drams 36 grains of quick-lime, readily.	2 drams 21 grains of burnt harts-horn, without ebullition.
3 drams of ſlack'd lime, as readily.	2 drams 55 grains of quick lime, readily.
	2 drams 49 grains of ſlack'd lime, readily.

There appears by this table, to be a very great difference between the acid ſolvents of the *aqua fortis*, and thoſe of the *aqua regia* kind. The ſpirit of nitre, in ſome of theſe inſtances diſſolving more than double the quantity of the ſpirit of ſalt; and in almoſt all the inſtances proving a greatly more powerful diſſolvent. This difference in the power of the acid, as a ſolvent is to be attributed partly to the number and partly to the figure of the points of theſe acid ſpirits, which are the means of their acting as ſolvents on theſe alkaline ſubſtances; that it is not to any one of theſe alone that this difference is wholly owing, appears from this, that there are as above, many ſubſtances of which ſpirit of nitre diſſolves double the quantity that ſpirit of ſalt does; but it is alſo plain that this is not the caſe in ſome others, which ſpirit of nitre will diſſolve, and ſpirit of ſalt will not touch: in the firſt caſe the different number of the diſſolvent points, in the two acids, might be very rationally ſuppoſed the occaſion of the difference; but in the other, it muſt be owing to a different configuration of thoſe points. Mem. Acad. Par. 1700.

It might be ſuppoſed, that the configuration of the points of acid liquors might be known, by the figure of the ſalts from which they are drawn by diſtillation; but this cannot be, ſince we well know theſe ſalts are formed of combinations of acids and *Alkali's*; and we very well know, that the ſame acid ſpirit forms differently figured cryſtals, when it has diſſolved different *Alkali's*: for example, ſpirit of nitre, when it has diſſolved ſilver, ſhoots into cryſtals of a broad flat and triangular figure; and, after diſſolving copper, the ſame ſalt ſhoots into long thick hexagonal cryſtals; and from ſalt of tartar, the ſame ſalt forms true cryſtals, of the ſhape of thoſe of pure nitre. We are therefore only to judge of the figures of theſe points, from the effects we ſee them produce, not from the ſhape of the ſalts they are made from, which may eaſily be ſuppoſed to be wholly altered by the fire.

In the diſſolutions of theſe ſeveral *Alkali's*, it is obſervable, that each of the acids diſſolved the bezoars and human calculi, ſlowly, and with trouble; yet we know by chemical analyſes, that the greateſt part of both theſe ſubſtances is a volatile alkaline ſalt, which is a ſubſtance that naturally produces a much greater ebullition with acids, than chalk, or crabs-eyes, or any other ſubſtance of this kind. The ſlowneſs of this ſolution is probably owing to the large quantity of a coarſe thick oil, contained in thoſe ſubſtances, which, enveloping the alkaline particles, defends them greatly from the violence of the acid diſſolvent.

ALKEKENGI, (*Cycl.*) in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of a rotated form, and divided into ſeveral ſegments. The cup is ſhaped like a bell, and from it there ariſes a piſtil, which is fixed in the manner of a nail to the middle of the flower, and finally becomes a ſoft fruit of the ſhape of a cherry, but containing a number of flat ſeeds, and ſurrounded with a looſe foliaceous huſk, which is indeed no other than the cup greatly enlarged.

The ſpecies of *Alkekengi*, enumerated by Mr. Tournefort are theſe.

1. The common *Alkekengi*, or winter cherry of the ſhops, called by many authors, *ſolanum veſicarium*, the bladder night-ſhade. 2. The common *Alkekengi*, with variegated leaves. 3. The leſſer fruited whorled *Alkekengi*, called by Dodonæus and many others the ſleepy night-ſhade. 4. The Virginian *Alkekengi*, with yellow fruit. 5. The greater Indian *Alkekengi*. 6. The leſſer Indian *Alkekengi*, with greeniſh fruit. 7. The Indian *Alkekengi*, with yellow fruit. 8. The white flowered American *Alkekengi*, with greeniſh red huſks, and yellow fruit. *Tournef.* Inſt. p. 151.

Divers medicines are prepared from the *Alkekengi*, chiefly troches, wine, ſyrup, diſtilled water, both ſimple and compound, rol or pulp, ſpirit and eſſence; but they are all much out of modern uſe. The moſt celebrated are the *trochiſchi Alkekengi*, called alſo *trochiſci de halicacabo*, *de Veſicaria*, and *diaphyſſalidon*; which, beſide the common virtues of the berry, are ſuppoſed to have ſome peculiar ones derived from the other ingredients joined with them; and to be anodyne, cooling, aperient, *&c.* The like holds, *cæteris paribus*, of the reſt.

For the preparation and uſes of the troches, wine, water, *&c.* of *Alkekengi*, ſee *Burggr.* Lex. Med. T. 1. p. 433. ſeq. For the ſyrup of *Alkekengi*, *Lang.* Epiſt. Medic. l. 3. c. 3. p. 809. See alſo *Quinc.* Diſpenſ. P. 2. Sec. 5. n. 338. p. 148. and *Junck.* Conſp. Therap. tab. 5. n. 62. p. 180.

ALKERMES (*Cycl.*)—Divers forms of the *confectio Alkermes* are found in the different diſpenſaries. Junken[a] gives the Auguſtan, Noremberg, Brandenburg, Amſterdam, and Utrecht forms. —Bartholine, the Daniſh[b].—[[a] *Jungk.* Lex. Chem. Pharm. P. 2. p. 128. ſeq. [b] Act. Med. T. 1. Obſ. 43. p. 80. ſee alſo *Pemberton*, Tranſlat. of Coll. Diſpenſ. p. 303.]

The confection *Alkermes* has undergone divers changes and cenſures: its inventor, Meſue, firſt threw out the ſilk, originally uſed in it, and in lieu thereof, ſubſtituted the kermes: others have thrown out the *lapis lazuli*, which others retain, notwithſtanding its purgative virtue. Several have objected to the mixture of gold in it: ſome have complained, that while the kermes is found in other countries, yet this confection is only had from France. Some inſtead of kermes have propoſed the berries of the *Solanum Racemoſum tinctorii Americani*, to be uſed in this medicine, on account of the near affinity between the two kinds of berries. Camerarius has a piece expreſs on that ſubject. Ephem Acad. N. C. Dec. 2. An. 6. Obſ. 98.

Count Marſigli has an enquiry into the compoſition of this medicine, wherein he ſhews, that many of the ingredients, wherewith the antients ſo plenteouſly loaded it, and which are ſtill retained in it by the moderns, are not only uſeleſs, but hurtful; more particularly the *Lapis lazuli*, by many miſtakenly held cordial, by reaſon of the appearance of veins of gold in it: whereas, in reality it is only a marcaſite of ſulphur and vitriol, and contains a great quantity of acid, directly repugnant to the alkaline nature of the kermes, and highly prejudicial in diſeaſes, where the blood tends to coagulation. *Marſigli*, Annotaz. Intorn. Alla *Grana* della kermes. p. 68. ſeq. Giorn. de Letter. d'Ital. T. 9. p. 31. See KERMES, *Cycl.* and *Suppl.*

ALKUSSA, in ichthyology, a name given by the Swedes to a fiſh, which they alſo call *lake*. It is a ſpecies of the ſilurus, and is diſtinguiſhed by Artedi by the name of the ſilurus with only one cirrus, or beard, under the chin. The common ſilurus, which is the glanus of the antients, has four cirri. See SILURUS.

ALKY *of Lead*, among alchemiſts, denotes a ſweet ſubſtance procured from lead. *Ruland*, Lex. Alch. p. 31. *Caſt.* Lex. Med. in voc.

ALL *Saints*, in the kalender, denotes a feſtival celebrated on the firſt of November, in commemoration of all the ſaints in general; which is otherwiſe called *All-hallows*.

The number of ſaints being ſo exceſſively multiplied, it was found too burdenſome, to dedicate a feaſt day to each. In reality there were not days enough, ſcarce hours enough, in the year for this purpoſe. Hence an expedient was had recourſe to by commemorating ſuch in the lump, as had not their own days. Boniface IV. in the ninth century, introduced the feaſt of *All Saints* in Italy, which was ſoon after adopted into the other churches. V. *Baron.* ad Martyrol. 1. Novemb. Liturg. Calend. Sect. 16. p. 96. Works of Learn. T. 2. p. 534.

ALL *Souls*, in the kalender, denotes a feaſt day, held on the ſecond of November, in commemoration of all the faithful deceaſed.

The feaſt of *All-ſouls* was firſt introduced in the eleventh century, by Odilon abbot of Cluny, who enjoined it on his own order; but it was not long before it became adopted by the neighbouring churches. Vid. *Baron.* ad Martyrol. Nov. 2. Act. Sanctor. 1. Jan. in Vit. Odil. *Zimmerman*, Florileg. Phil. Hiſt. p. 93. ſeq. *Dupin*, Bibl. Eccleſ. ſect. 11. p. 130.

ALLAH, or ALLA, the name which all who profeſs Mahometaniſm give to God. Vid. *D'Herbelot*, Bibl. Orient. p. 99.

The word is Arabic, but is uſed alſo in the Turkiſh.

Allah is the ſame in Arabic with *Eloah* in the Hebrew, which is the ſingular of *Elohim*.

It alſo anſwers to the Hebrew *Adonai*; and even to that called *Tetragrammaton*, which more immediately expreſſes the Divine Eſſence.

The Mahometans make frequent repetitions of the word *Allah*, *Allah*, in their prayers.

ALLANTOIS (*Cycl.*)—This membrane is otherwiſe called *farciminalis*.

The human *Allantois* is a third coat or membrane of a fœtus, inveſting part thereof, in manner of a ſcarf, or collar, extending from the *cartilago xiphoides* to the bottom of the hips. See FOETUS.

Several anatomiſts, who diſpute the exiſtence of the human *Allantois*, allow of an intermediate membrane in the human ſpecies, between the chorion and amnios, but deny it the appellation of an *Allantois*, as holding it to differ from the *Allantoides* of brutes, in ſtructure, as well as office.

Hobokenus, and others, chuſe rather to denominate it *membrana intermedia*; Needham, *pſeudo-allantoides*. Some of theſe authors deny an urinary membrane to a human fœtus, as ſuppoſing the urachus here to be impervious, conſequently no paſſage of urine from it, and therefore no need of an *Allantois*. Others, who allow of a pervious urachus, deny the exiſtence of an *Allantois*, ſuppoſing that the urine is conveyed by the former, to between the amnios and chorion. V. *Rouhault.* in Mem. Acad. Scien. 1715. p. 135.

Harvey will not allow an *Allantois* even in brutes, but fancies the *Allantois* and the chorion to be the ſame membrane, only with two names; the firſt derived from its ſhape, the ſecond from its office. According to his opinion, the fœtus does not void any urine, but the whole is contained in the bladder, till the time of birth. Hale reſolves all theſe difficulties. Heiſter [a] lay under the ſame incredulity with Harvey; but has lately publiſhed his recantation in form [b]. Galen, and moſt of the antients, 'tis certain, not only hold the *Allantois* and chorion for diſtinct membranes, but allow an *Allantois* to the human fœtus; though this, it is to be obſerved, they did not ſo much from their experience of it, as from a ſuppoſed conformity between the viſcera, &c. of men, and of brutes. Hence the accounts they have left as to the figure, ſituation, &c. of the *Allantois*, agree only to their appearance in brutes. Galen deſcribes the *Allantois* as part of the navel-ſtring, reſembling a pudding, and reaching from one corner of the uterus to the other.—[a Ephem. Acad. N. C. cent. 1. p. 433. b Ibid. cent. 5. p. 231.]

In the greater number of animals that have hitherto been carefully examined, the *allantoid* membrane, with its contained urine, has been found.

The *Allantois* of ſome animals, as mares, bitches, and cats, ſurrounds the amnios, being every where interpoſed between it and the chorion. In others, as cows, ſheep, and goats, the *Allantois* incloſes a conſiderable ſhare of the amnios; and in others, as ſwine and rabbits, it is confined to a ſmall ſpace. *Monro*, in Medic. Eſſ. Edinb. Vol. 2. p. 147.

The *Allantois* appears differently in different animals. Fabricius ab Aquapendente will have dogs, cats, and the like animals, which have teeth both in the upper and nether jaw, to be without it. It is moſt conſpicuous in the cow and ſheep kind. Its length in the former extends to about twelve feet. It is very dilatable, and may be blown up to above a foot diameter [c]. The inhabitants of Iceland make uſe of it, inſtead of glaſs, for windows [d].—[c *Heiſt.* Compend Anat. p. 87. *Burggr.* Lex. Med. T. 1. p. 437. ſeq. d *Borrich.* in Barthol. Act. Med. T. 5. obſ. 45. p. 132.]

Dr. Grew ſuppoſes, with ſome of the beſt anatomiſts, that the human fœtus has no *Allantois*. Phil. Tranſ. N°. 457. Concerning the *Allantois* of a ſow, ſee farther in Phil. Tranſ. N°. 202. p. 851. Of a lamb, Ephem. N. C. dec. 2. an. 1. p. 376. Of a cow, Id. cent. 5. obſ. 24. p. 231. Of a human fœtus, Hiſt. Acad. Scienc. 1701. p. 28. It. 1702. p. 38. *Fanton.* Anat. P. 1. p. 234. Giorn. de Letter. d'Ital. T. 10. p. 325. Method of finding it, *Hale*, ap. Phil. Tranſ. N°. 202. p. 836. ſeq. Difficulty of its diſcovery, and miſtaken deſcriptions of it, Id. ibid.

ALLAZÆZIS, in the language of the chemiſts, denotes a philoſophical braſs, or copper, called alſo *æs album*, *aqua mercurii*, and divers other names. *Caſt.* Lex. Med. p. 34.

ALLEGATA, a word antiently ſubſcribed at the bottom of reſcripts and conſtitutions of the emperors, as *ſignata*, or *teſtata*, was under other inſtruments.

In this ſenſe, *Allegata* imports as much as verified, *verificata*. *Baxt.* Gloſſ. p. 81.

Allegata was a kind of ſubſcription, ſomewhat leſs uſual than *data*, *propoſitum*, *accepta*, *ſubdita*, *ſuppoſita*, or *ſubſcripta*. V. *Pitiſc.* Lex. Ant. T. 1. p. 72.

ALLEGIANCE (*Cycl.*)—The oath of *Allegiance*, taken by the people to the king, is only the counter-part to the coronation oath, taken by the king to the people, and as ſuch, partakes of the nature of a covenant; that is, is conditional, and ceaſes on a violation of the contract by the prince; at leaſt this is the doctrine of ſome of the chief advocates for the revolution [a]. The anti-revolutioners, on the contrary, hold the oath of *Allegiance* to be abſolute and unconditional [b].—[a *Johnſ.* Rem. on Sherl. p. 11. b Obſ. on Johnſ. Rem. on Sherl. p. 7. ſeq.]

An oath of *Allegiance* was impoſed on the people under queen Elizabeth; the popiſh prieſts took it, but evaded it, by reſtraining its obligation to the permiſſive form of the pope's toleration. The tenor of their ſwearing was, that they would obey ſo long as the pope gave them leave. In reality, they did not wait long for an abſolution from this oath. The pope, it is known, pronounced a ſolemn anathema againſt all who ſhould afterwards pay obedience to the queen. Some Engliſh Jeſuits at Rome propoſed a new oath of abjuration of the oath of *Allegiance*, to be impoſed on all who had taken that oath; at leaſt, all who were to be admitted into the Jeſuits houſe were to take an oath never to take it. V. Declarat. of Favour. Deal. of her Majeſt. Commiſſ. 1583. 4to. p. 4.

The gun-powder plot gave occaſion to the impoſing a new oath of *Allegiance* in 1606, which ſhould oblige the papiſts to be true to their prince, without breaking in upon the tenets of their religion. Some ambiguous terms in this oath ſet all the papiſts at variance; ſome were for taking it, others againſt it; ſome maintained, that it was only a bare proteſtation of civil obedience, while others oppoſed it, as eſſentially contrary to the principles of their religion. Blackwell, the arch-prieſt, then the head of the Romiſh clergy in England, not only took it, but wrote a defence of it. Bellarmine thought proper to chaſtiſe him for it, in a letter printed on the occaſion. King James I. wrote an anſwer to Bellarmine; to which the cardinal made a reply, under the name of his chaplain Math. Tortus. Biſhop Andrews undertook a refutation of this laſt piece, under the title of *Tortura Torti*. Several other papiſts appeared in behalf of the oath: Widdrington, a Benedictin monk, wrote a maſter-piece in defence of it; and the fathers Caron and Walſh outdid every body in their zeal and writings for it [c]. In effect, the generality of the clergy were for it, yet the Jeſuits to a man refuſed it; and the Spaniſh and Flemiſh clergy branded it as downright perfidy [d]. The pope was adviſed with; he put forth a bull againſt it, declaring the oath inconſiſtent with ſalvation; and after this a ſecond. But neither of them were regarded, even by the papiſts themſelves; no more than thoſe had been which had abſolved the Engliſh people from their *Allegiance* to queen Elizabeth [e].—[c Nouv. Rep. Lett. T. 1. p. 329. d Act. Erud. Lipſ. 1685. p. 276. e Hiſt. Engl. Coll. at Doway, p. 25.]

The reformed of the French church were not idle ſpectators of the diſpute, particularly Meſſ. du Pleſſis, Mornay, and du Moulin. The firſt publiſhed a work, intitled, The Myſtery of Iniquity [f]; ſhewing by what ſteps the popes had raiſed themſelves to their preſent grandeur. The Latin edition of this piece was addreſſed to king James, with an epiſtle, exhorting that prince, *de quitter doreſenavant la plume, pour aller l'eſpée a la main deſnicher l'Antichriſt hors de ſa forteresſe*, to give over engaging in a war with the pen, to go directly, ſword in hand, to drive Antichriſt out of his ſtrong hold [g].—[f Saumur. 1611. fol. g *Bac.* Lett. 35. Not. ap. Work. T. 4. p. 574.]

The convention of eſtates having offered the crown to the prince and princeſs of Orange, who accepted of it, the old oaths of *Allegiance* impoſed by the Stat. 1. Q. Eliz. and 3d James I. were abrogated; and a new oath was drawn up, to be taken by all the ſubjects of England, on penalty of being deprived of all employments, both civil, military, and eccleſiaſtical. Seſſ. 1. c. 8. Stat. abridg. T. 3. p. 8. ſeq. 8vo. The form of which was:

"I *A. B.* do ſincerely promiſe and ſwear, that I will be "faithful, and bear true *Allegiance* to their majeſties king "William and queen Mary. So help me God."

A conſiderable term, however, was allowed for every perſon, to have time to conſider of it. During this interval, an infinite number of pieces ws publiſhed for and againſt the power of kings and people. The reſult was, that the people, chiefly the clergy, divided into different parties and ſentiments. Some were of opinion, that the oath might be taken with a ſafe conſcience, but that it had been better not to have impoſed it. Others were perſuaded, that the juſtice of this ſubmiſſion was but probable, not certain, and therefore durſt not condemn thoſe who ſcrupled to take it. To others it ſeemed, that the oath might be taken in divers ſenſes; and it became either good or evil, according to the view wherein it was taken. Accordingly, theſe took it with mental reſervation, that hereby they engaged themſelves no further, than conſcience, and the fundamental laws of the nation allowed them

them to do it. Others grounded the king's right to their *Allegiance*, on the title of conqueſt. Others, as Dr. Sherlock, on his being in poſſeſſion, and having the power to keep it. Laſtly, others rejected all temperaments and mitigations, and condemned the oath as utterly unlawful. Some of the ring-leaders of theſe were Dr. Hicks and Mr. Kettlewell; and ſince, the ſect of what we call *non-jurors*. Vid. K. Will. and Q. Mary Conquerors, Lond. 1693. 4to. and Bibl. Angl. T. 7. p. 105. ſeq.

ALLEGORY (*Cycl.*) — The word *Allegory*, Αλληγορια, is Greek, for which the Latins have no proper name. Hence Scaliger gives it that of *prætextus*, as expreſſing the general deſign and uſe of it. V. *Scalig.* Poet. l. 3. c. 53.

Allegory includes parable, apologue, μυθος, or fable, and *paræmia*, or proverbs; at leaſt, under *Allegories* are comprehended ſuch proverbs as are applicable to ſubjects of different kinds. V. *Scalig.* Poet. l. 1. c. 57. & l. 3. c. 83. & c. 52, 53.

Scaliger [a] conſiders *Allegory* as one part, or ſide of a compariſon. It differs from irony, in that *Allegory* imports a ſimilitude between the thing ſpoken and intended; irony a contrariety between them [b].—[a *Scalig.* lib. cit. c. 52. b *Scalig.* lib. cit. c. 84.]

Some have allegorized, or reduced to *Allegory*, whole ſciences, as heathen theology, mythology, antient hiſtory, poetry, coſmogony, theogony, and moſt of the wiſdom of the antients, as well as of the moderns. By the help of *Allegory*, we find natural philoſophy in Moſes, chemiſtry in the antient poets, ſublime and ſpiritual things in low, vulgar, or groſs ones, wonderful diſcoveries in Rabbinical fables, admirable ſenſe and harmony, inſtead of contradiction, blunder, and folly.

Allegories have been in uſe in all ages and countries; we find them particularly among the orientals, and the Egyptians, who are ſuppoſed to have been the fathers of them. They were adopted by the antient Jews, but more by the Rabbins, and cabbaliſts of latter days. The Chriſtians borrowed the uſage very early; the primitive fathers abound with them. The Mahometans alſo give into *Allegory*, where the literal ſenſe of the Alcoran is liable to objections, particularly in the carnal account of paradiſe.

The Gnoſtics, Valentinians, and Baſilidians, appear to have been great dealers in *Allegory*; at leaſt if the conjectures of moderns be not herein miſtaken, who reſolve the doctrine of the Æons, of Abraxa's, &c. into the allegorical ſyſtem.

The great ſource of *Allegory*, or allegorical interpretations, is ſome difficulty, or abſurdity, in the literal and obvious ſenſe.—For a refuge, either to ſave the reputation of the writer, or conceal the ignorance of the commentator, recourſe is had to the expedient of *Allegory*. The miſchief is, as there are no certain laws, or rules, whereby to conduct, moderate, and reſtrain the ſpirit of allegorizing, we find ſtrange confuſion, and endleſs diſcord the fruit of it.

Allegories are diſtinguiſhed into divers kinds: as, verbal, real, ſimple, alluſive, phyſical, moral, political, theological, &c.

Simple ALLEGORY, according to ſome writers, is that which is taken from any kind of natural things.

Alluſive ALLEGORY is that which relates to other words, or things. *Gale*, Philoſ. Gener. l. 1. c. 2. ſec. 6. §. 6.

Verbal ALLEGORY is a thread, or ſeries of metaphors; or a continuation of the ſame trope, chiefly metaphor, through many words.—Such is that in Virgil:

Claudite jam rivos pueri, ſat prata biberunt.

Where the metaphor of watering the ground is carried on to the ſhutting of the ſluices, &c [a]. Or, that in Horace:

Parturiunt montes, naſcetur ridiculus mus.

Where the metaphor of the mountains (uſed for great undertakings) is purſued to their being in labour, and bringing forth nothing [b].—[a *Thomaſ.* Erot. Rhet. c. 22. p. 44. b *Voſſ.* Elem. Rhet. c. 9. §. 4.]

Perpetual, or *continued* ALLEGORY, is that where the allegorical thread is purſued through all the parts of a conſiderable diſcourſe.—Such are the books of Jonah [a], of Canticles [b], not to ſay the whole Old Teſtament, as it is by many held to be.—[a Bibl. Germ. T. 1. p. 258. It. T. 5. p. 134. b V. Bibl. Angl. T. 11. p. 471. Mem. de Trev. 1719. p. 601.]

Phyſical ALLEGORIES, thoſe wherein ſome point of natural philoſophy is repreſented: ſuch in Homer, are Juno, who repreſents the air; Jupiter, the æther, &c. ſuppoſed by many to be. Alſted [a] pretended to find the principles of all arts and ſciences in the Bible alone. Dr. Dickinſon has a treatiſe to prove, that the books of Moſes, allegorically taken, exhibit a perfect ſyſtem of phyſics; from which it was, that Thales, Anaxagoras, Empedocles, Leucippus, &c. borrowed the principles of the corpuſcular philoſophy [b].—[a Vid. *Alſt.* Triumph. Bibliæ. b Phyſ. Vet. & Nov. Lond. 1702. *Gundling*. Hiſt. Philoſ. Mor. c. 7.]

Medical ALLEGORIES, thoſe wherein ſome ſecret of phyſic is revealed: ſuch is Solomon's deſcription of old age [a]; wherein, according to certain authors, the circulation of the blood is indicated [b]: ſuch alſo, according to a modern writer, is the ſtory of the labours of Hercules.—[a Eccleſ. *c.* xii. *v.* 1. ſeq. b *Warlitz*, Valetud. Senum Salom. ap. Jour. des Scav. T. 43. p. 232.]

Chemical ALLEGORIES, thoſe relating to chemiſtry: ſuch, according to Suidas [a], and many moderns, is the ſtory of the Argonautic expedition ſuppoſed to be; wherein the proceſs of making gold is exactly deſcribed: ſuch alſo, according to Tollius [b], is the name and title of Baſil, Valentine, Benedictine, Monk; under which are concealed the ſecret of the philoſophical mercury.—[a *Suid.* in voc. Δεξας. b V. Bibl. Univ. T. 13. p. 206.]

Moral ALLEGORIES, thoſe whereby ſome uſeful moral inſtruction is held forth: ſuch, in Homer, is the victory of Diomede over Venus, or fleſhy luſt: ſuch alſo are the Pythagorean Metempſychoſis [a], and the ſtory of the judgment of Hercules, given by Prodicus [b], ſuppoſed to have been. To which may be added, the fables of avarice and luxury [c]; of the grotto of grief, and others in the Spectators [d].—[a Bibl. Choiſ. T. 10. p. 186. b Tatl. N°. 97. T. 2. p. 282. c Spectat. N°. 55. T. 1. p. 215. d Jour. Liter. T. 7. p. 298—305.]

A grammarian of the laſt century maintained, that the name of mice and frogs in Homer's *Batrachomyomachia*, were allegorical, and might be underſtood of the vitious manners of mankind [e]. Some think Homer intended to expoſe the vanity of man, by the noble and elevated ſentiments which he puts in the mouths of thoſe miſerable animals, and by the terrible diſorders which the death of a pitiful mouſe produced. Spencer's general plan is the repreſentation of ſix virtues, holineſs, temperance, chaſtity, friendſhip, juſtice, and courteſy, in ſix legends, by ſix perſons. The ſix perſonages are ſuppoſed under proper *Allegories* ſuitable to their reſpective characters, to do all that is neceſſary for the full manifeſtation of the reſpective virtues, which they are to exert. The red croſs knight runs through the whole ſteps of the Chriſtian life; Guyon does all that temperance can poſſibly require; Britomartis (a woman) obſerves the true rules of unaffected chaſtity; Arthegal is, in every reſpect of life, ſtrictly and wiſely juſt; Calidore is rightly courteous [f].—[e V. Mem. de Trev. 1718. p. 162. f Spect. N°. 540. Vol. 7. p. 256.]

Political ALLEGORIES, thoſe wherein ſome maxim of good government is artfully wrapped up: ſuch is that celebrated one of Menenius Agrippa, whereby he prevailed on the Roman people, who had withdrawn in diſcontent at the magiſtrates, to return into the city; to which purpoſe, he related to them the parable of a war raiſed by the ſeveral parts of the human body againſt the ſtomach. Vid. *Lamy*, Art de Parler, c. 12. Mem. de Trev. Jan. 1702. p. 46.

As to the ode of Horace, lib. 1. od. 14. mentioned in the Cyclopædia, it is diſputed whether the republic be therein ſignified, or only the ſhip which brought the poet back to Italy, after the battle of Philippi. V. Jour. des Scav. T. 4. p. 315. ſeq. & T. 86. p. 171.

Theological ALLEGORIES, thoſe wherein ſome truth relating to the nature or attributes of God is couched.

The method of defending Homer's gods, by having recourſe to *Allegory*, has been zealouſly ſupported of late by madame Dacier, and others, but in vain. The advocates for that poet are by no means agreed on the allegorical meanings they aſcribe to him; and whatever *Allegory* they chuſe, whether it be theological, moral, or phyſical, the difficulty is ſo great to make it quadrate to the whole of what the poet ſays of each god, that 'tis plain the *Allegories* only come in *ex poſt facto*, and are foreign to the author's intention. It is almoſt certain, Homer never thought of any ſuch thing; and that Metrodorus of Lampſacus, and Anaxagoras are the firſt who thought of this expedient, to pacify thoſe, who were offended at the poet. But ſuppoſing Homer to have been as errant an allegoriſt, as ſome would have him; he will not yet eſcape cenſure, for having choſen his figures, and compoſed his fictions ſo ill, that at firſt ſight ſeveral of them exhibit moſt pernicious ideas: as the invention of *Allegories*, was in his own power, ought he not better to have obſerved decorums [a]. For an inſtance, the defenders of this ſcheme aſſert, that by Minerva, Homer means the divine wiſdom, or underſtanding. Notwithſtanding which, it has been obſerved, that Minerva makes one of the moſt ſenſeleſs perſons in the whole iliad. Being enraged at Jupiter, ſhe repents her having complied with his requeſt, in aſſiſting Hercules to eſcape from hell. This, according to madame Dacier, only ſhews how much power paſſion has over wiſdom itſelf. But may it not be anſwered, what power can paſſion have over the divine wiſdom?—[a Mem. de Trev. 1716. p. 771. b Jour. Liter. T. 7. p. 298.]

There is nothing but may be defended, by the uſe of *Allegory*. The impieties of Homer's gods are by that means turned into the contrary virtues. By the like means, a man who would be at the trouble, might find excellent moral ſenſes in the moſt obſcene poems of Martial, or Ovid. Have we not heard of a learned writer, who, by help of *Allegory*, pretended to find the hiſtory of the Jews in Homer's Odyſſee? Nouv. Rep. Lett. T. 52. p. 383.

Lud. Vives actually turned the eclogues of Virgil into *Allegories*; and Turnebus and Politian, found great myſteries in Catullus's Sparrow [c]. The monk Jacobus Hugo, has with great ſagacity, found the whole Roman hiſtory to be only the hiſtory of the goſpel under other names. The pious Æneas flying from Troy, and carrying his gods with him into Italy, is no other than St. Peter, quitting the ſee of Antioch, and going to fix at Rome [d].—[c Act. Erud. Lipſ. 1695. p. 23. d Ouvr. des Scav. 1694. p. 161.]

Surenhuſius ſhews how the Gemaric doctors, and *allegorical* interpreters of the old teſtament, have diſcovered the myſtic ſenſes, under the letter which conceals them. This letter they call the body, and the *Allegory* the ſoul. The literal ſenſe with them is vile, and the *allegorical* precious. Maimonides has treated of the ſeveral methods whereby they ſupport their *Allegories*, which may be reduced to the following ones. 1. By not reading the words according to the points under them, but according to other points, which might be put under them, even, tho' the former ſhould make no ill ſenſe. 2. By changing ſome letters for others, either of the ſame organ, (as they call it,) or a different one. 3. By both changing letters and points. 4. By adding and ſubſtracting certain letters. 5. By tranſpoſing letters and words, to make a new ſenſe out of them. 6. By ſeparating one word into two. 7. By ſubſtituting other words, inſtead of thoſe that are written, to render the ſenſe clearer, and accommodate it to the ſubject. 8. By inverting the order of the words, to give them another ſenſe. 9. By both inverting the order, and adding of new words. 10. By both adding, inverting, and ſubſtracting words. V. *Surenhuſ.* de Veter. Theolog. Hebr. Formul. *&c.* ap. Bibl. Choiſ. T. 25. p. 411. ſeq.

Athenagoras, Theophilus of Antioch, with many others of venerable rank, and antiquity, conſidered the chriſtian religion only as a new ſect of philoſophy, which under low and popular ſimilitudes, contained the moſt hidden ſenſe, and profoundeſt myſteries of all ſorts of natural and divine ſciences. Platoniſm unveiled, P. 1. c. 8. p. 27.

The Æons of the Valentinians, the Abraxa's of the Braſilidians, are generally held to have only been *Allegories*. Such alſo is the platonic *logos* ſuppoſed to have been. Hermannus Deuſingius has even had the temerity to turn the doctrine of the trinity into a mere *Allegory*: according to him, the three perſons are only three faculties in God; like the underſtanding, the judgment, and the will in man. Theſe three faculties, he ſuppoſes to have manifeſted themſelves at different times. The underſtanding revealed itſelf to the Jews, under the name of father, whereof judgment, which is the ſon, was in ſome meaſure the complement or perfection; the Holy Ghoſt, which is the will and the love of God, only manifeſted itſelf in the new teſtament: and thus by a kind of progreſſion, or degrees, each age of the chriſtian church receiving more and more of it than the preceding ones. Nouv. Rep. Lett. T. 30. p. 270. ſeq.

The antient Jews, as the Therapeutæ, the author of the book of wiſdom, Joſephus, and Philo, and, in imitation of them, the generality of the fathers, turned even the hiſtorical paſſages of the ſcripture into *Allegories*, without excepting thoſe places, where the literal ſenſe is moſt clear and unexceptionable. *Calm.* Dict. Bibl. T. 1. p. 105.

ALLEGORY is alſo uſed for the drawing ſome words, plainly and literally intended at firſt, from their natural and proper meaning, to a foreign ſenſe; for the better inſtructing of our minds in ſome point of faith, or manners. This coincides with what is otherwiſe called accommodation. See ACCOMMODATION, *Cycl.* and *Suppl.*

ALLEGRO (*Cycl.*)—*Piu* ALLEGRO, in the Italian muſic, intimates to play, or ſing, a little quicker.

Poco piu ALLEGRO, ſignifies, that the part it is joined to muſt be played, or ſung, a little more briſk, and lively, than *Allegro* alone requires.

ALLELENGYON, in antiquity, a kind of tax, or tribute, which the rich paid for the poor, when abſent in the armies. *Pitiſc.* Lex. Antiq. in voc.

ALLELOPHAGI, in natural hiſtory, a term uſed by Mouffet, and other writers on inſects, to expreſs a peculiar genus of flies, which feed on one another. They are thus called in diſtinction from another claſs, called the *heterophagi*, from their feeding on different ſubſtances, not on one another.

ALLELUJA, (*Cycl.*) in botany, a name uſed by many for the common wood ſorrel. *Ger.* Emac. Ind. 2.

ALLEMANNIC, in a general ſenſe, ſomething relating to the antient Germans. The word is alſo written *Alamannic*, *Alemannic*, and *Alemanic*. It is formed from *Alemanni*, *Allemanni*, or *Alamanni*; the name whereby the German nation was antiently known.

In this ſenſe we meet with *Allemannic* hiſtory, *Allemannic* language, *Allemannic* laws, *&c.* Goldaſtus, and others, have publiſhed collections of writers on *Allemannic* affairs: *Allemannicarum rerum ſcriptores.*

Allemannic language was ſpoken throughout the ſouthern parts of Germany. It is divided into ſeveral dialects; the principal of which are the Suevic, and Helvetic. Act. Erud. Lipſ. 1728. p. 11.

The *Alemannic* differed from the Francic, which was the language in uſe through the northern parts of Germany: the chief dialects of this, are the Palatine, Franconian, and Saxon.

ALEMANNIC *Law*, *Jus Allemannicum*, is the ſame with what is otherwiſe called the Suevic law, being that which obtained in the more ſouthern parts of the country, as the Saxon law did throughout the northern. *Hartung.* Exerc. Jur. Civ. 1. c. 7. p. 986.

Schilter has publiſhed the provincial *Alemannic* law [a], and alſo the code of the feudal *Alemannic* law [b].—[a V. Act. Erud. Lipſ. 1728. p. 338. b V. Journ. des Scav. T. 84. p. 177. ſeq.]

ALLIANCE (*Cycl.*)—*Arms of* ALLIANCE, in heraldry, are thoſe born by the iſſue of families, whoſe heireſſes have married with other families, to ſhew their deſcent paternal as well as maternal from both families. *Niſbet*, Eſſ. on Armoury, c. 7. Hence in great meaſure the uſe and office of what they call marſhaling, and quartering.

ALLIANCE is alſo extended to leagues or treaties, concluded between ſovereign princes, and ſtates, for their mutual ſafety and defence.

In this ſenſe, *Alliance* amounts to the ſame with what we otherwiſe call confederacy, league, *&c.*

Alliances make a ſpecies of treaties; which are uſually divided into treaties of peace, of commerce, and of *Alliance*, properly ſo called. Theſe are ſometimes particularly denominated foreign *Alliances.*

Alliances are variouſly diſtinguiſhed, according to their object, the parties in them, *&c.* Hence we read of equal, unequal, triple, quadruple, grand, offenſive, defenſive, *&c. Alliances.*

Unequal ALLIANCES, *Fœdera inequalia*, are thoſe wherein one of the contracting powers promiſes patronage, or protection, and the other fidelity, and obſervance; by which they ſtand contradiſtinguiſhed from equal *Alliances*, wherein the ſeveral powers treat on a par. *Grot.* de Jur. Bell. l. 1. c. 3.

Offenſive ALLIANCE, that whereby the parties oblige themſelves jointly to attack ſome other power. This ſtands contradiſtinguiſhed from defenſive *Alliances*, where the parties only oblige themſelves mutually to defend each other.

The forms or ceremonies of *Alliances* have been various in different ages and countries. Among, us ſigning and ſwearing, ſometimes at the altar, are the chief; antiently eating and drinking together [a], chiefly offering ſacrifices together, were the cuſtomary rite of ratifying an *Alliance*. Among the Jews and Chaldeans, heifers or calves; among the Greeks, bulls or goats; and among the Romans, hogs, were ſacrificed on this occaſion [b]. Among the antient Arabs, *Alliances* were confirmed by drawing blood out of the palms of the hands of the two contracting princes with a ſharp ſtone, dipping herein a piece of their garments, and therewith ſmearing ſeven ſtones, at the ſame time invoking the gods Vrotalt, and Alilat, *i. e.* according to Herodotus, Bacchus, and Urania [c]. Among the people of Cholchis, the confirmation of *Alliances* is effected by one of the princes offering his wife's breaſts to the other to ſuck, which he is obliged to do till there comes out blood [d].—[a Hiſt. Crit. Rep. Lett. T. 2. p. 250. b Jour. des Scav. T. 46. p. 114. c *Herodot.* l. 3. Nouv. Rep. Lett. T. 52. p. 31. d *Galen.* Hiſt. Armen. Ap. Bibl. Univ. T. 1. p. 293.]

It has been diſputed, whether the ſtates of the empire have a right of making *Alliances*, without the emperor's participation. And whether the king of England be veſted with abſolute power of making *Alliances* at diſcretion, without conſent of parliament. Dr. Davenant aſſerts the negative. According to him, the contrary opinion owes its riſe to the meer flattery of modern courtiers, having no foundation in the antient laws and conſtitution of the kingdom. King John and Richard II. were, according to this author, the firſt that attempted any thing like it. It is certain, there occur numerous inſtances in hiſtory, where the king has aſked, or the parliament have offered, their advice, concerning *Alliances* to be made; but there are many others, at leaſt of later times, wherein no footſteps of any ſuch conſultation appear. Vid. Obſerv. *Halenſ.* T. 6. Obſ. 31. §. 15. ſeq. *Boecl.* Notit. Imper. Germ. l. 16. c. 2.

Alliances are become much more frequent of late than in antient times, which has not a little diminiſhed the ſanction of them. Grown familiar, they are overlooked and thrown aſide at pleaſure. It may be aſked what end do *Alliances* anſwer? Can a prince or ſtate even reſt ſecure under the fence of *Alliances?* It is certain no [e]. The avowed principle of ſtateſmen and politicians is, that *Alliances* oblige princes no longer than they are for the intereſt of their reſpective people [f]. As the intereſts of nations are perpetually varying, the moſt ſolemn *Alliances* will be every day annulling themſelves, even without any perfidy, or breach of faith, on the part of the ſovereigns, or their miniſters. In this light did De Wit, or rather La Cour, conſider foreign *Alliances*, when he diſſuaded his countrymen from making any, even tho' attacked by a ſuperior power [g]. If you *ally* with a weaker prince, the burden muſt lie chiefly on you; if with a ſuperior, you become dependent on him, and will be treated at diſcretion. An *Alliance* may involve you in a war, but will ſcarce ever ſave you from it. If you run riſks, confiding in the faith of your allies, it is odds you are ſacrificed. The moment an *Al-*

liance is concluded, you ceaſe to be at liberty, to take the meaſures which you find moſt advantageous, except ſo far as the other powers *allied* will pleaſe to permit.—[[c] Jour. Liter. T. 4. p. 34. [f] *Chevign.* Scienc. des Perſon. de la Cour. T. 3. p. 291. [g] *De Witt*, Mem. P. 2. Mem. de Trev. An. 1710. p. 219. ſeq.]

According to the modern politics, to render an *Alliance* valid, it is neceſſary, that it not only be juſt in its principles, but beneficial in its effects. A prince can oblige himſelf no further than thoſe two go: he cannot lay himſelf under a neceſſity to ſuccour an ally, beyond what may be for his people's benefit. He may even make peace without the conſent of his ally, tho' the contrary has been expreſsly ſtipulated between them; provided ſuch peace be for the intereſt of his ſtate. This is ſufficiently warranted by the practice of princes. Henry the great of France, at the treaty of Vervins, concluded a ſeparate peace with Spain, tho' there was a poſitive article in the treaty of *Alliance* between him, queen Elizabeth, and the ſtates general, that none of them ſhould make peace without the conſent of the reſt. The like was done by Chriſtian IV. king of Denmark, who treated with the emperor, contrary to his engagement with the duke of Saxony, and his other allies. Queen Chriſtina of Sweden, did the like at the treaty of Munſter, in 1648, which was concluded without the conſent of the allies, the Dutch and French; the former of whom afterwards, made a ſeparate peace with the other branch of that houſe, without conſent of the French. *Brown*, Miſcel. Aulic. p. 172. ſeq. Mem. de Trev. Sept. 1702. p. 143.

ALLIGATI, in antiquity, the baſeſt and worſt kind of ſlaves, whom they kept locked up, or with fetters on.

The Romans had three degrees, or orders of ſlaves, or ſervants, the firſt employed in the management of their eſtates, the ſecond in menial or lower functions of the family, the third called *Alligati* above-mentioned. *Pitiſc.* Lex. Ant. T. 1. p. 72.

ALLIOTH (*Cycl.*) is alſo written *Alliot*, and *Aliot*, and literally denotes a horſe. The Arabs give this name to each of the three ſtars, in the tail of the great bear, on account of their appearing like three horſes, ranged for the drawing a waggon. *Vital.* Lex. Math. p. 23.

ALLIUM, in botany. See GARLICK.

ALLODIARIUS, the owner or proprietor of an *Allodium*, or *allodial* lands.

This is otherwiſe written *Alodiarius*, *Alodarius*, *Aloarius*, *Aloer*, *Aloerius*, and *Aleutier*. *Du Cange*, Gloſſ. Lat. T. 1. p. 147. in voc. *Alodiarius*.

ALLODIUM, (*Cycl.*) land held of a man's own right.

This word is alſo written *Alodium*, *Alods*, *Alodis*, *Alaudium*, and *Alaudum*; by French writers *Alleu*, *Aleu*, *Aleuf*, or *Aleud*. We ſometimes alſo find it more particularly expreſſed by the names *Franc Aleu*, *Franc Aleud*, *Franc Aloy*, *Franc Aleuf*, *Liberum Allodium*, and *Regale Allodium*. *Calv.* Lex. Jur. p. 61. *Du Cange*, Gloſſ. Lat. T. 1. p. 143.

Some define it to be land, not only free from all ſervice whether real or perſonal, tho' the owner of it might ſometimes acknowledge ſome ſuperior lord, from whom he firſt received it in quality of an honorary fee. We ſay ſometimes, for *Allodia* were often without owning any ſuperior lord. *Du Cange*, loc. cit.

Allodium and *Patrimonium*, are frequently uſed indiſcriminately.

The maxim which obtains in many places, *nulla Terra ſine Domino*, ſets aſide all *Allodia*, except where there are direct proofs of the contrary. *Vertot*, Diſſ. ſur les Loix Saliques, ap. Mem. Acad. Inſcr. T. 4. p. 338. ſeq.

Leibnitz [a] derives the word *Allod*, from the Teutonic, *Ahn Leod*, q. d. not *Leodium*, or not liable, of the Saxon *Leodes*, liable. Skinner [b] from the Teutonic, *All loſz*, q. d. *Allfree*. Spelman [c] from the Anglo-Saxon, *Leod*, people, q. d. popular eſtate; or from *a* and *Leod*, vaſſal, q. d. without vaſſalage; or from *a* and *Lad*, burden, q. d. not incumbent. Hicks from the Theotiſcal and Gothic *Lood*, q. d. whole produce of land. According to this author, a free farm, where the owner, beſides the poſſeſſion, enjoyed the property of the land, without ſervice, was called among the Goths *Allalod*, where he had only half the profit, or was ſubject to any payment or ſervices to a ſuperior lord, it was called half *Allalod*.—[[a] Act. Erud. Lipſ. Supp. T. 4. p. 238. [b] *Skinn.* Etym. in voc. [c] *Spelm.* Gloſſ. p. 27.]

Allodium, or *Allode*, is derived by ſome others, from the German words *All*, *omne*, and *ode*, *patrimonium*, *ſeu poſſeſſio*. V. *Strykii*, Exam. Jur. Feud. Cap. 2. Qu. 5, and 6.

Schilter derives it from *ahl*, or *alt*, *vetus*, and *ode*, *quaſi vetus vel paternum bonum*.

Altho' inſtances of *Allodial* donations occur in the Engliſh hiſtory, yet as Sir Edward Coke obſerves, there is now no *Allodium* in England. V. 1. Inſt. 1. b.

In domeſday, tenants in fee ſimple are called *Alodarii*, or *Aloarii*. *Coke*, loc. cit.

The antient Germans had what they called *Sonnen Lehn*, or *Feudum ſolare*, which they held of none but the ſun, their god of old. This ſeems analogous to *Allodium*. V. *Stryk.* Ex. Jur. Feud. Cap. 2. Qu. 5.

In the cuſtomary laws of France, we find mention made of two kinds of *Allodiums*, viz.

ALLODIUM *Nobile*, *Aleu Noble*, that to which *Juſtitia* or juriſdiction was annexed; and which was alſo free from all homage, or ſervice.

ALLODIUM *Villanum*, *Aleu Raturier*, that to which no juriſdiction was annexed. Trev. Dict. Univ. in voc. *Alleu*.

ALLOGIA, in antiquity, denote winter quarters appointed for the ſoldiery. *Aquin.* Lex. Milit. T. 1. p. 38. ſeq.

Some will have the word of French origin from *Logement*; others with more probability from the Italian *Alloggio*, formed of the Latin *Locus*, place.

ALLOM. See the article ALUM.

ALLOY (*Cycl.*)—The *Alloy* of gold is eſtimated by carats, that of ſilver by penny-weights.

Gold without any *Alloy* is ſaid to be twenty-four carats fine. According to the proportion of pure gold, to that of the *Alloy* in an ounce; the mixture is ſaid to be ſo many carats fine. If there be two carats of *Alloy*, to twenty-two of pure gold, it is ſaid to be twenty-two carats fine. If four of *Alloy*, to twenty of gold, twenty carats fine, *&c.*

In different nations, different proportions of *Alloy*, are uſed; whence their monies are ſaid to be of different degrees of fineneſs, or baſeneſs; and are valued accordingly, in foreign exchanges.—The ſilver coin, among the Romans, was long kept to a great degree of purity; which was firſt broke in upon by the tribune Livius Druſus; who mixed with them, an eighth part of copper. But the acts of his tribunate were afterwards annulled, and the money reſtored to its antient fineneſs. Thus things remained till the time of the emperor Severus, who encreaſed the *Alloy* ſtill more; yet on his medals, he took the title of *Reſtitutor Monetæ*. Jour. des Scav. T. 29. p. 765.

The *Alloy* of ſilver with copper, may be examined by the coppel in the following manner. Firſt have ready a touch-ſtone, and a ſet of touch needles; wipe carefully both the touchſtone, and the metal to be examined, and rub the metal on the ſtone; compare its mark with the needles, and by that means making a gueſs at the quantity of copper contained, and of courſe know how much lead will be neceſſary for conſuming that quantity. But as the lead neceſſary for conſuming the copper is not in a quantity proportionable to that of the copper, when this is mixed with ſilver, we ſhall here give, from Lazarus Erker, the quantity to be added in every caſe. We ſhall take for our examples, a ſeries of touch needles, made according to the mark, divided into half ounces and grains. See the article TOUCH-NEEDLES.

½ ounce ſilver,	½ ounce copper,	marks of lead to be added,
15 ½ —	½ —	4.
15 —	1 —	6.
14 —	2 —	8.
12 and 13.	4 and 3	10.
9 — 12	7 — 4	14.
4 — 8	12 — 8	15.
1 — 4	15 — 12	16.

Every body may reduce this table to the needles, made according to the mark of the avoirdupoiſe, or that of carats: nor is it neceſſary to proportion the quantities of lead to be added, ſo far as one half centner. *Cramers*, Art of aſſaying p. 226.

In the mean time, let the metal to be tried with the needles undergo the operation of copelling together with the quantity of lead indicated by the touching; and the fire muſt be made the gentler, as the ſilver is allayed with a greater quantity of copper, and on the contrary, the ſmaller the quantity of the *Alloy* of copper is, the ſtronger muſt be the fire to be uſed in the operation. When the lead, which muſt be firſt put into the coppel, begins to ſmoke and boil, then the metal to be examined is to be added, and the fire continued till the copper is all conſumed and reduced to yellow ſcoriæ, and the bead of ſilver left in the center of the copel muſt be weighed, which, ſubſtracting the known quantity of ſilver in the lead uſed in the operation, will ſhew the quantity of ſilver and conſequently that of the copper in the *Alloy*.

ALLUM, (*Cycl.*) in natural hiſtory. See ALUM.

ALLUSION (*Cycl.*)—*Alluſions* to paſſages in books or authors, make what ſome call indirect quotations. Hiſt. Acad. Inſcrip. T. 3. p. 108.

We find frequent *Alluſions* in the new teſtament, to paſſages in the old. The writings of the rabbins, the Arabs, the Perſians, Chineſe, Literati, *&c.* are full of *Alluſions* to the law, the Alcoran, and the works of Confucius. Many of the accompliſhments of prophecies in the old teſtament mentioned in the new, are generally allowed by critics to be only *Alluſions*, or accommodations of ſuch prophecies to other events, which originally they had no reſpect to.—This makes what ſome call the ſyſtem of accommodation. Jour. des Scav. T. 74. p. 320. *Sykes*, Eſſ. on the truth of chriſtian. c. 15. Bibl. Angl. T. 12. p. 470. Bibl. Anc. Mod. T. 11. p. 102. It. T. 17. p. 46. Bibl. Choiſ. T. 25. p. 426. Act. Erud. Lipſ. 1689. p. 167. Nouv. Rep. Lett. T. 18. p. 526. Platon. unveiled, c. 17. See ACCOMMODATION, *Cycl.* and *Suppl.*

A multitude of texts of ſcripture are only to be explained by pointing out the *Alluſion* they bear to heathen, or Jewiſh rites, uſages, *&c.*

This part of Hermeneutics, has been cultivated in the two laſt ages above all others. And hence it is that the ſcripture is ſo much better known among modern divines, than among the fathers themſelves. Not but that the itch of finding *Alluſions* has been too much indulged; inſomuch that many things have by this means been attributed to the inſpired writers, which it is certain they never meant. Dr. Hammond finds the gnoſtics intimated throughout all the epiſtles of the apoſtles: and Kircher who had dealt much in the Ægyptian language, and antiquities, finds Ægyptianiſm in every thing. For an inſtance to what degree intepreters have multiplied *Alluſions*, we will mention thoſe ſtarted from that ſaying of St. Paul [a], *put on the Lord Jeſus*. Many find this paſſage an *Alluſion* to heathen antiquity; but diſagree as to the particular thing alluded to. Some, *e. gr.* will have it to be the feaſts of the Palii, when they dreſſed themſelves in armour, and run about the ſtreets; others, the Roman Lupercalia, or Saturnalia, when ſervants dreſſed in the habits of their maſters; others, a religious cuſtom, wherein profane perſons wore the habit of their gods; others, a method of conferring the ſupreme degree among the Sophiſts, by dreſſing the candidate in a ſort of conſecrated garments; others again will have it allude to a Jewiſh ceremony, *viz.* the method of inaugurating the high prieſt by putting on him the pontifical robes: Others, will have it to be a point of Chriſtian antiquity, that is here alluded to, *viz.* the antient ceremony of baptiſm, wherein, after the catechumens aroſe out of the water, they were habited in new white garments [b].—[[a] Rom. c. xiii. v. 14. *Rambach.* Inſtit. Hermen. Sacr. l. 3. c. 7. §. 8. p. 591. ſeq.]

ALLUVION (*Cycl.*)—Great alterations are made in the face and limits of countries, by *Alluvions* of the ſea, rivers, *&c.* [c] Whole plains are ſometimes formed by *Alluvions* [d]. It is controverted whether *Alluvions* be to be conſidered as fruits, and as ſuch accruing to *Uſu-fructuaries* [e].—[[c] Giorn. de Letter. d' Ital. T. 21. p. 295. Jour. des Scav. T. 39. p. 561. [d] Mem. Acad. Scienc. 1710. p. 210. [e] Jour. des Scav. T. 38. p. 284.]

ALMADIE, in ſhip building, a ſmall veſſel uſed by the negroes of Africa, about four fathom long; and made uſually of the bark of a tree.

The ſame name is alſo given to the veſſels of Calicut in India, which are eighty foot long, and ſix or ſeven broad, and ſquare ſterned. Dict. de Marin. in voc.

Theſe are otherwiſe denominated *Cathuri*. They go with great ſwiftneſs. Witſen ſays, they are twelve or thirteen paces long, ſharp at head and ſtern, and that they are wrought both by ſails and oars. In time of war the king of Calicut fits out two or three hundred of theſe veſſels. *Witſen.* Ap. Dict. de Marine, in voc.

ALMAGEST (*Cycl.*)—This work was publiſhed at Baſil in 1538. *Claud. Ptolemæi Conſtructio magna S. Almageſtum, græcè, cum Comm. Theonis Alexandrini.*

The *Almageſt* was tranſlated from Greek into Latin in 1558, by G. Trapezuntius [a], but great complaints have been made of the errors and inaccuracies of this verſion [b]. Purbachius began to reduce the *Almageſt* into a more commodious form, and leſs compaſs, for the uſe of learners; but dying before he had half finiſhed, the work was left to be compleated by Regiomontanus, who publiſhed it in 1550 [c]. There is alſo a verſion and epitome of Ptolemy's *Almageſt* in Hebrew, made from the Arabic, by R. Jac. ben Abraham ben Samſon, Andoli, *&c.* [d] tho' yet only extant in MS.—[[a] Venet. 4°. 1515. 1525. *Lipen.* Bibl. Phil. T. 1. p. 31. [b] Miſc. Lipſ. T. 2. p. 596. *Fabric.* Bibl. Græc. l. 4. c. 14. *Naud.* Arcan. Stat. p. 367. [c] *Wolf.* Com. de Script. Mathem. in fin. Elem. Mathef. T. 2. p. 1051. Ed. 1. [d] V. *Wolf.* Bibl. Hebr. T. 3. p. 920. It. T. 1. p. 20.]

Riccioli [e] has alſo publiſhed a body of aſtronomy, which he entitles after Ptolemy, the new *Almageſt*; being a collection of the principal antient, as well as modern obſervations and diſcoveries in that ſcience. Riccioli's *Almageſt* contains a great variety of different ſyſtems, opinions, *&c.* likely enough to confound thoſe who are not deep enough in the ſcience, to be able to make a choice and judgment among them. He was therefore afterwards at the pains to examine and compare the divers obſervations, *&c*, together, and from the whole to draw out a more uniform and conſiſtent body, ſince publiſhed under the title of *Aſtronomia reformata* [f]. Some authors ſpeak of another *Almageſt* in Hebrew, by Avu Abad Baal [g]; but we do not find that it has been yet publiſhed.—[[e] *Jo. Bapt. Riccioli, Almageſtum novum ſive Aſtronomia Antiquo-nova. Bonon.* 1651. Fol. *Lipen.* Bibl. Phil. T. 1. p. 31. [f] Jour. des Scav. T. 2. p. 19. [g] *Wolf.* Bibl. Hebr. T. 3. p. 3.]

We have alſo botanical *Almageſts*, compoſed by Plukenet [h], being a kind of pinax, or general index of plants, containing the proper, and deſcriptive names of upwards of ſix thouſand. To which in a ſupplement, ſince publiſhed by the ſame author, have been added above one thouſand others [i].—[[h] *Almageſtum botanicum, ſive Phytographiæ Plucnetianæ Onomaſticon*, &c. Lond. 1696. Fol. an extract of it is given in Phil. Tranſ. N°. 225. p. 434. [i] *Almageſti Botanici Mantiſſa, plantarum noviſſime detectarum, ultra Millenarium Numerum complectens.* Lond. 1700. Fol. An extract of it may be ſeen in work of Learn. T. 2. p. 225.]

ALMAGRA, in natural hiſtory, a name given in later ages to an earth of the ochre kind, called *Sil atticum* by the antients. It is an ochre of a fine and deep red, with ſome admixture of purple, very heavy, and of a denſe yet friable ſtructure, and rough duſty ſurface. It adheres very firmly to the tongue, and melts freely and eaſily in the mouth, and is of an auſtere and ſtrongly aſtringent taſte, it ſtains the ſkin in touching it, and ferments very violently with acid menſtruums; by which ſingle quality, it is ſufficiently diſtinguiſhed from the *Sil Syricum*, to which it has in many reſpects a great affinity.

It is found in immenſe quantities, in many parts of Spain; and in Andaluſia there are in a manner whole mountains of it. It is uſed in painting, and in medicine, being a very valuable aſtringent.

The generality of authors, have been guilty of a very great error, in confounding the *Sil atticum* and *Ochra attica* of the antients with one another, and imagining them the ſame ſubſtance; but a careful examination of what is left us, in regard to theſe ſubſtances, very evidently ſhews, that the one was red, and the other yellow, and that we have them both yet in great plenty in different parts of the world. *Hill*'s Hiſt. of Foſſils, p. 57.

ALMAGRA, in the cant of chemiſts, denotes red bole, or ruddle, ſometimes a lotion, or waſh.

ALMALECI, in medical hiſtory, a celebrated work, containing a ſyſtem of the antient Arabian phyſic.

The word imports as much as the royal work.

The author of it was Haly Abbas, a perſon of great repute for learning, in his age; on which account he had the title of Magus.

It was compoſed about the year 980, and dedicated in very hyperbolical language to the Caliph Ada d'Odaula. It was tranſlated into Latin by Stephen of Antioch, in 1127. In which dreſs it is ſtill extant.

Others give this work the title of *Pantechni*, or *Complementum Medicinæ*, and aſcribe it to Iſaac Iſraelita. In reality there are many paſſages in the work exactly the ſame with what are quoted by Rhazes under the name of Iſaac. And no doubt, Haly might borrow from Iſaac, as well as he did from Rhazes. Concerning the hiſtory, contents, *&c.* of the *Almaleci*, ſee *Friend*'s Hiſt. of Phyſ. P. 2. p. 36. ſeq.

ALMANAC (*Cycl.*) is uſed, among antiquaries, for a kind of inſtrument, uſually of wood, inſcribed with various figures, and Runic characters, and repreſenting the order of the feaſts, dominical letters, days of the week, and golden number, with other matters neceſſary to be known throughout the year; uſed by the antient northern nations, in their computations of time, both civil and eccleſiaſtical.

Almanacs of this kind are known by various names, among the different nations wherein they have been uſed, as rimſtocks, primſtaries, runſtocks, runſtaffs, *Scipiones Runici*, *Baculi Annales*, clogs, *&c.*

They appear to have been uſed only by the Swedes, Danes, and Norwegians. From the ſecond of theſe people, their uſe was introduced into England, whence divers remains of them in our counties. Dr. Plot [a] has given the deſcription and figure of one of theſe clogs, found in Staffordſhire, under the title of the perpetual Staffordſhire *Almanac*. Wormius dates their origin, from the time of Julius Cæſar, which Rudbeck [b] is not contented with, but aſſerts them to be upwards of three thouſand years old, and even to have been invented by Atlas, the great founder of aſtronomy, from whom they are ſometimes alſo denominated Atlas's calendars. According to this author, they were firſt made in the country of the Cimmerians, ſituate on the fartheſt extremity of the Bothnic gulph, where the ſun in the middle of winter is hid from the inhabitants forty days together.—[[a] *Plot*, Nat. Hiſt. Stafford. c. 10. p. 420. ſeq. [b] *Atlant.* P. 3. c. 1. Phil. Tranſ. N°. 301. p. 2005.]

The external figure and matter of theſe calendars appear to have been various. Sometimes they were cut on one or more wooden leaves, bound together after the manner of books; ſometimes on the ſcabbards of ſwords, or even on daggers; ſometimes on tools and implements, as portable ſtillyards, hammers, the helves of hatches, flails, *&c.* Sometimes they were made of braſs or horn; ſometimes of the ſkins of eels, which being drawn over a ſtick properly inſcribed, retained the impreſſions of it. But the moſt uſual form was that of walking ſtaves, or ſticks, which they carried about with them to church, market, *&c.*

Some divide theſe *Almanacs* into public and private, perfect and imperfect; others into heathen and chriſtian.

Public *Almanacs* are thoſe of a larger ſize, uſually hung up at one end of the mantle-trees of chimnies, for common or family uſe [c]; private are thoſe of a ſmaller kind, to be carried about either in the hand, after the manner of a ſtaff, or in the pocket; perfect, thoſe which have the dominical letters as well as primes, and feaſts inſcribed to them; imperfect, thoſe which have only the primes and immoveable feaſts. Till about the the fourth century, they all carry the marks of heatheniſm; from that age to the ſeventh, they are generally divided between heatheniſm and chriſtianity [d].—[[c] *Plot*, lib. cit. c. 10. §. 45. [d] Nouv. Liter. Germ. 1709. p. 296.]

Each of these staves is divided into three regions, whereof the first indicates the signs, the second the days of the week and year, and the third the golden number.

The characters engraven on them are, in some, the antient Runic, in others, the later Gothic character of Ulfilus. The saints days are expressed in hieroglyphics, significative either of some endowment of the saint, the manner of his martyrdom, or the like. Thus, against the notch for the first of March, or St. David's day, is represented a harp; against the 25th of October, or Crispin's day, a pair of shoes; against the 10th of August, or St. Lawrence's day, a gridiron; and, lastly, against New-year's-day, a horn, the mark of good drinking, which our ancestors gave a loose to at that season [e]. Elvius has given a dissertation express on the Runic staff [f].—[[e] *Plot*, Nat. Hist. Stafford. c. 10. §. 59. [f] Idea Scipionis Runici, 4to. 1709. Upsal. An extract of it is given in Nov. Liter. Germ. 1709. p. 296. seq.]

Some think this word *Almanac* has been borrowed from the Egyptian astrologers, long before the Arabs; it appearing, from Porphyry, that *Almenach* and *Almenachica descriptio*, (Αλμεναχικα) were in use among that people in his age, for monthly predictions. V. *Euseb.* de Prep. Evang. l. 3. c. 4. See also *Worm.* in Fast. Danic. l. 1. c. 2. Vid. *Du Cange*, Gloss. Lat. in voc. *Almanach.*

Almanacs are of somewhat different composition, some containing more points, others fewer. The essential part is the kalendar of months and days, with the risings and settings of the sun, age of the moon, &c. To these are added various parerga, astronomical, astrological, meteorological, chronological, and even political, rural, medical, &c. as calculations and accounts of eclipses, solar ingresses, aspects and configurations of the heavenly bodies, lunations, heliocentrical and geocentrical motions of the planets, prognostics of the weather, and predictions of other events, tables of the planetary motions, the tides, terms, interest, twilight, equation, kings, &c.

We have a great variety of *Almanacs* annually published, some in books, others in loose papers, called *Sheet-Almanacs*: such are the Oxford *Almanac*, the London *Almanac*, &c. Others bound, which may be denominated *Book-Almanacs.*

The first author or inventor of *Almanacs* is contested; some will have it to have been Johannes Regiomontanus; of which opinion is P. Ramus. Cardan shews this to be a mistake, since he had seen an *Almanac* for the year 1414; whereas that of Regiomontanus only appeared in 1474. Volaterranus [g] ascribes the first *Almanac* to Laur. Miniatensis, who lived at Rome.—Be this as it will, Regiomontanus appears to have been the first who reduced *Almanacs* to their present form and method; gave the characters of each year and month; foretold the eclipses, and other phases, calculated the motions of the planets, &c [h].—[[g] Anthropol. l. 21. c. ult. Nouv. Rep. Lett. T. 32. p. 219. [h] V. *Gassend.* Vit. Regiomont. p. 361.]

The company of stationers have an exclusive privilege for publishing of *Almanacs.*—In 1673, an Oxford *Almanac* was printed in octavo, with so much success, that an edition of 30,000 was sold. This alarming the stationers of London, they purchased its suppression for the future with a considerable sum of money. After this, the Oxonians were contented only to publish a sheet *Almanac*, which is continued to this day.

The protestant states of Germany came to a resolution, in 1699, to reform the *Almanac*, by suppressing eleven days, and proceeding for the future in a method of computation different both from the Julian and Gregorian calendar. Vid. Phil. Transf. N°. 260. p. 459. See CALENDAR, JULIAN, GREGORIAN, &c. *Cycl.*

Evans [i], Lilly, Wharton [k], Gellibrand [l], Booker, Gadbury, Partridge, Parker, &c. are the principal among the English *Almanac* makers.—[[i] V. *Wood*, Ath. Oxon. T. 1. p. 579. [k] Hemeroscopiums, or Almanacs, from 1640 to 1666. *Wood*, ubi supra, T. 2. p. 684. [l] *Wood*, lib. cit. T. 1. p. 613.]

Sir Samuel Moreland [m], Jo. Newton [n], and Ro. Wood [o], have published universal *Almanacs*; Blount, a catholic *Almanac* [p]; Le Fevre, an *Almanac* for 150 years [q]. The royal academy of sciences at Paris [r], publish annual tables, from whence *Almanacs* are easily made.—We also meet with historical *Almanacs* [s], bibliographical *Almanacs* [t], alphabets of Parnassus, &c.—[[m] Descript. of two Arithmet. Instrum. Lond. 1673, 12mo. V. Phil. Transf. N°. 94. p. 6048. [n] *Wood*, Ath. Oxon. T. 2. p. 632. [o] A Specimen of a new Almanac for ever, or a rectified Account of Time by a Luni-solar Year described in the Garter. *Hook*, Phil. Collect. N°. 2. p. 26. [p] V. *Wood*, Ath. Oxon. T. 2. p. 73. [q] Almanac de Cabinet, pour toutes les Annees depuis 1600 jusqu'à 1750, Par. 1714. V. Jour des Scav. T. 56. p. 327. [r] La Connoisance des Temps, Par. 12mo. continued yearly. V. Jour. des Scav. 1707. p. 442. seq. [s] V. Mem. de Trev. 1715. p. 456. [t] Almanac Bibliographique pour l'Anne 1709. Par. 1709. 12mo. Vid. Nouv. Rep. Lett. T. 46. p. 101. seq.]

ALMANAR, in the Arabian astrology, denotes the pre-eminence, or prevalency of one planet over another. *Vital.* Lex. Math. p. 23.

ALMEHRAB, among Mahometans, denotes a niche in their mosques, which directs to the Keblah, that is, to the temple of Mecca, to which they are obliged to bow their faces in praying. Vid. *Sale*, Prelim. Disc. to Koran, sec. 4. p. 108.

The word is Arabic, where it is properly written *Al Mehrab.*

ALMEISAR, a celebrated game among the antient Arabs, performed by a kind of casting of lots, with arrows, strictly forbid by the law of Mahomet, on account of the frequent quarrels occasioned by it.

The manner of the game was thus: a young camel being brought and killed, was divided into a number of parts. The adventurers, to the number of seven, being met, eleven arrows were provided without heads or feathers; seven of which were marked, the first with one notch, the second with two, the third with three, &c. the other four had no marks. These arrows were put promiscuously into a bag, and thus drawn by an indifferent person. Those to whom the marked arrows fell, won shares in proportion to their lot; the rest to whom the blanks fell, were intitled to no part of the camel, but obliged to pay the whole price of it.

Even the winners tasted not of the flesh themselves, more than the losers, but the whole was distributed to the poor. V. *Sale*, Prelim. Disc. to Koran, sec. 5. p. 124. seq.

ALMELILETU is used, by Avisenna, for a preternatural kind of heat, a degree more remiss than that of a fever, and which sometimes remains after a fever is gone. Vid. *Castel.* Lex. Med. p. 34.

ALMENE, a name given, by some of the Arabian writers, to the prickly *lotus* of Africa, called by some of the antients *lotus acanthos*, and by Virgil *acanthus*, only. In speaking of this acanthus, he mentions its berries; and his commentator, Dr. Martyn, supposes, that by acanthus he means the Egyptian acacia, and that he calls the globular flowers of that tree *baccas*, berries. But Virgil seems justifiable in calling the lotus here described acanthus, from some of the other antients; and this lotus does truly bear berries.

ALMIGGIM *wood*, a word used in the scriptures, to signify a beautiful and light sort of wood. It has been conjectured to be several different sorts of woods now in use; others think it has been lost long since. But Meibom proves, from the accounts of Josephus, that it was the wood of the Indian pine, or fir-tree. This was excellent for its whiteness, and for a shining levity, and therefore was used in musical instruments.

ALMIZADIR, among alchemists, is sometimes used for verdegrease; sometimes for the process of the philosophers stone; and sometimes for the *aqua mercurialis*, or *aqua philosophorum. Ruland*, Lex. Alchem. p. 31. *Castel.* Lex. Med. p. 34. See ALCAHEST.

ALMOGIZA, among Arabian writers, denotes the limb, or circumference of the astrolabe. *Vital.* Lex. Math. p. 24.

ALMOHARRAM, one of the sacred months of the antient Arabs.

The word is Arabic, *Al Moharram.* It was the first month of the Arab year.—On some occasions they put off the observance of this month, to the following month Safar. Vid. *Sale*, Prelim. Disc. to Koran, sec. 7. p. 149.

ALMOND *tree*, *Amygdalus*, (*Cycl.*) in botany, the name of a genus of trees; the characters of which are these. The flower is of the rosaceous kind, being composed of several petals arranged in a circular form. The pistil arises from the cup, and finally becomes an oblong stony fruit, covered with a callous coat, and containing an oblong kernel.

The species of *Almond*, enumerated by Mr. Tournefort, are these. 1. The cultivated *Almond*, with large fruit. 2. The cultivated *Almond*, with small fruit. 3. The sweet *Almond*, with a soft coat. 4. The bitter *Almond.* And, 5. The Indian dwarf *Almond. Tournef.* Inst. p. 626.

The *Almond* tree is propagated by inoculating a bud of any of the species into the stock of a plumb, peach, or *Almond* of another species, in the month of July. See the article INOCULATION.

The second year after their budding, they are to be removed to the places where they are to remain.

The best season for transplanting them, if for dry ground, is in October; but for a wet soil, February is always found the propereſt season. *Miller*'s Gardner's Dict.

The *Almond* was antiently called *nux Græca*, because first brought into Italy from Greece. *Macrob.* Saturn. l. 2. c. 4. *Burggr.* Lex. Med. T. 1. p. 618. seq. in voc.

The tree is a very early blossomer. Aaron's rod, by whose budding the priesthood was preserved to him [a], was of this tree [b].—[[a] Num. *c.* xvii. *v.* 8. [b] *Lamy.* Introd. Script. l. 3. c. 3. p. 420. seq.]

There are two kinds of sweet *Almonds.* 1. Jordan, which are the larger, longer, and dearer kind, chiefly sold to be eat with raisins. 2. Valentian and Barbary *Almonds*, which are those from whence the oil is procured. *Hought.* Collect. N°. 434. T. 2. p. 76.

Dioscorides [c] relates, that bitter *Almonds* kill foxes, which, it is said, has been since abundantly verified by experiment.—The like is observed with regard to cats, cocks, hens, &c.

It may be obſerved, that ſome ſuſpect whether this be the true reading; ſince, in an antient MS. Hoffman found *lumbricis*, inſtead of *vulpibus*, which transfers the mortality from foxes to worms.—Some imagine the poiſonous virtue here to reſide chiefly in the rind; for when this is peeled off, they do not prove ſo mortal [d].—[c *Dioſcor.* l. 1. c. 176. d *Wepf.* de Cicut. Aquat. p. 248. De Medic. Offic. l. 2. c. 162. §. 42.] See LAURO-CERASUS.

Almond bloſſoms are often brought to market inſtead of thoſe of peaches.—The kernels of bitter *Almonds* give much the ſame reliſh in diſtillation, as the kernel of the cherry: on which account, ſome practiſe the making a counterfeit cherry brandy with them. They are alſo frequently uſed inſtead of apricoc kernels, in ratafia. *Quinc.* Diſpenſ. P. 2. ſec. 4. §. 19. p. 106.

Blanched ALMONDS are thoſe which, having been put a while in warm water, have ſlipped out of their ſhells.—Theſe are uſed with the cold ſeeds in emulſions, ptiſans, &c. *Hought.* loc. cit.

ALMOND *milk* is a preparation made of ſweet blanched *Almonds* and water, of ſome uſe in medicine, as an emollient, cooler, &c. *Hought.* ubi ſupra.

ALMOND *butter* is a preparation made of cream and whites of eggs boiled; to which is afterwards added, blanched *Almonds*; the whole ſet over a ſlow fire, till it become thick. *Hought.* T. 1. N°. 168. p. 438.

Several have publiſhed pieces and obſervations expreſly on *Almonds*: Schelhammer [e], on the germination of *Almonds*; Breynius, on the *Almonds* of the Cape of Good Hope [f].—[e *Gunth. Chriſt. Schelhammer*, Amygdalarum Germinatio in Ephem. Acad. N. C. dec. 2. an. 8. obſ. 32. f *Jac. Breynii*, Obſerv. de Amygdalo Holoſerico Capitis Bonæ Spei. Ephem. Acad. N. C. dec. 1. an 3. obſ. 292.]

Durrius [g], and the academiſts Naturæ Curioſi [h], have written on the poiſonous effects of *Almonds* on brutes.—Many particulars relating to *Almonds* are alſo occaſionally given by the botaniſts, phyſicians, &c [i].—[g *Durrii*, Obſerv. de Morte Subitanea in Volucribus Canarienſibus ex eſu Amygdalarum Amararum, in Ephem. Acad. N. C. dec. 3. an. 1. obſ. 156. h Obſerv. de Amygdala Amara quibuſdam Animalibus Nociva ac Lethali. in Ephem. dec. 1. an. 8. obſ. 99. i See particulars concerning the *Almond* tree, *Tournef.* Inſt. cl. 21. ſec. 7. gen. 5. p. 627. *Burggr.* Lex. Med. T. 1. p. 618. ſeq. in voc. *Amygdalæ*. *Zwing.* diſſ. 4. de Amygdal. p. 112. *Ruel.* de Nat. Stirp. l. 1. c. 51. *Ray*, Hiſt. Plant. l. 2. c. 7. Anatomy of the *Almond* fruit, *Malpig.* Anat. Plant. de Ulteror. Augment. p. 69. *Burggr.* loc. cit. Its importation into England, *Hought.* lib. cit. p. 75. Sweet *Almonds*, their qualities and uſe againſt coſtiveneſs, aſthma, ſtone, &c. *Burggr.* ubi ſupra. Their oil, if hurtful or beneficial in fevers, Giorn. de Letter. d'Ital. T. 14. p. 213, 217, 229. ſeq. It. T. 15. p. 410. Good againſt worms, Act. Erud. Lipſ. 1720. p. 409. Againſt colic, Act. Erud. Lipſ. Supp. T. 2. p. 14. Bitter *Almonds*, whether endowed with an opening or aſtringent quality, Ephem. Acad. N. C. dec. 1. an. 8. p. 185. ſeq. Whether they be a preſervative from drunkenneſs, *Brown*, Vul. Err. l. 2. c. 6. p. 80. *Camerar.* Memor. Cent. 3. P. 1. p. 88. Whence their power againſt intoxication, Ephem. Acad. loc. cit. Whence their mortality to hens, &c. Ephem. Acad. N. C. dec. 1. an. 8. p. 184. ſeq. Their diuretic and vermifuge quality, Ephem. Acad. N. C. dec. 2. an. 1. p. 184. ſeq. Coſmetic uſe, *Hought.* Collect. T. 3. N°. 434. p. 75.]

ALMOND *furnace*, in metallurgy, the furnace in which the refiners of ſilver out of lead melt the ſlags of the litharge left in this operation, and reduce them into lead again, with the help of charcoal. *Ray*'s Engl. Words, p. 116.

ALMONER, (*Cycl.*) in its primitive ſenſe, denotes an officer in religious houſes, to whom belonged the management and diſtribution of the alms of the houſe.

We find many things in writers on the monaſtic ſtate, concerning the qualities, conduct, &c. of the *Almoner*. Vid. *Lanfranc.* in Decret. pro Ord. S. Benedict. c. 8. ſec. 3. *Udalric.* Conſuetud. Cluniac. l. 3. c. 24.

By the antient canons, all monaſteries were to ſpend at leaſt a tenth part of their income in alms to the poor.

The *Almoner* of St. Paul's is to diſpoſe of the monies left for charity, according to the appointment of the donors, to bury the poor who die in the neighbourhood, and to breed up eight boys to ſinging, for the uſe of the choir. *Dugd.* Monaſt. abridged, p. 325.

By an antient canon, all biſhops are required to keep *Almoners*. *Johnſ.* Eccleſ. Law. 1222. §. 2.

The French kings have their great *Almoners*, firſt *Almoners*, ordinary or quarterly *Almoners*, &c.

Great *Almoner*, *grand Aumonier*, is the higheſt eccleſiaſtical dignity in that kingdom. To him belongs the ſuperintendency of all hoſpitals, and houſes of lepers. The king receives the ſacrament from his hand. He ſays maſs before the king, in all grand ceremonies and ſolemnities.

This office was firſt erected, under this denomination, by Charles VIII. before whoſe time, he had only the title of king's *Almoner*. Du Cange contends for a difference between king's *Almoner* and chaplain. Roulliard aſſerts them to have been the ſame. According to this writer, the office of great *Almoner* had ſubſiſted, though under ſome diverſity of names, in all ages of the monarchy.

Under the firſt race, he was called *Apocriſiarius*; under the ſecond, *Archicapellanus*; and under the third, *grand Almoner*. Under the firſt race, the office was ſerved by biſhops, who came to court for it by turns; under the ſecond, by prieſts, that the biſhops might not be obliged to non-reſidence; under the third, it has been uſually ſupplied by archbiſhops, or even cardinals. On this footing, *grand Almoner* is the ſame with what, in ſome antient writers, we find called *cuſtos ſacri palatii*, *antiſtes ſacri palatii*, or biſhop of the court; ſometimes *preſbyter de palatio*, or prieſt of the court.

His office anſwered to that of *proto papas*, in the court of the Greek emperors.

Frizon, Chevillard, and St. Marthe [a], have publiſhed liſts and genealogies of the great *Almoners*. Seb. Roulliard, a treatiſe of the antiquity of the office of great *Almoner* [b].—[a *Le Long*, Bibl. Hiſt. de la Franc. p. 705. b *Seb. Roulliard*, le Grand Aumonier, Par. 1607. 8vo. An extract of it is given in Trev. Dict. Univ. T. 1. p. 734.]

Firſt *Almoner*, *premier Aumonier*, ſupplies all offices which the great *Almoner* cannot attend, either by reaſon of his abſence, or multiplicity of buſineſs. *Raf.* Etat de la Franc. l. 1. c. 1. Mem. de Trev. 1723. p. 1019.

The *Almoners* in ordinary take their turn in waiting, to aſſiſt the king in his prayers, ſay grace, &c.

ALMONER is alſo applied, in eccleſiaſtical writers, to the deacons of churches. *Suic.* Theſ. T. 1. p. 870. See DEACON, *Cycl.*

ALMONER is alſo uſed, in hiſtorians of the middle age, for him appointed by a perſon to diſtribute his alms to the poor. In this ſenſe, *Almoner* amounts to much the ſame with what has been ſince denominated executor.

ALMONER is alſo ſometimes uſed for a perſon who left alms to the poor, by his laſt will.

ALMONER is ſometimes alſo uſed for a legatee.

In this ſenſe, it is the rule that the ſame perſon could not both be *Almoner* and heir. Trev. Dict. Univ. in voc. *Aumonier*.

ALMONER is alſo a more faſhionable title given, by ſome writers, to chaplains.

In this ſenſe, we meet with *Almoner* of a ſhip, *Almoner* of a regiment. Jour. des Scav. T. 36. p. 480.

ALMONRY (*Cycl.*)—The word is otherwiſe written *Almnery*, *Aulmry*, *Aumry*, *Almry*, and even *Ambry*.—By Latin writers *Almonaria*, *Almoneria*, *Almonerium*, *Eleemoſynaria*, *Eleemoſyna*, or *Hoſpitale pauperum*; ſometimes *Eleemoſyna pauperum*, or *Domus Eleemoſynaria*.

The *Almonry* is one of the clauſtral offices belonging to a religious houſe. It is found in the moſt antient abbys and conventual priories, and is reputed among the number of benefices. To this office were particular revenues given by benefactors, or aſſigned by the houſe, out of the common ſtock, to ſupply the charge of alms. In the reformed congregations, the *Almonry* is ſuppreſſed, and its revenues united to the conventual manſe. Trev. Dict. Univ. T. 1. p. 733.

ALMONRY is alſo uſed, in antient writers, for a purſe, out of which the alms uſed to be taken. *Du Cange*, Gloſſ. Lat. in voc. *Eleemoſynaria*.

In this ſenſe, we read of ſilk *Almonries*, embroidered *Almonries*, &c.

ALMS (*Cycl.*)—Paſchal *Alms*, *Eleemoſynæ Paſchales*, were thoſe diſtributed at the ſolemnity of Eaſter, attended, in ſome places, with other acts of humility, as waſhing of feet, &c. *Du Cange*, Gloſſ. Lat. in voc. *Eleemoſyna*.

Alms are divided by Mahometans, into *voluntary* and *legal*.

Voluntary ALMS are thoſe left to every man's diſcretion, to give more or leſs, as he ſees fit.

The *voluntary Alms* are properly denominated, by the Arabs, *Serdeckad*.

No religious ſyſtem is more frequent or warm in its exhortations to *Alms*-giving, than the Mahometan. The Alcoran repreſents *Alms* as a neceſſary means to make prayer be heard. Hence that ſaying of one of their caliſs, "Prayer carries us "half-way to God, faſting brings us to the door of his pa- "lace, and *Alms* introduces us into the preſence-chamber." Hence many illuſtrious examples of this virtue among the Mahometans. Haſan, the ſon of Ali, and grandſon of Mohammed, in particular, is related to have thrice in his life divided his ſubſtance equally between himſelf and the poor, and twice to have given away all he had. And the generality are ſo addicted to the doing of good, that they extend their charity even to brutes.

Legal ALMS, thoſe of indiſpenſible obligation, as being commanded by the law, which directs and determines both the portion to be given, and the kind of things it is to be given of.

The *legal Alms* are properly called, by the Mahometans, *Zacat*, either on account of their increaſing a man's ſtore, or of their purifying the remaining part of his ſubſtance.

Some writers have given these the denomination of tithes, but improperly; since, in some cases, they fall short, and in others, excceed the proportion of a tenth.

Alms, according to the prescriptions of the Mahommedan laws, are to be given of five things; that is to say, 1. Of camels, kine, and sheep. 2. Of money. 3. Of corn. 4. Of fruits, viz. dates and raisins. And, 5. Of wares sold. Of each of these, a certain portion is to be given in *Alms*, being usually one part in forty, or two and a half *per cent.* of the value. But no *Alms* are due for them, unless they amount to a certain quantity or number, nor until a man has been in possession of them eleven months, he not being obliged to give *Alms* thereon before the twelfth month is begun; nor are any *Alms* due for cattle employed in tilling the ground, or in carrying burdens. In some cases, a much larger proportion than the before-mentioned is reckoned due for *Alms:* thus, for what is got out of mines, or the sea, or by any art or profession, over and above what is sufficient for the reasonable support of a man's family, and especially where there is a mixture, or suspicion of unjust gain, a fifth part ought to be given in *Alms*. Moreover, at the end of the feast of Ramadan, every moslem is obliged to give, in *Alms* for himself, and for every one of his family, if he has any, a measure of wheat, barley, dates, raisins, rice, or other provisions commonly eaten.

Mahomet himself first took upon him to be collector of the *legal Alms*, as well as distributor of them; and his successors continued to do the same, till other taxes being introduced for the support of the government, to which these *Alms* were originally appropriated, the caliphs became weary of acting as almoners to their subjects, and left the payment of them to their consciences.

Alms, called by the Jews *Sedaka*, that is, justice, or righteousness, are preferred, by their rabbins, to sacrifices themselves. Besides the corners of the field, and the gleanings of their harvest, or vineyard, commanded to be left for the poor and the stranger, by the law of Moses, a certain portion of their corn and fruits is directed to be set apart for their relief, which portion is called the tithes of the poor. The Jews likewise were very conspicuous for their charity. We are told that some gave their whole substance, so that their doctors at length decreed, that no man should give above a fifth part of his goods in *Alms*. Vid. *Sale*, Prelim. Disc. to Koran. sect. 4. p. 109. seq.

ALMS is also used for lands given to churches, or religious houses, on condition of praying for the soul of the donor, both living and dead. This is otherwise called *free Alms*, sometimes *ecclesiastical Alms*, *Eleemosyna ecclesiastica*.

Free ALMS, *libera Eleemosyna*, or *pure Alms*, *Eleemosyna pura*, is more particularly used for that which is not subject to any rent, service, or the like [a]; or that which is given to the church, without any other reserve besides that of temporal jurisdiction, or the right of patronage [b].—[a *Du Cange*, Gloss. Lat. T. 2. p. 224. seq. in voc. *Eleemosyna*. b *Aubert*, ap. Richel. Dict. T. 1. p. 155. in voc. *Aumône*.

Charter of ALMS, *charta Eleemosynaria*, that whereby a thing is given to the church.

ALMS, *Aumône*, among the French, is also used for a compulsory payment, imposed by way of punishment, to be converted to pious or charitable uses.

In all adjudications to the king's right, there is an *Alms* reserved. This amounts to what among us is usually called *forfeiture to the poor*. Trev. Dict. Univ. in voc. *Aumône*.

ALMS *of plough-lands*, *Eleemosyna carucarum*, or *Eleemosyna pro aratris*, was a tax antiently paid to the benefit of the poor, at the rate of a penny for each plough-land.

ALMS *of the king*, *Eleemosyna regis*, denotes what was otherwise called *Peter-pence*.

This was sometimes also called *Alms* of St. Peter, *Eleemosyna S. Petri*.

Reasonable ALMS, *Eleemosyna rationalis*, a certain portion of the effects of persons dying intestate, set apart for the use of the church and the poor.

Several authors have written treatises expres on the subject of *Alms*, in Latin, English, French, Spanish, &c. Camerarius, de Lugo, Drexelius, Granada, Hyperius, Mertola, de Morques, Novar. Truxillo, de Valdes, Vasquez, and Villanova, Thiers and Cajetan, have treated on the duty of *Alms*; de Marini and Wheatley, on the usefulness of *Alms*; Downham and Quarre, on the necessity of *Alms*; Morques and Pancorvo, on the excellency of *Alms*; Watson, on the controversies on *Alms*. Vid. *Lipen.* Bibl. Theol. p. 589. seq. and Bibl. Jur. p. 167.

ALMS-*box*, or *chest*, a small chest, or coffer, called by the Greeks Κιβωτιον, wherein antiently the *Alms* were collected, both at church and at private houses. This is also in common use in several places. Vid. *Suicer*. Thes. T. 2. p. 100.

The *Alms-chest*, in churches, is a strong box, with a hole in the upper part, having three keys, one to be kept by the parson, or curate, the other two by the church-wardens.

The erecting of such *Alms-chest* in every church, is enjoined by the book of canons, as also the manner of distributing what is thus collected among the poor of the parish. Constit. & Can. Eccles. 84.

ALMUCIUM, in middle aged writers, denotes a kind of cover of the head, part of it pendant over the neck and shoulders, worn chiefly by the antient canons and monks. *Du Cange*, Gloss. Lat. in voc.

The word is also written, *Almucia*, *Aumucia*, *Almucella*, *Armutia*, and *Amicia*.

The *Almucium* appears to have been much the same with what is otherwise denominated *caputium*.

The *Almucium*, though proper only to religious, was sometimes also assumed by laymen, princes, and even women of quality.

The part which covered the head was of a square form, making, as it were, four horns, as may be seen from the antient pictures of canons. Hence appears the origin of the square caps, bonnets, &c. still retained in cathedrals and universities, which are no other than the upper part of the *Almucium*, without the lower.

ALMUCIA is also used, in some antient writers, for the furs, or skins worn by the canons, on their left arms, in the nature of muffs. *Pitisc.* Lex. Ant. T. 1. p. 73.

ALMUDHEBIS, in the Arabian astrology, a kind of Dignity, or preheminence accruing to a planet in some place, either from its disposition, or benign aspect. *Vital.* Lex. Math. p. 24.

ALMUG-*tree*, a kind of wood mentioned in scripture, imported by Solomon from Ophir, and used in the making of rails, or pillars of the temple. 1 Kings, *c.* x. *v.* 11, 12. 2 Chron. *c.* ii. *v.* 8.

The word is also written *Algum*-tree, in the Hebrew *Almugim*, *Algummim*, *Algumim*, or simply *Gummim*. The septuagint expresses it by *wrought wood*.

Critics have long disputed about the nature and kind of the *Almug*-tree. The Rabbins generally take it for coral; others for ebony; others for Brazil-wood; others for the pine [a]; others for the cedar [b]; others for the citron tree, a particular species of cedar [c]; while others hold it a general denomination for any kind of gummous, or resin-bearing tree [d]; deriving the name from *Agal* and *gummim*; *q. d.* drops of gum; several take it to be the same with the Shittim-wood.—[a *Calm.* Dict. Bibl. in voc. b *Evel.* ap. Hought. Collect. 3. p. 208. c *Huet.* ap. Kust. Bibl. Nov. Lit. T. 2. p. 190. d *Hiller.* Hierophyl. l. 1. c. 13. Bibl. Anc. Mod. T. 25. p. 71.]

ALMUGEA, in astrology, denotes a certain configuration of the five planets, in respect of the sun and moon, correspondent to that which is between the hours of those planets, and the sun's and moon's hours. *Vital.* Lex. Math. p. 25.

Thus Saturn will be in the *Almugea* of the sun, when distant from him the space of five signs in succession; or in the *Almugea* of the moon, when he is at the same distance, only contrary to the succession of the sign.

ALMUTAZAPHUS, a magistrate of Arragon, whose office is to search houses for stolen goods, weigh the bread, measure the wine, &c. *Du Cange*, Gloss. Lat. in voc.

ALMUTHEN, in the Arabian astrology, the planet which has the disposal of a place, that is, surpasses the rest in the number and efficacy of dignities, regard being had to the five essential points, viz. exaltation, terms, trigon, and phases. This is otherwise called *Almusteuli*. Vid. *Vital.* Lex. Math. p. 25.

ALNABATI, in the materia medica, a name given, by Avisenna and Serapion, to the *siliqua dulcis*, or carob-tree. They called both this and the acacia by the common name *charnub*, or *charub*; but they sufficiently distinguish this, not only by this appellation, but by telling us it was a gentle purge, whereas the other was astringent.

ALNAM, in botany, a name used, by some, for pennyroyal. *Ger.* Emac. Ind. 2.

ALNASI, in the Mahometan law, the transferring the observation of a sacred month to a profane month. V. *Sale*, Prelim. Disc. to Koran, sec. 7. p. 149.

The antient pagan Arabs, tired with observing two or three sacred months together, and eager to be making their customary expeditions for plunder, used, by way of expedient, to postpone the observance of *Al Moharram*, or the sacred month, to the succeeding one; so far thinking it lawful to profane the former, provided they hallowed the latter in its place, and gave notice of it at the preceding pilgrimage. Mahomet absolutely condemned this practice as an impious innovation.

ALNUS, the *Alder*, in botany, the name of a genus of trees, the characters of which are these. The flower is of the amentaceous kind, being composed of several apices, arising from four-leaved cups; these are affixed in a clustering manner to an axis, but these are barren. The young fruit appears in a different part of the tree, and is of a squammose structure, and loaded with embryo seeds; this finally increases in size, and becomes a regular fruit, containing a number of compressed seeds.

The species of *Alder*, enumerated by Mr. Tournefort, are these.

1. The common green glutinous-leaved *Alder*. 2. The *Alder* with smooth, longish, green leaves. 3. The hoary-leaved *Alder*. 4. The small alpine *Alder*. 5. The *Alder* with elegantly divided leaves. 6. The mountain *Alder*, with pale, smooth, sinuated leaves, resembling those of the elm.

7. The mountain *Alder*, with curled, ſerrated, and glutinous leaves. 8. The mountain *Alder*, with broad curled, glutinous, and not ſerrated leaves. *Tournef.* Inſt. p. 587.

ALNUS *baccifera*, the berry-bearing *Alder*, in botany, a name given, by ſome writers, to the *frangula*. See the article FRANGULA.

ALNUS alſo denotes a part in the antient theatres at the greateſt diſtance from the ſtage. *Pitiſc.* Lex. Ant. T. 1. p. 74.

ALOA, in antiquity, a Grecian feaſt, celebrated by the Athenian huſbandmen, in honour of Ceres, as inventreſs and protectreſs of corn and tillage.

The word is Greek, ἀλωα, ſometimes alſo written ἀλωα. It is formed of ἀλως, grange, or barn; it being in theſe places that much of the ſolemnity paſſed.

Authors are not agreed as to the time, or occaſion of the celebration of the *Aloa*. Some ſuppoſe it to have been before the beginning of harveſt; others will have it to have been a rejoicing after harveſt, not unlike our *harveſt-home*. The moſt probable opinion is that which fixes it to the month of Poſſidion, anſwering to our December, and to have taken its denomination from its being in the threſhing time, when the huſbandmen lived much in their barns. See further concerning the *Aloa* in *Suid.* Lex. in voc. *Euſtath.* ad Il. 1. *Hoffm.* Lex. Univ. T. 1. p. 155. Bibl. Univ. T. 6. p. 78.

ALOE, in botany, the name of a genus of plants, the characters of which are theſe. The flower is liliaceous, and conſiſts of one petal, which is of a tubular form, and is divided into ſix ſegments at the edge. In ſome ſpecies of this genus, the cup, and in others the piſtil, finally becomes a fruit, or ſeed-veſſel, of an oblong cylindric form, divided into three cells, and containing flat and ſemicircular ſeeds.

The ſpecies of *Aloe*, enumerated by Mr. Tournefort, are theſe.

1. The common *Aloe*. 2. The true *Aloe*, with a thorny rib. 3. The narrow leaved, purple flowered, prickly, ſuccotrine *Aloe*. 4. The *Aloe* with leaves terminating in very long prickles. 5. The leſſer *Aloe*, with the leaves terminating in very ſharp prickles. 6. The American *Aloe*, with broad blueiſh green leaves. 7. The ſoboliferous American *Aloe*. 8. The ſoboliferous American *Aloe*, with fewer prickles. 9. The ſoboliferous American *Aloe*, with beautifully variegated leaves. 10. The erect *Aloe*, with extremely ſharp thorns. 11. The ſmooth American *Aloe*, with very broad ſhining leaves. 12. The *Aloe* of Surinam, with broad, ſhining, and ſerrated leaves. 13. The leſſer American *Aloe*, with leaves armed at their edges with very numerous, but ſoft prickles. 14. The Braſilian *Aloe*, called by Margrave, *Caraguata*. *Tournef.* Inſt. p. 366.

The proper earth for planting theſe vegetables in, is, one half freſh light earth from a common, and the reſt an equal mixture of white ſea-ſand and ſifted lime rubbiſh; and this mixture ſhould be always made ſix or eight months, before the plants are to be ſet in it. The common great American *Aloe* is very hardy, with reſpect to cold, and being planted in a very dry ſoil, and under a ſouth wall, has endured abroad in mild winters, and is always very well kept in pots, or tubs, in a common green-houſe, with oranges and myrtles, but muſt have very little water in winter. Moſt of the other *Aloes* are beſt preſerved in an airy glaſs-caſe, in which there is a ſtove, to make a little fire in very bad weather. The tendereſt kinds, ſuch as the broad, green-leaved, curaſſo kind, with black ſpines; that kind, called in the Weſt-Indies, the ſilk-graſs; the ſoboliferous American kind; and ſome others, require a greater ſhare of heat to preſerve them in winter, and ſhould be kept in a good ſtove, in a degree of heat, according to Fowler's Thermometer, ten degrees above temperate. Many other kinds may alſo be kept in this heat; but the greater the heat, the more water they always require.

About the beginning of June, it is uſual in England to ſet the pots of *Aloes* out of the houſe; but they ſhould be ſet under the ſhelter of hedges, or trees, to keep them from the violence of the ſun. The rains alſo which uſually fall in this and the following month, are very apt to rot them. It is therefore beſt to keep them under cover the greateſt part of the year.

The beſt time to ſhift theſe plants is the middle of July. They are, on this occaſion, to be taken out of the pots, the looſe earth to be picked from about their roots, and the decayed or mouldy parts of them cut off; then a few ſtones are to be put at the bottom of the pot, and it is to be filled with the compoſition before deſcribed, and the plants carefully put in, the roots being ſo diſpoſed, as not to interfere with one another. They are to be carefully watered after this, at times, for three weeks, and ſet in a ſhady place.

The common kind will bear the open air from May to October, and ſhould be ſhifted every year. All the *Aloes* are propagated by off-ſets, which ſhould be taken from the mother plant, at the time when it is ſhifted; they are to be planted in very ſmall pots of the proper mixed earth; and if that part of them which joined to the mother plant, be obſerved to be moiſt when taken off, it ſhould lye on the ground in a ſhady place, two or three days before it is planted, otherwiſe it will rot. After planting theſe, they ſhould remain in a ſhady place a fortnight, and then be removed to a very moderate hot-bed, plunging the pots therein; which will help their ſtriking new roots. Toward the end of Auguſt, they muſt be, by degrees, hardened to the open air, by taking off the glaſſes of the hot-bed, and in September they may be removed into the green-houſe.

Moſt of the African *Aloes* flower with us annually, after they are three or four years old; but the American *Aloes* flowers only once, the root decaying when it has flowered. It always, at this time, however, produces very numerous off-ſets; ſo that the old one is replaced by a great number of young ones. It has been ſuppoſed, that this ſpecies flowers only in an hundred years; but that has been abundantly proved a miſtake; but the flowering with us, being ſomething rare, is uſually much talked of. The expreſſion of ſome body who has firſt ſaid this, has been ſo far miſunderſtood by thoſe who repeated it, that it was long ſuppoſed that the flowers, when they ſhoot out, give a crack like a gun.

Moſt of the African *Aloes* afford plenty of off-ſets; but thoſe which do not, may be propagated, by cutting off one of the under leaves of a flouriſhing plant, and, after laying it two or three days in the ſhade, planting it in a ſmall pot of earth, ſlightly watering it, and planting the pot in a moderate hot-bed, ſkreening it from too much ſun, and watering it gently at times, till it has taken root. The beſt ſeaſon for this is in the month of June; and thoſe ſet at this time, puſh out heads before winter. *Miller*'s Gardn. Dict.

The *Aloe* is a plant cultivated with great curioſity in our gardens, and reputed one of the chief ornaments thereof.—In reality, there is ſcarce any tribe of plants which affords a more pleaſing variety than theſe, from the odd ſhape of their leaves, the various manner of their ſpotting, and being ſome of them covered, as it were, with pearls.

Dioſcorides, Pliny, and the antient naturaliſts, ſeem only to have been acquainted with one ſpecies of *Aloes*; which is the *Aloe vulgaris Aſiatica*, from whence the drug of that name is procured.

But the late travels into Aſia, Africa, and America, have occaſioned the diſcovery of numerous other ſorts unknown to antiquity.

The ſlowneſs of the *Aloes* arriving at maturity, ſeems owing to the viſcidity and lentor of its juice, which requires a number of years before it be ſufficiently elaborated and ſubtilized, to cauſe an expanſion; but this is afterwards compenſated by the bulk to which it arrives, the height of its ſtyle, the velocity with which it ſhoots, and the prodigious number of flowers it produces, which ordinarily amounts to ſeveral thouſands. Another tradition is, that when the *Aloe* begins to ſhoot, it finiſhes its whole growth in thirty-ſix or forty-eight hours [a]: whereas it has ſince appeared, that the plant ordinarily takes up three months, viz. from May to July, from the firſt budding of the ſtem, to the finiſhing of the flowers. There are, however, exceptions from this rule. Munting relates, that an *Aloe* in the garden of cardinal Farneſe, at Rome, ſhot up in one month to the height of twenty-three feet; and another at Madrid, in one night, ten feet high, and in eight days thereafter, twenty-five feet more. The people imagined this ſo ſacred a buſineſs, that they built a chapel upon the place [b].—[[a] *Borell.* Obſerv. 1. c. 2. [b] Phil. Tranſ. N°. 111. p. 50. See alſo *Scarell.* ap. Giorn. de Letter. d'Ital. T. 4. p. 97.]

The progreſs of the bloſſoming of the Venetian *Aloes*, in the garden of Sig. Papafava, was obſerved as follows. The plant began to ſhoot its ſtem on the 20th of May, which by the 19th of June was riſen the height of four Paduan feet and one inch; on the 24th of the ſame month, it had gained ten inches more; on the 29th eight more, on which day it began to emit branches; on the 6th of July, it had gained a foot one inch; on the 17th, one foot eight inches more; on the 7th of Auguſt, one foot and an half. Laſtly, from that day to the 30th, it grew but ſlowly; but continued emitting branches and flowers. The trunk at the bottom meaſured a foot thick; the branches were twenty-three in number, on the top of each was a knot, or collection of flowers; on the firſt branches were an hundred and twelve, on others an hundred and ten, and on others an hundred flowers each. They yielded little ſmell, but what was of it was agreeable.

It is related of the *Aloe*, that it burſts out with a vehement noiſe and cracking, like the exploſion of a gun, ſo as even to make the earth quake [c]. Something like this has been related, by good authors, concerning the *arbor crepitans* in India, whoſe fruit, when ripe, is ſaid to burſt with a noiſe equal to that of a great gun [d]; but as to any noiſe at the eruption of the ſtem of the *Aloe*, later writers are entirely ſilent. Some, who have liſtened with great curioſity on the occaſion, have perceived none; yet a late French writer, M. Garidel, defends the report of its noiſe, againſt M. Ray, whom he taxes with incredulity for diſbelieving it [e].—[[c] *Borell.* loc. cit. [d] *Nicren. Berg.* Hiſt. Nat. l. 15. c. 10. [e] Nouv. Rep. Lett. T. 56. p. 389.]

When the tree has once flowered, it quickly dies; being quite exhauſted by ſo copious a birth. They ſeldom flower till of a conſiderable age, and this but once, during the life of the

plant for when the flower ſtem begins to ſhoot; from the middle of the plant, (which for the moſt part is of a large ſize, and grows to a great height,) it draws all the moiſture and nouriſhment from the leaves, ſo that as that advances the leaves decay, and when the flowers are fully blown, ſcarce any of the leaves remain alive; but whenever this happens, the old root ſends forth a numerous quantity of off-ſets for increaſe. Vid. ſupra, *Mill.* Gard. Dict. in voc.

Ray tells us, from Francis Hernandez, that the *Aloe* is uſeful to all purpoſes of human life; for the wood of it ſerves well for the uſe of the carpenter, and for fences; the ſtalks for timber; the leaves for covering of houſes; the nerves and fibres ſerve in room of hemp, flax and cotton, and will make ſhoes and veſtments; of the prickles are made nails and awls, alſo pins, needles, pikes, and ſuch like. From hence alſo (if rightly tapped) may be drawn, fifty pitchers full, of nine gallons each, of which, juice, by diſtillation, will become ſweeter and thicker, till it becomes ſugar.

The firſt *Aloe* in Italy, was in the garden of Jac. Ant. Cortuſio of Padua, where it was ſeen by Camerarius in 1551 [f]. The firſt that flowered was at Florence, in 1586, in the great duke's garden [g]. About the year 1590, there was another at Piſa; another flowered at Verona, in 1663, in the garden of the Conte Giuſti; another at Rome, in 1591; and a ſecond in the Farneſe garden, in 1625; beſides others ſince. In France the firſt *Aloe* that flowered was at Avignon, in 1599, in the garden of M. Doins; another was ſeen at Montpelier, in 1646; another flowered at Bezenes in Languedoc, in the preſence of Lewis XIII. and cardinal Richlieu, about the year 1641. —[f Narat. in Hort. Medic. p. 11. g Id. p. 10. 15. 86.]

In Germany, the firſt *Aloe* that flowered is ſaid to have been at Augſburg, in the garden of a private botaniſt, in the year 1633 [h]: Tho' ſome authors ſpeak of one earlier, *viz.* in 1627, in the *Hortus Onoldinus* [i]. The ſecond was in the ducal garden, at Stutgard, in 1658; it roſe twenty-three feet high, produced forty branches, on each whereof were two, three, or four hundred flowers, in all twelve thouſand [k]. Another at Chora, in Miſnia, in the garden of count Leeſer in Sahlitz, called by the German writers, the *Aloe Chora Salitiana*, in 1663: another at Sonderſhuys, in Thuringia, in the gardens of the count of Schwartzburg, in 1664; another at Gottorp, in Holſtein, in the duke's Garden, in 1668: another at Slevens, in Thuringia, in 1669: another in Sileſia, in the gardens of the count d'Opperſdorf, in 1662 [l]: another in 1687, in the gardens of duke Maurice of Saxony [m], remarkable for this, that inſtead of a ſingle ſtem, it divided into three, all ſhot about the ſame time, the talleſt thirteen feet, and the ſhorteſt eleven feet high; together they bore 3921 flowers. From the flowers dropped a water, like that which Sig. Scarella, above thirty years after, pretended had never been obſerved by any before him, in the Venetian *Aloe*. To theſe may be added, another *Aloe*, which flowered at Gottorp, in 1705; another at Leipſic, in 1700, another at Brunſwic, in 1701; another at Gotha, in 1710; another in Brandenburg, in 1712, not far from Berlin; another in the gardens of the duke of Wolfenbuttle, in 1701, in memory of which a medal was ſtruck [n]. Others have been obſerved at Vienna, in 1723; and at Copenhagen, in 1724 [o]. Even Sweden is not without inſtances of the ſame; an *Aloe* having been found to bloſſom in 1708, in the garden of the ſenator Gyllenſtolpe, at Nora in Upland, five miles from Stockholm; and what is remarkable, notwithſtanding the coldneſs of the climate, it began to bloſſom at the cloſe of October, and held in flower all the winter, tho' reckoned a very ſevere one for that place [p]: the thing was celebrated by the wits of Sweden: a collection of poems on the occaſion has been publiſhed [q], in which the famous northern poeteſs, Sophia Elizabeth Brenneria, makes a diſtinguiſhed figure.—[h Ephm. Acad. N. C. Dec. 1. An. 6. p. 339. i Act. Phyſ. Med. T. 2. p. 409. k *Elſholtz.* Flora. Marchic. p. 16. l *Sachs*, ap. Ephem. Acad. N. C. dec. 1. an. 1. Obſ. 90. m *Zapf.* Act. Erud. Lipſ. An. 1688. n V. Ephem. Acad. N. C. Cent. 7. App. p. 89. ſeq. o *Albert.* Lex. Real. T. 2. p. 34. p Nouv. Liter. Germ. 1709. p. 295. q *Holm.* 1709. Fol. See Nouv. Liter. loc. cit.]

For *Aloes* flowering in England, a late learned writer [r] informs, that none had been known before the year 1729, when that of a gentleman at Hoxton appeared. But this muſt be a miſtake: Miller ſpeaks of *Aloes* in our country which flowered long ago; tho' he does not mention when or where. At leaſt if our gardeners came not ſo early into the culture of the plant, as the Germans or Italians, they have made amends for it; there being no country in Europe, where the flower of *Aloes* is leſs unuſual than among us of late. In the year 1731, if we do not miſremember, there were two *Aloes* in bloſſom at the ſame time, within two miles of each other, one at Peckham, in Surry, in the lord Trevor's garden, the other at Greenwich [s].—[r Act. Phyſ. Med. Acad. N. C. T. 2. p. 409. s V. Month. Magaz. T. 1. p. 401.]

Some *Aloes* are arboreſcent, inclining to make large trees, breaking forth into branches; others are ſo ſmall, that a whole plant does not exceed the bigneſs of a crown piece. Some grow cloſe to the ground, others are more aſpiring, and have their crown of leaves raiſed upon a ſtem, ſomewhat above the earth. The kind moſt common in our gardens, with ſome few other ſorts, are brought from America; but the greateſt varieties, and as ſome think, the beſt kinds, come from Africa, chiefly from the Cape of Good Hope. Bradley aſſures us, he has ſeen above ſixty different kinds of *Aloes* in the phyſic-garden of Amſterdam, chiefly the product of the Cape; ſome of them have been raiſed from ſeed from that place, and others from young plants riſing from the roots, or putting forth from the ſtems. They are uſed with great tenderneſs; tho' the author laſt mentioned ſays, he has found them a hardy plant, and that of forty ſorts which he has cultivated in England, he has not loſt one by cold. *Bradley*, Improv. Gard. P. 3. c. 5. p. 267. ſeq.

The two kinds moſt conſiderable, the one for its curioſity, the other for its uſe, are the *Aloe Americana*, or flowering *Aloe*, and the *Aloe Aſiatica*, or drug *Aloe*.

Concerning the hiſtory of the *Aloe*, ſee *Munt.* Aloedar. paſſim. *Ray*, Hiſt. Plant. p. 1195—1200. The divers ſpecies of it, *Miller*, Gard. Dict. in voc. Jour. des Scav. T. 36. p. 46. Its culture, *Bradley*, New Improv. Gard. P. 3. p. 269. *Miller*, loc. cit. Spaniſh *Aloe*, *Sachs*, de *Aloe*. See Ephem. Acad. N. C. Dec. 1. An. 1. p. 182. African *Aloe* at Padua, Giorn. de Letter. d'Ital. T. 4. p. 103.

Several have written expreſsly on the American *Aloes*; Scarella [t] on the Venetian; Sachs on the Sileſian [u] and Chora-Salitian [x]; Zopfius on the Saxon [y]; Schroeckius [z] on the Auguſtan *Aloes*; Bejer [aa] on the propagation of the *Aloes* by ſeed. Many particulars, on the ſame ſubject, are occaſionally given by phyſiologiſts, botaniſts, &c. [bb].—[t *Breve Ragguaglio di Giambaliſta Scarella intorno al fiore dell Aloe Americana Padova, per G. B. Conzatti.* An. 1710. 8°. p. 56. Giorn. de Letter. d' Ital. T. 4. p. 87. u *Phil. Jac. Sachs a Lewenhiamb.* Obſerv. *de Aloe Sileſiaca floreſcente.* Ephem. Acad. N. C. Dec. 1. An. 1. Obſ. 90. p. 182. x Ejuſd. *Aloe Chora-Salitiana* ubi ſupr. Obſ. 91. p. 191. ſeq. y *Gul. Zopfii.* Epiſt. *Aloes Americanæ, prout in Saxoniæ ducis, Mauritii Gul. Horto nuper efflоruit Hiſtoriam Complexa.* Act. Erud. Lipſ. An. 1688. p. 121. z *Lucæ Schroeckii* Obſerv. *de Aloe Auguſtana.* Ephem. Acad. N. C. Dec. 1. An. 6 & 7. Obſ. 231. p. 339. aa *Joh. Jac. Bejeri de Aloes Americanæ per ſuum ſemen felici propagatione.* Act. Phyſ. Med. N. C. Acad. Germ. T. 33. Obſ. 177. p. 408. bb See the Authors enumerated under BOTANY, NATURAL HISTORY, PLANT, &c. Particularly concerning the univerſal Uſefulneſs of *Aloes*, See *Hernand.* loc. cit. *Sachs* de *Aloe* Sileſ. p. 190. *Ray*, Wiſd. of God. P. 2. p. 280. Nouv. Rep. Lett. T. 12. p. 347. Its deſcription and culture. *Cluſ.* Obſ. Hiſp. l. 2. c. 67. *Cæſalp.* de Plant. l. 10. c. 31. p. 417. *Sachs*, ubi ſupr. p. 183. Ephem. Acad. N. C. Dec. 2 & 10. App. 56. Its figure in the flowering ſtate, *Ald.* in Hort. Farneſ. c. 14. p. 94. *Camerar.* Icon. Plant. poſt Silv. Hercyn. §. 5. & *in German Herbar.* Mathiol. c. 1. p. 231. Its hiſtory, *Nard. Anton. Reuhus.* Hiſt. Rer. Mexic. l. 8. c. 12. p. 270. *Fab. Columb.* Not. ad *Reuh.* p. 882. Its Progreſs in Europe, *Scarell.* loc. cit. p. 6. ſeq. *Ray*, Trav. p. 108. Giorn de Letter. d'Ital. T. 27. p. 177. Ephem. Acad. N. C. Dec. 2. An. 10. App. p. 56. Act. Erud. Lipſ. 1688. p. 121. Its growth and flowering, *Scarell.* loc. cit. p. 12, 39, 40, 54. ſeq. Jour. des Scav. T. 64. p. 571. Noiſe at its erruption, whether a fable? *Scarel.* p. 48. Giorn. de Letter. p. 101. ſeq. Nouv. Rep. Lett. T. 56. p. 389. Its growth whether viſible? *Scarel.* p. 48. Giorn. de Letter. 102. Arriving at Maturity earlieſt near the edge of the ſea, *Scarel.* p. 54. Number of Flowers, Bibl. Germ. T. 2. p. 181. *Scarel.* p. 39. Leaves three Florentine Braccias long, *Scarel.* p. 47. Giorn. de Lett. ubi ſupr. p. 101. Writers on it, *Scarel.* loc. cit. Verſes on it, *Scarel.* p. 52. Epitaphs on it, *Sachs*, ubi ſupr. p. 187. ſeq. It. p. 193. ſeq. *Reuh.* l. 8. c. 12. p. 270.]

ALOE, is alſo applied by ſome writers, to a kind of mineral juice produced in Judea. *Dioſcor.* in Pref. ad l. 1.

This is called foſſil, mineral, or metalline *Aloe*.—Some diſpute the exiſtence of any ſuch *Aloe* [a]. Others ſuppoſe it to be no other than the *Aſphaltus* [b].—[a *Plin.* Hiſt. Not. T. 2. l. 27. c. 4. p. 421. V. *Garc. ab Hort.* Hiſt. Arom. l. 1. 2. *Burggr.* Lex. Med. T. 1. p. 457. b *Bejer.* loc. cit.] See ASPHALTA.

ALOES, (*Cycl.*) in pharmacy.—A late writer deſcribes the preparation of *Aloes* thus: The leaves being pulled from the roots of the tree with the hand, or an inſtrument, and preſſed, diſtil a juice, of which juice, the thick parts will ſubſide, and the thinner are poured off, and put in the ſun till it dries and hardens, in which time it gains a yellow colour. This is called *Aloe Succotrina*. The thicker part remaining is put into another veſſel, and by being inſpiſſated in the ſun, gains a liver colour, and is called *Aloe Hepatica*. The thickeſt part is called *Caballina*, or horſe *Aloes*. Edreſſi, an Arabian writer, gives the proceſs ſomewhat differently. The people of Succotra, he obſerves, gather the leaves of this plant in the month of July, and boil them in great caldrons, to extract the juice out of them, which they put into bottles, and expoſe them to the ſun during the dog-days. *D' Herbel.* Bibl. Orient. p. 727. in voc. *Sabr.*

Mr. Boulduc, on his analyſis of *Aloes*, found that the difference between the ſeveral kinds was greater than could have been imagined; that the Succotrine *Aloes*, contained not more

than

than half the proportion of the reſin, or ſulphureous part, that the hepatic did; and about on third more of the ſaline. The Caballine, he obſerved, was uſually ſo very foul, and contained ſo ſmall a proportion, either of reſin or ſalt, to its earthy or uſeleſs matter, that it was not worth employing on any occaſion. But the different proportion of the principles in the two other kinds, he very well obſerves, may naturally lead us to underſtand the difference of their effects. As the reſinous part of *Aloes*, contrary to that of all other purgative medicines, is ſcarce at all purgative, there is plain reaſon why the Succotrine, which has leaſt of it, ſhould be employed for all internal purpoſes; it being much better qualified to act by its other parts as a purge, by being freed from an over quantity of this, which is but an incumbrance upon it; but on the other hand, there is as great reaſon to preſer the hepatic, which abounds in reſin, for all external uſes, where it is to act as a balſam in the healing of wounds, and the like; and Mr. Boulduc ſets it in theſe intentions upon a footing with the beſt of the natural balſams.

The ſalts of *Aloes* are very violent and active; they frequently corrode the extremities of the blood-veſſels, which lie in their way, and hence the hemorrhages which attend the uſe of this medicine. The reſinous part of this medicine is in all caſes a great guard againſt the ſaline, and a check upon the violence of its operations; theſe ſhould therefore never be ſeparated from one another; yet this is too often done by the unſkillful, whence ariſe great miſchiefs, which Mr. Boulduc affirms, he has himſelf been a witneſs of, from the giving the ſalt of *Aloes*, without that balſamic reſin, which nature has prudently ſet as a guard over it. This ingenious experimenter would have us, inſtead of dividing theſe principles, join them more intimately together; this he obſerves may be done by means of ſalt of tartar; and by this means *Aloes*, will be made in all internal caſes, an infinitely more ſafe remedy. Mem. Acad. Par. 1708.

The *Aloes*, as imported, is uſually too foul for medicinal purpoſes; as having a mixture of ſtraws, ſticks, or gritty matter. To purify it, they gently diſſolve it in water, enough to paſs it conveniently through a flannel cloth when warm, and afterwards evaporate it to a conſiſtence. Some for this purpoſe uſe ſpirit of wine, and others ſpirit of tartar, under the notion of better correcting the *Aloes*; but that diſſolvent ſeems moſt ſuitable, which leaves the drug its native qualities, after refinement, leaving it to the phyſician afterwards to correct it in preſcription as he pleaſes. *Quinc.* Diſpenſ. P. 2. p. 293. ſeq.

This drug applied to ſores will cauſe a purging. Thus we find in the medical eſſays, that a paſtil made of myrrh, *Aloes*, and honey, having been put every day into a cavity formed by an ulcer in the bone, the patient had a conſtant purging, which ceaſed the day after the *Aloes* was omitted. Med. Eſſ. Edinb. Vol. 5. Art. 24.

Where it is alſo obſerved, that the tincture of *Aloes*, applied to ulcers and carious bones, frequently brings on a purging.

Aloes is a prime ingredient in *Elixir proprietatis*, and *Species Hieræ Picræ*, with which the *Tinctura Sacra*, is made.

Aloes was uſed among the antients, in embalming, to preſerve bodies from putrefaction. Of this *Aloes*, interpreters underſtand that to have been which Nicodemus in the goſpel brought to embalm the body of Chriſt. *John*, c. xix. v. 39.

Several authors have treated expreſly on *Aloes*; as Bejer and Major; Duroſtantis on its ſubſtance, Marquis on its virtue, Martinez on its choices, Fuchſius and Puteanus on its opening the veins.—Many particulars alſo relating to *Aloes* are given occaſionally by botanic and pharmaceutical writers. V. *Lipen.* Bibl. Med. p. 12.

More particularly concerning the principles and analyſis of *Aloes*, ſee Hiſt. Acad. Science. 1708. p. 66. Act Erud. Lipſ. 1710. p. 294. Its efficacy and uſefulneſs, *Zacut. Luſit.* Med. Princ. Hiſt. l. 1. Hiſt. 21. p. 36. ſeq. Whether its virtue reſide in its gummy, or reſinous part, *Junck.* Conſp. Therap. Tab. 3. p. 61. Manner of its operation, *Quinc.* Pharm. Lect. 4. p. 47. Uſe in flatulencies, *Junck.* Conſp. Medic. p. 599. In facilitating delivery, Ephem. Acad. N. C. Dec. 2. An. 4. Obſ. 117. Uſed to exceſs, Ephem. Acad. N. C. Dec. 2. An. 5. p. 444. Occaſions Hæmorrhages, *Junck.* Therap. ubi ſupra, bloody urine, Barth. Act. Med. T. 2. p. 166. Extraordinary Preparation of it, Mem. de Trev. 1729. p. 19.

Lignum ALOES (*Cycl.*) —This wood, by the Indians and Portugueſe, is called *Calamba*, or *Calambac*, being the ſame with what is otherwiſe called by medical writers *Xyloaloes*, and *Agallochum*. V. Act. Erud. Liſp. An. 1695. p. 501. Nouv. Rep. Lett. T. 15. p. 202. See AGALLOCHUM, and CALAMBA.

Linſchoten [a], and after him Dr. Grew [b], and others, miſtakenly make the three ſpecies of woods, mentioned in the Cyclopædia, the produce of ſo many different trees growing in different places.—[[a] *Linſch.* l. 1. c. 76. [b] *Grew*, Muſ. Reg. Societ. P. 2. p. 180. See alſo *Bont.* Not. in Garc. ab Hort.]

Sir Philip Vernatti, formerly reſident in Java major, deſcribes the *Aloes*, as the wood of a living tree, tho' rarely gathered till it be dead, and withered. The outermoſt coat of wood is white, ſoft, and yields a milky juice extremely poiſonous. The *Lignum Aloes*, or calambac is found within the white wood, but not every where. When the tree decays, the white wood ſoon withers, and grows worm-eaten, and the milk ſo dries up, that you may eaſily rub it aſunder with your hand. The beſt is found in the midſt of the tree, nouriſhed by the heart root, which goes ſtreight down into the ground. Phil. Tranſ. N°. 43. p. 863.

Grew deſcribes a piece of *Lignum Aloes*, with its own gum growing on it, in the repoſitory of the royal ſociety. The taſte of the gum is perfectly like that of the wood; the colour like that of the pureſt and moſt lucid Succotrine *Aloes*; for with the light reflected, it looks almoſt like pitch; with the light tranſmitted, it gliſters like a carbuncle; powdered it is of a reddiſh yellow [c]. This or ſome other like aromatic gum was the *Aloes* of the Hebrews, divers times mentioned in the old teſtament, among perfumes: myrrh and *Aloes* [d], garments ſmelling of *Aloes* [e] and Caſſia. The harlot in Solomon had perfumed her bed with *Aloes* [f]. The Hebrew text, in theſe paſſages, has *Ahalim*; which word alſo occurs in the book of Numbers [g], where its meaning has occaſioned ſome diſpute; the vulgate renders it by *Tabernacula*, tents; St. Jerom by *Stacte*; others by *Santalum*, or ſanders; others by ſaffron [h]; the Engliſh verſion, with great propriety, by *Lignum Aloes*.—[[c] *Grew*, Muſ. Reg. Societ. P. 2. c. 1. p. 179. [d] Cant. c. iv. v. 14. [e] Pſal. xlv. v. 8. [f] Prov. c. vii. v. 17. [g] Numb. c. xxiv. v. 6. [h] *Caſtel.* Orat. de Botan. Sacr. p. 29. ſeq.]

Bejer has a diſcourſe expreſs on the *Ahalim*; wherein he ſhews it to be the ſame with the *Agallochum*. Printed in *Wedel.* Exerc. Medic. Philol. Dec. Oct. p. 1—10. See alſo *Sachs* de *Aloe* Siles. in Ephem. Acad. N. C. Dec. 1. An. 1. p. 182. Concerning the virtues and uſes of the *Aloes*. V. *Bejer.* loc. cit. p. 6. ſeq. An odoriferous water now extracted from it, Act. Erud. Lipſ. 1698. p. 390.

ALOEDARY, *Aloedarium*, Αλοηδαριον, denotes a purging medicine, wherein aloes is an ingredient. *Gorr.* Def. Med. p. 23. *Caſt.* Lex. Med. p. 34.

This amounts to the ſame with what we otherwiſe call an *Aloetic*. See ALOETIC, ALOE, *&c.*

ALOEDARY is alſo uſed for a hiſtory of the claſs of plants, under the denomination of aloes.

Munting has publiſhed an *Aloedary*, at the end of his hiſtory of the *Herba Britannica*; in which is contained a botanic and medical hiſtory of the *Aloe Mucronato folio Americanæ majoris*, and of divers other ſpecies, particularly the Aſiatic aloes, from whence the juice, or drug-aloes is procured. *Amſt.* 4°. 1681. A Notitia of it is given in Act. Erud. Lipſ. 1682. p. 17. and in Weekl. Mem. Ingen. N. 110. p. 265.

ALOETIC (*Cycl.*)—*Aloetics* open the orifices of the veſſels [a], and are on this account found hurtful in caſes of hæmorrhages [b], particularly at the noſe [c]; alſo in the Teneſmus [d], hemicranium [e], *&c.* The immoderate uſe of *Aloetics* tends to produce hæmorrhoids [f], hypochondriac pains, and inflations [g].—[[a] *Rolfinc.* Med. Conſult. l. 3. Conſ. 2. p. 339. [b] *Nent.* Fund. Med. Tab. 9. p. 11. & p. 35. [c] Id. ibid. Tab. 9. p. 19. [d] *Junck.* Conſp. Med. Tab. 88. p. 586. [e] Id. ibid. Tab. 20. p. 120. [f] *Nent.* loc. cit. p. 156. [g] *Wepf.* Obſerv. p. 603.]

Joannius has a treatiſe expreſs on *Aloetic* pills. *Jo. Joann. de Utilitate Pilularum Aloeticar. Hier. ab Aquapendente. Patav.* 1630. 8°. *Lipen.* Bibl. Med. p. 12.

ALOGIANS (*Cycl.*)—The *Alogians* made their appearance towards the cloſe of the ſecond century.—They aſſerted that John's goſpel, which the orthodox alledge was written in oppoſition to Cerinthus, was the compoſition of that very heretic; nor was the apocalypſe in any better eſteem with them.

St. Epiphanius [a] among the antients, and M. le Clerc, among the moderns, have written largely againſt this opinion of the *Alogians*. The arguments of the former have been ſhewn to be inconcluſive by F. Simon [b] and others; neither has the latter received thanks for his defence, having been charged by ſeveral with favouring underhand the *Alogian* ſyſtem [c].—[[a] *Hæreſ.* 51. p. 184. [b] Hiſt. Crit. de Nouv. Teſt. Ap. Bibl. Univ. T. 12. p. 134. [c] V. Act. Erud. Lipſ. 1697. p. 499. It. 1698. p. 456. *Kuſt.* Bibl. Nov. Liter. 1698. p. 683. Work of Learn. T. 1. p. 74.]

F. Maſſuet [d] pretends, from a paſſage in Iræneus, that the *Alogians* did not reject the whole goſpel of St. John, but only that part of it which ſpeaks of the Holy Ghoſt, or Paraclet; an opinion which has been ſufficiently refuted [e].—[[d] Not. ad Iren. l. 3. c. 11. §. 9. [e] Init. Evang. S. Joan. Reſtit. c. 24. p. 419. ſeq.]

ALOGOTROPHIA, in medicine, an irregular nutrition of ſome part, attended with a vicious figure or conformation thereof, as in the rickets. *Caſt.* Lex. Med. p. 34.

If the bones of the vertebræ of the back receive too much nutriment, on one ſide, as ſometimes happens in children, an incurvation neceſſarily enſues, which, as Charleton expreſſes it, is produced by an *Alogotrophia*. Exerc. 10. Pathol. §. 42. p. 200.

ALOIDES, in botany, a name uſed by ſome for the *Aloe paluſtris*, or freſh water aloes, called in ſome parts of England *water-ſolduc.* *Dale*, Pham. p. 198.

ALOPECIA (*Cycl.*) properly differs from *defluvium capillorum*, as in the former, certain parts or patches were left intirely bald, whereas in the latter, the hair only grows immoderately thin [a]. It alſo differs from the *Ophiaſis*, as this latter creeps

in ſpires about the head, like the windings of a ſerpent, whereas the former is not confined to any figure [b].—[a] *Poliſ.* Myrrhol. c. 15. Art. 2. p. 326. [b] *Burggr.* Lex. Med. T. 1. p. 467. ſeq.]

The *Alopecia* in effect ſeems only to differ from the ophiaſis, as it is a degree leſs malignant.

The *Alopecia* is called by Celſus *Area*, on account of its appearing in naked ſpots or patches. *Celſ.* de Medic. l. 6. c. 4.

The cauſe as well as cure of the *Alopecia* is the ſame as that of the ophiaſis; tho' ſome would make a difference: urging that the primary intention in the former, is to correct or carry off the vitious humour; in the latter, to ſupply the want of nutriment to the cutaneous parts. *Poliſ.* ubi ſupra. *Caſt.* Lex. Med. p. 34. ſeq. *Burggr.* loc. cit. See alſo Bibl. Anat. T. 2. p. 679.

ALOPECIA is alſo uſed, by Galen, for a change of the hair to another colour. De Rem. Fac. Par. c. 6. *Caſt.* Lex. Med. p. 34. ſeq.

ALOPECIAS, in zoology, a name of the *Vulpes marina*. See VULPES *Marina*.

ALOPECOPITHECOS, in natural hiſtory, a name derived from the Greek, and given by Aldrovand and others to that ſtrange creature, the opoſſum; an American animal, which has a pouch under its belly, into which it receives its young in time of danger. It is ſuppoſed, according to this name, to partake of the nature of the fox and the ape; but it in reality is wholly different from both, and merits a general name of its own. Tyſon has given it that of Marſupiale, which as it is founded on the pouch, which is its diſtinction from all other animals, ſeems a very good one, but authors do not ſeem to come into the uſing it. Philoſ. Tranſ. N°. 239. p. 110. See OPOSSUM.

ALOPECUROS, *fox-tail graſs*, in the Linnæan ſyſtem of botany, makes a diſtinct genus of plants, the diſtinguiſhing characters of which are, that the calyx is a glume compoſed of two valves, and encloſing a ſingle flower; theſe valves are oval, pointed and hollow: the flower is compoſed of only one valve, which is hollow and of the ſame length with the calyx, and has a long awn or beard inſerted on its back-part near its baſis; the ſtamina are three capillary filaments; the antheræ are oblong; the germen of the piſtil is roundiſh; the ſtyles are two in number, hairy, reflex, and exceed the length of the cup; the ſtigmata are ſimple; the flower encloſes the ſeed, which is ſingle, and roundiſh. *Linnæus*, *Genera Plantarum*, p. 18.

ALP, in zoology, an Engliſh name uſed by ſome for the bullfinch. *Ray*, Ornitholog.

ALPAGE, *Alpagium*, in antient writers, denotes the privilege of feeding cattle on the Alps, or high mountains, or a ſum paid for the purchaſe of ſuch a right.

This is otherwiſe called *Alpaticum*. *Du Cange*, Gloſſ. Lat. in voc. See ALPS.

ALPHA (*Cycl.*) is particularly uſed among antient writers, to denote the chief or firſt man of his claſs or rank.

In this ſenſe the word ſtands contradiſtinguiſhed from *Beta*, which denotes the ſecond perſon.

Plato was called the *Alpha* of the wits: Eratoſthenes, keeper of the Alexandrian library, whom ſome called a ſecond Plato, is frequently named *Beta*.

ALPHA is alſo uſed to denote the beginning of any thing.

In which ſenſe it ſtands oppoſed to *Omega*, which denotes the end. And theſe two letters were made the ſymbol of chriſtianity; and accordingly engraven on the tombs of the antient chriſtians, to diſtinguiſh them from thoſe of idolaters. Moralez, a Spaniſh writer, imagined that this cuſtom only commenced from the riſe of Arianiſm, and that it was peculiar to the orthodox, who hereby made confeſſion of the eternity of Chriſt: but there are tombs prior to the age of Conſtantine whereon the two letters were found, beſides that the emperor juſt mentioned, bore them on his labarum before Arius appeared. See LABARUM, *Cycl.*

ALPHA is alſo a title given by ſome antient writers to the Jewiſh legiſlator Moſes. The reaſon of the apellation is much controverted. Helladius, in his Chreſtomathia, and Ptolemy ſon of Hepheſtion, pretend that Moſes was infected with the leproſy, which the Greeks call ΑΛΦΟΣ, and that hence aroſe the denomination ΑΛΦΑ. This opinion ſeems to have owed its riſe to a tradition among the heathens, that the Jews were expelled Egypt, becauſe they were over-run with this diſeaſe. A tradition ſupported by Diodorus Siculus, Tacitus, Juſtin, Apion, and others; but refuted by Joſephus.—A late writer apprehends, that the notion of Moſes's leproſy took its riſe from that text in the old teſtament, wherein the prophet, having put his hand into his boſom, drew it out again white as a leper, which the Septuagint render ΑΛΦΟΣ.

Others have invented other reaſons of the appellation, which do more honour to Moſes. Nicolai conjectures that he might have been denominated *Alpha*, on account of the fairneſs and brightneſs of his complexion, when he came from the mount; or from his being the chief, or leader of the Jewiſh people; or even from his being well learned, in regard the Hebrew word *Aleph*, from whence the Greek *Alpha* was formed, ſignified as much. If none of theſe will ſerve, the ſame author, from the conſideration of the radical letters of the word *Alpha*, deduces divers other myſtical ſignifications: Moſes might have been ſo called, becauſe he was the moſt meek of men; or in regard he mediated between God and the Jews; or becauſe he was ſlow of ſpeech; or becauſe he converſed familiarly with God; or in fine, becauſe he wrote a hiſtory of the times before him. *Nicolai*, Diſquiſit. de Moſe *Alpha* dicto. Lugd. Bat. 1703. 12°. Extracts of which are given in Ouvr. des Scav. Janv. 1703. p. 18. Mem. de Trev. 1708. p. 1154. Jour. des Scav. T. 34. p. 71.

ALPHERATZ, in aſtronomy, a fixed ſtar of the third magnitude in Aquarius. See AQUARIUS, *Cycl.*

This is otherwiſe called *Alpharatz*. Some alſo give the denomination *Enif Alpharatz* and *Marchab Alpharatz*, to two other ſtars in the right ſhoulder of Pegaſus. *Vital.* Lex. Math. p. 26. See PEGASUS, *Cycl.*

ALPHESERA, in botany, a name by which the Arabian, and ſome other, authors expreſs the white bryony. *Ger.* Emac. Ind. 2.

ALPHESTES, in zoology, the name of a fiſh, called by others *Cinedus*, ſeeming to approach very much to the Turdus, or Wraſſe kind, but having the rays or nerves of its back-fin prickly all the way to the tail; whereas the Turdi have only the anterior rays of that fin prickly, the reſt ſmooth. It is a ſmall fiſh, and is always caught about the ſhores, and among rocks: its back is purple, and its ſides and belly yellowiſh. Its mouth is ſmall, and has thick and fleſhy lips. *Geſner*, de Piſc. p. 40.

ALPHITIDON, in ſurgery, a ſpecies of fracture, wherein the bone is broken into a great number of ſmall parts, or particles. *Caſtel.* Lex. Med. in voc.

The word is Greek, ΑΛΦΙΤΙΔΟΝ, formed of ΑΛΦΙΤΟΝ, *farina*, flower, q. d. a bone ground to flower or powder.

ALPHITOMANTIA, in antiquity. See the article ALEUROMANCY.

ALPHOS (*Cycl.*)—The *Alphos*, or *Alphus* is of two kinds.

1. *Alba*, where the ſkin is ſprinkled with rough whitiſh ſpots. This is the *Alphus* more properly ſo called, being otherwiſe denominated *Leuce*.

2. *Nigra*, where the ſpots are black. This is alſo called *Melane*. V. *Celſ.* l. 5. c. 28. *Caſtel.* Lex. Med. p. 35. *Zuing.* Epiſt. Juſt. Pathol. n. 328.

ALPIEU, in the game of baſſet, is when a couch or firſt ſtake is won by turning up or crooking the corner of the winning card. Comp. Gameſt. p. 33.

In this ſenſe, *Alpieu* amounts to much the ſame with *Paroli*. See BASSET.

ALPS, beſides its proper ſignification, by which it denotes a certain chain of mountains, which ſeparate France from Italy, is ſometimes uſed as an appellative to denote any mountains of extraordinary height. Phil. Argyr. in Virg. Geor. l. 3. v. 474. *Iſid.* Orig. l. 4. c. 8. *Serv.* ad Virg. loc. cit.

In this ſenſe Auſonius, and others call the Pyrenean mountains, *Alps*, and Gellius, the Spaniſh *Alps*, *Alpini Hiſpani*. *Auſon.* Epiſt. 24. *Fortunat.* l. 6. Poem. 2. It. l. 10. Poem. 25. Sidonius gives the ſame appellation of *Alps*, to mount Athos. Other authors ſpeak of Norman *Alps*, *Alpes Arvennæ*, *Alpes Aſtoricenſes*, *Alpes Dofrinæ*, *Alpes Romaniæ*, *Alpes Baſtarnicæ*.—The Apennins are alſo called by *Johannes Villaneuf*, *Alpi D'Apennini*. L. 1. c. 33. *Du Cange*, Gloſſ. Lat. in voc.

ALPS is alſo uſed to denote paſtures on the mountains, wherein cattle are fed in the ſummer time; or rather in the vallies, and ſpaces between the mountain tops. Some will have this to be the primary ſignification of the word *Alpes*, which is ſuppoſed by theſe authors literally to denote the ſtreights or appertures between hills.

ALRATICA, among the Arabian phyſicians, is where the vulva of a woman is imperforate, or at leaſt the foramen ſmaller than ordinary, whether naturally, or by accident. *Albucas*, Meth. Med. l. 2. c. 72. p. 119. *Caſt.* Lex. Med. p. 35. See the article ATRETI.

ALRAUPE, in ichthyology, a name given by the Germans, to the *Muſtela Fluviatilis*, or eelpout, a ſpecies of the *Gadus*. See the article GADUS, and MUSTELA.

ALRUKAK, in the materia medica, a word uſed by Aviſenna, and others of that nation, for what was called by the Greeks *Leptos Libanotis*, and *Manna Thuris*; this was the fragments of frankincenſe, which were broken off from the larger pieces in the collecting or packing up, and were moſt eſteemed in medicine, as being the drieſt and pureſt kind.

ALRUM, in the botanical writings of the antients, a name given to the tree which produces the Bdellium. This gum was originally known to be the exſudation of a tree growing in Arabia and the Eaſt-Indies, and well known to Aviſenna and others, and by all of them called by that name. There is however, a great deal of error and confuſion, about one of the ſynonymous names of the gum of this tree; this name is *Mokel* or *Molechil*; and the ſame name being alſo given to a fruit of the palm kind, produced by a tree according to all accounts as different from the Bdellium as one tree can be from another; this fruit has been ſuppoſed, to be produced on the ſame tree, and the interpreters of Aviſenna, obſerving that this author had every where diſtinguiſhed the fruit *Mokel*, and the gum *Mokel*, by calling the one *Mokel*

Meccenſe, and the other *Mokel Judaicum*, have indeed not made them the ſame thing; but they have told us, that the fruit *Mokel* is the nut of that tree, whoſe exſudation is the gum *Mokel*, or *Bdellium*.

The words of Aviſenna, which they have wreſted into this falſity, are, however, guiltleſs of it; what he ſays, when truly tranſlated, runs thus: the *Bdellium Judaicum* is of two kinds, the Selabic and the Arabian. Theſe are both called *Mokel*, and are both uſed in medicine; but the fruit *Mokel* is a very different thing, produced by a different tree, and called *Mokel Meccenſe*.

Serapio ſpeaks to the ſame purpoſe, and tells us, that though the tree which produced the *Mokel Judaicum* grew only in Arabia and the eaſt, the tree which produced the *Mokel Meccenſe* was common in Spain, and many other parts of Europe; that it was of the palm kind, and ſomewhat more tender than the other ſpecies, which are the natural produce of Europe, and never ripened its fruit in Spain, though about Mecca it produced them in great plenty.

The tranſlators of this author into Latin have rendered the word *Alrum*, by *arbor junci*, the ruſh tree: it does not appear what could have influenced them to do this, unleſs the miſtaking the word for *Aldis*, which, in that language, is ſometimes uſed to ſignify a ruſh; but Alpagus explains it better, and proves it, by many paſſages from the other Arabians, to be truly a palm tree.

ALSADAF, in the materia medica, a name given, by Aviſenna and Serapio, to the *unguis odoratus*, and alſo to the *murex*, or purple fiſh, of the ſhell of which it was ſuppoſed to be a part.

The word *Alſadaf* ſignifies properly, in Arabic, a ſhell in general; but it is applied peculiarly to the *purpura*, as the words *cochlea* and *conchylium* were among the Latins and Greeks, which properly ſignify all ſorts of ſhells, but are uſed for this particular kind by many authors.

ALSAHARATCIA, a name uſed in botany, by ſome, to ſignify the *parthenium*, or feverfew. *Ger.* Emac. Ind. 2.

ALSCNEFU, in botany, a name uſed, by ſome authors, for wormwood. *Ger.* Emac. Ind. 2.

ALSCHARCUR, in the materia medica, a name given, by Rhaſes and ſome other of the old writers, to the *ſkink*, a ſmall animal of the lizard kind, uſed in medicine as a cordial and provocative.

ALSEBON, a name given, by ſome of the chemical writers, to ſea ſalt.

ALSIMBEL, in the materia medica, a name given, by Aviſenna and others, to the ſpikenard of India. It is thus called from its having the appearance of a ſpike, or ear, and alſo *ſimbalath*, a word which ſignifies its being a congeries of many ſpikes, or ears, and ſuch is much of the *nardus indica*, or Indian ſpikenard, that we receive at this day; not that theſe ſpikes are at all of the nature of the ſpikes of corn, or any other flowers, or fruits of plants, but only the firſt ſhoots from the root of the plant, which are the moſt ſcented and fulleſt of virtue, and are of the ſhape of the ſpikes of other plants.

ALSINASTRUM, in botany, the name of a genus of plants, ſo called from their general reſemblance to the *alſines*, or chickweeds. The characters of the *Alſinaſtra* are theſe. The flower and fruit are the ſame with thoſe of the alſine; but the flower-cup in theſe is compoſed only of one leaf, whereas in thoſe it is made up of ſeveral.

The ſpecies of *Alſinaſtrum*, enumerated by Mr. Tournefort, are only two.

1. The *Alſinaſtrum* with leaves like the gratiola, or hedge-hyſſop. And, 2. The *Alſinaſtrum* with leaves like thoſe of ladies-bedſtraw. *Tourn.* Inſt. p. 244.

ALSINASTRUM, in botany, is alſo a name given, by Vaillant, genus of plants, compriſed, by Linnæus, in that of the *elatine*. *Vaillant*, Bot. Par. 1. fol. See ELATINE.

ALSINE, *chickweed*, in botany, the name of a very large genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, and conſiſts of ſeveral petals, ſometimes whole, ſometimes bifid at the ends, diſpoſed in a circular form. The piſtil ariſes from the cup of the flower, and finally becomes an unicapſular membranaceous fruit, of a roundiſh, or conic figure, and containing many ſeeds affixed to a placenta.

The ſpecies of *Alſine*, or *chickweed*, enumerated by Mr. Tournefort, are theſe.

1. The tall *chickweed* of the woods, or large perennial *chickweed*. 2. The great nightſhade leaved *chickweed*. 3. The broad leaved mountain *chickweed*, with laciniated flowers. 4. The common *chickweed*. 5. The plantain leaved *chickweed*. 6. The St. John's-wort leaved *chickweed*. 7. The American *chickweed*, with leaves like thoſe of money-wort. 8. The perennial ſea *chickweed*, with money-wort leaves. 9. The Sicilian *chickweed*, with a ſpheroidal leaf. 10. The auricula leaved American *chickweed*. 11. The purſelain leaved ſea-ſhore *chickweed*. 12. The ſmooth ſpring *chickweed*, with white umbellated flowers. 13. The ſpring ſmooth, ſmaller *chickweed*. 14. The meadow *chickweed*, with graſſy leaves, and large flowers. 15. The meadow *chickweed*, with graſſy leaves, and ſmaller flowers. The four laſt are called *holoſtea*, and *ſtichworts*, by authors. 16. The long leaved marſh, or water *chickweed*. 17. The ſerpyllum leaved marſh *chickweed*. 18. The many ſtalked, and many flowered, ſerpyllum leaved alpine *chickweed*. 19. The common ſmall, many ſtalked *chickweed*. 20. The ſmooth Bononian *chickweed*. 21. The fine leaved *chickweed*. 22. The ruſhy leaved alpine *chickweed*. 23. The fine leaved moſſy *chickweed*. 24. The greater larch leaved ſtone *chickweed*, with larger flowers. 25. The ſmaller larch leaved ſtone *chickweed*, with ſmaller flowers. 26. The hair leaved, many flowered ſtone *chickweed*. 27. The leaſt hair leaved marſh *chickweed*. 28. The hairy alpine *chickweed*, with toad-flax leaves. 29. The hairy ſtalked alpine *chickweed*, with ſmooth toad-flax leaves. 30. The long rooted ſea *chickweed*, with rupture-wort leaves. 31. The graſſy leaved ſea *chickweed*. 32. The little graſſy *chickweed*, with four leaved flowers, called by authors graſſy ſaxifrage, and the moſſy mountain pink. 33. The ſmall annual graſſy *chickweed*, with four leaved flowers. 34. The fine leaved marſh *chickweed*, called by ſome marſh ſaxifrage. 35. The hairy fine leaved *chickweed*, with beautiful white flowers. 36. The fineſt leaved, beautiful flowered *chickweed*, or caryphylloide ſaxifrage, as ſome have called it. 37. The ſmall Portugal ſpring *chickweed*, with echinated heads. 38. The ſmalleſt *chickweed*, with quick fading flowers. 39. The hair leaved mountain *chickweed*. 40. The *chickweed* called the greater ſpurry. 41. The *chickweed* called the middle ſized ſpurry. 42. The *chickweed* called the leſſer ſpurry, with blueiſh flowers. 43. The *chickweed* called the ſmalleſt ſpurry, with marginated ſeeds. And, 44. The *chickweed*, called the ſmalleſt ſpurry, with naked ſeeds. *Tourn.* Inſt. p. 243.

There have been numerous other plants confounded by ſome writers, under the name *Alſine*; which ſee under the heads CUCUBALUS, VERONICA, ANDROSACE.

The *Alſine* is a medicinal plant, called alſo *morſus gallinæ*, popularly *chickweed*, on account of its being much coveted by poultry.

The word is Greek, αλσινη, formed of αλσος, a wood, or grove, on account of this plant's delighting chiefly to grow in ſhady places. *Dioſcor.* l. 4. c. 87.

There are divers plants under the denomination of *Alſine medica C. B.*

It is held a cooler, calmer, thickner, &c. in moſt reſpects reſembling pellitory of the wall; though now little uſed in medicine. New Diſpenſ. p. 48.

Some commend its diſtilled water againſt fervours of the blood, and conſumptions of the body, ariſing from hectics, &c [a]. The herb fried in linſeed oil, and externally applied to the belly, is ſaid to relieve the iliac pain [b].—[[a] *Zorn.* Botanolog. p. 51. [b] *Burggr.* Lex. Med. T. 1. p. 473. ſeq.]

Alſine is alſo called *myoſoton*, *q. d.* mouſe-ear, on account of the reſemblance its leaves bear to the ears of that animal. Vid. *Plin.* Nat. Hiſt. T. 2. l. 27. c. 4. p. 422.

ALSIRAT, in the Mahometan theology, a bridge laid over the middle of hell, finer than a hair, and ſharper than the edge of a ſword, over which people are to paſs, after their trial, on the day of judgment.

To add to the difficulty of the paſſage, Mahomet aſſures, that the *Alſirat*, narrow as it is, is beſet with briars and thorns; none of which, however, will be any impediment to the good, who ſhall fly over it like the wind; Mahomet and his muſſelmen lead the way; whereas the wicked, what with the narrowneſs of the path, the entangling of the thorns, and extinction of the light, which directed the former to paradiſe, will ſoon miſs their footing, and tumble headlong into hell, which is gaping beneath to receive them. Vid. *Sale*, Prelim. Diſc. to Koran, ſec. 4. p. 90.

ALTAR, (*Cycl.*) in antiquity, made the principal part of a temple [a]. Whence the antient magians [b], as well as the primitive Chriſtians, having no temples, are repreſented as without *Altars* [c].—[[a] Mem. de Trev. an. 1717. p. 1281. [b] V. Jour. des Scav. T. 78. p. 112. [c] *Minut. Felix*, p. 91. Mem. de Trev. 1718. p. 145. Jour. des Scav. T. 20. p. 56.] See TEMPLE, *Cycl.*

Altars were of divers kinds, with regard to their qualities, uſe, matter, form, accidents, and the like, and were ſacred to gods, heroes, virtues, vices, diſeaſes, &c. Thus we read of *inner Altar*, or that built under the roof or cover of ſome temple, or other building; *outer Altar*, that *ſub dio*, or under the open air; *golden Altar*, that which is covered or adorned with plates, &c. of gold; *brazen Altar*, one decorated, or plated over with braſs; *fixed*, or *ſtationary Altars*, thoſe built to remain conſtantly in the ſame place; *portable Altars*, thoſe contrived to be moved, or carried from place to place; *ſimple Altars*, thoſe without ornament or decoration; *magnificent Altars*, thoſe variouſly inriched with metals, precious ſtones, painting, ſculpture, &c. *ſtony Altars*, are thoſe made either of ſimple ſtones, or heaps of ſtones, or of maſſives bound by maſonry; *earthy*, or *turfy Altars*, thoſe thrown up only of earth, or turf accumulated; *extemporaneous Altars*, thoſe made in haſte, on ſome emergent occaſion; *ſacrificing Altars*, thoſe ſerving to hold victims, and offerings preſented to ſome deity; *memorial Altars*, thoſe erected

erected to perpetuate the memory of ſome bleſſing, or other extraordinary event which happened in the place; *anointed*, or *conſecrated Altars*, thoſe ſet apart or devoted to the Deity, by a regular form or ceremony, whereof unction made the chief part; *votive Altars*, thoſe vowed to ſome deity, in conſideration of ſome benefit received; *private*, or *domeſtic Altars*, thoſe erected by private perſons, in or about their own houſes, for family purpoſes; *public Altars*, thoſe conſecrated for the public uſe, in a ſolemn manner; *funeral Altars*, thoſe erected at the tombs of perſons defunct, inſcribed to their manes; *euchariſtic Altars*, thoſe whereon the communion, or Chriſtian ſacrifice is offered; *low Altars*, thoſe flat on the ground, or at moſt raiſed but little above the ſurface of it; *high Altars*, thoſe elevated a conſiderable height above the ground; *ſubterraneous Altars*, thoſe let down ſome depth under ground; *proper Altars*, whoſe which anſwer the characters and uſe ſpecified in the definition; *improper*, or *figurative Altars*, thoſe which only bear the denomination, by way of reſemblance or analogy, *e. gr.* the aſtronomical and poetical *Altars*; *idolatrous Altars*, thoſe erected to ſome idol, or falſe god; *principal Altar*, the chief *Altar* of a place where there are ſeveral; *horny Altars*, thoſe formed only of horns; *aſhen*, or *cineritious*, thoſe of aſhes; *wooden*, thoſe of timber; *bloody*, thoſe whereon animals are offered; *unbloody*, thoſe whereon plants, fruits, ſpices, or the like, are offered.

Altars are doubtleſs as antient as ſacrifices themſelves; conſequently their origin is not much later than that of the world. Gen. *c.* iv.

Some attribute their origin to the Egyptians; others to the Jews; others to the patriarchs before the flood [d]. Some carry them as far back as Adam, whoſe *Altar* is much ſpoken of by Jewiſh, and even Chriſtian writers [e].—Others are contented to make the patriarch Enoch the firſt who conſecrated a public *Altar* [f]. Be this as it will, the earlieſt *Altars* we find any expreſs teſtimony of, are thoſe erected by Abraham [g].—[[d] *Rhodig.* Lect. Ant. l. 18. c. 37. [e] *Fabric.* Cod. Pſeudepig. Vet. Teſt. T. 1. p. 89. [f] Gen. *c.* iv. *v.* 26. [g] Hiſt. Acad. Inſcrip. T. 3. p. 20.]

ALTAR *of Adam*, in antiquity, is pretended, by ſome Rabbins, and others, to have been erected by the firſt man, ſoon after the fall; when being overwhelmed with ſorrow, a promiſe was made him, by the miniſtry of the angel Haziel, that a redeemer ſhould be ſent. In gratitude for this news, and for a perpetual remembrance thereof, Adam is ſaid to have built an *Altar*, and ſacrificed on it a heifer.

The reliques of this *Altar* have been mentioned by ſeveral writers of late ages. It is pretended, that the *Altar* whereon Abraham ſacrificed on mount Moriah, was only a reparation of the *Altar* of Adam. It is added, that Cain and Abel offered ſacrifice on the ſame; that Noah, after the flood, repaired it, &c. Vid. *Hilſcher.* de Adam Relig. ap. *Fabric.* Cod. Pſeudepig. Vet. Teſt. T. 1. p. 89.

ALTAR-*thane*, in our antient law books, denotes a prieſt, or parſon of a pariſh. *Johnſ.* Eccleſ. Law, T. 1.

In this ſenſe, the word is ſynonymous with *church-thane*.

ALTARIST, *Altariſta*, properly denotes the vicar of a church, who ſerves the altar, and to whom the altarage, or produce of the altar, is aſſigned for his maintenance. *Du Cange*, Gloſſ. Lat. T. 1. p. 154.

The *Altariſt* is ſometimes alſo called *Altararius*, ſometimes *altar-prieſt*.

ALTARIST is alſo uſed for chaplain. *Du Cange*, loc. cit.

ALTASRIF, in literary hiſtory, the title of a medicinal book, written in Arabic, deſcribing the method of practice in uſe among the Arabs.

It was written by Alſaharavius, an author in the fifteenth century, and tranſlated into Latin by P. Ricius, in 1519. It conſiſts of thirty-two treatiſes. Its chief excellency is ſuppoſed to lye in the diagnoſtic part, and the deſcriptions of the ſymptoms of the diſeaſes. The book is indeed methodical, and doubtleſs deſerves a good character; but the greateſt part of it ſeems to be tranſcribed from Rhazes. Concerning the hiſtory and contents of the *Al-Taſrif*, ſee *Friend*, Hiſt. Phyſ. P. 2. p. 124. ſeq.

ALTAVELA, in zoology, the name of a flat cartilagineous fiſh, of the *aquila marina* kind; but with its wings, as they are called, that is, its thin and flat ſides, broad and obtuſe toward their lower part. The fiſhermen, from the reſemblance theſe flat ſides have to wings, have an opinion that this fiſh can fly. The tail is very ſhort, ſcarce being of half the length of the body. Its fleſh is ſolid, and well taſted, and it always ſells well in the markets. It is caught in the Mediterranean, and is frequently brought to market at Rome. *Fab. Columna*, p. 43.

ALTE *& baſsè*, in middle age writers, denotes ſovereignty, or a thing done with the ſupreme power. *Du Cange*, in voc.

ALTERANT (*Cycl.*)—The term *Alterant* is uſed for ſuch remedies as correct the morbid or diſorderly qualities of the animal fluids, without any particular, ſenſible evacuation.

Theſe are otherwiſe called *Alteratives*.

Alterants, in this ſenſe, make one of the capital ſpecies, or diviſions of medicines. They ſtand oppoſed to evacuants; and are alſo contradiſtinguiſhed from ſtrengtheners, &c.

Alterants are ſuppoſed to exert their power chiefly on the humours of the body; ſweetening the ſour, ſoftening the acid, abating their heat, or tempering their too great coldneſs, and the like. *Zwing.* Specim. Med. c. 1. §. 18.

Some define *Alterants* to be remedies which correct the pravity of the juices, whether acid or bilious, reſtoring to their natural ſtate the bitter, ſaline, ſweet, and acid, which Hippocrates, and other phyſicians, diſcover in the human body. Medic. Euporiſt. c. 4. Jour. des Scav. T. 5. p. 47.

When the blood is in its due temperature, it is ſaid to be of a ſweet taſte; if the bile prevail a little too much in it, it becomes ſaline; if this bile be increaſed, it turns acrid, &c.

Some object to the jeſuits-bark, that it only acts as an *Alterant*, without producing any ſenſible evacuation, and that of conſequence it leaves the cauſe of the diſtemper ſtill in the body, by which means many of thoſe, who have been cured by it, afterwards relapſe. Jour. des Scav. T. 54. p. 178.

We meet with medicines of the purgative kind, repreſented by practical writers as *Alterants*; the colocynth particularly by Helmont: for all medicines which operate in the fartheſt paſſages, they frequently include under that appellation. Phil. Tranſ. N°. 365. p. 75.

Accordingly, 'tis found of ſervice to give ſuch medicines as are properly cathartic, by way of *Alteratives*, in ſtubborn, chronical caſes; thus, *tinctura ſacra*, for inſtance, given in the quantity of half a ſpoonful for a doſe, has no immediate effect upon the inteſtines, ſo as to diſcharge their contents, but paſſes into the further ſtages of circulation. *Quinc.* Lex. Med. p. 17.

Dr. Woodward enquires into the efficacy of ſeveral of the moſt celebrated *Alterants*, and endeavours to ſhew on what little foundation their great uſe is eſtabliſhed. Of this number, according to him, are the abſorbents, cortex peruvianus, bitters, ſalts, ſteel and its preparations, mineral waters, &c. *Woodw.* State of Phyſ. Jour. des Scav. T. 70. p. 64.

The more efficacious and uſeful *Alterants*, according to the ſame writer, are cordials, ſtomachics, attenuants, mercurius dulcis, vegetable oils, mucilages, certain abſorbents, and ſome preparations of opium.

According to this learned phyſician, all that is commonly alledged concerning the change of the principles, or ferments of diſeaſes, by *alterant* remedies, is merely chimerical and imaginary, that there is no change made to the advantage of the human body, without a ſucceſſive renovation, and diſcharge of what is hurtful, and a ſupply of its place by ſomething innocent. *Woodw.* State of Phyſ. P. 1. Mem. de Trev. 1723. p. 796. Jour. des Scav. T. 69. p. 596.

The primitive or conſtituent elements of bodies never change their figure, magnitude, ſolidity, or gravity, but remain ſtill the ſame as at the creation. Hence ſome infer, 1. The vanity of all pretences to the tranſmutation of metals. And, 2. The folly of pretending to change the maſs of blood, by thoſe remedies called *Alterants*. *Woodw.* Idea of Natur. of Man, p. 8. Mem. de Trev. 1725. p. 986.

The mixtures and combinations of the primitive elements are almoſt infinite, and their alterations as to ſenſe and external appearance is ſo too. It may be added, that among *alterant* medicines, there are ſeveral which change the ſcene of the ſymptoms; others ſuſpend the action of the morbific matter for a time; and others diminiſh the ſenſibility of the organs. But theſe remedies, which hold the morbific principles captive for a time, are only palliatives, and even, on ſome accounts, dangerous, ſince they may as well captivate other principles neceſſary to life. Woodward gives the preference to evacuants, as being the only medicines capable of freeing the machine from what incommodes it. *Woodw.* loc. cit.

Some take a contrary courſe, and aſcribe even the ſalutary effects of evacuants to their alterative nature. This has been alledged of mercury in the venereal diſeaſe; the like is urged concerning minoratives, which ſome maintain do not work a cure by evacuation, ſo much as by alteration. The like is alledged of ipecacuanha in the cure of the dyſenteries, and in divers other emetics, in caſes of apoplexies. In effect, evacuating medicines, as they do not ſeparate the good from the bad, ſeem indifferently diſpoſed, either to do harm or good. *Stahl*, Negot. Otioſ. pr. 3. Jour. des Scav. T. 69. p. 90. ſeq.

Alterants are divided, by ſome, into abſorbents, calmers, incidents or attenuants, emollients, and demulcents [a]. Others divide them into *odorata*, or things which yield a quick ſcent, and *inodorata*, things which have little or no ſcent. The firſt of theſe likewiſe may be further divided into *dulcia*, *acriora*, and *fœtida*, and the latter into *emollientia*, *agglutinantia*, *aſtringentia*, and *abſorbentia* [b]. —[[a] *Hoffm.* Med. Ration. T. 3. ſec. 2. c. 4. Act. Erud. Lipſ. 1728. p. 374. [b] *Quinc.* Prælect. Pharm. 1. p. 2.]

A ſafe and powerful *Alterant* is readily and eaſily prepared in the following manner. Take an ounce of purified nitre, and two ſcruples of cochineal, in fine powder; boil theſe in five or ſix ounces of water; filter the liquor, and afterwards evaporate it to a dryneſs, keeping it continually ſtiring as it thickens, and a fine purple powder will be thus produced, very fit to be given in the form of bolus, pills, powder, &c. *Shaw*'s Lectures, p. 229.

Dr. Shaw on this occaſion obſerves, that if the medicinal virtues of nitre, were to be enumerated, as they ſtand confirmed by ſufficient experience, perhaps they would prove more numerous than thoſe of any one known medicine beſides. It is ſerviceable in the ſtone and ſtoppages of urine, in deliriums, malignant fevers, diarrhæas, the ſmall pox of the confluent kind, &c. ſo as to prove almoſt a general remedy. And all theſe excellent qualities are in this ſalt, joined to that deſirable property of being innocent, or ſcarce any way prejudicial to the body.

Plummer's æthiops is another powerful *Alterant*. See PLUMMER's *Æthiops*.

ALTERATION (*Cycl.*) is uſed in medicine to denote a change in the ſtate and qualities of an animal body, in reſpect of temperature or conſtitution, health or ſickneſs.

In this ſenſe, *Alteration* includes both evacuation and accretion. *Linden*, Sol. Med. Ex. 13. §. 335. ſeq.

ALTERATION is more ſtrictly taken for a change in the quality of the body, contradiſtinguiſhed from evacuation and appoſition.

In which ſenſe, *Alteration* is the effect of medicines called *Alterants*. See the article ALTERANT.

Alteration is one of the two great branches, or operations of phyſic, whereby chiefly the humours, when in a ſtate of diſorder, and threatening danger to the body, are prepared, changed or corrected in various manners, to the end that they may be more commodiouſly and ſafely evacuated afterwards. *Junck*. Conſp. Therap. Tab. 12. p. 348.

Alteration is chiefly applied in reſpect of the fluids, or humours of the body. When applied to the ſolids, it is chiefly in reſpect of the humours, or the motions thereof.

Alteration is ſometimes alſo applied in reſpect of the vital motions of the body.

Thus ſpecifics are applied to alter and rectify convulſive and other diſorderly motions. The *Alteration* of the humours is either extrinſic, or intrinſic.

Extrinſic ALTERATION is a change produced in the ſenſible appearances, as colour, thickneſs, and the like.

Intrinſic ALTERATION is a change in the primitive craſis, or conſtitution of a fluid. *Junck*. loc. cit.

ALTERATION, in a ſenſe ſtill more ſtrict, denotes that converſion which the food undergoes, to render it nouriſhment.

In this ſenſe *Alteration* both includes the digeſtion [a] performed in the ſtomach, and the aſſimilation in the habit of the body [b]. —[a *Gal.* de Sympt. Cauſ. l. 3. c. 2. b Id. de Compoſ. Med. l. 8. c. 6.]

It is diſputed among phyſicians what the *Alteration* is, which the food undergoes.—Some reduce it to a mere comminution or trituration.—Others aſſert a total tranſubſtantiation. Mem. de Trev. 1714. p. 2007. See DIGESTION, *Cycl.* and *Suppl.*

ALTERATION, in alchemy, denotes the converſion of one body into another by ſimilitude. V. *Caſt*. Lex. Med. in voc. *Alteratio*.

Coſmographers ſpeak of *Alterations* on the face of the earth [c], *Alterations* in reſpect of land and water [d], *Alterations* on the face of countries [e]. Aſtronomers [f] mention *Alterations* in the heavens, the ſtars, &c. [g]. Naturaliſts tell us of *Alterations* in the viſcera of the earth. Some have ſuggeſted *Alterations* of the meridian, of the earth's center [h] of gravity, the place of the poles in the heavens, the axis of rotation [i].—[c *Woodw.* Nat. Hiſt. Earth. p. 36, and 248. d *Rowl.* Mon. Ant. p. 5. 8, &c. *Hook*, Poſth. Works, p. 312. e Jour. des Scav. T. 68. p. 488. f *Niewent.* Relig. Philoſ. p. 435. *Keckerm.* Syſt. Mathem. p. 201. g *Kirch.* Mund. Subterr. l. 8. Sec. 1. c. 5. p. 9. *Hook*, loc. cit. p. 346. h *Hook*, loc. cit. p. 345, 540. i Id. ibid. p. 322, 345, 349, 353, 357, 359, 551.]

Concerning the *Alterations* of bodies by chemical Analys. See Mem. Acad. Scienc. An. 1718. p. 262. Hiſt. Ejuſd. An. 1721. p. 428. by mixture, Mem. Ejuſd. An. 1718. p. 262. Of colours of hair, feathers, &c. *Bac.* Nat. Hiſt. Cent. 1. n. 93. Opp. T. 3. p. 24. ſeq. Of the colours of Fluids, Eſſ. Acad. Ciment. p. 138. Obſerv. Halenſ. T. 11. p. 29. Jour. des Scav. T. 76. p. 6. Of Diſeaſes, Medul. Medic. p. 29. 56. ſeq.

ALTERATION *of Quantities*, among algebraiſts, denote what we otherwiſe call variations, or permutations. *Jones*, Synopſ. p. 216.

ALTERATIVE, in medicine, the ſame with *Alterant*. See ALTERANT, *Cycl.* and *Suppl.*

ALTERCUM, in botany, a name by which ſome of the old authors expreſs the *Hyoſcyamus*, or henbane. See HYOSCYAMUS. *Ger.* Emac. Ind. 2.

ALTERITY is uſed by ſome philoſophers for diverſity. *Stanl.* Hiſt. Philoſ. p. 828. See DIVERSITY, *Cycl.*

The word is formed of the Latin *Alter*, another.

Alterity amounts to the ſame with what others call *Aliety*, *Alietas*. *Scherz.* Man. p. 14.

ALTERNATE, or ALTERNATIVE (*Cycl.*)—ALTERNATIVE *Promiſe*, is where two or more are engaged to do a thing under a diſjunction, ſo that both are under obligation, though if either of them diſcharge it, both are acquitted. *Calv.* Lex. Jur. p. 62.

This is otherwiſe called a diſjunctive promiſe.

An *Alternative*, or diſjunctive propoſition is true, if one ſide or part of it be true.

ALTERNATION, (*Cycl.*) in its primary ſenſe, denotes a ſucceſſion by turns. *Feſt.* de Verb. Signif. p. 10.

ALTERNATION is more particularly uſed among civilians for diſjunction, as in ſaying this or that. *Briſſ.* de Verb. Signif. p. 41. *Calv.* lib. cit. p. 62.

ALTERNATIVE. See ALTERNATE.

ALTHÆA, *Marſh-mallow*, in botany. See MARSH-MALLOW.

ALTINCAR, among mineraliſts, a ſpecies of factitious ſalt uſed in the fuſion and purification of metals. *Caſt.* in voc.

The *Altincar* is a ſort of flux powder. Divers ways of preparing it are given by Libavius. *Synt.* Arcan. Chym. l. 8. c. 38.

ALTITH, in botany, a name given by ſome authors to the plant of which the *Aſſafætida* of the ſhops is the gum. *Bont.* p. 41.

ALTITUDE (*Cycl.*)—*Determinative* ALTITUDE, *Altitudo Determinatrix*, is uſed by ſome writers for the height from whence a falling body by its natural acceleration acquired a certain velocity. *Herman*, Phoron. l. 1. p. 92.

Circles of ALTITUDE are uſually known by the name of *Almucantars*. See ALMUCANTAR, *Cycl.*

Some have ſuſpected a variation in the apparent ſolſtitial *Altitudes* of the ſun. Something of this kind was perceived by M. Caſſini in 1655. by means of the great gnomon in the church of St. Petronius at Bologna; which was further confirmed by other obſervations at the royal obſervatory at Paris. The variation obſerved by M. Caſſini during the courſe of twenty two years, only amounted to a few ſeconds. And by comparing the obſervation made by Phytheas at Marſeilles three hundred years before Chriſt, with another made by Caſſini in 1672 at the ſame place, it appears that in two thouſand years time, this difference of *Altitude* has only amounted to a few minutes. V. Mem. Acad. Scienc. 1693. p. 180. ſeq. See ECLIPTIC.

The *Altitude* of the ſun, it is ſaid, may be found to a few ſeconds, with an inſtrument of three foot radius. But this is rarely found in fact [a]. A French engineer, M. Hautefeuille has propoſed a new inſtrument, whereby he pretends to take *Altitudes* even to thirds [b].—[a Jour. des Scav. T. 32. p. 33. ſeq. b Mem de Trev. 1704. p. 440.]

To find the ſun's *Altitude* by the globe. See GLOBE, *Cycl.*

ALTITUDE *of a Star*, or other point, is properly an arch of a vertical circle, intercepted between the aſſigned point and the horizon [a]. Or it is the arch of a circle, perpendicular to the horizon, in whoſe center the ſpectator is, terminated by the horizon and the ſtar [b].—[a *Wolf.* Elem. Aſtron. §. 86. b *Graveſende*, Mathem. Elem. T. 2. n. 1105.] See VERTICAL, *Cycl.*

An irregularity has been obſerved in the apparent *Altitudes* of the ſtars near the Meridian. On ſome occaſions, when they are mounting towards the meridian, they appear to fall, and after paſſing the meridian, to riſe. Hiſt. Acad. Scienc. 1719. p. 75. ſeq. See MERIDIAN, *Cycl.*

Mariners can rarely take *Altitudes* of the ſtars to leſs than five, ſix, or ſeven minutes. And as there is no fixed meridian aboard of a ſhip, as at land, the continual motion of the veſſel, will be perpetually changing the ſtars *Altitude*; beſides, that their inſtruments are commonly coarſely made; an error of ſix minutes, will make an error of a tenth part of a degree, *viz.* two leagues or upwards, in taking a latitude. Hiſt. Acad. Scienc. 1722. p. 145. See LATITUDE, *Cycl.*

The difference of *Altitude* of a ſtar, according as the obſerver is ſuppoſed in the center, or on the ſurface of the earth, makes what we call the parallax of the ſtars. *Graveſend.* lib. cit. n. 1106. See PARALLAX, *Cycl.*

M. Parent has given a new method of taking *Altitudes* at ſea, with a common watch. As the celeſtial tables give us the right aſcenſions, and declinations of all the fixed ſtars, we have only to obſerve the difference of time between the riſing of two ſtars, and in this difference ſeparating that which ariſes from their different poſition from that which ariſes from the obliquity of the ſphere, which laſt will be the *Altitude* of the pole of the place of obſervation.

As we cannot have too many ways of finding the poles *Altitude* at ſea, this method may be ſure, ſince here no other obſervation is required, but that of the riſings of two ſtars, the difference of time between theſe is ſufficiently given by a watch, without being any of the beſt, ſince it can hardly err much in the three or four hours between the riſings of the two ſtars. One difficulty ſeems to occur, viz. that the ſhip is not fixed, but will have changed its place between the two obſervations. To which it is anſwered, that the little way a ſhip has made, either in longitude or latitude, between two obſervations, which will uſually be at no great diſtance from each other, may be ſafely neglected. At the worſt, if the ſhip has made any conſiderable way, it need only be eſtimated in the uſual manner of reckoning. Vid. Hiſt. Acad. Scienc. an. 1703. p. 107. ſeq.

The *Altitude* of the equator above the horizon is ſometimes alſo called its *elevation*. Mem. Acad. Scienc. 1714. p. 87. *Wolf.* Elem. Aſtron. p. 397. ſeq. See ELEVATION, *Cycl.*

ALTITUDE *of the tropics* amounts to the ſame with what is otherwiſe called the *ſolſtitial Altitude* of the ſun. Mem. Acad. Scienc. 1714. p. 89.

ALTITUDE *of the horizon*, or of ſtars ſeen therein, is variable by the refraction, according to the quantity of which the horizon is either elevated or depreſſed more or leſs. Hiſt. Acad. Scienc. 1700. p. 128. It. 1707. p. 111.

ALTITUDE *of the moon's atmoſphere* is thought, by ſome, to be much greater than that of the earth; the former being not leſs than ſixty-four French leagues. But the exiſtence of this atmoſphere is ſtill in diſpute. Hiſt. Acad. Scienc. 1715. p. 68.

M. de la Hire propoſed a method of diſcovering the *Altitude* of the atmoſphere, the hint of which was firſt given by Kepler, viz. by the magnitude of the arch whereby the ſun is ſunk below the horizon, when the crepuſculum begins or ends. V. Hiſt. Acad. Scienc. 1713. p. 8. ſeq.

ALTITUDE *of the Aurora Borealis* in 1719, has been much conteſted, viz. whether it were above the atmoſphere, or within the limits of it: the former opinion being defended by Dr. Halley, the latter by Mr. Whiſton. The name meteor, which is given it, ſeems to favour the latter.—Beſides, it appears not by any obſervation to have been above thirty-eight miles high. V. Phil. Tranſ. N°. 360. Bibl. Angl. T. 6. p. 443. ſeq.

ALTITUDE, in ſpeaking of fluids, is more frequently expreſſed by the term depth.

ALTITUDE *of the ſea's ſurface* is not every where the ſame, as appears from the drift or currents ſetting ſtrong out of one ſea into another. Works of Learn. T. 4. p. 333. See CURRENT, SEA, &c. *Cycl.* and *Suppl.*

ALTITUDE *of the mercury*, in the barometer, is marked by degrees placed on the face of that Inſtrument, the variations of which are the chief object of barometrical obſervations. See BAROMETER, *Cycl.*

The mean *Altitude* of the mercury at London is about 29 inches.—The extreme *Altitudes* are 27 ½ inches and 31 ½ inches. Some ſuggeſtions have been made, as if the *Altitude* of the mercury were regularly greater in the morning than in the evening; at leaſt ſomething of this kind was obſerved to hold for a conſiderable time at Berlin. Hiſt. Crit. Rep. Let. T. 14. p. 239.

ALTITUDE *of the pyramids in Egypt* was meaſured ſo long ago as Thales, by means of their ſhadow, which makes one of the firſt geometrical obſervations we have any exact account of. Plutarch has given an account of the manner of this operation, which, according to this author, was done by erecting a ſtaff perpendicular upon the end of the ſhadow of the pyramid, and by two triangles made by the beams of the ſun, he demonſtrated, that what proportion there was between the ſhadows, the ſame was betwixt the pyramid and the ſtaff. *Stanl.* Hiſt. Philoſ. P. 1. p. 9.

ALTITUDE *of mountains* may be found divers ways, beſide thoſe already mentioned in the *Cyclopædia*, for acceſſible and inacceſſible heights; viz. by the plain table, theodolite, ſemicircle, barometer, &c. Mathematicians have even found out ways for meaſuring the mountains of the moon, as well as thoſe of the earth [a]. Various obſervations have been made of the height of the French and Swiſs mountains above the level of the ſea [b]. The *Altitude* of the higheſt mountain in France riſes only to 1660 toiſes. Mount Olympus, as meaſured by the antients, was found ten ſtadia, or furlongs [c]. But theſe are ſmall *Altitudes*, in compariſon of that of the Cordelleras in Peru.—[[a] Jour. des Scav. T. 70. p. 352. [b] Miſc. Lipſ. T. 8. p. 141. Mem. de Trev. 1713. p. 1258. & 1468. It. 1715. p. 1345. It. 1712. p. 875. Hiſt. Acad. Scienc. 1708. p. 32. It. 1712. p. 67. [c] Works of Learn. T. 7. p. 663.] See MOUNTAIN.

The barometrical method of meaſuring the *Altitude* of mountains is but of late invention. It is found very commodious in practice, being done with a ſmall apparatus, but is liable to great errors and irregularities, for which, however, certain corrections have been contrived. To conceive the principles of this method, it is to be obſerved, that the ordinary or mean *Altitude* of the barometer by the ſea-ſide is ſuppoſed to be 28 Paris inches, which are here equivalent to the weight of the whole incumbent atmoſphere. If the barometer be carried up higher, the mercury falls, as having a leſs depth of air to ſuſtain it. The proportion of this fall is commonly ſuppoſed a line for every 60 feet of air above the level of the ſea. As the barometer varies according to the divers alterations of the air, eſpecially as the weather is found fair, rainy, windy, or calm, it is evident the obſervations which are to determine the quantity, which the mercury falls for a given *Altitude* of place, ought to be made in the ſame weather, that the alterations thereof may have no ſhare in the event of the experiment.

If the *Altitude* of 60 feet always anſwered to a line of mercury, it would be eaſy to meaſure the height of a mountain above the level of the ſea. All here neceſſary would be, to find at what height the mercury ſtands near the ſea-ſide, and how much it falls at the ſame time, or under the ſame diſpoſition of the air, when carried to the top of a mountain.

But as the air is always more rare in proportion as it is further from the ſurface of the earth, that column of air, which, taken from the level of the ſea, will ſuſtain a line of mercury, is denſer, and conſequently ſhorter than a higher column which will ſuſtain another line; and ſo on, according to a certain progreſſion not hitherto well aſcertained.

Meſſieurs Caſſini and Maraldi, in continuing the meridian, made ſeveral experiments and obſervations of the barometer, at different *Altitudes*, which being compared with the geometrical meaſures of the ſame, and with the barometrical obſervations made at the obſervatory at Paris, which is known to be 46 fathom above the ſurface of the ocean, they have hence ventured to fix the progreſſion wherein the ſeveral columns of air anſwering to a line of mercury, grew higher and higher, to be ſuch as that, ſuppoſing the firſt column to be 61 feet high, the ſecond will be 62 feet, the third 63 feet, and ſo on, at leaſt for the height of half a league; for their obſervations had not been made on any mountains at a greater height than this. By ſuppoſing this progreſſion, they always found, by the fall of the mercury on a mountain, the mountain's height to be the ſame as they had found by geometrical menſuration, at leaſt within the difference of a few fathoms.

By ſuppoſing this progreſſion, therefore, it will be eaſy, by carrying a barometer to the top of a mountain, to find how much that mountain is above the ſurface of the ſea, provided it may be known at what height the mercury ſtood at the ſame time near the edge of the ſea, or in a place whoſe height above the ſea is known.

This method will even ſucceed ordinarily, though the mountain be at a very great diſtance from the ſea, unleſs it be apprehended, that at two places very remote the different *Altitudes* of the mercury may ariſe, in ſome meaſure, from the different ſtates of the air, as well as from its different *Altitudes*. Hiſt. Acad. Scienc. 1703. p. 13. ſeq. Mem. ejuſd. p. 274.

Suppoſing the progreſſion above-mentioned to obtain throughout the whole atmoſphere, it would be eaſy to find the *Altitude* of it, ſince the 28 inches of mercury, which are equivalent to the weight of the whole atmoſphere, producing 336 lines, we have hereby an arithmetical progreſſion, conſiſting of 336 terms, the difference whereof is one, and the firſt term 61, which will eaſily give us the ſum of the whole, viz. 6½ leagues for the *Altitude* of the whole atmoſphere. *Fonten.* Hiſt. Acad. Scienc. 1703. p. 16.

The defects of this method are, that we are obliged to ſuppoſe the barometer to vary at the ſame time, and in the ſame manner, in places at a conſiderable diſtance, which will not always hold true, beſides the uncertainty of the ratio of the dilatation of the air at different *Altitudes* of the atmoſphere. Id. ib. 1708.

The firſt experiment of this kind was made in France in 1648, by M. Perier, on the high mountain Puy de Dome in Auvergne. Others were afterwards made in 1666, by Sinclair, in Scotland; others by the undertakers of the great meridian line drawn through France. M. Mariotte, from theſe obſervations, drew rules for the conſtruction of tables, to ſhew the different *Altitudes* of places from the different *Altitudes* of the mercury, and the *Altitude* of air anſwering to each line of mercury in the barometer, from 28 inches, at which the mercury was ſuppoſed, at a medium, to ſtand near the ſea-ſide. Dr. Halley, in 1686, made another calculation, partly from the ſame principles with thoſe of Mariotte, and partly from the proportion of the ſpecific gravities of mercury to air, which he found to be 10800 to one. On which footing, a cylinder of air of 10800 inches will be equal to one inch of mercury. Agreeable to this, the ſame author calculated two tables, one to ſhew the *Altitudes* of air correſponding to the obſerved *Altitudes* of mercury, the other the *Altitudes* of mercury, correſponding to given *Altitudes* of the air. In 1703, M. Caſſini, the younger, comparing ſeveral obſervations which had been made in the ſouthern parts of France, in the proſecution of the new meridian, with Mariotte's rules, found a diſagreement between them; the *Altitudes* of the mountains meaſured generally ſurpaſſing thoſe which were given by the rules. On this he calculated new tables, wherein the reſults were conſiderably greater than according to the rules of Mariotte. In 1709, Dr. Scheuchzer made new experiments on the mountains of the Alps, by which he found 71, or, in other caſes, 69 Paris feet of air equal to one line of mercury. On the whole, according to this author, the tables made by the rules of Mariotte were found preferable, as coming much nearer to the truth than thoſe of Caſſini. Yet father Lavat, by other obſervations made on the mountains of St. Baume in 1708, found Caſſini's tables to hold with great exactneſs, beyond what could have been had from the rules of Mariotte. The brother of Dr. Scheuchzer, however, thought it neceſſary to calculate a new table, from the experiment at Pfeffers, which was made under ſuch circumſtances as ſeemed to render it, in ſome meaſure, a deciſive one. V. Phil. Tranſ. N°. 405. p. 542. ſeq. Mem. Acad. Scienc. 1705. p. 61. Ejuſd. Hiſt. 1708. p. 33. ſeq. See alſo Act. Phyſ. Med. Acad. N. C. T. 2. App. p. 52.

Several authors have written expreſs on the ſubject of *Altitudes*; Bouger [d], on the taking *Altitudes* at ſea; de Louville [e], on the ſolſtitial *Altitude* of the ſun; de la Hire [f], on the *Altitude* of the atmoſphere; Halley [g], Scheuchzer [h], de Lavat [i], and the academiſts of Paris [k], on the method of finding *Altitudes*

tudes by the barometer.—[[d] De la Meth. d'obſerver exactement ſur Mer la Hauteur des Aſtres, Paris 1729. 4to. Jour. des Scav. T. 90. p. 287. [e] Obſerv. des Hauteurs Meridienes du Soleil, au Solſtice d'Eté, 1721. in Mem. Acad. Scienc. 1721. p. 218. ſeq. [f] Sur la Hauteur de l'Atmoſphere, ext. in Mem. Acad. Scienc. 1713. p. 71. ſeq. An extract of it is given by *Fontenelle* in Hiſt. Acad. Scienc. 1713. p. 7. ſeq. [g] A propoſal for meaſuring the Height of Places by help of the barometer, in Phil. Tranſ. N°. 366. p. 116. ſeq. [h] A Method of meaſuring the Height of Mountains, Phil. Tranſ. N°. 405. p. 537. [i] Voyage du Mont-Ventoux pour determiner la Hauteur de cette Montagne, ext. in Mem. de Trev. 1714. p. 895. [k] Obſerv. de la Hauteur de diverſes Montagnes d'Auvergne, &c. in Suite des Mem. de l'Acad. de Scienc. 1718. P. 1. c. 10. p. 135.] See MOUNTAIN and ATMOSPHERE.

ALTITUDE, in aſtrology, denotes the ſecond of the five eſſential dignities, which the planets acquire in virtue of the ſigns they are found in. *Vital.* Lex. Math. p. 29.

In this ſenſe, *Altitude* is otherwiſe called *Exaltation.*

ALTOLIZOIM, among ſome chemiſts, denotes the *lutum Paracelſi*, well beaten, calcined, and boiled to the form of an oil, called alſo *fel terræ*; becauſe it is a bitter ſalt. *Helm.* de Lithias. c. 7. p. 22. *Caſt.* Lex. Med. in voc.

ALTUMAL, a term uſed to denote the mercantile ſtyle, or dialect.

In this ſenſe, we meet with *Altumal cant*, to denote the language of petty traders and tars. Medl. n. 18. p. 186.

ALVAH, the wood wherewith Moſes ſweetened the waters of Marah. Exod. *c.* xv. *v.* 25.

The name of this wood is not found in ſcripture, but the Mahometans give it that of *Alvah*, and pretend to trace its hiſtory from the patriarchs before the flood [a]. Joſephus, on the contrary, ſays, that Moſes uſed the wood, which he found next lying before him [b].—[[a] *Du Herbel.* Bibl. Orient. p. 105. & 1022. [b] *Calm.* Dict. Bibl. in voc.]

ALVARID, among the Spaniſh Moors, denoted a judge. *Du Cange*, Gloſſ. Lat. in voc.

The word is alſo written *Alvarilus*.—In this ſenſe, *Alvaridus* amounts to much the ſame with what is otherwiſe called *Alcaid.* See ALCAID.

ALVARISTS, in church hiſtory, a ſect or branch of modern Thomiſts, denominated from Alvares, whoſe method and principles they follow.

The *Alvariſts* differ from the antient Thomiſts, in that the former are aſſertors of ſufficient grace, the latter of efficacious grace. The former come near to the Jeſuits, the latter to the Janſeniſts. V. Mem. de Trev. 1725. p. 1251.

ALUCO, in zoology, the name by which authors have called the common white owl, or, as we commonly call it, the barn owl, or church owl. *Ray's* Ornithol. p. 67. See OWL.

ALUDEL, in chemiſtry, a name given to a particular kind of furnace, with two, or even four, copels of glaſs, or earthen ware. *Caſtel.* Lex. Med. in voc. See the table of chemical veſſels, &c. N°. 20.

ALVEARIUM (*Cycl.*) properly ſignifies a bee-hive.

The word is Latin, formed of *Alveus*, a channel, or cavity; in alluſion to the *alveoli*, or cells, in bee-hives.

Some of the antients alſo uſe the word *Alvearium* for a bee-houſe, more uſually called among us, *apiary.*

ALVEARIUM is ſometimes alſo uſed figuratively, to denote a collection.

In which ſenſe, *Alvearium* amounts to much the ſame with what we otherwiſe call *theſaurus*, *cornucopia*, or the like.

Vinc. Boreus has publiſhed an *Alvearium* of law. Alvearium Juris Mellifluum, Lugd. 4to. 1650. *Lipen.* Bibl. Jur. p. 16.

ALVEHEZIT, among Arabian writers, denotes what we ornarily call *falling-ſtars*, or *ſtar-ſhot*. *Vital.* Lex. Math. p. 29. See STAR-SHOT.

ALVEOLI, in anatomy, the ſockets wherein the teeth are fixed.

In ſome perſons the teeth are ſo faſt inſerted into the *Alveoli*, by ſeveral roots, that in drawing them, the latter break and are torn away with them. Journ. des Scav. T. 87. p. 378.

Some writers ſpeak of teeth growing without *Alveoli*. Pliny [a] mentions a perſon who had a tooth in his palate. Euſtachius [b] relates, that he ſaw a man who at ſixty had a tooth growing out of the middle of his fauces. Holler gives an inſtance of a perſon, whoſe teeth were of a piece with his jaws, without any inſertion into *Alveoli* [c].—[[a] Hiſt. Nat. l. 2. c. 27. [b] De Dentib. c. 29. [c] *Blaſ.* Comm. ad Veſling, c. 13. p. 203. *Caſt.* Lex. Medic.]

ALVEOLI is more eſpecially uſed, among naturaliſts, for thoſe waxen cells in the combs of bees, wherein their honey is depoſited. See HIVE, HONEY, &c.

The *Alveoli* are all of a hexagonal figure, compoſed of three rhombus's, flanked with ſix ſides. The advantages of which conſtruction are very great. See the article BEE.

Naturaliſts obſerve ſeveral things wonderful in the method of building, or forming the *Alveoli*, which is done with great aſſiduity and artifice, and in the connecting them together into proper ranges, with ſpaces between, to afford paſſage for the bees. What is remarkable is, that in each comb there are three orders of rhombus's, in three different planes, yet ſo uniformly conducted, that many thouſands of rhombus's belonging to the ſame range fall all exactly in the ſame plane. The wonder is, that ſo many thouſand inſects ſhould be employed at the ſame time, in the ſeveral parts of this work, yet all co-operate, by mere natural inſtinct, to finiſh a thing ſo difficult in itſelf, with ſo much nicety and exactneſs. A comb, ſix inches wide and a foot long, contains about four thouſand *Alveoli*, which they will compleat in a day, if things prove favourable. Each baſe conſiſts of three rhombus's, and on each ſide of theſe three, is a plane, which ſerves as a ſide to the oppoſite *Alveolus*, and, at the ſame time, makes a ſupport for the baſe of the oppoſite one. V. Mem. Acad. Scienc. 1712. p. 402—407.

The *Alveoli* ſerve for divers uſes; firſt, as ſtore-houſes, wherein to depoſite the honey for their winter ſupport; ſecondly, as nidus's, or lodges, wherein their little ones are hatched.—It may be added, that the wax prepared for future uſes, is alſo preſerved in the *Alveoli*. V. Hiſt. Acad. Scienc. an. 1712. p. 10.

There are a kind of *Alveoli* perceivable in the gum lacca, which diſcovers it not to be a gum, but a kind of comb, belonging to ſome inſect. The figure and ſtructure of theſe, is deſcribed by M. Geoffroy: they have not near the conveniencies of thoſe of bees. Mem. Acad. Scienc. an. 1714. p. 158. See LACCA.

ALVEOLUS, in natural hiſtory, the name of a marine body, found frequently foſſile, ſometimes lodged in the cavity, at the end of the belemnitæ, and ſometimes looſe; and in this laſt caſe, often ſo large, that we cannot ſuppoſe any belemnita ever to have exiſted ſo large as to have been able to contain it. We do not meet with theſe at this day in their recent ſtate, but what we find of them foſſile, are ever larger at one end, and tapering to a point at the other, and are compoſed of ſeveral hemiſpheric cells, like ſo many bee-hives jointed into one another, and having a ſiphunculus, or pipe of communication, like that in the thick nautilus. Theſe are ſometimes found perfect and whole, but much more frequently truncated, or wanting a part of their ſmaller end. *Klein.* de Tubul. Marin.

ALUESEN, in botany, a name uſed, by ſome, for the *peucedanum*, or hogs-fennel. *Ger.* Emac. Ind. 2.

ALVEUS properly denotes a channel.

Alveus is applied, by ſome anatomiſts, to the tumid lacteal branches ariſing from the *receptaculum chyli* under the diaphragm. *Barthol.* Anat. Libel. 1. c. 3. App. 2. p. 615. *Caſt.* Lex. Med. in voc.

ALVEUS is alſo uſed, in antiquity, to denote a ſmall veſſel, or boat, made out of the trunk of a ſingle tree, by boring or cutting it hollow. *Pitiſc.* Lex. Ant. T. 1. p. 77.

Such was that wherein Romulus and Remus are ſaid to have been expoſed. *Ovid.* Faſt. xi. 407.

ALUM, (*Cycl.*) *Alumen*, in natural hiſtory, is defined to be a ſalt found moſt frequently lodged in extremely ſmall and diſſeminated particles in ſtones and earths, as metals in their ores, but ſometimes alſo pure and unmixed, either in form of an efflorescence, or of a ſhapeleſs ſalt waſhed out of its ore by water, and afterwards deſerted by it.

Alum bears a near affinity to vitriol, in reſpect of the ſaline principle, *i. e.* the acid ſpirit, which is the ſame in both [a]. It differs from vitriol, as this latter is found to have a metalline baſis, *e. gr.* iron or copper, whereas the baſis or matter of *Alum*, wherewith the ſaline part is united, is an alcalious or chalky earth, or ſtone, reſembling lime-ſtone, as appears from the origin and preparation of *Alum*, and from the ſtony ſediment it depoſits by ſolution [b].—[[a] *Hoffm.* Obſerv. Phyſ. Chym. l. 3. Obſ. 8. p. 299. [b] *Burggr.* Lex. Med. T. 1. p. 482.] See VITRIOL.

Alum alſo bears a near conformity with ſulphur, as both are formed from the ſame ſaline ſpirit; which, if it meet with a ſtony ſubſtance, forms *Alum*, with a bituminous one, ſulphur. *Tournef.* Voy. au Levant. Let. 4. p. 60. See SULPHUR.

Alum then is formed of the univerſal acid, or fluid ſalt combining with a chalky earth.—The ſame acid with a mercurial earth forms common ſea ſalt, and with a moiſt rocky, or clay earth, *Sal Gemmæ*. *Stahl*, Phil. Princ. Chem. P. 1. Sec. 1. p. 17. ſeq.

This ſyſtem is confirmed, by what naturaliſts have obſerved concerning the origin of the native *Alum* in the iſle of Chio. That iſland is a hollow ſpungy rock, penetrated on all parts by the ſea-water. M. Tournefort conſiders the whole as a natural laboratory, wherein the ſea-water undergoes much the ſame action in it as in our retorts. By this means, an acid ſpirit is ſeparated from it, which, penetrating the ſubſtance of the rocks, diſſolves and incorporates with them, and forms mines of *Alum*. This ſeems hardly to be doubted, inaſmuch as by pouring ſpirit of ſalt on common ſtones, or chalk, aluminous concretions are readily formed. The ſame ſpirit mixing with a bitumen under-ground, forms ſulphur. V. *Tournef.* Voy. Lett. 4. p. 60. See SULPHUR.

Some attribute the origin of *Alum* chiefly to a ſulphureous principle acting on, corroding of, and coagulating with a mineral ſubſtance, uſually of a terrene and ſtony, rather than

metallic nature, tho' that metal be often contained in the *Alum* ſtone. That the ſulphur is the chief efficient and material cauſe of this production, ſeems to appear hence, that many *Alum* ſtones diſtilled *per deſcenſum*, yield good brimſtone, and all *Alum* ſtones during calcination, emit a ſulphureous ſteam. An inquiſitive naturaliſt gathered from the very ſame rock, and that within a few inches of each other, both vitriol, *Alum*, and ſulphur, all of them excellent in their kind. Indeed thoſe three minerals are ſo nearly allied, that an ingenious chemiſt aſſures us, he can by ſome artifices convert *Alum* into vitriol, or vitriol into *Alum*, the ſame to all intents and purpoſes, with the natural. Phil. Tranſ. N°. 104. p. 71. ſeq.

Alum is ranked by Homberg, and others, as an urinous neutral ſalt, on account of the urinous ſmell it exhales by burning, and its uſe in the volatilization of fixed ſalts. Yet ſome deny *Alum* to belong to the claſs of ſalts, and rank it rather among ſtony ſubſtances; by reaſon that after diſſolving *Alum*, and precipitating the ſolution with oil of tartar *per deliquium*, the coagulation at the bottom, reſembles a ſtony calx, and being expoſed to the fire will neither melt nor ſublime. *Junck.* Chym. Exper. Tit. *Alum.* Week. Mem. Ingen. N°. 15. p. 90.

The ore of *Alum*, if mature, yields its ſalt immediately, and without trouble; but if leſs mature, it requires a previous calcination, as is the caſe in many of our Engliſh *Alum* ſtones; and if very crude or immature, it muſt not only be burnt, but a long time expoſed to the air before it will yield its ſalt. From this it appears, that the *Alum* is not a genuine and native ſalt, but is compoſed by the acid of ſulphur, corroding ſome peculiar earth or ſtone, as vitriol is by its corroding ſome metal; and that, in both theſe operations, this corroding acid can ſometimes perform its buſineſs, while it lies in the bowels of the earth; and ſometimes while it lies in the open air, tho' it failed of it while buried. Philoſ. Tranſ. N°. 104.

Alum diſtilled into an acid ſpirit, with copper, or iron, becomes good vitriol; and vitriol freed from its metallick parts becomes aluminous; and, being diſtilled, yields a ſpirit not to be diſtinguiſhed by the taſte from that of *Alum*, and even ſcarce by the moſt accurate ſcrutiny. Rectified oil of vitriol, or ſpirit of ſulphur, of the ſame degree of ſtrength, will ſometimes concrete into a ſolid and tranſparent ſubſtance, reſembling cryſtallized *Alum*; and this ſubſtance is no way different whether prepared by one or the other of theſe ways, and in both reſembles the pureſt *Alum*, ſo as not to be diſtinguiſhable from it unleſs by taſting it.

Alum Ores generally contain vitriol as well as *Alum*, and are capable of great fermentation, when expoſed to the air, tho' they would never have been ſubject to it while buried in the earth. They will become ſo hot in the heap, that it is ſcarce poſſible to endure the hand upon them; and ſometimes will break out into abſolute flame. The acid and the ſulphur they contain are the occaſion of this; as, according to Sympſon and ſome others, they are of all ſubterranean fermentations and heats; and the whole is not badly explained, by the familiar inſtance of adding water to rectified oil of vitriol. The acid and the ſulphur of that fluid are, as in theſe ores, ſo combined as not to exert their forces naturally againſt one another; but all is quiet as in theſe ſtones while underground, but the water does to the one, what the air does to the other; ſends in a third, which not agreeing with either of the other, diſturbs and ſets their particles in motion, and the veſſel containing the liquid becomes as hot to the touch in the one caſe, as the ſolids themſelves are in the other. *Sympſon*, Zymolog. Chym.

The *Alum* found in ſome parts of the world pure and free from all admixture, might be eaſily miſtaken for a native ſalt; but this has only been waſhed out by water from its ore, and afterwards left, on the evaporation of that water, in a dry form. This, tho' unknown among us, is a very common appearance of this ſalt in many parts of the world.

All the *Alum* we uſe is ſeparated by art from various ſubſtances: in Italy from a ſoft reddiſh ſtone; and about Puteoli, from various earths. In the iſlands of the Archipelago, white earths and ſtones abound with it; and in England, we have it in a bluiſh, or whitiſh ſtone; and in great plenty in the ſubſtance called Iriſh ſlate. *Hill*'s Hiſt. of Foſ. p. 389, to 393.

The ſeveral ores of *Alum* are, all ſubject, at times, to be covered with an efflorescence of the ſalt, in a ſhapeleſs form. But the iſlands of the Archipelago are the places where *Alum* is found in the greateſt purity, and greateſt variety of forms; and are the places whence the antients had, and where we are therefore to expect to find, the ſorts they uſed, and have given us accounts of.

In the iſland of Melo, and ſome other places, there is found a vaſt quantity of that kind they called *Alumen plumoſum*, or feathered *Alum*. This is a finely ſtriated ſalt, and is an efflorescence from the *Alum* rocks in thoſe places. Liquid *Alum* is alſo found in great plenty in the many caverns in thoſe iſlands, and is no other than a ſolution of the *Alumen plumoſum* and other efflorescences of *Alum*, which cruſt over the ſides of thoſe ſubterranean caves, made in the water, with which their roofs and ſides are continually dropping. And theſe waters, collected in the ſmall cavities in the floors of the ſame grottoes, and about their entrances, when evaporated, leave behind the *Alum* which had been diſſolved in them, which is then found in ſmall lumps in theſe little holes, and is what the antients called round *Alum*, and what might eaſily be miſtaken for a native ſalt. The liquid, plumoſe, and round *Alum*, mentioned by the antients, might therefore be had at this time, if we deſired it: but they are not known among us, only that we ſometimes hear of the name of *Alumen plumoſum*. In the German ſhops, in the place of this, however, they keep a ſort of amianthus, which has no one character or property of *Alum*; and it is very happy for the world, that no phyſician there ever thought of preſcribing it, as it might be of very dangerous conſequence, to take that amianthus inwardly.

To diſcover *Alum* among vitriol, or vitriol among *Alum*, Mr. Lemery uſed to mix them with oil of tartar *per deliquium*: this deſtroying the power of the acid, breaks the combination of parts which formed the concrete, and immediately precipitates that ſubſtance, which by mixing with the acid conſtituted that particular body: this in *Alum* is a white earth, and in vitriol is that metal which the vitriol happened to partake of, be that iron, copper, or whatever.

There is indeed a much more expeditious and ready method than this, which is to throw a piece of the matter to be tried upon a burning charcoal, and after the ſwelling and evaporation occaſioned by the heat, there will remain a white ſpot on the coal, which is the white earth of the ſalt, if there were any *Alum* there, and if there were not, this would not happen. Some curious perſons have doubted, whether the white ſalts extracted from vitriol by Mr. Lemery, and by him ſaid to be *Alum*, were really *Alum* or not, ſince they did not give this character on the trial.

Mr. Lemery had four of theſe ſalts, or *Alums*, the one obtained from the *caput mortuum* of ſix pounds of *Alum*, which had been diſtilled; the other three he had prepared from the *Caput mortuum* of Engliſh, of German, and of the native white vitriol. The two firſt of theſe ſhewed no action at all upon the charcoal, but remained wholly unmoved there; the other two ſwelled, and had all the changes that were to be expected. It is plain, from theſe experiments that this teſt by the charcoal is a very uncertain one, ſince it ſometimes fails; and in this particular inſtance it failed, in regard to that ſalt which was inconteſtably *Alum*, while it ſucceeded with other ſalts which did not appear to be ſo evidently ſuch; and the oil of tartar, which acted evidently on all, is therefore to be greatly preferred as a teſt. It is eaſy to conceive, that the ſwelling and bliſtering up of *Alum*, when laid upon a burning charcoal, is owing to a viſcous aqueous humidity in it, and perhaps a ſulphureous one alſo, which when heated and rarified makes theſe efforts to diſengage itſelf from the mineral ſubſtance which it was before united with; and by means of theſe, the acid is by degrees freed from the earthy matter, and evaporates, leaving that only behind, which being a white calcarious earth, makes the white ſpot upon the coal, which is the criterion of this trial. But it is to be obſerved, that this humidity, which cauſes the ſwelling and bubbling of the matter, is not eſſential to *Alum*; it is only its acid and white earth which are ſo; and it is equally certain from experiment, that the degree of the combinations of theſe ſubſtances is by no means fixed, but the proportion of the one to the other is much greater in ſome *Alums* than in others; and ſeveral ſubſtances may be all equally *Alum*, and yet may all contain this foreign matter in different proportions; whether that be owing naturally to their combinations in the bowels of the earth, or be brought on by the different degrees of calcination; nay, the ſame calcination made with the ſame fire, and in the ſame furnace, may according to different accidents, have very different effects on ſeveral parcels of *Alum*. Therefore the trial by charcoal, which does not act upon any of the eſſential parts of *Alum*, muſt be a trial of a very inferior kind to that by oil of tartar, which acts immediately on that which conſtitutes the very eſſence of this ſalt.

The decompoſition of *Alum*, which is made on the charcoal is however very perfect, in compariſon of that made by the ordinary way of cloſe diſtillation in the retort, as well as more eaſy and expeditious: the firſt is the work of a few minutes, whereas in the other, after the phlegm has been driven off by a ſand heat, it requires to be kept in a violent wood fire ſeventy two hours, in order to have it only two thirds decompoſed. The account Mr. Lemery gives of this, is, that the operations differ greatly, in that the firſt is performed in the open air, the latter in cloſe veſſels. When the fire acts upon any body, ſo as to diſlodge from it thoſe particles which are ready for ſeparation, it is neceſſary for the completion of this, that they have ſome whither to go, and a place to receive them, where ſomething elſe will give way to them. In cloſe veſſels, the little air that they contain is by no means diſpoſed to give place to the evaporations of a heated body; and the greateſt effect that can be expected here muſt be either from the veſſels not being firmly enough luted, or from the evaporation of ſome particles, much finer and more ſubtile than the air itſelf, thro' the pores of the glaſs, (if air itſelf can be rendered by heat capable of ſuch a minute diviſion of its particles, and

to eſcape the evaporation from the heated body) which will fill the ſpace left by ſuch particles; and thus the body will by ſlow degrees be in part at leaſt decompoſed, being continually diveſted of ſome of its principles, driven from it by fire. Vid. Mem. Acad. Scienc. Par. 1736.

This ſeems all that can be done in the diſtillation by the retort; and it is eaſy to ſee how ſlow and imperfect this muſt needs be, compared with an evaporation in the open air, where there is ſpace eaſily given to every particle, as it ariſes or iſſues from the *Alum* laid on the coal, and influenced by its heat. This however is not all; for the immediate contact of the coal may eaſily be conceived to be of great ſervice in the proceſs, ſince the coal continually furniſhes a ſupply of ſulphureous or oily matter, which, Mr. Lemery has proved, is ever of great ſervice in the diſengaging and volatilizing of acids.

An accident which was diſcovered ſome time afterwards, in regard to the four *Alums* tried on the burning coal, the two with, and two without effect, which ſerved greatly to confirm this reaſoning in regard to the different effects of fire in the open air, and in cloſe veſſels. It was diſcovered, that the veſſels employed in the diſtillations from thoſe *Alums* had ſucceeded differently in the fire, two of them having remained perfectly whole, and the other two having cracked in ſeveral places. On enquiring to which of theſe the ſeveral *Alums*, which had been the ſubject of the ſucceeding obſervations had belonged, it was found, that the two which anſwered to the experiment had been the reſidue of the diſtillation in the veſſels which remained whole, while the *Alums* taken out of the two cracked retorts, had no change made in them, on the charcoal, but remained wholly unmoved and unaltered on it; theſe having ſuffered their ultimate decompoſure, in regard to theſe proceſſes, before, by means of their having had a communication with the open air, by theſe cracks; while the other *Alums*, which had been urged in whole veſſels, were yet ſubject to all the natural changes from heat and an open air.

Mr. Lemery has proved, that the common natural white vitriol is a mixt body, compounded of green vitriol and *Alum*. It is very certain that we are not able, by any known proceſs, to make white vitriol from theſe ingredients; but it is alſo certain, that tho' theſe two ſalts, being diſſolved in the ſame water, and afterwards cryſtallized in the common method, form their cryſtals quite ſeparate; yet nature does many things, which art in vain attempts to imitate, and may eaſily have effected this mixture in the bowels of the earth, which we in vain attempt by chymical veſſels and by furnaces; ſince all trials prove the certainty of Mr. Lemery's aſſertion, in regard to this body.

The ſeparation of the cryſtals of vitriol and *Alum*, when we make the ſolution of both together, is eaſily accountable for, on this principle, that they do not begin to form themſelves in the fluid at the ſame time; *Alum* being more difficultly ſoluble in water than vitriol, muſt be alſo more ready to form itſelf again into cryſtals, and ſhooting before the vitriol finds occaſion to ſhoot, it cannot but be ſeparated from it, and ſhoot alone. But we find that nature has found a nicer combination of theſe two ſalts than we know how to make; for tho' it is eaſily proved to demonſtration, that white vitriol, as we ſee it, does contain both vitriol and *Alum*; yet they are ſo cloſely combined, that, when the whole is diſſolved, they cryſtallize together, and continue mixed. Mem. Acad. Scienc. Par. 1736.

Mr. Geoffroy has entered more nicely into the origin of this ſalt, than any other author. We know, that beſide the ores which contain together vitriol, ſulphur, and *Alum*, there are ſome peculiar to *Alum* alone; and moſt writers on theſe ſubjects have agreed that the baſis of *Alum* is white unvitrifiable earth, of the nature of chalk, which fixes the common vitriolick acid into the form of this ſalt; and Mr. Geoffroy has proved from experiment, that this earth, which is the baſis of this ſalt, is contained in no ſmall quantities in ſeveral of the common foſſil ſubſtances, as the boles, clays, and the like; and many of theſe, even after burning, have furniſhed this curious enquirer with *Alum*, on the mixing them with oil of vitriol, or of ſulphur. When this is known, it will appear leſs ſtrange, that glaſs ſhould ſometimes afford *Alum*; ſince it may naturally be ſuppoſed often to contain the ſubſtance of this earth, to which there needs only the joining this common acid, to produce the ſalt; and to this was owing the remarkable quality of a certain coarſe glaſs, made ſome years ago in France, the bottles made of which, ſpoiled all the wine that was put into them, and that often in a very little time, by impregnating it with real *Alum*. Mem. Acad. Par. 1728.

The method by which Mr. Geoffroy ſucceeded beſt in making his artificial *Alum*, was this. He took pieces of common earthen veſſels, of the coarſer and more porous kind, and cauſed them to imbibe a large quantity of oil of vitriol, of which they would receive a larger quantity than the ſame earths would when unburned, as their pores were now more open: the acid cauſed ſome efferveſcence with them, and in fine became mucilaginous; and this mucilage, expoſed to the air, afforded cryſtals of pure *Alum*, of a regular figure, and of all the properties of that ſalt. Broken tobacco-pipes, wetted with ſpirit of ſulphur, in the ſame manner afforded cryſtals of *Alum*; and when the pipes had remained dry a conſiderable time, there ſhot out from them a beautiful and regular *Alumen plumoſum*; the ſmall remainder of the acid having had time to work in the pores of the ſubſtance, ſo as to afford this efflorescence.

The *Lapis Calaminaris*, of ſome kinds, alſo contains this white earth, which is the baſis of *Alum*; and the ſame Mr. Geoffroy diſcovered this by accident, when having made a mixture of this ſtone with the vitriolick acid, in hopes of obtaining from it an artificial white vitriol, he procured inſtead of what he hoped for, two different ſalts, a green vitriol, and a pure and perfect *Alum*.

The proceſs of making *Alum* at Whitby in Yorkſhire is thus deſcribed by Mr. Ray, at the end of his collection of Engliſh words not generally uſed, p. 139. They take the mine or ore picked from the deſſe or rock, and laying it in great heaps, burn it with whins or wood, till it be white. When it is ſufficiently burnt, they barrow it into a pit, ten foot long, ſix broad, and ſeven fourths of a yard deep, where it is ſteeped in water the ſpace of eight or ten hours; then they draw out the liquor, which is only a lixivium impregnated with the *Alum* mine, into troughs, by which it is conveyed to the *Alum* houſe, into a deep ciſtern, about twenty yards in circumference, and three yards and an half deep. After this firſt water is drawn off the mine in the pits, they do not preſently caſt away the mine, but pour freſh water on it a ſecond time; and after the ſecond water is drawn off, which is much weaker than the firſt, they caſt out the mine, and put in new, and pour on freſh water as before. Out of the ciſtern they convey the lixivium by troughs into the pans, where it is boiled the ſpace of twenty-four hours ordinarily. Then they take, the liquor out of the pans, and examine it by weight, to know how much lee made of kelp, it will require, which for the moſt part is ſix inches of the pan's depth. This being put in, as ſoon as the liquor boils or flows up, by the putting in of an iron coal-rake, or other iron inſtrument, they draw it off into a ſettler, and let it ſtand about an hour, that the ſulphur and other dregs may ſettle to the bottom; which being done, it is drawn off into coolers, where it continues about four days and nights. The cooler being drawn about half full, they pour into it a quantity of urine, *viz.* about eight gallons into a cooler that contains about two half tuns. Having thus ſtood about four days and nights, it is quite cool, and the *Alum* cryſtalized to the ſides of the cooler. Then they ſcoope out the liquor, which they call the mother, into a ciſtern, and put it into the pans again with new lixivium, to be evaporated by boiling, *&c.* The *Alum* that is ſhotten and cryſtalized on the ſides of the cooler they ſcrape off, and waſh with fair ſpring water, then throw it into a bing, where the water drains from it. Thence it is caſt into a pan, called the roching pan, and there melted; after which it is ſcooped out, and conveyed by troughs into tuns, in which it ſtands about ten days, till it be perfectly cool and condenſed. Then they unhoop and ſtave the tuns, and taking out the *Alum*, chip it and carry it into the ſtore-houſe. The exact proportion of kelp does not appear in this proceſs; for tho' the workmen told Mr. Ray, that the lee was ſix inches of the pans depth, yet they did not tell him how deep the pans were. Phil. Tranſ. N°. 142. p. 1054.

When a work is firſt begun, they take *Alum* of the liquor only that comes from the pits of the mine, without any other ingredients; and ſo might continue, but that it would ſpend ſo much liquor as not to quit coſt.

As to the proceſs of making *Alum* at Civita Vecchia, See Hiſt. Acad. Scienc. 1702. p. 26. See alſo Phil. Tranſ. N°. 265. about the *Alum* at Solfatura.

Alum is alſo prepared about Leipſic from a foſſil earth, impregnated with *aluminous* principles.

This ſome call common *Alum*, *Alumen vulgare*, by way of diſtinction from the Roche *Alum*.

The manner of preparing it is deſcribed at large by Hoffman, Obſerv. Phyſ. Chym. l. 3. Obſ. 8. p. 302. See *Burggr.* Lex. Med. in voc.

Naturaliſts ſpeak of divers kinds of *Alum*, which may be reduced to two, native and artificial.

Native ALUMS are thoſe prepared and perfected under ground, by the ſpontaneous operations of nature, mixing the proper ingredients, water, earth, and ſalt, or ſulphur.

Theſe are either liquid, or ſolid, and concrete.

Liquid ALUM appears to be the primitive kind, as being that out of which the reſt are formed.

Liquid Alum is deſcribed by Pliny, as formed of water exuding out of the earth in winter, and maturated by the ſun's heat in ſummer. *Plin.* Hiſt. Nat. T. 2. l. 35. c. 15. p. 716. See LIQUID *Alum*.

Solid, or *concrete* ALUM is divided into ſciſſile *Alum*, called by the Greeks σχιστὴ, as being ſoft and eaſily ſeparable. This is ſaid to bear a near reſemblance to our plumoſe *Alum*, only differing in this, that the former inſtead of whitiſh, is of a greeniſh hue. Some pretend to have done wonders with it againſt hæmorrhages, looſneſs of the teeth, the itch, pterygium, pernios, *&c.* In ſome of which its aluminous or aſtringent quality ſhould do more harm than good. *Junck.* Conſp. Therap. Tab. 16. p. 453. ſeq.

Round ALUM, *Alumen rotundum*, called alſo στρογγυλη, as being found ordinarily in roundiſh maſſes, though ſometimes angular.

Some diſtinguiſh the *Alumen rotundum* into divers kinds, viz. *Bulloſum*, of a whitiſh colour, without ſand, and very friable; *Pumicoſum*, porous, or full of holes like a ſponge; Αστραγαλωδης, or *talare*, in form of a dye; Πλινθιδης, or *latercularium*, flat, reſembling a trencher; Πλακωδης, or *cruſtarium*, formed of divers cruſts or coats. Vid. *Plin.* Hiſt. Nat. T. 2. l. 35. p. 716. *Gal.* de Comp. Med. ſecund. loc. l. 6. *Dioſcor.* l. 5. c. 82. *Mercat.* Metalloth. Arm. 3. c. 1. p. 53. *Kirch.* Mund. Subterr. l. 6. ſec. 3. c. 1. p. 312.

Sciſſile, or *foſſile* ALUM, is either compoſed of thin flakes, very friable to the fingers, or of ſtriæ, or whitiſh hairs, hence called στυπτηρια, or capillary *Alum*, uſually *plume Alum*.

But it may be obſerved, few, if any, of the antient native *Alums*, are known among the moderns; though ſpecimens of this or that kind are ſhewn in the collections of the curious. *Pomet*, Hiſt. des Drogues, P. 3. l. 2. p. 80.

The modern *Alums* are chiefly artificial, and may be reduced to two kinds; *rock*, or roche, and *common Alum*. The countries wherein they are chiefly produced are England, Italy, ſome parts of Germany, and Flanders.

Roche, or *rock* ALUM, is a whitiſh tranſparent ſalt, of an auſtere aſtringent taſte, rarely found in veins *per ſe*, but extracted by burning and lotion from aluminous ſtones, or by boiling from mineral waters, exhibiting cryſtals, uſually of the figure of octohedrons, or double pyramids, with ſquare baſes, joined together at their baſes. *Verdr.* Phyſ. P. Spec. c. 6. p. 464. *Liſt.* de Therm. *Gulielm.* de Salib. ap. Aſſalt. Not. ad Mercat. lib. cit. c. 2. p. 56.

Rock Alum is ſo called, becauſe prepared of the fragments of certain rocks, or ſtones calcined. *Scalig.* Exerc. ad Card. 104. §. 6.

This is otherwiſe called *Alumen rupeum*, and *Alumen rochæ*, *Alume di rocca*, among us frequently *common Alum*, as being that chiefly now in uſe.

Rock Alum is, by ſome, pretended to be the ſame with the *liquid Alum* of the antients. In proof hereof, Braſavolus alledges, that the *rock Alum* procured in the pope's territories, is originally liquid. But later and better enquirers ſhew this to be wholly a miſtake. *Mercat.* ubi ſupra, c. 2. p. 54. *Kirch.* loc. cit.

Dale, and ſome others, will have *rock Alum*, properly ſo called, confined to the *red Alum*, prepared from a reddiſh ſtone, uſually called *Roman Alum*. But, in the popular uſe, *rock Alum* is extended to all the *Alums* made from ſtones, by way of contradiſtinction from *common Alums*, which are prepared from earths.

Sacharine ALUM. See ALLUM, *Cycl.*

This is alſo called *Alumen Zuccarium*. *Kirch.* Mund. Subter. loc. cit. *Vater*. Phyſ. Exper. ſec. 5. c. 4. p. 417.

Burnt ALUM, *Alumen uſtum*, is prepared by melting the ſalt in a fire-ſhovel, or crucible, and letting it bubble till it comes to a white hard ſubſtance. This is uſed as an eſcharotic; it gently eats proud fleſh, but leaves ſuch a hardneſs on the part, as makes it little eſteemed in that intention.

Many mix a little of it with the ſugar they dulcify their cordial waters with; which fines them down, and throws the milkineſs to the bottom, from which they may be poured by inclination, or rack'd off with a crane. *Quinc.* Diſpenſ. p. 274.

Dioſcorides enumerates abundance of virtues and uſes of the *Alumen uſtum* [a]. Of this is prepared Tenzelius's *aquæ arcanæ contra iſchiam & contra ariduram* [b].—[a *Dioſcor.* l. 5. c. 123. b *Burggr.* Lex. Med. T. 1. p. 490. ſeq. See further concerning the uſe of *burnt Alum*, as a ſeptic, &c. in *Junck.* Conſp. Chirurg. p. 333. Ejuſd. Conſp. Medic. p. 470.]

Plume ALUM, *Alumen plumoſum*, is found chiefly in the iſland of Rhodes and Crete, where there are whole mountains of it.

The *plume Alum* is ſcarce known in theſe countries; what we have under the name in England, &c. being only a coarſe ſort of *amianthus*, from which the true *plume Alum* differs in many reſpects. The latter has a real ſaline aluminous taſte, and, like other ſorts of *Alum*, a ſtrong aſtringent quality; whereas the former does not belong to the claſs of ſalts, but of ſtones, and is neither aſtringent nor ſapid, except that it is a little pungent to the taſte; nor does it diſſolve in water, as the *plume Alum* ought to do: add, that it bears the fire, growing red hot in it, without ſuffering damage, which the *Alum* will not. *Junck.* Conſp. Terap. tab. 16. p. 453. Id. Conſp. Chem. p. 269. ſeq. Hiſt. Acad. Scienc. an. 1706. p. 412. See ASBESTOS.

ALUMEN *plumoſum* is alſo a name given, by ſome chemiſts, to a peculiar kind of ſublimate of mercury, invented by Baſil Valentine, whoſe name it alſo bears.

The preparation of the *Alumen plumoſum Baſilii Valentini* is thus: take of mercury one part, diſſolve it in ſix times the quantity of aqua-fortis, or aqua-regia; concentrate the ſolution, in a retort, to a dryneſs, and while hot, add to it one half, or one part, of rectified oil of vitriol; drive it a new over a gentle fire, till it riſe flaky, and fill the neck of the retort.

This is the *plume Alum*, which may be eaſily converted into *aqua mercurialis*. Vid. *Teichmey.* Inſt. Chem. P. 2. c. 10. p. 147.

ALUMEN *ſcagliolæ*, or *ſcalolæ*, a ſquamoſe or flaky ſtone, the ſame with what is otherwiſe called *lapis ſpecularis*. *Mercat.* ubi ſupra, c. 2. p. 56. See SPECULARIS.

Some take this for the ſame with what the antients called *ſchiſton*. *Kirch.* loc. cit.

ALUMEN *catini*, is a name which ſome have given to the aſhes, or rather ſalt of the herb kali, uſed chiefly in the making of glaſs. *Mercat.* & *Kirch.* ubi ſupra. See KALI.

In this ſenſe, *Alumen catini* amounts to the ſame with what is more frequently called *alkali*. See ALKALI.

ALUMEN *fæcis* is made of the lees of wine, formed into round maſſes, dried by the ſun, and then burnt or torrified ſo long by the fire, as to turn white. Its chief uſe is among the women, to dye their hair of a yellow colour, much affected in Italy. *Mercat.* loc. cit.

Purified ALUM is that prepared by diſſolving it in hot rain water, and evaporating it again, till it ſhoot into cryſtals.

By repeating this operation diverſe times, the fourneſs of the *Alum* is much abated.

Crude ALUM is the ſalt, ſuch as produced at the *Alum*-works, without further preparation. This ſtands contradiſtinguiſhed from prepared *Alum*.

It is, by ſome, uſed as a noſtrum againſt the itch and ſwellings of the feet; but rather palliates than works a thorough cure. *Junck.* Conſp. Therap. tab. 16. p. 453.

Prepared ALUM is of divers kinds.—Under this claſs come purified *Alum*, ſacharine *Alum*, burnt *Alum*, *Alum* magiſteries [a], tinctures of *Alum* [b], water, ſpirit, dulcedo of *Alum* [c].—[a V. *Tenzel.* Exeq. Chem. ap. A. Salam, Opp. p. 665. b *Burggr.* Lex. Med. T. 1. p. 486. ſeq. c *Poter*, Pharmac. l. 2. c. 9.]

Roman ALUM properly denotes a rock *Alum*, of a red colour, prepared in the country near Rome.

In the genuine Roman *Alum*, the red colour is not ſuperficial, but diffuſed through the whole ſubſtance of it; by which it may be diſtinguiſhed from the ſpurious, or counterfeit kind, which is only the common Engliſh *Alum* dyed red. *Pomet*, Hiſt. des Drog. P. 3. l. 2. c. 46. p. 87.

Alum is of uſe in medicine.—Many have been cured of agues with a nutmeg and its weight of *Alum*, powdered, and divided into three doſes, every morning faſting. Quincy has found its chief ſucceſs this way, to have been in ſtrong tough conſtitutions. The rationale of this coincides, in ſome meaſure, with that of the operation of the bark. *Quinc.* Diſp. P. 2. §. 151. p. 98.

And *Alum* poſſet is received into the London Diſpenſatory. The baſis of Helvetius's ſtyptic powder is *Alum*; the propriety of adding the dragon's blood is queſtioned in the narative prefixed to the laſt edition of that Pharmacopœa.

The *Alum* brought from the iſland of Melos was antiently uſed by the women, to prevent conception: to this purpoſe, before copulation, they applied it on the os vulvæ, that by its aſtringent virtue, the mouth of the uterus might be cloſed, ſo as to hinder the ingreſs of the ſemen [a]. *Alum* is alſo ſaid to be a capital ingredient in all thoſe medicaments uſed by women of later times, to conſtringe the pudendum, and make the loſs of virginity leſs perceivable [b]. A late writer pretends, that the German matrons, of beſt character, practice the ſame after child-bearing, to render themſelves more agreeable to their huſbands [c].—[a *Dioſcor.* l. 5. c. 123. b V. *Barthol.* Act. Med. T. 4. obſ. 41. p. 133. c *Burggr.* Lex. Med. T. 1. p. 488.]

Some antients ſpeak of another uſe made of *Alum*, viz. to render wood incombuſtible, by ſmearing it with a ſolution of this ſalt. Archelaus king of Cappadocia is ſaid to have made uſe of this expedient, to render his wooden tower, which defended the Piræus ſecure from fire. What the *Alum* muſt have been, that was endued with ſuch virtue, it is hard to ſay; for 'tis certain ours is not. See *A. Gell.* l. 15. c. 1. *Bayle*, Dict. Crit. T. 1. p. 295. ſeq. in voc. *Archelaus*, Not. (P.) Bibl. Raiſ. T. 5. p. 131. *Evel.* Sylv. c. 31. §. 7. p. 199.

Alum is uſually ſaid to contain but very little or no ſpirit; a pound of it ſcarce affords a few drops [d]. The reaſon is, *Alum* is of a very fixed nature, becauſe its calcarious earth is intimately united with the acid ſalt; and cloggs it in ſo great quantity, that they are hardly ſeparable by the impulſive motion of the fire. A vehement heat, inſtead of making a ſeparation, deſtroys the ſaline part, by evaporating its water; and thus the fine proper earthy part comes to be detained in the groſſer and leſs proper. Hence 'tis in vain to expect a ſpirit from common *Alum*, *i. e.* a ſeparation of its ſaline part, without the aſſiſtance of cryſtallization, by means of the finer waters, or elſe the interpoſition of ſome groſſer terreſtrial body, capable of dividing and diſcontinuing the concrete powerfully [e].—[d *Junck.* ubi ſupra, p. 90. e *Stahl*, lib. cit. p. 87.]

The phlegm of *Alum* remaining after diſtillation is held a good aſtringent, on which account, ſome ſurgeons dip all their dreſſings and bandages in it, or in *Alum*-water, and, after drying, apply them to the parts for ſtopping the hæmorrhages of wounds. *Burggr.* Lex. Med. T. 1. p. 490.

To make *Alum*-water; take *Alum* eight ounces, fair water one quart; boil them till the *Alum* is diſſolved. Or thus; take ſpring or well-water one gallon, roche *Alum* one pound; beat it to powder, and diſſolve it in the water by boiling; filter it through a brown paper, and keep it for uſe. With this water, if you wet your paper before you lay on your colours, it will keep them from ſinking in, and, withal, adds a luſtre and beauty to the colours laid on. But this you muſt note, that if your paper is not good, you muſt work it over four or five times, which may be done with a large pencil bruſh. Moreover, *Alum* generally raiſes ſtaining colours, and preſerves them from fading. *Salmon*, Polygraph. l. 3. c. 19. p. 202.

Heſſius, and an anonymous writer, have publiſhed pieces expreſs on *Alum* [f]. Many particulars relating thereto are alſo given by the writers on minerals, ſalts, &c [g].—[f *Lipen.* Bibl. Med. p. 13. g See particularly concerning the origin and compoſition of *Alum*, Philoſ. Tranſ. N°. 125. p. 615. Mem. Acad. Scienc. 1724. p. 558. Mem. de Trev. 1705. p. 1431. Whether it be a ſalt or ſtone, Jour. des Scav. T. 10. p. 123. Its analyſis, *Stahl*, Phil. Princ. Chem. P. 2. ſec. 1. p. 88. *Mercat.* ubi ſupra, p. 56. not. Containing both acid and alcali, *Mercat.* lib. cit. p. 56. not. Its affinity with ſulphur, Id. ib. p. 80. not. Its volatilization, Mem. Acad. Scienc. 1717. p. 326. Efflorescence, Philoſ. Tranſ. N°. 110. p. 221. The figure of its cryſtals, *Liſt.* de Therm. c. 1. §. 2. p. 2. Philoſ. Tranſ. N°. 173. p. 1075. *Mercat.* ubi ſupra, p. 56. not. It. p. 372. See alſo Tab. of Microſcopial Objects, Claſs 3. Its preparation, *Kirch.* Mund. Subterr. l. 6. ſec. 3. c. 2. p. 313. *Mercat.* ubi ſupra, p. 55. Uſe of urine in it, *Hought.* Coll. N°. 160. T. 1. p. 419. Its medicinal qualities and virtues, *Kirch.* ubi ſupra, c. 3. p. 315. and 324. *Junck.* Conſp. Therap. tab. 16. p. 453. *Witt.* Scarb. Spaw, p. 186. *Zuing.* Comp. Medic. T. 1. p. 339. ſeq. It. p. 576. Nouv. Rep. Lett. T. 16. p. 293. Specific virtue againſt hæmorrhages, Mem. de Trev. an. 1704. p. 562. Its uſe in dying, Act. Erud. Lipſ. 1692. p. 184. An ingredient in phoſphorus, Mem. Acad. Scienc. an. 1714. p. 520. It. 1715. p. 33. Jour. des Scav. T. 59. p. 61. Curious experiments with it, *Kirch.* lib. cit. p. 315.]

ALUM-*works*, places where this ſalt is prepared, and manufactured in quantities for ſale.

M. Colwal [a] has publiſhed an account of the *Alum*-works in in the north of England; M. Ray [b], of thoſe at Whitby; M. Geoffroy [c] and M. Silveſter [d], of thoſe at Solfatara and Civita Vecchia; Mercatus [e] and Kircher [f], may alſo be conſulted; Matthiolus, of thoſe in Germany [g]; Dr. Hoffman [h], of thoſe near Leipſic; Leopold [i], of thoſe in Sweden.—[a Philoſ. Tranſ. N°. 142. p. 1052—1056. b Coll. of Words, p. 139—141. c Hiſt. Acad. Scienc. an. 1702. p. 26. ſeq. d Phil. Tranſ. N°. 265. p. 633. e Metalloth. Arm. 3. c. 2. p. 54. ſeq. f Mund. Subterr. l. 6. ſec. 3. c. 2. p. 313. ſeq. Act. Erudit. Lipſ. 1721. p. 252. g *Matthiol.* Com. in Dioſcor. T. 2. p. 697. h Obſerv. Phyſ. Chym. l. 3. obſ. 8. p. 302. ſeq. *Burggr.* Lex. Med. T. 1. p. 481. ſeq. i *Leopold.* Relat. Hiſt. Suec. p. 12. Act. Erud. Lipſ. 1721. p. 252. Bibl. Angl. T. 7. p. 423. Concerning the redintegration of *Alum*-works, ſee Phil. Tranſ. N°. 219. p. 182.]

Alum-works are different from *Alum*-mines, as in the former an artificial *Alum*, in the latter a native one is produced.

There are ſtill mines of natural *Alum* in the iſland of Chio, though they are ſhut up, and no longer worked as formerly. The poor inhabitants voluntarily relinquiſh the benefit of them, which they cannot have, without paying to their Turkiſh maſters more than it is worth. M. Tournefort made them a viſit. They conſiſt chiefly of vaults and apartments incruſtated almoſt univerſally with *Alum*, which grows over them in flat pieces, or flakes, near an inch thick. As faſt as theſe are torn away, new ones grow in their place. They may be looked upon as exfoliations of the rock, occaſioned by the ſpirit of ſalt penetrating and diſſolving the ſame. *Tournef.* Voyag. du Levant, Let. 4. p. 63. Concerning mines of *Alum* in Egypt, ſee Mem. de Miſſ. T. 2. p. 186.

ALUMINOUS, ſomething partaking of the nature and qualities of *Alum*. See ALUM.

Grew deſcribes ſome extraordinary kinds of *aluminous* earths in the repoſitory of the royal ſociety. *Grew*, Muſ. Reg. Societ. P. 3. c. 1. p. 342.

ALUMINOUS *waters* are thoſe impregnated with the particles of that ſalt.

Aluminous waters make a ſpecies of thoſe called mineral or medicinal waters.

Such is the Spaw at Scarborough obſerved to be by Witty, Simpſon, &c. V. *Witty*, Scarb. Spaw, p. 187. ſeq.

According to the laſt author, that which gives the eſſence to this water is an acid *aluminous* mineral ſalt, preying on, and diſſolving a ſlight mixture of iron [a]. Dr Highmore objects, that ſuppoſing *Alum* the principal ingredient in theſe waters, the properties of *Alum* being to dry, to aſtringe, and to incraſſate, how comes it to paſs that they are pretended to be ſo highly deoppilative, and ſo beneficial to hypochondriac and cachectical perſons, where their aſtringency ſhould rather be noxious [b]? Dr. Witty anſwers, that they do not derive theſe virtues from the alum, but from the other ingredients in them [c].—It is diſputed whether or no the bath at Lucca be *aluminous* [d].—[a Vid. Phil. Tranſ. N°. 42. p. 851. b Phil. Tranſ. N°. 56. p. 1128. c It. N°. 160. p. 154. d Giorn. de Leter. d'Ital. T. 11. p. 186.]

We have alſo factitious waters, under the denomination of *aluminous*; ſuch is that called in the ſhops *aqua aluminoſa magiſterialis*.

Its preparation is thus; take of rock alum, and white ſublimate, ana ʒ ii, boil them in roſe and plantain water, ana ℔ i, till half is conſumed; filter the remainder, and keep it for uſe.

This is preſcribed againſt deformities of the ſkin, and often for the itch; but it is an uncertain remedy, and not to be uſed without caution. *Quinc.* Diſpenſ. P. 2. §. 456. p. 274.

ALUMTA, in botany, a name given, by ſome of the old Latin writers to the plant otherwiſe called *lutum* and *corniola*, and by the Greeks *cymene*. It was the ſame with our *geniſtella tinctoria*, or dyers-weed, and was uſed by the dyers, and by the ladies to tinge their hair yellow, the colour that was eſteemed moſt beautiful in thoſe times.

ALUS, in the materia medica of the antients, a name given to two different plants. Some of the later Roman authors uſe it only as the name of the *ſymphytum petræum*, or rock comfry; but the earlier authors ſometimes make it the name of this plant, and ſometimes of a very different one, a ſpecies of *allium*, or garlic, which grew wild in the fields and hedges. Pliny expreſly mentions both theſe kinds of *Alum*, or *Alus*. Beſide theſe, there is another plant, whoſe name comes very near theſe, that is, the *ala* of the old writers. This is the *helenium* of the antient Greeks, a plant of the verticillate kind, and of an aromatic ſmell, wholly different from the *helenium* of the preſent times, or elecampane. All theſe plants ſeem to have been called *Alum*, and *Ala*, *ab halando*, from their yielding a ſtrong ſmell. *Pliny*, l. 27. c. 7.

ALUSMA *Caramanica*, in botany, a term uſed ſometimes to expreſs a plant growing in Caramania, and ſometimes a preparation of that plant, or pigment made from it. The word frequently occurs in the writings of Aviſenna and Serapion, and is uſually underſtood to mean a particular ſort of indigo; but we have no account of the indigo plant growing in that part of the world, and this author always calls that plant *nil*, not *uſma*. He mentions the leaves of the *glaſtum*, or woad, frequently under the name of *uſma*; and the pigment prepared from them may therefore be very well expreſſed by the name *Aluſma*. The name *Caramanica* expreſſes alſo a country where we are informed, by other authors, that the *glaſtum*, or woad, grows; and there is no doubt, but that the general interpretation of the author is wrong, and that it is a kind of woad, not of indigo, that he means by this name.

ALWAIDII, a ſect of Mahometans, who hold that all great crimes are unpardonable, and the criminals reprobated to eternity.

The *Alwaidii* ſtand in oppoſition to the *Morgii*.—They attribute leſs efficacy to the true belief in the ſalvation of men, than the reſt of the muſſelmen. *Abulpharag*, Hiſt. Dyn. 9. ap. *Leehman.* Obſerv. Budd. Inſt. p. 196.

ALYPIAS, in the materia medica, a ſpecies of turbith, preſcribed, by ſome phyſicians, for the purging of bile. *Fallop.* de Purg. Simpl. c. 25. *Caſt.* Lex, Med. p. 37.

Some write the word *alypon*, and define it by white turbith [a]. Galen uſed *alypum*, ἄλυπον, for a minorative, or medicine that gently purges [b].—[a *Blancard*, Lex. Med. p. 32. b *Fallop.* ubi ſupra, c. 16.]

ALYPUM, in botany, a name given, by ſome authors, to a ſpecies of ſpurge, the *tithymalus amygdaloides anguſtifolius*, or narrow-leaved almond ſpurge of Tournefort. See TITHYMALUS.

ALYPUM is likewiſe a name given, by ſome authors, to a ſpecies of dogs-bane, diſtinguiſhed, by Mr. Tournefort, by the name of *apocynum maritimum venetum, ſalicis folio, flore purpureo*, the purple flowered ſea *apocynum* of Venice, with willow-like leaves. See the article APOCYNUM.

ALYSSOIDES, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of four leaves, and is of the cruciform kind. The piſtil ariſes from the cup, and afterwards becomes a fruit, or ſeed-veſſel, of an elliptic figure, very thick and turgid, and divided by an intermediate membrane, into two cells, which contain an orbicular, flat, and marginated ſeed, in conſiderable quantity. See Tab. 1. of Botany, Claſs 5.

The ſpecies of *Alyſſoides*, enumerated by Mr. Tournefort, are theſe.

1. The ſhrubby *Alyſſoides*, with green leucoium leaves.
2. The hoary *Alyſſoides*, with ſinuated leaves. Theſe plants have been, by many, eſteemed of the leucoium kind, and called by that name. *Tourn.* Inſt. p. 217. See LEUCOIUM.

ALYSSON, *madwort*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of four leaves, and is of the cruciform kind. The piſtil ariſes from the cup, and becomes at length a ſmall fruit, or ſeed-veſſel,

of a humped or protuberant ſhape, divided into two cells by an intermediate membrane, and filled with ſmall ſeeds, of a roundiſh figure.

The ſpecies of *Alyſſon*, enumerated by Mr. Tournefort, are theſe.

1. The hoary, perennial, mountain *Alyſſon*. 2. The larger, yellow flowered, hoary *Alyſſon*, with ſerpyllum leaves. 3. The ſmaller hoary *Alyſſon*, with ſerpyllum leaves. 4. The naked-fruited ſerpyllum-leaved, hoary *Alyſſon*. 5. The ſea *Alyſſon*, commonly called the ſea *thlaſpi*. 6. The ever-green *Alyſſon*, with ſea purſelain leaves. 7. The leſſer *Alyſſon*, with a narrow ſilvery leaf. 8. The leaſt *Alyſſon*. 9. The ſhrubby, prickly *Alyſſon*. 10. The hoary ſhrub *Alyſſon*. 11. The yellow flowered, hairy, alpine *Alyſſon*. 12. The hoary, knot-graſs leaved, alpine *Alyſſon*. 13. The common knot-graſs leaved *Alyſſon*, with naked ſtalks. 14. The ſpeed-well leaved *Alyſſon*. 15. The corn *Alyſſon*, with ſharp pointed and auriculated leaves. 16. The larger fruited, corn *Alyſſon*, with ſharp pointed auriculated leaves. 17. The ſmall perennial Pyrenean *Alyſſon*, with trifid leaves. *Tourn.* Inſt. p. 216.

The *Alyſſon* is a medicinal plant, celebrated among the antients as a preventive of the hydrophobia.

The word is alſo written *Alyſon*.—It is formed of the privative α, and λυσσα, *rabies*, madneſs.

The antient naturaliſts relate of this herb, that being beaten to a pulp, and given among food to dogs, it cures madneſs; and if hung up in a houſe, prevents the effect of all charms, faſcinations, &c [a]. It is added, that being tied to the neck, it preſerves cattle from all diſeaſes, &c. Plutarch [b] repreſents it as a ſpecific againſt the hiccup, which, it is pretended, it cures by the mere touch, or even ſight of it.—[[a] *Dioſcor.* l. 3. c. 97. [b] Sympoſ. 3.]

The *Alyſſon* is uſually ſaid to be one of thoſe plants loſt or unknown to the moderns; yet Langius has diſcovered it in what we call *verbena*, or vervain, ſometimes *periſterion*; and, on account of its uſe in the hardening of iron, *ſideritis*. *Lang.* Epiſt. Med. 2. app. 37. p. 663. ſeq. Id. ib. l. 1. app. 73. p. 403. See alſo *Lemer.* de Drog. p. 32. ſeq.

ALYSSON, in botany, a name given alſo, by ſome authors, to the *myagrum*, or gold of pleaſure. *Tourn.* Inſt. p. 217. See MYAGRUM.

ALYTARCHA, in antiquity, a prieſt of Antioch in Syria, whoſe office was to lead up the *maſtigophori*, or *flagelliphori*, in honour of the gods.

In this ſenſe, the word is alſo written *Alytarcheus*.—The office, or prieſthood itſelf, was alſo hence denominated *Alytarchia*.

The officer who preſided at the Olympic games was alſo ſometimes denominated *Alytarcha*. *Briſſ. Calv.* & *Pitiſc.* in voc.

Some will have the *Alytarcha* to be the ſame with the *hellenodicus*, of which opinion are Faber and Prideaux.

Van Dale ſhews them to be different offices; not but that the *Alytarchi* might ſometimes be ſubſtituted by the hellenodici, to perform ſome parts of their function.

The *Alytarchi* were the directors, or *prefecti* of the *maſtigophori*, or *maſtigonomi*, officers with whips in their hands, who attended at the games or combats of the athletæ, encouraged them to behave ſtoutly, and, on occaſion, ſerved to preſerve good order, and keep off the crowd. *Van Dale*, Diſſert. 7. Act. Erud. Lipſ. 1703. p. 90. ſeq. See alſo *Norris*, Ann. Epoch. Syro. Maced. p. 220.

The *Alytarchi* were the ſame with what were called, in ſome other places, *Alytæ*.

A late writer aſcribes I know not what extraordinary dignity and honours to the *Alytarchi*, whom he repreſents as the chief of all the officers that preſided at games, that they were honoured as Jupiter himſelf, wore crowns ſet with jewels, and ivory ſcepters, and ſandals, &c. *Walk.* of Coins, P. 1. c. 6. p. 91.

ALZACHI, in the materia medica, the name given, by the Arabian phyſicians, to that kind of gourd called in the ſhops the *citrull*, and by the people of ſome parts of Italy, the *anguria*. It is an oblong, and uſually crooked gourd, and contains in its cavity a conſiderable quantity of water, which is drank by people of the places where the plant is common, to quench thirſt. It contains ſeeds of an oblong figure, flatted, and covered with a hard ſkin.

ALZAGIAT, in the materia medica, a name given, by the Arabian writers, to all the vitriolic minerals. It is alſo written *Zogi*, or *Zegi*. See ZEGI.

ALZARAC, in the materia medica of the Arabians, a name given to a kind of camphor, which was coarſe, and of a brown colour. It ſeems to have been the ſame with our rough camphor, as imported from the Indies, before being purified.

ALZIZ, in the materia medica, a name given, by Serapio and Aviſenna, to the roots of the *traſi*. The word *Ziz* is the name of a river in Africa, according to Leo; and the roots probably had this name from their being found in great plenty on the banks of that river, the *traſi* always growing in wet places.

ALZUM, in botany, a name given, by the antients, to the tree which produces the gum *bdellium*. It is alſo written *Alrum* and *Aldum*, which laſt ſeems the proper way. The gum of this tree was called, by the Arabians, *mokel*, and the ſame word *mokel* is uſed as the name of a fruit of a palm-tree. Hence it has been ſuppoſed, by ſome, that the bdellium was the gum of a kind of palm. But this is not at all countenanced by the old writers, who all make the gum *mokel*, and the fruit *mokel*, to be the produce of two abſolutely different trees.

AMA, in eccleſiaſtical writers, denotes a veſſel wherein wine, water, or the like, were held, for the ſervice of the Euchariſt.

In this ſenſe, the word is alſo written *Amula*; ſometimes alſo *Hama*, and *Hamula*. *Margr.* Vocab. Eccleſ. p. 13. *Du Cange*, Gloſſ. Lat. T. 1. p. 158.

AMA is ſometimes alſo uſed for a wine meaſure, as a caſk, pipe, or the like. *Du Cange*, loc. cit.

AMAIN (*Cycl.*)—The word is alſo written *Amayne*.—Waving *Amain*, is to make a ſign to another veſſel, by waving a bright ſword, or other thing, as a demand that they ſtrike their top-ſails.—This they commonly do either in the fore-top, or on the poop. *Manwayr.* Seam. Direct. p. 2.

AMAIN is alſo a term uſed in letting down a thing, by a tackle, into the hold, or elſe where, in the lowering a yard, or the like, to denote, that they are to let go that part of the rope which they held before, and let down the thing eaſily, and by degrees.

AMALGAMATION (*Cycl.*) is defined, by alchemiſts, the calcining of metals by mercury; for though the proceſs be ſomewhat different, and not purſued to the obtaining a direct calx, it being ſufficient for the purpoſe that a ſolution be made, and the metal converted into an amalgama, or paſte, yet is it, in the mean while, reduced into a fine powder, which alchemiſts call *calx*; in which form it is found, upon evaporating the mercury by a gentle fire. *Ruland*, Lex. Alchem. p. 36.

The inventor of this ingenious operation is not known; but it appears to be of great antiquity. Pliny [a] and Vitruvius [b] ſpeak of it, though not under this name. Wedelius [c] even endeavours to prove it to have been known to Hippocrates, by an argument, which, if it be not ſolid, is at leaſt pretty. "Thoſe who work in gold, Hippocrates [d] obſerves, diſſolve "it by a gentle fire, for that a ſtrong one does not fuſe it." What ſhould this gentle fire be, which diſſolves gold ſooner than a ſtrong one? It muſt be mercury, anſwers Wedelius [e]. [[a] *Plin.* Hiſt. Nat. T. 2. l. 33. c. 6. p. 621. ſeq. [b] *Vitruv.* de Archit. l. 7. c. 8. p. 140. ſeq. [c] *Wedel.* Pharm. Acroam. l. 1. ſec. 4. c. 5. [d] *Hippoc.* de Diæt. l. 1. c. 15. [e] *Burggr.* Lex. Med. T. 1. p. 514.]

Some authors divide *Amalgamation* into vulgar and philoſophical.

Vulgar AMALGAMATION is that made with vulgar mercury, or running quickſilver, above explained.

Philoſophical AMALGAMATION is that performed with the mercury of the philoſophers. *Caſt.* Lex. Med. p. 37.

Amalgamation is either done in the dry or humid way.

AMALGAMATION *in the dry way*, *viâ ſiccâ*, is performed in a mortar for the purpoſe, deſcribed by Beecher and others.

AMALGAMATION *in the humid way*, *viâ humidâ*, is when part of the metal is firſt diſſolved in its proper menſtruum, and afterwards precipitated into an amalgama, by the addition of mercury. *Teichmey.* Inſtit. Chem. P. 1. c. 4. §. 33.

The amalgams of gold, ſilver, tin, lead, zink, biſmuth, and copper, with quickſilver, are all white; and when the quantity of metal is large in proportion to that of the mercury, they thicken into a kind of paſte.

The following circumſtances muſt be obſerved for the quick making and good ſucceſs of theſe mixtures.

1. The metal muſt be comminuted; this may be done any way, provided there is no alkali uſed; becauſe this either retards, or totally hinders the operation of the mercury. 2. A mechanical mixture muſt be uſed between the two bodies, by grinding them together in a mortar. 3. As much heat is to be uſed as the mercury will bear, without being diſſipated. 4. The ſurface of the metal muſt be perfectly clean, and, above all things, muſt be free from any ſort of greaſyneſs. According to theſe rules, there will always be an *Amalgamation* made, and a greater or leſſer quantity of the metal will be taken up, according to the ſtrict regard to theſe cautions, and the purity of the mercury.

A part of the diſſolved metal muſt be, however, ſo perfectly attenuated by the mercury, that it may inſinuate through the pores of a filtre, as ſalts diſſolved in water; but it is only a ſmall quantity that can be thus perfectly diſſolved and attenuated; the reſt runs freely, indeed, with the mercury, but if ſtrained through a fine leather, will be left behind, with a portion of the mercury remaining embodied in it. Iron and the regulus of antimony reſiſt *Amalgamation* with mercury, by all the known ways.

AMALGAMATION *of lead* is thus performed. Melt a proper quantity of pure lead in an iron crucible, remove the veſſel from the fire, and when the metal is a little cooled, pour to it an equal weight of clean mercury, which will immediately enter the lead with a hiſſing noiſe. Stir the mixture well together with an iron rod, and when cold, it will appear in

the form of a ſoftiſh brittle maſs, called the *Amalgam* of mercury with lead. *Boerh.* New Meth. Chem. P. 3. p. 296.

This ſhews the general method of *Amalgamizations*.—After the ſame manner the amalgama of tin is made.

AMALGAMATION *of copper*.—The amalgamating mercury with copper is a very difficult proceſs, mercury not mixing well with that metal unleſs when in fuſion, and the heat ſufficient to keep it in that ſtate being great enough to evaporate the mercury. Trituration, however, may be made to ſupply the place of heat, firſt reducing the copper to an exceeding fine powder. This *Amalgama* boiled in river water, and then diſtilled in a retort, and cohobated twice, leaves the copper, in form of a new metal, of the colour of gold, and more ductile than before. *Shaw*'s Lectures, p. 433.

Amalgamations of copper may likewiſe be performed by diſſolving the metal in *Aqua fortis*, diluting the ſolution with twelve times the quantity of pure water, then heating it and putting into it poliſhed plates of iron; by this means the copper will be precipitated to the bottom, and the iron diſſolved. Pour off the liquor and waſh the precipitated powder with hot water, till it become inſipid. The powder being well dried and put in a glaſs mortar, with an equal quantity of hot mercury, an *Amalgama* will be made.

AMALGAMATION *of ſilver* may be effected after the ſame manner, by diſſolving it in *Aqua fortis*, and then precipitating it. V. *Burggr.* Lex. Med. T. 1. p. 516.

The method of extracting ſilver by *Amalgamation* is this: waſh the ores, earths, ſtones, ſands, *&c.* in which ſilver lies hidden in its metalick form, and when well waſhed infuſe them in very ſour vinegar, in a clean wooden, or glaſs veſſel; about one tenth part of alum, muſt alſo be firſt boiled, and diſſolved in this vinegar, let the vinegar entirely cover the ore, and leave it thus for one or two days. Decant off the vinegar, and waſh the macerated powder in pure warm water, till the water becomes quite inſipid, when juſt poured upon it; dry the powder, and put it into an iron mortar, then add mercury four times the quantity of the dried powder, and with a wooden peſtle fitted to the ſize of the mortar with a large round head, beat the whole till every part of the powder is rendered of a blackiſh colour, by the minute globules of mercury mixt with it; at this time pour water on the whole, and continue rubbing it with the peſtle for ſome time; pour out the turbid water, and add freſh till all the looſe powder is waſhed off; then dry the *Amalgama* with a ſponge. *Cramer*'s Art of Aſſaying, p. 232.

To ſeparate the ſilver from this *Amalgama*, ſpread a thin leather over a wide earthen or glaſs veſſel, fold it up in the form of bag, and put the *Amalgama* into it, tie the bag very firmly at the top, and ſqueeze it very hard, and the greateſt part of the mercury will be forced thro' into the veſſel placed underneath; untie the bag, and all the ſilver and gold, if there be any there, will be found remaining in it, with about an equal quantity of the mercury mixed with it. Put this paſte into a glaſs retort, ſet it in a ſand heat, adapt on a receiver with a quantity of water in it, let the noſe of the retort be immerſed in the water, make a fire conſiderably ſtrong, and the mercury will all be driven into the receiver, falling into the water with a hiſſing noiſe. If you hear a crackling in the retort, diminiſh the fire a little; when no more quickſilver can be driven over by a great fire, let the retort grow cool, then take it away and ſplit it by means of a thread dipped in brimſtone tied round the belly of the retort, and then ſet on fire, take out the maſs, and in an open fire run it with the help of borax into a maſs. *Cramer*'s Art of Aſſaying, p. 254.

AMALGAMATION is alſo applied, in a leſs proper ſenſe, to a ſolution of ſulphur with mercury. *Schrod.* l. 1. c. 3.

In this ſenſe *Amalgamation* amounts to the ſame with mollification or ſoftening; in which ſenſe, the word is uſed by ſome antient chemiſts. *Caſt.* Lex. Med. p. 37.

AMALOZQUE, in zoology, a name under which Nieremberg deſcribes a Mexican bird. The neck of this is red, it is of the ſize of the turtle, and lives about the lakes and rivers, but has not webbed feet; the breaſt, belly, and under part of the wings are white; the tail is variegated with black and yellow, and it has two black circles, a finger's ſpace aſunder, round the neck and breaſt. It has a very long and ſlender beak, and feeds on the inſects common in watery places. *Ray*, Ornithol. p. 301.

AMARACUS, among antient naturaliſts.—There has been much confuſion among the antients, about the two words *Amaracus* and *Sampſuchus*, which ſome will have to be the names of the ſame plant, and others of two different ones. The antients have indeed ſaid, that ſome people called the *Amaracus*, *Sampſuchus*. Diocles in Athenæus, and Dioſcorides, both affirm this; but the latter author ſays alſo, that the *Oleum ſampſuchinum*, and *Oleum amaracinum* were two different oils. It follows very certainly from this, that the two plants were different; and tho' ſome people might have called the *Amaracus* by the name *Sampſuchus*, it does not follow, that this word *Sampſuchus*, was not alſo the name of a peculiar plant. People who have been too earneſt in attempting to prove, that they were different plants, have brought in Theophraſtus, as ſaying it; but Theophraſtus no where ſo much as mentions the word *Sampſuchus*. See SAMPSUCHUS.

AMARANTE, an order of knighthood, inſtituted in Sweden by queen Chriſtina, in 1653, at the cloſe of an annual feaſt, celebrated in that country called *Wirtſchaft*.

This feaſt was ſolemnized with entertainments, balls, maſquerades, and the like diverſions, and held from evening till the next morning.—That princeſs, thinking the name too vulgar, changed it into that of the *feaſt of the gods*, in regard each perſon here repreſented ſome deity, according as it fell to his lot. The queen aſſumed the name of *Amarante*, that is, unfaiding, or immortal. The young nobility, dreſſed in the habit of nymphs and ſhepherds, ſerved the gods at the table.—At the end of the feaſt, the queen threw off her habit, which was covered with diamonds, leaving it to be pulled in pieces by the maſques; and, in memory of ſo gallant a feaſt, founded a military order, called, in Swediſh, *Geſcilſchafft*, into which all that had been preſent at the feaſt were admitted, including ſixteen lords, and as many ladies, beſides the queen. Their device was the cypher of *Amarante*, compoſed of two A's, the one erect, the other inverted, and interwoven together; the whole incloſed by a lawrel crown, with this motto, *Dolce nella memoria*. V. *Juſtinian.* Hiſt. Ord. Milit. c. 85. Trev. Dict. Univ. in voc. *Amarante*.

Bulſtrode Whitlock, the Engliſh embaſſador from Cromwell to the court of Sweden, was made a knight of the order of *Amarante*.—On which account it ſeems to be, that we ſometimes find him ſtiled Sir Bulſtrode Whitlock. *Aſhmole*, Inſtit. Ord. Gart. c. 3. p. 123. ſeq. *Wood*, Ath. Oxon. T. 2. p. 546.

AMARANTH, or PRINCE'S-FEATHER, in botany, the name of a genus of plants; the characters of which are theſe. The flower conſiſts of ſeveral petals, diſpoſed in form of a roſe. The piſtil ariſes from the center of the flower, and finally becomes an oval or roundiſh fruit, containing roundiſh ſeeds.

The ſpecies of *Amaranth* enumerated by Mr. Tournefort are theſe.

1. The largeſt *Amaranth*, with duſky coloured flowers and white ſeeds. 2. The narrower leaved lower *Amaranth*, with a paler panicle. 3. The largeſt *Amaranth*, with a long ſparſed panicle. 4. The great *Amaranth*, with red ſeeds. 5. The great early flowering *Amaranth*, with pale ſeeds. 6. The great wild *Amaranth* of New England, which is all over green. 7. The great wild *Amaranth* of New England, with purple ſpikes. 8. The great wild *Amaranth* of New England, with fleſh coloured ſpikes. 9. The great beautiful ſcarlet *Amaranth*. 10. The crooked ſpiked *Amaranth*. 11. The creſted *Amaranth*, with bright red flowers. 12. The ſmall late flowering reticular, horned *Amaranth*. 13. The crimſon *Amaranth*. 14. The *Amaranth*, with yellow crooked panicles. 15. The *Amaranth*, with ſcarlet panicles. 16. The *Amaranth*, with browniſh red panicles. 17. The *Amaranth*, with duſky violet coloured panicles. 18. The ſimple panicled *Amaranth*, and purple flowers. 19. The great *Amaranth*, with upright purple panicles. 20. The great *Amaranth*, with upright green panicles. 21. The great *Amaranth*, with yellow panicles. 22. The ſilky ſpiked *Amaranth*, with yelloviſh green flowers. 23. The *Amaranth*, with ſcarlet ſpikes, variegated with a caſt of yellow. 24. The *Amaranth*, with ſpikes of yellow and fleſh-colour. 25. The *Amaranth*, with ſingle panicles of a ſhining flame-colour. 26. The *Amaranth*, with a gold yellow ſpike, variegated with red. 27. The perennial ſpiked Sicilian *Amaranth*. 28. The talleſt, long-leaved American *Amaranth*, with whitiſh green ſpikes. 29. The *Amaranth*, with conglomerated panicles. 30. The *Amaranth*, with large conglomerated panicles, and deep purple flowers. 31. The female, or bright coloured variegated leaved *Amaranth*. 32. The male variegated leaved *Amaranth*, with duſkier coloured leaves. 33. The prickly *Amaranth*, with ſlender panicles. 34. The Indian thorny *Amaranth*, with green ſpikes. 35. The Indian ſpiked, prickly *Amaranth*, with purple flowers. 36. The ſmall procumbent, purſelained-leaved Eaſt-Indian *Amaranth*, with headed flowers. *Tournef.* Inſt. p. 234, 235.

The culture and propagation of this beautful plant is this. It is to be ſowed on a good hot-bed in February, or in the beginning of March, and in about a fortnight's time the plants will riſe. Another hot-bed muſt then be prepared, covered with fine mould to about four inches deep, and the young plants muſt be carefully raiſed, and removed from the other, and planted at about four inches diſtance every way, and gently watered to ſettle the earth to their roots. In the heat of the day they muſt be ſcreened with mats from the heat of the ſun, and they muſt have air given them, by raiſing the glaſs that covers the bed; and the glaſſes muſt be either turned, or wiped from their moiſture, as often as they appear wet. In about three weeks or a month's time, theſe plants will have grown ſo large as to require another hot-bed; this muſt be of a moderate temper, and covered ſix inches deep with fine earth, then take them carefully up, and preſerve as much of the earth about their roots as may be, and plant them in this bed at eight inches diſtance, then let them be watered frequently a little at a time, and ſhaded with mats in the heat of the day. In the begining of May another hot-bed muſt prepared, with a deep frame, that the plants have room to grow;

grow; in this ſet as many pots as it will conveniently hold, let theſe be filled with freſh earth, and the intermediate ſpaces every way be filled alſo with earth. The plants are now to be raiſed with as much earth about their roots as may be, and planted in theſe pots. In about three weeks more, theſe plants will be grown to a large ſize, and muſt have air given them more and more every day in good weather. And in July they are to be ſet out in their places, often watering them. *Miller*'s Gardners Dict.

All the ſpecies of this plant are drying and aſtringent, but heat not in a violent degree. Schroder recommends the flowers of the common large garden kind dried and powdered, as good in diarrhæas, dyſenteries, hæmorrhages of all kinds, and incontinency of urine; but they are very little uſed in the preſent practice.

AMARANTHOIDES, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the floſculous kind, and collected into a ſquammoſe head; two imbricated little leaves grow together to the axis, and reſemble, in ſome degree, the claws of a crab; theſe embrace and incloſe a floſcule, which is jagged at the edge, and incloſed in its peculiar cup. From this cup ariſes the piſtil, which is fixed in the manner of a nail to the hinder part of the flower, and covered with a calyptra; this finally becomes a roundiſh and ſomewhat crooked ſeed.

The ſpecies of *Amaranthoides*, enumerated by Mr. Tournefort, are theſe.

1. The lychnis leaved *Amaranthoides*, with large ſilvery heads. 2. The lychnis leaved *Amaranthoides*, with ſmaller ſilvery heads. 3. The creeping ſea *Amaranthoides*, with knot-graſs leaves and ſilvery heads. And, 4. The purple headed, lychnis leaved *Amaranthoides*. *Tourn.* Inſt. p. 654.

The culture and propagation of theſe plants is, in all reſpects, the ſame with that of the amaranth; only that they muſt have a greater ſhare of heat, and muſt be forwarded more in the ſpring. See AMARANTH.

The flowers of this plant are commonly known by the name of *everlaſting flowers*, and, if kept in a dry place, after having been gathered in their full perfection, and before they begin to decay on the plant, they will retain their full beauty many years. *Miller*'s Gardn. Dict.

AMATIDES, in natural hiſtory, a name given, by Bartholomæus Anglus, and other writers of his time, to a ſtone, of which they recorded a wonderful virtue in reſiſting the fire; they ſaid, if a cloath was only rubbed over with it, it would not take fire, but on being thrown among burning coals, would only become the brighter and more beautiful. The whole ſeems a very groſs error, the word being probably no other than a corruption of *Amianthus*, and the properties of that ſtone, which are, that if it be divided into threads, and theſe woven into cloth, that cloth will bear burning in the fire, and may be cleaned by that means, inſtead of waſhing. The careleſs writers of thoſe times ſeem only to have miſtaken this account, and miſrepreſented it, in this ſtrange manner, in their works; and the more ſo, as the ſtone is ſaid by them to repreſent plumoſe alum, which is the character of the amianthus.

AMAUROSIS (*Cycl.*)—This diſtemper is ſometimes denonominated *ſuffuſio nigri*, the black cataract.

The *Amauroſis* differs from the *amblyopia*, this being in an inferior degree. *Gorr.* Med. Defin. in voc. See AMBLYOPY, *Cycl.*

The *Amauroſis* is either tranſient or permanent.

Tranſient AMAUROSIS is that found in apoplexies and lipothymias, from immoderate bleeding, and the like, which vaniſhes as the fit or paroxyſm goes off.—To this kind alſo belong thoſe ſometimes produced by the ſuppreſſion of the hæmorrhoids, menſes, or other habitual evacuations, the healing up of iſſues, or the like.

Permanent AMAUROSIS, that whoſe cauſe is fixed in the retina, or in the optic nerves; chiefly in the want of the clear intercourſe and influx between the brain and thoſe parts.—To this kind alſo belong thoſe occaſioned by hydrocephali, by ſtones found near the root of the optic nerves, or by ſteatoma's compreſſing thoſe nerves, or by debilities and extenuations, by contortions, or compreſſions of the ſame, at their iſſue out of the cranium. *Burggrave*, Lex. Med. in voc.

AMAUSA, a name by which the chemiſts have called the paſtes made of lead and cryſtal with various admixtures, for imitating gems.. *Merret*'s Notes on Neri, p. 322. See the article PASTE.

AMAZON (*Cycl.*)—We read of Scythian *Amazons* in Herodotus; of Lybian *Amazons* in Diodorus Siculus; and of German *Amazons* in Lucius Florus. Later geographers and travellers alſo ſpeak of Mingrelian and Georgian *Amazons*; *Amazons* in America, in Monomotopa, in the Philippine iſlands, in Denmark, &c.

The *Amazons* of South-America, living on the banks of the great river which bears their name, make the greateſt figure in modern ſtory. They are repreſented as governed and led to war only by their queen. No men are ſuffered to live among them; though thoſe of ſome neighbouring nations are ſuffered to viſit them, at a certain ſeaſon, for the ſake of procreation. The females iſſuing from this commerce are bred up with care, and inſtructed in what relates to war and government; for the males, they are ſent away into the country of their fathers. V. *Rogers*, Voyag. T. 1. p. 100. *Martin*, Dict. Geogr. T. 1. p. 300.

The Jeſuit miſſionaries ſpeak of a like republic of *Amazons*, in one of the new Philippine iſlands. They have their huſbands, who viſit them at a certain ſeaſon of the year, and after a few days commerce together, retire into their own iſland, carrying with them the male infants produced by the former interview, and leaving the females to the mothers care. Lett. Edif. T. 6. in Pref. Mem. de Trev. 1706. p. 462. ſeq.

The beſt troops in the emperor of Monomotopas armies are ſaid to be women, who inhabit in the neighbourhood of the Nile; they converſe at certain periods with men, and diſpoſe of their children after the ſame manner as the reſt. Recueil de Voyag. de la Compag. des Ind. Orient. T. 3.

Thevenot and others relate, that in Mingrelia there is a people inhabiting mount Caucaſus abounding in martial women, who make frequent incurſions into Muſcovy, and oft engage with the Calmuc Tartars. Vid. *Chardin*, Voyages, T. 2. p. 124. Nouv. Rep. Lett. T. 4. p. 835.

Adam Bremenſis, an eccleſiaſtic about the year 1070, ſpeaks of an *Amazon* nation on the Baltic coaſt, of which he relates much the ſame that has been ſaid concerning other *Amazons*, only with the addition of new wonders; for he ſays, that, according to ſome, they become with child by ſwallowing a few drops of a certain water; according to others, that they had converſation with merchants, who traded thither, or with the priſoners they made in war, or with monſters, which were frequent among them; which laſt opinion ſeems to Adam the moſt probable. De Situ Daniæ, c. 28. *Martin.* Dict. Geogr. T. 1. p. 305.

The *Amazons* are alſo called, by Plato, *Sauromatides*. Herodotus mentions, that, in the Scythian language, their denomination was *Aeorpata*, *q. d. viricida*, man-killer; formed apparently from the Celtic, *aeor*, man, and *pata*, to kill. V. Miſc. Berol. T. 1. p. 5.

The chief grounds on which the exiſtence of the *Amazons* was called in queſtion by Strabo, is the difficulty of conceiving a community of women without men to ſubſiſt any long time, make war with ſucceſs on the neighbouring nations, and even undertake long military expeditions. Palephatus's diſbelief of the *Amazons* is founded on a conſideration of leſs weight. His argument is, that no ſuch republic ever exiſted, becauſe there was nothing like it found in his time; it being a principle with him, that whatever had been in former times, was ſtill, and would be for the future. The ſame author ſtarts another objection, not much more cogent, viz. that the *Amazons* were only men dreſſed in women's cloaths. Nouv. Rep. Lett. T. 4. p. 833.

In defence of the ſtory of the *Amazons*, Petit argues, that the diverſity of climates produces a great diverſity of humours and inclinations, and that the country of the *Amazons* had its particular diſpoſitions, which gave even its female natives a robuſt temperament and ferocity. To this may be added, the force of education.

In reality, the manner of breeding up women among us ſeems to be the chief obſtacle to their becoming *Amazons*: were they inured, from their infancy, to laborious exerciſes, to handle the ſword and piſtol, and fight like men, no doubt they would make gallant ſoldiers.

In effect, Plato enjoins the youth of both ſexes, in his commonwealth, to be trained up to the ſame exerciſes. Nouv. Rep. Lett. T. 4. p. 836. ſeq.

Some endeavour to reconcile the two opinions, by holding a republic of mere *Amazons* a chimera, and aſſerting, that the republic we are ſpeaking of was compoſed, like all others, both of men and women; only that the females had the upper hand, and made the chief figure in war. This ſeems warranted by Pliny and Pomponius Mela, who make mention of a Scythian people, wherein the women had the ſupreme command, and call this the kingdom of the *Amazons*. Bibl. Univ. T. 4. p. 833.

Some think this too much, and ſuppoſe, that the whole might have been founded in an antient practice in divers nations, of wives going to war with their huſbands. The caſe of the antient Cimbri was no leſs remarkable. Vid. *Tacit.* de Morib. Germ. c. 8. *Dithm.* Comm. ad Lov. Bibl. Germ. T. 15. p. 120. *Pompon. Mela*, l. 3. c. 4. Bibl. Univ. T. 1. p. 273. *Steph. Cleric.* Diſſ. Philoſ. 2. Bibl. Univ. T. 4. p. 437. Mem. Acad. Inſcript. T. 8. p. 149.

The *Amazons* of Lybia were a commonwealth of women inhabiting the banks of the Lacus Tritonides, famous for their ſtruggles and competition with the Gorgons, and other nations of the ſame ſex. See GORGONS.

In this ſenſe, the Gorgons are contradiſtinguiſhed from the *Amazons*, and the great rivals of them, they being properly two different nations of female warriours in Lybia, both inhabiting near the Lacus Tritonides, and famous for their diſputes and wars together [a]. Diodorus Siculus ſpeaks of the tombs of the *Amazons*, ſome ruins whereof were ſtill in being in his time. Theſe tombs were three monuments erected by

an antient queen of the country, wherein were buried a great number of their martial women, who had been killed by the Gorgons [b].—[a] *Maſſieu*, Diſſ. ſur les Gorgon. in Mem. Acad. Inſcript. T. 4. p. 72. [b] *Maſſieu*, loc. cit.]

Beſides M. Petit's works on the *Amazons* [c], M. Moreau de Mautour has publiſhed a plan of a new hiſtory of the *Amazons* [d]; but we do not find that the promiſed hiſtory itſelf has appeared.—[c *Pet. Petiti* de Amazonibus Diſſertatio: qua an vere extiterent necne variis ultrocitroque Conjecturis & Argumentis diſputatur; multa etiam ad eam Gentem pertinentia ex Antiquis Monumentis eruuntur, atque illuſtrantur, Pariſ. 1685. 12mo. Act. Erud. Lipſ. 1685. p. 390. Nouv. Rep. Let. T. 4. p. 831. Jour. Liter. T. 10. p. 105. Trait. Hiſtor. ſur les Amazones, ou l'on trouve tout ce que les Auteurs tant Anciens que Moderns ont eſcrit pour ou contre ces Heroines, &c. Leid. 1718. 2 Tom. 8vo. [d] Diſc. Prelim. ſur la Diſſert. Hiſtor. des Amazones. Ap. Mem. de Trev. 1703. p. 157.]

AMAZON is alſo applied, in a figurative ſenſe, to bees, by reaſon among theſe inſects the females alone bear ſway. Vid. *Butler*, Hiſt. of Bees, in Pref.

Mr. Warder has publiſhed a work under the title of the true *Amazons*, or, the Commonwealth of Bees. See BEE.

AMAZONIAN, ſomething relating to, or reſembling Amazons. See AMAZON.

AMAZONIAN *kingdom* is particularly uſed for a feminine one, or that wherein the females alone bear ſway.

Ariſtotle, treating of the breeding of bees, profeſſes himſelf ignorant of their ſex, and therefore, willing to keep up the prerogative of the males, calls their governor Βασιλευς, *Rex*, in which he has been followed by the generality of others. An ingenious writer, of our own country, takes the liberty to ſtrain the ordinary ſignification of the word *rex*, and in ſuch places tranſlates it queen, this being an *Amazonian*, or female kingdom. Vid. *Butler* on bees, c. 4.

AMAZONIAN *habit*, in antiquity, denotes a dreſs formed in imitation of the Amazons.

Martia, the famous concubine of the emperor Commodus, had the appellation *Amazonian*, by reaſon it was in a habit of this kind that ſhe chiefly charmed him.—Hence alſo that prince himſelf engaged in combat, in the amphitheatre, in an *Amazonian* habit; and of all titles, the *Amazonius* was one of thoſe he moſt delighted in.—In honour either of the gallant, or his miſtreſs, the month December was alſo denominated *Amazonius*.

Some alſo apply *Amazonian* habit to the hunting dreſs worn by many ladies among us.

AMAZONIUS is an appellation given to a kind of paſtil, or troche, antiently uſed againſt riſings of the ſtomach, and vomitings.—The ingredients of which it is compoſed, are ſmallage, aniſeſeed, wormwood, myrrh, pepper, caſtoreum, opium, and cinnamon. *Gal.* de Compoſ. Medic. l. 8. c. 3. *Gorr.* Med. Def. p. 26.

AMBA, in botany, a name by which ſome authors have called the *manga Indica*, or mango tree. *J. Bauhin*, Vol. 1. p. 173.

AMBACHT, in topography, denotes a kind of juriſdiction, or territory, the poſſeſſor whereof has the adminiſtration of juſtice, both in *alto* and *baſſo*. *Aubert*, ap. Richel. Dict. T. 1 p. 74.

In this ſenſe, the term is uſed in ſome parts of Germany and Flanders, where cities and corporations, who elect chiefs, or ſuperiors, to whom they pay obedience, are called *Ambachten*, and thoſe ſuperiors *Ambachten Herren*, or *Heeren*. Countries were alſo divided into *Ambachties*. Hence, inſtead of the country of Engelbert, we meet, in antient charters, with the *Engelbrechtes*, and *Ambachte*, or *Ambechte*. *Du Cange*, Gloſſ. Lat. T. 1. p. 160.

Hence alſo we meet with *officina*, or *officium Ambachti*, or *Ambaht*.

In ſome antient writers *Ambacht* is particularly uſed for the juriſdiction, government, or chief magiſtracy of a city.

The word is very antient, though uſed originally in a ſenſe ſomewhat differet. Ennius calls a mercenary, or ſlave hired for money, *Ambactus*; and Cæſar gives the ſame appellation to a kind of dependents among the Gauls, who, without being ſlaves, were attached to the ſervice of great lords.

AMBAR-*ſeed*, in the materia medica, a name by which ſome have called muſk-ſeed. See the article MUSK-*ſeed*.

AMBARVALIA (*Cycl.*)—This feaſt was alſo called *Luſtratio Agrorum*.

Roſinus ranks it among the number of thoſe which were not fixed to any certain day; but were, nevertheleſs, to be conſtantly performed every year. The title of a chapter in Cato, on the contrary, ſeems to import, as if people were at their choice as to the ſolemnizing of this ceremony. *Cato*, de Re Ruſt. c. 141.

Some will have the *Ambarvalia* to have been held twice a year; the firſt time towards the end of January, or, as others think, in April; and the ſecond time in July, or, as Roſinus imagines, in Auguſt, at the time when the harveſt was ripe, *maturis frugibus*. Which opinion is the more probable, in that Ovid, who, in his *Faſti*, deſcribes the feaſts in the firſt ſix months of the year, from January to June incluſive, ſays nothing of the *Ambarvalia*.

The ſacrifice offered on this occaſion was hence called *Ambarvale ſacrum*, and *hoſtia Ambarvalis*.

The *Ambarvalia* were of two kinds, public and private.

The private were thoſe ſolemnized by the maſters of families, accompanied with their children and ſervants, in the villages and farms out of Rome.—They walked three times round the grounds, every one being crowned with leaves of oak, and ſinging hymns in honour of Ceres. After the proceſſion, they went to ſacrifice.

There were certain formulæ of words preſcribed on this occaſion. Vid. *Cato*, de Re Ruſt. ap. *Danet*, Dict. Ant. in voc.

The public *Ambarvalia* were thoſe celebrated in the boundaries of the city, and in which the twelve *fratres arvales* officiated pontifically, walking at the head of a proceſſion of the citizens, who had lands and vineyards in Rome.

The prayer, or formula here uſed, was *Avertas morbum, mortem, tabem, nebulam, impetiginem, peſeſtatem. Feſt.* de Verb. ſignif. in voc. *Peſeſtas*.

Some make a quinquennial as well as an annual *Ambarvalia*, the one performed once every *luſtrum*, the other once a year.

The former one was alſo called the greater *Ambarvalia*, as being performed according to a ſettled rite.—It is to theſe the denomination *Suovetaurilia*, ſeems alone to belong. *Baxt.* Gloſſ. See SUOVETAURILIA, *Cycl.*

AMBARVALIS *flos*, in botany, a name given, by ſome authors, to the *polygala*, or milkwort. *Ger.* Emac. Ind. 2.

AMBE (*Cycl.*)—The reduction of luxations of the arm with the ſhoulder is one of thoſe chirurgical operations which has many times puzzled the moſt ſkilful ſurgeons. Among the machines invented for this purpoſe, the *Ambe* of Hippocrates is one of the moſt antient, and moſt famous.

It conſiſts of an horizontal leaver, and a fixed point made of a piece of wood ſtanding vertically, to the extremity of which the leaver is joined by a hinge. The patient ſitting, and his arm that is hurt being raiſed, the machine is puſhed forward under the arm-pit, as far as can be, *curandum*, ſays Hippocrates, *ut quam penitiſſimè alam ſubeat*. The arm is tied to this horizontal piece, and then an aſſiſtant bears upon the ſcapula and the clavicula, whilſt another preſſes down the leaver, and thus makes the bone come into its place again.

The capital defect of the *Ambe* is, that it puſhes the head of the bone into its cavity, before the extenſion and counter-extenſion are made; the dangerous conſequences of which are, firſt, That the reduction is very difficult, becauſe the bone is not conducted by the ſame way it took in luxating itſelf, and that one meets with obſtacles from the parts that ſurround it, even the ſcapula itſelf, on which it articulates. Secondly, In making efforts for ſurmounting thoſe obſtacles, one runs the riſque of turning inwards the cartilaginous edge of the cavity of the ſcapula, or the *capſula ligamentoſa*. The third defect of the *Ambe* of Hippocrates is, that it cannot move the luxated bone, but from below upwards; conſequently, the machine is only proper in luxations directly downwards; and yet it is certain, that the arm luxates itſelf both outwards and inwards, and luxations forward are very frequent. In thoſe caſes, the *Ambe* is uſeleſs, and being dangerous in luxations downwards, it follows, that this machine labours under very great defects.

Mr. le Cat, in the Phil. Tranſ. N°. 469, has endeavoured to remedy theſe defects, by giving the deſcription and uſe of a new *Ambe*, not ſubject to the inconveniencies of the old one. But as the detail of this machine would exceed the bounds of our deſign, we muſt refer the curious to the tranſaction itſelf. See LUXATION, *Cycl.*

AMBER, (*Cycl.*) in natural hiſtory. See SUCCINUM.

AMBER *with inſects in it*. See INSECTS.

AMBERGREASE, *Ambra*, (*Cycl.*) in natural hiſtory, the name of a ſolid, dry, opake, inflamable foſſil, very light, of an agreeable ſmell, and melting into a fluid maſs in a very gentle fire.

The word is alſo written *Ambergreſs*, *Ambergreece*, and *Ambergris*. It is compounded of the barbarous Latin, *Amber*, and *gris*, grey.

Ambergreaſe is alſo known by the names *Ambarum*, *Ambra*, *Ambra griſea*, &c.

The author of a letter to Mr. Plukenet falſly affirms, that *Ambergreaſe* is an animal ſubſtance, produced from a ſort of inſect, as honey or ſilk are; and that in many parts of a large piece of *Ambergreaſe* found on the Jamaica coaſt, the beaks, wings, and part of the bodies of birds, were viſible. He adds, that he believes they ſwarm as bees on the ſea-ſhore, or even in the ſea. Phil. Tranſ. N°. 232. p. 712.

It is the opinion of ſome, that *Ambergreaſe* is really bred in the body of the *ſperma-ceti* whale, much after the ſame manner as muſk, civit, and ſome other ſubſtances, in their reſpective animals.—The diſcovery was firſt publiſhed by the honourable Paul Dudley, Eſq; as he received it from Mr. Atkins, a perſon of underſtanding and veracity, at Boſton, who had uſed the whale-fiſhery ten or twelve years; being one of the firſt of thoſe who undertook to fiſh

for the *Sperma-ceti* whale in 1720. His account is as follows.

Ambergreaſe is found only in the *Sperma-ceti* whales, and conſiſts of balls or globular bodies of various ſizes, from about three to twelve inches diameter, and weighing from a pound and a half to twenty two pounds, lying looſe in a large oval bag or bladder, three or four foot long, and two or three foot deep and wide, almoſt in the form of an ox's bladder, only the ends are drawn more acute, reſembling a black-ſmith's long bellows, with a ſpout running tapering into, and through the length of the *Penis*, and a duct or canal opening into the other end of the bag, and coming toward the kidneys. This bag lies juſt over the teſticles, which are above a foot long, and is placed length wiſe at the root of the *Penis*, about four or five foot below the navel, and three or four above the anus. This bag or bladder is almoſt full of a deep orange coloured liquor not quite ſo thick as oil, and ſmelling as ſtrong, or rather ſtronger of the ſame ſcent with the balls of *Ambergreaſe*, which float and ſwim looſe in it. The inſide of the bag is very deeply tinged with the ſame colour as the liquor, which alſo may be found in the canal of the *Penis*. The balls ſeem to be pretty hard, while the whale is alive, in as much, as there are many times found upon opening of the bag, large concave ſhelves of the ſame ſubſtance and conſiſtence, that have ſcaled off from them, and the balls themſelves ſeem to be compoſed of ſeveral diſtinct coats, incloſing one another, ſomething like the coats of an onion. As to the number of balls, Mr. Atkins never above four in a bag; where he once found one that weighed twenty-one pounds, which was the largeſt he ever ſaw, but there was only that one in the bag.

To one *Sperma-ceti* whale that has any of theſe balls, there are two that have nothing, but a deep orange coloured liquor in their bags; which confirms what another whale-man aſſured, that the *Ambergreaſe* was found only in ſuch *Sperma-ceti* whales, as are old and well grown. It is the general opinion of the whale-men, that the *Ambergreaſe* is produced only by the male, or the bull *Sperma-ceti* whale. The reaſon may be, that the cows are hardly ever taken, as being much more timorous than the males, and almoſt impoſſible to be come at, unleſs when found aſleep on the water, or detained by their calves, Mr. Atkins's method of getting the *Ambergreaſe* out of the whale was thus; after the fiſh is killed, he turns the belly upwards, fixes a tackle to the *penis*, cuts through the rim of the belly till he comes at the entrails, and then ſearching for the duct, or canal at the further end of the bag, he ties it pretty near to the bag, and cuts the duct off beyond it, upon which he draws forth the *Penis* by the tail, and the *Ambergreaſe* bag entirely follows it, and comes clean and whole out of the belly. The bag, an ingenious perſon conjectures to be the urinary bladder, and the *Ambegreaſe* ball to be a kind of concretion, formed out of the greaſy odoriferous ſubſtance of the liquor aforeſaid contained within it. Phil. Tranſ. N°. 387. p. 266. ſeq.

To this account it is objected, that the *Sperma-ceti* whales are found in the northern ſea, where no *Ambergreaſe* is to be met with.—Another objection is, that thoſe huge pieces of *Ambergreaſe*, mentioned by Garcias ab Horto, and other writers, are hardly reconcileable to this ſyſtem. *Garc. ab Hort.* Hiſt. Arom. l. 1. c. 1. *Verdr.* Phyſ. p. 2. c. 6. §. 6. *Ambergreaſe* plainly appears to be no animal ſubſtance, from the chemical principles obtained from it; for it affords no urinous volatile ſpirit, or ſalt; but, on the contrary, a ſmall quantity of an acid ſalt, exactly like that of amber.

In ſhort, the various erroneous conjectures, about the nature and origin of this ſubſtance, have been almoſt innumerable; but it is aſſuredly of mineral origin, and is no other than a light and frothy bitumen, exſudating out of the earth in a fluid form, and afterwards hardening into the conſiſtence in which we ſee it. Its having been once fluid is evinced by the ſame proof with that of amber, which is, that it frequently contains extraneous ſubſtances immerſed into its moſt ſolid maſſes, which could never have been admitted there, but when it was in a ſoft and fluid ſtate. Small ſhells, little pebbles, and grains of ſand, are not unfrequently found in it; and ſometimes the heads, and beak mouths of the calamary, and other fiſh of that kind: theſe have been miſtaken from their figure, for the beaks of parroquets and other birds, by thoſe who were ignorant of the nature of the fiſh they belonged to: and hence many extravagant conjectures have ariſen as to the origin of the body itſelf. *Hill*'s Hiſt. of Foſ. p. 112.

Authors have talked of two kinds of *Ambergreaſe*, a black and a grey, of which they acknowledged the grey the better; but the truth is, that theſe are only two appearances of the ſame ſubſtance. All *Ambergreaſe* is naturally compoſed of whitiſh and blackiſh particles, the whitiſh ones are the fineſt perfume, and when they are in greateſt abundance, the whole is the ſweeteſt and moſt valuable; but theſe whitiſh particles being crumbly and eaſily deſtroyed, are ſometimes in a great meaſure waſhed off, and the others left almoſt alone; the maſſes in this ſtate muſt be greatly inferior to the others in ſmell, and in value, and of a dark colour, and theſe are what are called black *Ambergreaſe*. *Hill*'s Hiſt. of Foſ. p. 412.

Ambergreaſe is found in more or leſs abundance, in moſt parts of the Eaſt-Indies. Japan furniſhes a large quantity; and the eaſtern parts of Java, and the Maldive iſlands have enriched many who knew how to ſearch after this commodity. It is in theſe places generally found faſtened to the roots of trees, that grow on the ſhore ſtooping into the ſea: while it is under water it is ſoft and pliable like wax, and ſometimes little harder than a jelly; but as ſoon as taken up, it begins to grow rigid, and ſoon becomes abſolutely ſo.

We are told of much larger pieces of *Ambergreaſe*, than that mentioned in the Cyclopædia, of two foot diameter. One was taken up near the Cape of good Hope, which weighed three hundred pound; and another, if we may credit the relation, fifteen thouſand pound. Phil. Tranſ. N°. 263. p. 573. See alſo N°. 232. p. 712.

In Jamaica, there is not unfrequently found a large quantity of this valuable commodity. We have, in the philoſophical tranſactions, an account of a perſon, who, in two voyages, picked up a hundred and fifty pounds weight of it: it is principally thrown on ſhore, on a part of the iſland, called from thence *Ambergreaſe* Point. There is an opinion there, of its being produced by a bird, they ſometimes finding the beak, feathers, *&c.* in it; and the rude voyager, who collected it, affirming, that he had ſeen the birds, and that they ſwarm like bees, and live about the rocks; but all this is erroneous. The beaks which are found in *Ambergreaſe* are not the beaks of birds, tho' very like them, but are the mouths of the calamary, a ſea-fiſh, which are often found picked up by it; and whatever other matters are at times found lodged among it, are in the ſame manner taken up by it, while yet moiſt and ſoft, and toſſed about by the waves.

The Weſtern coaſt of Ireland is often found to yield very large pieces of this precious drug. The coaſts of the counties of Sligo, Mayo, Kerry, and the iſles of Arran, are the principal places where it has been found; and we have, in the philoſophical tranſactions, an account of a lump found on the coaſt of the firſt mentioned county, in the year 1691, which weighed fifty two ounces, and was bought upon the ſpot for twenty pound, and ſold in London for more than a hundred pound. This was blackiſh and gloſſy like pitch on the outſide, but when cut it was of a yellowiſh colour and more ſpungy, ſpeckled with whitiſh grains, and of a very fine ſmell but not ſo compact nor of ſo grey a colour as the common kind; other pieces have been found on the ſame coaſts as black as pitch throughout, and ſome almoſt entirely white, reſembling what Wormius calls in his Muſæum unripe or imperfect *Ambergreaſe*: yet all theſe have a fine ſmell, though the black has the leaſt of it. Philoſ. Tranſ. N°. 227. p. 509.

Ambergreaſe may be known to be genuine by its fragrant ſcent, when a hot needle or pin is thruſt into it, and its melting like fat, of an uniform conſiſtence. Whereas the counterfeit will not yield ſuch a ſmell, nor prove of ſuch a fat texture. *Alleyn*, New Diſpenſ. p. 145.

One thing however is very remarkable, that this drug, which is the moſt ſweet of all the perfumes, ſhould be capable of being reſembled in ſmell, by a preparation of one of the moſt odious of all ſtinks. Mr. Homberg found, that a veſſel in which he had made a long digeſtion of the human fæces, acquired a very ſtrong and perfect ſmell of *Ambergreaſe*, inſomuch that any one would have thought a great quantity of eſſence of *Ambergreaſe* had been made in it. The perfume was ſo ſtrong and offenſive, that the veſſel was forced to be removed out of the elaboratory. Mem. Acad. Par. 1711.

Ambergreaſe is of much the ſame medicinal virtues with muſk; it is to be uſed for the ſame intentions, and generally to enter into the ſame compoſitions, only it is of ſomewhat a weaker ſcent. *Quinc.* Diſpenſ. P. 2. p. 86. See MUSK.

Hoffman ſays, that this drug is the beſt of antepileptics. Oper. Tom. 3. Sect. 1. c. 1. §. 4.

Eſſence or tincture of *Ambergreaſe*, is a cordial perfume prepared of *Ambergreaſe*, muſk, civet, and ſugar-candy, by digeſting them with tartarized ſpirit of wine.

Quincy affirms this to be the beſt of all medical perfumes, and fitteſt for perſpiration. *Quinc.* lib. cit. p. 294.

Dr. Newman of Berlin has given us a diſſertation on *Ambergreaſe*, in the Phil. Tranſ. N°. 435. Where alſo he mentions a very ſimple proceſs for making the ſolution of *Ambergreaſe* in ſpirit of wine; it is only to put a twelfth part of *Ambergreaſe* broke into ſmall pieces, into highly rectified tartarized ſpirit of wine, or even ſimple rectified ſpirit, without tartar, in a glaſs; and then to expoſe them to ſuch a heat, as will make the ſpirit begin to boil.

Several authors have treated expreſsly on the ſubject of *Ambergreaſe*, as Klobius[a], Clodius a Puteo[b], Camelli[c], and ſome anonymous writers[d]. Chevalier has publiſhed a deſcription of the large piece of *Ambergreaſe* at Amſterdam[e]. —

[[a] Hiſtoria Ambræ Wittel. 1666. 4°. Phil. Tranſ. N°. 28. p. 538. Jour. des Scav. T. 5. p. 147. [b] *Lipen.* Bibl. Med. p. 13. Ejuſd. Bibl. Phil. p. 34. [c] Tractatus de Ambaro. a G.S. Camello, Phil Tranſ. N°. 290. p. 1591. [d] A Letter of Robert Boyle, Septr. 13. 1673, to the publiſher concerning *Ambergreaſe*, and its being a vegetable production. Phil. Tranſ. N°. 97. p. 6113. [e] Deſcription de la Piece d'Ambergris,

que

que la Chambre d'Amſterdam à receu des Indes Orientales peſant 182 Livres; avec un petit Traité de ſon Origine & de ſa Vertu, Amſter. 1700. 4to. Philoſ. Tranſ. N°. 263. p. 573.]

AMBERING is uſed, by ſome writers, to denote the giving a ſcent or perfume of *amber* to any thing.

This is otherwiſe called *enambering*. V. *Hook*, Phil. Collect. N°. 4. p. 105.

Dr. Hook mentions an extraordinary method of *ambering in infinitum*, *i. e.* with a ſmall quantity of *amber*, and other requiſites, *enambering* an hundred, or a thouſand pounds of ſugar, or the like, ſo as the firſt matter ſtill remains undecayed, to be uſed again. *Hook*, loc. cit.

AMBETTUWAY, in botany, a name given, by the natives of Guinea, to a kind of tree, whoſe leaves they uſe in medicine, giving them boiled in wine, to create an appetite. The leaves are rough, and reſemble, both in ſhape and ſize, thoſe of our common elm. Phil. Tranſ. N°. 232.

AMBIDEXTER (*Cycl.*)—For the natural cauſe of this faculty, ſome, as Hœfer [a], attribute it to an extraordinary ſupply of blood and ſpirits from the heart and brain, which furniſh both hands with the neceſſary ſtrength and agility: others, as Nic. Maſſa, to the erect ſituation of the heart, which inclines neither to the right-hand nor left; and others [b] to the right and left ſubclavian arteries being of the ſame height, and the ſame diſtance from the heart, by which the blood is propelled with equal force to both hands.—But theſe are only conjectures, or rather chimera's. The true cauſe being doubtleſs to be referred to education and habit, or rather to nature itſelf, which, if let alone, men as well as brutes would more than probably be all *Ambidexters*, there being no difference of right and left in the nature of things. The nurſes and good women are even forced to be at ſome pains to enure the infants under their care to forgo the uſe of their left-hand [c]. How far it may be our advantage to be deprived of half our natural dexterity, may be doubted. 'Tis certain, there are infinite occaſions in life, when it would be better to have the equal uſe of both hands. Surgeons and oculiſts are of neceſſity obliged to be *Ambidexters*; bleeding, &c. in the left-arm, or left-ankle [d], and operations on the left-eyes [e], cannot be well performed but with the left-hand. Divers inſtances occur in hiſtory, where the left-hand has been cultivated preferably to the right. But by the laws of the antient Scythians, people were enjoined to exerciſe both hands alike, without partiality either for the right or left; and Plato [f] enjoins *Ambidexterity* to be obſerved and encouraged in his republic.—[a Hercul. Med. l. 7. c. 6. b *Burggr.* Lex. Med. T. 1. in voc. c V. *Ferrar.* de Infant. Cura, P. 1. Aph. 45. d *Horn.* Microtec. ſec. 2. p. 151. e Mem. de Trev. an. 1706. p. 326. f De Legib. l. 3.]

In the Grecian armies, their more diſtinguiſhed ſoldiers, their pikemen and halbardeers, as thoſe who formed the firſt line of their battalions, were to be able to fight indifferently with left-hand or right. We find it mentioned in ſcripture [g], that, on an extraordinary occaſion, the ſingle tribe of Gad produced 700 brave men, who fought with the left-hand as well as the right. And the Roman hiſtorians aſſure us, that they had gladiators who were trained up to the ſame exerciſe. An ingenious French writer [h] is ſurprized, that among all the modern refinements in the art of war, none have thought of reſtoring the antient practice of forming *Ambidexters*, which it is certain might be of conſiderable ſervice in the way of ſtratagem.—[g Judg. *c.* xx. *v.* 16. h *Morin*, ap Hiſt. Acad. Inſcr. T. 2. p. 98.

AMBIEGNA, in antiquity, an appellation given to a victim, which was ſurrounded, or attended at the time of offering it, with other leſſer ones.

In this ſenſe, the word is alſo written *Ambegui*. We read of *Ambiegnæ oves* uſed in ſacrificing to Juno, which were ſheep, having brought forth twins, and offered up with their two lambs faſtened on either ſide. *Varro*, de Ling. Lat. l. 6. c. 3. *Pitiſc.* Lex. Ant. T. 1. p. 79. See alſo *Struv.* Antiq. Rom. c. 10.

AMBIGU denotes a kind of mixed entertainment, wherein both fleſh and fruit are ſerved together; ſo that it ſeems doubtful whether to denominate it a mere collation, or a meal. Trev. Dict. Univ. T. 1. p. 323.

AMBIGUOUS (*Cycl.*)—An anonymous writer has publiſhed a dictionary of *ambiguous* words. *Lexicon Philoſophicum de Ambiguitate Vocabulorum*, Francof. 1597. 4to.

AMBIT (*Cycl.*)—Iſaac Voſſius has a particular inquiry concerning the *Ambit*, or circumference of antient Rome. That of the city he makes to be 60¾ miles, or *mille paſſus*, and that of the city and ſuburbs together 72 miles; exceeding antient Babylon, whoſe *Ambit* was only 60 miles. *Voſſ.* de Antiq. Urbis Romæ Magnit. c. 5. ap. Var. Obſerv. p. 22.

AMBIT, *Ambitus*, was particularly uſed, in antiquity, to denote a ſpace of ground to be left vacant betwixt one building and another. By the laws of the twelve tables, houſes were not to be built contiguous, but an *Ambit*, or ſpace of 2½ feet, was to be left about each, for fear of fire. V. *Feſt.* de Verb. Signif. p. 11. *Danet.* Dict. Ant. in voc.

The *Ambitus* of a tomb or monument, denoted a certain number of feet, in length and breadth, around the ſame, within which the ſanctity aſſigned to it was limited. The whole ground wherein a tomb was erected, was not to be ſecreted from the common uſes; for this reaſon, it was frequent to inſcribe the *Ambit* on it, that it might be known how far its ſanctity extended: thus, *in fronte pedes tot*, *in agrum pedes tot*. *Kirch.* Man. de Funer. l. 3. c. 20.

AMBITUS, (*Cycl.*) among the Romans, differed from *Ambition*, as the former lies in the act, the latter in the mind.

Ambitus was of two kinds, one lawful, and even laudable, the other infamous.

The firſt, called alſo *Ambitus popularis*, was when a perſon offered his ſervice to the republic frankly, leaving it to every body to judge of his pretenſions as they found reaſonable.

This kind was not prohibited by any law, but always approved and practiſed by the beſt and greateſt men.

The means and inſtruments here made uſe of were various, 1. *Amici*, or friends, under divers relations, including *cognati*, *affines*, *neceſſarii*, *familiares*, *vicini*, *tribules*, *clientes*, *municipes*, *ſodales*, *collegæ*. 2. *Nomenclatura*, or the calling and ſaluting every perſon by his name; to which purpoſe, the candidates were attended with an officer, under the denomination of *interpres*, or *nomenclator*. 3. *Blanditia*, or obliging perſons by ſerving them, or their friends, patrons, or the like, with their vote and intereſt on other occaſions. 4. *Prenſatio*, the ſhaking every perſon by the hand, offering him his ſervice, friendſhip, &c. 5. *Aſſiduitas*. 6. The *toga candida*, worn looſe. 7. *Benignitas*, the diſtributing largeſſes, *congiaria*, &c.

The ſecond kind was that wherein force, cajoling, money, or other extraordinary influence, was made uſe of.—This was held infamous, and ſeverely puniſhed, as a ſource of corruption, and other miſchiefs.

Several laws were made againſt it, as the *Lex Acilia*, *Calpurnia*, *Aufidia*, *Bœbia*, *Æmilia*, *Cornelia*, *Fulvia*, *Fabia*, *Julia Auguſti*, *Julia Cæſaris*, *Licinia*, *Maria*, *Pœtelia*, *Pompeia*, *Tullia Vetus*. *Pitiſc.* Lex. Ant. T. 1. p. 80.

In the year of Rome 321, the uſe of the *toga candida* was prohibited. In the year 398, the candidates were forbid to go to the markets and meetings in the neighbouring towns. In 571, ſevere penalties were laid on the givers of largeſſes. In 594, this was made puniſhable by baniſhment. In 697, heavy fines were impoſed. *Baxt.* Gloſſ. p. 89. ſeq.

By the *Lex Tullia*, made in the conſulſhip of Cicero, the candidates were forbidden to beſtow any combats of gladiators on the people, to make any public feaſts, or to cauſe themſelves to be followed by a crowd of clients, for two years before they put in for any place.

A ſenator, who was guilty of a breach of this law, was puniſhed with ten years baniſhment; others were fined and rendered incapable of any dignity for ever. *Danet*, Dict. Ant. in voc.

Ambitus was not only practiſed at Rome and in the forum, but in the meetings and aſſemblies of other towns in Italy, where numbers of citizens were uſually found, on account of trade and buſineſs.

The practice ceaſed in the city from the time of the emperors, by reaſon poſts were not then to be had by courting the people, but by favour from the prince.

Perſons who had cauſes depending practiſed the ſame, going about among the judges to implore their favour and mercy. *Voſſ.* Etym. p. 22.

They who practiſed this were called *Ambitioſi*. Hence we alſo meet with *Ambitioſa decreta*, and *Ambitioſa juſſa*, uſed for ſuch ſentences and decrees as were thus procured from the judges, contrary to reaſon and equity, either gratuitouſly, or for money. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 79. in voc. *Ambire*.

AMBIX, in antient writers, denotes a veſſel of glaſs, or ſhell. *Du Cange*, Gloſſ. Lat. in voc.

Hence the origin of the word *alembic*, which we ſometimes alſo find denoted by the word *Ambix*.

AMBLE (*Cycl.*)—This word is formed of *ambulare*, uſed in writers of the middle age, in the ſame ſenſe.

Ambling is alſo called, in thoſe writers, *ambulatura*, and *ambula*; by the Italians *ambiadura*. Vid. *Aquin.* Lex. Milit. in voc. *Ambulare*.

AMBO (*Cycl.*)—The *Ambo* is alſo called, by Sozomen, Βημα γνωστων, the readers *bema*, or deſk; by Cyprian, *pulpitum*, and *tribunal eccleſiæ*; by St. Auguſtin, *exedra*, and *apſis*. Card. Bona will alſo have the *Ambo* to have been called *ara*, altar; but Bingham overthrows this notion. V. *Bing.* Orig. Eccleſ. T. 1. l. 8. c. 5. §. 4. p. 294.

The modern reading deſks and pulpits have been generally ſubſtituted to the antient *Ambos*, though, in ſome churches, remains of the *Ambos* are ſtill ſeen. In that of St. John de Lateran at Rome, there are two moveable *Ambos*. M. Thiers inveighs againſt the diſuſe of the antient *Ambo*.—Thoſe by whom this innovation has been effected, he calls, by a new word, *Ambonoclaſtes*. *Richel.* Dict. T. 1. p. 75.

It was in the *Ambo* that publication was made of feaſts, faſts, proceſſions, &c. Here were read the acts of the martyrs, the the *ſancta ſanctis*, the diptychs, or commemoration of the dead; the letters of peace and communion, which one church ſent to another. Here new converts made their public profeſſion

feſſion of faith, and biſhops their defence againſt accuſations brought againſt them. Here treaties of peace were ſometimes alſo concluded, and coronations of kings and emperors performed, &c.

Divers antiquaries hold, that the *Ambo* was antiently the place from whence the biſhops and preſbyters made their ſermons; pulpits for that purpoſe having only been introduced by the mendicants, at the beginning of the thirteenth century. Jour. des Scav. T. 16. p. 126. *Bona*, Rer. Liturg. l. 2. c. 6. n. 3.

A late writer combats this opinion, and ſhews, that the uſual place from whence the antients preached was the ſteps of the altar; not but St. Chryſoſtom and St. Auguſtin both appear to have preached from the *Ambo*; but this was looked on as a thing ſomewhat extraordinary. *Bingh.* ubi ſupra. See alſo *Suic.* Theſ. Eccleſ. T. 1. p. 217. ſeq.

There is ſome diſpute concerning the part of the church, which is ſaid to be behind the *Ambo*, ὄπισθαμβωνος.—Properly ſpeaking, the *Ambo* was immediately behind the ſolea, or door of the bema. Hence that part next behind the *Ambo*, was, in reſpect of the *bema*, called ὄπισθαμβωνον, which was that wherein the catechumens and penitents were placed before the *miſſa catechumenorum*, after which they left it, and repaired into the *narthex*, or πρόναον. *Du Cange*, Gloſſ. Græc. T. 1. p. 58. ſeq.

M. de Thiers has a learned diſſertation on the uſe of *Ambos*; Sur les Jubez des Egliſes, ext. ap. ejuſd. Diſſert. Eccleſiaſt. 1688. Par. 12mo. V. Jour. des Scav. T. 16. p. 125. ſeq.

AMBONOCLASTES, a name given, by a late writer, to the demoliſhers of the *ambos* uſed in the primitive church. See AMBO.

The word is formed in imitation of *Iconoclaſtes*. See ICONOCLASTES, *Cycl.*

M. Thiers declaims ſeverely againſt the *Ambonoclaſtes*, as overturners of an inſtitution which was the fruit of the piety of the pureſt ages; as having maimed and disfigured churches, aboliſhed ſeveral ceremonies antiently performed there, and annihilated the myſteries which the *Ambos* exhibited. Diſſ. ſur les Jubez. Jour. des Scav. T. 16. p. 128.

AMBONUM, in natural hiſtory, a term uſed, by ſome of the old writers, to expreſs the prominent tubercles on certain ſtones. We ſee ſuch, in irregular figures, very common on our flints; and the *oculus beli* among the gems ſhews an inſtance of them, its pupil being ſometimes prominent. It ſeems only a corruption of the word *umbo*.

AMBRA, in natural hiſtory, ambergreaſe. See AMBERGREASE.

AMBROSE.—*St.* AMBROSE *in the wood*, by the Italians called, *al nemo*, is an order of religious, confirmed in 1431, under the rule of St. Auguſtine.

The monks of *St. Ambroſe al nemo* wear the image of the ſaint engraven on a little plate, and make uſe of the Ambroſian office.

In the province of Berry in France, the title *fathers of St. Ambroſe* is alſo given to the canons regular of St. Auguſtine, by reaſon their abbey at Bourges is dedicated to St. Ambroſe de Cahors. Trev. Dict. Univ. T. 1. p. 331.

AMBROSIA (*Cycl.*)—The *Ambroſia* is commonly repreſented as the ſolid food of the gods, by way of contradiſtinction from the fluid, which was called *nectar*: but the appellations are ſometimes inverted, and the name *Ambroſia* given to the drink of the dieties, as that of nectar to the meat. *Rhodig.* Antiq. Lect. l. 7. c. 13.

Wedelius has a diſſertation on *Ambroſia* and nectar, wherein he ſhews, that the term is ſometimes uſed to denote honey, ſometimes wine, ſometimes perfumes, and particularly ambergreaſe; ſometimes the method or ingredients for embalming or preſerving dead bodies from putrefaction, and ſometimes alſo for a ſtate of unchangeableneſs, or immortality. *Wedel.* Exerc. Phil. Med. Dec. 5. Ex. 5. de Nect. & Ambroſia.

AMBROSIA is alſo a ſplendid kind of title given, by ſome phyſicians, to certain alexipharmic compoſitions, of extraordinary virtue. *Galen*, de Loc. Affect. l. 4. c. 8. *Caſt.* Lex. Med. p. 38.

In this ſenſe, *Ambroſia*, Αμβροσια, amounts to much the ſame with Αθανασια, *Athanaſia*, as being ſuppoſed to conduce to immortality.

This name was particularly given to a famous antidote of Philip of Macedon againſt all poiſons, bites and ſtings of venomous creatures, as well as many internal diſeaſes. *Galen*, de Antidot. l. 2. c. 8.

AMBROSIA is alſo uſed for a pure ſpirituous kind of medicine, artfully extracted from the groſs elementary parts of a body, and which being adminiſtred in the ſmalleſt doſe is of conſiderable virtue, and may be taken without diſguſt, or inconvenience. *Caſt.* Lex. Med. p. 38.

In this ſenſe, *Ambroſia* amounts to much the ſame with what we otherwiſe call quinteſſence. See QUINTESSENCE, *Cycl.*

Nic. Abr. Frambeſa has a treatiſe expreſs on the preparation of theſe *Ambroſiæ*. Ambroſiopœa, Lugd. Bat. 1628. 12mo. Francof. 1629. 4to.

Some alſo uſe *Ambroſia* for a medicine agreeable to take, and which does not ruffle or diſturb the patient in the operation. Such are thoſe made up for delicate perſons and tender conſtitutions, to purge them, according to Hippocrates's rule, *cito*, *tuto*, and *jucunde*. Trev. Dict. Univ. T. 1. p. 331.

AMBROSIA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the floſculous kind, being compoſed of ſeveral ſmall floſcules, which are barren, and are contained in great numbers in the ſame common cup. The embryo's grow in other parts of the ſame plant, and finally become fruits, of the ſhape of a club, containing oblong ſeeds.

The ſpecies of *Ambroſia*, enumerated by Mr. Tournefort, are theſe.

1. The ſea *Ambroſia*. 2. The tall ſea *Ambroſia*, with leaves like mugwort, and without ſcent. 3. The tall hairy *Ambroſia* of America, with leaves like the platanus. *Tournef.* Inſt. p. 439.

However determinate we may be in theſe ages in the names of plants, we are not to expect the ſame preciſion in the antients; they frequently applied the ſame name to ſeveral very different plants; and it is neceſſary to be informed of this, and to know the nature and characters of the plants thus included in the ſame name, before we can profit by the accounts they have left us of the virtues or uſes of them.

The *Ambroſia* of the moderns is not at all like the plant ſo called by the generality of the antients. Strabo tells us, that in his time the plant cultivated in gardens, under the name of *Ambroſia*, did not appear to be the ſame with the *Ambroſia* of antient writers.

It is plain from Pliny, that even in his time the word *Ambroſia* was a name given by authors to many different plants. It is not eaſy to ſay what two plants are more unlike than the lilly and the houſeleek, yet both theſe are called *Ambroſia*, by authors of thoſe times.

Dioſcorides tells us, that the *Ambroſia* of his time was an elegant and beautiful plant, and was uſed by the Cappadocians in their garlands, and other ornaments made of flowers. Our *Ambroſia* has no title to a place among theſe, nor any recommendation as an ornamental plant. Nicander tells us, that the *Ambroſia* uſed in theſe garlands was the lilly; and Athenæus ventures to tranſlate the *Ambroſia*, lilly, on this occaſion; but it does not appear evident that the lilly is the *Ambroſia* here meant by Dioſcorides, it is much more likely to have been ſome ſmaller garden flower.

Dioſcorides, among the ſynonyma of the *ſedum*, or great houſeleek, tells us, that ſome called it *buphthalmus*, others *zoophthalmus*, two names taken from the reſemblance of its round cluſters to the eyes of large animals; and that others called it *Ambroſia*.

AMBROSIA is alſo uſed, by ſome of the antient writers, to expreſs what they judged to be the food of the bees, and what probably is ſo, though that has not been the opinion of the generality of late writers. They called by this name the lumps of yellow matter found on the third joint of the hinder legs of bees, when returning to their hive; this is called by the French *cire brute*, or rough wax, and has been commonly ſuppoſed to be really wax; but, on examination, it appears to be a very different ſubſtance. It has not the properties of wax, and is indeed no other than a congeries of the farina of flowers, which ſtill retains the globular or oval figure of the granules of that farina, though collected into maſſes. It is neither fuſible nor ductile, as common wax is, but is brittle, and burns to a coal over the fire. It is very probable, that the bees actually feed upon this ſubſtance, according to the old opinion, and that, after having ſerved as nouriſhment to their little bodies, it becomes altered in their bowels into what we call wax; no experiment of any kind having been able to produce true wax from it. *Reaumur*, Hiſt. Inſect. Vol. 10. p. 50. See the article BEE.

This ſubſtance is, by ſome, taken to be a groſs or ſolid honey; and is contradiſtinguiſhed from the liquid or purer ſort, which is denominated *nectar*.

The *Ambroſia* will not keep, and, if not ſpeedily ſpent, corrupts and turns ſowr, making what is ſometime called *coom*, or *ſtopping*, or, after the Greeks, *ſandarak*, highly offenſive and pernicious to the hive. *Butler*, Hiſt. of Bees, c. 6.

AMBROSIA, in antiquity, denotes a feaſt celebrated by the Aconians, in honour of Bacchus.

The *Ambroſia* were alſo denominated *Choa* and *Lenæa*. They were held in the month called Lenæon. Vid. *Roſin.* Antiq. Rom. l. 4. c. 15. *Rhodig.* Antiq. Lect. l. 27. c. 24. It. l. 28. c. 25.

AMBROSIN, in middle aged writers, denotes a coin ſtruck by the lords or dukes of Milan, whereon was repreſented St. Ambroſe on horſeback, with a whip in his right-hand. The occaſion of this coinage is ſaid to have been a viſion of that ſaint, who appeared to the Milaneſe general, in 1339, during the time of a battle. *Du Cange*, Gloſſ. Lat. T. 1. p. 165.

AMBUBAJÆ, in antiquity, a kind of wanton minſtrels about Rome, who lived by playing and dancing in places of reſort, and proſtituting their bodies for hire.

Authors ſpeak as if there had been a regular college, or community of *Ambubajæ*, and that theſe were the ſame with what were otherwiſe called *tibicinæ*. *Horat.* l. 1. Sat. 2. v. 1.

Some ſuggeſt that the *Ambubajæ* were of the male kind, only dreſſed in the habit of women. Vid. *Struv.* Synt. Antiq. Rom. c. 12. p. 639.

Antiquaries have been greatly divided about the *Ambubajæ*; ſome will have them to have come to Rome out of Syria; others ſuppoſe them to have been Roman women, though called by a name of Syriac origin.

Torrentius, Turnebus, and Pulmannus, derive the name from *ambu*, or *am*, an old Latin prepoſition, denoting *circum*, about, and *Bajæ*, a delicious place near Naples; and maintain, that the *Ambubajæ* were a kind of curtezans, who frequented the baths of that city. Cruquius is of a different opinion, taking the word *Ambubajæ* to have been uſed for *Ambubeja*, and primarily to denote a ſeller of *Ambubeja*, an herb mentioned by antient naturaliſts. Theſe ſellers of *Ambubeja* being a kind of empirics, their name became afterwards applied to all charletans. Trev. Dict. Univ. T. 1. p. 332.

Hoffman has a diſcourſe expreſs on the *Ambubajæ*.

AMBUBEIA, in botany, a name given, by ſome authors, to wild ſuccory. *Ger.* Emac. Ind. 2.

AMBURBIUM (*Cycl.*)—This is otherwiſe called *Amburbia*, and *luſtratio Amburbialis*.—Apuleius calls it *luſtrale piamentum*; others, *ſacrificium luſtrale*, by way of expiation, as a preſervative from unhappy omens and dangers impending.

Servius expreſly diſtinguiſhes between the *Amburbia* and *Ambarvalia*.—*Dicitur hoc ſacrificium Ambarvale quod arva ambiat victima, ſicut Amburbale, vel Amburbium, quod urbem circuit & ambit victima.* The one was performed in the city, the other in the country. *Serv.* ad Virg. Ecl. 3. v. 77. *Scalig.* Not. in Feſt. p. 17. in voc. *Amtermini*. *Struv.* Synt. Antiq. Rom. c. 9.

AMBURY, or ANBURY, a name given, by our farriers, to a kind of ſoft and ſpungy ſwelling growing on the bodies of horſes, ſomewhat ſore to the touch, and full of blood. The method of curing it is, to tye a horſe-hair very hard round it, at the root; in about a week after this, it will fall off, and the part is then to have ſome powder of verdigreaſe ſtrewed upon it, to prevent the return of the complaint, and finally to be healed up with the common green ointment.

This is the common method, when the *Ambury* is high and prominent; but ſometimes it is flat and low, with a broad baſe: in this caſe, it is impoſſible to take it off by ligature, and there is a neceſſity of having recourſe to a ſeverer operation. It muſt, in this circumſtance, be taken away either by the knife or fire: if the former way be agreed on, the method is this; the ſkin is to be drawn back tight, and then the whole ſwelling cut off cloſe to the common level of the reſt of the fleſh: if in the other way, an iron is to be heated red hot and applied to it, continuing it on till the whole is burnt down to the even fleſh. In both caſes, care muſt be taken not to ſpare in the cutting or burning, ſo as to leave any root behind, for then the complaint will be renewed. When it is taken off, the common ointment of hogs-lard and turpentine will compleat a cure. There are ſome circumſtances, however, in which the knife and cautery may be both improper, as, if it grows in a ſinewy part, or the like; in this caſe, the proper method is, to eat out the core with oil of vitriol, or white ſublimate, and then ſtop the hole with flax dipped in honey and lime unſlaked. Some, for the firſt day or two, dip it only in the white of an egg, and after that, in the mixture of quick lime and honey; and this ſeems the better way. Vid. *Markham*'s Farrier.

Many of our farriers boaſt of a ſecret, which infallibly cures all kinds of protuberances of this kind, the preparation of which is this. Take three ounces of green vitriol, and one ounce of white arſenic, beat them to a coarſe powder, and put them into a crucible; place the crucible in the midſt of a charcoal fire, ſtirring the ſubſtance, but carefully avoiding the poiſonous ſteams; when the whole grows reddiſh, take the crucible out of the fire, and when cool, break it and take out the matter at the bottom; beat this to powder in a mortar, and add to four ounces of this powder five ounces of *album rhoſis*; make the whole into an ointment, and let it be applied cold to warts, rubbing them with it every day: they will, by this means, fall off gently and eaſily, without leaving any ſwellings. It is beſt to keep the horſe quiet, and without working, during the cure. What ſores remain on the parts where the ſwellings fall off from, may be cured with the common application, called the counteſs's ointment. *Sollyſel*'s Compleat Horſeman.

AMEA, in botany, a name given, by the natives of Guinea, to a plant, which they uſe in bleedings at the noſe, drying and powdering the leaves, and ſnuffing up the powder. It ſeems to be of the family of the plant called *pajamirioba*, by Sir Hans Sloane, in his Jamaica Catalogue. Its leaves are large and alated, and of a beautiful green, even when dried. Vid. Phil. Tranſ. N°. 232.

AMEDEI, *Amedians*, a congregation of religious in Italy, inſtituted in 1400.

Their name is formed of the Latin, *amans Deum*, *q. d.* lover of God, or rather of *amatus Deo*, beloved of God.

The *Amedei* wore a grey habit, and wooden ſhoes, had no breeches, and girt themſelves with a cord. They had twenty-eight convents; and were united by pope Pius V. partly with the Ciſtercian order, and partly with that of the Soccolanti, or wooden-ſhoe-wearers. *D'Emilian*, Hiſt. of Monaſt. Ord. p. 217. ſeq.

AMEIVA, in zoology, the name of a Braſilian ſpecies of lizard, reſembling the taraguira in figure, but having a bifid tail. This is Margrave's account of it; but Mr. Ray very judiciouſly queſtions the fact, not believing that there is in nature any ſuch ſpecies. Probably indeed it is only an accidental variety of the taraguira, or ſome other common lizard, perhaps from a wound, or other accident; perhaps from the egg, as we have lately ſeen from Barbadoes, a ſnake with two heads, taken out of an egg of ſome common kind; for aſſuredly there never was any ſuch ſpecies as a two headed ſerpent. *Ray*, Syn. Quad. p. 266.

AMEL (*Cycl.*) is ſometimes uſed for enamel: we frequently meet with it uſed in this ſenſe by Mr. Boyle. See his Works abridg. Vol. 1. p. 130. and in other places.

AMELLUS, in botany, a name uſed, by ſome authors, to expreſs the *caltha paluſtris*, or marſh marygold; and by Virgil, for the *aſter atticus*. *Ger.* Emac. Ind. 2.

Many of the critics on Virgil have ſuppoſed, that the poet meant no other than the common herb baum by this name. He ſays, the flowers are gold colour, and the leaves purple. This they explain, by obſerving, that the ſtamina, or threads of the flower, are yellow, and the flower-cup purple; and that he meant this, and not the leaves of the plant, in his deſcription. There is indeed this to countenance the opinion, that the Latin authors have often called the ſtamina of a plant the flower, and not the petals. This Vopiſcus, in Aurelian, carries ſo far as to the roſe, calling it a yellow flower in a purple caſe. It is evident from this, that the Greeks, as well as Romans, underſtood the yellow threads, which are very numerous, in the center of the roſe, to be the flower, and the purple petals, which we call the flower, they called the huſk.

Others are of opinion, and that with more ſhew of reaſon, that the *Amellus* of Virgil is the plant we call *aſter atticus*. The author deſcribes it as growing in meadows, which is the place of growth of that plant, though not of the baum; and as to the deſcription, if the ſtamina, or threads, are called by this author, as by others of the antients, the flower, theſe are more numerous and more yellow in this plant, than in the baum, and the leaves of the flower in this are of a beautiful blueiſh purple, and do not drive us to the cup, as in the making the baum to be the *Amellus*.

AMENDMENT, (*Cycl.*) in a general ſenſe, a change made in a thing for the better.

Amendment amounts to much the ſame with melioration, reformation, correction, &c.

AMENDMENT is more particularly uſed for a manure laid on the ground, to fatten or enrich it. See MANURING, *Cycl.* and *Suppl.*

AMENDMENT, in a literary ſenſe, is uſed to denote the corrections and other alterations made in the poſterior editions of books.

In this ſenſe, *Amendments* are alſo denominated emendations.

Many authors ſeem to conſider *Amendments* as the ſame thing with additions, but they are very different. We often meet with large additions, without any *Amendments*. *Amendments* properly reſpect the juſtneſs and exactneſs of a book, additions its extent and compaſs. We hear of *Amendments* of bills in parliament [a], even *Amendments* of *Amendments* [b], *Amendments* of returns of repreſentatives, &c.—[a Vid. *Hakew.* Mann. Paſſing Bills, ſec. 5. b Id. ib. ſec. 6.]

In caſes of wrong returns, ſo reported by the committee of privileges and elections, and voted by the houſe of commons, it is uſually ordered, that the returns be *amended* by the returning officer, according to the directions of the houſe, without iſſuing a new writ. Mem. of Proceed. in Parliam. c. 16.

Amendments ought always to be in that houſe from whence the thing to be *amended* originally proceeded, though the directions for the *Amendments* came from the other houſe. *Hakew.* Mann. of Paſſ. Bills, p. 167.

AMENTACEOUS, in botany, a term applied to the flowers of certain trees and plants, which are compoſed of a vaſt number of apices, or antheræ, hanging down in form of a rope; ſuch as the hazel, and the like.

AMENTUM, among alchemiſts, denotes *alumen ſciſſum*. See the article ALUM.

AMENTUM, in antiquity, a leathern thong faſtened about the middle of a dart, or javelin, whereby, after caſting it at the enemy, it might be drawn back again to the owner.

The *Amentum* ſerved alſo to increaſe the force of the ſtroke; for which reaſon, ſome of their great men refuſed to uſe it, as confiding wholly in the natural ſtrength of their own arms. *Pitiſc.* Lex. Antiq. in voc.

AMERADE, a kind of officers among the Saracens, anſwering to the governors of provinces among the Europeans. Trev. Dict. Univ. in voc.

The name is originally the ſame with that of *emir*.

AMERICIMA, in zoology, the name of a Braſilian ſpecies of lizard, very ſmall, being not above three fingers breadth long, and of the thickneſs of a ſwan's quill. Its body appears ſquare; its whole back is covered with deep grey ſcales, and its head, legs and ſides, with brown ones, and its tail with

with blue. All of them are very gloſſy, and extremely ſmooth to the touch. Its feet are ſcarce thicker than hogs briſtles. It is generally eſteemed a poiſonous animal. *Ray*, Syn. Quad. p. 267. See Tab. of Quadrupeds and Serpents. N°. 35.

AMETHYST, (*Cycl.*) the name of a very well known and very beautiful gem. The ſtone called *Amethyſt* by the antients, was evidently the ſame with that now generally known by this name, which is far from being the caſe in regard to ſome of the other gems. And the gem they called the *hyacinth* was alſo no other than a variety of this ſtone, reſembling the flower of that name. See HYACINTH.

They accounted, beſide that alſo, five other ſpecies of the *Amethyſt*, all which were truly no more than varieties of this ſtone in the degree of colour, and all which we alſo have at preſent, though not known among our jewellers under any particular names. Indeed there might be numberleſs names and numberleſs ſpecies accounted of this gem, if they were to be given according to its different degrees of colour, it having ſometimes a bluer, ſometimes a redder purple, and varying in degree through all the changes between the colour of the ripe purple grape, and the colourleſs hue of the pureſt cryſtals.

It is inferior to ſcarce any of the gems in beauty, and in the fineſt ſpecimens is of the ſame hardneſs and of equal value with the ruby. It is found of various ſizes, from the bigneſs of a ſmall vetch to an inch and half in diameter, and often to much more than that in length. It is as various in ſhape as the diamond, and ſome other of the gems; it is not unfrequently found in a roundiſh or pebble-like form, ſometimes a little longiſh, and often thicker at one end than the other, and reſembling in ſome ſort a pear. It is in theſe ſhapes ſometimes equally rounded every way, but more frequently it is flatted on one ſide, and often has very ſmall and very bright faces on ſeveral parts. Tho' this is no unuſual form to meet it in, its more common appearance however is a cryſtalliform figure, being found adhering by its baſe to ſtony matter, and either cruſting over the cracks and fiſſures in the ſtrata of ferrugineous ſtones, or coating the inſides of large and hollow ferrugineous nodules, reſembling thoſe hollow flints which we every day ſee in England, coated within with common ſmall pellucid cryſtals. In theſe nodules the *Amethyſt* always aſſumes the form either of a ſhort and thick column of four planes, terminated by a flat and ſhort pyramid of the ſame number of ſides, or elſe the very figure of our common hexangular cryſtal, and ſometimes that of a long pyramid without any column adhering to the matter of the nodule by its baſe; in the columnar ſhape it makes the gayeſt figure, but in the pebble-like maſſes it is always the hardeſt and moſt valuable. *Hill*'s Hiſt. of Foſ. p. 593.

The colour of the *Amethyſt* is ever purple tho' various in degree, ſometimes approaching to the violet colour, and ſometimes fading almoſt into a roſe colour. It is ſometimes alſo found naturally colourleſs, and may, at any time, be made ſo, by putting it into the fire; and whether it has been naturally, or thus artificially produced, it, in this ſtate, ſo nicely imitates the diamond, that its want of hardneſs ſeems the only way of diſtinguiſhing it.

The tips or points of the angular *Amethyſts* are often the only coloured part, the reſt of the column remaining white.

The *Amethyſt* is found in the Eaſt and Weſt-Indies, and alſo in Europe. Some of the oriental ones, eſpecially of the pebble kind, are very hard, and of a very great ſplendour and value; but theſe are rare, moſt even of the oriental ones being very little harder than common cryſtal; and all the European ones are of this ſoft kind: whence the *Amethyſt*, in general, is of much leſs value than moſt of the other gems, though a few ſpecimens of it are very valuable. The oriental *Amethyſts* are found in Calecut and Biſnagar. The European ones are common to many places; Germany, Sileſia, and Bohemia abound with them; and they are not uncommon in Spain and Italy; the Pyrenæans, and the mountains of Auvergne afford very fine ones, and the mountain St. Sigimont in Catalonia is dug in many places for them. They there find the fineſt lodged in the perpendicular fiſſures of the rock, among a looſe reddiſh ferrugineous earth.

M. Morin ſhewed Dr. Liſter a huge block of French *Amethyſt*, 2 or 300 pound weight [a]. Ray ſpeaks of a mountain of *Amethyſts* [b].—[a] Vid. *Liſt.* Journ. Pariſ. [b] *Ray*, Trav. p. 469.

Amethyſts may be counterfeited with glaſs, to which the proper colour or ſtain is given. There were fine ones made in France, about the year 1690, which may even impoſe on connoiſeurs, unleſs the ſtone be taken out of the collet.

The method of giving this colour to glaſs is as follows. Take cryſtal-frit, made with the moſt perfect and fine tarſo; then prepare a mixture of manganeſe in powder, one pound; zaffer prepared, one ounce and half; mix theſe powders well together, and add to every pound of the frit, an ounce of this powder. Let it be put into the pots with the frit, not into the already made metal. When the whole has ſtood long enough in fuſion to be perfectly pure, work it into veſſels, and they will reſemble the colour of the *Amethyſt*. *Neri*'s Art of Glaſs, p. 92.

Some phyſicians make a particular claſs of medicines, under the denomination of *Amethyſta*, Αμεθυστα; under which they comprehend all preſervatives from drunkenneſs. Vid. *Gal.* de Compoſ. Medic. ſec. loc. c. 2. *Gorr.* Def. Med. p. 28.

AMETHYSTINE is applied, in antiquity, to a kind of purple garment dyed of the hue of *Amethyſt*. *Plin.* Hiſt. Nat. T. 1. l. 9. c. 38. p. 526. ſeq.

In this ſenſe, *Amethyſtine* differed from *Tyrian*, as well as from *Hyacinthine* purple, being a kind of medium between both.

AMGAILA, or AMGAILAM, in the materia medica of the antients, a name given, by Aviſenna and others, to a plant ſometimes called *acantha Arabica*, and *leucacantha* by the Greeks; the roots of which were called *bunkon*, and much uſed in medicine by the Arabian phyſicians. The names of this plant were almoſt all common to it, and to the tree which produces the gum Arabic; and hence ariſes a great confuſion in reading the works of thoſe who name it. But it is very certain, that they are two extremely different vegetables, the one being a tree, and the other a plant, whoſe roots were uſed in medicine.

The *Amgaila*, called alſo *ſucaha*, or *zucahai*, is deſcribed as a prickly herb, having roots like thoſe of the cyprus, formed of ſeveral joints, or knots; and that theſe, when they had been ſo long expoſed to the air as to be, in ſome ſort, rotten, and to fall ſpontaneouſly from one another, were afterwards dried, and became very light, of a yellow colour, and agreeably aromatic ſmell, and bitter taſte. They were uſed in ſtomachic and cardiac compoſitions, and were choſen by their lightneſs and good ſmell.

AMIA, in zoology, the name of a very large ſea fiſh, called by ſome alſo *glaucus*, and by others *leccia*. It grows to a vaſt ſize, and in figure reſembles the ſalmon. Its body is long and thick, and becomes ſquare towards the tail. Its back is of a duſky blue, with a light tinge of purple. Its ſides are of a more purple hue. It is covered with conſiderably large ſcales, though they ſeem ſmall, when we compare them with the ſize of the fiſh. Its mouth is not large; its jaws are furniſhed with ſharp teeth. Its gill fins are very ſmall for its ſize; its belly fins are placed near theſe. It has alſo two on the back; the anterior has ſeveral very ſharp prickles; the poſterior is long, and reaches almoſt to the tail: this and the belly fin oppoſite to it, are undulated at their edges. The tail is very forked. It is very common in the Mediterranean, and grows to four or five feet long. *Salvian.* de Aquat. *Aldrovand.* de Piſc. p. 302.

AMIA is alſo the name of a fiſh called, by ſome authors, *pelamys*, but different both from the *pelamys ſarda*, more uſually called ſimply *pelamys*, and from the *pelamys* of the antients, which was no other than the *thynnus*, or tunny-fiſh, at a certain time of its growth.

This is, in ſhape and figure, very like the mackrel, long, round bodied, and ſlender near the tail; the back is of a duſky blue, the belly of a fine ſilvery white, and its ſides are variegated with eight or nine oblique black lines. Its jaws have only one row of teeth in each. Its eyes are ſmall. It is common in the Mediterranean, and is brought to the markets of Italy, &c. *Ray*'s Ichthyograph. p. 180.

AMIANTHUS, in natural hiſtory, the name of a genus of foſſils, of the claſs of the *fibrariæ*; the characters of which are, that the bodies of it are flexile and elaſtic, and compoſed of ſhort and abrupt filaments. See Tab. of Foſſils, Claſs 1.

It has been a common error to confound the ſpecies of this genus one with another, and all with the ſeveral ſpecies of the aſbeſtus, the conſequence of which has been the loſs of the art of ſpinning and working the aſbeſtus into incombuſtible cloth. See the article ASBESTUS.

The ſpecies of this genus, at preſent known in the world, are four, two of which are compoſed of larger, and two of finer or ſmaller filaments.

The firſt is a reddiſh black kind, with very ſhort threads. This is very common in the iron mines of Germany. 2. A ſoft, ſilky, white kind, with ſhort and crooked filaments. This is found in many parts of France and Germany.

The ſecond kinds are, 1. A greyiſh green, rigid one, called erroneouſly *alumen plumoſum* in the ſhops. This is found in Egypt, Africa, and Germany. And, 2. A greeniſh brown one, found in maſſes of ſtone in Yorkſhire, and in Wales, and ſometimes in the ſame green marble at Angleſea, in which one of the aſbeſti is often found. *Hill*'s Hiſt. of Foſſ. p. 108, 109, 110.

AMICABLE *benches*, *ſcamna amicabilia*, in antiquity, are generally ſuppoſed to denote the ſeats in the Roman courts, whereon the advocates were placed.—Some think, that theſe had but little title to the denomination of *amicable*, and therefore will have the word to be here uſed for the benches whereon the *aſſeſſors*, or thoſe called *judices pedanei*, were placed. *Pitiſc.* Lex. Antiq. in voc.

AMICABLE *compounder*, *amicabilis compoſitor*, is uſed, in ſome antient law writers, for an *arbitrator*. *Du Cange*, Gloſſ. Lat. in voc. See ARBITRATOR, *Cycl.*

AMICITIA.—*Tenure in* AMICITIA, *tenere in Amicitiam*, is applied, in antient writers, to lands granted freely, and of mere good-will, to be enjoyed at the diſcretion of the donor. *Du Cange*, Gloſſ. Lat. T. 1. p. 168.

AMICTUS (*Cycl.*)—This garment is otherwiſe called *anabolagium*; ſometimes *ambolagium*, *anagolagium*, and *humerale*. In antient Engliſh writers it is called *Amitte*.

The *Amict* is properly a linen garment, of a ſquare figure, worn on the head, when the *alb* is uſed. The *Amict* is the firſt of the ſix garments which are common to biſhops and prieſts. The others are, *alba*, *cingulum*, *ſtola*, *manipulus*, and *planeta*.

The *Amict* is alſo worn by deacons, ſub-deacons, and acoluthi, when they officiate at the altar. Trev. Dict. Univ. T. 1. p. 347. ſeq.

Antiently all eccleſiaſtics wore the *Amictus* over the head, as is ſtill done by religious; afterward it was worn over the *planeta*. *Magri*, Vocab. Eccleſ. p. 14.

The *Amictus* went over the ſhoulders, and was buckled, or claſped before the breaſt.—Divers myſtical applications are formed of this habit in eccleſiaſtical writers. Vid. *Du Gange*, Gloſſ. Lat. T. 1. p. 168. ſeq.

The prieſts and deacons, in ſome dioceſes, wear *Amicts* on their heads, from All-ſaints to Eaſter; though, by the canons, they be expreſly forbid to wear the *Amict*, without ſome conſiderable occaſion.

M. Thiers aſſerts, that the uſe of *Amicts* was not introduced into the Latin church before the twelfth century [a]. Dom. de Vert [b] maintains the contrary, chiefly from a figure of St. Firmin, firſt biſhop of Amiens, ſuppoſed to have ſuffered martyrdom towards the beginning of the ſeventh century, whereon he is repreſented in his pontifical habit, with the *Amict* on his head [c].—[[a] V. *Thiers*, Hiſt. des Perruq. c. 8. [b] Explic. des Cerem. de la Meſſa, T. 2. p. 242. [c] *Aubert*, ap. Richel. Dict. T. 1. p. 79.]

AMICTUS, in Roman antiquity, denotes any upper garment worn over the tunica. *Ferrar.* de Re Veſt.

AMICULUM, in antiquity, denoted an upper garment worn by the women.—The *Amiculum* is ſaid to have differed from the *palla*; but wherein the preciſe difference lay does not appear. An *Amiculum* was alſo in uſe among the men. This ſeems to have been the ſame with the *chlamys*, or *paludamentum*. *Pitiſc.* Lex. Ant. in voc.

AMILICTI, in the Chaldaic theology, denote a kind of intellectual powers, or perſons in the divine hierarchy. Vid. *Stanl.* Hiſt. Philoſ. c. 6.

The *Amiliſti* are repreſented as three in number, and conſtitute one of the *triads*, in the third order of the hierarchy.

AMINEUM *acetum*, a name by which ſome of the medical writers have called white-wine vinegar, to diſtinguiſh it from other kinds.

AMIRANTE, a great officer in Spain, anſwering to the lord high admiral in England.

AMMA, (*Cycl.*) in middle age writers, denotes a ſpiritual mother.

In this ſenſe, the word was chiefly underſtood of an abbeſs, or ſuperior of a nunnery. *Magri*, Vocab. Eccleſ. p. 14. See ABBESS, *Cycl.*

AMMAN, in the German and Belgic policy, denotes a judge who has the cognizance of civil cauſes.

The word is alſo written *Amant*. Thus it occurs in writers on the French officers, where it ſtands for a notary, or parochial officer, who draws acts or inſtruments. *Du Cange*, Gloſſ. Lat. T. 1. p. 171.

AMMANIA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe. The calyx is an oblong, erect, quadrangular perianthium, with eight lines and folds on it, and divided into ſegments at the end, and remaining when the flower is fallen. The flower is compoſed of four petals growing within the cup, and of an oval figure. The ſtamina are four ſlender filaments of the length of the cup. The antheræ are double; the germen of the piſtillum is large and oval; the ſtyle is ſimple, and very ſhort; and the ſtigma has a rim, or ridge round it. The fruit is a roundiſh capſule, conſiſting of four cells covered with the calyx. The ſeeds are numerous and ſmall. Vid. *Linnæus*'s Gener. Plant. p. 51.

AMMI, (*Cycl.*) *biſhops-weed*, in botany, the name of a genus of umbelliferous plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral leaves arranged in a circular form; theſe are all of a heart-like ſhape, and irregular in ſize. Theſe leaves ſtand upon the cup, which afterwards becomes a fruit, compoſed of two ſmall ſeeds, which are gibboſe and ſtriated on one ſide, and flat and ſmooth on the other. To this it may be added, that the leaves are long and narrow, ſtanding over-againſt one another on the middle rib, which is terminated by a ſingle leaf.

The ſpecies of *Ammi*, enumerated by Mr. Tournefort, are theſe.

1. The great, broader leaved *Ammi*. 2. The great *Ammi*, with leaves cut in at the edges, and a little curled. And, 3. The Perennial *Ammi*, called by ſome authors *eryngium*, and by others *crithmum*. *Tournef.* Inſt. p. 304.

AMMINEA *uva*, in botany, a name given, by the old writers, to the grapes of a wild vine, common in the hedges of Italy, and ſome other places. They uſed to make wine of theſe grapes, which they mixed with other richer wines, and had in common uſe.

Some write the word *taminea*, inſtead of *aminea*; and it has been ſuppoſed, from this, that the berries of the *tamnus*, or black bryony, were thus called. But theſe could never be fit to make any ſort of wine of, and therefore the conjecture appears to be erroneous.

AMMITES, in mineralogy, a kind of figured ſtone, of a looſe open contexture, formed of a number of ſmall globular ſtones. *Mercat.* Metalloth. Arm. 9. c. 58. Ib. Arm. 10. p. 378.

Ammites is the ſame with what is otherwiſe called *Ammonites*.

The word is derived from the Greek, αμμος, ſand; in regard the *Ammites* appears to the eye as a compoſition of large ſand.

The *Ammites* is found in divers countries of Germany, &c. of different colours, as well as different degrees of hardneſs. It bears a near reſemblance to the *coccodes*.

AMMOCÆTUS, in ichthyology, a name given, by Geſner and ſome others, to the *ammodytes*, or ſand-eel; called alſo *tobianus*, by Schoneveldt and others. See AMMODYTES.

AMMOCHOSIA, Αμμοχωσια, in the antient phyſic, a kind of remedy, or operation for drying the body, by lying along on warm ſand, and having the body covered with the ſame. Some prefer ſalt for this purpoſe to ſand. Vid. *Gorr.* Def. Med. p. 29.

AMMOCHRYSOS, a name given by authors, to a ſtone very common in Germany, and ſeeming to be compoſed of a golden ſand. It is of a yellow gold-like colour, and its particles are all very gloſſy, being all fragments of a coloured talc. It is uſually ſo ſoft, as to be eaſily rubbed to a powder in the hand; ſometimes it requires grinding to powder in a mortar, or otherwiſe. It is uſed only as ſand to ſtrew over writing. *Boet. de Boot*, de Gemmis, p. 462.

The Germans call it *katzengold*; and there is another kind of it leſs common, but much more beautiful, conſiſting of the ſame ſort of gloſſy ſpangles, but thoſe not of a gold colour, but of a bright red, like vermillion.

AMMOCHYSUS, in natural hiſtory, a kind of gem, ſuppoſed to be the ſame with the *venturine*. *Kirch.* Mund. Subterr. l. 8. ſec. 1. c. 8.

AMMODYTES, in zoology, the name of a ſpecies of ſerpent, called alſo *ſerpens cornutus* by ſome, from certain protuberances on the head. It is about the ſize of the viper, and is of a yellowiſh or ſand colour. Its head is ſhaped like that of the viper, but its jaws are wider; and, in the upper part of its head, it has a ſort of wart-like excreſcence, which is ſuppoſed to reſemble a horn; and thence its name of *ſerpens cornutus*, as it has its other of *Ammodytes*, or ſand-ſnake, from its ſand-like colour, or from its quality of ſometimes running under the ſands. It is found in Lybia, and in ſome parts of Italy. *Ray*'s Synopſ. Anim. p. 287.

AMMODYTES, in ichthyology, the name of a genus of fiſhes, the characters of which, according to Artedi, are theſe. The branchioſtege membrane contains on each ſide ſeven bones, but theſe are, in great part, hid by the laminæ of the branchia. The head is compreſſed, the body oblong and ſlender, nearly cylindrical, but a little compreſſed, and it has no belly fins. The fiſh is of the malacopterygious, or ſoft-finned kind; and the characters of the ſpecies, enumerated by Artedi, are theſe. The lower jaw is the longeſt; the lateral lines are double, or two on each ſide. The pectoral fins have each twelve rays; the the back fin has fifty-four; that of the anus twenty-eight. The tail is bifid, and has fifteen long rays; the mouth is toothleſs; the anus is nearer to the tail than the head. We call the fiſh, the *ſand-eel*; Schonfield, the *tobianus*. *Artedi*, Gen. Piſc. p. 17.

According to Ray, it is ſeldom of more than a foot long, and blueiſh on the back, and white on the ſides and belly. It has a ſtrait line drawn along the middle of each ſide, and three foſſulæ, or lines, along the middle of the belly. It has no ſcales, but the ſides are marked with a number of oblique lines. Its noſe is ſharp, and the lower jaw falls out beyond the upper; the opening of the mouth is extremely large, but it has no teeth. Its fleſh is well taſted, and is much ſought after by the other fiſh of prey. The males of this ſpecies are ſhorter and thicker than the females. The fiſh is commonly found at about half a foot deep under the ſand, when the tide has run out, and are caught there with iron hooks, with which the fiſhermen pull them out. *Ray*'s Ichthyograph. p. 113.

The name is formed of the Greek, αμμος, ſand, and δυνω, a diver, expreſſing the quality of this creature, to dive into, or bury itſelf under the ſand.

AMMONIACUM *gummi*.—It is much to be queſtioned, whether we have, at preſent, the gum *Ammoniacum* deſcribed by the antients; and indeed their deſcriptions of that drug ſeem to evince, that we have not. See AMMONIAC, *Cycl.*

Our *Ammoniacum* has not the characters which they attribute to theirs. Dioſcorides tells us, that one ſort of the gum *Ammoniacum* of his time was called *thrauſma*, and *thrauſton*, becauſe of its being ſo brittle, that it crumbled to pieces between the fingers. This is a character expreſſive enough of ſome of the dry reſins; but could never be properly given to a gum which is one of the moſt tenacious that we have. The ſame author tells us, that it was like the lumps of the

thus, or frankincenſe. Serapio ſuppoſes, that he meant this likeneſs of the ſmell; but it rather appears, that he meant it only of the colour: he ſays it was of a duſky colour without, and of a reddiſh brown within; and ſuch they deſcribe ſome of their frankincenſe of that time to have been. Dioſcorides diſtinguiſhes this by the name of *euchrous*, well coloured.

They had, beſide this, another ſort, which they called *Ammoniacum phyraton*. This was ſoft as wax, and might be moulded between the fingers; but this was uſually foul'd with dirt, ſtones, and other kinds of filth. This was the only kind in uſe in the ſhops, in the time of the later Greeks. But neither this nor the other ſeem perfectly to agree with our gum *Ammoniacum*, though this laſt comes neareſt it. Another unanſwerable objection to this being the ſame with ours, is, that the Arabian writers, who copy their accounts from the Greeks, and therefore certainly mean the ſame gum, by the ſame name, call this alſo *lezoc aldeheb*, that is, *chryſocolla*, or golden glue.

Aviſenna tells us, that they gave it this name, becauſe books and papers were coloured with it, and that the colour it yielded was a fine yellow, like that of gold, and ſtuck ſo firmly to the paper, that it never came off again: thus golden glue became a good name for it; but this is ſo far from being applicable to our *Ammoniacum*, that ſome have ſuppoſed it was meant of the *gamboge*; but the virtues attributed to both contradict this.

Neophytus has endeavoured to reconcile the accounts given by Dioſcorides, of the two ſorts of *Ammoniacum* uſed in thoſe times, to the one ſort uſed in his; but he has forced the ſenſe of the words, and his interpretation of Dioſcorides's meaning will by no means bear. Pliny gives us the ſame account that Dioſcorides does of the two kinds; and it is very natural to agree with them, that the hard kind muſt be purer than the ſoft, which would naturally take up every thing that came in the way of it, and ſo be fouled with earth, ſtones, &c.

AMMONIACUM *regeneratum*, in chemiſtry, the name given to a ſort of *ſal armoniac*, procured by chemiſtry from its principles. See ARMONIAC, *Cycl.*

The method of preparing it is this: take four ounces of alkaline ſpirit of *ſal armoniac*, dilute it with three times its weight of water, in a tall glaſs, and drop in ſpirit of ſea-ſalt, till the alkali is ſaturated, and no more effervescence happens. The ſaturation being nicely hit, the liquor will be ſcentleſs, and of the taſte of *ſal armoniac*, let it be filtrated and evaporated, and it will ſhoot out a fine woolly ſalt; or if it be evaporated to a dryneſs, a white ſalt will remain, and either one or the other of theſe will be found to be true genuine *ſal armoniac*, capable of riſing in flowers, and ſtanding all the teſts of the common *ſal armoniac*.

The volatile alkali of animal and vegetable ſubſtances, which of itſelf indifferently receives all acids, is here determined, by the acid of ſea-ſalt, into a ſemi-volatile ſea-ſalt; hence the chemical rule, that acids are capable of determining alcali's into their own nature, ſeems to receive confirmation, while the alkali either gives fixedneſs, or volatility, as itſelf is fixed, or volatile; and therefore, as a large quantity of volatile alkali is continually generated from putrified animals and vegetables, if there was in nature a ſpirit of ſea-ſalt floating about in ſeveral places, *ſal ammoniac* would, in theſe places, be continually produced; and the ſame ſpirit meeting with a fixed alkali, produced from the aſhes of vegetables, would immediately produce a true fixed ſea-ſalt, as appears by the proceſs of the regenerated ſea-ſalt.

But though it is eaſy to manifeſt theſe fixed alkali's by experiments, yet it is very difficult to ſhew the exiſtence of ſuch acids in nature, unleſs we had the ſecret of Mr. Boyle, who, in his treatiſe of mechanical experiments, declares, that, by a ſecret and long continued digeſtion, ſea-ſalt may be ſo diſpoſed as to part with its acid, by a gentle heat, and that before its water, and without any addition of any other ſubſtance. *Boerh.* Chem. P. 2. p. 261.

AMMONITÆ, in natural hiſtory. See SNAKE-*ſtone*.

AMNA, in phyſical writers, denotes the water found in limy ſoils, and which conſequently is tinged with a whitiſh colour, as in many places of England. *Caſt.* Lex. Med. p. 40.

In this ſenſe, Paracelſus ſpeaks of the medical virtues and uſes of *Amna*. *Paracelſ.* de Tartar. l. 1. trac. 5. c. 2. in Schol.

AMNIMODAR, in aſtrology, the planet that rectifies a geniture, or rather a method of rectifying a nativity, and finding the preciſe degree in the horoſcope at the time of an infant's birth, from the condition of the planet, which had the rule in the laſt preceding conjunction, or oppoſition of the luminaries. *Vital.* Lex. Math. p. 30.

AMNIOS (*Cycl.*)—Authors differ widely as to the quantity and quality of the liquor of the *Amnios*. Vid. Medic. Eſſ. Edinb. Vol. 2. art. 9.

The liquor of the *Amnios*, according to Mr. Monro, ſerves to keep the fœtus and its membranes ſoft and extenſible, hinders them from cohering, and defends the fœtus from preſſure, or other violence, which it needs moſt to be protected from, while its parts are very tender. V. Medic. Eſſ. Edinb. Vol. 2. art. 9.

It is a queſtion whether the liquor of the *Amnios* be a proper food for the fœtus. Vid. Medic. Eſſ. Edinb. abridg. Vol. 1. p. 310. Where Mr. Monro is of opinion, that whether the liquor of the *Amnios* be in a ſound or in a morbid ſtate, it appears to be very ill calculated for ſerving as food to be taken into the ſtomach of a fœtus.

It is alſo controverted, whether the liquor of the *Amnios* paſſes into the ſtomach of the fœtus. Mr. Monro aſſerts, that the liquor of the *Amnios* does not paſs into the ſtomach of the fœtus; and anſwers the arguments brought by ſeveral learned men for the contrary opinion. V. Medic. Eſſ. Edinb. abrid. ib. p. 314. ſeq. See NUTRITION and FOETUS.

AMNIS *alcaliſatus*, among chemiſts, denotes water impregnated with an alcalious quality, by paſſing through a limy or other alcaline ſubſtance under-ground. *Ruland.* Lex. Alchem. p. 40.

This amounts to much the ſame with what Paracelſus calls *amna*. See AMNA.

AMNITES, in natural hiſtory, a name uſed by ſome for the *hammites*, or ſpawn-ſtone, a ſtone ſuppoſed to be compoſed of the petrified ſpawn of fiſhes. Raczynſki, in his hiſtory of Poland, tells us of theſe ſtones found, in great abundance, in ſome of the ſubterranean caverns, and other places in that kingdom. He very accurately deſcribes them, and is much nearer the truth in his judgment of their nature and origin, than thoſe who ſuppoſe them the ſpawn of fiſhes: he ſuppoſes them to be formed of grains of ſand, naturally combined together in that form; but they are, in reality, a congeries of ſmall *ſtalagmitæ*, or drop-ſtones. See STALAGMITÆ.

AMOEBÆUM, in the antient poetry, denotes a kind of poem, or compoſition, wherein two parties ſpeak alternately in the ſame number of verſes, but ſo, as that he who anſwers either goes beyond, or contradicts the other. *Feſt.* de Verb. ſignif. *Baxt.* Gloſſ. in voc.

The word is originally Greek, Αμοιβαιος, ſignifying mutual, or alternate. Hence alſo we meet with *epiſtolæ amœbææ*. Such, *e. gr.* are thoſe of Pliny and Trajan.

AMOGABARI, a kind of antient Spaniſh ſoldiery, in great repute for their bravery.—Theſe are otherwiſe denominated, in ſome writers, *Almugaveiri*. *Du Cange*, Trev. Dict.

AMOGLOSSUS, in zoology, a name of a peculiar kind of flat fiſh, ſomewhat reſembling the ſoal, and called in ſome parts of England, the *lantern*. It is of a very ſlender, pellucid and white body, and never exceeds three inches in length, and is exceeding ſmooth to the touch, being covered only with a number of very thin ſcales, which fall off on touching it. Its fleſh is very finely taſted, and requires very little dreſſing, being enough almoſt as ſoon as put on the fire. *Willughby*, Hiſt. Piſc. p. 102.

AMOMI is uſed, by the Dutch traders, for what we otherwiſe call *Jamaica pepper*. *Savar.* Dict. Comm. T. 1. p. 94.

AMOMUM (*Cycl.*)—The ſeed of that kind of *ſium*, which is called by many by this name, is a powerful diuretic, and is good in all nephritic caſes. It is alſo commended as an aperient in general, and preſcribed in obſtructions of the liver and ſpleen, and in ſuppreſſions of the menſes. The people in ſome parts of England bruiſe the ſeeds, and give them in warm ale, in cholics; but thoſe of caraway, or aniſe, are better.

The antient *Amomum* was of divers kinds; but the Armenian moſt eſteemed. It was a heater, dryer, and aſtringent; uſed as a narcotic, to appeaſe pain, cure poiſonous bites, inflammations of the eyes, &c.

It was ſometimes adulterated with another plant not unlike it, called *amomis*. Pliny [a] and Dioſcorides [b] are the authors who ſpeak fulleſt of the *Amomum*; but their deſcriptions are ſo imperfect, as to leave room for twenty different modern plants to be taken for the *Amomum* [c].—[[a] *Plin.* Hiſt. Nat. T. 1. l. 12. c. 13. p. 662. ſeq. [b] *Dioſcor.* l. 1. c. 14. [c] *Burgrav.* Lex. Med. T. 1. p. 599.]

A late gloſſariſt is ſatisfied the *Amomum* was no other than the cinnamomum, both being deſcribed, in antient poets, as of great uſe in embalming. *Baxt.* Gloſſ. p. 100. ſeq. See the article CINNAMON.

Hence alſo all medicines and unguents uſed in the embalming and preſerving of dead bodies, were called *Amomia*. *Hoffm.* Lex. Univ. T. 1. p. 183.

AMORÆANS, a ſect or order of gemaric doctors, or commentators on the Jeruſalem Talmud.

The word is otherwiſe written *Amorœi*, and *Amoraitæ*, *Amoraim*.—The *Amorœans* are alſo called, by Scaliger [a], *ſophiſtæ*; by Alting, γνωμολογοι, or ſpeakers of ſentences; by Bartaloccius, *dicentes*, or *diſceptantes*, by reaſon they conferred and diſputed together in a ſcholaſtic manner [b].—[[a] *Scal.* de Emendat. Temp. p. 614, [b] Bibl. Rabbin. T. 3. p. 663.]

The *Amorœans* ſucceeded the Miſchnic doctors. They ſubſiſted 250 years; and were ſucceeded by the *Seburœans*. Vid. *Wolf.* Bibl. Hebr. T. 2. l. 4. c. 4. §. 1. p. 914.

AMORE, in zoology, the name of a genus of fiſhes, of which there are three ſpecies. 1. The *Amore piuxma*. 2. The *Amore guacu*. And, 3. The *Amore tinga*.

The *Amore piuxma* has a very broad head, and a very large mouth, but has no teeth. Its body is oblong, and its back

and ſides are of a duſky iron colour. Its belly, which is protuberant, is white. Its ſkin is ſoft; and it has ſeven fins, beſide the tail, which is rounded at the end. Its fleſh is firm, and well-taſted.

The *Amore guacu* is like the former, of an oblong figure; but it grows to ſix inches in length. Its head is thick, its gills large, and its mouth is furniſhed with ſmall teeth. Its eyes are ſmall, their pupil black, and the iris yellow. It has ſeven fins, beſide the tail, which is long, and rounded at the end. This ſpecies is covered with ſomewhat large ſcales, and is of a ruſty iron colour, but ſomewhat paler on the belly than in any other parts.

The *Amore tinga* is of the ſame ſhape with the former, but is much ſmaller, and is covered with whitiſh ſcales all over, but ſpotted with brown ſpots. Its tail is brown, and waved with different degrees of that colour. All the three ſpecies are eaten, but the firſt is eſteemed the beſt. They are caught about the American ſhores. *Margrave*'s Hiſt. of Braſil.

AMORPHA, in botany, the name of a genus of plants of the papilionaceous kind, the characters of which are theſe. The perianthium is one leaved, tubulated, and cylindric; its mouth is ſtrait, and is divided into five ſegments, the two upper ones being longer than the reſt. The flower conſiſts of one petal, vertically ovated, hollow, erect, and a little larger than the cup; this is inſerted into the cup, between the two larger upper ſegments. The ſtamina are ten filaments, ſlightly cohering at the baſe; they are of an irregular length, but are longer than the flower. The antheræ are ſimple; the germen of the piſtil is roundiſh; the ſtyle is of the ſame length with the ſtamina; and the ſtigma is ſimple. The fruit is a lunated pod, of a compreſſed form, larger than the cup, and covered with tubercles. The ſeeds are of an oblong kidney-like ſhape, and two of them are contained in each fruit. This plant differs from all others in the ſtructure of the flower, its ſingle petal being a true vexillum, and the alæ and carina being wholly wanting; which is a very great ſingularity in ſuch a flower. Vid. *Linnæi*, Gen. Plant. p. 342. Hort. Cliffort. p. 86.

AMPANA, in botany, a name given, in the Hortus Malabaricus, to a genus of plants, ſince deſcribed by Linnæus, under the name of *boraſſus*. Hort. Malab. l. 10. See the article BORASSUS.

AMPELIS, the *vine*, in botany. See the articles VINE and VITIS.

AMPELIS, in the Linnæan ſyſtem of zoology, the name of a genus of birds, of the order of the *paſſeres*; the diſtinguiſhing characters of which are, that the tongue is furniſhed with a rim, or margin all round; the beak is of a conic form, and ſtrait. *Linnæus*'s Syſtema Naturæ, p. 48.

AMPELIS is alſo the name of a bird, of the magpye kind, called by ſome *Garrulus Bohemicus*.

It is of the ſize of the black-bird. Its head is creſted with a little plume of feathers, and is of a fine gloſſy brown; its neck is very ſhort, and variegated with black, brown, and white; its breaſt is of a reddiſh brown, and its belly grey; its back is of a cheſnut brown, and its wing feathers variegated with black and grey. It is thought to be peculiar to Bohemia, not having been found in any other country. It feeds on fruits, particularly grapes, whence its name; and is very voracious, and generally flies in large flocks together. *Ray*'s Ornithol. p. 91. *Aldrovand.* de Avib. l. 12. c. 17.

AMPELITIS, (*Cycl.*) a bituminous earth, nearly reſembling pit-coal, inſomuch, that the difference between them is ſcarce ſenſible. Accordingly, Theophraſtus gives its deſcription under the the claſs of theſe coals; and Dr. Woodward ſeems of the ſame opinion. The *Ampelites* of the ſhops, according to him, is the ſame with our canal-coal found in Lancaſhire. *Woodw.* Nat. Hiſt. Engl. Foſſ. p. 165.

It differs from the common pit-coal, in that it is more friable and fat, and withal leſs compact and ſolid; which, it muſt be owned, does not agree with Woodward's deſcription of canal-coal, which he repreſents as very fine and hard, ſo as to take a pretty good poliſh.

The beſt, according to Dioſcorides, is that of a black colour, reſembling ſmall pieces of the *lapis piceus*, or pit-coal, equally gloſſy on all ſides, though, when kneaded up with a little oil, it readily melts.

It is found in the ſame places with pit-coal, is uſed by huſbandmen, &c. to ſmear their vines with, againſt vermin, and is endued with a drying diſcuſſive power; on which account, it is alſo uſed for the dying of hair. *Mercat.* Metalloth. Arm. 5. c. 8.

Libavius has treated at large of the *Terra Ampelitis*.

AMPELOGRAPHIA, the natural hiſtory or deſcription of the vine. See VINE and VITIS.

The word is originally Greek, compounded of αμπελις, a vine, and γραφη, deſcription.

Phil. James Sachs has publiſhed an *Ampelographia*, ſeu vitis viniferæ ejuſque partium conſideratio phyſica, &c. Uratiſlav. 1661. 8vo.

AMPER, a local term uſed in Eſſex for a *tumor*, or *phlegmon*.

In this ſenſe, the word is alſo written *Ampor*. Vid. *Skin.* Etym. in voc.

AMPHERES, in antiquity, a kind of veſſels wherein each mariner wrought two oars at the ſame time, one with his right-hand, and the other with his left. This is alſo called *Amphericum*. *Scheff.* de Milit. Nav. l. 2. c. 2.

AMPHIBALUM, among middle age writers. See AMPHIMALLUM.

AMPHIBIA, in natural hiſtory, a claſs of animals, whoſe eſſential characters are, that they have either a naked, or elſe a ſcaly body, with no grinders, or *dentes molares*, their teeth all ſharp and pointed, and without radiated fins. Vid. *Linnæus*'s Syſtema Naturæ, p. 33. See the article AMPHIBIOUS, *Cycl.* and *Suppl.*

AMPHIBIOUS (*Cycl.*)—In ſome *amphibious* animals, as the frog, tortoiſe, &c. the heart has but one cavity, with an artery to receive the blood coming out of it, and a vein to convey it thither. *Bagliv.* Prax. Med.

In others, the *foramen ovale* appears to be ſtill open for the paſſage of the blood from the vena cava to the arteria venoſa, without the help of breathing.

In the caſtor diſſected by the academiſts of Paris, though the *foramen* was not found actually open, yet the *veſtigia*, or marks of it appeared; and the cauſe of its cloſure might well enough be accounted for, from the animal's having been detained a good while from the water, by which the part having been in diſuſe, it cloſed up. In the otter the caſe is different; there is no appearance of any thing like a *foramen*, and hence the neceſſity the creature is under of riſing, from time to time, above water, to take in air. Nat. Hiſt. Anim. p. 90. ſeq. Phil. Tranſ. N°. 124. p. 595.

The ſtructure of the feet of the caſtor pronounces it *amphibious* at firſt ſight, the fore-feet being formed like thoſe of terreſtrial animals, who hold their food in their feet, *e. gr.* ſquirrels, while the hind-feet are faſhioned after the manner of river-fowl, with webs or membranes between the toes, as the gooſe, duck, &c. Hiſt. Acad. Scienc. 1704. p. 81.

A great part of the fly kind may be ſaid, in one ſenſe, to be *amphibious*. Gnats drop their eggs in water, where hatching, the young live and breathe after the manner of fiſhes, till at length undergoing a metamorphoſis, they take wing, quit their native element, and become inhabitants of the air [a]. May not ſwallows alſo be ranged under this claſs, which have been ſometimes found to paſs their winter aſleep under water, from which the warmth of the ſpring awakes, and calls them forth [b].—[[a] *Hook*, Microg. obſ. 43. p. 196. [b] Mem. de Trev. 1718. p. 94.]

A late philoſopher has advanced a paradox, that man may, by art, be rendered *amphibious*, and able to live under water as well as frogs. His principle is, that as the fœtus lives *in utero* without air, and the circulation is there continued, by means of the *foramen ovale*, by preſerving the paſſage open, and the other parts in *ſtatu quo*, after the birth the ſame faculty would ſtill continue. Now, the *foramen*, according to him, whould be preſerved in its open ſtate, were people accuſtomed, from their infancy, to hold their breath a conſiderable time once a day, that the blood might be forced to reſume its antient paſſage, and prevent its drying up, as it uſually does. This conjecture ſeems, in ſome meaſure, ſupported by the practice of divers [c], who are taught from their childhood to hold their breath, and keep long under water, by which means the antient channel is kept open. A Calabrian monk at Madrid laid claim to this *amphibious* quality, making an offer to the king of Spain, to continue twice twenty-four hours under water, without ever coming up to take breath [d].—[[c] *Cornelii*, Progymnaſm. Phyſ. ex. 7. Philoſ. Tranſ. N°. 30. p. 579. [d] Mem. de Trev. 1703. p. 1286.]

It has been warmly controverted in France, whether the fleſh of *amphibious* animals were to be ranked in the claſs of fleſh, which is prohibited in Lent, or under that of fiſh. M. Hecquet inveighs ſeverely againſt the practice of eating *amphibious* animals, as tortoiſes, frogs, ſolan geeſe, under the notion of their belonging to the fiſhy tribe; whereas, according to him, they ought rather to be referred to the claſs of birds and quadrupeds. Vid. Traité des Diſpenſ. de Careme, l. 1. c. 24. Jour. des Scav. T. 43. p. 430. ſeq. It. T. 47. p. 531. Mem. de Trev. 1710. p. 2073. See alſo *Andr.* Regim. de la Careme. Jour. des Scav. T. 47. p. 440.

Elias Geiſsler [e] has written expreſly concerning *amphibious* animals. M. Ottwald of Dantzic has left behind him anatomical obſervations on *amphibious* animals; but they yet wait for an editor [f].—[[e] De Amphibiis, Lipſ. 1676. 4to. [f] Nouv. Liter. T. 9. p. 113.]

AMPHIBIOUS is ſometimes alſo applied to plants which draw their nutriment both from the earth and water. Dict. Ruſt. in voc.

In which ſenſe, willows, and the like, are *amphibious* plants. *Amphibious*, in this ſenſe, amounts to the ſame with what we more commonly call aquatic. See AQUATIC, *Cycl.*

AMPHICOME, in natural hiſtory, a kind of figured ſtone, of a round ſhape, but rugged, and beſet with eminences, celebrated on account of its uſe in divination. *Mercat.* Metalloth. Arm. 9. c. 55.

The word is originally Greek, αμφικομη, *q. d. utrinque comata*, or hairy on all ſides.

The

This ſtone is alſo called *Erotylos*, Ερωτυλος, *Amatoria*, probably on account of its ſuppoſed power of creating love.

The *Amphicome* is mentioned by Democritus and Pliny, though little known among the moderns. Mercatus takes it for the ſame with the *lapis lumbricatus*, of which he gives a figure. *Aſſalt.* Not. ad Mercat. loc. cit.

AMPHICTYONS (*Cycl.*)—Some ſuppoſe the word Αμφικτιονες to be formed of αμφι, about, and κτιειν, or κτιζειν, in regard the inhabitants of the country round about met here in council. Others, with more probability, from *Amphictyon*, ſon of Deucalion, whom they ſuppoſe to have been the founder of this aſſembly; though others will have Acriſius, king of the Argives, to have been the firſt who gave a form and laws to this body.

Their aſſembly was called το κοινον των Ελληνων συνεδριον, or *commune Græciæ concilium*; ſometimes alſo Εκκλησια Αμφικτυονων, *Eccleſia Amphictyonum*.

Authors give different accounts of the number of the *Amphictyons*, as well as of the ſtates who were entitled to have their repreſentatives in this council; according to Strabo, Harpocration, and Suidas, they were twelve from their firſt inſtitution ſent by the following cities, and ſtates; the Ionians, Dorians, Perrhæbians, Bœotians, Magneſians, Achæans, Phthians, Melians, Dolopians, Ænianians, Delphians, and Phocæans. Æſchines only reckons eleven, inſtead of the Achæans, Ænianians, Delphians, and Dolopians, he only gives theſe three, the Theſſalians, Œtæans, and Locrians. Laſtly, Pauſanias's liſt only contains ten *Amphictyons*, which are mentioned in the *Cyclopædia*.

In the time of Philip of Macedon, the Phocæans were excluded the alliance, for having plundered the Delphian temple, and the Lacedæmonians were admitted in their place; but the Phocæans ſixty years after, having behaved gallantly againſt Brennus and his Gauls, were reſtored to their ſeat in the *Amphictyonic* council. Under Auguſtus, the city Nicopolis was admitted into the body; and to make room for it, the Magneſians, Melians, Phthians, and Ænianians, who till then had diſtinct voices, were ordered to be numbered with the Theſſalians, and to have only one common repreſentative. Strabo ſpeaks as if this council were extinct in the times of Auguſtus and Tiberius: but Pauſanias who lived many years after, under Antoninus Pius, aſſures us it remained intire in his time, and that the number of *Amphictyons* was then thirty.

The members were of two kinds; each city ſending two deputies, under different denominations, one called Ιερομνημων, whoſe buſineſs ſeems to have been more immediately to inſpect what related to ſacrifices and ceremonies of religion; the other Πυλαγορας, charged with hearing and deciding of cauſes and differences between private perſons.—Both had an equal right to deliberate and vote, in all that related to the common intereſts of Greece. The Hieromnemon was elected by lot; the Pylagoras, by plurality of voices.

Though the *Amphictyons* were firſt inſtituted at Thermopylæ, M. de Valois maintains that their firſt place of reſidence was at Delphi, where, for ſome ages, the tranquillity of the times found them no other employment than that of being, if we may ſo call it, church-wardens of the temple of Apollo. In after times the approach of armies frequently drove them to Thermopylæ, where they took their ſtation, to be nearer at hand to oppoſe the enemies progreſs, and order timely ſuccour to the cities in danger. Their ordinary reſidence, however, was at Delphi.

Here they decided all public differences and diſputes between any of the cities of Greece; but before they entered on buſineſs, they jointly ſacrificed an ox cut into ſmall pieces, as a ſymbol of their union. Their determinations were received with the greateſt veneration, and even held ſacred and inviolable.

The *Amphictyons*, at their admiſſion, took a ſolemn oath never to diveſt any city of their right of deputation, never to avert its running waters, and if any attempt of this kind were made by others, to make mortal war againſt him: more particularly, in caſe of any attempt to rob the temple of any of its ornaments, that they would employ hands, feet, tongue, their whole power, to revenge it.—This oath was backed with terrible imprecations againſt ſuch as ſhould violate it; *e. gr.* May they meet all the vengeance of Apollo, Diana, Minerva, &c. their ſoil produce no fruit, their wives bring forth nothing but monſters, &c.

The ſtated terms of their meeting was in ſpring and autumn; the ſpring meeting was called Εαρινη Πυλαια, that in autumn Μετοπωρινη. On extraordinary occaſions, however, they met at any time of the year, or even continued ſitting all the year round.

Philip of Macedon uſurped the right of preſiding in the aſſembly of the *Amphictyons*, and of firſt conſulting the oracle, which was called Προμαντεια. Vid. *Potter*, Archæol. Græc. l. 1. c. 16. p. 89. ſeq. *Valois*, ap. Mem. Acad. Inſcrip. T. 4. p. 265. ſeq. It. T. 7. p. 641. Trev. Dict. Univ. in voc. *Richel.* Dict. in voc. *Æſchin.* Orat. περι παραπρεσβειας.

AMPHIDROMIA (*Cycl.*) See LUSTRICUS *dies*.

AMPHIDRYON, in eccleſiaſtical writers, a veil or curtain uſually drawn before the door of the *bema* in antient churches. Vid. *Du Cange*, Gloſſ. Græc. in voc. See the article BEMA.

AMPHIMALLUM, in eccleſiaſtical writers, is otherwiſe called *Amphibalum*, and *Amphibolum*.

Magri ſuggeſts the *Amphimallum*, ſpoken of by eccleſiaſtical writers, to have been a garment peculiar to biſhops. *Magri*, Vocab. Eccleſ. p. 15.

AMPHIPNEUMA, among antient phyſicians, a great degree or ſpecies of difficult reſpiration. *Hippoc.* Epid. l. 4. c. 24. n. 17. *Foſſ.* ad Eund. p. 43. *Caſt.* Lex. Med. p. 41.

AMPHIPPII, in antiquity, thoſe who practiſed riding on two horſes, by jumping from one to the other. *Pitiſc.* Lex. Ant. T. 1. p. 84.

The word is Greek, Αμφιπποι; they are ſometimes alſo called Ιππαγωγοι, and ſometimes by corruption, Ανιπποι. The appellation was given to a ſort of cavalry in the Grecian armies, who, for their conveniency, had two horſes a-piece, on which they rode by turns, leading the other. Vid. *Pollux*, Onomaſt. *Aquin.* Lex. Milit. T. 1. p. 49. *Tiraquel.* ad Alex. ab Alex. c. 22. *Potter*, Archæol. Græc. T. 2. l. 3. c. 3. p. 18.

AMPHIPRORÆ, in antiquity, were ſhips which had prows at both ends, that no time might be loſt in turning them, and alſo on account of the rapidity of ſtreams, and narrowneſs of channels. *Caliagr.* de Re Naut. c. 12. *Pitiſc.* Lex. Ant. T. 1. p. 89.

AMPHISBÆNA, in zoology, the name of a ſpecies of ſnake, which goes with equal eaſe either forward or backward. This is all its name imports, though there has been generally underſtood by it a ſerpent, with a head at each end, a monſter not to be expected in the works of nature.

It is a ſmall ſpecies of ſnake, of a pale brown colour, equally thick at the head and tail, and moving, like many inſects, either backward or forward. It is found in Lybia, and in the iſland of Lemnos. *Ray*'s Syn. Anim. p. 288.

Pliny, Galen, Ælian, Solinus, and other antient naturaliſts, ſpeak much of a ſerpent found in Lybia, under this denomination, which, according to them, could bite either at head or tail, *tanquam parum eſſet uno ore effundi venenum* [a], as if one mouth were not enough to convey its poiſon by.—The moderns generally deny the exiſtence of ſuch an animal, at leaſt of any ſuch ſpecies: inſtances of this kind may be found, but then they are irregular and monſtrous [b]. What ſeems to have given riſe to the opinion is, that there are ſome kinds of worms equally big at both ends; ſo that 'tis difficult to diſtinguiſh the head from the tail. It may be added, that there are ſome which move both ways; and theſe are the *Amphiſbænæ*, according to the etymon.—Such is the *cæcilia*, or ſlow-worm, or blind-worm, and ſome ſorts of *ſcolopendræ*.—[a *Plin.* l. 8. c. 23. b *Brown*, Vulg. Err. l. 3. c. 15.]

Sir Phil. *Vernatti* even affirms the exiſtence of a ſpecies of ſerpents in Java Major, with a head at each end, called *capra capella*, held ſacred by the people. We ſuppoſe he means the *cobra de cabelos*, which 'tis certain, from other accounts, has not this property. Vid. Phil. Tranſ. N°. 43. p. 863.

Some naturaliſts apply the term *Amphiſbæna* to inſects which have no heads.—In this ſenſe, Aldrovand gives the name *Amphiſbæna aquatica* to that ſpecies of inſects which he otherwiſe calls animated horſe-hairs; from an opinion, that they have no heads, but ſwim both ways.

AMPHISBÆNA *aquatica*, a name given, by Bertrutius, Albertus, and ſeveral other authors, to that long and ſlender inſect, called by others the *ſeta aquatica*, and *vermis ſetarius*. It has the name *Amphiſbæna*, from its going backwards or forwards with equal eaſe and celerity. This creature is, by the vulgar, ſuppoſed to be an animated horſe-hair; and Albertus and other the like authors, have taught many to believe, that a horſe-hair thrown any where into a ſtanding water, will become ſuch an animal. The uſual ſize is four or five inches long, and the thickneſs of a large hair. They are deſcribed by ſome as growing to a cubit long, and by others as growing even to two cubits. Theſe authors alſo affirm, that they are poiſonous to ſwallow, but of no hurt to the touch, and that they move like ſerpents.

Dr. Liſter accidentally found out the origin of this worm, in his reſearches into the hiſtory of a very different ſort of inſect. Diſſecting one of the common black beetles dug up in a garden, he found in its belly two of theſe hair-worms, or *Amphiſbænæ*; and renewing the experiment on other beetles of the ſame ſpecies, he found that they uſually contained one, two, or three of theſe worms. As ſoon as the body of the beetle is opened, they always crawl out. When put into water, they will live a conſiderable time, and ſwim nimbly about; but often put up their heads above water, as if endeavouring to make their eſcape, and ſometimes faſtening themſelves by the mouth to the ſides of the veſſel, and drawing their whole bodies after them.

This author obſerves alſo, that they cannot be fairly ſaid to be *Amphiſbænæ*, but move always with the head forwards; and that the head is diſtinguiſhed from the reſt of the body, by being conſiderably blacker than any other part, and is eaſily diſtinguiſhed from the tail end, which is white. When there are two or three of theſe found in the body of one beetle, they are uſually ſmall; but when the worm is ſingle,

it is much larger, and of a paler colour. Theſe creatures are not only found in the waters, but buried in earth, and ſometimes on the leaves of trees, in our gardens and hedges. Phil. Tranſ. N°. 83.

AMPHITANE, in natural hiſtory, a name of a ſtone deſcribed by the antients, and ſaid to have the power of the magnet, or loadſtone; but with this remarkable difference, that as that ſtone attracts only iron, ſo this exerts its influence only on gold. Pliny ſays it was found in that part of the Indies, where the native gold lay ſo near the ſurface of the earth as to be turned up in ſmall maſſes, among the earth of ant-hills, and deſcribes it to have been of a ſquare figure, and of the colour and brightneſs of gold. The deſcription plainly points out a well known foſſil, called, by Mr. Hill, *pyricubium*: this is common in the mines of moſt parts of the world; but neither this nor any other ſtone was ever ſuppoſed, in our times, to have the power of attracting gold. Probably the whole account aroſe from this, that in the gold mines worked in thoſe days, this foſſil might be frequent; and as it uſually lies near metals, and its brightneſs and regular figure might naturally make it be taken notice of by the miners, they might make it a rule, that when they found it, gold was near; and this report, a little miſrepreſented, might eaſily, among a people fond of reporting marvelous things, be ſwelled into a ſtory of its attracting the gold. See PYRICUBIUM.

AMPHITAPA, in antiquity, a kind of carpets, or cloathing, having a ſoft warm nap on each ſide. *Briſſon*, de Verb. ſignif. *Pitiſc.* Lex. Ant. in voc.

AMPHITHEATRE, (*Cycl.*) in gardening, certain diſpoſitions of trees and ſhrubs on the ſides of hilly places, which, if the hill or riſing be naturally of a circular figure, always have the beſt effect. They are to be formed of evergreens, ſuch as hollies, phillereys, lauruſtines, bays, and the like, obſerving to plant the ſhorteſt growing trees in the front, and thoſe which will be the talleſt behind, ſuch as pines, firs, cedars of Lebanon, and the like. *Amphitheatres* are alſo ſometimes formed of ſlopes on the ſides of hills, covered only with turf, and, when well kept, they are a great ornament to large gardens. *Miller*'s Gard. Dict. in voc.

AMPHITHURA, in eccleſiaſtical antiquity, a name given to the veil, or curtain, which divided the chancel from the reſt of the church. *Bingh.* Orig. Eccleſ. l. 8. c. 6. §. 8.

The word is Greek, Αμφίθυρα, thus called on account of its opening in the middle, after the manner of folding-doors.

AMPHODONTA, in zoology, a deſignation given to animals which have teeth in both jaws, the upper as well as under. *Caſt.* Lex. Med. p. 41.

The word is Greek, Αμφοδοντα, compounded of αμφι, and οδος, tooth.

AMPHORA (*Cycl.*)—We meet with two kinds of *Amphoræ* in antient writers, the Italic and Attic.

Italic AMPHORA was that uſed by the Romans, and which is therefore ſometimes called the Roman *Amphora*.

The Italian *Amphora* was alſo called *quadrantale*, and ſometimes *cadus*. It contained 72 pounds of wine, or water, 80 of oil, and 180 of honey. *Rhod.* de Pond. & Menſ. p. 40. *Voluſ. Mæcian.* de Ponder. ap. Pitiſc. Lex. Ant. T. 1. p. 88.

The *Amphora* was equal to 2 urnæ, or 3 modii, 6 ſemodii, 8 congii, 48 ſextaries, 96 heminæ, 192 quartarii, and 570 cyathi, amounting to about 7 gallons one pint, Engliſh wine meaſure. *Arbuth.* Tab. 12.

The antient *Amphoræ* were either *feſſile*, *i. e.* ſuch as would ſtand, or *non feſſile*, terminating in a ſtarp bottom. Of both which kinds, we meet with figures in antient medals. *Reland.* de Num. Veter. Hebr. diſſ. 2. p. 10. ſeq.

The *Amphora capitolina* was the ſtandard of this meaſure, which was kept in the capitol to adjuſt others by. *Pitiſc.* Lex. Ant. T. 1. p. 88.

Suppoſing the *Amphora* to have been a cube of 4 feet each ſide, as Politian aſſerts it to have been, we may venture to ſay, that ten of the greateſt drinkers on earth could not have emptied it. Buddeus's computation is much more reaſonable, he makes the *Amphora* of wine amount to about $4\frac{1}{4}$ gallons Paris meaſure. Vid. *Budd.* de Aſſe, l. 5. p. 492. ſeq. and 519. ſeq.

Attic AMPHORA was that uſed by the Greeks, and therefore ſometimes alſo called the Grecian *Amphora*.

The Attic *Amphora* was one third part bigger than the Italic; ſo that as the latter contained 2 urnæ, or 48 ſextaries, the former contained 3 urnæ, or 72 ſextaries, amounting to about 10 gallons 2 pints, Engliſh wine meaſure [b]. This was called, by the Greek writers, Αμφορευς, ſometimes alſo Κεραμιον, and, by way of diſtinction from the Roman kind, μελιχρης [c].—[[a] *Beverin.* de Ponerib. P. 2. p. 121. [b] *Arbuth.* Tab. 10. [c] *Gorr.* Med. Def. p. 32. in voc. Αμφορευς.]

AMPHORA, in aſtronomy, a name given to the ſign more uſually called *Aquarius*. See AQUARIUS, *Cycl.*

AMPHORARIUM *vinum*, in antiquity, denotes that which is drawn or poured into *amphoræ*, or pitchers, by way of diſtinction from *vinum doliare*, or caſk wine. *Briſſ.* de Verb. ſignif. p. 43. ſeq.

The Romans had a method of keeping wine in *Amphoræ* for many years to ripen, by faſtening the lids tight down with pitch or gypſum, and placing them either in a place where the ſmoak came, or under-ground. *Columell.* Re. Ruſt. l. 1. c. 6. *Plin.* Hiſt. Nat. T. 2. l. 23. c. 1. Ephem. Acad. N. C. l. cent. 5. obſ. 39.

AMPHOTEROPLON, among civilians, denotes a kind of naval uſury, or inſurance, where the inſurers run the riſque both of the going out and return of a veſſel. *Budd.* de Aſſe, l. 1. p. 185.

In this ſenſe, the word ſtands oppoſed to *heteroplon*, where only the voyage outwards is inſured.

AMPHOTIDES, in antiquity, a kind of defence, or armour for the ears worn by the antient Pugiles, to prevent giving their adverſaries a handle by that part. *Aquin.* Lex. Milit. in voc.

Authors have been in the dark as to the nature and office of the *Amphotides*. Some explain them as a ſort of helmet for covering the noſe and ears. *Argol.* in Not. ad Panvin.

Fabretti firſt aſcertained their real uſe, from the figure of a Pugil, which had *Amphotides* over its ears, joined by a piece coming over the forehead, and tied with ſtrings under the chin. Column. Traj. c. 8.

AMPLIATION is uſed, in ſome writers, for the act of enlarging the compaſs or extent of a thing.

On a medal of the emperor Antoninus Pius, we find the title *Ampliator civium* given him, on account of his having extended the *jus civitatis*, or right of citizenſhip, to many ſtates and people before excluded from that privilege. In effect, it is generally ſuppoſed to have been this prince that made the famous conſtitution, whereby all the ſubjects of the empire were made citizens of Rome. M. Spanheim refutes this notion, and makes the emperor Caracalla to have been the author of that conſtitution. *Spanh.* Orbis Romanus, Exerc. 2. Ouvr. des Scav. Nov. 1702. p. 489.

AMPLIATION, in the Roman law, denotes the act of deferring a judicial ſentence, either by reaſon the cauſe is not clear, or in favour of him againſt whom it is to paſs.

Ampliation differed from *comperendination*, in that the former was granted on the mere motion or pleaſure of the judge, the latter at the petition of one or both the parties. Add, that the former was not limited to any certain time, whereas the latter could not be extended beyond the third day.—Beſides, *Ampliation* might be repealed, which *comperendination* might not.

The firſt introduction of *Ampliation* was in favour of the *rei*, or perſons accuſed. But it was afterwards uſed on other occaſions; *e. gr.* when certain witneſſes were wanting, or the crime or the fact had not been ſufficiently proved to found a final deciſion on, or that the kind or meaſure of puniſhment was not agreed on, &c.

In theſe caſes, the prætor ſignified his intention, by pronouncing the word *Amplius*, or the letters *N. L.* for *non liquet*, by which he denoted that the cauſe was not clear, but that a ſecond action muſt be brought.

The perſon whoſe ſentence, whether of condemnation or abſolution, was thus deferred, was ſaid to be *ampliatus*.

Hence the phraſes, *bis ampliatus*, *tertio abſolutus eſt reus*.

AMPLIATION is alſo uſed, among ſchoolmen, to denote the acceptation of a term for a different time from that ſignified by the verb in the propoſition, *e. gr. juſtus peccavit*, *i. e.* before he ſinned he was juſt. *Scherz.* Man. Philoſ. P. 1. p. 18.

AMPTRUARE, in antiquity, denoted a kind of dancing performed by the chief of the Salii, and anſwered with a correſpondent motion by others in the chorus.

This is ſometimes alſo called *amburvare*; the anſwer of the chorus was particularly called *redamtruare*.

AMPULLA, in antiquity, an oil-viol with a large belly, uſed for unctions at the baths. *Pitiſc.* Lex. Ant. in voc.

The word *Ampulla* was alſo uſed for a drinking veſſel uſed at table.

AMPULLA, among eccleſiaſtical writers, denotes one of the ſacred veſſels uſed at the altars. *Du Cange*, Gloſſ. Lat. T. 1. in voc.

The word is ſometimes alſo written in Engliſh *Ampul*.

Ampullæ were alſo uſed for holding the oil uſed in chriſmation, conſecration, coronation, &c.

Among the ornaments of churches, we find frequent mention made of *Ampuls*, or vials. In the inventory of the cathedral of Lincoln, we meet with *Ampuls* of cryſtal, variouſly enriched with ſilver feet and covers; one containing a tooth of St. Chriſtopher, another a tooth of St. Cecily, another a bone of the head of St. John Baptiſt. *Dugd.* Monaſt. T. 3. p. 272. Abridg. p. 304.

AMPULLACEÆ *conchæ*, in natural hiſtory, a name by which ſome authors have called a genus of ſhells, named by others *conchæ globoſæ*, and *dolia*, and by the French naturaliſts *tonnes*. See the article DOLIUM.

AMPUTATION (*Cycl.*)—We have ſeveral remarks on the *Amputations* of the larger extremities, by Mr. Monro, in the Medic. Eſſ. Edinb. Vol. 4. art. 22. to which we muſt refer the curious.

AMSEGETES, in antiquity, thoſe whoſe grounds abutted on the highway. Vid. *Feſt.* de Verb. ſignif. in voc.

The laws of the twelve tables decree, *Amſegetes viam muniunto*. *Baxt.* Gloſſ. in voc.

AMTRUSTIO, in antient charters, denotes a ſworn or liege tenant, or vaſſal, of the antient French or German kings. The word is alſo written *Antruſtio*. Spelman derives it from the German *Ampt*, office, buſineſs, and the Engliſh *Truſtee*. *Spelm.* Gloſſ. p. 29. ſeq.

AMULET (*Cycl.*)—Some think this word derived from *Amula*, a ſmall veſſel with luſtral water in it, antiently carried in the pocket by the Romans, for the ſake of purification and expiation. This laſt opinion appears the more probable, in that ſome *Amulets* were made in the ſhape of little veſſels, as appears from the teſtimony of Pliny, who obſerves, that pieces of amber, cut in form of little veſſels, were hung about childrens necks for *Amulets*. *Infantibus alligatur ſuccinum Amuleti ratione formam vaſculi habens*. Vid. Jour des Scav. T. 45. p. 382.

Amulets are by ſome conſidered as a natural ſpecies of Taliſmans.[a] Others rather make Taliſmans a ſpecies of *Amulets*[b].—[a Mem. de Trev. b 1707. p. 1250. b Jour. de Scav. T. 20. p. 416.]

The Sambucus is ſaid by Hartman to be an *Amulet* againſt the Epilepſy: Dipſaci, according to Dioſcorides and Scaliger, are *Amulets* againſt the Quartan: Toad Flax, *Linaria*, is by others reputed an *Amulet* againſt the hæmorrhoids: Orpin, *Telaphium*, by Wedelius, [c] againſt the blind piles, and condylomata: a ſpider incloſed in a ſmall nut, by others, againſt the phthiſis: Jet, againſt the gravel: a dead man's tooth, againſt the tooth-ach.[d]—[c Ephem. Acad. N. C. dec. 1. an. 2. Obſ. 195. d Jour. des Scav. T. 7. p. 38.]

The Bulla, worn by the antients; the Abraxas of the Braſilidians, &c. were alſo *Amulets*.

The antients made great uſe of gems for *Amulets*: The whole Eaſt, according to Chiflet, wore a kind of jaſpar for this purpoſe.—*Pitiſc.* Lex. Ant. T. 1. p. 90.

Some will have the Teraphim of Laban, [e] which were carried away by Rachel, and the ear-rings which Jacob hid under an oak, to have been *Amulets*. [f]—[eGen. *c.* xxxi. *v.* 19. f Gen. *c.* xxxv. *v.* 4. *Calm.* Dict. Bibl. T. 1. p. 122.

That ſpecies of *Amulets* compounded of poiſons, uſed as preſervatives from the plague, are more particularly denominated Zenechta. Vid. Giorn. de Letter. de Parm. 1690. p. 164.]

Under *Amulets*, ſome alſo include medicinal or other ſubſtances fixed to brutes, or even plants, to preſerve them from certain diſeaſes and dangers.

Charms, words, ſcrolls, magic figures and numbers make a large claſs of *Amulets*, to which the Turks are ſtill greatly devoted. Their *Amulets*, called *Chaimaili*, are little bits of paper of two or three fingers breadth, rolled up in pieces of ſilk, containing ſhort prayers or ſentences out of the Alcoran, with circles and other figures, in which they inſcribe the name of Jeſus, the figure of the croſs, the firſt words of St. John's goſpel, and the like. They hang them about their necks, or place them under their arm-pits, or in their boſom near their hearts, and eſpecially when they go to war, as a preſervative againſt the dangers of it. Phil. Tranſ. N° 155. p. 445.

The pope is ſuppoſed to have the virtue of making *Amulets*, which he exerciſes in the conſecrating of *Agnus Dei's*, &c. See the article AGNUS *Dei*.

The ſpunge which has wiped his table, was formerly in great veneration on this account, as a preſervative from wounds, and death it ſelf: On this account it was ſent with great ſolemnity by Gregory II. to the duke of Aquitain. Vid. Act. Erud. Lipſ. 1718. p. 210.

AMULET, in a more particular ſenſe, is reſtrained to ſuch medicines, as do not operate by any phyſical virtue, or thoſe wherein there is no proportion between the cauſe and effect. *Burggr.* Lex Med. in voc.

In this ſenſe medicines which operate by effluvia, odors, and the like, do not belong to the claſs of *Amulets*.

In this ſenſe alſo thoſe eſſence veſſels worn by hyſterical women on their breaſt, called by Greek authors καρδιοφυλακια, and by the Latin ones *domus pectoris*, were not properly *Amulets*.

AMULET is ſometimes alſo applied, in a more extenſive ſenſe, to all medicines, whether internal or external, whoſe virtue or manner of operation is occult.—Vid. Giorn. de Letter de Parm. 1690. p. 164.

We find Mr. Boyle giving credit to *Amulets*, not as magic charms, but as having ſome ſecret phyſical influence. He tells us, that he himſelf, being troubled with a bleeding at the noſe one ſummer, what he found the moſt effectual remedy was, the moſs of a dead man's ſkull, tho' it did but barely touch his ſkin. Vid. Boyle Phil. Works abr. vol. 1. p. 445.

Several authors have written expreſsly on *Amulets*, as Jul. Reichett, Dav. Rein, Caſp. Bartholin, Th. Eraſtus, Ant. Tollini, [g] and Jac. Wolfius, [h] which laſt has almoſt exhauſted the ſubject of *Amulets*.—[g V. *Lipen.* Bibl. Med. p. 15. Ejuſd. Bibl Phil. p. 42. h *Wolf.* Scrutinium Amuletorum Medicum, in quo de natura & attributibus illorum, uti & plurimis illis quæ paſſim in uſum tam in theoria quam praxi vocari ſueverunt, ac in ſpecie de Zenechtis, vel quæ peſti opponuntur, agitur, &c. Lipſ. 1690, 4°. An extract of it is given in Giorn. de Letter de Parma, 1690. p. 163, ſeq.

AMULETICS, in medicine, is uſed by ſome writers for what is more frequently called an *Amulet*.

Amuletics amount to the ſame with what are otherwiſe called *Sympathetics*. See AMULET, and SYMPATHY.

Amuletics are chiefly uſed of late times to ſtop bleeding; ſuch are the *perſicaria*, *lapis hæmatites*, dried toads, &c. alſo againſt warts, ſarcomas, &c. V. *Junck.* Conſp. Chirurg. tab. 59.

Digby's ſympathetic powder is one of the principal *Amuletics* in caſes of hæmorrhages; and with many the *ancora ſacra*. *Junck.* Conſp. Medic. tab. 3. n. 6.

AMUND, in antient writers, denotes a perſon free or diſcharged from tuition or wardſhip. *Du Cange*, Gloſſ. Lat. T. 1. p. 176.

The word is alſo written *Aamund*, *Amond*, and *Amont*; and is compounded of the privative *a*, and the Saxon *Munde*, defence, tuition.

AMURACORY, in ſome writers of the middle age, denote a kind of *Turkiſh* ſoldiery belonging to the corps or order of *Janizaries*.

They ſeem to be the ſame with thoſe otherwiſe called *Saraptarii* and *Pocillatores*. *Aquin.* Lex. Milit. in voc.

AMURCA (*Cycl.*) is properly an aqueous duſky coloured juice, which is expreſſed together with the oil out of olives; but which, upon ſtanding, ſeparates, and ſettles to the bottom.

Some define *Amurca* by the fæces or dregs of olives, an expreſſion not altogether proper; in regard what ſettles from the oil, after it is put in the caſk, is properly denominated its fæces.

The olive is ſaid to conſiſt of five ſubſtances, *oſs*, *nucleus*, *ſanſa*, *oleum* and *Amurca*. Calv. Lex. Jur. p. 66.

Amurca being boiled in a copper veſſel to the conſiſtence of honey, becomes a drug of ſome uſe in medicine, being reputed an aſtringent and drier [a]; and as ſuch ſometimes preſcribed in ulcers, as well as againſt diſeaſes of the teeth, eyes. &c [b].—[a *Savar.* Dict. Comm. T. 1. p. 96. b V. *Burggr.* Lex. Med. T. 1. p. 617.

Hippocrates applies the term *Amurca* to a crude, immature putrid ſtate of the liver. *Hippocr.* Aph. 45.

Some authors have alſo given the Name *Amurca* to the juice or fluid found in the *renes ſuccenturiati*. Caſtel. Lex. Med. in voc. *Amurca*. See SUCCENTURIATI.

AMYGDALA, in natural hiſtory, the name of a ſpecies of *echinus marinus*, of the genus of the Briſſoides. *Klein.* Echin. p. 16. See the article BRISSOIDES.

AMYGDALÆ, in ſurgery, denotes ſuperfluous fleſh growing at the root of the tongue. *Ruland.* Lex. Alchem. p. 41.

AMYGDALOIDES *lapis*, in natural hiſtory, the name given by authors to a ſtone which reſembles the kernel of an almond in figure. It is no natural foſſile, but the petrify'd ſpine of an *echinus marinus*, or ſea-urchin, of the nature of the *lapis Judaicus*, but wanting the pedicle or ſtalk of that ſpine.

AMYGDALUS, the almond-tree, in botany. See the article ALMOND-*Tree*.

AMYLON, in antient writers, a kind of pulment anſwering, as ſome apprehend, to our furmity. *Baxt.* Gloſſ. in voc.

The word is Greek, Αμυλον, thus called, becauſe made *ſine mola*.

AMYNTA, in literary hiſtory, a beautiful paſtoral comedy, compoſed by Taſſo; the model of all dramatic pieces wherein ſhepherds are actors.

Taſſo's *Amynta* is allowed by the critics to be a maſter-piece in its kind, as containing all the beauties and delicacies poſſible. The author even preferred it to his *Jeruſalem*: It has been tranſlated into French, Spaniſh, Engliſh, Flemiſh and High-Dutch; and been imitated by moſt of the Italian poets ſince, eſpecially by Guarini and Bonarelli: The *Paſtor Fido*, and *Filli di Sciro*, are only copies of this excellent piece. *Baill.* Jugm. des Scav. T. 4. P. 1 p. 393. ſeq. *Menag.* Diſcorſ. ſopr. Amynt. in pref. Anti-Baill. T. 1. n. 55.

AMYNTOR properly denotes a perſon who defends or vindicates a cauſe. The word is pure Greek, Αμυντωρ, formed of the verb αμυνω, I defend or avenge.

In this ſenſe Mr. Toland entitles his defence of Milton's life, *Amyntor*, as being a vindication of that work againſt Mr. Blackall, and others, who had charged him with queſtioning the authority of ſome of the books of the new Teſtament, and declaring his doubt that ſeveral pieces under the name of Chriſt and his apoſtles, received now by the whole Chriſtian church, were ſuppoſititious.

The foundation of *Amyntor* is, that what had been ſaid in the life of Milton concerning the ſpuriouſneſs of ſeveral pieces under the name of Chriſt and his apoſtles, was not meant of thoſe writings which are now received by the whole Chriſtian church, but of thoſe apocryphal pieces, which were in many places received and approved of by the Fathers, and the firſt ages; ſuch as the epiſtles of Barnabas, of Clement, and of Ignatius; and many others, under the titles of goſpels, acts, liturgies; ſome revelations, and the paſtor Hermas; all which he holds to be mere forgeries, ſome of pious biggots, and others of Heathens; but at the ſame time he ſuggeſts many things which tend to diminiſh the authority of the canon of the new Teſtament itſelf.

Mr. Richards [a], Mr. Nys [b], Dr. Clark [c], and others, have wrote expreſsly againſt *Amyntor*.—[a] Canon of the N. Teſt. vindicated in anſwer to the Objec. of J. T. in his *Amyntor*, Lond. 1701. 8°. [b] Hiſtor. Acct. and defence of the Canon of N. T. in Anſ. to *Amyntor*, Lond. 1700. 8°. [c] Some reflections on that part of *Amyntor*, which relates to the writings of the primitive fathers, &c. Lond. 1699. 8°.

AMYRALDISM, a name given by ſome writers to the doctrine of univerſal grace, as explained and aſſerted by Amyraldus, and others his followers among the reformed in France. *Jæger*. Hiſt. Eccleſ. T. 1. Nouv. Rep. lett. T. 48. p. 544. and 549. *Pfaff*. Primit. Tubing. P. 1. p. 116. Ejuſd. Diſcurſ. de Formal. Conſenſ. Helvet. Ejuſd. Introd. Hiſt. Theol. Liter. l 3. ſec. 8. p. 254.

Amyraldiſm is ſaid to have been a ſyſtem worked up, to bring on a reconciliation with the Lutherans. At bottom it hardly differs from the genuine ſentiments of Calvin. *Jæger*. loc. cit. p. 563.

Moſes Amyraldus, in French *Amyraut*, was a celebrated profeſſor of theology at Saumur, towards the middle of the ſeventeenth century. He chiefly followed Cameron's ſyſtem, in explaining the myſteries of grace and redemption. His antagoniſts, of whom Du Moulin was one of the chief, charged him with running counter to the ſynod of Dort, and favouring Arminianiſm.

Among the eſpouſers of *Amyraldiſm*, one of the chief was M. Daillé. A formal accuſation was brought againſt Amyraut in the national ſynod of Alençon; but after hearing him, he was acquitted with honour; and ſilence impoſed upon both parties, which however was but ill obſerved by either. Suppl. *Morer*. Dict. Hiſt. T. 1. p. 127. ſeq.

AMYRBERIS, in botany, a name uſed by ſome authors to expreſs the barberry tree. *Ger*. Emac. Ind. 2. See the article BARBERRY.

AMZELL, in zoology, the name of a bird of the *Merula*, or black-bird kind, of which there are two ſpecies. The ring *Amzell*, or *Merula torquata*, and the *Merula montana*, called ſimply the *Amzell*.

The ring *Amzell* is a little larger than the common black-bird. Its back is of a duſky blackiſh brown, and its throat and breaſt are beautifully variegated with ſpots and ſtreaks of white, and the lower part of the throat is adorned with a fine broad white ring, whence the bird has its name.: this ring is of a lunated ſhape, the points ending at the ſides of the neck. The wings and tail are blackiſh, but are ſomewhat variegated with white in the female; the white looks greyiſh. The female is ſaid alſo by ſome not to have the ring round its neck, and has by that means been miſtaken for the *Merula montana*, or common *Amzell*. This feeds on inſects and on berries. It is common about the Peak in Derbyſhire, and is there called the rock *Owzell*. *Ray*, Ornitholog. p. 143.

The common *Amzell*, or *Merula montana*, differs from this, in that it has no ring round the throat, which is variegated with a browniſh red and with ſpots of black, and the belly with grey and black ſpots. It ſeems however not determined certainly, whether this is any other than the female of the ring *Amzell*. Id. ibid. p. 144.

ANA (*Cycl.*) is uſed among ſome occult philoſophers to denote the human mind. Hence, according to ſome, is derived the word *Anaſapta*, a Dæmon invoked to the aſſiſtance of a ſick perſon. *Caſt*. Lex. Med. p. 42.

ANABAPTISTS (*Cycl.*)—It is ſaid *Anabaptiſts* hold it unlawful to bear arms, and decline all offices in government. They conſtantly make uſe of dipping. Some ſcruple the lawfulneſs of paying tythes, and ſome obſerve the Jewiſh ſabbath. But theſe do not ſo properly come under the denomination of *Anabaptiſts* as of Sabbatarians, Quakers, Muggletonians, &c. Chamberl. Pref. Stat. P. 1. l. 3. p. 163.

Notwithſtanding the ſeverity of their morals, which is remarkably great [a], ſome zealous catholics, as Prateolus, Morery, and others, have not ſcrupled to charge the *Anabaptiſts* with the moſt abominable impurity, with renewing the practice of the Adamites, and enjoining their women to proſtitute themſelves to every man who demanded it [b]. When aſked what would become of ſociety, if every body refuſed to be concerned in the adminiſtration of government, their anſwer is: "No fear, while there are men to be ſubjects, they will never want lords and maſters to reign over them [c]." [a] *Bayl*. Dict. T. 3. p. 300. [b] Id. T. 1. p. 204. n. (M.) [c] Id. T. 2. p. 555.

The *Anabaptiſts* abound moſt in Holland, where they are known by the name of *Mennonites*. They are divided into two principal ſects or families, viz. the *Apoſtolici* and *Galenici*. *Carpzov*. Introd. Libr. Bibl. T. 5. P. 1. c. 18. p. 326. Ottius, Spanheim, Schyn, Catrou, and others, have given the hiſtory of the *Anabaptiſts*; Vandale, Gale, and others, defences of them; Luther, Wigandus, Schelguigius, Oſiander, Cloppenburg Harder, d'Aſſigny, &c. refutations of them. V. *Budd*. Iſag. ad Theol. l. 2. c. 7. p. 1362. ſeq. Ouvr. des Scav. Sept. 1699. p. 378. Mem. de Trev. 1702. Octob. p. 214. Jour. des Scav. T. 35. p. 565. It. T. 41, p. 466. ſeq. Act. Erud. Lipſ. 1704. p. 329. It. Supp. p. 85. *Vandale*, Hiſt. Baptiſm. ap. Bibl. Choiſ. T. 9. p. 230, 232.

Walafrid Strabo, who lived in the ninth century, and Ludovicus Vives, Salmaſius, and other learned men of later times, though not ranked among the *Anabaptiſts*, yet have owned, that infants were not baptized in the primitive church. Nevertheleſs pædobaptiſm appears to have been in uſe in St. Cyprian's time, who lived in the third century. Vandale maintains, that it had its firſt origin in that age; that it was entirely unknown in the two firſt centuries, and that the occaſion of its introduction was an opinion, which then got footing, of the neceſſity of baptiſm to ſalvation.—See what has been alledged on the other hand by Dr. Wall; as well as the reply thereto by Dr. Gale. *Walaf. Strab*. de Reb. Eccleſ. c. 26. *Vives* Not. ad Auguſt. de Civit. Dei, c. 27. Bibl. Choiſ. T. 9. p. 230. ſeq. Nouv. Rep. Lett. T. 20. p. 610. See BAPTISM, *Cycl.* and *Suppl.*

ANABAPTISM, among antient divines, denotes the repetition of baptiſm, practiſed on thoſe who had been baptized by heretics. Vid. *Suic*. Theſ. Eccleſ. T. 1. p. 238. ſeq. in voc. Αναβαπτιζω, and Αναβαπτισις. *Du Cange*, Gloſſ. Græc. T. 1. p. 65. in voc. Αναβαπτιζειν.

The antient *Anabaptiſm*, aſſerted by the Donatiſts, the Montaniſts, &c. took its riſe from the notion of the neceſſity of baptiſm to ſalvation. It began in the age of Tertullian, and laſted, at leaſt in Africa, till the time of St. Cyprian. See DONATIST, MONTANIST, &c. *Cycl.*

ANABAPTISM is alſo applied, among modern writers, to the principles and practice of thoſe called *Anabaptiſts*. See ANABAPTISTS, *Cycl.* and *Suppl.*

ANABASIUS, a name given by Pliny to a plant, which he calls alſo *Ephedra*, and deſcribes as hanging down from the branches of large trees, in form of tufts of hair. It is very evident that he has formed the name *Ephedra* by corruption of the *Ephydra* of the Greeks, which is the name given by Dioſcorides and others to the horſetail, from its growing in wet places. And here the word ſeems applied to a different plant, only for its reſembling the naked thready branches of the horſetail. The plant deſcribed by Pliny and others of the antients under this name, is the *Uſnea*, or long hairy tree-moſs. See the article USNEA.

ANABATA, in antient cuſtoms, a cope, or ſacerdotal veſt, to cover the back and ſhoulders of the prieſt. *Kenn*. Gloſſ. ad Paroch. antiq.

It is otherwiſe called *Anaboladium*, formed of the Greek Αναβαλλεσθαι, to caſt over or cover. Id. ibid.

The word *Anabala* ſeems to be uſed in the ſame ſenſe. V. *Du Cange*, Gloſſ. Lat. in voc.

ANABATHRA, in ancient writers, denote a kind of ſteps or ladder, whereby to aſcend to ſome eminence. In this ſenſe we read of the *Anabathra* of theatres, pulpits. &c. *Pitiſc*. L. Ant. p. 90. *Du Cange*, Gloſſ. Græc. T. 1. p. 65.

Anabathra appears to have been ſometimes alſo applied to ranges of ſeats riſing gradually over each other. Id. ibid.

ANABATHRA is more particularly applied to a kind of ſtone-blocks raiſed by the highway ſides, to aſſiſt travellers in mounting or alighting, before the uſe of ſtirrups was invented. *Pitiſc*. Lex. Ant. T. 1. p. 90.

The firſt author of this contrivance, among the Romans, was C. Gracchus, brother of Tiberius. *Bergier*, de Viis Milit. ſec. 39. § 31.

ANABLATUM, in botany, a name uſed by ſome authors for the *Squammaria*, or toothwort, called *Dentaria* by others. *J. Bauhin*, Vol. 2. p. 783.

ANABLEPS, in the Artedian ſyſtem of ichthyology, the name of a new genus of fiſh, of the Malacopterygious kind, the characters, of which are theſe: The branchioſtege membrane contains ſix bones, and there is only one ſmall fin at the extremity of the back. There is a ſpecimen of this fiſh in the great collection of Albertus Seba in Holland.

ANABOLÆUM, in antiquity, denotes any kind of upper garment worn over the coat or tunic. *Pitiſc*. Lex. Ant. T. 1. p. 90. *Du Cange*, Gloſſ. Græc. T. 1. p. 65.

This is otherwiſe called *Anabole*.

ANABOLEUS, Αναβολευς, among the antients, a ſervant whoſe office was to aſſiſt in mounting on horſeback.—Theſe were in uſe before the invention of ſtirrups, or of thoſe ſtones called *Anabathra*. *Suid*. Lex. T. 1. p. 158. *Du Cange*, Gloſſ. Gr. T. 1. p. 65. *Pitiſc*. Lex. Ant. T. 1. p. 90.

ANABOLEUS is alſo uſed by Euſtathius, to denote a ſmall piece of iron, whereon the foot was ſet, in order to mount; from which Buddæus infers, that the antients had ſtirrups or foot-boards; to which Lipſius objects, that it does not appear this *Anaboleus* was any pendent part fixed to the ſaddle, after the manner of our ſtirrups, but rather a portable engine brought by a ſervant, and placed by the horſe's ſide. *Aquin*. Lex. Milit. T. 1. p. 50.

ANABROCHISMUS, Αναβροχισμος, in the antient phyſic, the operation of taking away offenſive hairs in the eye-lids.

The manner of performing the *Anabrochiſmus* is deſcribed by Gorræus. Vid. *Gorr*. Def. Med. in voc. Αναβροχισμος.

ANACA, in zoology, the name of a Braſilian ſpecies of paroquette. It is of the ſize of a lark; its beak is brown and crooked; the crown of its head is covered with feathers of a liver colour, and there are circles of brown ones near its eyes. Its throat is grey; the upper part of its neck and its ſides are green; its belly is of a reddiſh brown; its back green, with a pale brown ſpot; and its tail a pale brown. There is a deep blood red mark at the top of each wing, the reſt

of

of the wings is green, but that their extremities are bluciſh. Its thighs are covered with green feathers, and its legs and feet are grey. *Margrave*, Hiſt. Braſil.

ANACALYPTERIA, (*Cycl.*) according to Suidas, were preſents made to the bride by her huſband's relations, and friends when ſhe firſt uncovered her face and ſhewed herſelf to men. *Suid.* Lex T. 1. p. 165. See alſo *Spanheim ad* Callim. p. 180.

Theſe preſents were alſo called επαυλαια; for among the Greeks, virgins before marriage were under ſtrict confinement, being rarely permitted to appear in public, or converſe with the other ſex; and when allowed that liberty, wore a veil over their faces, termed Καλυπτρον, or Καλυπτρα, which was not left off in the preſence of men till the third day after marriage, whence, according to Heſychius this day was alſo called *Anacalypterion*. *Pott.* Archæol. l. 4. c. 11. p. 294. ſeq.

ANACAMPSEROS, *Orpin*, in botany, the name of a genus of plants, the flowers and ſeeds of which are wholly the ſame with thoſe of ſedum; but, the plants of this genus from their firſt ſhooting from ſeed immediately run up into ſtalks, whereas the others form firſt globular tufts of leaves, from which the ſtalks are afterwards propagated.

The ſpecies of *Orpin* enumerated by Mr. Tournefort are theſe.

1. The common *Orpin*. 2. The purple flowered *Orpin*. 3. The ſmaller purple flowered *Orpin*. 4. The largeſt broad leaved *Orpin*. 5. The ſmall round leaved ever-green *Orpin*. 6. The ſmall long leaved ever-green *Orpin*. 7. The ſweet rooted *Orpin*, called *Rhodia radix*, and roſewort. 8. The ſmaller ſweet rooted *Orpin*, or roſe-root. 9. The largeſt bloody Portugal *Orpin*. 10. The largeſt Portugal *Orpin*, with white flowers. 11. The purſelain leaved *Orpin*. 12. The purple flowered *Orpin*, with few leaves on the ſtalks, and 13. The ſmall procumbent white flowered *Orpin*. *Tourn.* Inſt. p. 264. See ORPIN.

ANACAMPTERIA, Αναχαμπτηρια, in eccleſiaſtic antiquity, denote little hoſpitals, or inns for the entertainment of the poor and ſtrangers, built adjoining to the antient churches.

The *Anacampteria* are mentioned in the Theodoſian code. Muſculus renders the word by *Deambulatorii receſſus*, taking them we preſume for walks about the church. But Valeſius more properly tranſlates it by *Diverſoria*. Bingham, takes them for the *Cellulæ*, or little cells or lodgings, ſpoken of in the foreſaid law of the Theodoſian code. Perhaps they might alſo ſerve as lodgings for ſuch as fled to take ſanctuary in the church. For theſe might neither eat nor drink within the church, but only in ſome of theſe outward buildings, which upon that account were made as ſafe a retreat as the very altar itſelf. *Bingh.* Orig. Eccleſ. l. 8. c. 7. §. 13.

ANACANDAIA, in zoology, the name of a ſpecies of ſerpent found in the iſland of Ceylon, and very miſchievous among the cattle, whence it is called *Bubalinus*. *Ray*, Syn. An. p. 332. See BUBALINUS.

ANACARDIUM, in botany, a medicinal fruit brought from the Eaſt Indies, antiently in great eſteem as a cephalic.

The word is formed of the Greek ανα and καρδια, heart, on account of the figure of this fruit, which bears ſome reſemblance to a heart.

The *Anacardium* is alſo known among the Arabs by the appellation *Balador*, among the Indians by that of *Bybo*. The Portugueſe denominate it *Fava de Malaqua*, the Molucca bean, by which title it is alſo known in England as bearing ſome reſemblance in figure to our bean, though as to magnitude bigger. Some call it the *Elephant's louſe*; in the ſhops, it is particularly diſtinguiſhed by the name *Anacardium orientale*, by way of contradiſtinction from another fruit called *occidentale*. *Garc. ab Hort.* Hiſt. Arom. c. 30. *Matthiol.* in Dioſcor. c. 141. *Burggr.* Lex. Med. in voc. See MOLUCCA.

As to the ſpecies of the tree, and the country where it is produced, botaniſts give very uncertain, and contradictory accounts. Some will have it the growth of Bantam, others of Malabar.

The *Anacardium* is a flattiſh ſeed uſually compared to the heart of a litte bird, blackiſh and ſhining, which under a double rind encloſes a white ſweetiſh kernel.

The pith or medullary part of the *Anacardium* is extremely pungent, and acrimonious; whence the antients made great uſe of it in cold diſeaſes of the head, particularly to ſtrengthen the memory; but the abuſe of it ſometimes turning them ſtupid, delirious, or even mad, the moderns rarely venture on the uſe of it, at leaſt not without great correctives. *Vater.* Phyſ. Exper. app. c. 3. It. 4.

The preparations made from *Anacardium* are, an electuary or confection, and a honey.

The method of preparing *Anacardium* is by ſteeping them in vinegar, and then ſlowly drying them again by evaporation, or even making an extract of them with the vinegar in them. *Zwelf.* Pharmac. Auguſt. Claſſ. 20. p. 407.

The confection of *Anacardiums*, *confectio Anacardina*, is prepared two different ways, agreebly to the different preſcripions of Meſue and Zwelfer.

The ingredients, according to the former, beſides prepared *Anacardiums*, are mirobalans, pepper, caſtorium, refined ſugar, laurel-berries, cyperus, coſtus, and rocket.

It is ſuppoſed to be of great virtue againſt all cold diſorders of the abdomen, the brain, &c. to purify the blood and ſpirits, aſſiſt the ſenſes, ſtrengthen the memory and underſtanding; whence it is called by Meſue *Confectio Sapientum*.

Zwelfer ſubſtitutes another method of preparation, as both leſs diſagreeable and more efficacious. The ingredients are *aqua majorana*, orange flowers and peel, prepared *Anacardiums*, ſugar, ambergreaſe, citron ſeeds, ſtyrax, laudanum, beſides divers of the aromatic tribe. *Zwelf.* Pharmac. Reg. Claſſ. 14. p. 654.

Honey of *Anacardiums*, *Mel Anacardinum*, is made by grinding and boiling the fruit in water, till it yield a kind of melleous ſubſtance of a dark ruddy colour, which ſwimming on the water is to be ſkimmed off for uſe. *Zwelf.* Pharm. Aug. Claſs. 1. p. 49.

Fuchſius gives a ſomewhat different preparation; according to him, the *Anacardiums*, after grinding are to be ſoaked ſeven days in water, and on the eighth boiled down to half the quantity, ſtrained through a linen cloth, the fæces dried, and when dry, boiled up with a due proportion of honey.

The like virtues are aſcribed to this as to the confection. But neither are to be uſed without ſome precaution. A proper occaſion of employing them is in palſies of the tongue. V. *Sennert.* Prax. Med. l. 1. P. 2. c. 5. *Hoffm.* de Medicam. Offic. l. 2. c. 162. ſec. 50. *Burgg.* Lex. Med. in voc.

ANACARDIUM *antarticum* is uſed by ſome for the Cajou-fruit. This is alſo called by others *Anacardium occidentale*, and is ordinarily uſed for the true, or eaſtern kind. *Savar.* Dict. Comm. New Engl. Diſpenſ. p. 117. See CAJOU.

ANACATHARSIS, in medicine, properly denotes a purgation by ſpitting. *Caſtel*, Lex. Med. in voc.

In this ſenſe is the word uſed by Hyppocrates and Galen; agreeably alſo to this Blaſius reſtrains *Anacatharſis* to expectoration. Only Blancard, on what authority does not appear, extends *anacathartic* medicines to all thoſe which work upwards, by the glands of the head, whether vomitories, ſternutatories, or maſticatories. *Blanc.* Lex. Med. in voc.

ANACATHARSIS is alſo a name given by civil lawyers to the *Baſilicon repetitæ prælectionis* made by order of the emperor Conſtantine Porphyrogenetus. *Calv.* Lex. Jur. p. 66. *Fabric.* Bibl. Græc. l. 6. c. 6. n. 12.

It was thus called as being a review or correction of the Baſilicon.

ANACATHARSIS, among divines, denotes the clearing up ſome obſcure paſſage, by a ſpiritual, or anagogical interpretation. *Suicer*, Theſ. T. 1. p. 274. ſeq.

ANACEIA, Ανακεια, an Athenian feſtival in honour of the Dioſcuri.

It took its name from thoſe deities, who were alſo called Ανακες, and honoured with a temple called Ανακειον, *Anacæum*. The ſacrifices offered at that time were named Ξενισμοι, becauſe thoſe deities were ξενοι, or ſtrangers; and conſiſted of three offerings, which were called Τριτιαι. Athenæus mentions plays acted in honour of theſe deities. *Athen.* Deipnoſ. Lib. 2. *Potter*, Archæol. l. 2. c. 20. Vol. I. p. 366.

ANACHORESIS, Αναχωρησις, denotes a withdrawing from ſociety, or retiring into ſolitude. *Du Cange*, Gloſſ. Lat. T. 1. p. 178.

Anachoreſis is chiefly uſed in ſpeaking of the retreat of the antient monks and ſolitaries into ſome deſolate place, for the ſake of pennance, meditation and prayer. *Suic.* Theſ. Eccleſ. T. 1. p. 327. ſeq. *Magr.* Vocab. Eccleſ. p. 15.

The *Anachoreſis* was not allowed to perſons, before they had ſpent thirty years in the community. *Iſid.* de Eccleſ. Off. l. 2. c. 15.

ANACHORET (*Cycl.*)—When many of the habitations of *Anachorets* were placed together in the ſame wilderneſs, at ſome diſtance from one another, they were all called by one common name, *Laura*, which, as Evagrius informs us, differed from a *Cænobium*, or convent, in that a *Laura* was many cells divided from each other, where every monk provided for himſelf, but a *Cænobium* was but one habitation, where the monks lived in ſociety, and had all things in common.

Palladius and Cyril have written the lives of the antient *Anachorets*. V. *Fabric.* Bibl. Græc. l. 5. c. 32. and 41. *Bingh.* Orig. Eccleſ. l. 7. c. 2. §. 2.

The modern Greek *Anachorets* live three or four together, in a houſe dependent on the monaſtery, of which they hire it for life. They have their chapel, and after prayers apply themſelves to the culture of their vineyards, olives, fig-trees, and the like, which afford them proviſion for the year.

Theſe *Anachorets* only differ from the conventual monks, in that they have leſs intercourſe with the world, and live but in ſmall bodies.

In ſome parts of Greece, the monks or caloyers are divided into *Anachorets*, and aſcetics, or hermits. *Tournef.* Voy. du Levant. Lett. 3. p. 41.

ANACHORITA, in eccleſiaſtical writers, a name ſometimes given to the cells of recluſes. *Du Cange*, Gloſſ. Gr. T. 1. in voc.

By the antient canons, no *Anachorita* could be erected without conſent of the biſhop.

ANACLASTIC *Glaſſes*, *Vitra Anaclaſtica*, a kind of ſonorous phials, or glaſſes, chiefly made in Germany, which have the property of being flexible; and emitting a vehement noiſe by the human breath.—They are alſo called vexing glaſſes, by the Germans, *vexier glaſer*, on account of the fright and diſturbance they occaſion by their reſilition.

The *Anaclaſtic* glaſſes are a low kind of phials with flat bellies, reſembling inverted funnels, whoſe bottoms are very thin, ſcarce ſurpaſſing the thickneſs of an onion peel: this bottom is not quite flat, but a little convex. But upon applying the mouth to the orifice, and gently inſpiring, or as it were ſucking out the air, the bottom gives way with a horrible crack, and of convex, becomes concave. On the contrary, upon expiring or breathing gently into the orifice of the ſame glaſs, the bottom with no leſs noiſe bounds back to its former place, and becomes gibbous as before.

The *Anaclaſtic* glaſſes firſt taken notice of were in the caſtle of Goldbach; where one of the academiſts *Naturæ curioſorum*, having ſeen and made experiments on them, publiſhed a piece expreſs on their hiſtory and phænomena. *Roſini Lentilii Oribaſii* Sched. de Vitris Anaclaſticis. V. Ephem. Acad. N. C. Dec. 2. An. 3. p. 489. ſeq. their figure may be ſeen in the book above cited.

They are all made of a fine white glaſs. It is to be obſerved in theſe, 1. That if the bottom be concave at the time of inſpiration, it will burſt; and the like will happen if it be convex at the time of expiration. 2. A ſtrong breath will have the ſame effect even under the contrary circumſtances.

ANACLETICUM, Ανακλητικον, in the antient art of war, a particular blaſt of the trumpet, whereby the fearful, and flying ſoldiers were rallied, and recalled to the combat. *Suid.* Lex. T. 1. p. 166.

ANACLINOPALE, Ανακλινοπαλη, in antiquity, a kind of wreſtling, wherein the champions threw themſelves voluntarily on the ground, and continued the combat by pinching, biting, ſcratching, and other methods of offence. *Potter.* Archæol. l. 2. c. 21.

The *Anaclinopale*, ſtood contradiſtinguiſhed from the orthopale, wherein the champions were erect. In the *Anaclinopale*, the weaker combatant ſometimes gained the victory.

ANACLINTERIA, in antiquity, a kind of pillows on the dining bed, whereon the gueſts uſed to lean.

The antient tricliniary beds had four ενηλια, one at the head, another at the feet, a third at the back, and a fourth at the breaſt. That on which the head lay, was properly called by the Greeks, ανακλινητηριον, or ανακλινητρον; by the Romans *Fulcrum*, ſometimes *Pluteus*. *Caſaub.* Not. ad Spartian. in Ælio Vero. c. 5. *Salmaſ.* ad eund.

According to other writers, *Anaclinteria* is more properly underſtood of the backs of chairs whereon we lean. *Pitiſc.* Lex. Ant. T. 1. p. 90.

ANACOENOSIS, *Communicatio*, a figure in rhetoric, when we conſult the adverſary, or appeal to the judges what ought, or could have been done on ſuch an occaſion. *Voſſ.* Rhet. c. 14. §. 2.

Such is that of Cicero, *Quæro, ſi te hodie domum tuam redeuntem, coacti homines et armati, non modo limine tectoque ædium tuarum, ſed primo aditu veſtibuloque prohibuerint, quid acturus fis?* *Cicero* pro Cecin.

ANACOLLEMA, in phyſic, denotes a liniment or other medicine applied to the forehead, to ſtop or prevent defluxions of the eyes. *Gorr.* Def. Med. p. 33.

The word is Greek, formed of ανακολλαω, *conglutino*.

Anacollemata make a ſpecies of medicines called *frontalia*. The qualities required are, to be drying, cooling, thickening, aſtringent, conglutinant, &c.

To the claſs of *Anacollemata* belong bran, manna, myrrh, terra Samia, Acacia, &c.

Jungken deſcribes an *Anacollema frontale* for ſtopping hæmorrhages at the noſe. *Jungk.* Lex. Chym. Pharm. P. 2. p. 12.

ANACOLUTHON, Ανακολουθον, among antient grammarians, denotes an incoherence, or a conſtruction which does not hang together. This is uſually ſignified by the appellation of a figure, which ought rather to be denominated an inaccuracy. *Fab.* Theſ. p. 152. *Heder.* Schul. Lex. p. 227. ſeq.

ANACRISIS, among the antient Greeks, is uſed for a kind of trial, or examination, which the Archons, or chief magiſtrates of Athens, were to undergo, before their admiſſion into that office.

The *Anacriſis* ſtands diſtinguiſhed from the *Docimaſia*, which was a ſecond examination, in the forum.

The *Anacriſis* was performed in the ſenate houſe. The queſtions here propoſed to them were concerning their family, kindred, behaviour, eſtate, &c. *Potter.* Archæol. l. 1. c. 12. Some will have it that all magiſtrates underwent the *Anacriſis*.

ANACRISIS, in the civil law, denotes a ſearch or enquiry into the truth by examination of witneſſes, and other proper means, eſpecially torture. *Calv.* Lex. Jur. p. 66. *Briſſ.* de verb. Signif. p. 45. *Suid.* Lex. T. 1. p. 167.

ANACROSIS, Ανακρωσις, in antiquity, denotes a part of the Pythian ſong, wherein the combat of Apollo and Python are deſcribed. *Potter.* Archæol. l. 2. c. 23.

The *Anacroſis* was the firſt part, and contained the preparation to the fight.

ANACTON *Pædon*, Ανακτων Παιδων, in antiquity, a feſtival held at Amphyſſa, the capital of Locris, in honour either of the Dioſcuri, or of the Curetes, or Cabiri, about which authors are not agreed. *Potter.* Archæol. l. 2. p. 20.

ANADAVADÆA, in zoology, the name of a ſmall bird of the Eaſt Indies, which has the beak of the chaffinch, and the feet of the lark. It is a very ſmall bird, ſcarce exceeding the gold creſted wren in ſize. It is brown on the back, but very beautifully red at the rump; its tail and its long wing feathers are black; the wings are ſpotted with white, and the breaſt is black in ſome birds, and in others of a fine bright red. It is ſometimes brought over to England alive in cages, and will live here very comfortably. *Ray*'s Ornitholog. p. 194.

ANADEMA, among the antients, denotes an ornament of the head, wherewith victors at the ſacred games had their temples bound. *Fab.* Theſ. p. 153.

The word is formed of the Greek Αναδεομαι, to be bound round the temples, to be crowned. *Suic.* Theſ. T. 1. p. 256. in voc. Αναδεομαι.

Some confound the *Anadema* with the *Diadema*, worn by the antient Perſian kings. *Pitiſc.* Lex. Ant. T. 1. p. 661. in voc. *Diadema*.

Anademata are alſo mentioned by antient writers among the ornaments of the heads of women. *Calv.* Lex. Jur. p. 66.

According to ſome the Greek word αναδεμα anſwers to what the Latins call *Redimiculum*.

ANADOSIS, in the antient medicine, denotes the diſtribution of the aliment, by the veſſels of the body. *Gorr.* Def. Med. p. 33. *Caſt.* Lex. Med. p. 43.

In this ſenſe *Anadoſis* makes a part of nutrition or digeſtion. Some uſe *Anadoſis* as ſynonymous with *Diadoſis*. Others diſtinguiſh between them, reſtraining *Anadoſis* to the act of conveying the chyle from the ſtomach into the greater veins, and *Diadoſis* to that of forwarding it from the greater into the ſmaller, and capillary veſſels. See DIGESTION.

ANADROMOUS, in ichthyography, a term of diſtinction among fiſhes, denoting ſuch as have their times of going from the freſh water to the ſalt, and afterwards returning back to the freſh water again.

The word is derived from the Greek, ανα, back again, and δρομος, a courſe, or paſſage. The truttaceous fiſhes are many of them of this kind, and the method nature has appointed of their courſe of changes ſeems to be this; they are firſt produced from the ſpawn in freſh water rivers, they live there till of ſome ſtrength and ſize, and then ſeek the ſalt water to feed more at large in, and grow to their full extent: at which period they return into the freſhes again to lay their ſpawn, that their young brood may have the ſame advantages themſelves before had of being firſt placed in freſh water. Some uſe the word *Catanadromi* in the ſame ſenſe. Vid. *Willughby*'s Hiſt. Piſc. p. 182. *Caſt.* Lex. Med. p. 48. *Du Cange*, Gloſſ. Græc. T. 1. p. 67.

ANADYSIS, among antient divines, denotes the ceremony of the emerſion in baptiſm. *Suic.* Theſ. Eccleſ. T. 1. p. 259. in voc. Αναδυω. See BAPTISM.

In which ſenſe, Αναδυσις ſtands contradiſtinguiſhed from καταδυσις, or immerſion. See IMMERSION, *Cycl.*

ANÆDEIA, in antiquity, a denomination given to a ſilver ſtool placed in the Areopagus, on which the defendant, or perſon accuſed was ſeated for examination. *Potter*, Archæol. l. 1. c. 19.

The word is Greek Αναιδεια, which imports impudence; but according to Junius's correction it ſhould rather be Αναιδια, q. d. innocence.

The plaintif, or accuſer was placed on an oppoſite ſtool called *Hybris*, or injury; here he propoſed three queſtions to the party accuſed; to which poſitive anſwers were to be given. The firſt, are you guilty of this fact? The ſecond, how did you commit the fact? The third, who were your accomplices? See ACCUSATION, *Cycl.* and *Suppl.*

ANÆRETA, in aſtrology, a place in the heavens, at which the *Apheta* arriving, an infant born at that time, is in danger of death. *Vital.* Lex. Math. p. 38.

The word is Greek, and literally imports, a cutter off, *Abſciſſor*.

In this ſenſe *Anæreta* ſtands oppoſed to *Apheta*.

Anæreta, among the Greek aſtrologers, amounts to the ſame, with what the Arabs call *Ahazin*.

ANÆSTHESIA, Αναισθησια, in medicine, a privation of ſenſe, or abolition of the faculty of perceiving external objects. *Zuinger.* Compend. Inſtit. Med. Pathol. n. 158.

The ſpecies or degrees of this are *ſtupor*, *hebetudo*, *depravatio*, &c.

ANAGALLIS, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe. The calyx is a perianthium divided into five hollowed ſegments, and remaining after the flower is fallen. The flower conſiſts of a ſingle petal, which forms no tube, but is divided into five roundiſh but ſomewhat oval ſegments, which join together at their bottoms. The ſtamina are five erect filaments ſhorter than

than the flower, and hairy in their lower part. The antheræ are ſimple; the germen of the piſtillum is globoſe; the ſtyle is ſlender, and ſlightly bent; and the ſtigma is headed. The fruit is a globoſe capſule, containing only one cell, and divided horizontally into two hemiſpheric portions. The ſeeds are numerous, and of an angular figure, and their receptacle globoſe, and very large. *Linnæi*, Gener. Plant. p. 65.

Anagallis is a medicinal plant, of which there are two kinds in uſe in the ſhops, viz.

ANAGALLIS *aquatica*, called alſo by botaniſts, *Veronica aquatica*, or *becca-bunga*, in Engliſh, *brook-lime*. It bears a reſemblance in its flowers to the Paul's-betony, though its leaves are larger, and the ridges entire. See the article VERONICA.

Its chief uſe is to abrade and clear away thoſe little viſcoſities which obſtruct the capillaries, and occaſion ſcabs and blotches, though it has alſo a diuretic virtue, and ſerves as a cleanſer of all the viſcera; whence it is frequently an ingredient in antiſcorbutic and deobſtruent compoſitions. *Quinc.* Diſpenſ. P. 2. ſec. 4. n. 291.

ANAGALLIS *terreſtris*, called, in Engliſh, *pimpernel*, is of two kinds, diſtinguiſhed by the colour of the flowers. 1. Male, *Anagallis terreſtris mas*, by ſome alſo called *Anagallis Phœnicio flore*. 2. Female, *Anagallis terreſtris fœminea*, or *Anagallis cæruleo flore*. *Alleyn*, Diſpenſ. p. 48.

The officinal preparations from the terreſtrial *Anagallis* are, a water, conſerve, ſyrup, and eſſence, all reputed of uſe in maniac caſes. Eſſence of *Anagallis* is made of the extract diſſolved in the eſſence of *hypericum*. *Burggr.* Lex. Med. in voc. See PIMPERNEL.

ANAGLYPHA, Αναγλυφα, in antient writers, denote veſſels, or other things, adorned with ſculpture in *baſſo relievo*. Vid. *Fabri*, Theſ. p. 153. *Du Cange*, Gloſſ. Lat. T. 1. p. 178. *Magr.* Vocab. Eccleſ. p. 15.

In this ſenſe, the term is ſometimes alſo written *Anaglyptus*, *Anaglyphicus*, or *Anaglyphatus*.

The artificers in this kind are denominated *Anaglyptes*, *Anaglypharii*, &c. Vid. *Meurſ.* Gloſſ. p. 32. ſeq. *Du Cange*, Gloſſ. Græc. T. 1. p. 66.

ANAGLYPHICE (*Cycl.*) includes what we call emboſſing, &c. and ſtands contradiſtinguiſhed from *diaglyphice*, or engraving in creux, where the ſtrokes are indented.

ANAGNOSES, or ANAGNOSMATA, in the Greek church, denotes an eccleſiaſtical book, containing the leſſons read at divine ſervice, in the ſeveral feaſts, &c. of the year. *Allat.* de Libr. Eccleſ. diſſ. 1.

The Greek Αναγνωσεις, or Αναγνωσμαλα, anſwers to what the Latin church calls *lectio*. Vid. *Du Cange*, Gloſſ. Græc. T. 1. p. 66. *Meurſ.* Gloſſ. p. 33. in voc. Αναγνωσαι. *Suic.* Theſ. Eccleſ. T. 1. p. 247. ſeq. & p. 250. ſeq. in voc. Αναγνωσαι.

St. Jerom is commonly ſaid to have been the firſt compiler of the Αναγνωσεις.

ANAGNOSTA, or ANAGNOSTES, among the antients, denotes a kind of ſervant retained in the families of perſons of rank, to read to them at meals. Vid. *Walch.* Parerg. Acad. p. 77.

Theſe were called by the Greeks Αναγνωσαι, and by the Romans *lectores*; ſometimes alſo *a ſtudiis*.

Even private families, who lived any thing politely, were not without this kind of literary ſervants. Servius [a] makes mention of a female *Anagnoſta*, under the denomination of *lectrix*. Sometimes the maſter himſelf performed the office of reader. The emperor Severus read himſelf at table. Martial mentions one Ligurinus, who read his own poems at dinner, to the great diſguſt of the gueſts [b].—[a Ad Virgil. l. 12 .v. 159. b *Mart.* Epig. 5. l. 3.

Among the Greeks there were alſo *Anagnoſtæ* in their theatres for public reading of the poets. *Gell.* l. 18. c. 5. *Fabr.* Theſ. p. 153. ſeq.

Bilbergius [a], and Th. Raynaud [b], have diſſertations expreſs on *Anagnoſtæ*.—[a Diſſ. Acad. de Anagnoſtis, Upſ. 1689. 8vo. An analyſis of it is given in Reimman. Idea Antiq. Liter. p. 46. ſeq. b De Anagnoſt. ad Menſem religioſam, ext. ap. Opp. ejuſd. Lugd. 1665.]

The *Anagnoſtæ* were inſtructed to read with clearneſs, expedition, propriety, and good accent, in order to which, they had maſters appointed them, called *prælectores*.

The time of reading was chiefly at ſupper; ſometimes alſo in other vacant hours, or even after waking in the night. The books chiefly read were hiſtorians and orators. *Alexand. ab Alexand.* Genial. Dict. l. 2. c. 30. *Schot.* Obſerv. 5. 29. p. 241. *Putean.* de Stil. c. 7. *Scheff.* Relig. conviv. priſc. T. 12. p. 258. Theſ. Ant. Rom. *Græv.* Pignor. de Serv. p. 109. *Meurſ.* Gloſſ. p. 251. *Hoffman.* Lex. in voc. *Pitiſc.* Lex. in voc. It. in voc. *Lectores*. *Fabric.* Bibl. Antiq. c. 19. §. 6. *Fabr.* Theſ. in voc. *Anagnoſtes*.

Some ſpeak of the *Anagnoſtæ*, as a ſpecies of *acroamata*, from which, however, in propriety they differed.

Cornelius Nepos relates of Atticus, that no *acroama* was ever heard at his meals, but an *Anagnoſtes*. He never ſupped without reading, ſo that the minds of his gueſts were no leſs agreeably entertained than their appetites. The ſame cuſtom Eginhard obſerves was kept up by Charlemain, who at table had the hiſtories and acts of antient kings read to him. This cuſtom ſeems to have been a relick of that of the antient Greeks, who had the praiſes of great men and hero's ſung to them, while at table. *C. Nepos*, Vit. Att. c. 14. n. 1.

The antient monks and clergy kept up the like uſage, as we are informed by St. Auguſtin. Sidonius praiſes a man of quality in his time, who, in this reſpect, lived a clerical life, though he was no prieſt.

ANAGNOSTIC, in middle aged writers, is ſometimes uſed for an epiſtle, or other writing. *Du Cange*, Gloſſ. Lat. T. 1. p. 178. ſeq.

ANAGOGIA, in antiquity, ſolemn ſacrifices to Venus at Eryx, in Sicily, where ſhe was honoured with a magnificent temple.

The name of this ſolemnity was derived, απο τυ αναγισθαι, *i. e.* from returning; becauſe the goddeſs was ſaid to leave Sicily, and return to Afric, at that time. *Potter*, Archeol. Græc. l. 2. c. 20.

ANAGOGICAL (*Cycl.*)—*Anagogical* expoſition is, when the ſacred text is explained with a regard to the end which Chriſtians ſhould have in view, and this is eternal life. For example, the reſt of the Sabbath, in the *anagogical* ſenſe, ſignifies the repoſe of everlaſting bleſſedneſs. *Calm.* Bibl. Dict. in voc. See ANAGOGY.

ANAGOGY (*Cycl.*) is particularly uſed, where words, in their natural or primary meaning, denote ſomething ſenſible, but have a further view to ſomething ſpiritual or inviſible. Vid. *Magr.* Vocab. Eccleſ. p. 16.

Anagogy, in a more particular ſenſe, denotes the application of the types and allegories of the Old Teſtament to ſubjects of the New; thus called, becauſe the veil being here drawn, what before was hidden is expoſed to open ſight. *Suic.* Theſ. Eccleſ. T. 1. p. 253. ſeq.

Some of the fathers place Αναγωγη, in oppoſition to ιστορια, hiſtory.

ANAGOGY, in medicine, denotes the return of humours, or the rejection of a matter upwards, or by the mouth. Vid. *Caſt.* Lex. Med. in voc.

Anagogy amounts to the ſame with what is otherwiſe called *anabole*. *Caſt.* lib. cit. in voc. *Anabole*.

ANAGOGY, Αναγωγια, in antient hiſtory, denotes a looſe education or diſcipline. *Suid.* in voc. & in voc. Αναγωγος.

ANAGRAMMATIST, a maker or compoſer of anagrams.

Thomas Billon, a provincial, was a celebrated *Anagrammatiſt*, and retained by Lewis XIII. with a penſion of 1200 livres, in quality of *Anagrammatiſt* to the king.

Lipenius gives a long liſt of *Anagrammatiſts*. Vid. *Lipen.* Bibl. Phil. p. 43. ſeq.

Th. Billon has given a ſet of prophecies in anagrams; Gul. Blancus, the art of compoſing anagrams. *Morhof.* Polyhiſt.

ANAGROS, a meaſure for corn, uſed in ſome cities in Spain, containing ſomewhat more than the Paris *mine*. *Savar.* Dict. Com. T. 1. p. 97.

This is otherwiſe called *Anegros*.

Four *Anagros* make a *cahi*, four *cahi's* a *tanega*. Id. Suppl. p. 25. in voc. *Anegros*.

ANAGYRIS, *bean-trefoil*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the papilionaceous kind, but its vexillum is much ſhorter than any of the other petals. The piſtil ariſes from the cup, and finally becomes a pod, reſembling that of the kidney-bean, and containing uſually kidney-ſhaped ſeeds. To this it is to be added, that the leaves ſtand three on every pedicle.

The ſpecies of *Anagyris*, enumerated by Mr. Tournefort, are theſe.

1. The true ſtinking *Anagyris*. And, 2. The long leaved, ſtinking, cretic *Anagyris*, with yellow flowers. *Tournef.* Inſt. p. 647.

The leaves of *Anagyris* are reſolutive, and its ſeed emetic. *Lemery*, des Drogues.

ANALECTA, the fragments, or off-falls of meat, which dropped from the table on the ground.

Analecta was alſo uſed for a ſervant appointed to gather up the off-falls of the tables. *Pitiſc.* Lex. Ant. T. 1. p. 91.

In this ſenſe, the word is ſometimes alſo written *Analectes*.

Satellius Quadratus, in the way of deriſion, adviſed Calviſius Sabinus, a man of great wealth, and much affectation of learning, but with little memory, and leſs genius, to keep *Analectæ*, *ut grammaticos haberet Analectas*; a phraſe which has occaſioned much diſpute among critics and antiquaries. Vid. *Senec.* Epiſt. 27. *Fabr.* Theſ. p. 154. ſeq. *Pitiſc.* Lex. Ant. T. 1. p. 91. *Rhodig.* Ant. Lect. 13. p. 31. *Lipſ.* in Senec. loc. cit. *Turneb.* Adverſ. 24, 33.

ANALECTA, *Analects*, in literary hiſtory, a title given by ſeveral writers to collections of remarks, animadverſions, or even of diſtinct pieces and eſſays.

Pontanus and Swartius have publiſhed works, under the title of *Analecta*; Mabillon and Matthæus have given antient *Analecta*; Goclenius, *Analecta* of the Latin tongue; Monfaucon, Greek *Analecta*; Reland, Rabbinical *Analecta*; Hottinger and Nereus, hiſtorical *Analecta*; Urſinus, Baumannus, Doughtey, Friſchius, Montagu, &c. ſacred *Analecta*; Gonzalez, *Analecta* of Law; an anonymous author, *Analects* of Iriſh affairs, a work written with great diſingenuity and ſpleen againſt the Engliſh intereſt. *Fabric.* Bibl.

Græc. l. 6. c. 10. n. 12. Act. Erud. Lipſ. 1724. p. 81. Jour. des Scav. T. 75. p. 277. Ouvr. des Scav. Oct. 1697. p. 53. *Kuſt.* Bibl. Nov. Libr. an. 1698. p. 75. *Nichols.* Iriſh Hiſt. Libr. c. 1. p. 9. *Lipen.* Bibl. Phil. p. 44. Ejuſd. Bibl. Jur. p. 17. Ejuſd. Bibl. Theol. p. 37.

ANALEMMA (*Cycl.*)—This word is uſed by Ptolemy, who has given a treatiſe expreſs on the ſubject, περὶ ἀναλήμματος; but the Greek copy is loſt, and only the Latin tranſlation left, which is very faulty. It was publiſhed, with a commentary, by Frid. Commandinus, Rom. 1562. 4to. Vid. *Fabric.* Bibl. Græc. l. 4. c. 12. n. 9. Giorn. de Letter. d'Ital. T. 19. p. 153. ſeq.

The *Analemma* was invented by John de Royas, a Spaniard. The advantages of this above the aſtrolabes of Ptolemy and Gemma Friſius, are, that all the lines proceeding from the eye are parallel to each other, and perpendicular to the plane of projection, conſequently not only the equator is a right line, as in the aſtrolabe of Gemma Friſius, but all the parallels to the equator are ſo too; ſince, in virtue of the infinite diſtance of the eye, they are all in the ſame caſe, as if their plane paſſed through the eye. For the like reaſon, the horizon, and its parallels, are alſo right lines. On the other hand, whereas in the two former aſtrolabes the degrees of circles converted into right lines become very ſmall towards the center, and large towards the circumference, they become here ſmall towards the circumference, and large towards the center: ſo that their figures will be no leſs altered in this than in the others. Add, that moſt of the circles here degenerate into ellipſes, which are often difficult to deſcribe. Vid. Hiſt. Acad. Scienc. an. 1701. p. 125. ſeq.

ANALEMMA, in antient writers, denotes thoſe ſort of ſun-dials which ſhew only the height of the ſun at noon, every day, by the largeneſs of the ſhadow of the gnomon.

The antient *Analemma*, ſpoken of by Vitruvius and others, was not properly a dial; becauſe it did not ſhew the hours, but the ſigns and months only. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 91. *Danet*, Dict. Antiq. in voc.

Jo. Twiſden has a treatiſe expreſs on the *Analemma*. Vid. Uſe of the great Planiſphere, called the *Analemma*, in the Reſolution of ſome uſeful Problems of Aſtronomy, Lond. 1685, 4to. *Wood*, Faſt. Oxon. T. 2. p. 97.

ANALEPSIS, the reſtauration of a body waſted by diſeaſe, by the uſe of a nutritious diet.

ANALEPSIS is alſo uſed for the method of hanging a broken or diſlocated member, eſpecially the hand, in a ſling. *Caſt.* Lex. Med. p. 44.

This operation to the arm is called *Analepſis*, to the foot *theſis*. *Gorr.* Def. Med. p. 33.

ANALOGISM, in medicine, denotes the judging of diſeaſes, and their remedies, by ſimilar appearances; or the diſcovery of cauſes and cures unknown, by ſome ſimilitude with others already known. Vid. *Caſt.* Lex. Med. in voc. *Quinc.* Lex. Phyſ. p. 19. ſeq.

Analogiſm is defined, by Gorræus, a method of reaſoning peculiar to dogmatic phyſicians, whereby, in obſcure and occult caſes, indications are taken from ſimilar diſeaſes. This method of deduction was called, by the antients, *medicina rationalis*, or *dogmatica*, in oppoſition to the *empirica*, called alſo *epilogiſm*, which was conducted by appearances only, without theory.

The rational or dogmatic method was called Ἀναλογικὴ, and the phyſicians who practiſed it, Ἀναλογιστικοὶ.

A late anonymous writer has given a diſcourſe on the *Analogiſm* of fevers. Vid. Exerc. Francof. T. 4. Ex. 2. See the article FEVER.

ANALOGISTA, among civil law writers, a tutor who is not obliged to give an account of his conduct. *Calv.* Lex. Jurid. p. 67.

In this ſenſe, *Analogiſta*, Ἀναλογιστὰ, amounts to the ſame with what is otherwiſe called *Aneclogiſtus*, Ἀνεκλογιστος, *Anexetaſtos*, Ἀνεξέλαστος.

Perſons dying ſometimes appointed friends to be tutors to their children, with this clauſe, that they ſhould be *Analogiſtæ*.

Some lawyers hold, that this did not exempt a tutor guilty of glaring miſmanagement, from being called to account, and puniſhed accordingly. Id. in voc. *Aneclogiſtus*.

ANALOGIUM, in eccleſiaſtical writers, denotes an *ambo*, or reading-deſk. Vid. *Meurſ.* Gloſſ. p. 35. *Du Cange*, Gloſſ. Græc. T. 1. p. 69. *Suic.* Theſ. Eccl. T. 1. p. 284. *Suid.* Lex. p. 169.

ANALOGIUM is ſometimes alſo uſed for a martyrology, or obituary of a monaſtery. Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 179.

ANALOGY (*Cycl.*) is one of the great ſources of knowledge. A great part of philoſophy and of theology itſelf ſtands on no other baſis. From a few data, a few points known and allowed, we reaſon by *Analogy*, and deduce a number of others. 'Tis thus that moſt branches of knowledge are extended to their preſent dimenſions. There are but few things actually obſerved, few experiments made; and all the obſervations and experiments we have are only ſingular. Such an effect was found from ſuch an individual body, under ſuch and ſuch circumſtances. Muſt we reſt here, and content ourſelves with having diſcovered a ſingle phænomenon; or muſt we proceed to make the like obſervations and experiments of all the other bodies of the ſame claſs, under the like circumſtances, before we can conclude any thing concerning them? The human mind is too impatient; knowledge, at this rate, would go on but ſlowly, or rather would not go on at all. We therefore take a ſhorter and more compendious, though a ſomewhat precarious courſe. We infer, that what has been obſerved of one body under ſuch circumſtances, will, from the *Analogy* and uniformity in the works of the creator, equally hold in all other bodies of the ſame ſpecies under the like circumſtances. This has many times drawn us into great errors; it continues every day to lead us into new ones, and may be ſaid to be the ſource of moſt of the miſtakes committed in purſuit of ſcience. But what remedy? how is it to be avoided? Mankind muſt be reaſoning and prying into things, where, let their patience and application be ever ſo great, they can never come at any actual knowledge by obſervation and experiment. They will enquire what paſſes, for inſtance, in the heavens, in the regions of the fixed ſtars and planets, in the neighbourhood of the ſun, on the ſurface of the moon, in the center of the earth, at the bottom of the ſea, in the bodies of animals, vegetables, and minerals. What have they but the *Analogy* of things, the ſuppoſed correſpondence between theſe unknown, inacceſſible objects, and other objects they are acquainted with, to be their guide.

The *Analogy*, *e. gr.* between the three kingdoms of plants, animals and minerals, has been the ſource of a multitude of diſcoveries, either real or imaginary: hence it is we have learnt, that ſtones vegetate; that plants breathe; that the ſap circulates in them; that generation is performed by eggs in the human kind; that the moon and planets have their atmoſpheres, their inhabitants, their trees, their ſeas, and what not. In effect, if we will follow whither *Analogy*, real or imaginary, will lead us, there is no end of ſcience. What magnificent things are we told of the *Analogy* between the microcoſm and the macrocoſm, the great and little world? how many large volumes on it have been written?

The world, according to Kircher, and others, is only a great animal, of which the ſun is the heart, the firmament the brain, Saturn the ſpleen, Mars the liver, Mercury the lungs, Jupiter the blood and ſpirits. There are bones and cartilages, veins, arteries, nerves, blood, &c. in the earth; or, if you had rather, there are ſtones, metals, minerals, rivers, lakes, caverns, in the human body. Vid. *Kirch.* Mund. Subter. l. 12. ſec. 1. c. 5.

The chemiſts have not been leſs happy in tracing the *Analogy* between the human body and a chemiſt's alembic. The heart is the focus, or fire-place, the ſkull the capital, the noſe the beak, &c. While mechanical phyſicians find nothing in the human body, but levers, pullies, ſcrews, preſſes, &c.

'Tis the ſame principle of *Analogy* that has filled the heavens with Cartes's vortices, and the human body with parts, which belong only to brutes. Anatomiſts in all ages, for want of opportunities of enquiring into man, have taken many of their deſcriptions from brutes, as ſuppoſing an *Analogy*.

The former, from the effects of mineral ſubſtances in their furnaces, infer, that they have the like in our bodies. And hence, for inſtance, it was, that Van Helmont decried bleeding in fevers. As, ſays he, we don't cool the liquor boiling in a kettle, by drawing off part of it, ſo, &c.—The heat, in the former caſe, is only to be abated by leſſening the fire; conſequently, in the latter caſe, the way to allay the fervor is by diſcharging ſome of the fuel, the febrile matter, by ſweat, or other evacuations.

As to divine and ſupernatural matters, 'tis aſſerted we know nothing of them, but by *Analogy*; that is, by the mediation and ſubſtitution of thoſe ideas we have of ourſelves and other natural beings [a]. Our ideas of God himſelf ariſe from this ſpring; we have no direct and immediate perception of him. The knowledge we have of the ſupreme being, is only an obſervation of his works, and a reflection of the mind, which ſhews what power, wiſdom, &c. appear neceſſary to enable him to produce them [b]. Having no proper ideas of his perfections, we give them the names of thoſe faculties in men, which we judge neceſſary.—[[a] Proced. Extent, &c. of Underſt. l. 1. c. 1. Preſ. State Rep. Lett. T. 2. p. 49. [b] *King*, Serm. on Divine Predeſt. Nouv. Rep. Lett. T. 49. p. 397. ſeq.]

But here, it is to be obſerved, a diſpute ariſes. The generality of divines make a diſtinction between the natural and moral attributes of God, maintaining the former to be only analogical, but the latter proper; *e. gr.* when the ſcriptures, ſay they, attribute hands, eyes, feet, and face to God, we are not to underſtand that God really has theſe parts, but only that he has a power to execute all thoſe actions, to the executing of which thoſe parts are neceſſary in us: and when the ſcripture attributes ſuch paſſions to God, as pleaſure, love, hatred, repentance, revenge, and the like, the meaning is, that he will as certainly puniſh the wicked, as if he was inflamed with the paſſion of anger; that he will as infallibly reward the good, as if he had a love for them, and that when men turn from their wickedneſs, he will ſuit diſpenſations to them,

them, as if he really repented or changed his mind. Theſe ſcripture attributes, anger, pleaſure, love, hatred, repentance, revenge, and the like, belong not to God, in a proper and juſt ſenſe, but only improperly or analogically. But when the ſame ſcripture attributes to God an underſtanding, wiſdom, will, goodneſs, holineſs, juſtice, and truth, theſe words are to be underſtood ſtrictly and properly, or in their common ſenſe. Archbiſhop Tillotſon, throughout his works, maintains this ſyſtem of the Deity. *Collins*, Diſc. of Free-th. ſec. 2. p. 50.

On the other ſide, archbiſhop King affirms, that wiſdom, underſtanding and mercy, foreknowledge, predeſtination and will, when aſcribed to God, are not to be taken properly. Again, that juſtice and virtue (and by conſequence the moral attributes of God) are not to be underſtood to ſignify the ſame thing, when applied to God and man, and that they are of ſo different a nature, and ſo ſuperior to all that we can conceive, that there is no more likeneſs between them, than between our hand and God's power. But all theſe attributes are to be underſtood in the ſame manner, as when men aſcribe hands, eyes and feet to God, or when men aſcribe anger, love, hatred, revenge, repentance, changing reſolutions, &c. and are to be taken in the ſame improper, analogical ſenſe.

On the whole, a late author draws this concluſion, that as archbiſhop Tillotſon would define God to be a being without parts and paſſions, holy, wiſe, juſt, true and good; biſhop King muſt, on the contrary, define God to be a being not only without parts and paſſions, but without underſtanding, will, mercy, holineſs, goodneſs, or truth. Diſc. of Free-think. ſec. 2. p. 51. ſeq.

But this ſneer of the author of the diſcourſe on free-thinking is equally invidious and unjuſt. The two archbiſhops might, upon farther explanation, have been found to differ more in words than in thought. As to the queſtion itſelf, it is plain, on the one hand, that we muſt derive our notions of the divine attributes from thoſe of the human mind, excluding limitations and imperfections; hence we may ſay, that we conceive the divine attributes by *Analogy*. But, on the other hand, it ſeems no leſs certain, that the divine underſtanding muſt be infinitely different from the human, whether we conſider its object, or manner of knowing. The human underſtanding does not extend to every thing poſſible, nor is it perfectly diſtinct, nor ſimultaneous. We cannot conceive any limitation or imperfection whatever in God. In him the diſtinction between inferior and ſuperior faculties cannot take place; and the degree and manner of his knowledge muſt be incomprehenſible to any limited intelligence. His underſtanding may be ſaid therefore, with the ſchoolmen, to differ *toto genere* from the human underſtanding; but will it therefore be juſt to charge Dr. King with ſaying, that God is a being that has no underſtanding?

ANALOGY *of faith*, among divines, denotes that relation which the ſeveral articles of faith bear to each other.

Analogy of faith is uſed, by the fathers, for a ſyſtem of the chief points and articles of ſcripture, containing the principal dogmata neceſſary to ſalvation. Vid. Act. Erud. Lipſ. 1686. p. 105.

Analogy of faith is the foundation, or general principle, whereby all expoſitions of ſcripture are to be tried, as by a touchſtone. *Rambach.* Inſtit. Hermen. l. 2. c. 1. §. 4.

Analogy of faith ſtands oppoſed, on one hand, to reaſon, which the Socinians obtrude as the chief rule of interpretation, and, on the other hand, to tradition and authority, which is the great rule of interpretation among catholics. *Budd.* Iſag. ad Theol. l. 2. c. 8. p. 1758.

By this it is required, that whether we interpret ſcripture, or explain the doctrines of Chriſtianity, all our poſitions and explications be conſiſtent with the *Analogy* of our faith, and thoſe evident propoſitions deduced from ſcripture.

Tortſchius, Antonius, Franckius, &c. have written expreſly on the *Analogy* of faith.

ANALOGY *of diſeaſes*, in medicine, is a certain relation or reſemblance between them, in virtue whereof, we may reaſon and conclude from one to another, and treat them all much in the ſame manner; *e. gr.* a pleuriſy, being a ſpecies of inflammation, produced like inflammations of other parts, is to be treated like them, relaxing the ſolids, which are too much ſtretched, and giving free paſſage for the humours. *Bagliv.* Diſſ. 5. ap. Opp. in 4to. Nouv. Rep. Lett. T. 33. p. 577. Jour. des Scav. T. 33. p. 220.

ANALOGY, in grammar, denotes the ſuitableneſs, or agreeableneſs of a word or phraſe to the common rules, or forms of language.

In this ſenſe, *Analogy* ſtands oppoſed to *Anomaly*. See the article ANOMALY, *Cycl.*

ANALOGY, in reſpect to language, denotes a conformity with other points already eſtabliſhed, ſerving as a rule, or model, for the making of new words and phraſes ſimilar to thoſe already in uſe.

Or, *Analogy* may be conſidered as a general or eſtabliſhed uſage, applied in ſimilar caſes, to certain words, phraſes, or conſtructions, not yet eſtabliſhed. Or, *Analogy* is only a particular uſage which, in certain caſes, is inferred from a general uſage already eſtabliſhed. *Quint.* l. 1. c. 6. *Vaugel.* Rem. in Præf. in voc.

Grammarians are divided into two parties. Some, with Sanctius, contend, that the *Analogy*, or reaſon, reigns through all the parts, all the phraſes and dictions of the Latin tongue. On the contrary, others, with Perizonius, aſſert, that there are many phraſes, contrary to *Analogy* and reaſon, derived all originally from the populace. Such, *e. gr.* are, *Nemo homo*, *deorſum verſum*, &c. Bibl. Univ. T. 5. p. 302.

Varro [a] and Cæſar [b] wrote expreſs on the *Analogy* of Latin words, now all loſt. Jac. Operarius has endeavoured to ſupply that loſs, by tracing the *Analogy* of 20000 Latin words. —[a *Fabric.* Bibl. Lat. *Baill.* Jugem. des Scav. T. 2. P. 3. p. 25. b *Fabric.* ubi ſupra, l. 1. c. 10.]

ANALOGY *of conjugation*, *Analogia conjugationis*, is not only when a verb is conjugated like another, but agrees with it in the quantities of the ſyllables. *Heder. Schul.* Lex. p. 230.

Thus *clamo* is conjugated like *amo*, and *clamabam* pronounced like *amabam*.

ANALOGY *of declenſion*, *Analogia declinationis*, is not only when a noun, pronoun, or participle is declined like another, but agrees with it in reſpect of the quantities of the ſyllables. *Heder. Schul.* loc. cit.

Thus, *e. gr. mater* is declined like *pater*, *ſaltans* as *amans*, *ſuus* as *tuus*. So *pennarum* is pronounced as *menſarum*, and *funeris* as *muneris*.

ANALOGY *of doctrine*, among critics, is one of the great rules to which regard is to be had in the interpretation of authors.

We are firſt to learn from the author himſelf, the general ſyſtem which he follows; and as no body is to be eaſily ſuppoſed to contradict himſelf, our interpretation is to be ſo conducted, as that nothing be admitted which is contrary to, or tends to overthrow this ſyſtem.

Thus, in interpreting an author who follows the Platonic ſcheme, we are to prefer a ſenſe which is conſiſtent with the Platonic doctrine, to another which is contrary thereto, unleſs there be ſome glaring proof, that the author here contradicts himſelf, or aſſerts things which are inconſiſtent. *Budd.* Elem. Phil. Inſtrum. P. 2. c. 4. §. 15.

ANALOGY, in rhetoric. See COMPARISON, *Cycl.*

ANALYSIS, in logic, is particularly uſed for the reduction of an imperfect ſyllogiſm to a perfect one. This is otherwiſe called *reduction*. See REDUCTION and SYLLOGISM, *Cycl.*

ANALYSIS *of ideas*, that whereby an idea is reſolved into the ideas of its ingredients, and the ideas of theſe again into ſimpler ones, till at length we arrive at the moſt ſimple. *Wolf.* Pſychol. §. 339.

Grammatical ANALYSIS is that employed about words, their etymons, homonyma's, or various acceptations, ſynonyma's, conſtructions, uſes, and the like.

Paſor has given a grammatical *Analyſis* of the difficult words in Heſiod, &c [a]. Sturmius has publiſhed a method of making the *Analyſis* of Latin words [b].—[a *Baill.* Jugem. des Scav. T. 2. P. 2. p. 301. b Jour. des Scav. T. 35. p. 51.]

Rhetorical ANALYSIS is that which examines the connexions, tropes, figures and the like, enquiring into the propoſition, diviſion, paſſions, arguments, and other apparatus of rhetoric.

Several authors, as Freigius and others, have given *Analyſes* of Cicero's orations, wherein they reduce them to their grammatical and logical principles; ſtrip them of all the ornaments and additions of rhetoric, which otherwiſe diſguiſe their true form, and hide the connection between one part and another. The deſign of theſe authors is to have thoſe admired harangues, juſt ſuch as the judgment diſpoſed them, without the help of imagination; ſo that here we may coolly view the force of each proof; and admire the uſe Cicero made of rhetorical figures, to conceal the foible of a cauſe. Mem. de Trev. 1704. p. 1084.

The *Analyſes* given by Freigius are the ſhorteſt, in three ſmall volumes; thoſe of F. Merouille, added to the dauphine's edition of Cicero's orations, are eſteemed; the like may be ſaid of thoſe of Maſene, and of F. Mart. Du Cygne, ſeveral times printed. The abbé Olivet, in his edition of Tully's works, has alſo given us the *Analyſis* of his orations.

A collection has been made of the *Analyſes* made by the moſt celebrated authors of the ſixteenth century, in three volumes folio. V. *Gibert.* Judg. des Sav. P. 2. p. 221, and 225. Mem. de Trev. loc. cit.

ANALYSIS is alſo uſed for a preciſe methodical ſcheme, or delineation of any art or ſcience deduced from its principles.

In this ſenſe Juncker has given *Analyſes* of phyſic, ſurgery, chemiſtry, &c. Carter has publiſhed an *Analyſis* of honour, &c.

ANALYSIS, in a more general ſenſe, may be defined, the method of diſcovering the poſſibility or impoſſibility, the truth or falſhood of a propoſition.

The Scholiaſt on Euclid defines *Analyſis*, the ſumption of a thing ſought by the conſequent, as if it were already known, in order to find out the truth. Examples of which we find in the five firſt propoſitions of the thirteenth book of Euclid, beſides

beſides ſeveral others that occur in Apollonius Pergæus, and Pappus Alexandrinus. *Stanl.* Hiſt. Philoſ. P. 5. p. 263.

The order of the *Syntheſis* is contrary to that of the *Analyſis*, one beginning where the other ends. The two methods cannot always be uſed indifferently; the *Analyſis* is moſt proper for the diſcovery of truth, and ſyntheſis for teaching and explaining it in a ſyſtematical way. Hence ſome call *Analyſis* the method of invention.

ANALYSIS may be divided into antient and modern, or new and old.

The modern *Analyſis* is what is often called *Algebra*; but they ought to be diſtinguiſhed, Algebra being only a part of the *analytic* art.

The moderns are at ſome loſs concerning the antient *Analyſis*, i. e. concerning the art or method whereby the antients reſolved problems and invented theorems. Some traces of their method are extant in Pappus [a], Apollonius [b], and Euclid [c]; and Dr. Hook ſuſpects, that their *Analyſis* went backwards thro' almoſt all the ſame ſteps, by which their demoſtrations went forwards [d].—[a Præf. ad L. 7. Vid. *Fabric.*. Bibl. Græc. l. 5. c. 22. b De Sectione Rationis. V. Mem. de Trev. an. 1706. p. 702. c Elem. l. 13. Vid. *Stanl.* Hiſt. Philoſ. P. 5. p. 263. d Poſthum. Work. p. 68.]

That this might often be the caſe, ſeems evident to any one who has ſtudied Euclid with care. They have indeed left us no precepts of their art. This, like almoſt all others, muſt be acquired by imitation of the excellent examples left us by the Greeks. But may we not ſay alſo, that the moderns have given us no precepts of their art, and that it cannot be acquired otherwiſe than by imitation? The precepts of invention we meet with in algebraical writers are very general and vague; and the principal point, the invention of the diagram, by which a problem is to be ſolved, or a propoſition demonſtrated, is commonly left untouched; ſo that, altho' we have very good obſervations in Newton's algebra and in ſome others, yet all theſe go but a little way towards the art of invention, which is a habit to be acquired in modern analytics, as well as in antient, by imitation and uſe, and not by precept. Men of genius among the moderns, who have ſtudied the works of the antient geometers, have been thereby enabled to imitate them, and penetrate into their methods: the works of Huggens and Newton, and of late, the treatiſe of conic ſections by Mr. Simſon, profeſſor of mathematics in the univerſity of Glaſgow; as alſo ſeveral parts of Mr. MacLaurin's treatiſe of fluxions, are evident proofs of this.

We have an attempt to reduce the geometrical *Analyſis* to an art, by Hugo de Omerique, a Spaniard. This work has been applauded by good judges; tho' ſome modern analyſts pretend, that he has done nothing but what may be performed much more eaſily by algebra.

Weigelius has endeavoured to retrieve the antient *Analyſis* of Ariſtotle, from Euclid, and other antient geometricians. Vid. *Weigel.* Analyſis Ariſtotelica ex Euclide reſtituta.

ANALYSIS is divided by ſome authors into ſimple and compound.

Simple ANALYSIS it that employed in ſolving problems reducible to ſimple equations. *Reynau*, Anal. Demonſtr. Præf. p. 4.

Compound, or *Complex* ANALYSIS, that which gives the expreſſions or ſolutions of problems in compounded equations.

ANALYSIS *of Powers* denotes the reſolving them into their roots. V. *Jones* Synopſ. Palmar. Matheſ. p. 51.

In this ſenſe *Analyſis* amounts to the ſame with what we otherwiſe call evolution. See EVOLUTION, *Cycl.*

We find divers other kinds of *Analyſis* treated of by mathematical writers, as the *Analyſis* of indiviſibles, &c [e]. M. Leibnitz ſpoke of an *Analyſis ſitus*, different from the *Analyſis* of magnitudes [f].—[e Act. Erud. Lipſ. an. 1686. p. 292. f V. Wolf. Elem. Anal. in Præf.

The *Analyſis* of geometrical curves ſhews their properties and internal conſtitution, their curvature, points of inflexion, ſtation, retrogradation, variation, &c.—In this *Analyſis*, curves are uſually conſidered as polygons compoſed of an infinite number of infinitely little ſides; but this ſuppoſition is neither accurate nor neceſſary, tho' it ſometimes affords convenient hints for invention. V. *MacLaurin*'s Fluxions paſſim.

F. Reynau of the oratory has given a large ſyſtem of algebra under the title of *Analyſis* [g]. F. Caſtel cenſures it as not ſufficiently methodical or ſyſtematical [h]. The great diviſions and members are drowned in the multitude of particular rules and methods.—[g Analyſe Demontrée. P. 1708. 4°. 2 Vol. V. Mem. de Trev. 1708. p. 1493. ſeqq. h *Caſtel* Mathem. Univ. p. 666.]

ANALYSIS, in chemiſtry.—The *Analyſis* of metals and metallic minerals conſiſts in what they call the mercurification of them: The *Analyſis* of other bodies is performed by diſtillation, lixiviation, &c. V. Mem. Acad. Scienc. an. 1702. p. 46.

The order of matters which ariſe in analyſing vegetable and animal bodies is different, according as thoſe bodies have been fermented or not; if they have, the ſpirits and volatile ſalts ariſe firſt, then aqueous liquors, then fœtid oil, after which a caput mortuum, which by calcination and lixiviation, is reduced to a fixed ſalt and inſipid earth. in bodies unfermented, the aqueous parts riſe firſt, afterwards the reſt ſucceed in the ſame order as above.

The zeal for analizing plants and other matters belonging to the *materia medica*, in order to a more preciſe diſcovery of their internal qualities, is much abated of late years, as having been proved in great meaſure uſeleſs. The *Analyſis* gives the chief principles ſeparately; from the qualities of which no concluſion can be drawn concerning the plant itſelf, wherein theſe principles are united. Beſides that, the fire alters the ſtructure of much the greater part of plants [i]. Fourteen hundred plants underwent this examination in the royal academy of ſciences at Paris; from all of which, however different in virtues, the ſame matters were procured. The decompoſition ſeems to reduce all to the ſame ſtuff. Plants in this ſtate may be conſidered like houſes in ruins; whatever different forms or diſpoſitions they had before, the rubbiſh is much the ſame in all. M. Lemery ſuggeſts a new ſort of *Analyſis*. According to this author, to learn the nature of a mixt, we are not to analyſe it exactly, but only bring it down one pitch lower, reſolve it not into its principles, but into other mixts a degree ſimpler than the former; the chief of which are ſaline and ſulphureous or fatty parts [k].—[i Jour. des Scav. T. 68. p. 16. k V. Hiſt. Acad. Scienc. an 1719. p. 63. Mem. ibid. p. 227.

Mr. Hales has given an attempt towards analyſing the air by chymico-ſtatical experiments, which ſhew in how great proportion air is wrought into the compoſition of animal, vegetable, and mineral bodies. *Hales*, Veget. Stat. in fine.

But it may be obſerved, the ingenious author here uſes the word in a ſenſe ſomewhat different from what a reader at firſt ſight would imagine. The tendency of this author's experiments is not to make what we call an *Analyſis* of the air, to ſhew its ingredients and principles, but to ſeparate or diſingage it from the bodies it happens to be mixed with, or incloſed in.—So that analyſing in his ſenſe amounts to the ſame with what we ordinarily call *extricating*. See AIR.

ANALYST, a perſon who analyzes a thing, or makes uſe of the analytical method. See ANALYSIS, and ANALYTIC. *Cycl.* and *Suppl.*

Some reſtrain the word more peculiarly to denote a mathematician, who makes great uſe of the algebraic method or calculus in geometry, in excluſion of the ſynthetic or ſtrict geometrical method.

In which ſenſe *Analyſt* amounts to much the ſame with *Computiſt* or *Calculator*.

In a ſenſe not unlike this, a late ingenious writer gives the title *Analyſt* to a book againſt the modern geometry, or doctrine of fluxions. See FLUXION, *Cycl.* and *Suppl.*

ANALYTIC *Chemiſtry*, the art of analyſing vegetable, animal, and mineral ſubſtances, and reſolving them into their different parts or principles. The whole of chemiſtry may be comprehended under the art of reſolving bodies into their principles, and of compoſing new compounds from theſe principles, this laſt part of it is called *ſynthetic Chemiſtry*. *Shaw*'s Lectures, p. 145.

ANALYTICS, (*Cycl.*) in literaryhiſtory, is particularly uſed to denote certain writings of Ariſtotle under this title.

Ariſtotle's *Analytics* conſiſt of four books, two under the denomination of *former*, Αναλυτικων πρωτερων, and as many under that of *latter*, υστερων.—They belong to the claſs of his acroamatic works. Galen ſuggeſts, that the antient and genuine title of the two former books, was περι συλλογισμων, concerning ſyllogiſm, which is confirmed by Boëthius: The title of the two latter, according to the ſame Galen, was περι αποδειξεως, on demonſtration. Petit maintains, that the *Analytics*, mentioned by Ariſtotle to Nicomachus, were different from thoſe now extant. In effect, Laertius ſpeaks of eight, or according to other copies, of nine or ten books of the former *Analytics*, beſides two of the latter. Add, that Ammonius aſſures us, that in the time of Ptolemy Philadelphus, there were no leſs than forty books of Ariſtotle's *Analytics* in the Alexandrian library.

Proclus cenſures Ariſtotle's *Analytics*, for being too plain and intelligible to every body: Ramus, perhaps with more juſtice, frequently complains of their being obſcure and incomprehenſible.

However it muſt be owned, that Ariſtotle in this work has ſhewn, that he thoroughly underſtood reaſoning and demonſtration; a compliment which cannot with juſtice be paid to many modern writers on the human uuderſtanding and logic. We have various commentators on Ariſtotle's *Analytics*; for which we refer to *Fabric.* Bibl. Græc. l. 3. c. 6. n. 3.

ANAMNESEIS, Αναμνησεις, in antient writers, denote enconiums of perſons who had behaved well in war or elſewhere, rehearſed before the emperors of Conſtantinople, to put them in mind of beſtowing ſuitable rewards. *Meurs.* Gloſs. Græc. Barbar. in voc.

ANAMNESES, in medicine, are uſed by ſome writers to denote thoſe ſigns which help to diſcover the paſt ſtate of a patient's body.

Theſe are otherwiſe called *Rememoratives*. *Caſt.* Lex. in voc.

ANAMNESTIC is alſo applied by Blancard to remedies proper for reſtoring or ſtrengthening the memory.

Such according to this author are all ſpirituous things. Vid. *Blancard*, Lex. in. voc.

ANANAS,

ANANAS, in botany, the name of a genus of plants, of which father Plumier gives the following characters. The flower is compoſed of one leaf and is of the funnel faſhioned kind, divided into three ſegments at the edge, and having the tubercles of the embryo fruit for its baſe; this embryo finally becomes a fleſhy fruit, very juicy and of a turbinated form, in which are lodged many ſmall ſeeds of a kidney-like ſhape, covered with their calyptræ. See PINE-APPLE.

The ſpecies of *Ananas* enumerated by Mr. Tournefort are theſe.

1. The prickly *Ananas*, with an oval fruit with white pulp. 2. The prickly *Ananas*, with a pyramidal fruit and yellow pulp. And, 3. The ſmooth or not prickly *Ananas*, called *pitta*. *Tournef.* Inſt. p. 659.

The method of preparing the *Ananas*, as practiſed by the Americans, is to pare it, ſlice it, put it in a veſſel well cloſed, and ſuſpend it in a kettle of water over the fire, by which means the juice iſſues ſpontaneouſly, and in the boiling loſes all its crudities. *Worm.* Muſ. p. 185. *Pomet*, Hiſt. des Drog. l. 7. c. 49. *Burggr.* Lex. Med. T. 1. p. 647.

Tiemeroth [a] and Lochner [b] have given diſſertations expreſs concerning the *Ananas*.—[[a] Diſſ. de Planta & Fructu *Ananas* Erf. 1723. [b] Comment de *Ananaſa*, ſive Nuce Indica Pinea, vulgo *Pinhas*, Norimb. 1716. 4°. An Extract of it is given in Jour des Scav. T. 62. p. 180. ſeq.]

ANANCITIS, in natural hiſtory, a kind of figured ſtone, or gem, famous among the antients for its magical uſe in raiſing the image of the gods. *Mercat.* Metalloth. Arm. 9. c. 57.

The word is alſo written *Ananchitis*, αναγχίτις, but more properly αναγκίτις.

It is formed from αναγκη, force, neceſſity, alluding to its conſtraining the gods to appear.

The *Anancitis* appears to be the ſame with the ſtone otherwiſe called *Synochitis*, celebrated for its virtue in raiſing the ſhadows of the infernal gods.

The *Anancitis* is of an elegant figure; it makes an hemiſphere finely furrowed all over. Its figure and deſcription may be ſeen in Mercatus.

ANANDRI, Ανανδροι, in antient writers, is applied to virgins, or thoſe who have not known man. *Caſt.* Lex. Med. p. 44.

In this ſenſe *Anandri* ſtands contradiſtinguiſhed from *Andrumæ*, Ανδρεμαι, thoſe who have had commerce with men.

ANANISABTA, or ANANISAPTA, a magical word frequently found inſcribed on coins and other amulets, ſuppoſed to have a virtue of preſerving the wearer from the plague. V. Miſc. Lipſ. T. 5. p. 284. Obſ. 115.

Serpilius thinks it has been formed from a miſunderſtanding of the word σαβαχθανι, uſed by our Saviour in his agony on the croſs. Hence alſo this inſcription is ſometimes found to accompany pretended pieces of the true croſs. In ſome inſtances the order of the letters is tranſpoſed, and in lieu of *Ananiſabta* written *Inana Sabta*.

M. Lyonet, phyſician of the king of France, ſtarts another explication of *Ananiſabta*. He ſuppoſes it a kind of abreviature, formed of the initial letters of the words, *Antidotus Nazareni Auferat Noxam Intoxicationis, Sanctificet Alimenta, Pocula Trinitas Alma*. But this is mere conjecture. A later writer has with equal probability, diſcovered after the ſame manner another meaning in the word, applicable to M. Lyonet himſelf; *Attulit Nequaquam Ananiſabtæ Noſtræ Innatam Significationem A Peſtis Tempore Alienam.*

ANAPÆSTIC, or ANAPÆST, is ſometimes uſed in a ſubſtantive ſenſe.

Such is the *Anapæſtus Ariſtophanæus*, in Cicero, which is a verſe conſiſting of eight feet, as

Axena Ponti per freta Colchos denique delatus adhæſi.

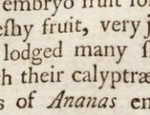
Vid. *Cic.* in Orat. c. 56. *Faber*, Theſ. in voc. *Anapæſtus*. This is otherwiſe called *Anapæſtus Octonarius*.

ANAPÆSTIC, in an adjective ſenſe, ſomething relating to, or compoſed of *Anapæſts*. See ANAPÆST, *Cycl.*

ANAPÆSTIC *kind*, *Genus Anapæſticum*, is a ſort of verſe compoſed of pure Ariſtophanic or Parthenaic *Anapæſts*.

Anapæſtic verſes are either Ariſtophanic or Pindaric. *Anapæſticus Ariſtophanius*, called alſo *Parthenaicus*, conſiſts of three *Anapæſts*, and one long ſyllable, but ſo as that inſtead of the firſt two *Anapæſts* as many ſpondees may be uſed. *Scalig.* Poet. l. 2. c. 36. *Groſſ.* Inſt. P. 5. Sec. 1. c. 2. §. 19.

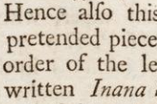
Its type ſtands thus



Venient cito Sæcula quum jam
Socius calor oſſa reviſet
Animataque ſanguine vivo
Habitacula priſtina geſtet
Lacrymas ſuſpendite cuncti
Mors hæc reparatio vitæ eſt. Bona.

Pindaric Anapæſt admits, in the firſt region, either of an *Anapæſt* or a ſpondee; in the ſecond, only of an *Anapæſt*; in the third, of an *Anapæſt* or a ſpondee; in the fourth, either of a ſpondee or a trochee.

As in the following type:



In ſumma pericula venturi
Multos timor ipſe mali mittit.

ANAPHORA (*Cycl.*) is uſed, in the antient medicine, for the rejection of matter by the mouth. *Foes.* Œcon. Hippoc. p. 56. *Caſt.* Lex. Med. in voc.

Hence alſo we meet with the term *Anaphorici*, Αναφορικοι, uſed for thoſe labouring under an hæmoptye, who bring up blood from the lower part by the mouth. *Gorr.* Def. Med. in voc.

ANAPHORA among eccleſiaſtical writers, denotes the hoſt or ſpecies offered in the euchariſt. *Du Cange*, Gloſs. Græc. in voc. Αναφορα.

ANAPHORA is alſo uſed to denote the rehearſing a perſon's name from the diptychs in the liturgy. Id. ib. See DIPTYCH.

ANAPHORA is alſo a title given to thoſe little Syriac liturgies, wherein are contained the prayers after the *Oſculum Pacis*. Ignatius patriarch of the Marionites enumerates forty of theſe *Anaphoræ*. *Le Brun*, ap. Bibl. Franc. T. 9. p. 100.

ANAPHORA, in aſtrology, denotes the ſecond houſe, or that part of heaven which is thirty degrees diſtant from the horoſcope. *Bud.* de Aſſe, l. 1. p. 120.

The term *Anaphora* is alſo ſometimes promiſcuouſly applied to ſome of the ſucceeding houſes; as the ſecond, fifth, eighth, and eleventh. In this ſenſe *Anaphora* amounts to the ſame with *Epanaphora*, and ſtands oppoſed to *Cataphora*. See CATAPHORA.

ANAPHORA is alſo applied by ſome to the oblique aſcenſions of the ſtars. *Vital.* Lex. Math. in voc.

ANAPHRODISIA denotes impotency in reſpect of venery. Some alſo uſe it for a want of deſire or inclination to the ſex. *Bonet.* Medic.ſeptent. l. 3. Sec. 33. c. 7. *Caſt.* Lex. Med. p. 45.

In this ſenſe, the academiſt's *Naturæ Curioſi* give an extraordinary inſtance of this kind, in a perſon otherwiſe healthy and robuſt. Ephem. Acad. N. C. Dec. 1. an. 8. Obſ. 94.

ANAPHYSEMATA, in ſome antient writers, denotes winds iſſuing from under ground, at the clefts or appertures thereof. *Apul.* de Mund. ap. *Vital.* Lex. Math. p. 39.

Theſe are ſometimes called by later writers *Apogæi*.

ANAPLASIS, in medicine, the compleat reſtitution of a broken bone, ſo as the two ends meet and cloſe exactly together [a]. This is the ſame with what is otherwiſe called *Diaplaſis* [b].—[[a] *Caſt.* Lex. Med. p. 45. [b] V. *Foes.* Œcon. Hippoc. p. 51.]

ANAPLEROSIS, in the general ſenſe, denotes repletion.

Anapleroſis is more particularly uſed in medicine, to denote that part of ſurgery, whereby things wanting are ſupplied. *Caſt.* Lex. Med. p. 45.

In which ſenſe, *Anapleroſis* amounts to the ſame with what we otherwiſe call appoſition. *Barbet.* Chirurg. P. 1. c. 1

ANAPLEROSIS, in the civil law, is a name which ſome give to the four laſt books of Juſtinian's code. V. Jour. des Scav. T. 30. p. 768.

ANAPODOPHYLLON, *Duckfoot*, or *May-Apple*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral petals diſpoſed in a circular form; from the center of the flower ariſes a piſtil which is afterwards a fruit, or ſeed-veſſel of an oval form, unicapſular, and containing ſmall roundiſh ſeeds.

The ſpecies of *Anapodophyllon* enumerated by Mr. Tournefort are theſe.

1. The Canada *Anapodophyllon* of Morinus. And, 2. The Canada *Anapodophyllon*, with leaves like thoſe of the Ricinus. *Tournef.* Inſt. p. 239.

This plant is propagated by parting the roots in Auguſt, after the green leaves decay.

ANARGYRUS, Αναργυρος, in antient writers, denotes a perſon without money, tho' otherwiſe ſufficiently accommodated with land and other effects. *Suid.* in voc.

In a like ſenſe, we ſometimes alſo meet with the word *Anargyria*, uſed by lawyers for the condition of a perſon without ready money.

Mart. Phil. Fabricius has a diſſertation expreſs *de exceptione Anargyriæ*. *Argent.* 1666. 4°.

ANARGYRI, in eccleſiaſtical hiſtory, is an appellation given to certain ſaints in the Greek church, who having been phyſicians, gave not only their advice, but their remedies, gratis.—They are alſo called *Argentinopes*. *Meurs* & *Du Cange*, Gloſſ. Græc. & *Suic.* Theſ. in voc. Αναργυρ@.

ANARRAPHE, in ſurgery, denotes a kind of ſuture or retraction of the upper eye-lid, when relaxed and hanging over the eye. *Woolhouſe*, ap. Ephem. Acad. N. C. Cent. 5. app. p. 142. ſeq.

This is by ſome alſo called *Sutura blepharica*, by others *abbreviatio*, *contractio*, *collectio*, or *ſuſpenſio ſuperioris palpebræ*.—It is uſed in the *phalangoſis*, *ptoſis*, or *chalaſis*; where the ſight is obſtructed, by a *prolapſus* of the part, or the eye-lid itſelf is too thick beſet with briſtly hairs both within and without.

ANARCHI, Αναρχοι, in antiquity, a name given by the Athenians to four ſupernumerary days in their year, during which they had no magiſtrates.

The Attic year was divided into ten parts according to the number of tribes, to whom the precedency in the ſenate fell by turns.

Each diviſion conſiſted of thirty five days; what remained after the expiration of theſe, to make the lunar year compleat, which according to their computation conſiſted of three hundred fifty-four days, were employed in the creation of magiſtrates, and called αναρχοι ἡμεραι, and αρχαιρεσιοι. *Potter*, Archæol. l. 1. c. 18.

ANARCHY (*Cycl.*)—All kinds of ſtates are ſubject to *Anarchies*. We read of civil *Anarchies*, eccleſiaſtical or ſpiritual *Anarchies*, and even *Anarchies* in the republic of letters. It has been objected to a learned prelate, that his principles tended to reduce Chriſt's kingdom to an *Anarchy* [a]. Clem. Walker has given the hiſtory of independency, under the title of the Engliſh *Anarchy* [b].—[a Vid. Bibl. Angl. T. 3. p. 251. b Lond. 1649, 4to. *Wood*, Athen. Oxon. T. 2. p. 146.]

It has been ſometimes controverted which of the two is beſt, a ſtate of *Anarchy*, or of tyranny and arbitrary power. Vid. Nouv. Rep. Lett. T. 40. p. 262. *Cato*'s Letters, T. 2. p. 207, 213.

Anarchy is ſuppoſed to have reigned after the deluge, before the foundation of monarchies [a]. We ſtill find it obtain in divers parts, eſpecially of Africa and America; *e. gr.* among the Itinois, who are obſerved by travellers to live in a perfect independency of any ſuperior [b]; among the Canadeſe, who are ſaid to be without either judges or prieſts [c]; among the Californians, where every family makes its own laws, as well as religion [d]; in Chili, where every maſter of a family is a king [e]; in the Marian iſlands, where neither prince nor law is known, but every perſon governs himſelf according to his own fancy [f]; and to mention no more, among the Hotentots, where the only reſemblance of government that is found is that in each neighbourhood, the eldeſt is the firſt in honour, and his advice chiefly followed, not from any civil authority he is veſted with, but in regard of his ſuperior experience [g]. —[a Vid. *Thomaſſ.* Meth. Etud. Hiſt. l. 1. c. 13. p. 207. b Lett. Edif. T. 11. p. 305. c Works of Learn. T. 5. p. 79. d Mem. de Trev. 1705. p. 1750. e Nouv. Rep. Lett. T. 54. p. 110. f Ouvr. des Scav. Mars 1702. p. 114. g Phil. Tranſ. N°. 310. p. 2426.]

Some extend the idea of *Anarchy* further, ſo as to make it comprehend all the more popular governments.

In this ſenſe, *Anarchy* amounts to much the ſame with *Democracy*. See DEMOCRACY, *Cycl.*

Hobbs, in this ſenſe, calls the Roman commonwealth an *Anarchy*. *Chriſt. Machiav.* l. 3. c. 6. p. 105.

ANARCHY is alſo applied to certain troubleſome and diſorderly periods, even in governments otherwiſe regular.—In Germany the ſpace from the election of Richard duke of Cornwall to that of duke Rud. of Hapſburg, is commonly called the *Anarchy*, or interregnum. Vid. Bibl. Germ. T. 3. p. 242.

In England, the period between the death of Cromwell and king Charles's reſtoration, is commonly repreſented as an *Anarchy*. Every month produced a new ſcheme or form of government [a]. Enthuſiaſts talked of nothing but annulling all the laws, aboliſhing all writings, records, and regiſters, and bringing all men to the primitive level [b].—[a Ouvr. des Scav. Jan. 1699. p. 10. Works of Learn. T. 2. p. 103. b Bibl. Anc. Mod. T. 21. p. 94.]

No modern nation is more ſubject to *Anarchies* than Poland; where every interval between the death of one king and the election of another is a perfect picture of confuſion, inſomuch that it is a proverb among that people, Poland is governed by confuſion. Nouv. Rep. Lett. T. 12. p. 46.

The Jewiſh hiſtory preſents numerous inſtances of *Anarchies* in that ſtate, uſually denoted by this phraſe, that in thoſe days there was no king in Iſrael, but every man did that which was right in his own eyes [c]; which is a juſt picture of an *Anarchy*. The firſt *Anarchy* we read of in that commonwealth, is that which enſued on the death of Joſhuah, who leaving no ſucceſſor, the government devolved to the elders of the tribes, who ruled each according to his own mind. After the death of theſe elders, the *Anarchy* became compleat [d].—[c Vid. Judg. *c.* xvii. *v.* 6. Works of Learn. T. 2. p. 301. Nouv. Rep. Lett. T. 46. p. 448. d *Calm.* Dict. in voc.]

ANARRHICAS, in ichthyology, the name given, by Artedi, to the fiſh called by others the *lupus marinus*. He makes it a diſtinct genus of fiſhes, of the malacopterygious, or ſoft-finned kind, diſtinguiſhed by the following characters. The branchioſtege membrane on each ſide contains ſix or more bones. There are no belly fins, The back fin is ſingle, and very long, reaching even to the tail. The pinna ani is long; the tail is diſtinct and ſquare; the head is ſomewhat depreſſed; and the body ſomewhat compreſſed. The length of the fiſh is three or four feet. It is of a variegated colour, and ſlippery to the touch. The mouth opens extremely wide; the teeth are large, and ſtand in the jaws and palate, and fauces. The eyes are large, and placed upwards. The pectoral fins large and roundiſh. *Artedi*, Gen. Piſc. 18.

ANARRHINON, in botany, a name given by ſome of the antients to the plant called by others *lychnis agria*, and by others *antirrhinum*. Pliny tells us, that this plant reſembled flax; that it had ſcarce any root; that its flower was of the colour of the hyacinth, and its fruit reſembled the noſe of a calf. 'Tis from this reſemblance that we at this time call the plant *calve's ſnout*. Dioſcorides ſays, that it was like the anagallis.

ANAS, *duck*, in the Linnæan ſyſtem of zoology, the name of a large genus of birds, of the general order of anſeres. The diſtinguiſhing characters of this genus are, that the beak is convex, and ends in an obtuſe point. The birds of this genus are the ſwan, gooſe, widgeon, &c. *Linnæi*, Syſtem. Natur. p. 46. See DUCK.

ANAS *Compeſtris*, in zoology, the name of a bird common in France, and uſually called *tetrax*, and *canne petriere*. It is of the ſize of a pheaſant, and of the nature of the buſtard, having no hinder toe; it runs very ſwiftly, and ſits on the ground as the duck does in the water, whence it has its name. *Bellonius*, de Avibus. See TETRAX.

ANASARCA (*Cycl.*)—This diſtemper is ſometimes alſo called *Cataſarca*, ſometimes *Hypoſarcidium*, ſometimes *Epiſarcidium*, ſometimes *Aqua inter cutem* or *intercus*, in regard this pituitous humour ſpreads itſelf thro' the fleſh. Serenus Samonicus elegantly calls it *Lymphaticus error*; Albucaſis calls it a dropſy by infiltration. *Friend*, Hiſt. of Phyſ. P. 2. p. 168.

Anaſarca is a peculiar ſpecies of univerſal dropſy, differing both from the Aſcites and Tympanites. It differs from the Aſcites in that, tho' it uſually ariſes from the ſame cauſes, the waters in an Aſcites do not poſſeſs the upper parts of the body, at leaſt while the patient keeps in an erect poſture, which they do in the *Anaſarca*. *Juncк.* Conſp. Med. Tab. 65.

Some diſtinguiſh between the *Anaſarca* and the *leucophlegmatia*, in that the latter comes from the *Pituita*, the former from an ichorous ſeroſity diſcharged in the very habit of body; apparently thro' the fault of the lymphatic veſſels. Bibl. Anat. T. 2. p. 550.

The *Anaſarca* ſometimes ſtops at half its growth; in which caſe it is called by the antients *Phlegmatia*, where the blotting is conſpicuous, yet ſoft and looſe.

The uſual method of cure among us is much the ſame as that of the Aſcites. The antients had a peculiar method adapted to it.

Ætius relates, from Aſclepiades, the manner of curing an *Anaſarca* very exactly. This is by making inciſions on the inſide of the leg, about four fingers breadth above the ankle, as deep as generally thoſe in bleeding are made. At firſt a little blood iſſues out, afterwards there is a continual diſcharge of water, without any inflammation, ſo that the aperture cannot be cloſed, till the humour is ſpent, and the ſwelling gone down; and this drain cures the diſtemper, without any internal medicine. *Friend*, Hiſt. Phyſ. P. 1. p. 33. ſeq.

Leonides ſays further, that if the inciſions in the legs do not make a diſcharge quick enough, ſome ought to be made in other parts of the body; in the thighs, in the arms, or in the ſcrotum if ſwelled, by which means a great quantity of watry matter may be evacuated. *Friend*, Hiſt. Phyſ. P. 1. p. 34.

The operation itſelf is mentioned by Hippocrates, and had been practiſed from his time down to our own days, with ſucceſs; tho' ſometimes, mortifications have been known to enſue. Silvius de le Boe propoſes another way of acupuncture, and aſſumes the diſcovery of it to himſelf, though it is plain, it is all taken from the deſcription here given, and in ſo many words mentioned by Aviſenna. *Friend*, Hiſt. Phyſ. P. 1. p. 35.

In ſome caſes the *Anaſarca* appears to have been advantageous, inſomuch that a cure of it has killed the patient. V. Act. Phyſ. Med. Acad. N. C. T. 2. Obſ. 13.

Dr. Dovar's cure for an *Anaſarca* is an electuary compoſed of ſteel prepared with ſulphur and crude antimony, each an ounce, diagridium four ounces; make a fine powder of theſe; then add as much of any ſyrup as will make a ſoft electuary.

ANASSAS, in natural hiſtory, the name of a fruit very common in Guinea and in ſome other parts of Africa. It is very beautiful to the eye, and not leſs agreeable both to the taſte and ſmell, and is by ſome accounted the fineſt fruit in the world. The deſcriptions we meet with of it are very imperfect, but as there is nothing in them that contradicts its being the pine-apple, it may be that fruit, and if ſo it deſerves all the praiſe that is given it. See PINE-APPLE.

ANASTASIS, αναστασις, denotes a reſurrection.

Chiflet has given us a diſſertation on Childeric's tomb, under the title of *Anaſtaſis Childerici* [a]. Treuer has publiſhed the figure of a man and woman in the antient German habit, as found in an antient urn, under the title of *Anaſtaſis veteris Germani Germanæque fœminæ* [b]. —[a V. Jour. des Scav. T. 90. p. 216. b Bibl. Germ. T. 17. p. 216.]

ANASTATICA, in botany, the name of a genus of plants the characters of which are theſe. The perianthium conſiſts of four leaves and is coloured; the leaves are of an oval figure, hollowed, and erect. The flower conſiſts of four petals and is of the cruciform kind; the petals are roundiſh, flat, and expanded, and have ungues of the length of the cup, ſtanding alſo a great way aſunder. The ſtamina are ſix ſubulated fila-

filaments of the length of the cup; they ſtand erect and open, and two oppoſite ones are ſomewhat bent, and are ſhorter than the reſt. The antheræ are roundiſh. The germen of the piſtill is bifid and very ſmall; the ſtyle is ſubulated and of the length of the ſtamina; the ſtigma is headed. The fruit is an extreamly ſhort bilocular pod, the membrane which forms the diviſion between the two cells, terminating in an oblique inflated ſubulated ſtyle longer than the pod. The ſeeds are ſingle and roundiſh. *Linnæi*, Gen. Plant. p. 311.

ANASTOMOSIS (*Cycl.*)—It is a queſtion among *Anatomiſts*, whether the uterine arteries and veins *anaſtomoſe* with the veins and arteries of the ſecundines. Mr. Monro holds the negative, and he thinks that ſeveral inconveniences are avoided by the want of this *Anaſtomoſis*. V. Med. Eſſ. Edinb. Vol. 2. p. 133. ſeq. See FOETUS.

ANASTROUS *Signs*, in aſtronomy, an appellation given to the *Duodecatimoria*, or the twelve portions of the ecliptic, which the ſigns poſſeſſed antiently, but have deſerted by the præceſſion of the æquinox. *Keil*, Aſtron. Lect. 8. p. 81.

ANASTROPHE, Αναστροφη, in the antient military art, denotes the return of a battalion to its former ſtation, after a turn or evolution either to the right or left. *Potter*, Archæol. l. 3. c. 6. *Suid.* in voc.

The *Anaſtrophe* ſtands oppoſed to the epiſtrophe.

ANASTROPHE alſo denotes a grammatical figure, whereby a prepoſition, which regularly ought to precede, is placed after its caſe, e. g. *Saxa per et ſcopulos*. *Faber*. Theſ. p. 157.

ANASTROPHE, in rhetoric, denotes a quaint inverſion of the order of the words in a ſentence, e. gr. *ut ſcire poſſis ad quo te expediat loqui*, for *quoad expediat te loqui*. *Heder*. Schul. Lex. p. 233.

ANATHEMA, (*Cycl.*) in heathen antiquity, denotes a preſent offered to ſome god, and hung up in his temple.

In which ſenſe, the word is written in Greek, Αναθημα.

In reality moſt Greek writers, diſtinguiſh *Anathema* written with a long ē, Ἀναθημα, from *Anathema* with a ſhort ĕ, Ἀνάθεμα; tho' Beza and ſome others reject the difference.—Pollux in his lexicon obſerves, that the word properly ſignifies gifts dedicated to the gods. This interpretation is confirmed by Heſychius, who explains *Anathema* by ornaments. *Suic.* Theſ. Eccleſ. in voc. Ανάθεμα.

Making preſents to the gods was a cuſtom even from the earlieſt times, either to pacify them when angry, or to obtain ſome future benefit, or as a grateful acknowledgment of ſome paſt favour. They conſiſted of crowns and garlands, garments, cups of gold or other valuable metals, and any other thing which conduced to the ornament or the enriching of the temples.

Theſe were commonly termed ἀναθηματα, and ſometimes ἀναθεματα; from their being depoſited in the temple where they ſometimes were laid on the floor, ſometimes hung upon the walls, doors, pillars, or the roof, or any other conſpicuous place. Sometimes the occaſion of the dedication was inſcribed either upon the thing itſelf, or, when the matter of that could not bear an inſcription, upon a tablet hung up with it.

When any perſon left his employment, or way of life, it was cuſtomary to dedicate the inſtruments belonging to it, as a grateful commemoration of the divine favour and protection. Thus in an antient Greek epigram we find a fiſher makes a preſent of his nets to the nymphs of the ſea. Shepherds hung up their pipe to Pan, or ſome of the country deities, as we find done by one in Tibullus. So Lais decayed with age, dedicates her mirror to Venus [a]. Pauſanius has left us a particular deſcription of the *Anathemata* in the Delphian temple, which was the richeſt of any in Greece [b].—[[a] *Potter*, Archæol. l. 2. c. 4. [b] *Potter*, loc. cit.]

The term *Anathema* alſo occurs in a like ſenſe applied to chriſtian offerings.

The *Anathemata* or ornaments of the antient churches, are otherwiſe called in eccleſiaſtical writers *Donaria*.

Such in particular were thoſe called Εκτυπωματα, anſwering to the votive tablets of the heathens. Alſo pictures, moſaics, inſcriptions, and at length images, ſtatues, crucifixes, *&c. Bingh.* Orig. Eccleſ. l. 16. c. 8.

ANATHEMA is more particularly applied to men devoted to the *dii inferi*, or infernal gods. *Calv.* Lex. Jur. in voc.

In alluſion to the heathen offerings, Socrates thinks the term *Anathema* was introduced for excommunication, becauſe thereby a man's condemnation was publiſhed and proclaimed as if it were hung up upon a pillar. *Bingh.* loc. cit.

Some diſtinguiſh between *Anathema* and excommunication, ſuppoſing the former to be a greater degree of puniſhment, the latter a milder. The effect of the latter is only to cut men off from the commerce of the faithful, that of the former to exclude them from the joy of heaven. Mem. de Trev. 1715. p. 859.

The council of Gangra cloſes every one of its canons with the formula, Ανάθεμα ἐστω, let him be *Anathema* or accurſed; which ſome interpret, let him be excluded from the church; others, let him be tormented by Satan here; and others, let him be damned hereafter. *Bingh.* Orig. Eccleſ. l. 16. c. 2. Sect. 16.

This ſame is the ſtile of moſt other councils, grounded on that form of St. Paul, "if we or an angel from heaven preach any other goſpel unto you, than that which we have preached unto you, let him be *Anathema* or accurſed."

The antient *Anathema* in the judgment of ſeveral modern writers, amounted to no more than an excommunication, or expulſion from the church, and interdiction of all communion with her. Accordingly in the antient canons, it is diſtinguiſhed by the names of παυλειης αφορισμος, the total ſeparation, and *Anathema*, q. d. the curſe; as being the greateſt curſe that could be laid upon man. *Bingh.* Orig. Eccleſ. l. 16. c. 2. §. 8.

Delivering unto Satan, appears to have been but another expreſſion for this excommunication, and the ſpiritual effects conſequent to it, that is, the puniſhment of the ſoul and not of the body. Others are of opinion, that beſides this ſpiritual puniſhment naturally conſequent to excommunication, there was in the apoſtles days another conſequent to it, which was a corporal power and poſſeſſion, or the infliction of bodily vexations and torments by the miniſtry of Satan, on thoſe who were delivered unto him. Dr. Hammond, Grotius, and Lightfoot, are the great ſupporters of this opinion among the moderns, and they have almoſt the general concurrence of the antient interpreters on their ſide [a]. In effect it ſhould ſeem the general ſenſe of the antients, both Greek and Latin, that the power of *anathematizing* was an extraordinary apoſtolical power, diſtinct from the ordinary power of excommunication, ſince we do not find that they made uſe of this phraſe, *delivering unto Satan*, in any of the ordinary forms of excommunication, as being ſenſible, that the church after the power of miracles was ceaſed, had no pretence of inflicting bodily diſeaſes, as the apoſtles had [b].—[[a] *Bingh.* Orig. Eccleſ. Lex. 16. c. 2. §. 15. [b] *Bingh.* loc. cit.]

It is certain the church ſometimes pronounced a total, final, and irreverſible ſentence of excommunication againſt ſome more heinous criminals, keeping them under pennance all their lives, and denying them her external peace and communion at the hour of death, for example and terror [c]. But it is not ſo apparent that ſhe uſed to join execration to her cenſures, and devote men to temporal deſtruction, not only by refuſing to pray for them, but by praying againſt them, that God would take them out of the world, and deliver his church by that means, from their malicious power and machinations. Grotius thinks this was very rarely done; but yet there are ſome examples of it [d].—[[c] *Bingh.* Orig. Eccleſ. l. 16. c. 2. §. 16. [d] *Bingh.* Orig. Eccleſ. l. 16. c. 2. §. 17.]

Maranatha is an extraordinary formula, which occurs in antient cenſures. Authors are divided concerning its import and uſe. There is little ſaid of the word *maranatha* among the antients, and leſs of its uſe in any form of excommunication. St. Chryſoſtom ſays it is a Hebrew word, ſignifying *the Lord is come*; and he particularly applies it to the confuſion of thoſe who ſtill abuſe the privilege of the goſpel, notwithſtanding that the Lord was come among them.

St. Jerom ſays it was more a Syriac than an Hebrew word, tho' it had ſomething in it of both languages, ſignifying *our Lord is come*. But he applies it againſt the perverſeneſs of the Jews, and others who denied the coming of Chriſt, making this the ſenſe of the apoſtle; *if any man love not the Lord Jeſus Chriſt, let him be anathema*, the *Lord is come*.

According to this ſenſe, *maranatha* could not be any part of the form of excommunication, but only a reaſon for pronouncing the *anathema* againſt thoſe who expreſſed their hatred againſt Chriſt, by denying his coming, either in words, as the Jews did who blaſphemed him, and called Jeſus *anathema* or accurſed, or elſe by wicked works, as thoſe who lived profanely under the name of Chriſtian.

Others of the antients interpret the word of the future coming of Chriſt, particularly St. Auſtin, who ſays *maranatha* is a Syriac word ſignifying *the Lord will come*. And he particularly applies it againſt the Arians, who could not be ſaid to love the Lord, becauſe they denied his divine nature. Dr. Hammond and others will have *Anathema maranatha* to have anſwered to the third and higheſt degree of excommunication among the Jews, called *Shammatha*. *Bingh.* Orig. Eccleſ. l. 16. c. 2. §. 16.

The reformed church of France in their ſynod of Alez, at which Peter du Moulin aſſiſted as moderator in 1620, made an order, that in excommunication no one ſhould uſe the form of delivering to Satan, neither ſhould the cenſure of *Anathema maranatha* be pronounced againſt any, for that no man was entitled to uſe that form, but he that knows the ſecrets of reprobation. *Bingh.* Orig. Eccleſ. l. 16. c. 2. §. 15.

Balduinus, Deutrohmannus, Durrius, Stevartius, and others have written expreſsly concerning *Anathemas*. Hen. Labertus, a German writer, has given an *Anathematologia*, or doctrine of the church curſes, Vomkerchen, Bann. *Lipen.* Bibl. Theol. p. 38. ſeq.

ANATHEMATIZING, the act of pronouncing an *Anathema*. See ANATHEMA.

In which ſenſe *Anathematizing* amounts to the ſame with excommunicating. See EXCOMMUNICATION, *Cycl.*

The term is not only applied in ſpeaking of perſons, but of doctrines and opinions.—Thus the council of Trent *anathe-*

matize the opinion of those who hold, that free-will is not able to resist divine grace.

It has been much controverted, whether a person might be *anathematized* after his death; a controversy certainly of great moment, as turning on no less a question than this, whether a church can reverse the dispensations of heaven, and call persons perhaps out of paradise, and commit them to hell? *Pfaff.* Inst. Hist. Eccles. sec. 6. c. 5.

Church history abounds with instances of mutual anathemas, councils, fathers, heretics *anathematizing* each other. There are still extant the twelve anathemas of St. Cyril against Nestorius [c], and the counter-anathemas of Nestorius against St. Cyril [f].—[[c] *Fabric.* Bibl. Græc. l. 5. c. 27. n. 18. [f] Id. ibid. c. 34. p. 439.]

St. Athanasius is charged by Whiston with having interpolated the anathemas of the council of Nice. The critic pretends to convict the saint of having forged the clause, where the Arians are *anathematized*, for holding that Christ was created. It must not be omitted, that Mr. Thirlby has endeavoured to refute the charge. *Whist.* Argum. p. 38. seq.

ANATHEMATISM denotes the same with anathema or imprecation. See ANATHEMA.

The decrees of councils are commonly guarded by *Anathematisms*, to procure them respect, and secure the observance of them. See CANON, COUNCIL, &c. *Cycl.*

The *Anathematisms* of Greg. Thaumaturgus are extant in Canisius's collection; but have been shewn to be spurious, since mention is made in them of Arianism and Apollinaris. Vid. Bibl. Anc. Mod. T. 23. p. 272.

ANATHREPSIS, in medicine, amounts to much the same with *Analepsis*. *Cast.* Lex. Med. p. 47. See ANALEPSIS.

ANATICULA, in the old Roman authors, a term of fondness used by people in love. There is another of the same kind from a different bird *Palumbula*.

My little duck, and my little dove, were the most endearing terms the the lovers of those times could use; nor was this the custom of the Romans only, but the Greeks, as far off as Aristophanes, have it.

ANATIFERA *concha*, in natural history, the name of a genus of shells, the characters of which are these: It is a shell-fish of the multivalve kind, being of a triangular figure, flat, and composed of five shells fasten'd to a long pedicle, and furnished with fourteen hairs. Of this genus of shell-fish the cabinets of the curious afford us the following species. 1. The smooth-edg'd *Anatifera*, with a long pedicle. 2. The *glans marinus* of Rondeletius, with a long pedicle. 3. The almond-shaped *Anatifera*, with a short pedicle. 4. The arborescent or branched *Anatifera*, of a long acute form.

This genus of shells obtained this strange name from an erroneous opinion, that they produced ducks, or a species of wild fowl of that kind, the name signifying a shell producing ducks. The fable of this shell is told by many grave authors, and reported by persons who live in the places where that breed of wild fowl is found, as a known and inconteſtable fact, yet nothing can be more false or absurd. It is very well known to the more judicious part of the world, that these shells contain a fish of the nature of that in other kinds of shell-fish, and that this never has any analogy to, or connection with the fowl call'd the *Bernacle*, and supposed to be produced of it. The fowl has been of late years found to breed in many places in great abundance; and all that could have given rise to so idle an opinion as this of its being produced of this shell is, that the fish contained in it is of a plumose shape, or has certain parts somewhat resembling feathers, which it throws out of the shell upon occasion. The small resemblance of these to a bird, and the appearance of great numbers of these fowl at certain times of the year, without their being known to breed in the places where they were found, gave birth to a foolish opinion among the country people; which, it was very unlucky, that persons of more abilities ever gave any the least countenance to.

ANATOMICAL *Injections*. See INJECTIONS.

ANATOMY (*Cycl.*)—Aristotle, Galen, Vesalius, the royal academy of sciences at Paris, and others have treated on the *Anatomy* of brutes. Vid. *Conring.* Introd. in Medic. c. 3. § 9.

There is some dispute among physicians and naturalists concerning the usefulness of comparative *Anatomy*. On the one hand it is urged, that the parts less apparent in one animal, are found more distinct and conspicuous in another; so that the knowledge of the structure of the former, may be improved by analogy, from that of the latter. On the other hand it is objected, that the diversity is so great between one animal and another, according to the different manners of life they are intended for, that 'tis never safe concluding by mere analogy, from the structure of one to that of the other [a]. Malpighi [b] has been very large in the refutation of this objection.—[[a] Epist. & Recens. Medic. Phil. Transf. N° 228. p. 552. seq. [b] Opp. Posthum. ap. Phil. Transf. loc. cit. p. 554.]

Anatomy makes a great branch of that division of medicine called physiology. See PHYSIOLOGY, *Cycl.*

In another view it constitutes a branch of what we otherwise call anthropology. See ANTHROPOLOGY, *Cycl.*

Anatomy, with regard to its object, is divided into osteology and sarcology. See OSTEOLOGY, and SARCOLOGY.

The first treats of the bones and cartilages; the second is subdivded into splanchnology, which comprehends the history of the internal parts, and more particularly of the viscera; myology, or the doctrine of the muscles; and angeiology, which treats of the vessels, viz. the nerves, arteries, veins, and lymphatick vessels.

Others divide *Anatomy* with regard to its objects, into that of live bodies, and that of dead carcasses.

Herophilus and Erasistratus, we are told by Celsus, dissected live persons: Condemned criminals were sent to the former by princes, on purpose that he might have an opportunity of seeing the parts in their natural state, before any alterations induced in them by diseases or death.

The bodies of persons who have suffered a violent death, among which those that have been hanged, or lost their lives by strangulations with a cord, are the most proper, and to be preferred before the rest. 'Tis for that reason that Riolan rejects those dead carcasses which have been suffocated in the water, as improper for *Anatomy*; tho' Galen used most frequently to drown such of his living creatures, as he had chosen for his anatomical operations. Vid. Bibl. Anat. T. 2. p. 1. seq.

The inconveniencies that attend the dissecting of dead carcasses have occasioned the invention of another cleanlier and more durable kind of subjects. Reiselius contrived a human statue, wherein the circulation of the blood was represented to the sight, and something of the like kind was lately shewn among us by M. Chovet. .Vid. *Ephem.* Acad. N. C. dec. 1. an. 9. Obs. 1.

Who has not seen the wax-work *Anatomy*? The author of that ingenious invention seems to have been Gaetano Giulio Zumba, a Sicilian of Syracuse [b]. Yet M. des Noues, who learnt it of him, and probably made some improvements in it, bringing it to Paris, arrogated the chief honour of it to himself [c]. Some prefer before all the rest, for public lectures and courses, the use of real parts of dead bodies prepared by injection [d].—[[b] Bibl. Ital. T. 2. p. 16. [c] Jour. des Scav. T. 68. p. 335. seq. [d] Bibl. Ital. T. 3. p. 63. seq.]

Anatomy is by others divided into medicinal and physical.

Physical *Anatomy*, *Anatomia physica*, is that employed in enumerating and describing the several solid parts of the body, as bones, cartilages, membranes, muscles, tendons, nerves, ligaments, arteries, veins, lymphyducts, &c. describing their figure, situation, connection, &c.

Medicinal *Anatomy*, *Anatomia medica*, is that, which to the former enquiries adds that of the office and use of the several parts and their concern in health or diseases. *Goelic.* Hist. Anat. §. 8.

Some give a particular species of this under the denomination of chirurgical *Anatomy*. Jour. des Scav. T. 81. p. 10.

Instruments necessary to perform anatomical operations are of two kinds, viz. some for necessary use, others for shew only, or ornament's sake.

The necessary instruments are of twelve several sorts, viz. the needle, thread, dissecting knives, small hooks, a whet-stone, spunge, a pair of scissars, a style, a small hollow pipe, a pair of small bellows, a saw and an elevatory. Vid. Bibl. Anat. T. 2. p. 2.

Some considerable physicians have endeavoured to check a minute study of *Anatomy*, as of no use in physic. 'Tis in reality but a small part of the science, as it now stands, that comes in play in the medicinal practice. It seems enough for a physician to know the number, situation, communication, and use of the parts, without losing time in a minute investigation of their intimate structure, to the smallest fibers they are composed of. V. *Nenter.* Theor. Homin. Sani. Mem. de Trev. 1720. p. 77.

Anatomy is also of use in painting, designing, statuary, &c. Leonardo da Vinci, and all the great masters studied it with particular application. Titian took so much delight in it, that he designed the figures for Vesalius's *Anatomy*. M. de Piles, under the fictitious name of Tortebat [d], and de Rossi at Rome [e], have published books of *Anatomy* particularly accommodated to this use.—[[d] Nouv. Rep. Lett. T. 45. p. 553. [e] A translation of this has been given in England, under the title of "*Anatomy* improved and illustrated, with regard to the use "thereof in designing."]

Most of those who have attempted to give the history of *Anatomy*, have rather given that of the anatomists than of the art it self, that is, of the discoverers, than of the discoveries and improvements themselves, in the order wherein they were made. Solomon Albertus [f], in 1578 published an oration concerning the origin and growth of *Anatomy*; but it only contains the general points of the anatomical history. Many years after Goelick [g], professor of physic at Hall, published in 1713, a history of *Anatomy*, modern as well as antient, wherein he promised a view of most, if not all the writers on it from the origin of physic to his own time; but the work proved many ways defective, scarce a fourth part of the writers are mentioned in it, not to mention the superficial account here given of the progress of the knowledge of the structure of the human body, or the great number of errors committed in it. Dr. Douglass has succeeded much better in a specimen of an anatomical bibliotheca published

in 1715[h], containing an account of almoſt all the writers who have treated on *Anatomy*, either expreſsly or occaſionally, from Hippocrates to Harvey, wherein he gives neceſſary particulars relating to their lives, enumerates the ſeveral editions of their pieces, together with judgments or cenſures of many of them. It may be added, that Van Leempoel in 1725, gave a hiſtory of the origin and progreſs of *Anatomy*, and almoſt all the writers from Alcmeon to Veſalius inclusive[i]. He is fuller than Douglaſs, both in the number of authors, and in the lives and merits of anatomiſts, but more ſparing in noting the editions, of which he only indicates the firſt, referring the reader for the reſt toVander Linden[k]; but this work being only continued as low as Veſalius incluſive, excepting that he gives an account of the life and merits of Harvey, many other good authors, who have publiſhed books on *Anatomy* ſince Veſalius, are therein omitted. Of theſe an account has been given in a diſſertation expreſs by Frank[l]. The hiſtory uf the diſcoveries of the laſt age has alſo been given by Heiſter[m].—[[g] De Diſciplina Anatomica, quo ortu cœperit, & quomodo ſenſim aucta & ad poſteros tranſmiſſa ſit. Noremb. 1513. [h] Hiſt. Anatomiæ nova æquè ac antiqua. Halæ Madg. 1713. 8°. [i] Bibliogr. Anatom. Specim. ſive Catalog. Auctorum, &c. Lond. 1715. It. Lugd. Bat. 1734. 8°. [k] Anatomes Origo, Progreſſus. &c. Ludg. Bat. Deſcript. Med. [l] Bona nova Anatomica, hoc eſt noviter inventum per Anatomicorum accuratorum diligentiam. Heidelb. 1680. 4°. [m] Oratio de incrementis Anatomiæ in hoc ſæculo 18. cum annexo programmate de inventis Anatomicis hujus ſæculi. Wolffenbut. 1720. 8°.]

The oldeſt writings extant on *Anatomy* are thoſe of Hippocrates, who, tho' he only treats of the ſubject occaſionally and in part, has given ſuch a multitude of obſervations relating to the ſtructure of the body, that Riolanus has compiled out of his ſcattered pieces an intire ſyſtem of oſteology; and Burggravius a whole ſyſtem of all the branches of *Anatomy*. Vid. *Burggr.* Lex. in voc. *Anatome.* p. 672.

How well he was acquainted with the *Anatomy* of the bones, appears from thoſe excellent pieces on fractures and articulations, which could not have been compoſed without a perfect knowledge of oſteology. To leave an eternal monument of his labours in this kind, he conſecrated a brazen ſkeleton of admirable contrivance to Apollo of Delphi. Several paſſages occur in his writings, which ſeem to indicate as if he was not unacquainted with the circulation of the blood, and the ſecretion of the animal fluids. Dr. Douglaſs rehearſes the chief of them, as well as of thoſe relating to the other points of *Anatomy*.

Ariſtotle is cenſured by ſome, as having never diſſected himſelf, but related all things on the faith of other writers. Douglaſs ſhews that this cenſure is ill grounded, tho' he owns human diſſections were very rare at that time, and that Ariſtotle borrowed many of his anatomical matters from Hippocrates. Vid. *Dougl.* Bibl. Anat. p. 9. ſeq.

Galen, by general conſent of writers, is the prince of anatomiſts. By his early application, his unwearied aſſiduity, great ſagacity, and penetration of mind, as well as dexterity of hand, he not only carried the art infinitely beyond what had been done by thoſe before him, but even to that perfection wherein we find it at this day, abating only ſome few diſcoveries made by modern anatomiſts. In reality, many of the diſcoveries with which late writers plume themſelves, are due to him. Dr. Douglaſs enumerates ſeveral of the diſcoveries made by Galen in the ſtructure and uſe of the parts of the human body.

Some have objected to Galen, that he formed his deſcriptions not on the human body, but on the bodies of brutes, particularly monkies, and that he never diſſected a man; but this objection may be refuted from his own teſtimony. In many places he expreſsly compares and notes the difference between the ſtructure of men and brutes. His chief enemies among the moderns, are, Veſalius and Fallopius; his advocates Puteus and others. *Put.* Apologia in Anatome pro Galeno, contra And. Veſalium. Venet. 1562. 8°.

Anatomy ſuffered with the other ſciences by the invaſions of the Goths and Vandals, and at length ſunk into total barbariſm[n]; from which it was reſtored in the fourteenth century by Mundinus[o], a Milaneſe, who compoſed rudiments of that art in the year 1315, which, notwithſtanding the barbarous ſtyle wherein they are written, remain ſtill in eſteem, and are the only ſyſtem now taught in ſome of the principal ſchools in Italy. The ſtatutes of the univerſity of Padua expreſsly enjoin the profeſſors to follow the text of Mundinus in their lectures and expoſitions.—[[n] V. *Friend.* Hiſt. of Phyſ. P. 2. p. 397. [o] Anatome omnium humani corporis interiorum membrorum. Papiæ, 1478.]

Some with Fallopius rather aſcribe the honour of the reſtoration of *Anatomy* to Jac. Berengarius, called alſo Carpus or Carpenſis, who lived 200 years after Mundinus. He ſet out with commenting on that author, but afterwards wrote a much better book on the ſubject, of his own; in order to which he diſſected above one hundred bodies. Some have even charged him with the crime of Herophilus. 'Tis alledged that he bore an implacable hatred to the Spaniards; and that, having got ſome of them into his cuſtody, he intended to have proceeded to diſſection, but his deſign being diſcovered, he was baniſhed. Others deny the charge, and give other reaſons for his exile. Vid. *Dougl.* Bibliogr. Anat. p. 58.

The honour of reforming *Anatomy*, and bringing it to its preſent perfection, is commonly aſcribed to Veſalius, whoſe inclination to this ſcience was ſo great, that, when a boy, he could not forbear diſſecting moles, dormice, cats, and the like. As he grew up, his paſſion increaſed; when bodies were wanting for ſkeletons, he would ſteal them even off the gibbets; for which he was expelled Louvain, as he himſelf informs us. Bodies which he dug out of their graves, he would keep ſeveral weeks in his very bed-chamber. He publiſhed his famous work on the ſtructure of the human body at twenty-eight years of age. He was chief phyſician to the emperor Ch. V. and Philip. II. of Spain; but growing weary of a court-life, he undertook a pilgrimage to Jeruſalem, and died in his return. The motive of this expedition is attributed to his opening the body of a young Spaniard of quality, ſuppoſing him dead, whereas, when he came to the heart, he found it ſtill beating. Others give a different account of his misfortunes.

It is certain Veſalius explained, illuſtrated, and connected innumerable paſſages in the anatomical books of Galen, beſides many new things firſt diſcovered by himſelf; yet he has met with his cenſors. He has been charged with ſhining altogether with borrowed light: Cajus affirms, that he even corrupted Galen's text in an edition, the reviſal of which had been committed to him by Aldus, that he might have the greater field for correction in his own work. Others tax him with miſtaking, or at leaſt impoſing wrong and imaginary ſentiments and conſtructions on that author: Columbus with giving deſcriptions of brutes for men, particularly the larynx, tongue, and eye of an ox; and giving muſcles to the epiglottis, which belong only to brutes: Euſtathius with deſcribing the kidney of a dog for a human kidney: Arantius with giving the pudendum of a brute inſtead of that of a woman, for want of a ſubject of this laſt kind. Riolanus taxes his ſtyle with being too figurative, and thus darkening the deſcription of things in themſelves naturally obſcure enough. *Dougl.* Bibl. Anat. p. 80. ſeq.

The writers on *Anatomy* may be divided into ſuch as either treat on the ſubject profeſſedly or occaſionally.

Under the latter come phyſicians, natural hiſtorians, thoſe who treat of human nature and of brutes.

Among the profeſſed writers on *Anatomy*, ſome treat of the whole ſubject, others only of a part.

Under the latter come thoſe who have treated of the *Anatomy* of the bones, of which we have an excellent treatiſe by Mr. Monro; or of the muſcles, as Cowper; of the head, as Dryander; of the uſes of the parts, as Galen, Hoffman and Rudius; of the names of the parts, as Rufus Epheſius and Camerarius; of the art of diſſecting, as Galen, Cappivaccius, Hippolitus, Boſcus, and Lacuna; Horſtius on the art of preſerving carcaſſes.

Among thoſe who treat of the whole ſubject of *Anatomy*, Winſlow is moſt deſervedly eſteemed. This author has been tranſlated into Engliſh by Dr. George Douglaſs. We have alſo an excellent compendium of *Anatomy* by Heiſter. The merit of Albinus's tables and of his writings is well known; as is that of Mr. Cheſelden; ſo that, after reading Heiſter, Winſlow, Monro and Cheſelden, conſulting the tables of Veſalius and Albinus, a ſtudent may, we believe, conſider other books more as curious than neceſſary.

Manget and Le Clerc, two phyſicians of Geneva, have given us a bibliotheca anatomica, containing all the new diſcoveries that have been made in this art, but with many miſtakes, the detecting of which has been undertaken by Morgagni, who has publiſhed ſeveral volumes with that view, under the title of *Adverſaria Anatomica.*

ANATOMY is alſo uſed, in an improper ſenſe, for the analyſis of mixt bodies. See ANALYSIS.

In this ſenſe the chemiſts ſometimes call their art ſpagyrical *Anatomy*, *Anatomia ſpagyrica. Caſtel.* Lex. Med.

In which ſenſe we ſometimes ſay the *Anatomy* of vitriol, the *Anatomy* of ſulphur, the *Anatomy* of Rheniſh wine, &c.

ANATOMY is alſo uſed in a leſs proper ſenſe, to denote the art of reſolving compound bodies into ſimple ones.

In this ſenſe any kind of compound body may be conſidered as the object of *Anatomy*; that is, any body wherein there are divers parts joined together; even the taking aſunder an artificial, political, or moral being, may, in this ſenſe, come under *Anatomy*.

ANATOMY is alſo uſed figuratively, for an exact ſearch or examination of the parts of a diſcourſe, buſineſs, or the like.

In which ſenſe we ſay the *Anatomy* of a book, a doctrine, or the like. *Wood.* Ath. Oxon. T. 2. p. 101.

ANATOMY of plants may be conſidered as a branch of comparative *Anatomy*, otherwiſe called *Dendronatomy*.

The parts of plants which come under anatomical conſideration are, the root, wood, bark, pith, fruit, leaves, flowers, &c.

The *Anatomy* of vegetables is chiefly owing to the induſtry of Malpighi[p] and Dr. Grew[q], tho' conſiderably promoted

also by Ruysch[r], who by a peculiar method of injection has produced divers skeletons or systems of vessels of fruits, leaves, and the like. Something of the same kind has also been done by Thummigius[s].—[[p] Anatome Plantarum, Lond. 1675. Fol. An extract of it is given in Philos. Trans. N°. 118. p. 401. seq. Anatome Plantarum pars altera, Lond. 1679. See an account of it in Hook, Philos. Coll. N°. 1. p. 38. [q] The Anatomy of Plants, with an idea of a philosophical history of plants, &c. Lond. 1682. Fol. [r] Adversar. Anat. Dec. 3. c. 2. [s] Experim. Singul. de Arboribus ex folio educatis. *Halæ*, 1721.]

Some pretend to make F. Fabri the father of this science; and alledge that Malpighi took many of his discoveries from him[t]. Dr. Highmore in his book of generation, Dr. Sharrock on the propagation of plants, and Dr. Hook in his micrographia, have also given some observations tending this way, tho' only collaterally[u].—[[t] Jour. des Scav. T. 34. p. 885. [u] *Grew*, lib. cit. in Pref.]

ANATRIPSIS, in the antient medicine, denotes friction.

The word is sometimes also written simply *tripsis*. *Gorr.* Def. Med. p. 35.

ANATRON (*Cycl.*) is of a cineritious colour, and bitter taste, approaching to sal ammoniac.

It is the produce of a huge lake, on the surface of which it is gathered, in form of a scum. *Boerh.* New Meth. Chem. P. 2. p. 109.

The *Anatron* skimmed from glass fusion is the same with what others call *fel vitri*, or gall of glass. Vid. *Cast.* Lex. Med. *Savar.* Dict. Comm. *Teichmey.* Inst. Chem. c. 18. p. 235.

ANATRON is also used for the *terra saracenica*; of which there are several kinds, black, red, and blue. *Cast.* Lex. Med. in voc. *Anatron.*

ANAUDIA, among naturalists, denotes dumbness, or a want of the use of speech.

Anaudia is, by some, made to differ from *aphonia*, as the former is owing to a defect of the nerves of the tongue, the latter to that of the nerves of the *larynx*. Ephem. Acad. N. C. Dec. 2. an. 10. app. p. 99.

Infants and mutes are *Anaudi*, αναυδοι, not *aphoni*, αφωνοι.

ANAUMACHION, in antiquity, the crime of refusing to serve in the fleet.—The punishment assigned for this offence was infamy. *Potter*, Archæol. l. 1. p. 23.

ANAX, ανακ, in antient writers, denotes a hero, or a god.

The word seems formed of the Hebrew, *anacim*, or *enacim*, which signifies the same.

Some will have it originally to import gyants, called also γηγενεις, *earth-born*. Cicero assures us, that the three eldest sons of Jupiter, called Διοσκαροι, were also denominated *anaces*. *Thomas.* Meth. Etud. Poet. P. 1. l. 2. c. 15. n. 4.

ANAXAGORIA, Αναξαγορεια, in antiquity, a festival observed in honour of Anaxagoras.

The occasion of its being instituted was this, Anaxagoras dying at Lampsacus, the magistrates of that city asked him, whether he desired any thing to be done for him? He replied, that on the anniversary of his death the boys should have leave to play. This custom was observed in the time of Diogenes Laertius.

ANAXIMANDRIANS, a name given, by some writers, to the followers of Anaximander.

These are otherwise denominated *Hylopathii*, and stand opposed to the Atomists. *Cudworth*, Intellect. Syst. c. 5. Sect. 3. Bibl. Chois. T. 2. p. 54, 61. It. T. 8. p. 29. seq.

The *Anaximandrians* make the most antient sect of philosophical atheists: they allow of nothing in nature but bodies. These bodies they assert, admit of qualities, which produce and destroy one another in a circle without beginning or end.

ANBERTKEND, in the eastern learning, a celebrated book of the Brachmans, wherein the Indian philosophy and religion are contained. *D'Herbel.* Bibl. Orient. p. 114.

The word in its literal sense, denotes the cistern wherein is the water of life.

The *Anbertkend* is divided into fifty Beths, or discourses, each of which consists of ten chapters.

It has been translated from the original Indian into Arabic, under the title of *Morat al Maani*, q. d. the marrow of intelligence.

ANBURY, in farriery. See AMBURY.

ANCA, in middle age writers, denotes the thigh or hind leg.

In which sense the word is also written *Ancus*. *Kenn.* Gloss. ad Paroch. Antiq. in voc.

ANCESTORS (*Cycl.*)—Most nations have paid honours to their *Ancestors*.

It was properly the departed souls of their fore-fathers that the Romans worshiped under the denominations of *Lares*, *Lemures*, and household-gods. Mem. Acad. Inscript. T. 2. p. 41. and 479.

Hence the antient tombs were a kind of temples, or rather altars whereon oblations were made by the kindred of the deceased.

The Russians have still their anniversary feasts in memory of their *Ancestors*, which they call *Roditeli Sabot*, q. d. kinsfolk's sabbath, wherein they make formal visits to the dead in their graves, and carry them provisions, eatables, and presents of divers other kinds. They interrogate them with loud lamentable cries what they are doing? How they spend their time? What it is they want, and the like? New Mem. of Liter. T. 1. p. 372.

The Quojas, a people of Africa, offer sacrifices of rice and wine to their *Ancestors*, before ever they undertake any considerable action. The anniversaries of their deaths are always kept by their families with great solemnity. The king invokes the soul of his father and mother to make trade flourish, and the chase succeed.

The Chinese seem to have distinguished themselves above all other nations in the veneration they bear their *Ancestors*. By the laws of Confucius, part of the duty which children owe their parents, consists in worshipping them when dead. This service which makes a considerable part of the natural religion of the Chinese, is said to have been instituted by the emperor Kun, the fifth in order from the foundation of that antient empire. Bibl. Univ. T. 7. p. 395. and 401.

The Chinese have both a solemn and an ordinary worship which they pay their *Ancestors*. The former is held regularly twice a year, *viz.* spring and autumn, with much pomp. A person who was present at it gives the following account of the ceremonies on that occasion.

The sacrifices were made in a chapel well adorned, where there were six altars furnished with censers, tapers, and flowers. There were three ministers, and behind them two young Acolites; he that officiated was an aged man and a new christian. The three former went with a profound silence, and frequent genuflexions towards the five altars, pouring out wine: afterwards they drew near to the sixth, and when they came to the foot of the altar, half bowed down, they said their prayers with a low voice. That being finished, the three ministers went to the altar, the priest took up a vessel full of wine and drank, then he lifted up the head of a deer or goat: after which taking fire from the altar, they lighted a bit of paper, and the minister of the ceremonies turning towards the people, said with a high voice, that he gave them thanks in the name of their *Ancestors* for having so well honoured them, and in recompence he promised them, on their part, a plentiful harvest, a fruitful issue, good health and long life, and all those advantages that are most pleasing to men.

All the Chinese, pagans as well as christians, give their *Ancestors* another simpler and more private worship. To this end they have in their houses a niche or hollow place, where they put the names of their deceased fathers, and make prayers, and offerings of perfumes and spices to them at certain times, with bowing, &c. They do the like at their tombs. Works of Learn. T. 3. p. 221. Mem. de Trev. 1707. p. 1032.

It has been a question warmly agitated of late years, whether the worship which the Chinese pay their *Ancestors* be religious, or only of a civil nature. The Jesuits who not only allow their Neophytes or new converts to join in it, but even assist in it themselves, are necessitated to maintain the latter, to screen themselves from the charge of idolatry; the Dominicans and other missionaries maintain the former, and prohibit the service as absolutely unlawful.

The Jesuits argue, that with relation to the first institution, those honours might be given to our *Ancestors*, since at first they appear to have been only civil; even though they should since, thro' the superstitious disposition of the people, have degenerated into idolatry. But it is answered, that by this argument the most gross worship of idols might be authorized, because all idolatry appears at first only to have been civil worship, as is maintained in the book of wisdom. Chap. xiv. V. 15. Works of Learn. T. 3. p. 222.

The Jews settled in China are said to worship their *Ancestors* like the heathens, and with the same ceremonies, except that they offer not swines flesh. Near their synagogue they have a hall, or court of *Ancestors*, wherein are niches for Abraham, Isaac, &c. Lett. Edif. T. 7. p. 19. Mem. de Trev. 1707. p. 1032.

There is one peculiarity of another kind wherein the Chinese shew their regard for their *Ancestors*, in proportion as any of their descendants are preferred to a higher degree or dignity, their dead *Ancestors* are at the same time preferred and enobled with them. The kings *Ven*, *Van*, *Veu*, *Van*, and *Cheu*, *Cum*, who were descended from vassal kings, when they mounted the imperial throne, raised their *Ancestors* from the vassal or depending state wherein these had lived, to the dignity of emperors. So that the same honours were for the future rendered them, as if they had been emperors of China. The same example was followed by the subsequent kings, and now obtains among the grandees and literati; all now worship their *Ancestors*, according to the rank which they themselves hold in the world. If the son be a mandarin, and the father only a doctor, the latter is buried as a doctor, but sacrificed to as a mandarin. The like holds in degradations, where the condition of the fathers is that of their sons. Bibl. Univ. T. 7. p. 432.

ANCHILOPS (*Cycl.*)—Strictly speaking the *Anchilops* is only a tumor not yet exulcerated, nor is the tumor always within the *saccus lacrymalis*, but sometimes only near it. *Junck.* Consp. Chir. Tab. 45.

If the *Anchilops* be suffered to go too long, or be unskilfully managed, it degenerates, the stagnating humours corrupt, and an ulcer is produced.

It makes a ſpecies, or rather degree, of the *fiſtula lacrymalis*. When the tumor is broke, and the tears flow involuntarily, whilſt the *os lacrymale* is not carious, it is an ægylops; but when the ulcer is of a long ſtanding, deep, fetid, and the *os lacrymale* becomes carious, it is a fiſtula. *Shaw*, Pract. Phyſ. p. 45.

The *Anchilops* is ſometimes attended with an inflammation, and then reſembles a phlegmon; but when not inflamed it approaches nearer to thoſe tumors called *Atheromata*, *Steatomata* and *Melicerides*.

Its cure is by reſtriction and exciſion; tying it at the root on the *Glandula lacrymalis*; and when ready, cutting it off. *Purman.* Chirurg. Curioſ. l. 1. c. 26.

ANCHIROMACUS, in middle age writers, denotes a kind of veſſel, which on account of its nimble ſailing, was uſed for the conveyance of anchors, and other neceſſary utenſils of ſhips. *Iſid.* Orig. l. 19. c. 1.

In this ſenſe, the word is alſo written *Ancyromagus*, *Anchiromachus*, *Ancyromacus*, *Angromagus*, *Anquiromagus*, and *Anguiromagus*. *Du Cange*, Gloſſ. Lat. T. 1. p. 183.

ANCHOR (*Cycl.*)—Proof is made of *Anchors*, by raiſing them to a great height, and then letting them fall again on a kind of iron block placed acroſs for the purpoſe.—To try whether the flookes will turn to the bottom, and take hold of the ground, they place the *Anchor* on an even ſurface, with the end of one of the flookes, and one of the ends of the ſtock reſting on the ſurface; in caſe the *Anchor* turn, and the point of the flooke riſe upwards, the *Anchor* is good.

Baſkets full of ſtones are mentioned by Eunapius as uſed in lieu of *Anchors*; and inſtead of theſe they ſometimes made uſe of bags of ſand. But theſe chiefly obtained in rocky places, where other ſorts of *Anchors* would not take hold. V. *Suid.* Lex. in voc. ζευγμα.

The firſt *Anchors* of iron, had only a flooke on one ſide; this ſort the Greeks called πλεοσομος. The contrivance was compleated by Eupalamius, who made them flooked both ways; though ſome aſcribe the honour of this to *Anacharſis* the Scythian. V. *Plin.* l. 7. c. 56. *Strab.* l. 7. p. 209. *Scheffer*, de Milit. Nav. l. 11. c. 5. *Pitiſc.* Lex. Antiq. in voc.

All *Anchors* have now two arms; not but they might ſtill be uſed with only one arm, which ſtructure would have this advantage, that they would be lighter, and yet in fine weather would hold equally firm with the double kind. The reaſon of having two arms is, that the *Anchor* may always take, in order to which it is neceſſary that it be very heavy; beſides that *Anchors* with a ſingle arm would require more preparation for ſervice. *Aubin.* Dict. Mar. in voc.

For the proportions of *Anchors*, according to Manwayring, the ſhank is to be thrice the length of one of the flookes, and half the length of the beam; according to Aubin, the length of the *Anchor* is to be four tenths of the greateſt breadth of the ſhip: ſo that the ſhank, *e. gr.* of an *Anchor* in a veſſel thirty foot wide is to be twelve foot long. When the ſhank is for inſtance eight foot long, the two arms are to be ſeven foot long, meaſuring them according to their curvity. As to the degree of curvity given the arms, there is no rule for it; the workmen are here left to their own diſcretion.

Aubin gives a table from a Flemiſh writer wherein the lengths of the ſhanks of *Anchors*, for veſſels of all widths, is computed, as well as the weights of the *Anchors*, from a veſſel eight foot wide within, which requires an *Anchor* 3 $\frac{1}{5}$ foot long, weighing thirty three pound, to a veſſel forty-five foot wide, which demands an *Anchor* eighteen foot long and weighing 5832 pounds.

Veſſels that ſail on rivers have at leaſt one *Anchor*, thoſe which ſail in the canals of Zealand have two *Anchors*, but thoſe which go to ſea have always three, four, or more. *Aubin.* lib. cit. p. 27.

The diſtinctions of *Anchors* are taken from their uſe, and the proportion they bear in the ſhip, where they are employed; for that which in one ſhip would be called but a kedger, or kedge *Anchor*, in a leſſer would be a ſheet *Anchor*.

The kedge *Anchor* is the ſmalleſt, which by reaſon of its lightneſs, is firſt to ſtop the ſhip in kedging a river.

This is what the Dutch ſailors call *Werp Anchor*, the French *Ancre a touer*. It ought to weigh 450 pounds.

Stream ANCHOR is a ſmall *Anchor* faſtened to a ſtream cable, wherewith to ride in rivers, and gentle ſtreams, and to ſtop a tide withal in fair weather. *Botel.* Sea Dial. p. 238.

Sheet or *Sheat* ANCHOR is the biggeſt and ſtrongeſt, being that which the ſeamen call their laſt hope; never to be uſed but in great extremity.

This is what the Romans called *Anchora Sacra*; the Dutch *Plegt Anker*, and *Stop Anker*; the French *Maitreſſe Ancre*, or *Grande Ancre*.

The other *Anchors* are called by the name of the firſt, ſecond, and third *Anchor*; by any of which the ſhip may ride in any reaſonable weather, ſea-gate, or tide.—Theſe are ſomething bigger one than another, and uſually when they ſail in any ſtreights, or are near a port, they carry two of theſe at the bow; in which reſpect they are alſo called by the name of, firſt and ſecond bowers.

Second ANCHOR, called by the Dutch *Boeg-Anker*, or *Daagelyks-Anker*, is that ordinarily made uſe of.

Croſs ANCHOR, called by the Dutch *Tuy-Anker*, or *Vertuy-Anker*, and by the French *Ancre d'affourche*, is a middling *Anchor* thrown acroſs or oppoſite to another.—This ought to weigh 1500 pound, or near as much as the ſecond *Anchor*.

Riding at ANCHOR, in the ſea language, the ſtate of a veſſel moored and fixed by her *Anchors* at ſome proper ſtation. See MOORING, *Cycl.* and *Suppl.*

Where a great number of veſſels are moored in the ſame port, care is to be taken by the pilots, or thoſe who have the command, that each ſhip be at a due diſtance from the reſt to prevent their running foul of each other; alſo that they be neither too near, nor too far from land. The proper ſpace betwixt veſſels is from two to three cables length.

Dropping or letting fall the ANCHOR, otherwiſe called caſting *Anchor*, imports the letting it go down into the ſea.

In ſome caſes it is neceſſary to drop two *Anchors* oppoſite to each other, one of them to keep the ſhip firm againſt the tide, or flow, the other againſt the ebb.

Weighing ANCHOR imports the act of with-drawing or recovering the *Anchor* into the veſſel, in order for ſailing.

Dragging ANCHOR is when the *Anchor* gives way, or loſes its hold in the ground by the force of the wind, or ſea, and the veſſel drives from its place.

Clearing the ANCHOR ſignifies the getting the cable off the flooke.

Generally alſo when they let fall the *Anchor*, they uſe this term, to ſee that the buoy rope, nor any other ropes hang about it.

Fetching or bringing home the ANCHOR denotes the weighing it in the boat and bringing it aboard the ſhip.

The *Anchor* is ſaid to come home, when the ſhip drives away with the tide or ſea.—This may happen, either becauſe the *Anchor* is too ſmall for the burthen of the ſhip, or by reaſon the ground is ſoft, and oozie; in ſuch places ſhoeing is uſed.

Shoeing the ANCHOR denotes putting boards on the flookes, in the form of flookes themſelves, to make it broader than before, uſed when they are obliged to *Anchor* in bad ground to prevent the ſhip from driving.

This is what the French mariners call *breder l'Ancre*, and the Dutch, *t'Anker bekleeden*.

In ſome caſes they have been known to tallow the *Anchors*, where the ground being ſoft, the ordinary would not hinder them from coming home. Manwayring ſaw an inſtance of tallowing the *Anchor* in Porto Tareen by Tunis. The reaſon of the advantage is hard to aſſign; he ſuppoſes it to be, that the tallow ſinks deeper into the ooze, and finds ſome harder ground at the bottom, than the other.

Other terms and words of command relating to the *Anchors* are, *the Anchor is a peeke*, that is, when heaving up the *Anchor*, the cable is right perpendicular betwixt the hawes and the *Anchor*; *the Anchor is cock-ball*, when the *Anchor* hangs right down by the ſhip's ſide: this word is given by the maſters, when they are ready to bring the ſhip to an *Anchor*. *The Anchor is foul*, that is when the cable, by the turning of the ſhip, is hitched or got about the flooke; which will not only cut the cable aſunder, but hinder the *Anchor* from holding.

On this account when they come to an *Anchor* where there is a tide, they lay out two *Anchors*, by which means on the turning of the tide the ſhip winds up clear of either.

Juſtin [a] and Appian relate, that all the Seleucides were born marked with an *Anchor* on the thigh; on which account Antiochus Soter, Antiochus Θεος, and Demetrius, Nicator, Seleucus, and many of his ſucceſſors have *Anchors* engraven on their medals [b].—[[a] *Juſt.* Hiſt. l. 15. c. 4. [b] *Spanheim*, de Præſt. Nummiſm. p. 404. ſeq. Trev. Dict. Univ. in voc.]

ANCHOR, *Anchora*, in literary matters, the figure of an *Anchor*, repreſented in antient books; which is of two kinds, ſuperior and inferior. The ſuperior, &c. is where the crooked part is uppermoſt, uſed to denote a thing or paſſage ſtrongly expreſſed. *Du Cange*, Gloſſ. Lat. in voc.

The inferior is were the crooked part is at the bottom, to denote a thing poorly or meanly ſet forth. *Iſid.* Orig. l. 1. c. 20.

ANCHOR is alſo uſed in a leſs proper ſenſe, for any thing that holds another thing faſt, or prevents its driving.

In this ſenſe, ſea-muſcles are ſaid *to riſe at Anchor*, by a ſort of threads the thickneſs of a large hair, which they emit out of their body, to the number ſometimes of a hundred and fifty, which faſtening to the ſtones and other adjacent bodies, keep them firm in their place.—The ſame is done by the *Pinna Marina*. Vid. *Reaumur*, in Hiſt. Acad. Scienc. 1711. p. 10. ſeq.

ANCHORAGE, (*Cycl.*) in middle age writers, is called *Anchoragia* and *Ankeragia*. V. *Dugd.* Monaſt. T. 1. p. 718, 976.

In ſome towns of Italy and Sicily, there is a ſpecial officer appointed to collect this duty, under the denomination of *Anchoragius Portus*, *Ancoragio del Porto*. *Du Cange*, Gloſſ. Lat. in voc.

ANCUSA, *Alkanet*, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe. The cup is an oblong cylindric perianthium, divided into five ſegments at the edge, and remaining when the flower is fallen; the flower is compoſed of a ſingle petal, which is a cylindric tube

tube, of the length of the cup, ſlightly divided into five ſegments at the edge, ſomewhat erect, ſpread open, and obtuſe. The opening of it is covered with little ſcales which are convex, prominent, oblong, and converge toward one another: The ſtamina are five very ſhort filaments, plac'd in the mouth of the flowers. The antheræ are oblong, plac'd on the ſtamina, and cover'd. The piſtillum has four germina; the ſtyle is ſlender, and of the ſame length with the ſtamina; the ſtigma is obtuſe, and has a rim round its edge. The cup remains, to ſupply the place of a fruit, containing in its bottom four longiſh, obtuſe, and gibboſe ſeeds. *Linnæi*, Genera plantarum, p. 57.

The roots of the ſeveral kinds of *Alkanet* are by ſome ſuppoſed to be great vulneraries. There is a preſcription in many of the German authors, of a tincture drawn from the cortical part of them with petroleum, which has great praiſe as a remedy for punctures and all recent wounds.

ANCHYLOBLEPHARON, in phyſic, a diſtemperature of the eye-lids, wherein they ſometimes cohere to each other, and ſometimes to the globe of the eye itſelf. This is eaſily diſtinguiſhable from the ſlight glewing up of the eye-lids from the ſmall-pox, or other the like cauſes. This diſorder is ſometimes brought with an infant into the world, ſometimes it comes upon adults by a fleſhy excreſcence from the angles of the eyes, and ſometimes it happens from accidents, as blowing up of gun-powder, and the like. This is always dangerous, and difficult of cure, but moſt ſo when the eye-lids grow to the cornea. They are to be divided by a blunt pointed pair of ſciſſars, and when ſeparated from each other, it muſt be tryed whether they adhere to the eye; if they do, they muſt be ſeparated with great caution with a blunt pointed ſcalpel; but there is here great danger of injuring the ſight; when ſeparated, they muſt be kept from touching one another, to prevent their cohering again, by lint, or a plate of lead. *Heiſter*'s Surgery. p. 370.

ANCHYLOPS, in medicine. See ANCHILOPS.

ANCHYLOSIS, in phyſic, is, when a juncture or articulation becomes immoveable.

Anchyloſis bears an affinity to contractures, ſhrinkings, or witherings of the parts.

This ſymptom ſometimes happens in fractures near the joints, where the nutritious juice oozes into the cavities thereof.

This diſeaſe, when once formed, is incurable, but while yet freſh, is ſometimes removed by motion, friction, and the uſe of diſcutient medicines. *Junck.* Conſp. Chir. Tab. 62. p. 414.

ANTIENT *Muſic*, that in uſe among the antient Greeks and Romans. About the year 1024, Guido Aretine invented, or at leaſt revived muſic in parts, which may with propriety be called *antiquo-moderna*, modern with reſpect to the Greeks, and antient with regard to us. See MUSIC.

ANCLABRIS, in the religion of the antient Romans, denoted a table in temples, whereon the prieſts eat their portion of the ſacrifices and oblations. *Struv.* Antiq. Rom. c. 11. *Piſc.* Lex. Antiq. in voc.

ANCLE *luxated*, in ſurgery. — The *Ancle* is ſubject to be luxated, either in running, in jumping, or even in walking; and that in all four directions, either inward or outward, backward or forward. When the *Ancle* is luxated inward, the bottom of the foot is turned outward; and on the contrary, when it is luxated outward, the bottom of the foot is turned inward, which latter caſe is indeed much more frequent than the others. If it is diſlocated forward, the heel becomes ſhorter, and the foot longer than it ſhould be; and if backward, the contrary ſigns to theſe will appear. The *Ancle* however can ſcarce poſſibly be luxated outwards, unleſs the fibula be ſeparated from the tibia, or elſe quite broken, which may happen to the external *Ancle*; nor is it at all uncommon for a luxation of the *Ancle* to be attended with very grievous ſymptoms, eſpecially when occaſion'd by ſome great exernal violence; nor can it indeed well happen otherwiſe in this caſe, ſince the diſtortion of the foot muſt neceſſarily overſtrain the adjacent tendons, ligaments, and nerves, and thence excite very violent pains, and other bad ſymptoms; or the veins and arteries may alſo be very eaſily lacerated, which will occaſion a large extravaſation of blood about the whole foot, which too often gives riſe to a gangrene.

It is however neceſſary to obſerve, that the *Ancle* is not always luxated, after it has been violently ſtrained by leaping or turning the foot on one ſide; for it ſometimes happens, that the *Ancle* is not diſlocated on theſe occaſions, but only the parts are violently contuſed and ſtrained. The *Ancle*, when truly luxated, is more or leſs difficult to be reduced, according to the violence of the force by which the accident was occaſioned. The moſt ready way, however, of reducing a luxation of the *Ancle*, is, to place the patient upon a bed, ſeat, or table, leting the leg and foot be extended in oppoſite directions by two aſſiſtants, while the ſurgeon replaces the bones with his hands and fingers in their proper ſituation. When the foot is by this means reſtored to its proper poſition, it is to be well bathed with oxycrate and ſalt, and then carefully bound up with a proper bandage. The patient muſt be enjoined to keep his bed for a conſiderable time, till the bad ſymptoms are gone, and the *Ancle* has recovered its ſtrength ſo far, as to bear the weight of the body, without any uneaſineſs or danger. *Heiſter*. Surg. p. 173.

We have an account of the menſes regularly evacuated at an ulcer of the *Ancle*, in the Medic. Eſſ. Edinb. Vol 3. art. 29.

ANCON (*Cycl.*) is uſed in the antient architecture, to denote the two parts or branches of a ſquare, which meet in an angle reſembling the letter L. *Vitruv.* l. 3. c. ult.

ANCON is alſo uſed by Vitruvius, to denote a kind of *menſulæ*, or tables before doors, bent ſomewhat after the manner of volutes, ſo as to reſemble the letter S. Id. l. 4. c. 6.

In this ſenſe *Ancones* amount to the ſame with what the Greeks call προθυρίδες, *Prothyrides*. *Fabr.* Theſ. in voc. *Ancon.*

ANCON is particularly applied, in the antient architecture, to the brackets, or ſhouldering pieces, called *conſoles* by the moderns. *Neve*, Build. Dict. See CONSOLE, *Cycl.*

ANCON was alſo uſed by the Carthaginians, to denote a dark priſon or dungeon. Suidas mentions one of this kind, in which Gelimer uſed to put all who diſpleaſed him; from which Belliſarius delivered many merchants of the Eaſt, whom the tyrant intended to put to death. *Suid.* Lex. in voc. Αγκων.

ANCON is alſo applied to the angles or flexures of rivers; ſometimes alſo to the tops of mountains. Id. ibid.

ANCONÆUS *Externus*, (*Cycl.*) in anatomy, a long muſcle, lying on the outer part of the backſide of the os humeri, from its neck to the external condyle. It is fixed above in the neck of the os humeri, under the inferior ſurface of the great tuberoſity, and under the inſertion of the teres minor, but a little more backward. It runs down by the *Anconæus* major, adhering firmly to the bone, except at that oblique depreſſion, on account of which this bone appears contorted: it is likewiſe fixed by ſome oblique fibres in the external intermuſcular ligament. From all this ſpace the muſcular fibres contract in breadth, being joined more or leſs obliquely to the outer edge of the tendon of the *Anconæus* major, all the way to the olecranum. The termination of theſe two muſcles in the common tendon forms a very acute angle, and repreſents a ſort of penniform muſcle. *Winſlow*'s Anatomy. p. 188.

ANCONÆUS *internus*, a muſcle ſhorter, and more fleſhy than the *anconæus* externus, and lying towards the inner part of the lower half of the os humeri. It is fixed above, under the lower extremity of the teres major, but a little more backward, and to the intermuſcular ligament, which makes a kind of ſeptum between this and the brachiæus; from thence the fibres contracting in breadth, paſs towards the tendon of the *Anconæus* major, ſome of them running in between it and the bone, and are inſerted in the edge and inner ſide of that tendon. *Winſlow*. ibid.

ANCONÆUS *major*, a long fleſhy muſcle lying on the backſide of the os humeri. It is fixed above by a ſhort tendon to the inferior impreſſion in the neck of the ſcapula, and to a ſmall part of the inferior coſta of that bone; from thence it paſſes between the extremities of the ſubſcapularis and teres minor; and having reached the backſide of the lower extremity of the os humeri, it ends obliquely in a ſtrong broad tendon, which adhering cloſely to the ſcapular ligament, is afterwards fixed by a broad inſertion in the rough tuberoſity on the upper ſide of the olecranum. It lies between the two lateral *Anconæi*, and by its adheſion to them, a triceps muſcle is formed, of which this is the middle portion. Theſe three are all very properly called *Anconæi*, becauſe of their inſertion in the olecranum. *Winſlow*'s Anatomy, p. 187.

ANCONÆUS *minor*, a ſmall muſcle obliquely triangular, lying in the oblong foſſula on the outſide of the olecranum. It is fixed by a ſhort but pretty ſtrong tendon in the lower part of the external condyle of the os humeri; from thence the fleſhy fibres run down obliquely in a ſomewhat radiated form, and are inſerted in the bottom, and whole poſterior edge of the foſſula. It is cloſely united to, and in ſome ſubjects ſeems to communicate by ſeveral fibres with the ulnaris externus, and its tendon adheres very ſtrongly to that of the *Anconæus* externus. Some anatomiſts having confounded this muſcle with the ulnaris externus, and raiſing them together, have afterwards looked in vain for the *Anconæus minor*. It is however plainly diſtinguiſhed from the other, by a fatty or cellulous line. *Winſlow*'s Anatomy, p. 188.

ANCONY, (*Cycl.*) in the iron-works, a piece of half-wrought iron, of about three quarters of a hundred weight, and of the ſhape of a bar in the middle, but rude and unwrought at the ends.

The proceſs for bringing the iron to this ſtate is this: they firſt melt off a piece from a ſow of caſt iron, of the proper ſize; this they firſt hammer at the forge into a maſs of two feet long, and of a ſquare ſhape, which they call a *bloom*; when this is done, they ſend it to the finery, where, after two or three heats and workings, they bring it to this figure, and call it an *Ancony*. The middle part beat out at the finery is about three feet long, and of the ſhape and thickneſs the whole is to be; this is then ſent to the chafery, and there the ends are wrought to the ſhape of the middle, and the whole made into a bar. See BAR.

ANCTERES, in the antient medicine, ſeem to have been the ſame, at leaſt to have anſwered the ſame uſes, as our ſutures. See SUTURE, *Cycl.* and *Suppl.*

Some alſo ſpeak of a ſtrong kind of ſticking plaiſter under this denomination. *Lang.* Epiſt. Med. l. 1. Ep. 77. *Caſt.* Lex. Med. p. 48.

ANCTERIASMUS, in medicine, the operation of applying a fibula to cloſe the too patent lips of wounds. *Gorr.* Def. Med. p. 2. in voc. Αγκίηξες.

This is alſo called, by Latin writers, *infibulatio.*

ANCTERIASMUS is more particularly uſed to denote the paſſing a fibula through the prepuce of the antient ſtage-players and buffoons. *Rolfink*, de Partib. Genit. P. 1. c. 50.

ANCUBITUS, among antient phyſicians, denotes a diſeaſe of the eyes, wherein there is an appearance of ſand, or little ſtones ſprinkled on them. *Joh. Anglic.* Roſ. Ang. p. 867. *Caſt.* Lex. Med. in voc.

This is otherwiſe called *petrification.*

ANCYLOGLOSSUM, in medicine, is where the frænum extends to the tip of the tongue, and thus contracts, or bends it downwards.

The name is derived from αγκυλος, crooked, and γλωσσα, tongue.

The *Ancyloglossum* is, by ſome, alſo called *Ancylion*, Αγκυλιον; and thoſe afflicted with it *Ancyloglossi*, Αγκυλογλωσσοι, by ſome *mogilali*, μογιλαλοι. Vid. *Act.* l. 8. c. 36.

Ancyloglossum is either natural, *i. e.* born with the Infant, or accidental, occaſioned uſually by ſome ulcer under the tongue, which leaves behind it a hardneſs, or eſchar. It is the common opinion of midwives, that none are born without this Infirmity; and hence one of the firſt things after a birth is, to cut the ſtring of the infant's tongue. Vid. *Caſt.* Lex. Med. in voc. See alſo *Hildan.* obſerv. 28. cent. 3. *Barthol.* Anat. l. 3. c. 13. *Ægin* l. 6. c. 29.

The effect of the *Ancyloglossum* is not only to hinder the uſe of ſpeech, but in children it alſo diſables them from ſucking.

The cure is performed by a careful ſection of the frænum, ſo as not to hurt the nerves, or other veſſels.

This operation is never to be performed, where the infant is able to thruſt its tongue ſtraight out of the mouth.

Fabricius ab Aquapendente complains ſeverely on the officiouſneſs of midwives, who, without ever examining the condition of the frænum, practiſe the operation promiſcuouſly on all infants, from an opinion, that without it the child would never be able to ſpeak. But, according to this author, there is ſcarce one child in 100,000 in whom this ligament needs any cutting at all. Operat. Chirurg. P. 1. c. 36.

In ſome parts of Italy the midwives nouriſh a long nail on their right thumb, which is faſhioned after the manner of a knife's point, wherewith, as ſoon as the child is born, they cut the ligament. In other places, from a vain opinion that there is ſomething malignant in the nail, the operation is performed with the edge of a piece of money. Vid. *Hoffman*, in Galen de uſ. Part. l. 11. n. 805. *Columb.* l. 3. c. 3. It. l. 5. c. 13. *Jeſſen.* Inſtit. Chir. c. 2. *Sennert.* Prax. de Infant. Curat. P. 2. c. 15. See alſo *Franc.* Satyr. 20. de Inciſa Frænisublingua, §. 8.

The operation is painful to the infant, and is ſometimes followed by inflammations, and even death itſelf. *Burggr.* Lex. Med. in voc. See ANCYLOGLOSSUS, *Cycl.*

ANDABATÆ (*Cycl.*)—Some ſay the *Andabatæ* fought in the dark, or late at night, after the circenſia were over. There were two men in the chariot, viz. the driver, or auriga, and the παραβαλης, who was alſo called αναβαλης, *q. d.* adſcenſor, or mounter; whence, by corruption, the Latins formed their *Andabata.* *Turneb.* Adverſ. l. 19. c. 8.

It has been diſputed among critics, whether the *Andabatæ* were a people who actually fought blindfold, in their wars, or a ſet of combatants who only practiſed this method of fighting for exerciſe ſake. Vid. *Aquin.* & *Pitiſc.* in voc.

ANDELANGA, in middle age writers, occurs as part of the formula of divers donations.

In this ſenſe, we meet with *donare per Andelangam & feſtucam, vendere & tradere per Andelangam*, &c. Some will have the term properly to denote what we call an *andiron*; others a long ſtaff, or rod, which it is known was much uſed in the putting into poſſeſſion. *Spelm.* & *Du Cange*, in voc.

The word is ſometimes alſo written *Andelangus*, *Andelago*, *Andilago*, *Andalagus*, &c.

ANDENA, in antient writers, denotes a ſwath in mowing. The word is likewiſe uſed to ſignify as much ground as a man can ſtride over at once.

ANDERENÆ *fal*, in natural hiſtory, a name given, by many of the old writers, to the nitre of the antients, or natrum. Some have, ſince their time, applied it to our common nitre; and it has been wondered at, that the accounts do not agree with the ſubſtance. But it is to be obſerved, that the nitre, or natrum, of the antients is a fixed ſalt, approaching to the nature of potaſh, and not at all inflammable with ſulphur, as our nitre is. It is therefore no wonder if the things related of the one ſhould not be found to agree with the other.

ANDIRIAR, in botany, the name by which Rhaſes and ſome others expreſs the *fabago. Ger.* Emac. Ind. 2. See FABAGO.

ANDORINHA, in zoology, a name by which the Portugueſe in the Braſils call the Braſilian ſwallow, more uſually known by its Braſilian name *tapera.* See TAPERA.

ANDRACHNE, in botany, the name of a genus of plants, called by Tournefort, and ſome others, *telephioides.* The characters are theſe. It produces ſeparate, male and female flowers, on the ſame plant. The male flowers have an extremely large five-leaved cup, which withers very quickly. The corolla conſiſts of five ſlender and ſhort petals, which have each a thin rim or edge round them. The nectarium conſiſts of five greeniſh leaves, one affixed to each of the petals; theſe are ſmaller than the petals, and are lightly divided into two ſegments at the rim. The ſtamina are five ſmall filaments, inſerted into the baſe of a ſort of ſtyle. The antheræ are ſimple. In the female flowers, the cup is compoſed of five leaves, and is very large, and does not fall off. The corolla has no petals, but has a nectarium of the ſame ſhape with that of the male. The germen of the piſtil is globoſe. There are three capillary ſtyles, ſlightly divided into two at the ends, and terminated by globoſe ſtigmata. The fruit is a trilobate capſule, approaching to a globoſe figure. The cells are bivalve, and are of the ſize of the cup. The ſeeds are two in each cell; they are round on one ſide, and angular on the other, and approach ſomewhat to a trigonal form. Vid. *Linnæi*, Gener. Plant. p. 455. *Tourneſ.* Inſt. p. 365.

ANDRACHNE is alſo a name given, by the antients, ſometimes to a tree of the *arbutus*, or ſtrawberry-tree kind, and ſometimes to the herb purcelain. Pliny attempts to diſtinguiſh the two ſubjects, by changing the letter (*n*) into an (*l*) in one of them, writing the tree *Andrachne*, and the herb *Andrachle.* But this is not juſtifiable, for the Greeks wrote it indifferently either way, as they liked, the changing the letter (*n*) into (*l*) being very common: thus *nitrum* was ſometimes called *litrum*, λιτρον; and the not perceiving this has occaſioned the error in many authors, of calling the *aphronitron* and *aphrolitron* of Dioſcorides, and the antient Greeks, two different ſubſtances. See APHRONITRUM.

Some have doubted whether the word *Andrachne* was ever uſed by the Greeks, as the name of the herb purcelain; but there is no queſtion to be made of this, if the virtues and the deſcriptions they give of the figure of the plant are attended to. Macer gives us, in two lines, both theſe names; and the later Latin one of Chick-foot, *pulli pes*; whence the French name is borrowed, they calling this plant *pourpier quaſi poulpied.* The words of Macer are theſe:

Andrachne Græcis, quæ Portulaca Latinis
Dicitur, hæc vulgi Pes Pulli more vocatur.

Some of the later Latin writers have alſo called it *porcala*, and ſome of the later Greeks have called it *cairobotanon.* See PORTULACA.

ANDRAPODISMUS, Ανδραποδισμος, in antient writers, the ſelling of perſons for ſlaves. *Suid.* Lex. in voc. Ανδραποδιζω. Hence alſo *Andrapodiſtes*, Ανδραποδιστης, a dealer in ſlaves, more particularly a kidnapper, who ſteals men or children, to ſell them; a crime the Theſſalians were noted for.

ANDRAPODOCAPELI, Ανδραποδοκαπηλοι, in antiquity, a kind of dealers in ſlaves. The *Andropodocapeli* had a particular proceſs for taking off moles, and the like diſfigurements on the faces of the ſlaves they kept for ſale, by rubbing them with bran. *Suid.* Lex. in voc.

At Athens ſeveral places in the forum were appointed for the ſale of ſlaves. Upon the firſt day of every month, the merchants called Ανδραποδοκαπηλοι brought them into the market, and expoſed them to ſale, the crier ſtanding upon a ſtone erected for that purpoſe called the people together. *Potter*, Archæol. Græc. l. 1. c. 10.

ANDRIA, Ανδρεια, in antiquity, a name given by the Cretans to the public entertainments, at which whole cities, tribes, or other bodies of men were preſent.

What the Cretans called *Andria*, the Spartans termed φειδιτια, at leaſt of later ages; for originally they appear to have made uſe of the Cretan name. *Potter*, Archæol. Græc. l. 4. c. 17.

The hall, or place of eating, where theſe entertainments were held, was denominated *Andrion*, Ανδρειον, in the uppermoſt part of which was a conſtant table ſet apart for ſtrangers. Id. ib. c. 21.

ANDRIA is alſo uſed by ſome naturaliſts, to denote a ſpecies of hermaphrodite wherein the female ſex has the predominancy. *Vater.* Phyſ. Exper. Sect. 4. c. 5. q. 7. *Bonet.* Med. Septent. l. 3. Sec. 32. c. 4. *Caſt.* Lex. Med. in voc.

ANDRIA, in literary hiſtory, denotes a comedy of Terence, the firſt in order, in the uſual editions.

We have Engliſh tranſlations of the *Andria* by Webb, and Echard; French, by Des Periers and Dacier; and Italian, by Juſtiniani, *&c.* *Fabric.* Bibl. Lat. l. 1. c. 3. p. 32.

ANDROAS, in natural hiſtory, a name given by ſome of the antients to the foſſile more uſually called *Androdamas.* See ANDRODAMAS.

ANDRODAMAS, in natural hiſtory, the name of a ſtone, or foſſil body mentioned by the antients, as uſed by the magi on many occaſions. The deſcription Pliny gives of it is, that it

was very bright, and of the colour of ſilver, and was always of a regular ſquare or teſſelated figure.

This deſcription is enough to inform us, that it muſt have been one of that genus of pyritæ called, by Mr. Hill, *pyricubium*; but its virtues are too imaginary to deſerve a place here.

ANDRODAS, in antient writers, denotes the ſixty-third year of man's life. *Fabri*, Theſ. in voc.

This is otherwiſe called *Annus Ægyptius*, and *Climacter Magnus*.

Some think the word ought rather to be written *Androclas*, and derive it from the Greek, ανδρα, man, and κλαν, *frangere*. Hence Rigaltius renders it by *virifragum*.

ANDROGYNUM, Ανδρογυνον, in eccleſiaſtical writers, is uſed to denote matrimony; or even one of the parties married. *Du Cange*, Gloſſ. Græc. in voc.

Balneum ANDROGYNUM, Ανδρογυνον Βαλανειον, denotes a bath common to both ſexes. Id. ibid.

ANDROIDES (*Cycl.*) — Authors ſometimes ſpeak of brazen heads made under certain conſtellations, capable not only of ſpeaking, but of propheſying, and rendering oracles. Henry de Villeine, Virgil, pope Silveſter, Robert of Lincoln, and Roger Bacon, are ſaid to have had ſuch figures [a]. Albertus Magnus, it is pretended, went further. He made a compleat man, or *Androides*, after this manner; in a courſe of thirty years continual operation, by taking the benefit of an infinite number of different conſtellations, and aſpects, which preſented themſelves in that time: for inſtance, the eyes were made, when the ſun was in a ſign of the zodiac, which bore an analogy to that part; and the like of the reſt. It is generally ſaid to have been compoſed of a mixture of divers metals; though ſome will have it to have been made of fleſh and bones. It was burnt by Thomas Aquinas.—This *Androides*, it ſeems, ſolved all problems, and cleared up all difficulties for its author. We are even to ſuppoſe, that a great part of the twenty-nine volumes in folio, which this author produced, are compoſed of the dictates, or inſpired by the *Androides* [b].—[a Vid. *Naud.* Apol. des Gran. Hom. p. 528. ſeq. b *Bayle*, Dict. Crit. T. 1. p. 129. n. (F).]

ANDROMEDA, in aſtronomy, a conſtellation of the northern hemiſphere, repreſenting the figure of a woman chained.

It is ſuppoſed to have been formed in memory of *Andromeda*, daughter of Cepheus and Caſſiopeia, and wife of Perſeus, by whom ſhe had been delivered from a ſea-monſter, to which ſhe had been expoſed to be devoured for her mother's pride. Minerva tranſlated her into the heavens. Vid. *Fabri*, Theſ. p. 164.

Dr. Hook thinks he has diſcovered the hidden meaning of the ſtory of *Andromeda*. Vid. Poſthum. Works, p. 401.

The ſtars in the conſtellation *Andromeda* in Ptolomy's catalogue are twenty-three, in Tycho's twenty-two, in Bayer's twenty-ſeven, in Mr. Flamſted's no leſs than eighty-four.

ANDROMEDA, in the Linnæan ſyſtem of botany, the name of a genus of plants, including the *ledum* of Micheli, the *chamædaphne* of Buxbaum, the *poliifolia* of the ſame author, and the *ericæ ſpecies* and *chamærhododendros* of Tournefort. The characters are theſe: the perianthium is ſmall, coloured, and permanent, and is divided into five ſegments. The flower conſiſts of one petal, and is of an oval figure inflated, and divided into five reflex ſegments at the edge. The ſtamina are ten ſubulated filaments ſhorter than the flower, and ſcarce fixed to it. The antheræ are divided into two horns, and bend. The germen of the piſtil is roundiſh; the ſtyle is cylindric, and longer than the ſtamina, and is permanent. The ſtigma is obtuſe. The fruit is a roundiſh but pentangular capſule, having five cells, and being compoſed of as many valves; when ripe, it opens at their junctures. The ſeeds are numerous and roundiſh. The figure of the flower is ſomewhat various in this genus, but it differs evidently from the erica, or heath, in the number of its ſtamina. Vid. *Linnæi*, Gen. Plant. p. 188. *Micheli*, p. 106. *Tournef.* Inſt. p. 273. and 373.

ANDROMEDA, in middle age writers, denotes a kind of garment made of rams ſkins. *Du Cange*, Gloſſ. Lat. T. 1. p. 187. ſeq.

ANDROMEDA, in literary hiſtory, denotes a celebrated Greek tragedy of Euripides, admired by the antients above all the other compoſitions of that poet, but now loſt. Vid. *Fabric.* Bibl. Græc. l. 2. c. 18. p. 647.

It was the repreſentation of this play, in a hot ſummer day, that occaſioned that epidemic fever, or phrenzy, for which the Abderites are often mentioned, wherein they walked about the ſtreets, rehearſing verſes, and acting parts of this piece.—Some aſcribe this effect to the excellency of the poem; others to that of Archelaus the tragedian, who performed in it. Vid. *Baill.* Jugem. des Scav. T. 3. P. 1. p. 377. *Bayle*, Dict. Crit. in voc. *Abdera*.

ANDRON, or ANDRUM, in antiquity, an apartment in houſes aſſigned for the uſe of the men. This was otherwiſe denominated *Androna*, and *Andronites*. *Potter*, Archæol. Græc. l. 4. c. 13.

The *Andron* ſtood oppoſed to the *gynecæum*, or apartment of the women. See GYNÆCEUM, *Cycl.*

The Greeks alſo gave their dining-rooms the title *Andron*, becauſe the women had no admittance to feaſts with the men. Mem. de Trev. 1706. p. 483.

ANDRONA, in antient writers, denotes a ſtreet, or public place, where people met and converſed together. *Du Cange*, Gloſſ. Lat. T. 1. p. 188.

In ſome writers *Androna* is more expreſly uſed for the ſpace between two houſes. In which ſenſe, the Greeks alſo uſe the term Ανδρωνας, for the way or paſſage between two apartments. *Vitruv.* l. 6. c. 10.

The word is ſometimes alſo written *Andra*, *Andron*, and *Andronium*.

ANDRONA is alſo uſed, in eccleſiaſtical writers, for that part in churches deſtined for the men. Antiently it was the cuſtom for the men and women to have ſeparate apartments in places of worſhip, where they performed their devotions aſunder; which method is ſtill religiouſly obſerved in the Greek church.

The Ανδρων, or *Androna*, was in the ſouthern ſide of the church, and the women's apartment on the northern. *Magri*, Vocab. Eccleſ. p. 16.

ANDRONION, in phyſic, the name of a paſtil, invented by an antient phyſician named Andro, ſaid to have been of great efficacy againſt the carbuncle and herpes. Vid. *Ægin.* l. 4. c. 20. & 25. *Gorr.* & *Caſt.* in voc.

Its ingredients, according to Ægineta's preſcription, are the *ſquamæ* of copper, *æs uſtum*, *ſal ammoniac*, *alumen rotundum*, ſhavings of verdegreaſe, and frankincenſe, all wrought up with wine. Celſus gives another recipe, and Aetius a third.

ANDROPHAGI, among antient geographers, denotes man-eaters.

Theſe are more uſually called *Anthropophagi*.

Herodotus [a] and Pomp. Mela [b] ſpeak of a nation of *Androphagi* in Scythia.—[a *Herod.* Hiſt. l. 4. c. 106. b *Pomp. Mela*, de Sit. Orb. l. 3. c. 7.]

ANDROSACE, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe. The cup is a ſmall but general covering, containing many flowers, and compoſed of many leaves. The perianthium of each ſingle flower is of a ſomewhat pentagonal form, compoſed of one leaf, ſlightly divided into five ſegments, ſtanding erect, and remaining after the flower is fallen. The flower conſiſts of only one petal, in form of an oval tube, covered by the cup. The edge is divided into five oblong oval ſegments, with no indentings at their extremities. The ſtamina are five very ſhort filaments ſtanding in the tube of the flower; the antheræ are oblong and erect; the germen of the piſtillum is globoſe; the ſtyle is ſlender, and very ſhort; and the ſtigma globoſe. The fruit is a globoſe capſule, placed on a flat cup, containing only one cell, and ſpliting open in five places at its top. The ſeeds are very numerous, and ſomewhat roundiſh, but gibboſe on one ſide, and flat on the other. *Linnæi*, Gener. Plantarum, p. 62.

The characters of this genus, according to Mr. Tournefort, are theſe. The flower conſiſts of one leaf, and is of the ſaucer-ſhape, very wide at the mouth, and divided into ſeveral ſegments round the edge. The piſtil perforates the middle of the flower, and afterwards changes into a globoſe fruit, which is partly covered by the cup; this opens at the point, and is filled with ſmall ſeeds affixed to a placenta.

The ſpecies of *Androſace*, enumerated by Mr. Tournefort, are theſe.

1. The common, broad-leaved, annual *Androſace*. 2. The perennial, narrow-leaved, ſmooth, alpine *Androſace*. 3. The narrow-leaved, ſmooth, perennial *Androſace*, with a ſingle flower of a ſnow white. Vid. *Tournef.* Inſt. p. 123.

The *Androſaces* approach much to the nature of the auriculas, but differ in the ſtructure of the flower.

Androſace is ſo called, from its bringing relief to men, *q. d.* ανδρι ακος φερουσα. It is apperitive, and good for the dropſy, for retention of urine, and for the gout. Vid. *Lemery*, Dict. des Drogues.

ANDROSÆMUM, *tutſan*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral petals, diſpoſed in a circular form. The cup conſiſts alſo of many leaves, and from it there ariſes a piſtil, which finally becomes a moiſt oval fruit, unicapſular, and containing a number of ſmall ſeeds affixed to a threefold placenta.

There is only one known ſpecies of this genus, which is the *tutſan*, or park-leaves, called alſo *ſiciliana* by ſeveral authors. *Tournef.* Inſt. p. 251.

Androſæmum is ſo called, from the colour of its juice, which reſembles that of human blood. It is apperitive, vulnerary, reſolutive, good for the ſtone, to kill worms, to reſiſt malignity, and guard againſt madneſs; and is uſed either externally or internally. Vid. *Lemery*, Dict. des Drogues.

ANDRUM, in phyſiology, a local diſeaſe, epidemical among the people of Malabar, being a peculiar ſpecies of *hydrocele*, or watery tumor of the ſcrotum.

The *Andrum*, in the language of the country, is alſo called *perical*; ſometimes paraphraſtically, *Andu wajaku*, *q. d.* a popular water rupture.

Its origin is derived from the vicious quality of the country waters, impregnate with corrosive muriatic salts, the source of most other diseases that infect the Malabarians. Its signs, or symptoms, are an erysipelas of the scrotum, returning every new moon, by which the lymphatics being eroded, pour a serous saline humour into the cavity of the scrotum.

The *Andrum* is incureable; those once seized with it, have it for life; but it is not dangerous, nor very troublesome, to those used to it; though sometimes it degenerates into a hydrosarcocele.

The means of prevention is by a heap of sand fetched from a river of the province Mangatti, and strowed in the wells. This is practised by the rich. As to the cure, they have only a palliative one, which is by incision, or tapping and drawing off the water from the scrotum, once in a month or two. *Kempf.* Amæn. Exot. fasc. 3. obs. 7.

ANDRYGALA, in botany, the name of a genus of plants, the characters of which are these. The common cup is short, round, and hairy, and is divided into a great number of equal and subulated segments. The flower is of the compound kind, and is imbricated and uniform, being composed of a great number of equal small flowers, or corollulæ. Each of these consists of one petal, and is ligulated, narrow, truncated, and divided into five segments at the edge. The stamina are five very short and capillary filaments. The antheræ are of a cylindric figure, and tubular. The germen stands under the flower, and is small; the style is capillary, and of the length of the stamina; and the stigmata are two in number, and are reflex. The cup, when the flower is fallen, serves as a seed-vessel; it closes at the top, and becomes of a globular figure. The seeds are single; they are of an oval figure, and are crowned with a single down, of the length of the cup. The receptacle is hairy, and of a flat figure. *Linnæi*, Gen. Plant. p. 376.

ANECDOTES (*Cycl.*)—Procopius's *Anecdota* have been attacked expresly by Rivius, Bonifacius, and Eichelius; and their fidelity defended by Alcmannus [a]. Paschius ranks them in the number of satires, written with no other design, but by lies forged against the emperor, to render the court of that good prince odious to posterity [b].—[[a] *Budd.* Isag. ad Theol. l. 1. c. 4. p. 180. b. [b] Jour. des Scav. T. 42. p. 379.]

Some authors have doubted, whether the work were really Procopius's. Suidas, 'tis certain, ascribes it to him; but neither Agathias, Photius, nor any writer before Suidas, make any mention of it. What chiefly supports the doubt is, that the same Procopius, in his other history, extols Justinian to the skies; yet the critics generally allow the work to be genuine. The inference then is, either that Procopius must have been an arrant flatterer, or an abominable slanderer. What dependance then can be had on the faith of history, when historians are found to prevaricate so horribly [c]? Perhaps it may be of some service to Procopius, to take the book of *Anecdotes* in the light wherein Nicephorus put it [d], when he calls it, with propriety enough, a retractation of what he had said in praise of Justinian, and, as it were, a palinody of what he had spoken wrong.—[[c] Vid. *Fabric.* Bibl. Græc. T. 6. l. 5. c. 5. p. 255. seq. [d] *Niceph.* l. 8. c. 10.]

'Tis certain, however, Procopius was not the inventor of this kind of compositions. Cicero makes mention of his own *Anecdotes*, long before that historian's time; nor was Cicero the first; for he owns he only imitated Theopompus. Vid. *Fabric.* Bibl. Græc. T. 1. p. 146. See also *Cicero*, ad Attic. l. 2. Ep. 6. and ibid. l. 14. Ep. 17.

Among the moderns, besides Varillas [e], Alerac [f] has published *Anecdotes* of Poland; Valdory [g], *Anecdotes* of the ministry of the cardinals Richelieu and Mazarin; Mad. de Gomez, Persian *Anecdotes* [h].—[[e] *Anecdotes* de Florence, ou l'Histoire secrete de la Maison de Medicis, Hay. 1685. 12mo. Extracts of it are given in Jour. des Scav. T. 13. p. 329. Nouv. Rep. Lett. T. 4. p. 459. [f] Les *Anecdotes* de Pologne, &c. Par. 1699. 12mo. A critique is given of this work, in two letters printed in Nouv. Liter. T. 8. p. 257. & 293. [g] *Anecdotes* du Ministre du Cardinal Richelieu, & du Regne du Louis XIII. tires du Mercurio Siri, Par. 1717. 12mo. 2 vol. An extract of it is given in Nouv. Rep. Lett. T. 56. p. 96. [h] *Anecdotes* Persannes, Amst. 1729. 2 vol. 12mo. See an account of them in Jour. Liter. T. 14. p. 206.]

The title, in effect, has somewhat in it alluring. It promises to gratify our love of novelty, and of scandal into the bargain; which has induced authors to make use of it without much propriety. Thus it has been objected to the *Anecdotes* of Poland, that abating about a dozen circumstances, not mentioned by former writers, the work has little pretensions to the title of *Anecdotes*. Instead of this, some have charged it with being a plagiarism from the Memoirs of Chevalier Beaujeu. For the Persian *Anecdotes*, they are a romance, to all purposes. Those of Varillas, are but one degree removed from being the same. Nouv. Liter. T. 8. p. 258.

ANEE, in commerce, denotes a corn measure, used in some provinces of France.

It is otherwise called *Asnee*.

The *Anee* is not so properly a measure, as a denomination, or assemblage of a certain number of other measures.

The *Anee* at Lyons consists of six bichets, equal to one septier and three bushels, Paris measure. At Mâcon, the *Anee* is somewhat more. *Savar.* Dict. Comm. in voc.

ANEE is also used for a quantity of wine, supposed to be an ass's load; and is fixed to eighty pots.

ANEMOMACHIA, Ανεμομαχια, in some antient writers, denotes a whirlwind, or hurricane. *Du Cange*, Gloss. Græc. T. 1. p. 76.

In which sense, we sometimes also meet with *Anemozale*, Ανεμοζαλη; *Anemotaraxis*, Ανεμοταραξις, &c.

ANEMOMETER (*Cycl.*)—It is objected to the *Anemometer* mentioned in the Cyclopædia, from Wolfius, that it requires a considerable wind to make it work. Leutmannus has contrived another, wherein the sails are horizontal, and are more easily driven about, and will turn what way soever the wind blows. Vid. Act. Erud. Lipsi, 1726. p. 125. See WIND.

ANEMONE, *wind-flower*, in botany, the name of a genus of plants, the characters of which are these. The flower is of the rosaceous kind, being composed of several petals, arranged in a circular form. From the center of the flower there arises a pistil, which finally becomes an oblong fruit, to the axis of which there adhere a number of seeds, which are usually covered with a downy hood. To this it may be added, that the stalks of the *Anemone* are usually naked, except in one part, from whence there usually grow three leaves.

The species of *Anemone*, enumerated by Mr. Tournefort, are these.

1. The yellow, broad-leaved garden *Anemone*, with leaves like those of sow-bread, or of mallows. 2. The broader-leaved, yellow garden *Anemone*, with double flowers. 3. The broad-leaved *Anemone*, with flowers yellow within, and red or violet coloured on the outside. 4. The broad-leaved garden *Anemone*, with single perfectly white flowers. 5. The broad-leaved, white garden *Anemone*, with a double or triple series of petals. 6. The broad-leaved garden *Anemone*, with flowers white within, and purple or violet coloured on the outside. 7. The double broad-leaved garden *Anemone*, with flowers variegated with white and violet colour. 8. The broad-leaved peacock *Anemone*, with scarlet flowers. 9. The broad-leaved, proliferous, scarlet-flowered peacock *Anemone*. 10. The broad-leaved peacock *Anemone*, usually very luxuriant in leaves, and very rarely flowering. 11. The many-leaved peacock *Anemone*, with bright red flowers. 12. The double broad-leaved rose *Anemone*, with flowers of the colour of the peach blossoms. 13. The largest broad-leaved, changeable-coloured *Anemone*. 14. The great broad-leaved *Anemone*, with leaves variegated with purple and white. 15. The great *Anemone*, with green flowers variegated with purple and bright red. 16. The broad-leaved, double violet *Anemone*. 17. The broad-leaved *Anemone*, with velvety-brown leaves at the edges, green clusters of leaves within, and a blackish purple tuft in the center. 18. The broad-leaved, single, pale, saffron-coloured *Anemone*, with red streaks, called by many the lesser peacock *Anemone*. 19. The purple *Anemone*, with the roundish, cranes-bill leaf. 20. The roundish, cranes-bill-leaved *Anemone*, with very pale purple flowers. 21. The broad-leaved *Anemone*, with single flesh-coloured flowers. 22. The broad-leaved *Anemone*, with single deep purple flowers. 23. The broad-leaved *Anemone*, with violet purple flowers. 24. The double violet purple, broad-leaved *Anemone*. 25. The violet-coloured, broad-leaved *Anemone*. 26. The broad-leaved *Anemone*, with deeper violet-coloured flowers. 27. The broad-leaved *Anemone*, with streaky flowers. 28. The broad-leaved *Anemone*, with spotted flowers. 29. The broad-leaved *Anemone*, with flesh-coloured flowers. 30. The fanicle-leaved *Anemone*. 31. The broad-leaved *Anemone*, with orange-coloured flowers. 32. The broad-leaved *Anemone*, with scarlet flowers. 33. The broad-leaved *Anemone*, with very large scarlet flowers. 34. The broad-leaved *Anemone*, with purplish scarlet flowers. 35. The great white wood *Anemone*. 36. The smaller white wood *Anemone*. 37. The tall Virginian wood *Anemone*. 38. The blue-flowered, narrow-leaved garden *Anemone*. 39. The narrow-leaved garden *Anemone*, with double flesh-coloured flowers. 40. The dropwort-leaved garden *Anemone*, with a six-leaved violet-coloured flower. 41. The fine-leaved garden *Anemone*, with pale crimson flowers. 42. The fine-leaved garden *Anemone*, with a six-leaved scarlet flower. 43. The fine-leaved garden *Anemone*, with an eight-leaved crimson flower. 44. The fine-leaved garden *Anemone*, with a large six-leaved crimson flower. 45. The finely divided-leaved garden *Anemone*, with a blood-coloured flower. 46. The fine-leaved garden *Anemone*, with blood-coloured flowers, with white bottoms. 47. The fine-leaved garden *Anemone*, with a paler blood-coloured flower. 48. The fine-leaved garden *Anemone*, with a large six-leaved blood-coloured flower. 49. The fine-leaved garden *Anemone*, with large blackish-red flowers. 50. The fine-leaved garden *Anemone*, with deep red flowers. 51. The fine-leaved garden *Anemone*, with snow-white flowers. 52. The fine-leaved garden *Anemone*, with large white flowers. 53. The large white-flowered, cretic garden *Anemone*. 54. The common, single, white-flowered garden *Anemone*. 55. The fine-leaved garden *Anemone*, with large

greeniſh white flowers. 56. The fine-leaved garden *Anemone*, with ſmaller greeniſh white flowers. 57. The common fine-leaved garden *Anemone*, with browniſh white flowers. 58. The fine-leaved garden *Anemone*, with ſtriated fleſh-coloured flowers. 59. The garden fine-leaved *Anemone*, with large bright red flowers, with white bottoms. 60. The common fine-leaved, greyiſh white *Anemone*. 61. The fine-leaved *Anemone*, with ſingle ſcarlet flowers. 62. The fine-leaved garden *Anemone*, with ſingle bright red flowers. 63. The fine-leaved garden *Anemone*, with a crimſon flower. 64. The fine-leaved garden *Anemone*, with ſingle fire-coloured flowers. 65. The fine-leaved garden *Anemone*, with ſingle plain red flowers. 66. The fine-leaved garden *Anemone*, with blood-coloured flowers. 67. The fine-leaved *Anemone*, with bright ſhining red flowers. 68. The fine-leaved *Anemone*, with ſingle purple flowers. 69. The fine-leaved *Anemone*, with ſingle blackiſh purple flowers. 70. The fine-leaved *Anemone*, with ſingle blueiſh purple flowers. 71. The fine-leaved *Anemone*, with ſingle pale purple flowers. 72. The fine-leaved *Anemone*, with ſingle beautiful red flowers. 73. The fine-leaved *Anemone*, with ſingle violet-coloured flowers. 74. The fine-leaved *Anemone*, with ſingle pale violet-coloured flowers. 75. The fine-leaved *Anemone*, with ſingle purpliſh violet flowers. 76. The fine-leaved *Anemone*, with ſingle pale purpliſh violet flowers. 77. The fine-leaved *Anemone*, with ſingle greyiſh white flowers. 78. The fine-leaved *Anemone*, with ſingle ſilvery white flowers. 79. The fine-leaved *Anemone*, with ſingle water-coloured flowers. 80. The fine-leaved *Anemone*, with ſingle amethyſt-coloured flowers. 81. The fine-leaved *Anemone*, with ſingle deep blue flowers. 82. The fine-leaved *Anemone*, with ſingle pale blue flowers. 83. The fine-leaved *Anemone*, with white flowers, purpliſh about the ſtalk. 84. The fine-leaved *Anemone*, with ſingle pale red flowers, whitiſh toward the edges. 85. The fine-leaved *Anemone*, with bright flame coloured and white flowers. 86. The fine-leaved *Anemone*, with yellowiſh white flowers. 87. The fine-leaved purpliſh velvety *Anemone*. 88. The fine-leaved *Anemone*, with whitiſh and flame coloured flowers. 89. The amaranth *Anemone*, or fine-leaved *Anemone*, with the outer leaves of the flower of a duſky red, and the inner ones of a blackiſh purple. 90. The fine-leaved *Anemone*, with ſtreaked flowers and amaranthine ſtamina. 91. The fine-leaved *Anemone*, with double flowers variegated with crimſon and white. 92. The fine-leaved *Anemone*, with narrow petals and ſhining deep purple flowers. 93. The fine-leaved *Anemone*, with red and white variegated flowers. 94. The fine-leaved *Anemone*, with purple flowers with ſome bright white leaves. 95. The fine-leaved *Anemone*, with very bright red flowers, variegated with drops of white. 96. The largeſt early flowering pale violet-coloured *Anemone*. 97. The *Anemone* with purple flowers and a green umbo. 98. The fine-leaved *Anemone*, with deep violet-coloured flowers with broad ſtreaks of white. 99. The fine-leaved *Anemone*, with the largeſt white flowers. 100. The fine-leaved gelder roſe-flowered *Anemone*. 101. The larger flowered gelder roſe *Anemone*. 102. The largeſt fine-leaved *Anemone*, with white flowers purple at the edges. 103. The great procumbent *Anemone*, with faint purple flowers. 104. The fine-leaved *Anemone*, with large fleſh-coloured flowers ſtanding on very ſhort ſtalks. 105. The fine-leaved *Anemone*, with large red and white flowers, with yellow inner leaves. 106. The elegant red and white flowered ſmaller *Anemone*. 107. The giant *Anemone*, with pale flame-coloured flowers. 108. The vermillion *Anemone*, with white ſtreaks. 109. The fine-leaved *Anemone*, with a large blood-coloured flower. 110. The fine-leaved *Anemone*, with a very large blood-coloured flower. 111. The fine-leaved *Anemone*, with a very large bright red flower. 112. The fine-leaved *Anemone*, with a very large bright red flower, with leaves ſtreaked with white. 113. The deep red flowered *Anemone*, with white lines. 114. The largeſt fine-leaved *Anemone*, with purple flowers. 115. The fine-leaved *Anemone*, with a drooping flower variegated with copper colour and deep blue. 116. The fine-leaved *Anemone*, with pale blue flowers variegated with purple and green. 117. The blue flowered giant *Anemone*. 118. The procumbent *Anemone*, with a very large amethyſtine flower. 119. The fine-leaved *Anemone*, with blue flowers variegated with white. 120. The leafy *Anemone*, with a duſky red, or brick-coloured flower. 121. The fine-leaved *Anemone*, with flowers red at the baſe, and whitiſh at the top. 122. The leafy *Anemone*, with very wide white flowers, with red middles. 123. The milky and red *Anemone*, called the hermaphrodite *Anemone*. 124. The fine-leaved *Anemone*, with a ſingle very large white flower. 125. The fine-leaved *Anemone*, with a red lead-coloured flower, variegated with ſtreaks of white. 126. The double red fine-leaved *Anemone*. 127. The double purple fine-leaved *Anemone*. 128. The double blackiſh purple fine-leaved *Anemone*. 129. The double geranium-leaved *Anemone*. 130. The double white fine-leaved *Anemone*. 131. The fine-leaved double *Anemone*, with bluiſh white flowers. 132. The double white *Anemone*, with red edges. 133. The milky white double *Anemone*. 134. The double red fine-leaved *Anemone*. 135. The fine-leaved double, fire-coloured *Anemone*. 136. The double crimſon *Anemone*, with ſnow-white edges. 137. The double red and white fine-leaved *Anemone*. 138. The double fine ranunculus-leaved *Anemone*. 139. The double *Anemone*, with variegated flowers of white and a bright red lead colour. 140. The great fine-leaved double violet-coloured *Anemone*. 141. The leſſer fine-leaved double *Anemone*, with pale violet-coloured flowers. 142. The fine-leaved double *Anemone*, with peach bloſſom-coloured flowers. 143. The fine-leaved double *Anemone*, with variegated green and purple flowers. 144. The great fine-leaved *Anemone*, with double fleſh-coloured flowers, ſpotted with deep purple. 145. The taller erect fine-leaved double *Anemone*, with fleſh-coloured flowers ſpotted with red. 146. The chamæleon *Anemone*, or fine-leaved *Anemone*, which alters the flower every year. 147. The tall beautifully variegated fine-leaved *Anemone*. 148. The double fine-leaved *Anemone*, with crimſon petals with white edges. 149. The double browniſh red *Anemone*. 150. The double fine-leaved *Anemone*, with a bright red flower and violet-coloured ſtamina. 151. The double fine-leaved *Anemone*, with yellowiſh flowers. 152. The fine-leaved double *Anemone*, with crimſon petals and green ſtamina. 153. The beautiful double vermillion *Anemone*, with white bottoms to the petals. 154. The fire-coloured double *Anemone*, with white bottoms. 155. The fine-leaved double flowered red lead-coloured *Anemone*, with white ſpots. 156. The great fine-leaved double violet and purple *Anemone*. 157. The fine-leaved double *Anemone*, with violet and white flowers. 158. The fine-leaved double *Anemone*, with violet flowers, and white edges. 159. The great flowered more variegated blue and white double *Anemone*. 160. The fine-leaved *Anemone*, variegated with red, purple, and white, and with velvety ſtamina. 161. The ſomewhat broader-leaved double *Anemone*, with flame-coloured flowers. 162. The leafy *Anemone*, with double blood-coloured flowers. 163. The leafy *Anemone*, with double bright red flowers. 164. The white flowered leafy *Anemone*. 165. The greeniſh flowered leafy *Anemone*. 166. The leafy *Anemone*, with violet-coloured and white flowers. 167. The ſimply violet-coloured leafy *Anemone*. 168. The hyacinth-coloured leafy *Anemone*. Vid. *Tourn.* Inſt. p. 275. ſeq.

The *Anemonies* are good for pains of the head, and for inflammations; help diſeaſes of the uterus, and procure milk into the breaſts. Taken in ptiſan, or applied to the part in wool, they provoke the menſes. The root chewed in the mouth draws out phlegm, and makes the teeth ſound; and the decoction thereof cures inflammations in the eyes.

All the *Anemonies* are acrimonious and deterſive, drawers, and endued with the faculty of opening the mouths of the veins. Vid. *James*, Med. Dict. in voc.

ANEMOSCOPE (*Cycl.*)—The *Anemoſcope* of Væroe is famous. It is made of the bird *Lunde*, whoſe feathers are picked, the ſkin ſtripped off, viſcera taken out, and the ſkin in this ſtate drawn a new over the bones, this being hung up in the chimney, is ſaid always to direct its bill to the point from whence the wind is like to blow. Ephem. Acad. N. C. Dec. 3. An. 9. App. p. 245.

ANETHUM, *Dill*, in botany, the name of a genus of umbelliferous plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals arranged in a circular form, and placed upon a cup which afterwards becomes a fruit compoſed of two ſeeds of an oval figure, flat, marginated, and ſtriated. To this it is to be added, that the leaves are like thoſe of fennel; there is only one known ſpecies of *Dill*, which is the common kind. *Tourn.* Inſt. p. 317.

Anethum is a medicinal plant, whoſe ſeed is of ſome uſe as a diſcuſſiant, carminative, and ſuppurative. V. *Quinc.* Diſpenſ. P. 2. Sect. 1. n. 47. *Lemer.* Tr. des Drog. p. 46. *Junck.* Conſp. Therap. Tab. 15. n. 16.

Some pretend that the ſeed of *Anethum* has alſo an antaphrodiſiac virtue. *Alleyn.* Diſp. p. 24.

The officinal preparations of *Anethum* are a water, oil, and aſhes.

Aſhes of ANETHUM, *Cinis Anethi*, are procured by mere conflagration. They are commended by Galen in humid ulcers, eſpecially about the pudenda.

Water of ANETHUM, *Aqua Anethi*, is procured from the leaves while in flower by diſtillation in *Balneo mariæ*. It is held ſtomachic, carminative and anodyne.

Oil of ANETHUM, is either procured by infuſion, or diſtillation. The former kind is deſcribed by Dioſcorides, as a proper emollient for diſorder of the privities; alſo a warm diſcutient, digeſtive, &c. The latter is held aromatic, ſtomachic, &c. *Dioſcor.* l. 1. c. 61.

ANEURISM (*Cycl.*) — Surgeons diſtinguiſh two kinds of *Aneuriſm*, which they call the true and the ſpurious. The true *Aneuriſm* is formed by a dilation only of the artery, either all round, or only on one ſide, much in the manner of the varices or tumors of the veins; this has always a pulſation. The ſpurious *Aneuriſm* is, when the artery having been opened by puncture or inciſion, or other accident, the blood is extravaſated between the muſcles and integuments, and the limb appears ſwelled and livid, and there is little or no pulſation. The moſt common ſeat of an *Aneuriſm* is in the brachial artery,

tery, and its moſt common occaſion a puncture of that artery in bleeding; but the ſame accident may happen to any artery, and from various cauſes, and is often the caſe in the internal arteries, from falls, blows and violent ſtrains; in the arm it often happens from the outer coat only of the artery having been cut in bleeding, and the inner one giving way by degrees, as not of ſtrength to bear the impulſe of the blood. Theſe are at firſt very ſmall and diſregarded by the patient, but they grow at length to the ſize of an egg, and ſometimes even to that of a man's head.

The *Aneuriſms* of the great internal arteries are moſt fatal of all others, thoſe of their external branches are often remedied, but thoſe in the arm frequently after the operation are attended with a waſting of the arm, and an amputation becomes neceſſary. The natural burſting of an *Aneuriſm* is very dangerous, as the patient may be loſt in a minute's time, if the artery be not compreſſed above; ſometimes ſurgeons have alſo opened the larger *Aneuriſms*, miſtaking them for abſceſſes. *Heiſter*'s Surgery, p. 290.

The method of curing a ſlight *Aneuriſm* in the arm or elſewhere, is either by deligation and compreſſion, or by inciſion; the firſt ought always to be firſt tried, and is done either by ſtrait bandages with compreſſes, or by an engine invented for that purpoſe. Small *Aneuriſms* are often thus cured; but when large and dangerous, the operation by the knife muſt be called in. In this the firſt care is to ſtop the courſe of the blood by the tournequet, the ſecond to denudate the artery, and free it from the adjacent integuments, and the laſt to contract or conſtringe it either by medicine or ligature.

The ſpurious *Aneuriſm* is often produced by the burſting of the true kind, under the integuments, and in this caſe is to be treated as the true, and cured by the operation with the knife, and by ligature or cauſticks; but in all theſe caſes the ligature ſeems the beſt method.

When any part of an artery has loſt its ſpring, it is leſs capable than before to reſiſt the impulſe of the blood. This part of a canal, which is continually puſhed by the blood, muſt therefore become gradually more and more dilated; and by degrees there becomes formed in the part that ſort of tumor which ſurgeons and anatomiſts call an *Aneuriſm* by dilatation, or the true *Aneuriſm*; and this dilated part of the veſſel is, properly ſpeaking, a kind of bag through which the blood that firſt formed it is continually paſſing.

When an artery has by any means been wounded, the blood which eſcapes thro'the orifice cauſes another ſort of tumor; and this is called an *Aneuriſm by wounding*, or a ſpurious *Aneuriſm*. Vid. ſupra.

Theſe two diſorders, tho' both called by the ſame name of *Aneuriſm*, it is eaſy to ſee are however very different in their nature and characters. They only agree in having the ſame veſſel for their origin, while in one the blood is contained within the artery, and in the other it is extravaſated. It is eaſy to conceive that in the firſt caſe, the blood which forms the tumor retains its fluidity, whereas in the *Aneuriſm* from a wound, the ſame blood which firſt forms the tumor remains there, and in time coagulates, and is no more received into the round of the circulation. The *Aneuriſm* by dilatation forms itſelf very ſlowly, for the veſſel having yet ſome ſpring or force in the part, gives way but by a very little at a time, and reſiſts in ſome meaſure the impulſe; but the *Aneuriſm* from a wound riſes to a large bulk in a very little time, and that the more quickly as the orifice and the veſſel wounded are larger. The *Aneuriſm* by dilatation is always ſoft, as the blood which forms the ſwelling ſtill retains its fluidity; that by a wound is harder; and the firſt diſappears when preſſed by the fingers, whereas the other is not to be preſſed away. In both caſes there is felt, on touching the tumor, a vibration correſpondent to that of the pulſe; but this is much more evident in the *Aneuriſm* by dilatation than in the other. On touching the *Aneuriſm* by dilatation there is always perceived a ſort of fluctuation, which is very little if at all to be found in the other kind; and if the ear be laid to the former kind, it in like manner perceives a noiſe like the rolling of waters, whereas this is not to be perceived, or at the utmoſt only very faintly, in the *Aneuriſm* from a wound. The *Aneuriſm* by dilatation always forms an equal and circumſcribed tumor, whereas the other kind forms one perfectly irregular, and often is variouſly blended among the membrana adipoſa; and finally the colour of the ſkin is not changed by an *Aneuriſm* by dilatation, whereas it is always bluiſh or black in the other.

It might ſeem needleſs to have given ſo many characters, for the diſtinction of theſe two kinds of *Aneuriſm*, ſince any one of them might appear ſufficient alone; but in truth all theſe are ſcarcely ſufficient, and the ſurgeons of the preſent age have often miſtaken one kind for the other, tho' they have examined the tumor carefully. It is certain that an *Aneuriſm* by a wound has often very much of the external appearance of one cauſed only by a dilatation of the veſſel; and on the other hand, an *Aneuriſm* by dilatation frequently at length becomes an *Aneuriſm* by wound, by the diſtended veſſels breaking in ſome weak part and extravaſating a large quantity of blood. This is a caſe that may eaſily perplex and puzzle the ableſt ſurgeon, who had not ſeen the malady in the beginning; ſince as the extravaſated blood forms a larger tumor, and by degrees coagulates, all the ſymptoms of the *Aneuriſm* by a wound come on by degrees, while the dilatation of the artery can no longer be perceived.

Aneuriſms by wound are more frequent than thoſe formed merely by dilatation; in order to judge properly of theſe, we are to conſider, that when an artery is but divided by a ſmall wound, if there be a proper degree of compreſſion given to the part, the blood will form a ſort of covering to the wound, and filling it up, will prevent the other blood from flowing out till the orifice is perfectly cicatrized; and ſometimes this cicatrix will remain firm and intire, ſometimes it is removed afterwards, and ſucceeding extravaſations happen. The moſt common *Aneuriſms* by wound happen from bleeding in the arm; in theſe, if the artery be but ſlightly wounded, and the bandage and compreſs properly applied, the cure is often performed, ſo that no farther miſchief enſues; but if the wound is larger, or the compreſſion leſs regular, bad ſymptoms come on ſooner or later, and there often is a neceſſity at laſt of ſubmitting to the operation of opening the ſkin, diſperſing the blood, and cloſing the veſſel. Mem. Acad. Scienc. Par. 1736.

Mr. du Vernoi deſcribes an *aneuriſmal* ſac, ſituate on the third to the ſixth vertebra of the thorax, which he ſays was the aorta dilated into a ſac ſix inches and an half wide, and as many inches long. Its coats had a great many bony laminæ in them, and were raiſed into unequal protuberances. The poſterior part of this ſac adhered ſo firmly to the carious bodies of the vertebræ, that it was impoſſible to ſeparate them, and theſe large depreſſions were made ſo deep into the vertebræ, as to be within a line or two of the cavity for the medulla ſpinalis. He ſeems to think the *Aneuriſm* was owing to the caries of the bones, by which the ſupport the arteries generally have on one ſide was taken away. The man who had this *Aneuriſm* was plump, well coloured, and in appearance healthy. Comment. Acad. Petrop. Tom. 6.

ANGARI, or ANGARII, in antiquity, denote public couriers, appointed for the carrying of meſſages.

The antient Perſians, Budæus obſerves, had their αγγαρειον δρομημα, which was a ſet of couriers on horſeback, poſted at certain ſtages or diſtances, always in readineſs to receive the diſpatches from one and forward them to another with wonderful celerity, anſwering to what the moderns call poſts, *q. d.* poſiti, as being poſted at certain places or ſtages. V. *Herodot.* l. 8. *Salmaſ.* ad Capitol. in Pio. c. 12. *Stewech.* ad Veget. l. 1. c. 3. *Fabri* Theſ. in voc.

The *Angari* were alſo called by the Perſians *Aſtandæ*; by the Greeks, ἡμεροδρομοι, on account of the long journies they made in one day, which according to Suidas amounted not to leſs than 1500 ſtadiums.

ANGARI is alſo applied figuratively to porters, and others employed in laborious offices, as bearing burdens. *Calv.* Lex. Jur. p. 67.

ANGARIA, (*Cycl.*) in the civil law, denotes a duty required of the ſubjects to furniſh out horſes and carriages for conveying of corn for the ſoldiers, and ſuch things as belonged to the fiſcus.

This duty goes by the name of *curſus publicus*, *angariæ*, *parangariæ*, *tranſlatio*, and *evectio*. The horſes uſed in this ſervice are particularly called *paraveredi*, and *equi curſuales*.

Angariæ are generally underſtood as excluſive of ſhips, though on ſome occaſions theſe were preſſed into the ſervice for tranſporting proviſions and the like. *Calv.* ibid.

Angariæ differ from *parangariæ*, in that the former are confined to public or main roads, the latter to oblique or croſs-roads. *Calv.* loc. cit.

In the book of feuds, the performance of *Angariæ* and *parangariæ* is ranked in the number of royal ſervices. L. 2. Tit. 56.

The clergy at firſt were exempt from this ſervice, by two laws of Conſtantius, made in the former part of his reign, which expreſsly excuſe both their perſons and their eſtates from the duty of the *parangariæ*. But by another law made in the laſt year of his reign, Anno 360. he revoked this privilege. This continued in force not only under Julian, but under Valentinian, till by a contrary law in 382, the clergy were reſtored to their antient privilege, which was farther confirmed to them by Honorius, in 412, whoſe law is ſtill extant in both the codes; yet Theodoſius junior, and Valentian the third, in 440, again took away their privilege, and by two laws made church lands liable to theſe burdens of the *Angariæ*, *parangariæ*, &c. whenever the emperor ſhould be upon any march or expedition, as well as others. *Bingh.* Orig. Eccleſ. l. 5. c. 3. §. 10.

Richter [a] and Stolberg [b] have diſcourſes expreſs on *Angariæ*. — [[a] *Lipen.* Bibl. Jur. p. 17. Ejuſd. Bibl. Theol. p. 39. [b] Diſſ. de *Angariis*. Veterum. Ext. Ap. Exerc. Græc. ling. Francof. 1688. 4°. V. Ouvr. des Scav. 1688. p. 490. ſeq.]

ANGARIA, in a ſtill more extenſive ſenſe, is uſed for any kind of vexation or oppreſſion, whether of body, mind, or eſtate. Hence alſo in ſome writers it is uſed for the act of compelling. V. *Calm.* Dict. Bibl. in voc. *Magri*, Vocab. Eccleſ. in voc. *Angariare*.

ANGARIA is alſo uſed in antient military writers, for a guard of ſoldiers poſted in any place for the ſecurity of it. *Veget.* l. 1. c. 3. It. l. 2. c. 19. It. l. 3. c. 8. *Aquin.* Lex. Milit.

Turnebus takes the word, in this ſenſe, to be a corruption of the text, introduced for *Agrarea*. *Turneb.* Adverſ. l. 4. c. 7.

ANGEIOTOMY, in ſurgery, is uſed by ſome to denote an artificial ſection of the veſſels, as in bleeding.

The word is formed of Αγγειον, veſſel, and τεμνω, *ſeco*, I cut. In this ſenſe *Angeiotomy* may be divided into *phlebotomy* and *arteriotomy*. See ARTERIOTOMY and PHLEBOTOMY.

ANGEL (*Cycl.*)—The whole *angelologia*, or doctrine of *Angels* is full of difficulties and diſputes. The intemperate curioſity of men has led them to enquire, not only concerning their nature, characters, offices, and operations; but concerning their hiſtory, their number, their names, and what not. What a ſource of vain conjectures? Mich. Pſellus gives this reaſon why *Angels* are leſs numerous than mankind, *viz.* that they are nearer to unity. *i. e.* God. *M. Pſell.* de Omnifar. Doctr. n. 19. *Fabric.* Bibl. Græc. T. 5. p. 128.

By the antient councils men are forbid to frame or give particular names to *Angels*; the only names owned by the church are Michael, Gabriel, and Raphael, to which is ſometimes added Uriel. *Du Cange*, Gloſſ. Lat. T. 1. Add. p. 1347.

Before the Babyloniſh captivity the Jews did not know the name of any *Angel*; at leaſt we find none mentioned in the books written before this event. The Talmudiſts ſay they brought theſe names from Babylon: it is true we find many of them called by their names in the book of Enoch; but this is known to be ſpurious, and to have been written after the captivity we are ſpeaking of. Tobit is the firſt who has called an *Angel* by his proper name: he mentions Raphael who conducted Tobias into Media. Tobit is thought to have lived at Nineveh ſome time before the captivity of Judah; Daniel, who lived at Babylon ſome time after Tobit, has taught us the names of Michael and Gabriel. The ſecond book of Eſdras ſpeaks of Uriel; but this book is modern in compariſon, the author of it having in all probability lived ſince the time of Jeſus Chriſt.

The Jewiſh cabaliſts make ſome particular *Angels*, whoſe names they give us, to have been preceptors to the patriarchs; for example, they ſay that Adam's preceptor was called Raziel, Shem's Jephiel, Abraham's Zedekiel, Iſaac's Raphael, Jacob's Seliel, Joſeph's Gabriel, Moſes's Metraton, or Metator, that is, he who ſhews the field; Elias's Maluſhiel, and David's Cerviel. *Calm.* Dict. Bibl. T. 1. in voc.

Julian denied the creation of *Angels*, by reaſon Moſes makes no mention of it in his hiſtory. Juſtinian condemns thoſe who follow this opinion. The antients give two reaſons for Moſes's ſilence concerning the creation of *Angels*; the firſt, that this prophet had only in view to deſcribe the creation of viſible things; the ſecond, that he was ſilent on this point to avoid giving the Jews any handle for idolatry.

Authors are divided as to the time of the creation of *Angels*; ſome will have it to have been before the creation of our world, or even before all ages, that is, from eternity; this was Origen's opinion, who according to Leontius held that all ſpirits, *Angels*, devils, and even human ſouls were from eternity.

Others hold *Angels* to have been created before the world, yet not from eternity, of which opinion are Nazianzen and others.

Others again maintain that they were created at the ſame time with our world, but on what day is diſputed. Theodoret and Epiphanius fix their date from the firſt day.

By *Angels of the Lord*, in ſcripture, are often meant men of God, prophets, *&c.* Then ſpake Hagai the *Angel of the Lord* from among the *Angels of the Lord*; Malachi the laſt of the twelve ſmall prophets, is by ſeveral of the fathers called the *Angel of God*; and this in reality is what his name ſignifies in Hebrew. Some believe Eſdras to be deſcribed by the name of Malachi, or *Angel of the Lord*.

The name of God is given in ſcripture to *Angels*, becauſe they acted in the name of God, were his ambaſſadors, were intruſted with his power, and the intepretation of his orders. They are not only called *Elohim*, and *Adonai*, names ſometimes attributed to judges and princes, but by that likewiſe of *Jehovah*, which belonged to God only, whoſe majeſty they repreſented.

In Deuteronomy it is ſaid, that when the Lord divided men, he divided them according to the name of the *Angels of God*. Deut. xxx. 8.

Deſtroying *Angel*, *Angel* of death, *Angel* of Satan, the *Angel* of the bottomleſs-pit, are terms uſed in ſcripture to ſignify the the Devil and his agents, the evil *Angels*. The *Angel* of Death is he to whom God has given a commiſſion to ſeparate the ſoul from the body. The Jews, Arabians, Turks, and Perſians own ſuch an one. The Perſians call him *Mordad* or *Aſuman*. The Rabbins and Arabians give him the name of *Azrael*; and the Chaldee paraphraſts that of *Malk-admonſa*. Others, as the book concerning the aſſumption, or the death of Moſes, call him the *Angel Samael*, prince of the devils.

Good *Angels* are called *Angels of light*, and thoſe on the contrary who are the devil's miniſters, *Angels of Darkneſs*. *Calm.* Dict. Bibl. in voc.

ANGEL *Fiſh*, in ichthyology, the Engliſh name of the fiſh called by the generality of authors the *ſquatina*, and by ſome the *ſquatus* and *Rhine*. It is alſo called the *monk-fiſh*, and is according to the Artedian ſyſtem a ſpecies of the *ſqualus*, diſtinguiſhed from the others of that genus by the name of the *ſqualus* with no *pinna ani*, and with the mouth placed in the top of the head. See the articles SQUATINA and SQUALUS.

ANGELIC (*Cycl.*)— ANGELIC *Powder*, an hyperbolical epithet given by ſome to the *mercurius vitæ*. *Schrod.* Pharm. l. 3. c. 15. See alſo *Libav.* Synt. Chem. Arc. l. 4. c. 17.

ANGELIC *Poem*, an appellation given by ſome to compoſitions in verſe, preſcribing rules for good morals. *Heder.* Schul. Lex. p. 245.

Such *e. gr.* are the golden verſes of Pythagoras; the *carmen*, ραβδιχον of Phocylides; the *Gnomæ* or ſentences of Theognis; not to mention the moral diſtichs of Cato.

ANGELICA, (*Cycl.*) in botany, the name of a genus of plants, the characters of which are theſe. They are of the rounded headed umbelliferous kind; the flower is roſaceous or compoſed of ſeveral leaves diſpoſed in a circular form and placed upon a cup, which afterwards becomes a fruit compoſed of two oblong thick ſeeds, larger than thoſe of parſly, and gibboſe and ſtriated on one ſide and plain on the other. To this it may be added, that the leaves are alated, and compoſed of large ſegments.

The ſpecies of *Angelica* enumerated by Mr. Tournefort are theſe.

1. The common ſmaller wild *Angelica*, called *gout-wort*. 2. The yellow flowered American *Angelica*. 3. The Alpine *Angelica*, with flowers at the joints of the ſtalks. 4. The ſmallage-leaved perennial mountain *Angelica*, called by ſome *liguſticum* or lovage. 5. The parſley-leaved marſh *Angelica*, called *ſeſeli* and *ſilaum*. 6. The narrower leaved marſh *Angelica*. 7. The columbine-leaved, perennial mountain *Angelica*, called by many *libanotis*. 8. The fine leaved American *Angelica*, with aſphodel-roots. 9. The Canada *Angelica*, with leaves as if eaten to pieces, and ending each in a very long narrow one. *Tourn.* Inſt. p. 313.

The roots of the garden *Angelica* are of conſiderable uſe in medicine; the leaves alſo are ſometimes uſed, and the ſeeds. It is a ſtomachic, a cordial, and ſudorific; it is good in flatulencies, and is by many ranked among the vulnerary herbs. It is preſcribed in malignant diſeaſes of all kinds, againſt the effects of poiſons, and in the plague.

It has been a cuſtom with ſome phyſicians, in the times of contagion of this kind, to make a paſte of the freſh roots beaten with vinegar, and to carry this in a box about them ready to be applied to the noſe occaſionally; others prefer the holding a piece of the dry root in the mouth, and others the drinking a glaſs of ſtrong vinegar, in which it has been infuſed, faſting.

It has alſo been a cuſtom to ſprinkle the powder of the root over the cloaths of perſons who go among the infected, through an opinion that it preſerves them from imbibing the effluvia, which otherwiſe they might carry elſewhere. *Geoffroy*, Mater. Med. Vol. 2. p. 8.

A dram of the powder of the root alone, or half that quantity with a dram of venice treacle, are recommended to be given as a remedy in the plague, to be repeated every ſix hours, and a gentle ſweat to be kept up all the time.

The root is uſed in many of our ſhop compoſitions, as in the plague-water, *&c.* and the dried leaves are a principal ingredient in the ladies red powder, famous in England for the cure of fevers.

The Laplanders are extremely fond of *Angelica*, and uſe it in great abundance both in meat and medicine. They uſe only the ſtalks, never medling with the roots or ſeed, in which we find the higheſt flavour and greateſt virtue. They gather the large ſtalks before the plant is run to ſeed, and roaſt them or bake them till they are thoroughly tender, and then eat them as a delicate diſh.

When they are ſick, they boil either theſe ſtalks or the roots of the moſs which they call *jerth* in water, and in worſe caſes in whey made of rain-deer milk, and give large draughts of this decoction to keep up a breathing ſweat; and it is wonderful to conceive how frequent the pleuriſy and ſmall pox are among them, and yet how few die of them, tho' this is their only medicine.

ANGELITÆ, *Angelites*, in eccleſiaſtical hiſtory, a kind of antient heretics, thus denominated from *Angelium*, the name of a place in Alexandria, where their firſt aſſemblies were held. *Niceph.* Hiſt. Eccleſ. l. 18. c. 49.

The *Angelites* appear to have been the ſame with what are otherwiſe called *Severites*, ſometimes *Theodoſiani* and *Damianiſti*, from the names of their leaders. Sometimes alſo *Tabellioniſtæ*.

They made their firſt appearance in the time of the emperor Anaſtaſius and pope Symmachus, about the year of Chriſt 494.

The diſtinguiſhing tenets of the *Angelitæ* were, that the ſeveral perſons of the trinity had no diſtinct eſſence, ſubſtance, or deity; but only a ſubſiſtance or deity in common, or indiviſible among them. *Prateol.* Heræſ. l. 1. n. 37.

ANGELOLATRIA, the ſuperſtitious worſhip, or adoration of angels. *Suic.* Theſ. T. 1. in voc. See ANGEL.

ANGELOLOGIA, the doctrine or ſcience of angels, their natures, office, *&c.*

Gerhard has publiſhed a ſacred *Angelologia*, Muſæus an apoſtolical *Angelologia*. *Lipen.* Bibl. Theol. T. 1. p. 40. ſeq.

Some

Some uſe the term *Angeloſophia* in a ſenſe much the ſame. A. Varenius has given an *Angeloſophia*. Id. ib. p. 41.

ANGELOGRAPHIA, a deſcription of angels, their orders, names, diſcipline, &c.

This amounts to much the ſame with what others call *Angelologia*.

Caſmannus and Manitius have publiſhed *Angelographies*, Schvarzenau a poſitive *Angelographia*. *Lipen.* Bibl. Theol. l. 1. p. 39. & 41. Ejuſd. Bibl. Phil. T. 1. p. 48. ſeq.

ANGELOT, an antient Engliſh gold coin, ſtruck at Paris, while under the Engliſh ſubjection. *Le Blanc.* Trait. des Monnoies, p. 297. *Menag.* Orig. Franc. p. 34.

It was thus called from the figure of an angel ſupporting the ſcutcheon of the arms of England and France.

There was another coin of the ſame denomination ſtruck under Philip de Valois. *Le Blanc.* loc. cit. p. 243. *Menag.* ubi. ſupr.

ANGELOT is alſo uſed in commerce to denote a ſmall, fat, rich ſort of cheeſe, brought from Normandy.

Skinner[a] ſuppoſes it to have been thus called from the name of the perſon who firſt made it up in that form, and perhaps ſtamped it with his own name. Menage[b] takes it to have been denominated from the reſemblance it bears to the Engliſh coin called *Angelot*.—[a *Skin.* Etym. in voc. b *Menag.* Orig. Franc. p. 35.]

It is made chiefly in the Pays de Bray, whence it is alſo denominated *Angelot de Bray*.

It is commonly made in vats, either ſquare or ſhaped like a heart. *Savar.* Dict. Comm. T. 1. p. 107.

ANGELUS, in the church hiſtory of France, denotes a prayer to the holy virgin, to be rehearſed three times a day, at the ſound of a bell rung for that purpoſe.

The *Angelus* is the ſame with what is otherwiſe called *Ave Maria*, or the angelic ſalutation. See AVE MARIA, *Cycl.*

ANGER.—A late moraliſt defines *Anger*, a propenſity to occaſion evil to another, ariſing upon apprehenſion of an injury done by him. *Hutcheſ.* Eſſ. on Paſſ. Sect. 3. p. 74. ſeq.

This violent propenſity is attended generally, when the injury is not very ſudden, with ſorrow for the injury ſuſtained, or threatned, and deſire of repelling it, and making the author of it repent of his attempt, or repair the damage.

But beſides theſe conditions, which are good, in ſome ſort intended by men when they are calm, as well as during the paſſion, there is in the angry perſon a propenſity to occaſion miſery to the offender, a determination to violence, even where there is no intention of any good to be obtained or evil avoided by this violence. And it is principally this propenſity which we denote by the name *Anger*, tho' other deſires often accompany it. *Hutcheſ.* Eſſ. on Paſſ. Sect. 3. p. 63.

Phyſicians and naturaliſts afford inſtances of very extraordinary effects of this paſſion. Borrichius cured a woman of an inveterate tertian ague, which had baffled the art of phyſic, by putting the patient in a furious fit of *Anger*. Valeriola made uſe of the ſame means with the like ſucceſs in a quartan ague. The ſame paſſion has been equally ſalutary to paralytic, gouty, and even dumb perſons; to which laſt it has ſometimes given the uſe of ſpeech. Ettmuller gives divers other inſtances of very ſingular cures wrought by *Anger*; among others he mentions a perſon laid up in the gout, who being provoked by his phyſician, flew upon him, and was cured. It is true the remedy is ſomewhat dangerous in the application, when a patient does not know how to uſe it with moderation. We meet with divers inſtances of princes to whom it has proved mortal. *e. gr.* Valentinian the firſt, Wenceſlas, Matthius Corvinus king of Hungary, and others. There are alſo inſtances wherein it has produced the epilepſy, jaundice, cholera-morbus, diarrhea, &c. Mem. de Trev. 1707. p. 923.

For the influence of this paſſion on the perſpiration and urine of human bodies, ſee PERSPIRATION.

ANGETENAR, in the Arabian aſtronomy, denotes a fixed ſtar of the fourth magnitude, in the body of cetus or the whale. *Vital.* Lex. Math. p. 41. See CETUS, *Cycl.*

ANGIGLOSSII denotes thoſe who ſpeak with difficulty, heſitation, or even ſtammering. *Blanc.* Lex. Med. p. 45.

ANGILDUM, in our old writers, denotes a ſimple gild, that is, the ſimple value of the man or other thing. *Spelm.* and *Du Cange*, in voc.

The word is compounded of the Saxon *An*, one, and *gild*, payment, price, or compenſation.

In this ſenſe, *Angildum* ſtands contradiſtinguiſhed from *Twigildum*, a double compenſation, *trigildum*, a triple compenſation.

ANGINA, in medicine. See QUINZY.

ANGINA *Lini*, in botany, a name uſed by ſome of the later Greek writers, to expreſs what the more antient writers of this nation called *linozoſtis*, and the Latins *epilinum*; this was the *coſcuta* or dodder growing on the flax, as that on the thyme was called *epithymum*. It was called *Angina Lini*, the quinzy of flax, from its choaking that plant.

ANGIOSPERMIA, in botany, a term uſed by Linnæus, to expreſs a certain ſeries of the didynamiæ or plants of the verticillate kind, which have their ſeeds not lodged naked within the cup. They are by this diſtinguiſhed from the *gymnoſpermia*, which have them ſo; whereas the *angioſpermia* have them encloſed in a capſule, and adhering to a placenta placed in the middle of that capſule. The claſs of didynamia contains the labiated and perſonated plants. The *Angioſpermia* are the perſonated, the others the labiated kinds.

ANGLE (*Cycl.*)—ANGLE *of a Semi-circle*, in geometry, the *Angle* which the diameter of a circle makes with the circumference. The chief property of this *Angle* is, that it is leſs than a right *Angle*, and greater than any acute right-lined *Angle*.

ANGLER, a fiſherman who profeſſes or practiſes *angling*.

An anonymous writer has publiſhed the rules neceſſary to form an *Angler*, under the title of the gentleman *Angler*. London, 1726. 8°. See ANGLING.

Anglers are to be diſtinguiſhed from poachers. Some make the ſame difference between them, that is between the fair trader and ſmuggler. Accordingly the legiſlature has made the latter penal, but laid no reſtraint on the former. *Angling* can do no prejudice to the fiſh of a river. Anglers fiſh for their recreation, not for lucre; whereas poachers make it their livelihood.

The tackle neceſſary for an *Angler* is various, according to the branch of the art he applies himſelf to. He muſt be equipt with variety of hooks, and a competent quantity of every ſort; he muſt not be without wax, ſilk, a pair of ſciſſars or pen-knife, a baſket, or bag, and landing-net, plummets, ſhot, and floats of every kind, needles and thread, lines, hair, Indian graſs, variety of feathers, more particularly thoſe taken from the neck of a mallard, the wing of a partridge, a capon's neck, the top of a plover, or the hackle of a red cock. He muſt likewiſe be furniſhed with twiſt, and bedding for dubbing his artificial flies; he muſt have a landing-hook, reels for his ſilk lines, a pouch or book for his hair lines, a convenient place wherein to repoſite his ſmall craft, viz. flies, hooks, wax, ſhot, ſilk, &c. a bag for his worms, a tin box for his gentles. Gentl. Angl. p. 2, 3. See ANGLING, *Cycl.* and *Suppl.*

When he takes his ſtand, he is to ſhelter himſelf under ſome buſh, or tree, or ſtand ſo far from the brink of the river that he can only diſcern his float; by reaſon fiſh are timorous, and eaſily frighted. The beſt way of *angling* with the fly is down the river, and not up; neither need the *Angler* ever make above half a dozen of trials in one place, either with fly or ground bait, when he angles for trout: by that time the fiſh will either offer to take, or refuſe the bait and not ſtir at all. Dict. Ruſt. in voc.

ANGLING (*Cycl.*)—The *angler*'s firſt buſineſs is to prepare for catching the fiſh by inviting them about him; the method of doing this in ſtanding waters, by throwing in grains, chopped worms and the like, is well known: but the chief difficulty is in running rivers and brooks. The method in this caſe, is to prepare a tin box capable of holding ſome hundreds of worms, bored on all ſides, and full of holes of ſuch a ſize as they may be juſt able to crawl out at; there muſt be a plummet faſtened to this box to ſink it, and a line to draw it back at pleaſure; in this caſe it is to be thrown into the water in a proper place, above which the angler may ſtand under cover. The worms will ſlowly and gradually crawl out of this box, and the fiſh will be gathered about to feed on them; the baited hook is to be thrown in higher up and carried down by the ſtream. If this method do not bring the fiſh about the place in a little time, there is reaſon to ſuſpect that ſome pike lies lurking thereabout, and deters them; in this caſe it is proper to throw out a baited hook and he will generally be taken, after this the attempt will ſucceed.

The *Angling* rod muſt be kept in a moderate ſtate neither too dry nor too moiſt, in the firſt caſe it will be brittle, in the other rotten. When paſtes are uſed, it is proper to mix a little tow with them, and rub them over with honey; finally a ſmall anointing them with butter is of great uſe to keep them from waſhing off the hook. The eyes of any fiſh that is taken are an excellent bait, for almoſt any other kind of fiſh.

In a pond, the beſt place for the *Angler* to take his ſtand is uſually that where the cattle go in to water; in rivers, if breams are fiſhed for, it ſhould be in the deepeſt and moſt quiet places; if eels, under the banks of rivers that hang over; perch are to be expected in clean places, where the ſtream is ſwift; and chub in deep ſhaded holes: roach are moſtly found where the perch are, and trout only in ſwift and clear ſtreams. Places where there are many weeds, or old ſtumps of trees, harbour fiſh in great numbers, and they uſually bite freely there, but there is danger of entangling the line, or faſtening the hook to the weeds.

In caſe of this accident, recourſe is to be had to a ring of lead, of about ſix inches round, faſtened to a ſmall pack-thread, this ring is to be truſt over the rod, and let to fall into the water. It will deſcend to the place where the hook is entangled, and then by pulling the pack-thread gently, the hook will be ſoon diſengaged, or at the worſt it can only be broke off near the end of the line; whereas when this is not employed, the rod itſelf is ſometimes broken, or the line nearer its upper end.

Deep waters are beſt for *Angling* in, for the fiſh do not love to be diſturbed by wind and weather.

The beſt ſeaſon is from April to October, for in very cold ſtormy weather the fiſh will not bite; the beſt times of the day are from three till nine in the morning, and from three in the afternoon till ſun-ſet.

In an eaſterly wind there is never much ſport for the *Angler*; the ſoutherly winds are the beſt for his purpoſe, and a warm but lowering day is moſt of all to be choſen; a gentle wind after a ſudden ſhower to diſturb the water makes a very good opportunity for the *Angler*; the cooler the weather in the hotteſt months, the better, but in winter on the contrary the warmer the day the better. A cloudy day after a bright moon-light night is always a good day for ſport, for the fiſh do not care for going after prey in the bright moon-ſhine, and are therefore hungry the next morning.

The openings of ſluices and mill-dams always bring fiſh up the current to ſeek for the food, which is brought with the ſtream, and angling in theſe places is uſually ſucceſsful.

Thoſe who are fond of *angling* might ſave themſelves ſome fruitleſs trouble, by obſerving when ſmall fiſh in a jar take or refuſe food. See the article FISH.

Angling differs from poaching, as the latter is performed chiefly by nets, and night-lines, the former by a rod, *&c.* Add that the latter is done in a clandeſtine manner, forbid by the laws, which does not hold of the former. By the poaching methods more fiſh are deſtroyed in one month, than all the *Anglers* in England can take in ſeven.

Ground-ANGLING. See the article GROUND.

Night-ANGLING. See the article NIGHT.

ANGLO-CALVINISTS, a name given by ſome eccleſiaſtical hiſtorians to the members of the church of England, conſidered as their church in matters of doctrine follow the ſyſtem of Calvin. V. *Natal. Alexand.* Select. Hiſt. Eccleſ. Sect. 15. P. 1. Act. Erud. Lipſ. 1687. p. 437.

The Anglo-Calviniſts make one of the four branches or diviſions of Calviniſm; and as ſuch ſtand diſtinguiſhed from the pure Calviniſts, the Piſcatorians, and the Arminians.

ANGLO-SAXON *Language*, that ſpoke by the antient Angli or Saxons who ſettled in England.

It was thus called from the people, who were partly Angli, partly Saxons.

It is otherwiſe denominated ſimply *Saxon*.

The *Anglo-Saxon*, or Engliſh Saxon, is properly the original Engliſh; being the language which our Saxon anceſtors firſt eſtabliſhed in this iſland.—It is now called *Anglo-Saxon* to diſtinguiſh it from the modern or preſent Engliſh. *Wallis*, Ap. Greenw. Engl. Gramm. Pref. p. 16.

ANGON, in the antient writers on mechanics, denotes a military engine of the bow-kind. *Hero*, de Machin. Bell. c. 17.

Authors are divided as to the form and ſtructure of the antient *Angon*. From the deſcription given of it by Hero, the *Angon* as well as the *monangon* appears to have been near a-kin to the Catapultæ and Balliſtæ, being ranked in the number of the Lithobolæ, or engines for throwing ſtones. *Aquin.* Lex. Milit. in voc.

Agathias ſpeaks of another kind of *Angones* of the javelin, or ſpear-kind, not unlike our halbards. Pachymeret ſays expreſsly theſe were the ſame with the antient Tragula. *Pachym.* in. Andron. l. 6. c. 30.

ANGONÆUS, in anatomy, a name given by Riolanus and others, to a muſcle called by the generality of other writers *anconæus*, and *cubitalis minor*. See ANCONÆUS.

ANGOR is uſed by ſome phyſicians to denote a ſhrinking inwards of the native heat of the body, or its retiring to the center; upon which enſues a pain, and palpitation of the heart, attended with ſadneſs and melancholy. *Caſt.* Lex. Med. p. 50.

In this ſenſe, *Angor* amounts to much the ſame with what the Greeks call *Agonia*.

The *Angor* is reputed a bad ſymptom, when it happens in the beginning of an acute fever. *Caſtel.* loc. cit. *Gall.* Com. 1. de Hum. & com. in Epid. l. 1. t. 75. It. de diff. pulſ. l. 4. c. 3.

ANGSANA or ANGSAVA, in botany, names by which ſome authors have deſcribed the *draco arbor*, or dragon tree; one of the trees ſaid to afford the *ſanguis draconis*, or dragon's blood of the ſhops. *Dale*, Pharm. p. 337.

ANGUELLA, in zoology, a name given by ſome authors to the fiſh more uſually called *hepſetos*, and *atherina*, a ſmall fiſh caught about the ſhores of the Mediterranean and ſome other places, and eſteemed a delicate taſted one. *Willughby*, Hiſt. Piſc. p. 210. See the article HEPSETUS.

ANGUILLA, in zoology. See EEL.

ANGUILLIFORM, *Anguilliformis*, in zoology, the term for a very large claſs of fiſhes, which are ſoft and lubricous like the eel, and have no ſcales.

The word is derived from the Latin *Anguilla*, an eel, and *Forma*, ſhape or appearance. Moſt of the fiſh compriſed in this claſs are long bodied alſo like the eel. Some of them have neither fins at their gills nor belly, as the murus and lampetra; others have fins at their gills, but none on their bellies, as the ſea-ſerpent, eel, conger, ophidion, and ammodytes. And others have both, as the tæniæ, muſtelæ, alaudæ, and the like. *Ray*, Ichthyograph. p. 103.

ANGUILLIFORM is ſometimes alſo applied to land animals which bear a reſemblance to eels, but do not properly belong to that claſs.

In this ſenſe, we read of *Anguilliform* worms. G. Elſerus maintains that eels are viviparous; having found in ſome of them certain membranes full of *Anguilliform* worms. Vid. Giorn. de Letter d'Ital. 75. p. 190.

ANGUINA, in botany, the name of a genus of plants deſcribed by Michel and mentioned by Plumier, and in the Malabar garden. It is the ſame genus with the *Trichoſanthes* of Linnæus deſcribed in his *genera plantarum*. p. 466. See TRICHOSANTHES.

ANGUINEI *Verſus*, in poetry, thoſe which may be read backwards. *Scal.* Poet. l. 2. c. 42.

Theſe are otherwiſe called recurrent verſes. Such *e. gr.* are

Optimum jus, lex amica, vox diſerta.
Diſerta vox, amica lex, jus optimum.

ANGUINUM *Ovum*, among antient writers, denotes an extraordinary ſort of egg, ſaid to be produced by the joint ſaliva of a cluſter of ſnakes; being toſſed up on high by the hiſs, and thus caught in the air by the druids. It was endued with many marvellous virtues. *Plin.* Hiſt. Nat. l. 9. c. 3. Bibl. Franc. T. 8. p. 227.

Mercatus and others by a miſtake give this name to a figured ſtone of the ſpecies of Echinites, more properly called *Scolopendrites*, by ſome *Bufonites*. *Mercat.* Metalloth. Arm. 9. c. 54. Giorn. de letter d'Ital. T. 32. p. 196.

ANGUIS, the *Snake*, in the Linnæan ſyſtem of zoology, makes a diſtinct and large genus of the order of the creeping, amphibious animals; the character of which is, their having no feet, and a ſcaly body of a cylindric figure. Of this genus are the viper, rattle-ſnake, blind-worm, aſp, cobra or hooded-ſerpent, *&c.* *Linnæi* Syſtema Naturæ, p. 50. See SNAKE.

ANGUIUM *Lapis*, a name given to a ſuppoſed ſtone in Germany, which is of a cylindric figure, and has a cavity capable of admitting a finger, and of a yellow colour with a great many variegations. The vulgar call it *duchaneck*, and have an idle opinion of its having its origin in ſome manner from a ſerpent ant. De Boot who had ſeen many of them declares them to be fictitious, and made of glaſs tinged with two or three colours.

ANGULARIS *Scapulæ*, in anatomy, a name given by Winſlow and ſome others to the muſcle of the ſhoulder generally called the *levator ſcapulæ*. See LEVATOR.

ANGURIA, in botany, the name of a genus of plants called by many authors *citruls*. They are very nearly allied to the melon and cucumber claſs, but differ from all in having their leaves deeply divided, and their fruit eatable.

The ſpecies of *citrul* enumerated by Mr. Tournefort are theſe. 1. The black ſeeded *citrul* or *Anguria*, with leaves cut like thoſe of colocynth. 2. The great Indian *Anguria*. 3. The trefoil American *Anguria* with ſmall fruit. And 4. The American *Anguria* with a rough eatable fruit. *Tourn.* Inſt. p. 106.

For the medical uſes of *citrul*. See CITRUL.

ANHALDIN, *Alhandinum*, an epithet given to various medicines, formerly kept as ſecrets in the family of Anhalt.

Three of the moſt celebrated medicines under this denomition are a corroſive, a water, and a ſpirit.

The corroſive as deſcribed by Burggrave is compounded of calcined antimony, ſublimate mercury, ſal ammoniac, and calcined tartar, diſtilled and rectified. *Hartman.* Opp. T. 1. p. 114.

The deſcription of the *Anhaltin* water is given in the common diſpenſatories, and that of the ſpirit may be found in De Spina. *Burggrave*, Lex. Pharm. p. 869.

ANHIMA, in zoology, the name of a Braſilian bird, ſomewhat reſembling the crane family, but not regularly of it. It is diſtinguiſhed in a very ſingular manner from all other birds, having a ſingle long horn on its head inſerted a little above the origin of the beak, and ſtanding forwards and a little bent downwards. This is of two or three fingers breadth long, and is ſlender and round as if nicely turned, and is of a boney ſubſtance and fine white colour; and on the front of each wing it has two other ſuch horns growing from the ſubſtance of the bone. It is found about waters, and is a very voracious bird, but feeds only on vegetables. It is longer than a ſwan; and is of a mixed colour of black grey and white, with a very little yellow in ſome places. It is always ſeen male and female together; and the male is twice as large as the female, which is here deſcribed, and is larger than our ſwan. It makes a very loud noiſe, often repeating the notes, *vyhu, vyhu*. *Marggrave*'s, Hiſt. Braſil.

ANHINGA, in zoology, the name of a very elegant Braſilian water fowl. It is about the ſize of our common duck; its beak is ſtrait, very ſharp, not thick, and about three fingers breath long, and has all along the middle, as well above as below, a long ſeries of hooked prickles all bending backwards. Its head is ſmall, and its neck ſlender and long, not leſs than a foot in length; its legs are ſhort, and its toes connected by a membrane, as in the cormorant and duck-kind. Its tail is ten fingers breadth long; its wings when folded reach not more than half the length of the tail; its head and neck are yellowiſh, and covered with extremely ſoft velvet-like feathers; its breaſt, belly, and thighs, are of a ſilvery white. The upper part of its back is brown ſpotted with yellow, and the reſt all black. It is common on the Braſilian ſhores, and feeds on fiſh. *Marggrave*'s, Hiſt. Braſil.

ANHUIBA, in botany, a name by which ſome authors call the ſaſſafras tree, the wood of which is ſo much uſed in medicine. *Piſo*, p. 145.

ANHYDROS, in botany, a name given by the antient Greeks and from them copied by the Romans in the time of Pliny, to expreſs one of thoſe kinds of the Strychna, or night-ſhades, which when taken internally cauſed madneſs. The more early writers confounded all the night-ſhades, ſo far as concerned names, under the general term Strychna; but that they diſtinguiſhed the Strychna into three different kinds from their effects, the firſt were the ſleepy, the ſecond the mad Solanum, and the third the eſculent ones, among which the principal were the Lycoperſicon or love-apple, and the Halicaccabum or winter cherry.

ANI, in zoology, the name of a Braſilian bird, ſomewhat allied to the paroquette kind. It is about the ſize of a thruſh, and is all over black, all its feathers, its beak, its eyes, and its feet being of that colour: its beak is large, very hooked and prominent, and running to a ſharp ridge at the top; and its legs and feet are very ſmall and ſlender. It is very common in the woods, but is not eaten. *Marggrave*, Hiſtor. Braſil.

ANIMA (*Cycl.*) is ſometimes uſed by phyſicians to denote the principle of life in the body.

In which ſenſe Willis calls the blood *Anima brutalis*. *Caſt.* Lex. Med. p. 51.

ANIMA is alſo figuratively uſed by chymiſts for the volatile principle in bodies whereby they are capable of being raiſed by the fire. *Dion. Zachar*, in Theat. Chym. T. 1. p. 714.

In which ſenſe, we meet with *Anima Jaſpidis*, the ſoul of jaſper, &c. Phil. Tranſ. N°. 74. p. 2233.

ANIMA is more peculiarly applied to ſimple medicines, artfully exalted by ſolution and extraction to a high degree of power.

In which ſenſe, we meet with *Anima Aloes*, *Anima Rhabarbari*, *Anima Veneris*, &c. *Caſt.* Lex. Med. p. 51.

Anima Rhabarbari is prepared of the powder of that root boiled with cichory water, till a purple tincture be procured. *Teichmey.* Inſt. Chem. p. 260.

ANIMA is alſo applied in ſpeaking of medicines, which are peculiarly friendly and ſalutary to certain parts of the body.

In which ſenſe, we meet with *Anima Pulmonum*, *Anima Hepatis*, *Anima Articulorum*, &c.

Some uſe the phraſe *Anima Catholica Mundi*, for the univerſal ſpirit joined with the humid ætherial ſubſtance of all bodies. Theat. Chym. T. 6. p. 147.

In the operation of the philoſopher's ſtone, *Anima* is uſed to denote the *Aqua Mercurialis Philoſophica*. Theat. Chym. T. 3. p. 26. It. T. 4. p. 75. and 721. ſeq.

The name *Anima* is alſo given to the philoſopher's ſtone itſelf. *Rul.* Lex. Alchem. p. 42.

ANIMA *Gemmarum*, a term uſed by Becher, and ſome others, to expreſs that principle, to which the gems and other beautiful ſtones owe their colours.

This *Anima lapidum* is no more than the metalline ſulphur to which theſe ſtones and gems, naturally colourleſs, owe their tinges; and, like other metalline ſulphurs, it may be raiſed and evaporated by fire. Becher is the author of an odd experiment, in which it is ſaid, melt a jaſper in a covered crucible, well luted, and the ſtone will become white, but its colour will be found on the cover and upper parts of the crucible. *Becher*, Phyſ. Subt.

ANIMA SATURNI, *the ſoul of lead*, a preparation of lead ſerving to many purpoſes in the enamel work. The method of making it is this:

Put litharge, powdered fine, into a glazed earthen veſſel, and pour diſtilled vinegar upon it to the height of four fingers; let it ſtand till the vinegar is of a white or milky hue: pour off this coloured vinegar, and put on freſh, and ſo do till the vinegar will no longer be coloured by the litharge; then ſet theſe liquors together in open glazed earthen veſſels, that the white powder may ſubſide, and the vinegar be poured off clear. This white ſubſtance is the *Anima Saturni*. Sometimes this white matter will not precipitate without the addition of water; and ſometimes it is neceſſary to evaporate the liquors; but by that means it is always prepared. *Nevis*'s art of glaſs, p. 184.

ANIMAL (*Cycl.*)—Some have objected to Ray's diviſion of *Animals*, mentioned in the Cyclopædia, that all *Animals* are ſanguineous, ſince all have a vital fluid circulating through veins and arteries, though it be not of a red colour in all, the eſſential character of the blood lying not in its crimſon colour, but in its office: in which view every fluid, by whoſe motion through veſſels the life of an *Animal* is ſuſtained, may be denominated *Blood*. See BLOOD.

But this is rather a diſpute about words than things.

ANIMAL is alſo ſometimes applied, in a figurative ſenſe, to artificial or moral things.

Hobbs conſiders government as a huge complex *Animal*, under the denomination of *Leviathan*.

The reaſon of the appellation is founded on the analogy between an *animal*, and a political body. The ſovereign or legiſlative power anſwers to the ſoul; the magiſtrates to the limbs or members; rewards and puniſhments are the nerves; riches, the ſtrength; counſellors, the faculty of memory; equity, reaſon; ſedition, ſickneſs; civil war, death. Vid. *Hobb.* Leviath. P. 1. p. 1.

ANIMAL *Gods*, *Dii Animales*, in the mythology of the antients, thoſe into which human ſouls were converted by means of certain religious ceremonies.

Labeo has written expreſsly on the *animal gods*. *Serv.* ad l. 3. Æneid. *Herald.* ad Arnob. p. 154. *Salmaſ.* Exerc. Plin. p. 64. *Kirchman.* de Funerib. l. 4. c. 13. *Voſſ.* Inſt. Orat. l. 1. c. 2. n. 5. *Gal.* ad Lactant. p. 79. ſeqq. *Fabri* Theſ. in voc.

ANIMAL *Syſtem* imports the whole claſs of beings endowed with *animal life*.

In which ſenſe *animal ſyſtem* amounts to the ſame with what chemiſts, and others, call the *animal kingdom*.

ANIMAL is alſo uſed for what we otherwiſe call *corporeal*.

In this ſenſe we ſay *animal* pleaſures, *animal* life, &c.

Wheel ANIMAL. See the article WHEEL *Animal*.

ANIMALS *ſimilar*. See SIMILAR *Animals*.

ANIMAL *liquors*.—The common opinion is, that all the *animal liquors*, excepting chyle and milk, are of an alcaleſcent nature; but Mr. Queſnay, in his book *ſur l'Oeconomie Animale*, affirms, that our gelatinous liquors contain a very aceſcent ſalt, capable of reſiſting a heat of two hundred degrees. The proof of which, ſays he, offers itſelf daily to every one. Who is it that has not remarked, that broth made with fleſh well freed from fat, when corrupted, becomes as ſour as verjuice? The foundation on which Mr. Queſnay builds his doctrine concerning *animal liquors*, is the ſeparation of milk into its oily, cheeſy, and watery ſubſtances. Medic. Eſſ. Edinb. T. 2. p. 448.

ANIMALCULE (*Cycl.*)—Naturaliſts have many ſpeculations concerning the origin, the multiplication, and propagation of *Animalcules*; whether, e. gr. it be by putrefaction, or by copulation, and the ordinary intercourſe of the two ſexes. Concerning the mechaniſm of *Animalcules*, the ſtructure of their eyes, their different orders and œconomy, their number, minuteneſs, food, office, uſe, &c.

Some will have *Animalcules* the cauſe of all diſeaſes, particularly the itch, the plague, &c. Others aſſign them a nobler uſe, and ſuppoſe them intended to animate and enliven all nature, to be the principle of life, motion, generation, and the firſt ſtamina or rudiments of man himſelf.

As to the origin and propagation of *Animalcules*, we find naturaliſts extremely at a loſs, and therefore advancing conjectures and hypotheſes, each more chimerical than the other. The ſyſtem of putrefaction ſolves the difficulty quickly: but the ſuppoſition is unphiloſophical, and contrary to obſervation and analogy. Yet how ſuch vaſt numbers of animals can be, as it were at pleaſure produced, without having recourſe to ſomething like equivocal generation, is very difficult to ſay! To produce a million of living creatures in a few hours, by only expoſing a little water in a window, or by adding to it a few grains of ſome ſeed, or leaves of a plant, ſeems difficult to believe. We therefore muſt ſuppoſe them to have been pre-exiſtent.

Huygens imagines, that the *Animalcules* in pepper or ginger water come thither out of the air, attracted by the ſpicy ſmell. But can we ſuppoſe that the effluvia of aromatic bodies, groſs enough to affect our olfactory organs, can produce the like ſenſations in creatures many millions of times leſs than us? Ought not the odorous particles which affect them, to be proportional to their own ſize? Each corpuſcle of the effluvia, e. gr. of pepper, may be many degrees bigger than the whole body of one of our *Animalcules*; and inſtead of entring its noſtrils, muſt knock it down, or even bury it under its load. Nouv. Rep. Lett. T. 32. p. 614. ſeq.

Harris is rather of opinion, that the eggs of ſome exceeding ſmall inſects, which are very numerous, may have been laid or lodg'd in the *plicæ* or *rugæ* of the coats of the grain, by ſome kinds that inhabit thoſe ſeeds, as their proper places. For that inſects of the larger kinds do frequently thus depoſite their eggs, on the flowers and leaves of plants, is often experimented; and it is probable that the ſmaller or microſcopical inſects do the ſame. Now theſe being waſhed out of the ſeeds by their immerſion in water, may riſe to the ſurface, and there be hatched into theſe animals which we ſee ſo plentifully to abound there. Or, the ſurface of the water may arreſt the ſtraggling eggs of ſome microſcopical inſects, which before floated in the air, and being prepared for this purpoſe by the infuſion of proper grain, or a due degree of heat, may compoſe ſo proper a nidus for them, that by the ſun's warmth they may eaſily be hatched into living creatures, which may afterwards turn into flies of the ſame ſpecies with the animal parent. Phil. Tranſ N° 220. p. 258. ſeq.

But this is not enough, M. Malezieu has diſcovered ſome *Animalcules* to be viviparous, and others oviparous. [a] And Lewenhoeck and others pretend to have ſeen them in the very act of copulation. [b] Others aſſure us they have ſeen eggs in the bodies of ſome *Animalcules* which are tranſparent, and that in others eggs have appeared placed on the outſide of the body; from which M. Malezieu and M. Tobelot have obſerved young ones to iſſue alive, of the ſame kind and form with their ſires and dames [c]. A ſingle *Animalcule*, diſcovered by Wolfius, in freſh rain water, was obſerved by

him to bring forth no leſs than 4000 eggs [d]. M. Huygens caught an *Animalcule* big with four young ones, and kept her ſome hours till ſhe was delivered [e]. Lewenhoeck gives the figure of an embryo *Animalcule* coming out of the body of an old one. At firſt he imagined the former had only been accidentally faſtened to the latter, but obſerving it more narrowly, found it to be a partus [f]. —[[a] Hiſt. Acad. Scienc. 1718. p. 11. [b] Bibl. Anc. Mod. T. 11. p. 454. [c] Hiſt. Acad. Scienc. 1718. p. 12. Mem. de Trev. 1719. p. 1406. [d] Act. Erud. Lipſ. 1723. p. 37. [e] Nouv. Rep. Lett. T. 32. p. 614. [f] Phil. Tranſ. N° 283. p. 1307.]

Indeed, conſidering the great variety of ſpecies of *Animalcules*, it is not probable they ſhould all propagate in the ſame manner. M. Harris obſerved a ſort of green belts on ſome that were found in the ſcum of puddle water; and on further obſervation found theſe belts compoſed of globules, ſo like the roes or ſpawn of fiſhes, that he could not but fancy they ſerved for the ſame uſe. After April he found many of them without any thing of the green belt; others with it very much, and that unequally, diminiſhed, and the water filled with a vaſt number of ſmall animals, which before he ſaw not there, and which he now looked on as the young animated fry, which the old ones had ſhed. Phil. Tranſ. N° 220. p. 256.

With regard to their ſtructure and œconomy, *Animalcules* are found of divers ſorts; ſome formed like fiſhes, others reptile, others hexapedal; ſome horned, *&c.* In ſeveral kinds, however ſmall, 'tis eaſy to diſcover the form of their mouths, their proboſcides, horns, *&c.* the motions of their hearts, lungs, and other parts. Mem. de Trev. 1719. p. 1406.

Every *Animalcule* being an organized body, how delicate and ſubtil muſt the parts be, that are neceſſary to conſtitute it, and to preſerve its vital actions! It is hard to conceive, how in ſo narrow a compaſs, there ſhould be contained a heart to be the fountain of life, muſcles neceſſary to its motions, glands for the ſecretion of its fluids, ſtomach and bowels to digeſt its food, and other innumerable members, without which an *Animalcule* cannot ſubſiſt. But ſince every one of theſe members is alſo an organical body, they muſt have likewiſe parts neceſſary to their actions. For they conſiſt of fibres, membranes, coats, veins, arteries, nerves, and an almoſt infinite number of fine tubes, like thoſe whoſe ſmallneſs ſeems to exceed all efforts of imagination. But there are ſome parts that ought to be almoſt infinitely leſs than theſe, as the fluids that flow along theſe fine tubes, the blood, lymph and animal ſpirits, whoſe ſubtilty, even in large animals, is incredible.

The multitude of *Animalcules* obſerved in the melt of a cod fiſh are not all alive at once, but only ſuch of them as are neareſt the paſſage, whereby they are to be diſcharged, and which have moſt moiſture about them: The reſt of them being more remote in the body, and incompaſſed with a thicker matter, are not yet animated. In reality, the cod fiſh is found a whole month in caſting its ſpawn, during all which time the ſeed is ſucceſſively ripening. The like holds of *Animalcules* in the ſpawn of frogs. Phil. Tranſ. N° 152. p. 347. ſeq.

Microſcopical ANIMALCULES, thoſe only diſcoverable by the help of a large magnifier. Theſe otherwiſe come under the denomination of *inviſible Animalcules*.

The exceſſive minuteneſs of theſe *Animalcules* conceals them from the human eye unarmed. One of the wonders of the modern philoſophy is, to have invented means for bringing creatures under our cognizance and inſpection, which God and nature ſeem to have intended to keep hid! An object a thouſand times too little to be able to affect our ſenſe, ſhould ſeem to have been very ſafe. Yet we have extended our views over animals, to whom theſe would be mountains. In reality, moſt of our microſcopical *Animalcules* are of ſo ſmall a magnitude, that through a lens, whoſe focal diſtance is the tenth part of an inch, they only appear as ſo many points; that is, their parts cannot be diſtinguiſhed, ſo that they appear from the vertex of that lens under an angle not exceeding a minute. If we inveſtigate the magnitude of ſuch an object, it will be found nearly equal to $\frac{1}{100^3000}$ of an inch long. Suppoſing therefore theſe *Animalcules* of a cubic figure, that is, of the ſame length, breadth and thickneſs, their magnitude would be expreſſed by the cube of the fraction $\frac{1}{100000}$, that is, by the number of $\frac{27}{1000,000,000,000,000}$, that is, ſo many parts of an inch is each *Animalcule* equal to. Hence what ſome philoſophers have dreamed concerning angels is ſtrictly true of theſe *Animalcules*, that many thouſands of them may dance on the point of a ſmall needle.

There are in ſome liquors *Animalcules* ſo ſmall, as upon calculation the whole magnitude of the earth is not found large enough to be a third proportional to theſe minute floating animals, and the whales in the ocean. *Keil*, Introd. Phil. l. 5. p. 56.

In ſome of the *Animalcules* obſerved by Lewenhoeck, he computed that three or four hundred of the ſmalleſt placed contiguous to each other in a line, would only equal the diameter of an ordinary grain of ſand. Now multiply 300 cubically, produces 27,000,000, *i. e.* twenty ſeven millions of animals equal one grain of ſand, ſo that a cubical inch would contain 13,824,000,000,000, or almoſt 14 millions of millions. Bibl. Angl. T. 14. p. 128.

This contemplation of *Animalcules* has made the ideas of infinitely ſmall bodies extremely familiar to us. A mite was antiently thought the limit of littleneſs; but we are not now ſurprized to be told of animals twenty-ſeven millions of times ſmaller than a mite. For ſuch is the enormouſly little ſize of a kind of microſcopical *Animalcule* obſerved by M. Malezieu, as he proves by a geometrical calculation of the augmentation which his glaſs makes [a]. Hartſoeker has carried the matter further. If the ſyſtem of generation be true, which ſuppoſes that all animals were formed from the beginning of the world, and incloſed one within another, and all of them in the firſt animals of each ſpecies, how minute muſt the *Animalcules* now produced have been at the beginning! It appears by calculation, that the ſpawn of the firſt fiſh muſt have been to that of the laſt, as unity followed by thirty or forty thouſand cyphers, is to unity [b].—[[a] Hiſt. Acad. Scienc. an. 1718. p. 11. [b] Bibl. Anc. Mod. T. 18. p. 198. ſeq.]

Viſible ANIMALCULES, thoſe which may be diſcerned by the naked eye.

Such, e. gr. are mites, divers ſpecies of inſects, reptiles, and other vermin.

As theſe in all probability are ſubſiſted on the ſmaller fry of microſcopical animals, they in their turn ſerve for food to quadrupeds, *&c.* Ray mentions two ſorts of tamunduus which live wholly on ants; whence they are called in Engliſh *ant bears*: The camelion lives on flies; the mole, on earth-worms; the badger, chiefly on beetles, worms, and other inſects.—By the way we may take notice, that becauſe ſo many creatures live on ants and their eggs, providence hath ſo ordered it that they ſhould be the moſt numerous of any tribe of inſects that we know. *Ray*, Wiſd. Creat. P. 2. p. 372. ſeq.

Minute animals are found proportionably much ſtronger, more active and vivacious than large ones. The ſpring of a flea in its leap, how vaſtly does it out-ſtrip any thing greater animals are capable of? A mite, how vaſtly faſter does it run than a race horſe? M. de l'Iſle has given the computation of the velocity of a little creature ſcarce viſible by its ſmallneſs, which he found to run three inches in half a ſecond; ſuppoſing now its feet to be the fifteenth part of a line, it muſt make 500 ſteps in the ſpace of three inches; that is, it muſt ſhift its legs 500 times in a ſecond, or in the ordinary pulſation of an artery. Hiſt. Acad. Scienc. 1711. p. 23.

Inviſible ANIMALCULES.—Naturaliſts ſuppoſe another ſpecies or order of inviſible *Animalcules*, *viz.* ſuch as eſcape the cognizance even of the beſt microſcopes, and give many probable conjectures in relation to them. Reaſon and analogy give ſome ſupport to the exiſtence of infinite imperceptible *Animalcules*.

The naked eye, ſay ſome, takes in from the elephant to the mite; but there commences a new order reſerved only for the microſcope, which comprehends all theſe from the mite, to thoſe twenty-ſeven millions of times ſmaller; and this order cannot be yet ſaid to be exhauſted, if the microſcope be not arrived at its laſt perfection: And when it is arrived there, ſhall we then have attained the whole ſyſtem of animals? 'Tis nowiſe probable that the limits of nature ſhould coincide exactly with the limits of our eye-ſight, when aſſiſted by the microſcope. [a] Who knows, ſays another, but the ſmalleſt and moſt imperceptible animals themſelves have others leſs bred and nouriſhed by them, and which bear the ſame proportion to them, that thoſe bear to the animals they are produced on [b].—[[a] Hiſt. Acad. Scienc. 1718. p. 11. ſeq. [b] Nouv. Rep. Let. T. 43. p. 364.]

Lewenhoeck, though he had often examined the ſemen of mice, yet by reaſon, as he judges, of its fluidity and clearneſs, he could never diſcover any *Animalcules* in it. But he makes no difficulty to conclude, that this too abounds with living creatures, ſince he has found them in animals of all bigneſſes and ſpecies, from a horſe, to a ſmall horſe-fly; for that nature obſerves the ſame method in the ſmalleſt as the greateſt bodies. *Hook*, Phil. Col. N° 3. p. 56.

ANIMALCULES, in medicine, *&c.*—We have large ſyſtems of phyſic, of pathology, of dæmonology, witchcraft, *&c.* founded on the *animalcular* principles. M. Lange will have *Animalcules* to be the immediate origins or inſtruments which the devil makes uſe of to effect temptations, ſeductions, illuſions, charms; in fine, to work on our imagination, and inſpire what thoughts and inclinations he pleaſes, and the like. The prince of the air, it ſeems, can act on the bodies of thoſe *Animalcules* at pleaſure, which being of aerial origin, belong to the number of his immediate ſubjects. He plays on their organs, they on ours, according to the part of the body in which they are lodged, as the brain, the heart, the genitals, *&c.*

Others attribute the itch, others the ſmall-pox and meaſles, others the epilepſy, *&c.* to *Animalcules*. Langius goes further, and pretends to reduce all diſeaſes in general to the ſame principle. A late writer at Paris, who aſſumed the title of an Engliſh phyſician, has done more. He not only

accounts

accounts for all diſeaſes, but for the operations of all medicines, from the hypotheſis of *Animalcules*. He has peculiar animals for every diſeaſe: ſcorbutic *Animalcules*, podagrical *Animalcules*, variolous *Animalcules*, &c. all at his ſervice.

To ſhew what lengths men are capable of purſuing chimeras, we will give a ſpecimen of his method of philoſophizing. The cauſe of an intermitting fever or an ague, of the tertian or quartan kind, is, that the patient has ſome way received into his body a number of feveriſh or aguiſh *Animalcules*, whoſe nature is to ſleep like the marmot, or dormouſe, or ſquirrel, ſome forty-eight hours, others twelve hours, and at waking cauſe the diſturbances which make the fit or acceſs of the diſeaſe. When a perſon in the rheumatiſm feels pains, ſometimes in the right arm, ſometimes in the left, ſometimes in one hip, ſometimes in the other; the reaſon is, that ſome rheumatic *Animalcule* has been admitted into his body, where having multiplied and bred a large number, theſe travel in herds, ſometimes to feed on one part of the body, ſometimes on another, as their fancy leads them to ſhift the ſcene, or as they grow tired of their former paſture. Such is his pathology. Jour. des Scav. T. 82. p. 535. ſeq.

For the curative part he obſerves, that meats, drinks, medicines, drugs, plants, minerals, are all full, both within and without of *Animalcules*, or their ova: each ſpecies of which is the bane or deſtruction of ſome other, as wolves are of ſheep, cats of mice, ſpurhawks of partridge, pikes of carps, and ſwallows of flies.

This author by forty years labour, and the uſe of a thouſand bottles of different infuſions of plants and minerals, made a nice diſcovery of above a thouſand ſpecies of *Animalcules*, their ſeveral changes and transformations, and different durations of their lives, manners of coupling, ſeaſons of hatching, ages of going to hunt others, their combats, *&c.* He tried different kinds on the blood and urine of his patients, till he had diſcovered which was the proper antagoniſt to thoſe of this or that diſeaſe. A. C. D. ſyſteme d'un medecin Anglois ſur la cauſe de toutes les eſpeces des maladies, avec les ſurprenantes configurations des differentes eſpeces des petits inſects, qu'on voit par le moyen d'un bon microſcope dans le ſang, & dans les urines des differens malades, & meme de tous ceux qui doivent le devenir, Paris 1726. 8°. Suite du ſyſtem d'un medecin Anglois, par lequel ſont indiquées les eſpeces des vegetaux, & des mineraux qui ſont des poiſons infallibles pour tuer les differentes eſpeces de petits animaux qui cauſent nos maladies, Paris 1727. 8°. Vid. Jour. des Scav. T. 84. p. 428.

Kircher, Fabri, Griffon, Bradley, and others, account for the plague, and all peſtilental diſeaſes from the ingreſs of a poiſonous ſpecies of *Animalcules* into our bodies, where after gnawing and conſuming the principles of fleſh, they lay their eggs in the emunctories of the body, from whence ariſe peſtelential buboes, in which ſwarms of little inſects have been obſerved. Jour. des Scav. T. 63. p. 348. It. T. 73. p. 473. ſeqq.

One would be almoſt tempted to doubt, whether the microſcope had done more good than harm. It has opened a large field for fiction and impoſture. Hartſoeker laughs at many of the pretended diſcoveries of Lewenhoeck. Many others have ſuſpected their reality. There was ſomething of myſtery at bottom. He is ſaid to have reſerved his fineſt glaſſes for his own uſe; none but his wife and daughters were ever ſuffered to ſee them. Vid. Bibl. Rais. T. 4. p. 186.

It may be added, that the Royal Society, to whom after his death he bequeathed his glaſſes, have not been able to find half his wonders in them. One man, 'tis alledged can ſee that by a microſcope which another cannot. The difference that is found between the ages of one man and another, as to the ſtrength and clearneſs of ſight, hold equally when they are armed with a microſcope, as when naked.

The *Animalcules*, which, according to M. Griffon, were the cauſe of the late plague of Marſeilles, were ſo very ſmall, that no body could ſee them, except a ſingle hermit of Thouloſe.—Without ſuppoſing any thing of miracle or impoſture in the caſe. Jour. des Scav. T. 73. p. 479.

A great part of the appearances of what they call *Animalcules* are tranſient, and many others obſcure and undeterminate. The imagination of the obſerver in many caſes is left to make what it can out of them. They are on much the ſame footing with the images we diſcern in the fire, or in the clouds, which either become animals, or any thing elſe, according to the ſtrength and pregnancy of the ſpectator's fancy. A mole or inanimate corpuſcle, with which all waters are replete, when magnified, may eaſily bear ſome affinity to one ſort of inſect or another. And the continual inteſtine motions and fluctuations in liquors, will drive their contents in all manner of directions, from whence it will not be hard to frame a notion of ſwimming, friſking about, *&c.*

ANIMALCULES *in the ſemen.* See SEMEN.

ANIMALCULES *in fluids.* See FLUIDS and PEPPER-*Water.*

ANIMATED (*Cycl.*)—Naturaliſts and philoſophers vary extremely in aſſigning the characters, ſubjects and ſpecies of *animate* bodies.—Some include ſtocks and ſtones in this rank; others exclude brutes themſelves. See ANIMATION.

Cardan will have all ſtones to be alive and *animated*: The Carteſians on the contrary deny a ſoul not only to plants, but to all animals, except man. Ephem. Acad. N. C. dec. 2. an. 7. App. p. 205.

Thales held the loadſtone and amber, others the cornu ammonis, ſponges, *&c.* to be *animated.* Vid. Jour. des Scav. T. 52. p. 679.

Some of the philoſophers have held that all nature is *animated*; that the ſun, the earth, the planets, rivers, trees, ſtones, *&c.* are ſo many animals; others, that the whole ſyſtem is only one huge animal, informed with an univerſal ſoul, or *anima mundi. Plato*, in Timæo. *Morheff.* Polyhiſt. Philoſ. l. 2. P. 1. c. 11. n. 7.

ANIMATED *horſe hairs.* See HORSE *hairs.*

ANIMATED is alſo uſed to denote a thing impregnated with vermin or animalcules. See ANIMALCULE.

In this ſenſe the whole earth may be ſaid to be *animated*; ſince in every part of it we meet with an infinite number of animals, either great or little, viſible or inviſible: they are found in air, water, earth, and even in the hardeſt ſtones: multitudes of them are found in all ſorts of plants; and there is perhaps no animal known, which does not breed numbers of others in the different parts of its body. Nouv. Rep. Lett. T. 43. p. 363. ſeq.

Kircher ſpeaks of an *animated putredo*, or morbid ſtate of fluid, and other bodies which generates ſwarms of inviſible animalcules or inſects, which, in the human body, occaſion various diſorders. See ANIMALCULE.

Langius has publiſhed a ſyſtem of *animated* pathology. *Pathologia animata, ſeu animadverſiones in pathologiam ſpagiricam Fabri: quibus morbos omnes ex genuinis ſuis cauſis, animatâ potiſſimum putredine, &c. explicat.* Francof. 1688. 8°. Bibl. Univ. T. 14. p. 92. ſeqq.

This book, according to Sig. Valliſnieri, does not anſwer the title; it being in reality but few diſeaſes that the author accounts for from this cauſe. Giorn. de Letter d'Ital. T. 19. p. 67. ſeq.

Needham gives into the ſame ſyſtem, of worms being concerned in all diſeaſes; and not only directs anthelmintics in fevers, but to be mixed in all the remedies given in all other caſes: one great part of the attention of a phyſician, according to him, is ſtill to aim at worms, which are more or leſs concerned in all diſeaſes. *Needham*, Medel. Medic. c. 5. p. 176. ſeq.

ANIMATION (*Cycl.*)—The hiſtory of the opinions concerning the *Animation* of the fœtus, or the origin of the human ſoul, is given at large by Jac. Thomaſius. Diſſ. de orig. animæ humanæ, Lipſ. 1669. An extract of which is given in *Burggr.* Lex. Med. in voc.

The different hypotheſes of phyſicians and philoſophers, concerning the time of *Animation*, have had their influence on the penal laws made againſt artificial abortions, it having been made capital to procure miſcarriage in the one ſtate, while in the other it was only deemed a venial crime. See the article ABORTION.

The emperor Charles V, by a conſtitution publiſhed in 1532, put the matter on another footing; inſtead of the diſtinction of an animated and unanimated fœtus, he introduced that of a vital and non-vital fœtus, as a thing of more obvious and eaſy deciſion, and not depending on any ſyſtem either of creation, traduction, or infuſion. *Burggrave*, Lex. Med. T. 1. p. 821.

Accordingly a fœtus is ſaid, in a legal ſenſe, to be animated, when it is perceived to ſtir in the womb; which uſually happens about the middle of the term of geſtation. *Teichmy.* Inſtit. Medic. legal. c. 8, 9, 21. See FOETUS.

T. Fienus, Gardinius, Verde, Fort. Liceetus, F. de Bonnonia, have written expreſsly on the *Animation* of the fœtus; Fr. Zanellis on the *Animation* of the ſeed. *Lipen*, Bibl. Med. pp. 180, 419.

ANIMATION is alſo uſed by ſome mechanical philoſophers, for the act of ſoliciting the deſcent of a body, ſo as to give it continually new degrees of acceleration. *Bernoul.* ap. Mem. Acad. Scienc. 1714. p. 271.

ANIMATION is alſo uſed by alchemiſts for the operation of fermenting a white foliated earth, with a kind of philoſophical or celeſtial water of ſulphur. *Libav.* Synt. Arc. Chym. l. 7. c. 8.

ANIMATION is alſo uſed in a moral or figurative ſenſe, for the act of giving life and force to a diſcourſe, or the like.

M. Barry has given rules to preachers, lawyers, *&c.* for animating or enlivening their ſpeeches. Methode pour bien prononcer un diſcours, & pour le bien *Animer.* Leid. 1708. 12mo. Vid. Nouv. Rep. Lett. T. 43. p. 223.

ANIMATION is alſo uſed by hermetic philoſophers, to denote a certain ſtate of perfection to which a body is brought by ſome appropriate proceſs, in virtue whereof it becomes capable of producing ſome extraordinary phænomena. *Quinc.* Lex. Phyſ. p. 27.

ANIME', (*Cycl.*) in heraldry, is where the eyes, *&c.* of a rapacious creature are borne of a different colour from the reſt of the creature. Dict. Herald.

The French ſay *animé*, the Engliſh *incenſed*, the Latins *inſenſus*, of ſuch or ſuch a colour.

ANIMETTA, in eccleſiaſtical writers, denotes the pall or cloth wherewith the cup is covered in the euchariſt. *Magri.* Vocab. Eccleſ. p. 17.

ANINGA, in commerce, a root growing in the Carribee iſlands, of uſe in the refinement of ſugar. *Savar.* Dict. Comm. T. 1. p. 107. ſeq.

The decoction of this root is found a more certain, as well as more innocent means of clarifying ſugar, than the ſublimate and arſenic uſed for this purpoſe, before the diſcovery of the *Aninga.*

ANISATUM, a name given to aniſe-ſeed water. *Trallian.* l. 8. c. 6. *Meurs*, Gloſſ. p. 38. See ANISE-SEED.

ANISCALPTOR, in anatomy, a name given by Laurentius and others to expreſs the muſcle now generally known by the name of latiſſimus dorſi. It is called alſo *aniterſor* by Riolanus. See LATISSIMUS.

ANISE-SEED — The plant which produces it is a ſpecies of apium or parſly, called by Tournefort *apium aniſum dictum ſemine ſuaviolenti majori*, parſly with large ſweet-ſcented ſeeds, commonly called aniſe [a]. The plant is of very difficult culture among us, and will hardly quit the coſt, as we can have the ſeed much better and cheaper from Italy, than they can be produced here [b].— [[a] Vid. *Junck.* Conſp. Therap. tab. 9. n. 41. *Lemery*, Tr. des Drog. p. 49. [b] *Mill.* Dict. Gard. in voc. *apium.*] See Tab. of microſcopical objects, claſs 2.

The compound powder of *Aniſe-ſeed* is called *dianiſum.* It is accounted a cordial, pectoral, and expeller of wind, and in thoſe intentions much uſed by farriers.

Starry ANISE-SEED, *Aniſum Stellatum*, is a ſeed brought chiefly from Tartary; thus called from the affinity it bears in ſmell to the common *Aniſe-ſeed*, and the ſtar-like figure of its capſula ſeminalis. *Junck.* Conſp. Therap. tab. 9. n. 41. *Lemery*, Tr. des Drog.

It was firſt brought into Europe from the Philippine iſlands by an Engliſh mariner, named Thomas Candy, in his return from a voyage round the world in the year 1601.—The natives call it *damor* and *zingi*; the Europeans ſometimes *fœniculum ſinenſe*, or *Chineſe fennel*; Botaniſts, *aniſum indicum*, *aniſum peregrinum*, *aniſum exoticum Philippinarum inſularum*, *cardamomum ſiberienſe*, *badianum*, &c. *Burggr.* Lex. Med. T. 1. p. 828.

Its virtues are of the ſame kind with thoſe of the common *Aniſe-ſeed*, only that it is ſweeter, more grateful, penetrating and aromatic. It is reputed a general cordial and ſtrengthner. The Chineſe uſe it in the preparation of their tea; and after their example the Dutch alſo uſe it in this liquor, pretending it makes it more pleaſant.

The wood is alſo imported into Europe, where it is employed in works of marquetry and moſaic.—It is alſo called *anil.* *Savar.* Dict. Com. T. 1. p. 107.

ANITERSOR, in anatomy, a name given by Riolanus and others to a muſcle, called by Laurentius *aniſcalptor*, and by others *latiſſimus dorſi.* See LATISSIMUS *dorſi.*

ANNA, among the Romans, a name given to the moon. *Hofm.* Lex. in voc. *Luna.*

ANNALS (*Cycl.*)—Cicero relates the origin of *Annals*, which were deſigned to preſerve the memory of tranſactions. The pontifex maximus, ſays he, wrote what paſſed each year, and expoſed it on tables, in his own houſe, where every one was at liberty to read them. *Cicero*, de Orat. l. 2. c. 12.

Theſe they called *Annales maximi*; and the cuſtom was kept up till the time of P. Mutius, in the year of Rome 620.

The denomination *maximi* was not given them on account of their bulk, but of their authors the pontifices maximi [a]. Livy alſo calls them *faſti* and *commentarii pontificum.* The author of the origin of the Roman nation calls them *Annales pontificales* [b].— [[a] *Feſt.* de Verb. ſignif. p. 97. [b] *Gell.* l. 4. c. 5. *Macrob.* l. 3. c. 2. *Cicero*, de Orat. c. 12.]

The *annales maximi* conſiſted of eighty books. They were moſt of them deſtroyed in the burning of the city by the Gauls. Vid. *Struv.* Synt. Antiq. Rom. c. 12.

The like *Annals* were kept from the earlieſt ages by the Egyptians, Babylonians, Perſians, Chaldeans, &c. *Strab.* l. 17. p. 543, 548. *Joſeph.* 1. contr. Apion. p. 1035. ſeq. *Fabric.* Bibl. Lat. p. 638.

We have alſo *Annals* of the benedictines by Mabillon; *Annals* of the Franciſcans by Wadding, &c. alſo an infinite number of provincial and local *Annals*; *Annals* of monaſteries, of churches, &c. civil *Annals*, political *Annals*, military *Annals*, &c. [a]; *Annals* of England, of Ireland, [b] &c.—[[a] Vid. *Lipen.* ubi ſupr. [b] Vid. *Nichols*, Iriſh Hiſt. Librar. c. 2. p. 30. It. in Append. N° 1. p. 179. It. N° 4. p. 243.]

ANNALE, in ſome middle-age writers, denotes a day held every year in commemoration of the dead.

In which ſenſe *Annale* amounts to the ſame with what is otherwiſe called *Anniverſarium.*

ANNALE is more particularly applied to the maſſes celebrated during the ſpace of a year for the dead. *Du Cange*, Gloſſ. Lat. T. 1. p. 196.

ANNALIS *actio*, in the civil law, denotes an action which may be put in practice any time within the year.

In the like ſenſe we meet with *Annale decretum* or *negatum*, *Annalis reſciſio*, &c. *Calv.* Lex. Jur. p. 69.

ANNALIS *clavus*, in Roman antiquity, the nail which the prætor, conſul, or dictator fixed every year in the wall of Jupiter's temple, on the ides of September, to ſhew the æra or number of years from the building of Rome. This cuſtom was afterwards changed, and the years were reckoned by the conſuls. *Danet*, Lex. in voc.

ANNALIS *exceptio*, a kind of privilege antiently granted the people of Italy, that whoever had made a contract, could not be compelled to the performance, or payment of what had been agreed on within the year. Some extended this privilege ſo as to render it ſtill more grievous, by computing the year excluſive of all holydays. *Calv.* Lex. Jur. p. 69.

ANNALES *libri*, in the civil law, denote books wherein the acts, and proceedings of a whole year were contained. *Calv.* Lex. Jur. in voc.

In which ſenſe *Annales* ſtand oppoſed to *ſemeſtres libri*, wherein the acts and conſtitutions of ſix months were contained.

ANNALES *baculi*, denote a kind of wooden almanacks uſed among our anceſtors, called alſo runſtocks or clogs. *Worm.* de faſt. Danic. l. 3. c. 2.

ANNALES, in middle-age writers, denotes yearlings, or young cattle of a year old, or under two. *Du Cange*, in voc.

ANNALES alſo denotes a kind of rent, or annual revenue. *Du Cange*, Gloſſ. Lat. in voc.

ANNATES (*Cycl.*)—The invention of *Annates* is aſcribed, by a late writer, to Anthonin biſhop of Epheſus, who exacted from all biſhops conſecrated by him, a ſum proportionate to the annual revenues of their ſees. The council of Epheſus held in 400, condemned this exaction, but not till Anthonin was dead. It was long after ere *Annates* got footing in the weſtern Church. The time when they were firſt introduced is very obſcure; ſome refer it to the pontificate of Alexander IVth; others to that of John XXIId, who the firſt year of his papacy got a year's revenue of all the cathedral benefices. In 1399, during the ſchiſm of the antipopes, Benedict IXth exacted a year's revenue of all the archbiſhoprics, biſhoprics, and abbies. But in the time of theſe popes, the *Annates* were not fixed; and the clergy often refuſed to pay them. There were even popes who condemned *Annates*; and the ſecular princes frequently ſtickled againſt the payment of them, forbidding any money to be carried out of their dominions on this account. The council of Baſil aboliſhed them. But by the concordat made between Leo Xth, and Francis Iſt, they were ſettled for perpetuity in France [a]. Notwithſtanding which, M. de Launoi continued all his life proteſting againſt them as a moſt deteſtable ſpecies of ſimony [b]. —[[a] *Aubert*, ap. Richel. Dict. in voc. [b] *B. Launoi* de Venerand. Eccleſ. Tradit. circa Simoniam, ap. *Budd.* Iſag. ad Theol. l. 2. c. 5. p. 820.]

Nic. de Clemangis, A. Maſſa, Galleſius, Campegius and Fernandus Cordubenſis have written expreſsly concerning *Annates.* Vid. *Lipen.* Bibl. Jur. p. 19.

ANNEALING, (*Cycl.*) or as it is popularly called *Nealing*, the art or act of burning or baking earthen or other ware in an oven.

The miners at Mendip, when they meet with a rock they cannot cut thro', *anneal* it by laying on wood and coal, and contriving the fire ſo that they quit the mine ere the operation begins; it being dangerous to enter it again before it be quite cleared of the ſmoak. Phil. Tranſ. N°. 39. p. 769.

ANNEALING *of tile*, is uſed in antient ſtatutes for the burning of tile. Stat. 17. Ed. 4. c. 4.

The word is formed of the Saxon *Onælan*, *accendere*, to light, burn. *Skin.* Etym. in voc.

ANNEALING *of Glaſs*, the baking of it in a kind of oven, over a melting furnace, called the tower, after it has been faſhioned into proper veſſels or utenſils. *Boerh.* Meth. Chem. P. 1. p. 140. Not. See GLASS.

ANNEALING is more particularly uſed for the act of burning, or fixing metalline colours on glaſs. See GLASS.

ANNEALING *of Iron.* See IRON.

ANNEALING *of Steel.* See STEEL.

ANNIHILATION (*Cycl.*)—Divines, philoſophers, Chriſtians, Heathens, Jews, Siameſe, Perſians, Papiſts, Socinians, &c. have their peculiar ſyſtems, ſentiments, conjectures, not to ſay dreams, concerning *Annihilation*; and we find great diſputes among them about the reality, the poſſibility, the means, meaſures, prevention, ends, &c. of *Annihilation.*

The firſt notions of the production of a thing from, or reduction of it to nothing, Dr. Burnet ſhews, aroſe from the Chriſtian theology; the words creation and *Annihilation* in the ſenſe now given to them, having been equally unknown to the Hebrews, the Greeks, and the Latins. Vid. Bibl. Univ. T. 24. p. 455.

The antient philoſophers in effect denied all *Annihilation* as well as creation, reſolving all the changes in the world into new modifications, without ſuppoſing the production of any thing new, or deſtruction of the old. Vid. Bibl. Choiſ. T. 1. p. 105. ſeq.

By daily experience they ſaw compounds diſſolved, and in their diſſolution nothing periſhed, but their union, or connection of parts: when in death the body and ſoul were ſeparated, the man they held was gone, but the ſpirit remained in its original the great ſoul of the world, and the body in its earth from whence it came; theſe were again wrought by nature

ture into new compoſitions; and entered new ſtates of being, which had no relation to the former. *Lucret.* l. 3.

If nature admitted any *Annihilation*, the world, ſays Ocellus Lucanus, had long ago periſhed. *Blount*, Anim. Mund. §. 5.

Hence they derived two other notions, *viz.* 1. That of the præ-exiſtence and immortality of ſouls, which being diſtinct things from the body, can neither be produced nor *annihilated*. 2. That the forms and qualities of bodies are nothing diſtinct from matter, ſince they are generated and *annihilated*; a doctrine held by all the antient atomiſts except Anaxagoras. Bibl. Choiſ. T. 1. p. 110.

The Perſian Bramins held, that after a certain period of time conſiſting of 71 Joogs, God not only *annihilates* the whole univerſe, but every thing elſe, angels, ſouls, ſpirits and all, by which he returns to the ſame ſtate he was in before the creation; but that having breathed a while, he goes to work again and a new creation ariſes, to ſubſiſt 71 joogs more, and then to be *annihilated* in its turn. Thus they hold there have been almoſt an infinite number of worlds; but how many joogs are elapſed ſince the laſt creation, they cannot certainly tell, only in an almanac written in the Sanſcript language in 1670, the world is ſaid to be then 3892771 years old from the laſt creation. Vid. Phil. Tranſ. N°. 268. p. 732, 733.

The Siameſe heaven is exactly the hell of ſome Socinians, and other Chriſtian writers, who, ſhocked with the horrible proſpect of eternal torments, have taken refuge in the ſyſtem of *Annihilation*. This ſyſtem ſeems countenanced by ſcripture; for that the words death, deſtruction, and periſhing, whereby the puniſhments of the wicked is moſt frequently expreſſed in ſcripture, do moſt properly import *Annihilation* and an utter end of being.—To this Tillotſon anſwers that theſe words as well as thoſe correſponding to them in other languages, are often both in ſcripture, and other writers uſed to ſignify a ſtate of great miſery and ſuffering, without the utter extinction of the miſerable. Thus God is often ſaid in ſcripture to bring deſtruction on a nation, when he ſends judgments upon them, but without exterminating or making an end of them; ſo in other languages it is frequent by periſhing to expreſs a perſons being made very miſerable, as in that known paſſage in Tiberius's letter to the Roman ſenate.—*Ita me dii, deæque omnes pejus perdant, quam hodie perire me ſentio.* As to the word death, a ſtate of miſery which is as bad or worſe than death may properly enough be called by that name. And thus the puniſhment of wicked men after the day of judgment is in the book of revelations frequently called the ſecond death. Vid. Bibl. Choiſ. T. 7. p. 314. ſeq. Supp. to Swind. p. 396. ſeq.

This ſuppoſition excludes all poſitive puniſhment and torment of ſinners; the fire of hell is quenched at once, and turned only into a frightful metaphor without further meaning. Add that, in this ſuppoſition, the puniſhment of all ſinners muſt of neceſſity be equal, ſince there are no degrees of *Annihilation*, or not being; which is directly contrary to the words of ſcripture.

The Socinians aſſert, that God will *annihilate* the ſouls of the damned, to put an end to their pains; this *Annihilation* makes what they call the ſecond death, or general death. Vid. Mem. de Trev. 1702. p. 6.

Some Chriſtian writers allow a long time of the moſt terrible torments of ſinners, and after that ſuppoſe, that there ſhall be an utter end of their being [a]; of which opinion Irenæus appears to have been, who, according to M. du Pin, taught that the ſouls, at leaſt of the wicked, would not ſubſiſt eternally; but that, after having undergone their torments for a certain period, they would at length ceaſe to be at all. But Tillemont, Petit, Didier, and others, endeavour to defend Irenæus from this imputation, as being too favourable to the wicked [b]. Athanaſius ſeems to ſpeak, as if man would have been *annihilated* after the fall, had it not been for his redemption [c]. Tho' ſome have doubted whether this be to be underſtood of an abſolute *Annihilation*.—[a Vid. Bibl. Choiſ. T. 7. p. 316. ſeq. Supp. to Swind. p. 400. ſeq. b Vid. Act. Erud. Lipſ. Supp. T. 3. p. 243. ſeq. Jour. des Scav. 1724. p. 195. ſeq. c Vid. Nouv. Rep. Lett. T. 16. p. 458.]

It has been much diſputed among divines, whether, at the conſummation of things, this earth is to be *annihilated*, or only purified, and fitted for the habitation of ſome new order of beings.

Gerard in his common places, and Hakewil in his apology, contend earneſtly for a total abolition or *Annihilation*. Ray [d], Calmet, and others, think the ſyſtem of renovation, or reſtitution more probable and more conſonant both to ſcripture, reaſon, and antiquity.—The fathers who have treated on the queſtion are divided, ſome holding that the univerſe ſhall not be *annihilated*, but only its external face changed; others aſſert that the ſubſtance of it ſhall be deſtroyed. But they all generally agree that there will be a renovation of the earth; ſo that they who hold for the *Annihilation* ſuppoſe there will be a new creation [e].—[d *Ray*, Phyſ. Theol. Diſc. 3. c. 11. e Jour. des Scav. Aout. 1715. p. 167. Jour. des Scav. 1723. Juin. p. 584.]

How widely have the ſentiments of mankind differed, as to the poſſibility and impoſſibility of *Annihilation?* According to ſome, nothing ſo difficult; it requires the infinite power of the Creator to effect it; ſome go further, and ſeem to put it out of the power of God himſelf. According to others, nothing ſo eaſy; exiſtence is a ſtate of violence; all things are continually endeavouring to return to their primitive nothing; it requires no power at all. It will do itſelf, nay, what is more, it requires an infinite power to prevent it. I know not whether ſome do not deny it in the Creator's power to prevent it.

Many authors conſider preſervation as a continual reproduction of a thing, which ſubſiſting no longer of itſelf, would every moment return into nothing.—This ſome call the reproductive ſyſtem. Mem. de Trev. 1715. p. 224.

Gaſſendi on the contrary aſſerts, that the world may indeed be *annihilated* by the ſame power which firſt created it, but that to continue it there is no occaſion for any power of preſervation. Ibid. p. 225.

The Jews had a ſpecies of excommunication, called *cherem*, which implied a total extermination or cutting off, and which according to Maimonides extends to an *Annihilation* of the ſoul, and an excluſion from all future life.

Some divines, of which number the learned biſhop King ſeems to be, hold *Annihilation* for the greateſt of all evils, worſe even than the utmoſt torments of hell flames; while others with ſome of the eaſtern philoſophers acknowledge *Annihilation* for the ultimate pitch of happineſs human nature is capable of: that ſovereign good; that abſolute beatitude, ſo long vainly ſought for by the philoſophers is found here. No wonder it had been ſo long concealed; for who would have thought of looking for the *ſummum bonum*, where others have placed the ſum of miſery. Mem. de Trev. an. 1711. p. 2078.

Biſhop King propoſes it as a queſtion, whether ſuffering eternal torments be a greater evil than not exiſting? He thinks it highly probable that the damned will be ſuch fools, that feeling their own miſery in the moſt exquiſite degree, they will rather applaud their own conduct and chooſe to be, and to be what they are; rather than not to be at all; fond of their condition, however wretched, like people enraged, they will perſiſt in their former ſentiments without opening their eyes to their folly, and perceive by way of indignation and revenge.

M. Bayle refutes him on this head, but might, one would think, have ſaved himſelf the trouble. V. Nouv. Rep. Lett. T. 37. p. 73.

The Talapoins hold it the ſupreme degree of happineſs to have the ſoul totally *annihilated*, and freed from the burden and ſlavery of tranſmigrations.—They ſpeak of three Talapoins who after a great number of tranſmigrations became Gods, and when arrived at this ſtate, procured this further reward of their merit to be *annihilated*. The firſt of theſe, who is called Nacodon, or Sommonocodom, is ſuppoſed to have paſſed through five thouſand ſucceſſive bodies; ſince his *Annihilation* there has been no God left. *Chaumont*, Relat. de l'Ambaſſ. à Siam. Act. Erud. Lipſ. 2687. p. 110.

The ultimate reward of the higheſt perfection man can arrive at is Nieurepan, or *Annihilation*, which at length is granted to thoſe who are perfectly pure and good, after their ſouls have wandered many thouſand years through divers bodies. *De la Loubere*, Du Royaume de Siam. p. 487. Act. Erud. Lipſ. 1692. p. 487.

The Romiſh church holds a total *Annihilation* of the whole ſubſtance of the bread and wine in the euchariſt; but that the antient church were not of the ſame belief, appears clearly from that celebrated paſſage in St. Chryſoſtom's epiſtle to the monk Cæſarius, as well as from the firſt dialogue of Theodoret, and pope Gelaſius's book *de duabus naturis*. Vid. Nouv. Rep. Lett. T. 8. p. 1418. ſeq.

The quietiſts ſpeak much of a kind of myſtic *Annihilation*, whereby the human will is ſwallowed up, or extinguiſhed in the divine.

An uniformity between the divine and human wills, as to the ſame objects, is called union; which they hold may be ſo cloſe, that the ſoul ſhall loſe all endeavour or inclination of reſiſting. This ſtate they call the myſtical *Annihilation*, death, diviſion, or deſtruction of our own will, whereby man is brought to will or nill nothing but as God does. Vid. Act. Erud. Lipſ. 1713. p. 490.

This they pretend is founded on ſcripture. St Paul ſays, *I am nothing* [f]; and of Chriſt, that he *made himſelf nothing* [g], *ille ſe exaninivit*. Are not theſe plain marks of *Annihilation* [h]? Who can doubt it? It is a misfortune the Engliſh tranſlation ſhould have rendered the latter paſſage, ſo as to be of no ſervice to their cauſe.—[f 2 Cor. xii. 11. g Phil. ii. h Apol. Theol. Myſt. n. 15.]

M. De la Bruyere rallies the quietiſts on the total *Annihilation* which they require of their penitents; a man who is made for thinking muſt have very extraordinary aſſiſtances to enable him to think of nothing, that is not to think at all; and how will women ſupport ſo painful a ſuſpenſion of all their faculties? Nouv. Rep. Lett. 1699. T. 17. p. 34.

ANNIVERSARY-*Days*, (*Cycl.*) were antiently called *year-days*, or *mind-days*, i. e. memorial-days.

In ſome authors we alſo find it written *anniverſal.*

The Banians give an *Anniverſary* feaſt to all the flies in the country, to whom they ſerve up diſhes of honey and milk. Vid. Jour. des Scav. T. 78. p. 70.

The pope fulminates an *Anniverſary* excommunication againſt the people of England. The Armenians every year pronounce a ſolemn excommunication of the council of Calcedon and pope Leo. V. Work. Learn. T. 5. p. 662.

The Rabbins ſpeak of an *Anniverſary* judgment in this life, by which every man is tried in the firſt day of the year, and according as his righteouſneſs or iniquity is found to preponderate, he is ſealed for death or life. V. Bibl. Univ. T. 2. p. 253.

ANNIVERSARY *Winds* are thoſe which blow conſtantly at certain ſeaſons of the year.

Theſe are oth erwiſe called Eteſian winds: ſuch are the trade winds, and monſoons. See the article TRADE *Wind*, and MONSOON, *Cycl.*

ANNIVERSARY is more particularly uſed for the *annale*, or maſs rehearſed daily for the ſpace of a year after a perſon's death. *Linwood*, Provinc. p. 329, and 345. *Du Cange*, Gloſſ. Lat.

Il Perez de Lara has a treatiſe expreſs on *Anniverſaries* and chaplainſhips.

De Anniverſariis & capellaniis; in quibus etiam ſpecialiter diſputatur de annuo relicto pro virginibus maritandis, pro infantibus expoſitis nutriendis, captivis redimendis, &c. *Francof.* 1610. 4°.

ANNOMINATION, *Annominatio*, in rhetoric, the ſame with what is otherwiſe called *paronomaſia*. See the article PARONOMASIA, *Cycl.*

ANNONA, in antient writers, denotes victuals or proviſion of corn for a year. *Calv.* Lex. Jur. p. 69. *Pitiſc.* Lex. Ant. T. 1. p. 99.

ANNONA *Civilis*, the corn with which the granaries of cities were filled every year, for the ſubſiſtance of the citizens.

ANNONA *Militaris*, the corn and other proviſion laid up in the magazines, for the ſubſiſtance of an army during the campaign. *Danet*, Dict. Ant. in voc.

In antient writers we alſo meet with the phraſes *ſingulæ Annonæ*, *binæ Annonæ*, *ternæ Annonæ*; with regard to which Salmaſius lays down this rule, that when *Annona* occurs in the ſingular number, it includes not only corn, but fleſh, wine, oil, and other neceſſaries; whereas when it is uſed in the plural number, it imports bread alone. Aquinus is not contented with this rule, but inſtead thereof advances another, *viz.* that *Annona* in the ſingular number includes all kinds of proviſion; and, in the plural, imports ſo many rations or pittances of bread, fleſh, and the like, diſtributed to ſo many men.

In this ſenſe, ſoldiers are ſometimes ſaid to have riſen to the benefit of five or more *Annonæ*, that is, were entitled to ſo many rations. The emperors Arcadius and Honorius took great pains to reduce this profuſion. *Aquin.* Lex. Milit. T. 1. p. 53.

ANNONÆ *Præfectus*, or *curator*, was an officer extraordinary, intruſted with the direction of the corn, to ſee it ſold at a reaſonable price. *Briſſ.* de Verb. Signif. p. 46.

The *Annonæ Præfectus* amounted to much the ſame with what at other times was called *Ædilis Cerealis*.

ANNONÆ *Structor*, an officer who had the management of the military proviſions. *Aquin.* Lex. Milit. T. 1. p. 53.

The *Annonæ Structor* anſwered to what the Italians call *commiſſario di viveri*.

ANNONAGE *Annonagium*, a tax on corn. *Du Cange*, Gloſſ. Lat. T. 1. p. 197.

ANNONAGE is much the ſame with *frumentage*.

ANNONARIUS, in middle age writers, an officer appointed to diſtribute proviſion to the ſoldiery, *&c.* By the laws of the Viſigoths it appears, that they had *Annonarii* in each of their cities and caſtles, to take care their ſoldiers had their allowance fairly dealt them. *Du Cange*, loc. cit.

In the antient monaſteries we meet with an *Annonaria præpoſitura*, or office to which belonged either the buſineſs of purveyance, or of diſtributing the pittances to the monks. *Du Cange*, Gloſſ. Lat. T. 1. p. 197. ſeq.

ANNONARII is alſo uſed for a kind of monopoliſts, who bought up the whole of a commodity to ſell it again at a raiſed price. *Pitiſc.* Lex. Ant. T. 1. p. 99.

ANNOTATION, (*Cycl.*) in medicine, denotes the very beginning of a febrile paroxyſm, when the patient grows chill, ſhudders, yawns, is drowſy, and the like. This is called by the Greeks *epiſemaſia* [a]; ſometimes alſo, εισβολη παροξυσμου [b]. [a *Gal.* Aph. 2, 1. b *Caſt.* Lex. Med. p. 52.]

ANNOTATION is alſo uſed for a ſymptom peculiar to hectic fevers, when the patient, an hour or two after eating, finds himſelf hot, his pulſe quickened, *&c.* without any ſhuddering.—This is more peculiarly called *Annotatio incompreſſa*, επισημασια αθλιπλος. *Gal.* de Dif. Febr. c. 9.

ANNOTATION, in the civil law, denotes a kind of reſcript or grant of the emperor, ſigned with his own hand. But this *Annotation* differed from a mere reſcript, and a pragmatic ſanction. *Briſſ.* de Verb.Signif. in voc. V.Bibl. Ital. T. 2. p. 254.

It took its name from the note or ſubſcription at the bottom, which was in red letters.

ANNOTTO, in commerce, a kind of red dye, brought from the Weſt Indies. This is otherwiſe denominated *anate* and *attole*.

It is procured from a red flower, produced by a ſhrub, which grows ſeven or eight foot high. This flower being thrown into tubs or ciſterns, for the purpoſe, is treated much after the manner of indigo.

The *Annotto* is now only prepared by the Spaniards. The Engliſh had formerly a manufacture at St Angelo now ruined. The drug is preferred by the dyers to indigo, and ſold one fourth dearer. *Savar.* Dict. Comm. T. 1. p. 98. in voc. *Anate*.

ANNUA *Penſione*, an antient writ for providing the king's chaplain unpreferred with a penſion. It was brought where the king having due to him an annual penſion from an abbot or prior, for any of his chaplains whom he ſhould nominate (being unprovided of livings) to demand the ſame of ſuch abbot or prior. Reg. Orig. 165, 307. Terms of Law, *Blount*.

ANNUAL, *Annuale*, in church affairs, is uſed for the yearly produce of the prebend of a canon or clerk deceaſed. *Du Cange*, Gloſſ. Lat. T. 1. p. 198.

In which ſenſe *Annuale* amounts to the ſame with what we otherwiſe call *annat*. See ANNAT.

ANNUAL is alſo uſed, in eccleſiaſtical writers, to denote a yearly office, ſaid for the ſoul of a perſon deceaſed on the day of his obit, or anniverſary. *Du Cange*, Gloſſ. Lat. T. 1. p. 198. See ANNALE, ANNIVERSARY, &c.

ANNUAL, in the Scotiſh law, denotes any yearly revenue, or due paid at certain terms, either legal as Martimaſs and Whitſuntide, or conventional as the parties agree. *Skene*, de Verb. Signif. p. 7. ſeq.

In the acts of parliament, made by queen Mary, mention is made of ground *Annuel*, fue *Annuel*, and top *Annuel*; the meaning whereof is ſomewhat uncertain.

Ground ANNUEL, according to Skene, is when the property of any land, whether built or unbuilt, is let or ſold for a yearly, rent, to be paid either to the proprietor, or, to ſome chaplain, or prieſt.

Fue ANNUEL is either when the mail or due is diſpoſed of, as a yearly revenue; or when the lands or tenement is let in fee farm hereditary, for a certain yearly ſum to be paid under the denomination of *feuda firma*.

ANNUEL *of Norway*, of which mention is made in the acts of parliament of king James the third, was an *Annuel* payment of an hundred marks ſterling, which the kings of Scotland were obliged to pay to the kings of Norway, in ſatisfaction for ſome pretenſions which the latter had to the Scotiſh kingdom, by vertue of a conveyance made thereof by Malcom Kanmoir, who uſurped the crown after his brother's deceaſe.

This *Annuel* was firſt eſtabliſhed in 1266; in conſideration whereof the Norvegian renounced all title to the ſucceſſion of the iſles of Scotland. It was paid till the year 1468, when the *Annuel* with all its arrears was renounced in the contract of marriage between king James the third, and Margaret daughter of Chriſtian the firſt, king of Norway, Denmark, and Sweden. *Skene*, loc. cit. p. 8. ſeq.

Top ANNUEL is a due given or aſſigned out of houſes or buildings, where the property remains with the former owner, only with the condition of his paying the ſaid *Annuel*.

ANNUITY (*Cycl.*)—We have ſome obſervations of M. De Moivre, concerning the eaſieſt method for calculating the value of *Annuities* upon lives, from tables of obſervation. See Phil. Tranſ. N°. 473. Sect. 10.

Where he gives the ſolution and demonſtration of theſe two problems.

PROBLEM I.

To find the value of an Annuity, ſo circumſtantiated, that it ſhall be on a life of a given age; and that upon the failing of that life, ſuch a part of the rent ſhall be paid to the heirs of the late poſſeſſor of an Annuity, as may be exactly proportioned to the time intercepted between that of the laſt payment, and the very moment of the life's failing.

Let n repreſent the complement of life, that is the interval of time between the given age, and the extremity of old age ſuppoſed at 86. And let r be the amount of 1 $\mathcal{L}$. for one year; a, the hyperbolic logarithm of r; p, the preſent value of an *Annuity* of 1 $\mathcal{L}$. for the given time; $\mathcal{Q}$, the value of the life ſought.

$$\text{Then will } \mathcal{Q} = \frac{1}{r-1} - \frac{p}{an}$$

This is the rule given page 86. lin. 12. of the IId. Edit. of Mr. De Moiver's *Annuities* on lives, but without demonſtration.

As there are no printed tables of hyperbolic logarithms extant, it may be proper here to give ſuch as may be wanting for this calculation. Suppoſing,

$r = 1.04$ then will $a = 0.0392207 = \frac{2}{51}$
$r = 1.05$ —— $a = 0.0487901 = \frac{2}{41}$
$r = 1.06$ —— $a = 0.0582589 = \frac{6}{103}$
} nearly.

It is to be obſerved, that the rule here given makes the value of lives ſomewhat greater than what is found by Mr. De Moi-

Moivre's theorem in the firſt problem of his *Annuities* on lives; becauſe in the preſent caſe there is one payment more to be made than in the other, yet on the ſuppoſition of an equal decrement of life to the extremity of old age, the difference of the rules is but inconſiderable. But if ever we ſhould have tables of obſervation, concerning the mortality of mankind, intirely to be depended upon, then it would be convenient to divide the whole interval of life into ſuch ſmaller intervals, as, during which, the decrements of life have been obſerved to be uniform, notwithſtanding the decrements in ſome of thoſe intervals ſhould be quicker, or ſlower, than others; for then the theorem here given, would be preferable to the other.

PROBLEM II.

To find the value of an Annuity for a limited interval of life, during which the decrements of life may be conſidered as equal.

Let a and b repreſent the number of people living in the beginning and end of the given interval of years. Let s be that interval; P, the value of an *Annuity* certain for that interval; Q, the value of an *Annuity* for a life ſuppoſed to be neceſſarily extinct in the time s; or, which amounts to the ſame, the value of an *Annuity* for a life of which the complement is s.

Then $Q+\frac{b}{a}\times\overline{P-Q}$ will expreſs the value required. Example. Let it be required to find the value of an *Annuity* for an age of 54, to continue 16 years, and no longer.

Then by Dr. Halley's tables it appears that $a=302$, $b=172$. And $n=s=16$; and by the tables of the values of *Annuities* certain $P=10.8377$; alſo by probl. 1. $Q=\frac{1}{r-1}-\frac{p}{an}=6.1168$. Hence by the preſent problem, it follows, that $Q+\frac{b}{a}\times\overline{P-Q}=8.3365$; the years purchaſe required, ſuppoſing intereſt at 5 *per Cent. per Ann.*

In the ſame manner the value of an *Annuity* between the age of 42 and 49 is worth 5.3492 years purchaſe. And from the age of 49 to 54 is worth 4.0374 years purchaſe.

Now if it were required to determine the value of an *Annuity* or life to continue from 42 to 70, it might be determined from the foregoing partial computations; but deductions for the chance of the life's failing between 49 and 54, as alſo between 42 and 49, and the diſcount of money, during thoſe ſeveral intervals, muſt be allowed. Then the value of an *Annuity* to continue from 42 to 70 will be found to be 11.0571 years purchaſe. In the ſame manner of computation the laſt 16 years of life, reaching from 70 to 86, when properly diſcounted and alſo diminiſhed on account of the probability of living from 42 to 70, the value of thoſe 16 years will be reduced to 0.8; this being added to 11.0571 before found, the ſum 11.8571 will be the value of an *Annuity* to continue from 42 to 86; and this is the value of a life of 42. Now this value in Mr. De Moivre's tables is but 11.57, on the ſuppoſition of an uniform decrement of life, from an age given, to the extremity of old age. We ſee then how the more accurate obſervations concerning the mortality of mankind furniſh corrections to the tables of *Annuities* in uſe.

We muſt here obſerve, that Mr. De Moivre in this tranſaction has corrected the ſolutions he had formerly given of two problems, *viz.* the 23d, and 25th. in the II. edition of his *Annuities*.

ANNUITY *for Lives*. See LIFE.

ANNUNTIATOR, in the Greek church, an officer whoſe buſineſs is to give notice of the feaſts, and holy days to be obſerved. Trev. Dict. Univ. T. 1. p. 429.

ANOCHUS, an imaginary name of a medicine, concerning which many fruitleſs conjectures have been made. The word occurs only in Gaza's tranſlation of the account which Theophraſtus has left us of the euonymus of thoſe times. The author ſays, that the goats which eat the leaves and fruit of the euonymus were killed by it, and that they died of a ſtoppage of the bowels, which he has expreſſed by the word *anocho*, ανοχω, derived from the verb, ανεσχειν, which ſignifies a retention of the ſtools; and having added to this error a ſecond of reading the Greek word καθειρεισθαι into καθαιρεῖσαι, he explains it that they muſt be cured by *anochus*, which he miſtakes for the name of ſome medicine, not underſtanding it to be the name by which the author expreſſed the diſeaſe.

It is to be obſerved by the way, that the euonymus of the Greeks could not be the ſame plant known at this time by that name, ſince the cattle eat our euonymus or fuſanus whenever they can get it, and that without any danger; but the deſcriptions of theſe plants in the antient and modern authors ſhew alſo that they were very different. See FUSANUS

ANOCTORON, in eccleſiaſtical antiquity, a name uſed by ſome writers for a church. *Bingh.* Orig. Eccleſ. l. 8. c. 1. §. 5. *Anoctora* properly import Roman halls, divers of which were converted into churches.

In which ſenſe *Anoctora* amount to much the ſame with *baſilicæ*. See BASILICS.

ANOCYSTI, in natural hiſtory, the name of a claſs of the *echini marini*, which have an aperture for the anus at the top of the ſhell.

Some of theſe approach to a hemiſpheric or ſpheroidal figure, others flatter, and in ſhape ſomewhat reſembling a ſhield.

ANODUS is uſed by ſome chemical writers to denote a putritious matter ſeparated by the kidneys.

In this ſenſe *Anodus* ſtands contradiſtinguiſhed from the ſuperfluous part, that is the urine. *Paracelſ.* l. 1. de Tartar. Trac. 3. c. 2. Not.

ANODYNE (*Cycl.*)—A ready way of preparing a uſeful, ſafe, and efficacious *Anodyne* is as follows. Take half an ounce of opium, diſſolve it in a gentle heat in three ounces of water, ſtrain the ſolution and evaporate it to a dry ſubſtance. Grind this to powder in a glaſs mortar with twice the quantity of loaf-ſugar, and you have an excellent preparation of opium, to be given three or four grains for a doſe. *Shaw*'s Lectures p. 233.

By diſſolving the opium thus in water, we get rid not only of its groſs and foul parts, but alſo of it reſinous, which are found much more pernicious than the reſt; and by dividing its parts afterwards with ſugar the medicine is rendered more uniform, reſoluble, and miſcible with animal fluids.

But however opium is prepared, it ſtill muſt be acknowledged that it retains qualities that make it little leſs than a poiſon in an over doſe; whence it were much to be wiſhed ſomething could be found that would be more innocent, and yet ſupply it place. And this camphor and nitre will do on many, tho' not on all occaſions.

ANODYNUS *Mineralis Liquor*. See LIQUOR.

ANOINTERS, a religious ſect in ſome parts of England, ſo called from the ceremony they uſe of anointing all perſons before they admit them into their church. They found their opinion of anointing upon the fifth of St. James verſes 14 and 15. Is there any ſick among you (which they account all people to be but themſelves) let him call for the elders of the church, and let them pray over him, anointing him with oil in the name of the Lord; and the prayer of faith ſhall ſave the ſick, and the lord ſhall raiſe him up, and if he have committted ſins, they ſhall be forgiven him. The elders among theſe people are ſome of the mean tradeſmen of the place, and the oil they uſe is that commonly ſold in the ſhops, with which the proſelyte being ſmeared over, and fired with zeal, he preſently becomes a new light of this church. *Plot*'s Oxfordſhire, p. 208.

ANOLE, in zoology, the name of a ſpecies of lizard common in the Weſt-Indies, about houſes and plantations. It is of the ſize of the common lizard of Europe, but its head is longer, its ſkin of a yelloviſh colour, and its back variegated with green, blue, and grey lines running from the neck to the tail. They creep into holes for the night, and there make a continual and very diſagreeable noiſe; in the day time they are always in motion. *Rochefort*, Hiſt. Antill.

ANOLYMPIADES, in antiquity, a name given by the Eleans to thoſe Olympic games, which had been celebrated under the direction of the Piſæans and Arcadians. *Potter*, Archæol. Græc. l. 2. c. 22.

The Eleans claimed the ſole right of managing the Olympic games, in which they ſometimes met with competitors. The hundred and fourth Olympiad was celebrated by order of the Arcadians, by whom the Eleans were at that time reduced very low; this as well as thoſe managed by the inhabitants of Piſa, they called ανολυμπιαδας, that is, unlawful Olympiads, and left them out of their annals, wherein the names of the victors and other occurences were regiſtred.

ANOMŒANS, (*Cycl.*) in church hiſtory, were ſometimes called corruptly *Anomians*, *Anomii*, and *Anomiani*.

The *Anomœans* were a ſpecies of rigid Arians. They condemned the Semi-arians at the council of Ancyre for holding the το ομοιωσιον. *Budd.* Iſag. ad. Theol. l. 2. c. 2. p. 458.

Prateolus deſcribes the Antinomians, under the title of *Anomi* or *Anomœi*, *Anomœans*. *Elench.* Hæreſ. l. 1. n. 40. See alſo *Sozom.* l. 4. c. 13. and 28. It. l. 6. c. 26. *Socrat.* l. 2. c. 35. *Theodor.* l. 4. *Epiphan.* Hæreſ. 57, or 77. Trev. Dict. Univ. in voc.

The word *Anomœan* is compounded of α, and νομος, law and more properly belongs to the ſect whom we call *Antinomians*, than to the *Anomœans*. See ANTINOMIANS.

ANOMORHOMBOIDIA, in natural hiſtory, the name of a genus of ſpars; the word is derived from the Greek, ανωμαλὸς, irregular, and ῥόμβοειδὴς a rhomboidal figure.

The bodies of this genus are pellucid cryſtalline ſpars of no determinate or regular external form, but always breaking into regularly rhomboidal maſſes; eaſily fiſſil, and compoſed of plates running both horizontally and perpendicularly thro' the maſſes, but cleaving more readily and evenly in an horizontal than in a perpendicular direction. The plates being ever compoſed of irregular arrangements of rhomboidal concretions.

Of this genus there are five known ſpecies. 1. A white bright and ſhattery one; found in great quantities in the lead-mines of Derbyſhire, Yorkſhire, and Wales. 2. A milk-white opake and ſhattery one, found in ſome parts of France, and very plentifully in Germany, and ſometimes in Wales and Scotland, and in the hills of Yorkſhire. 3. A hard dull and

ſnow-white one, found in ſome of the mines in Derbyſhire, and in many of our northern countries. 4. A hard grey and pellucid one, found in the lead-mines of Yorkſhire, and very common in Germany. And, 5. a pellucid and colourleſs one; this is found in the lead-mines of Derbyſhire and Yorkſhire. All theſe in ſome degree have the double refraction of the iſland cryſtal. *Hill*'s Hiſt. of Foſ. p. 337.

ANONA, in botany, the name of a genus of plants, ſome ſpecies of which are deſcribed by Plumier, under the name *Guanabanus*. The characters are theſe. The perianthium is ſmall and conſiſts of three leaves, which are hollow, pointed, and ſhaped into a heart-like form at the end. The flower conſiſts of ſix heart-ſhaped petals, the inner three of which are ſmaller than the others; there are ſcarce any filaments to ſerve by way of ſtamina, but the antheræ are very numerous and ſeem to adhere to the ſides of the germen. The germen is roundiſh and ſtands upon the cup; there are no ſtyles, but ſeveral obtuſe ſtigmata. The fruit is an extreamly large berry of an oval and rounded figure, containing one cell, and covered with a ſcaly punctated bark; the ſeeds are numerous, hard, of an oblong oval figure and placed circularly. *Linnæi* Gen. Pl. p. 255. *Plumier*, 10.

ANONIS, in botany. See REST-HARROW.

ANONYMOUS, in anatomy, a name ſometimes given to parts newly diſcovered, or firſt taken notice of. *Quinc.* Lex. in voc.

ANONYMOUS is alſo an appellation antiently given to the ſecond cartilage of the throat, by later writers called *cricoides*, or *annuliformis*. *Theoph.* Protoſpath. de Hum. Corp. Fabr. l. 3. c. 15. *Caſt.* Lex. Med. in voc.

ANPITS, in ſome middle age writers, denotes a breaſt-work, anſwering to what is otherwiſe called *barbacan*. *Aquin.* Lex. Milit. T. 1. p. 53.

ANSARIUM, in the civil law, a duty impoſed on all proviſions carried in veſſels with *Anſæ*.

This was otherwiſe called *Anſurium*, and the collectors of it *Anſurii*. *Pitiſc.* Lex. Ant. T. 1. p. 113.

ANSATUM *Telum*, according to ſome, denotes a dart, or javelin with an *amentum* faſtened to it.

Others rather take the *anſæ* of a javelin to be thoſe two eminences about the middle of the *cuſpis*, or point, which hindered the weapon from piercing thro' the whole body. *Pitiſc.* Lex. Ant. T. 1. p. 113.

ANSER, *the Gooſe*, in ornithology. See GOOSE.

ANSER, in aſtronomy, a ſmall ſtar, of the fifth or ſixth magnitude, in the milky way, between the ſwan and eagle, firſt brought into order by Hevelius. Vid. *Hevel.* Prodrom. Aſtron. p. 117.

ANT, *Formica*, in the hiſtory of inſects. See FORMICA.

ANTS *Eggs* is a name popularly given to a kind of little white balls found in the banks or neſts of *Ants*, ordinarily ſuppoſed to be the ova of this inſect.

Late naturaliſts have obſerved, that theſe are not properly the *Ants-eggs*, but the young brood themſelves in their firſt ſtate; they are ſo many little vermiculi wrapped up in a film, or ſkin compoſed of a ſort of ſilk which they ſpin out of themſelves, as ſilk-worms and catterpillars do [a]. At firſt they are hardly obſerved to ſtir, but after a few days continuance, exhibit a feeble motion of flexion and extenſion; and begin to look yelloviſh and hairy, ſhaped like ſmall maggots, in which ſhape they grow up till they are almoſt as large as *Ants*. When they paſs their metamorphoſis, and appear in their proper ſhape [b], they have a ſmall black ſpeck on them cloſe to the anus of the included *Ant*, which M. Leewenhoeck probably enough imagines to be the *fæces* voided by it [c].—[a Bibl. Univ. T. 11. p. 156. b Phil. Tranſ. N°. 23. p. 426. c Bibl. Univ. T. 11. p. 156.]

Dr. Ed. King opened ſeveral of theſe vulgarly reputed eggs, in ſome of which he found only a maggot in the circumſtances as above deſcribed; while in another the maggot had begun to put on the ſhape of an *Ant* about the head, having two little yellow ſpecks, where the eyes were to be. And in others, a further progreſs was obſerved, the included maggot being furniſhed with every thing to compleat the ſhape of an *Ant*, but wholly tranſparent, the eyes only excepted, which were as black as bugles. Laſtly, in others, he took out every way perfect and compleat *Ants*, which immediately crept about among the reſt. Phil. Tranſ. loc. cit.

Theſe ſuppoſed *Ants-eggs* are brought up every morning in ſummer near the top of the bank, where they are lodged all the warm part of the day, within reach of the ſun's influence. At night, or if it be cool, or like to rain, they carry them down to a greater depth; ſo that you may dig a foot deep e'er you come at them. Id. ibid. p. 427. ſeq.

The true *Ants-eggs* are the white ſubſtance which upon opening their banks, appears to the eye like the ſcattterings of fine white ſugar, or ſalt, but very ſoft, and tender. Examined by a microſcope it is found to conſiſt of ſeveral, pure, white appearances in diſtinct membranes, all figured like the leſſer ſort of birds eggs, and as clear as a fiſhes bladder.

The ſame ſubſtance is found in the bodies of the *Ants* themſelves.—This ſpawn, when emitted, they lye in multitudes on, to brood; till in ſome time it is turned into little vermicles, as ſmall as mites, commonly called *Ants-eggs*. Phil. Tranſ. ibid. p. 426.

The progreſs of the generation and tranſormation of *Ants* is traced exactly by M. Leewenhoeck. V. Bibl. Univ. T. 11. p. 153.

ANT-*Hills* are little hillocks of earth, which the *Ants* throw up for their habitation and the breeding of their young. They are a very great miſchief to dry paſtures, not only by waſting ſo much land as they cover, but by hindering the ſcythe in mowing the graſs, and yielding a poor hungry food pernicious to cattle.

The manner of deſtroying them is to cut them into four parts from the top, and then dig into them ſo deep as to take out the core below, ſo deep that when the turf is laid down again it may lye ſomewhat lower than the level of the reſt of the land; by this means it will be wetter than the reſt of the land, and this will prevent the *Ants* from returning to the ſame place, which otherwiſe they would certainly do. The earth that is taken out muſt be ſcattered to as great a diſtance every way as may be, otherwiſe they will collect it together and make another hill juſt by. *Mortimer*'s Huſbandry, p. 329.

The proper time for doing this is winter, and if the places be left open, the froſt and rains of that time of the year will deſtroy the reſt; but in this caſe care muſt be taken, that they are covered up early enough in the ſpring, otherwiſe they will be leſs fertile in graſs than the other places.

In Hertfordſhire they uſe a particular kind of ſpade to this purpoſe. It is very ſharp and formed at the top into the ſhape of a creſcent, ſo that the whole edge makes up more than three fourths of a circle; this cuts in every part, and does the buſineſs very quickly and effectually; others uſe the ſame inſtruments that they do for mole-hills.

Human dung is a better remedy than all theſe, as is proved by experiment, for it will kill great numbers of them, and drive all the reſt away; if only a ſmall quantity of it be put into their hills.

Some put honey mixed with powder of ratſbane into little boxes pierced full of holes ſuch as will juſt admit this creature, and this never fails to deſtroy them in great numbers; care is to be taken however that theſe holes are not too large, for if they would admit a bee, thoſe creatures would as ſurely come in as the *Ants*, and would not only be deſtroyed themſelves but might chance to carry this poiſoned honey to the hive, and depoſit it in the combs among the reſt, before they died by it, which would render the whole ſtock of honey poiſonous.

A bottle filled half up with any ſweet liquor, and hung upon the trees will deſtroy great numbers by their getting in, and being drowned in it; but if they are troubleſome to the walks and allies in the pleaſure-garden, the watering theſe at times will ſend them away. *Mortimer*'s Huſbandry, p. 330.

ANTA (*Cycl.*)—There were alſo *Antæ* at doors and gates. Feſtus confines their uſe to this laſt place.

Vitruvius calls thoſe that have but two faces out of the wall angular *Antæ*, to diſtinguiſh them from others which have three faces diſengaged, and which are placed at the ends of the walls of porticos. *Perrault* of the five orders, P. 2. c. 6. p. 101. *Evelyn*, Archit. p. 25.

The *Antæ* were alſo called *Poſtes*; by the Greeks, παραστάδες. Some will have them to be the ſame with the *Antepagmenta*. *Vitruv.* 3. 1. *Voſſ.* Etym. p. 31. *Pitiſc.* Lex. Ant. T. 1. p. 114. *Wolf.* Elem. Archit. §. 75. See ANTEPAGMENTA.

ANTACÆUS, in ichthyology, a name firſt given by the Greek writers Ælian and Strabo to the ichthyocolla piſcis, the iſinglaſs fiſh, or huſo; and afterwards, by Jonſton and others, not only to this fiſh, but to the common ſturgeon.

ANTACHATES is uſed, by ſome naturaliſts, for a kind of bitumenous ſtone, of the nature of amber, though of a different colour, which in burning yields a ſmell like myrrh. *Gorr.* Def. Med. p. 39.

ANTACIDS, *Antacida*, is uſed by ſome writers to denote medicines proper to qualify and reſiſt acid humours. *Dol.* Encycl. Med. l. 1. c. 3. §. 19.

Antacids are chiefly of the alcalious kind.

Under the claſs of *Antacids* come, 1. Abſorbents, as chalk, coral, ſea-ſhells, hæmatites, and ſteel filings. 2. Obtundents, as oils, and fats. 3. Immutants, as lixivious ſalts and ſoaps. *Burggr.* Lex. Med. T. 1. p. 861.

ANTAGONIST *Muſcles*, in anatomy, are thoſe which have oppoſite functions. *Heiſt.* Comp. Anat. N°. 307. *Barthol.* Anat. l. 1. c. 5. p. 41. *Caſt.* Lex. Med. p. 54. See the article MUSCLE.

Thus *Flexors* and *Extenſors*, *Abductors* and *Adductors*, are *Antagoniſts* to each other. See FLEXOR, *&c.*

ANTALGIC, an epithet given by ſome writers to medicines proper to abate pain. *Caſt.* Lex. Med. p. 54.

In this ſenſe *Antalgics*, *Antalgica*, amount to the ſame with *Anodynes*. See ANODYNE, *Cycl.* and *Suppl.*

ANTALIUM, in natural hiſtory, a ſmall ſea ſhell of a tubular form, whence it is alſo denominated *Tubulus Marinus*.

The *Antalium*, otherwiſe written *Antale*, and *Antalus*, is about an inch and half long; the thickneſs of a large quill at one end, and of a ſmall one at the other; fluted from end to end, of a white or greeniſh-white colour, and is found on rocks,

and at the bottom of the ſea. V. *Du Cange*, Gloſſ. Gr. T. 1. p. 81. in voc. ανθαλι.

It is an *Alcali* and ſaid to be of ſome medicinal uſe as a reſolvent and dryer; at leaſt by the antients. V. *Myrepſ.* de Unguent. Sect. 3. c. 42.

The *Antalium* bears a near affinity both in origin, ſtructure, and uſe, with the *Dentalium*.

ANTAPHRODISIAC, an epithet given to medicines, which diminiſh the ſeed, and extinguiſh the ſtimuli or incitements to venery. *Wedel.* Amæn. Med. l. 2. Sect. 2. c. 18. *Caſt.* Lex. Med. p. 54.

ANTAPOCHA, in the civil law, denotes one's acknowledgement in writing of money paid, in the way of rent, penſion, intereſt, or the like incumbrance. Such inſtrument or *Antapocha* the debtor gives upon making payment to the creditor, to ſerve as a proof of the charge or incumbrance for futurity, and exclude any claim of preſcription againſt the payment of it. The *Antapocha* differs from the *Apocha*, in that this latter is given by the creditor to the debtor, the former *vice verſa*. *Calv.* Lex. Jur. p. 71.

ANTASTROPHE, in rhetoric, a ſpecies of antepoſition. See ANTEPOSITION.

ANTEAMBULONES, in antiquity, a kind of ſtate ſervants, who walked before their maſters to clear the way, and keep off the crowd. *Pitiſc.* Lex. Ant. T. 1. p. 114.

The formula uſed by theſe was *date locum domino meo.*

ANTECANIS is uſed, by ſome aſtronomers, to denote the ſtar or conſtellation otherwiſe called *canis minor*, or *Procyon*. It is thus denominated as preceding, or being the forerunner of the *canis major*, and riſing a little before it. *Vital.* Lex. Math. p. 47.

ANTECESSORS, in the antient art of war, is an appellation given to a party of horſe, diſpatched before the agmen or body of an army, partly by way of intelligence, and partly to chuſe out a proper place for encamping on, as well as the moſt convenient roads for the ſoldiery to travel in. *Aquin.* Lex. Milit. in voc.

Theſe are alſo denominated *Antecurſores*.

They amount to the ſame with what the Greeks call prodromi.

ANTECURSORES, in the antient military art, parties ſent before to mark out a camp, procure proviſion, or even reconnoitre the enemy. *Aquin.* Lex. Milit. T. 1. p. 55.

ANTEJUSTINIANEAN, an appellation ſometimes given to the antient Roman law, as it ſtood before the time of the emperor Juſtinian.

Tribonian has been often condemned for ſuppreſſing the writings of the *Antejuſtinianean* lawyers. Schulting, a celebrated profeſſor at Leyden, has a diſſertation expreſs on the equity of this cenſure [a]. Fabricius gives a catalogue of the antient *Antejuſtinianean* lawyers [b]. Schulting [c] has publiſhed a collection of the *Antejuſtinianean* writers.—[[a] Ext. in fine ejuſd. Juriſpr. Antejuſt. [b] Bibl. Græc. l. 6. c. 6. n. 5. [c] Juriſprudentia Vetus Antejuſtinianea. Lugd. Bat. 1717. 4to.]

ANTELIUS, or ANTHELIUS, in antient writers, denotes an idol placed over the doors of houſes, ſuppoſed to have the guardianſhip, or protection of them. *Magr.* Vocab. Eccleſ. p. 18.

The word is originally Greek, ανθηλιος, q. d. againſt the ſun, as being expoſed thereto.

ANTELOPE, in natural hiſtory, the name by which we commonly call the *Gazella*, a creature of the goat genus, of which there are three diſtinct kinds. See the article GAZELLA.

ANTELUCAN, in eccleſiaſtical writers, is applied to things done in the night or before day.

We find frequent mention of the *Antilucan* aſſemblies, *Cœtus Antelucani*, of the antient chriſtians in times of perſecution, for religious worſhip. *Bingh.* Orig. Eccleſ. l. 13. c. 10. §. 11.

ANTELUDIA, in antiquity, a day of ſhow or parade preceding the Circenſes, wherein the preparations made for thoſe ſolemnities were expoſed in great form and pomp. *Pitiſc.* Lex. Ant. T. 1. p. 115.

ANTEMURALE, in middle age writers, denotes a kind of outer wall environing the other walls and works of a place, and preventing the too near acceſs of the enemy to them. *Du Cange*, Gloſſ. Lat. in voc.

This is alſo called by Iſidore, *Promurale*, as being *pro munitione muri*, for the defence of the wall. *Iſid.* Orig. l. 15. c. 2.

In ſome writers we find it denominated *antepectoralis muris*, in others *anpits*. *Du Cange*, loc. cit.

ANTEMURALE is alſo uſed to denote any work without ſide the rampart or wall of the place. *Aquin.* Lex. Milit. in voc.

In this ſenſe, *Antemurale* amounts to the ſame with what we otherwiſe call *outwork*.

ANTEMURALE is alſo uſed in eccleſiaſtical writers for the veſtible or entrance of the preſbyterium, or bema.

ANTENATUS is uſed in ſome law writers for the firſt-born, or eldeſt ſon, anſwering to what we call *aiſnè*. *Du Cange*, Gloſſ. Lat. T. 1. p. 241.

ANTENATUS is alſo ſometimes uſed for a ſon, the iſſue of a former marriage.

In which ſenſe, *Antenatus* amounts to the ſame with *Privignus*.

ANTENATI, in the modern Engliſh hiſtory, is chiefly underſtood of the ſubjects of Scotland, born before king James the firſt's acceſſion to the Engliſh crown, and alive after it. V. *Rapin*, Extr. de Rym. Fæd. T. 16. Bibl. Anc. Mod. T. 18. p. 278.

In relation to theſe, thoſe who were born after the acceſſion were denominated *poſtnati*.

The *Antenati* were conſidered as aliens in England, whereas the *Poſtnati* claimed the privilege of natural ſubjects.

ANTENCLEMA, ανθεγκλημα, in oratory, is where the whole defence of the perſon accuſed turns on criminating the accuſer. *Quinct.* Inſt. l. 7. c. 3.

Such is the defence of Oreſtes, or the oration for Milo, *occiſus eſt ſed latro. Exſectus ſed raptor.* See the article RECRIMINATION, *Cycl.*

ANTENICENE, in eccleſiaſtical writers, denotes a thing or perſon prior to the firſt council of Nice.

We ſay the *Antenicene* faith, *Antenicene* creeds, *Antenicene* fathers [a]. There are great diſputes among divines and critics concerning the *Antenicene* ſyſtem of the trinity. Some will have it to have been Arianiſm, others Socinianiſm, others the ſame with what ſtill obtains [b]. Petavius with great learning endeavours to ſhew that the *Antenicene* fathers were all pure Arians; in which he has been ſeconded by M. le Clerc, under the borrowed name of Theophilus Alethinus; alſo by Baltus, Whiſton and others. [c] Biſhop Bull with no leſs learning defends the orthodoxy of the *Antenicene* fathers; and refutes the ſeveral objections produced by Petavius [d].—[[a] *Budd.* Iſag. ad Theol. l. 2. c. 2. p. 444. [b] *Budd.* loc. cit. c. 3. p. 581. Nouv. Rep. Lett. T. 4. p. 611. Mem. for Ingen. p. 52. [c] Journ. des Scav. T. 47. p. 223. Jour. Liter. T. 6. p. 85. ſeq. [d] Nouv. Rep. Lett. T. 31. p. 247.]

ANTENNÆ, in natural hiſtory. See FEELERS.

ANTENUPTIAL, ſomething that precedes marriage.

In this ſenſe, we ſay *Antenuptial* promiſes, *Antenuptial* preſents, *Antenuptial* covenants, *&c.*

Neoſtadius has a treatiſe expreſs *de pactis Antenuptialibus. Lipen.* Bibl. Jur. p. 370.

ANTEPILANI, among the antient Romans, denote the Haſtati or Principes of a legion.

They are ſuppoſed to have been thus called becauſe ranged before the Triarii, who were alſo called *Pilani*.

Some will have the word to be a corruption for *Anteſignani*. V. *Pitiſc.* Lex. Ant. in voc.

ANTEPILEPTIC, in medicine, denotes a quality in bodies, whereby they reſiſt or oppoſe the epilepſy and convulſive motions. V. *Caſt.* Lex. Med. in voc.

The chief *Antepileptics* from the vegetable kingdom are, the roots of pæony, valerian, the flowers of the lime tree, miſletoe of the oak, hazel and lime.

The animal kingdom affords a great number of *Antepileptics* either real or imaginary. Such are elks claws, caſtoreum, divers parts of the deer, ſwallows-hearts, the human cranium, blood, ſecundines, *&c.* the hippomanes, lizards, frogs and moles liver and ſpine, lions and peacocks dung, earth worms, *&c.*

The mineral kingdom affords hyacinths and ſmaragds prepared, alſo tincture of luna. *Junck.* Conſp. Therap. Gen. Tab. 90. p. 597. ſeq.

ANTEPOSITION, a grammatical figure, whereby a word which by the ordinary rules of ſyntax ought to follow another comes before it. As when in the Latin the adjective is put before the ſubſtantive, the verb before the nominative caſe, *&c.* *Thomas. Erot.* Rhet. p. 75.

Antepoſition ſtands oppoſed to *poſtpoſition*. One caſe or ſpecies of this figure is called by a particular name, *antaſtrophe*.

ANTERIDES, in the antient architecture, denotes buttreſſes erected to ſupport a wall.

Theſe are ſometimes alſo called *antes*, ſometimes *eriſmæ*, and by the Greeks ερεισμαλα.

Anterides anſwer to what the modern builders call *counterforts*, *arcbutants*; the Italians, *barbicane*, and *ſperoni*, or ſpurs. *Pitiſc.* Lex. Ant. T. 1. p. 115. *Aquin.* Lex. Milit. T. 1. p. 55. *Voſſ.* Etym. p. 32.

ANTEROTES, a name given by ſome of the antient writers on gems to a ſpecies of the amethyſt. Some have imagined they meant by it a ſort of opal, but Pliny expreſsly contradicts this, making the *Anterotes* the fifth kind of amethyſt in value.

ANTESIGNANI, in the Roman armies, a kind of ſoldiery poſted before the eagles, and other enſigns of the legions, whence their appellation.

The *Anteſignani* ſtand contradiſtinguiſhed from the *ſubſignani*, who were ranged in the ſame line with the enſign; and from the *poſtſignani*, who were placed behind them.

Critics are greatly divided concerning the *Anteſignani*. Lipſius maintains them to have been Haſtati, whoſe office was to defend the ſtandard; whence they were alſo denominated *propugnatores*, and *præpoſiti ſignorum*. On this ſuppoſition the Principes made the *ſubſignani*, and the Triarii the *poſtſignani* [a]. Others will have the Velites to have been the *Anteſignani*, at leaſt in Cæſar's time; agreeably to which Livy divides the whole army into *Anteſignani* and *poſtſignani*; the former of whom made the firſt line, compoſed of Velites, or

perſons lightly armed, and the *poſtſignani* the ſecond line, conſiſting of thoſe heavily armed [b]. Others aſſert the *Anteſignani* to have been the firſt body of ſoldiers in heavy armour, called by the Greeks προμαχοι.—[[a] *Aquin.* Lex. Milit. T. 1. p. 55. [b] *Salmaſ.* de Re Milit. Rom. c. 17.]

In effect, the Velites appear, on many accounts, to have been different from the *Anteſignani*, as the former only ſkirmiſhed in parties here and there without any regular enſigns, whereas the latter kept firm to their poſts. The Velites when preſſed were allowed eaſily to give way, whereas the *Anteſignani* were not to flinch except on very extraordinary occaſions. *Pitiſc.* Lex. Ant. T. 1. p. 115. ſeq.

ANTEVIRGILIAN *Huſbandry*. See HUSBANDRY.

ANTHALIUM, among the antients, a root growing in dry places, and about the bigneſs of the fruit of the medlar; it was dug up for food, and eſteemed very pleaſant and wholeſome. See MALINATHALLE.

ANTHESTERION, Ανθεστηριων, in antient chronology, the ſixth month of the Athenian year. It contained twenty-nine days, and anſwered to the latter part of our November and and beginning of December. The Macedonians called it *dæſion* or *deſion*.

It had its name from the feſtival *antheſteria* kept in it. See ANTHESTERIA, *Cycl.*

ANTHIA, in zoology, a name by which ſome improperly call the *falx venetorum*, or ſickle fiſh, a long anguilliform fiſh of the tænia kind. *Willughby*'s Hiſt. Piſc. p. 117.

ANTHIAS, in zoology, the name of a fiſh ſeeming to approach to the turdus or wraſſe kind, of which Rondeletius and ſome other authors have deſcribed four ſpecies. The ſecond of thoſe is however to be rejected from the number, being properly a ſpecies of whiting; all the others in moſt particulars ſo nearly reſemble the varieties of the common turdus, as by many to be ſuſpected to be only varieties of that fiſh.

The firſt ſpecies is of a red colour, and has a very ſtrong and ſharp prickle on the firſt ray of its back fin; its tail is forked, and that and all the fins are of a reddiſh hue; the head is roundiſh, not flatted, and the noſe not at all prominent.

The third ſpecies is by ſome authors called black, but it is truly all over of a deep and duſky purpliſh blue; its body is long and thick not flat, and its teeth very ſtrong and ſerrated. It has thick lips, and round and prominent eyes, the iriſes of which are of a purpliſh colour.

The fourth kind is diſtinguiſhed from all the others, by having two large and arched protuberances like eye-lids, one placed directly over each eye. *Geſner*, de Piſc. p. 62. ſeq.

ANTHINE, among antient naturaliſts, is an appellation given to certain ſpecies of wine and oil.

In this ſenſe the word is alſo written *Anthinos*.

Vinum Anthines, οινος Ανθινης, was that prepared with certain fragrant flowers to give it the more agreeable odour.

Oleum Anthinum is alſo denominated *liliaceum*, ſometimes *ſuſinum*. *Caſt.* Lex. Med. in voc.

Some alſo give the appellation *Anthine* to the compoſition otherwiſe called cyceon.

ANTHOCEROS, in botany, the name of a genus of moſſes. The name was given by Micheli, and the generical character eſtabliſhed in that it has a monopetalous flower, which is corniculated and divided into two carinated parts, the diviſion running to the center, where there ſtands a duſty ſtamen or filament; this he ſays is barren, and ariſes from the tubular cup of the flower; the fruit being ſometimes found on the ſame plants with theſe flowers, and ſometimes on others, and being of a radiated form, each of the ſeveral rays containing two, three, or four ſeeds.

Dillenius however obſerves, that what this author calls the monopetalous flower of the *Anthoceros* is properly the capſule containing a fine duſt, which is like that of the capſules of all the other moſſes, and is by him ſuppoſed to be the farina or male part of the fructification; the filament in the middle of this capſule is ſurrounded with a yellow duſt, and the whole capſule, viewed by the microſcope, appears of the nature of the common unicapſular and bivalve ſeed-veſſels of the larger plants, as the pods of muſtard and the like. And this author further obſerves, that he could not accurately perceive the ſeed-veſſels deſcribed by Micheli.

There are only five known ſpecies of this genus.

1. The common *Anthoceros*, with ſmaller and more divided leaves; this grows moſt frequently in damp ſhady places. 2. The *Anthoceros*, with larger and leſs divided leaves, the heads in this kind ſtanding on very ſhort pedicles; it is found in many parts of Germany. 3. The narrow leaved *Anthoceros* with a ſhort flower; this is found in Italy by way ſides. 4. The five cut leaved *Anthoceros*; the leaves of this are of a purple green; it grows on clayey ground. 5. The muſhroom headed moſs, or ſmall leafleſs moſs, with thick bivalve heads; this is frequent in Muſcovy. *Dillen.* Hiſt. Muſc. p. 476.

ANTHOLYZA, in the Linnæan ſyſtem of botany, the name of a plant which makes a diſtinct genus, the characters of which are theſe. In the place of a flower cup, there are a number of thin imbricated ſpathæ, interwoven with one another, and dividing the flowers; theſe remain after the flowers are fallen. The flower is compoſed of a ſingle petal, which from the form of a tube dilates by degrees into a flatted labiated form, the upper lip of which is placed erect and is very thin and long, and undulated, and near its baſis has two ſhort jaggs; the under lip is ſhort and trifid, and has the middle ſegment larger than the reſt and hanging down. The ſtamina are three long and ſlender filaments; two of theſe are placed under the upper lip, the other upon the lower; the antheræ are pointed. The germen of the piſtillum is beneath the receptacle; the ſtyle is thread-like, and is of the ſame length and placed in the ſame line with the two upper ſtamina; the ſtigma is capillary, bent downward, and divided into three ſegments. The fruit is a roundiſh capſule, but ſomething trigonal, containing three cells, with three valves; the ſeeds are very numerous and of a triangular form. *Linnæi* Genera Plantar. p. 10.

ANTHONY (*Cycl.*) — Juſtiniani [a], Caramuel [b], and others, ſpeak of an order of *St. Anthony* in Æthiopia, eſtabliſhed as early as the year 370. But beſides that Ludolphus makes no mention of them, an order of knights in the fourth century appears at firſt ſight a chimera.—[[a] Hiſtor. de l'Orig. de Cavallieri, c. 5. [b] Theolog. Regolar. P. 9.]

St. Anthony alſo gives the denomination to an order of religious founded in France about the year 1095, to take care of thoſe afflicted with *St. Anthony's fire*. *Emill.* Hiſt. Monaſt. Ord. c. 14. p. 127. ſeq.

The *Anthonins*, or monks of *St. Anthony*, are by ſome ſaid to be of the begging kind. Their founder was Gaſton Frank, who erected a monaſtry for them at la Motte, near Vienne, where the general ſtill lives; they follow the rule of St. Auguſtine. Others give a different account of their origin, and ſuppoſe them thus called, not on account of *St. Anthony's fire*, but becauſe inſtituted by a *St. Anthony*, prior of a monaſtery in that neighbourhood. It is added, that they are regular canons; but the former account ſeems the more probable, ſince it is plain they were originally hoſpitallers; that they had the care of the ſick and weak, and, as a mark of this, ſtill carried the T, the ſign of a crutch. *Aubert*, ap. Richel. Dict. T. 1. p. 95.

It is ſaid in ſome places, theſe monks aſſume to themſelves a power of giving, as well as removing the *ignis ſacer*, or eryſipelas, a power which ſtands them in great ſtead for keeping the poor people in ſubjection and extorting alms. To avoid the menaces of theſe monks, the country people preſent them every year with a fat hog a piece. Some prelates endeavoured to perſuade pope Paul III. to aboliſh the order *quæſtuarios iſtos ſancti Anthonii, qui decipiunt ruſticos & ſimplices, eoſque innumeris ſuperſtitionibus implicent de medio tollendos eſſe* [c]. But they ſubſiſt notwithſtanding to this day in ſeveral places [d].—[[c] *Sebaſt.* Frank. in Chron. p. 468. [d] *Emill.* Hiſt. Monaſt. Ord. c. 14. p. 128. ſeq.]

ST. ANTHONY's *Fire*, a name popularly given to the eryſipelas. See ERYSIPELAS, *Cycl.* and *Suppl.*

Apparently it took this denomination, as thoſe afflicted with it made their peculiar application to *St. Anthony* of Padua for cure. It is known, that antiently particular diſeaſes had their peculiar ſaints; thus in the ophthalmia perſons had recourſe to St. Lucia, in the tooth-ach to St. Apollonia, in the hydrophobia to St. Hubert, &c. *Skin.* Etym. in voc.

In effect, the Romaniſts in ſome parts are ſtill ſaid to repreſent *St. Anthony* with a fire kindled at his ſide, to ſignify that he delivers people from the *ſacer ignis* or eryſipelas. They alſo paint a hog near him, as a token that he cures beaſts of all diſeaſes. To do him the greater honour in ſeveral places, they keep at common charges a hog denominated *St. Anthony*'s hog, for which they have great veneration. Some will have *St. Anthony*'s picture on the walls of their houſes, hoping by that to be preſerved from the plague; and the Italians, who do not know the true ſignification of the fire painted at the ſide of their ſaint, concluding that he preſerves houſes from being burnt, invoke him on ſuch occaſions. *Emill.* Hiſt. Monaſt. Ord. c. 12.

ANTHOPHYLLI, a denomination given to the larger ſpecies of cloves. *Junck.* Conſp. Therap. Tab. 6. n. 44.

The word is otherwiſe written *antophali*, Ανθοφαλοι. *Du Cange*, Gloſſ. Græc. in voc.

ANTHORÆ *Radix*, the name of a root which holds a place in the catalogues of the materia medica, but is not kept at this time in the ſhops. It is the root of the *aconitum ſalutiferum*, or healing aconite of authors; it is kept with us in the gardens of the curious, and flowers in June. It is common wild on the Alps and Pyrenean mountains; the root is of a duſky brown without and whitiſh within, and of an acrid taſte and unpleaſant ſmell; it is accounted a cordial and a reſiſter of poiſon, and is an ingredient in the famous orvietan; and is by many thought to have the ſame virtues with contrayerva. *Pomet*'s Hiſt. of Drugs, p. 42. See the article ACONITE.

The root of *Anthora* became famous for its virtues in preventing the effect of the poiſonous aconite, and ſome other vegetables of the like miſchievous kind; hence it has been brought into uſe againſt poiſons of all kinds, and againſt the bites of venomous animals. Some of the German phyſicians give it alſo in malignant and petechial fevers, and even in

the

the plague; and in many places it is given in powder to children to deſtroy worms, and to relieve in pains of the bowels. It is true that Cluſius holds the root ſuſpected, and diſcourages the uſe of it in medicine; and John Bauhine tells us, it ought never to be given but with great caution, for that it purges violently. But Geſner, who ſpeaks from abſolute experience, tells us, that he had often taken it himſelf, and given it to others in caſes of malignant fevers, and even to children for worms, and that he never even found it to have the purgative quality which Bauhine aſcribes to it. It may be given in powder from a ſcruple to two ſcruples for a doſe, and is beſt given in form of a bolus, its taſte being very diſagreeable. *Cluſius*, *Johan. Bauhine*, *Geſner*, Epiſt.

ANTHORISMUS, Ανθορισμος, in rhetoric, denotes a counter definition or deſcription of a thing. *Heder.* Schul. Lex. p. 261.

Thus, if the plantiff urge, that to take any thing away from another, without his knowledge or conſent, is a theft; this is called ορος, or definition. If the defendant reply, that to take a thing away from another, without his knowledge or conſent, provided it be done with deſign to return it to him again, is not theft; this is an Ανθορισμος.

ANTHOS, in chemiſtry, is uſed to denote the quinteſſence or elixir of gold; and ſometimes for a medicine extracted from pearls. Vid. *Paracelſ.* de Vit. Long. l. 3. c. 1. *Rul.* Lex. Alch. in voc.

ANTHOS *Philoſophorum* is more particularly uſed to denote a method of tranſmuting metals by means of vitriol. *Libav.* Synt. Arc. Chem. l. 7. c. 7. *Caſt.* Lex. in voc.

ANTHOSMIAS, in ſome antient naturaliſts, denotes a rich odoriferous kind of wine. *Suid.* Lex. in Ανθοσμιας.

In this ſenſe *Anthoſmias* differs from *Anthinos*, as the latter imports a medicated wine ſcented with odoriferous herbs, whereas the former derived its fragrancy from the native grapes.

Some give a different explication of the antient *Anthoſmias*. Langius will have it to have been a wine mixt with a fiftieth part of ſea-water. *Lang.* Epiſt. Medic. l. 1. Ep. 27. p. 114. V. *Athen.* deipnos, l. 1. *Foes.* p. 61.

ANTHOXANTHUM, in the Linnæan ſyſtem of botany, the name of a ſort of graſs which makes a diſtinct genus of plants. The characters of this are, that the calix, or flower cup, is compoſed of two glumes, the exterior containing one flower compoſed of two valves of an oval figure, pointed, hollow, and the one larger than the other; the interior glume is compoſed of two valves of the ſame length with the exterior larger valve, and each ſending out a fine beard or acorn from its hinder part: this alſo contains one flower, which is compoſed of two unequal ſized valves, and is extremely thin in its whole ſtructure, and quickly falls off. The ſtamina are three capillary filaments; the antheræ are long, and ſplit at their ends; the germen of the piſtillum is oblong; the ſtyles are capillary, two in number and hoary; the ſtigmata are ſimple; the interior glume grows firmly to the ſeed, which is ſingle, oblong and pointed at each end. *Linnæi* Genera Plantarum, p. 18.

ANTHRACIS, in natural hiſtory, a word uſed by the antients in ſeveral different ſenſes. Pliny makes it ſynonymous with *Anthracias*, which was the name of a gem in uſe among them very remarkable for its luſtre, which as it was moved about reſembled the twinkling and glittering of the ſtars in a clear night; others have underſtood it to mean the aſteria of the antients, in which a light ſpeck reſembling a ſtar ſeemed to be included within the body of the ſtone, and to give light to the ſeveral parts of it as moved in different poſtures. Pliny evidently means this in one place, where he deſcribes this ſtone, for he ſays the ſtars ſeem to run about and change place in it, and that they are ſometimes black ſpecks not bright ones that thus change place in it. All this ſeems evidently to refer the ſtone to the cat's eye, or aſteria kind; but the word *anthracitis* being ſometimes uſed as the genitive caſe of this, there has been ſome confuſion brought into the ſubject by the ſameneſs of the ſound with that *anthracitis* which is the carbuncle. Many of the antients alſo have called the hæmatites or blood-ſtone by this name *anthracitis*, becauſe of its being of the colour of a burning coal.

The word therefore is never to be conſtrued haſtily, but the context examined before it can be aſcertained which of three ſo very different ſubſtances is meant by it.

ANTHRAX, in the natural hiſtory of the antients, was a word uſed by the moſt early writers for the ſubſtance we now call pit-coal and lithanthrax. Theophraſtus plainly tells us, that the ſubſtance ſtrictly and properly called *Anthrax* (for they alſo knew a gem by the ſame name uſed in a metaphorical ſenſe) was an earthy foſſil ſubſtance, which was broken in pieces to be uſed, and kindled well, and burnt almoſt like wood coals, and was uſed by the ſmiths.

This was a ſenſe however not univerſally received for the account of Theophraſtus till of late, and the underſtanding the paſſage in a wrong one, has been the occaſion of many erroneous gueſſes about what this *Anthrax* was, among thoſe who did not perceive that it meant the common coal.

Wormius expreſsly ſays, that Theophraſtus calls the ampelites or cannel coal, *Anthrax*, tho' there is no foundation for any ſuch aſſertion from his works; and others, willing to make ſome ſenſe of the paſſage, but ſeeing it could not bear this, have made even more unwarrantable conjectures. Vid. *Hill*'s Theophraſtus, p. 40.

ANTHRAX, in medicine—Some pretend to make a diſtinction between the *Anthrax* and carbuncle, limiting this latter to the glandular parts, and the former to all the others. But the diſtinction is ſcarce worth the making. *Le Clerc.* Comp. Surg. p. 112. See CARBUNCLE, *Cycl.*

Rivettus, Toſius, Gemma, and Meurerus, have diſcourſes expreſs on the *Anthrax*. *Lipen.* Bibl. Med. p. 32.

ANTHROMETRICA *Machina*, a name which Sanctorius gave to his weighing chair, contrived for meaſuring the quantity of inſenſible perſpiration. V. Act. Erud. Lipſ. 1726. p. 381.

ANTHROPODÆMON, Ανθρωποδαιμον, in antient writers, a dæmon concealed under the figure or appearance of a man. *Suid.* Lex. T. 1. p. 214.

ANTRHOPOGLOTTUS, Ανθρωπογλωττος, in natural hiſtory, ſomething that has a tongue, or ſpeech reſembling that of man.

The parrot-kind are denominated *Anthropoglotti*, on account of their broad thick and muſcular tongues, by which they are enabled to ſpeak, and to roll their meat from ſide to ſide under the edges of their bills. Vid. *Grew*, Muſ. Reg. Societ. P. 1. Sect. 4. c. 1. p. 57.

ANTHROPOGRAPHIA, a deſcription of man; more particularly, of the ſtructure of his body and the parts thereof.

ANTHROPOLATRÆ, a title given to the Neſtorians on account of their believing Chriſt to be a mere man, yet paying him the honour of a God. V. *Suic.* Theſ. & *Du Cange*, Gloſſ. Græc. in voc. Ανθρωπολαιλεαι.

ANTHROPOLATRIA, the paying divine worſhip or honours to a man. *Anthropolatria* is ſuppoſed by ſome to have been the moſt antient ſpecies of idolatry.

ANTHROPOMETRIA, a deſcription of the human body, with its ſeveral parts and members according to the three dimenſions, length, breadth, and thickneſs, both conſidered in themſelves, and comparatively to each other. *Caſtel.* Lex. in voc.

In this ſenſe, Etſholzius has given an *Anthropometria*, *de mutua membrorum corporis humani proportione*, &c. *Patav.* 1654. 4°. *Burggr.* Lex. Med. in voc.

The *Anthropometria*, it muſt be owned, is a term ſomewhat too narrow for this occaſion; ſince the author not only undertakes to deſcribe the dimenſions of man's body; but to ſhew the ſymmetry of it.

ANTHROPOMORPHA, in the Linnæan ſyſtem of nature, a claſs of animals in ſome degree reſembling the human form.

The word is derived from the Greek ανθρωπος, a man, and μορφη form.

The characters of the animals of this claſs are, that they have either four fore-teeth, or elſe they have none at all. Beſide the human ſpecies, which ſtands at the head of this claſs, the author makes it comprehend the monkey, the ignavus or ſloath, and the tomadua quacu, or ant-bear as it is uſually called. *Linnæi* Syſt. Nat. p. 34.

ANTHROPOMORPHISM, among divines, the error of thoſe who aſcribe a human figure to the deity.

Many of the antient ſaints and fathers as well as modern divines and philoſophers ſtand charged with *Anthropomorphiſm*. Johannes Hieroſolymitanus ſtrongly taxes St. Epiphanius with it[a]. The antient Ebionites were confeſſed *Anthropomorphites*, as appears from the author of the Clementines, who gives a proof of this opinion after his manner from ſcripture and reaſon[b].—[[a] V. *Budd.* Iſag. ad Theol. l. 2. c. 7. p. 1006. [b] Vid. Bibl. Choiſ. T. 2. p. 64.]

It is very difficult to trace the progreſs of *Anthropomorphiſm*, which has infected the whole Chriſtian world more or leſs; as well as a great part of the Jewiſh and heathen world. It ſeems indeed not very eaſy to ſay who is free from it; they whoſe ideas of the deity are pureſt, and moſt abſtract, do ſtill take in ſomething that is human, from which it ſeems almoſt impoſſible for us to get entirely looſe.

Rabbi Quarchi aſſures us, that God, when ſeated in heaven, had his feet in the temple of Jeruſalem, which was his foot-ſtool. Mem. de Trev. An. 1718. p. 957.

A late advocate[c] againſt Arianiſm ſeems to have carried *Anthropomorphiſm* further than had been known before. He aſſerts, that the three perſons of the trinity, the Father, the Son, and the Holy Ghoſt have each of them a figure reſembling that of a man; and that when the ſcripture attributes a face, eyes, hands, *&c.* to the divine being, it is to be taken literally. He adds that it was this reſemblance between man and the three divine perſons that occaſioned the fall of the angels; thoſe celeſtial ſpirits grew jealous of the honour that was conferred upon us, which prompted them to rebel[d]. —[[c] *Warren*, Antidot againſt Arianiſm. Jour. des Scav. T. 54. p. 236. [d] Mem de Trev. An. 1713. p. 1295.]

Indeed if we literally keep to ſcripture how ſhall we avoid *Anthropomorphiſm?* Dr. Coward aſſerts, that no unprejudiced perſon can read the Pentateuch, and be in any doubt, but that Moſes believed God to be corporeal. He adds, what can be more expreſs than that text in Exodus[e]? "God ſpoke to Moſes

face

face to face, as a man ſpeaks to his friend."—Again, the prophet deſiring to ſee the glory of God, was anſwered, that he ſhould ſtand on a rock, and that when God paſſed by he would cover him with his hand, ſo that Moſes ſhould ſee his back-parts, but that his face ſhould not be ſeen [f]. If, ſays Coward, we are to interpret theſe texts not according to the natural and literal import of them, but agreeably to a preconceived idea, the bible avails nothing; what is there but may be thus eluded? The ſcripture will be found to be juſt what every body is pleaſed to find it. Theſe reflections are refuted by M. Feſtas [g].—[e Exod. c. xxxiii. v. 11. f Ibid. v. 21. ſeq. g V. Ouvr. des Scav. Oct. 1708. p. 480. ſeq.]

Even philoſophers, for want of a better acquaintance with metaphyſics, ſeem to have fallen into *Anthropomorphiſm*, repreſenting God much after the manner of a human ſoul, without conſidering the difference between a finite and an infinite being, limited and abſolute perfections. *Wolfius* has laboured hard to avoid this rock, by having the difference ſtill preſent to his mind, and proceeding according to the antient rule, *quæ de Deo dicuntur* ανθρωποπαθως, *ea intellige* Θεοπρεπως. Vid. Act. Erud. Lipſ. An. 1724. p. 316.

The whole ſect of Stoics held God to be corporeal; and not to mention Tertullian and others among the fathers, Hobbs and his followers aſſert the ſame among ourſelves. Leibnitz charges Sir Iſaac Newton and his followers with repreſenting God under the conditions of a man [a]. But with what juſtice would be hard to ſay. [a Mem. de Trev. An. 1713. p. 266.]

ANTHROPOMORPHOUS, ſomething that bears the figure or reſemblance of a man. Naturaliſts give inſtances of *Anthropomorphous* plants, *Anthropomorphous* minerals, &c. Theſe generally come under the claſs of what they call *luſus naturæ*, or monſters.

Anthropomorphous ſtones make a ſpecies of thoſe called figured ſtones. Dr. Sachs has publiſhed an account of an *Anthropomorphous* rape, found in 1628, in a garden at Weiden near Juliers; repreſenting a naked woman ſitting with her arms, and legs folded. The hair, eyes, noſe, lips, trunk, thorax, &c. were very exactly expreſſed. De Rapa Monſtroſa Anthropomorpha. Ext. Ap. Ephem. Acad. N. C. Dec. 1. An. 1. Obſ. 48.

Among the divers extraordinary figures which the Orchis preſents, botaniſts ſpeak of an Orchis *anthropomorpha*, or as others call it *Anthropophora*, called in Engliſh man-Orchis, whoſe flower repreſents the figure of a man. Columella calls it *ſemi-homo* [a]. Seger has given the figure of an *Anthropomorphous* fungus [b].—[a *Brown*, vulg. Err. l. 2. c. 6. p. 75. *Ray*, Synopſ. p. 237. b V. Ephem. Acad. N. C. Dec. 1. An. 2. Obſ. 55.]

ANTHROPOMORPHOUS is an appellation more peculiarly given to *mandragora*, or mandrake. *Du Cange*, Gloſſ. Græc. T. 1. p. 78. See MANDRAGORA, *Cycl.* and *Suppl.*

ANTHROPOPHAGI (*Cycl.*)—Hiſtory gives us divers inſtances of perſons driven by exceſs of hunger to eat their own relations. Joſephus ſpeaks of a mother at the time of the ſiege of Jeruſalem, who killed her ſon, baked him, eat one part, and hid the reſt. Others commence *Anthropophagi* out of revenge and hatred; there are many inſtances of ſoldiers who in the heat of battle have been carried to ſuch exceſs of rage, as to tear their enemies with their teeth.

The violence of love has ſometime produced the ſame effect as the exceſs of hatred. The Tapuii eat the bodies of their friends and neareſt relations to preſerve them from worms and putrefaction, thinking they do not only hereby afford them an honourable grave, but even a new life, a kind of revivification in themſelves. Artemiſia did ſomething like this, when ſhe ſwallowed the aſhes of her dead huſband Mauſolus.

Among the Braſilians, the moſt honourable burial people can give their friends is to eat them, in order to which the corps is cut in pieces, and dealt out in greater or leſſer doles to their ſeveral relations as they are nearer or more remotely a-kin. They alſo eat their enemies, but with this difference, that theſe laſt are eaten raw, whereas the fleſh of their relations is dreſſed before they eat it. Mem. de Trev. An. 1702. p. 91.

Among the Eſſedonian Scythians, when a man's father died, his neighbours brought him ſeveral beaſts, which they killed, minced, and mixed up with the fleſh of the deceaſed, and made a feaſt. *Herodot.* Hiſt. l. 4. Vid. Nouv. Rep. Lett. T. 52. p. 34.

Among the Maſſageti, when any perſon grew old, they killed him and eat his fleſh; but if the party died of ſickneſs, they buried him, eſteeming him unhappy. *Herodot.* l. 1. Nouv. Rep. Lett. T. 52. p. 22.

Idolatry and ſuperſtition has occaſioned the eating more men, than both love and hatred put together. There are few nations but have offered human victims to their deities; and it was an eſtabliſhed cuſtom to eat part of the ſacrifices they offered.

The Jagos and the ſubjects of the great Macoco, are ſaid to be *Anthropophagi*. This prince is very powerful, having ten kings for his vaſſals; his court is ſo numerous, that there are 200 men butchered every day to ſupply the table, part of this number are criminals, the reſt ſlaves furniſhed in the nature of tribute. The fleſh of theſe unhappy people is dreſſed much as beef or mutton among us; and in Monſol, the capital of the country, there is an open ſhambles where man's fleſh is bought and ſold. This cannot be from neceſſity, for there is no want of cattle and other proviſions. *Dapper* Deſcript. de l'Afrique p. 359, 486. Bibl. Univ. T. 2. p. 384.

The ſeveral nations of the Moxas, in ſouth America, go out to hunt men, much as we do foxes or boars. Their chief view is to make a good number of captives, which they carry home, feed and fatten them with care as we do cattle, and then kill them one after another to ſupply their families. Mem. de Trev. 1717. p. 22.

Herodotus aſſures us, that ſeveral nations in the Indies killed all their old people, and their ſick, to feed on their fleſh; he adds, that perſons in health were ſometimes accuſed of being ſick for an occaſion of devouring them. *Herodot.* Hiſt. l. 3. Nouv. Rep. Lett. T. 52. p. 33.

Herrera ſpeaks of huge markets in China, furniſhed wholly with human fleſh for the better ſort of people. Marcus Paulus ſpeaks of the like in his time in the kingdom of Concha, towards Quinſay and the iſland Zapangit; others of the great Java; Barboſa of the kingdom of Siam, and iſland of Sumatra; others of the iſlands of the gulf of Bengal; others of the country of the Samogitians, &c.

Hiſtorians and travellers would furniſh us other inſtances of *Anthropophagi*; but is there no exaggeration in their accounts? Has not the terrible name *Anthropophagi* been made uſe of to raiſe our wonder, and ſometimes our averſion.

The Venitians, we are told, made uſe of this ſtratagem to alienate and keep their people from a liking to the Turks, by giving out that they were *Anthropophagi*. Jour. des Scav. T. 65. p. 138.

Father Lobo ſaw a camp of 2000 *Anthropophagi*, three leagues from Jubo in Ethiopia, who he ſays neither ſpared age nor ſex, nor gave quarter to any body: yet ſeveral of them made a viſit to the miſſionary with great frankneſs. They admired nothing but the extreme whiteneſs of his ſkin; we are to ſuppoſe they had dined before they came. Mem. de Trev. 1728. p. 2013. ſeq.

The reverend father John Joſeph de Santa Thereſa aſſures us, that the Dutch having conquered ſome part of Braſil from the Portugueſe, endeavoured to convert the Braſilians to Calviniſm, and to gain them the more eaſily, allowed them to eat as many Portugueſe as they pleaſed. Mem. de Trev. 1702. fev. p. 1705.

M. Petit has a learned diſſertation on the nature and manners of the *Anthropophagi*. De Natura et Moribus *Anthropophagorum*, Traject. ad Rhen. 1689. 4°. Extracts of it are given in Jour. des Scav. T. 17. p. 617. ſeq. Ouvr. des Scav. 1689. p. 195. ſeq. Act. Erud. Lipſ. 1689. p. 578. ſeq.

Among other things he diſputes whether or no the *Anthropophagi* act contrary to nature? The philoſophers, Diogenes, Chryſippus, and Zeno, followed by the whole body of ſtoics, held it a very reaſonable thing for men to eat each other, or even to eat themſelves if by any accident a part of the body ſhould come to be ſeparated from the reſt. According to Sextus Empiricus, the firſt laws were thoſe made to prevent men from eating each other, as had been done till that time. The Greek writers repreſent *Anthropophagy* as univerſal before Orpheus. To ſhew further, that *Anthropophagy* is not contrary to nature, a modern author urges, that cats, dogs, rabbits, and other animals, feed on each other. Pliny, after Ariſtotle, affirms, that ſwans eat each other; and the bees alſo eat their nymphæ, which are their young. The Dutch in Nova Zembla ſaw bears devour each other, and the like has been obſerved in the fiſh kind: the Tiburones, according to Ovid, are caught with a hook bated with their own fleſh. Leonardus Floroventius having fed a hog with hog's fleſh, and a dog with dog's fleſh, found a repugnancy in nature to ſuch food; the former loſt all its briſtles; the latter its hair; and the whole body broke out in blotches. It is known that the origin of the venereal diſeaſe is uſually attributed to the eating of human fleſh.

It may be aſked, whether the uſe which is made of certain parts of the human body in phyſic come under the denomination of *Anthropophagy?* How often have tombs been violated on this occaſion? To ſay nothing of mummies and the like. Pliny aſſures us, that in his time the phyſician ordered their epileptic patients to apply their lips to the wounds of gladiators, and ſwallow the blood as it ſtreamed from them. Jour. des Scav. T. 17. p. 621.

Some carry their reſpect for dead bodies a great length. M. Petit does not think it lawful for anatomiſts to diſſect human bodies, in order to learn their ſtructure, except thoſe of condemned criminals, and ſuch as are denied the rites of burial. The Arabs went farther; notwithſtanding all their curioſity and deſire to be acquainted with the human ſtructure, they could never be induced to make one diſſection; but were contented to borrow all their knowledge of this kind from the Greek phyſicians.

Some maintain it impoſſible, whatever precaution is uſed, to prevent the ingreſs of the parts of dead bodies with our food and drink. Add, that if we do not feed on our own ſpecies, we feed on plants and animals, which derive a great part of

their nutriment from us. Whence the impoſſibility of the reſurrection of the ſame body has been inferred. See RESURRECTION, *Cycl.*

ANTHROPOPHAGIA (*Cycl.*)—This is pretended by ſome to be the effect of a peculiar kind of diſeaſe which they call παμφαγια, and which leads people affected with it to eat every thing alike. Some chuſe only to conſider it as a ſpecies of pica.

The annals of Milan furniſh an extraordinary inſtance of *Anthropophagy*. A Milaneſe woman named Elizabeth, from a depraved appetite, like what women with child, and thoſe whoſe menſes are obſtructed frequently experience, had an invincible inclination to human fleſh, of which ſhe made proviſion by enticing children into her houſe, where ſhe killed and ſalted them; a diſcovery of which having been made, ſhe was broke on the wheel and burnt in 1519. Jour. des Scav. T. 44. p. 190. ſeq.

Authors have been divided as to the occaſion of the *Anthropophagia* charged on the primitive Chriſtians; the generality attribute its origin to what the Heathens had heard of the euchariſt and the communion, tho' M. Daillé and others after him are not ſatisfied with this conjecture. Wormius advances another reaſon; the Chriſtians it is known aſſembled in the catacombs, and about the tombs of the martyrs, where they made profeſſion of deſiring earneſtly the baptiſm of blood, an expreſſion by which they underſtood martyrdom; the Heathens miſtook the phraſe, and imagined that the Chriſtians being initiated by water baptiſm, had afterwards baptiſms of blood to confirm them in the faith. He adds, that the child covered with flower, *puer farre contectus*, who was ſtabbed by the perſon initiated, was no other than the euchariſt, or the body of Jeſus Chriſt, concealed under the ſubſtance of bread. Vid. Ouvr. des Scav. 1696. p. 376.

ANTHROPOSCOPIA, the art of judging or diſcovering a man's character, diſpoſition, paſſions, and inclinations, from the lineaments of his body.

In which ſenſe, *Anthropoſcopia* ſeems of ſomewhat greater extent than phyſiognomy, or metopoſcopy.

Otto has publiſhed an *Anthropoſcopia, ſive judicium hominis de homine ex lineamentis externis*. Regiom. 1647. 4°.

ANTHROPOSOPHIA, the ſcience of the nature of man, and his ſtructure and compoſition, both internal and external. *Charlt.* Œcon. Anim. Exerc. 3. §. 10.

In this ſenſe, *Anthropoſophia* amounts to much the ſame with the medical phyſiology or anatomy.

The word is uſed by Charleton, but with no great propriety; ſince Sophia or wiſdom imports the ſcience of uſing means to obtain an end, which is foreign to Charleton's intention. *Burggr.* Lex. Med. T. 1. p. 867.

ANTHROPOTHYSIA, Ανθρωποθυσια, in antient writers, denotes the offering of human victims. V. *Suic.* Theſ. Eccleſ. T. 1. p. 347. in voc. Ανθρωποθυτεω. *Fabric.* Bibl. Antiq. c. 11. n. 3.

The *Anthropothyſia*, whatever horror the idea of it may now excite, was a frequent practice among the antients. Some have imagined that the ſacrifice of Abraham was the firſt inſtance. Many reaſonings and diſquiſitions have been founded on this ſuppoſition; by which the ſeverity of Abraham's trial is thought by ſome to have been ſomewhat exaggerated. Human ſacrifices were in uſe among the Gentiles before that time; practiſed by kings as well as by private perſons; nay by entire nations, as the Egyptians, Phœnicians, Canaanites, &c. V. *Phil.* de Abraham. p. 375. *Marſh.* Can. Chron. Ægypt. Sect. 5. p. 77. *Budd.* Hiſt. Eccleſ. Vet. Teſt. Period. 1. Sect. 3. p. 280. ſeq.

ANTHUMON, in the materia medica of the antients, a name given to the epithymum, or dodder growing upon thyme. See the article EPITHYMUM.

ANTHUS, in zoology, a name by which Aldrovand and ſome other authors have called that ſpecies of the Œnanthe known in England by the name of the *Whin-chatt*. *Aldrovand.* de Avibus. See the article WHIN-CHATT.

ANTHYPOMOSIA, Ανθυπωμοσια, in antient writers, an oath taken by a proſecutor or accuſer, declaring that the abſence of the party accuſed is not for any juſt cauſe, and therefore demanding that judgment may no longer be delayed on that account. *Suid.* Lex. in voc.

ANTHYPOPHORA, Ανθυποφορα, in rhetoric, a figure whereby we covertly obviate a reaſon or objection. *Faber*, Theſ. p. 185. *Heder.* Schul. Lex. p. 262.

In this ſenſe *Anthypophora* ſtands oppoſed to ὑποφορα, *hypophora*, e. gr. If the *hypophora* be, grammar is very difficult to obtain; the *Anthypophora* may be, grammar is indeed a little difficult to attain, but then its uſe is infinite. See HYPOPHORA.

ANTIBARBAROUS, a title given to ſeveral works levelled againſt the uſe of barbarous terms and phraſes, chiefly in the Latin tongue.

Eraſmus, Nizolius, and Cellarius have publiſhed *Antibarbara*. Noltenius has given us a Lexicon *Anti-barbarum*, conſiſting of obſervations made by the grammarians of late ages in relation to the purity and corruption of Latin words. Sixt. Amama has given an *Antibarbarus biblicus*, wherein he pretends to have diſcovered ſeven ſources of the barbariſms which have got footing of late ages in the bible. *Helmſt.* 1730. 8°.

Peter du Moulin uſed the title *Antibarbarus* for a book againſt the uſe of an unknown tongue in divine ſervice.

ANTIBIBLOS Αντιβιβλος, in the civil law, an inſtrument or ſignature whereby the defendant owns he has received the libel or a copy of it, and notes the day whereon he received it. This is uſually done on the back of the libel. *Du Cange*, Gloſſ. Gr. T. 1. p. 83.

ANTICADMIA, denotes a ſpecies of mineral *Cadmia*, ſometimes alſo called *Pſeudo-Cadmia*. Vid. *Caſt.* Lex. Med. p. 56.

It takes the denomination *Anticadmia*, not as being oppoſite in quality to the *Cadmia*, but becauſe it is uſed as a ſubſtitute to it. Id. ibid.

ANTICATARRHAL, an epithet given to things which are levelled againſt catarrhs. *Caſt.* Lex. Med. in voc.

In this ſenſe, we meet with *Anticatarrhal* medicines, *Anticatarrhal* preſcriptions, &c. *Lentil.* Miſc. Medic. Pract. P. 2. p. 503.

ANTICATEGORIA, Αντικαλλιγορια, in oratory, denotes a recrimination or mutual accuſation [a]; where the two parties charge each other with the ſame crime [b].—[a *Quinct.* Inſt. l. 3. c. 8. [b] *Calv.* Lex. Jur. p. 73.]

Apollodorus conſiders the *Anticategoria* as two ſeveral cauſes or actions. *Quinct.* l. 7. c. 2.

ANTICAUSOTICS, among phyſicians, denote medicines againſt burning fevers.

In this ſenſe Juncken has given the deſcription of an *anticauſotic* ſyrup. *Junck.* Corp. Pharm. P. 2. p. 493.

ANTICNEMION, in anatomy, denotes the ſhin; or the fore prominent part of the *tibia*.

This is otherwiſe called by the Greeks Ακανθα, by the Latins *prima tibia*, or *anterior tibia*, and ſtands oppoſed to the *ſura* or calf of the leg, ſometimes called *ocrea*. *Gorr.* Def. Med. p. 39. *Caſt.* Lex. Med. p. 56.

ANTIDÆMONICI, in eccleſiaſtical hiſtory, a ſect who denied the exiſtence of devils, or evil ſpirits; alſo all ſpectres, incantations, witchcrafts, &c. *Prateol.* Elench. Hæret. l. 1. n. 46.

ANTICHRIST (*Cycl.*)—We have demonſtrations, diſputations, pro and con, and proofs in great order and number, both that the pope is, and that he is not *Antichriſt*.

F. Calmet is very large in deſcribing the father and mother of *Antichriſt*, his tribe and pedigree, his wars and conqueſts, his atchievements againſt Gog, Magog, &c.

Some place his capital at Conſtantinople, others at Jeruſalem, others at Moſcow, and ſome few at London, but the generality at Rome, though theſe laſt are divided. Grotius and ſome others ſuppoſe Rome Pagan to have been the ſeat of *Antichriſt*. Moſt of the Lutheran and reformed doctors contend earneſtly for Rome Chriſtian under the papal hierarchy.

M. Le Clerc holds that the rebel Jews and their leader Simon, whoſe hiſtory is given by Joſephus, are to be reputed as the true *Antichriſt*. Lightfoot and Vanderhart rather apply this character to the Jewiſh Sanhedrim. Hippolitus and others held that the devil himſelf was the true *Antichriſt*, that he was to be incarnate, and make his appearance in human ſhape before the conſummation of things. Others among the antients held that *Antichriſt* was to be born of a virgin, by ſome prolific power imparted to her by the devil. A modern writer of the female ſex, whom many hold for a ſaint, has improved on this ſentiment, maintaining that *Antichriſt* is to be begotten by the devil on the body of a witch by means of the ſemen of a man caught in the commiſſion of a certain crime, and conveyed, &c. *Bayle*, Dict. Crit. T. 1. p. 655. note (Q) voc. *Bourignon*.

But the majority of voices has fallen on Nero.

How endleſs are conjectures? Some of the Jews we are told actually took Cromwell for the Chriſt, while ſome others have laboured to prove him *Antichriſt* himſelf. Pfaffius aſſures us he ſaw a folio book in the Bodleian library, written on purpoſe to demonſtrate this latter poſition. *Pfaff.* Introd. in Hiſt. Theol. Liter. Lib. 1. p. 106.

Hunnius and ſome others to ſecure *Antichriſt* to the pope, notwithſtanding that this latter ſeemed excluded by not being of the tribe of Dan, have broke in upon the unity of *Antichriſt*, and aſſert that there is to be both an Eaſtern and a weſtern *Antichriſt*.

ANTICHRISTIANISM, a ſtate or quality in perſons or principles, which denominates them antichriſtian, or oppoſite to the kingdom of Chriſt.

M. Jurieu takes the idea of the unity of the church to have been the ſource of *Antichriſtianiſm*. Had not mankind been infatuated with this, they would never have ſtood in ſuch awe of the anathema's of Rome. It is on this the popes erected their monarchical power. Vid. Ouvr. des Scav. An. 1688. p. 493.

ANTICHRISTIANS properly denote the followers or worſhipers of *Antichriſt*. See ANTICHRIST.

ANTICHRISTIANS are more particularly underſtood of thoſe who ſet up or believe a falſe Chriſt, or Meſſiah. *Prateol.* Elench. Hæret. l. 1. n. 46.

In this ſenſe, many Jews and others may be denominated *Antichriſtians*. Bucer himſelf is by ſome ranked in the number, it being pretended that at his death he declared that Chriſt

was not the true Meſſiah promiſed to the Jews; but that another was ſtill to be expected. *Prateol.* loc. cit.

ANTICHTHON, Ἀντίχθων, in its primitive or aſtronomic ſenſe, denotes a kind of globe or earth reſembling ours, and like it moving round the ſun, but inviſible to us, becauſe on the oppoſite ſide of the ſun, that luminary being ſtill exactly interpoſed between this other earth and ours. *Thomaſius*, ubi infra. Nouv. Rep. Lett. T. 33. p. 422.

In this ſenſe it is, that Pythagoras and his diſciples aſſerted an *Antichthon*; of which we have the teſtimonies of Ariſtotle [a], Plutarch [b], &c.—[a De Cœlo. l. 2. c. 13. It. Metaph. l. 1. c. 5. b De Placit. Philoſ. l. 3. c. 11.]

There is a great variety of ſentiments concerning the Pythagorean *Antichthon*; ſome taking their account in a literal, others in a figurative ſenſe; ſome find a Heathen, others a Jewiſh, and others even a Chriſtian meaning in it.

By reaſon of the perfection of the number ten, they concluded there muſt be juſt ſo many ſpheres; and as our ſenſes only diſcover nine, *viz.* the ſeven planets, the ſphere of the fixed ſtars, and our earth, they imagined a tenth oppoſite to ours. V. *Thomaſ.* ubi infra. §. 16.

Others will not allow Pythagoras to have invented the *Antichthon*, but aſſert him to have borrowed the notion from the antient Jews, who inſtead of the preſent earth, ἀντὶ χθονος ταυτης, expected ἀντιχθονα. or another earth. V. Iſai. c. lxv. v. 17. Pet. c. iii. v. 10.

In reality it appears from a paſſage in Plato, that the Greeks conſidered their *Antichthon*, as ſeated in the heavens, and vaſtly more excellent than our earth. In Phæd. p. 398. V. Obſerv. Halens. T. 8. Obſ. 3. §. 11.

Some of the fathers who endeavoured to accommodate the doctrines of the Heathen philoſophers to thoſe of chriſtianity, aſſert that this Pythagorean earth is no other than the heavens of the righteous. V. *Clem. Alex.* Strom. l. 5. in fine.

Thomaſius has a diſſertation expreſs on the Pythagorean *Antichthon*. Ext. in Obſerv. Halens. T. 4. Obſ. 19.

ANTICIPATION, (*Cycl.*) in rhetoric, a figure otherwiſe called *Prolepſis*. See PROLEPSIS, *Cycl.*

ANTICIPATION is alſo uſed, in a logical ſenſe, for a preſumption, prejudice, or præconceived opinion. *Shafteſb.* Charact. T. 2. p. 120. 307. & 412.

This is alſo denominated præconception, præſenſation, or inſtinct.

ANTICIPATION, in the Epicurean philoſophy, denotes the firſt idea, or definition of a thing, without which we can neither name, think, doubt, or even enquire concerning it. *Gaſſend.* Synt. Philoſ. Epicur. P. 1. c. 2. p. 18.

This is otherwiſe denominated *prenotion*. See the article PRENOTION, *Cycl.*

Anticipation, in this ſenſe, makes the ſecond of Epicurus's criterions of truth.

ANTICIPATION is alſo uſed by lord Shafteſbury, in ſpeaking of painting, to denote the expreſſion of ſome future action, reſolution, or the like. *Shafteſb.* Charact. T. 3. p. 355. ſeq.

ANTICIPATION, in a medicinal ſenſe, is applied to diſeaſes, wherein part of the ſymptoms which regularly belong to ſome future period, appear in the beginning; or, the word may be underſtood of thoſe diſeaſes, which having their acceſſes and remiſſions at ſtated hours, gain in point of time, and finiſh their period ſooner than ordinary. V. *Gal.* de Criſ. l. 1. c. 3.

In this ſenſe, *Anticipation*, or *anticipated* diſeaſes, by the Greeks called προληπτικοι, ſtand oppoſed to hyſteretic, ὑστερητικοι, which come after the time. Vid. *Caſt.* Lex. Med. p. 56. in voc. *Anticipans.*

ANTICK, in ſculpture and painting, denotes a fantaſtical compoſure of figures of different natures, ſexes, &c. As men, beaſts, birds, flowers, fiſhes, and even things merely imaginary, or which have no exiſtence in the nature of things. Build. Dict. T. 1. in voc.

Antick amounts to much the ſame with what the Italians call *Groteſca*, and the French *Groteſque*.

ANTIDICOMARIANITES (*Cycl.*)—St. Epiphanius refutes the *Antidicomarianites* by this argument, *viz.* That the lioneſs never brings forth more than one; for that ſhe voids the uterus itſelf at her firſt birth, to make any future one impoſſible. Suppoſing the fact true, what has the lioneſs to do with Joſeph's wife? Chriſt was called the lion of the tribe of Judah; conſequently his mother was a lioneſs! The reaſoning is admirable! *Budd.* Iſag. ad Theol. l. 2. c. 3. p. 561.

Sutor has publiſhed an expreſs refutation of the *Antidicomarianites*. Apologet. in *Antidicomarianitas*. B. Virginis Laudibus detrahentes. Par. 1526. 4°.

ANTIDORON, in eccleſiaſtical writers, a name given by the Greeks to the conſecrated bread, out of which the middle part marked with the croſs, wherein the conſecration reſides, being taken away by the prieſt, the remainder is diſtributed, after maſs, to the poor. V. *Goar.* ad Euchol. Græc. p. 154. ſeq.

On the ſides of the *Antidoron* are impreſſed the words *Jeſus Chriſtus vicit*. *Schmid.* Lex. Eccleſ. p. 51.

The word is Greek, Ἀντιδωρον, formed from δωρον, *donum*, a gift, as being given away *loco muneris*, or in charity. *Magri.* Vocab. Eccleſ. p. 18.

The *Antidoron* is alſo called *panis præſanctificatus*. *Suic.* Theſ. T. 1. p. 373. in voc. Ἀντιδωρον.

Some ſuppoſe the *Antidoron* to be diſtributed in lieu of the ſacrament, to ſuch as were prevented from attending in perſon at the celebration; and thence derive the origin of the word, the euchariſt being denominated *doron* gift, by way of eminence. Trev. Dict. Univ. T. 1. p. 442. ſeq.

ANTIDOSIS, Ἀντιδωσις, in antiquity, denotes an exchange of eſtates, practiſed by the Greeks on certain occaſions with peculiar ceremonies, and firſt inſtituted by Solon.

When a perſon was nominated to an office, the expence of which he was not able to ſupport, he had recourſe to the *Antidoſis*; that is, he was to ſeek ſome other citizen of better ſubſtance than himſelf, who was free from this, and other offices; in which caſe the former was excuſed. In caſe the perſon thus ſubſtituted denied himſelf to be the richeſt, they were to exchange eſtates, after this manner, the doors of their houſes were cloſe ſhut up and ſealed, that nothing might be conveyed away, then both took an oath to make a faithful diſcovery of all their effects, except what lay in the ſilver mines; which by the laws was excuſed from all impoſts; accordingly, within three days, a full diſcovery and exchange of eſtates was made. *Potter*, Archæol. l. 1. c. 15.

ANTIDOTARY is uſed by ſome writers for what we more uſually call a diſpenſatory. *Caſt.* Lex. Med. in voc.

We have *Antidotaries* extant of ſeveral authors, as thoſe of Nicolaus, Meſue, Myrepſus, Rhaſis, &c.

ANTIDOTE (*Cycl.*)—The indian phyſic conſiſts much in the uſe of *Antidotes*, viz. the root mungo, and the viper-ſtone; both held ſovereign againſt the bite of the *Cobras de Cabelo*, and other venomous creatures. *Kempf.* Amæn. Exot. Faſc. 3. Obſ. 10.

ANTIDOTE is alſo uſed, in a more general ſenſe, for any compound medicine. *Friend*, Hiſt. of Phyſ. P. 2. p. 41.

In which ſenſe, Peter Damian ſpeaks of a perſon who in his whole life never took any *Antidote*. Epiſt. 30. l. 6. *Du Cange*, in voc.

ANTIDOTE is alſo uſed in a leſs proper ſenſe for any remedy againſt any diſeaſe, chiefly if it be inveterate, and ariſe from ſome ulcer or abſceſs. *Gal.* de Antidot. l. 2. c. 6.

ANTIDOTE is alſo uſed for a particular form of medicines, otherwiſe called *opiates*, or more properly *confections*. See CONFECTION, *Cycl.*

ANTIDOTE is alſo myſtically applied to the philoſopher's ſtone. *Caſtel.* Lex. Med. in voc.

ANTIGRAPHE, Ἀντιγραφη, in antiquity, denotes a law ſuit about kindred, whereby a perſon claimed relation to ſuch or ſuch a family. *Potter*, Archæol. l. 1. c. 24.

The *Antigraphe* appears to have been the ſame with the Παραγραφη. See PARACATABOLE.

ANTIGRAPHUS, Ἀντιγραφευς, in antiquity, an officer of Athens who kept a counterpart of the Apodecti, or chief treaſurers accounts to prevent miſtakes, and keep them from being falſified.

This magiſtrate was particularly denominated Ἀντιγραφευς της Διοικησεως, ſometimes alſo, Ἀντιγραφευς της βυλης. *Potter*, Archæol. l. 1. c. 14. *Suid.* Lex. p. 222.

ANTIGRAPHUS is alſo uſed, in middle age writers, for a ſecretary or chancellor. He is thus called, according to the old gloſſariſts, on account of his writing anſwers to the letters ſent to his maſter; *quod reſcribit literis miſſis ad dominum ſuum.* The *Antigraphus* is ſometimes alſo called *archigraphus*; and his dignity *Antigraphia*, or *archigraphia*. *Du Cange*, Gloſſ. Græc. T. 1. p. 83.

ANTIGRAPHUS is alſo uſed in Iſidorus for one of the notes of ſentences, which is placed with a dot to denote a diverſity of ſenſe in tranſlations. *Iſid.* Orig. l. 1. c. 20. Ephem. Diſſ. de Vet. Crit. σημειως. c. 2. §. 9.

ANTIGRAPHUS is alſo applied in eccleſiaſtical writers to an abbreviator of the papal letters. See ABBREVIATOR.

In which ſenſe the word is uſed by pope Gregory the great in his regiſter.

Of late days the office of *Antigraphus* conſiſts in making minutes of bulls from the petitions agreed to by his holineſs, and renewing the bulls after engroſſing. *Magri.* Vocab. Eccleſ. p. 18.

ANTIHECTICUM *Poterii* (*Cycl.*) is alſo called *antimonium diaphoreticum joviale*.

There are divers methods of preparing it, given by Wedelius, Etmuller, &c. V. *Juncken*, Lex. Pharm. in voc.

A learned author ſpeaks of it as a remedy fatal to conſumptive perſons. What ſhall we ſay? A medicine has been in common uſe upwards of an hundred years, yet phyſicians cannot agree whether it does good or harm. *Junck.* Conſp. Therap. Tab. 16. n. 57.

ANTILEXIS, in antiquity, denotes a new trial granted in the Athenian judicatories, where judgement had before paſſed againſt a party for non-appearance. *Potter*, Archæol. l. 1. c. 21.

ANTILUTHERANS, a ſect or party among the antient reformers, who maintained opinions, chiefly in relation to the euchariſt, different from thoſe of Luther. *Prateol.* Elench. Hæret. l. 1. n. 45.

Such were Caroloſtadius and his followers, called alſo *Sacramentarians*, and thoſe of Zuinglius denominated *Zuinglians*.

The ſect of *Antilutherans*, at firſt confined within narrow bounds, in a few years time ſubdivided into ſix or ſeven inferior ſects, and ere long into an infinite number more variouſly denominated. *V. Prateol.* loc. cit.

ANTILYSSUS *Pulvis*, in medicine, is compoſed of equal parts of the lichen cinereus terreſtris & piper niger. It is reckoned uſeful in preventing the rabies canina. Vid. Phil. Tranſ. N°. 448. Sect. 5.

ANTIMENSIUM, (*Cycl.*) in the Greek church, anſwers to the *altare portabile*, or portable altar in the Latin church. They are both only of late invention, tho' Habertus [a] would have them as old as St. Baſil, and to be indicated by the words, ἰδίαι τραπέζαι. But Durant and Bona do not pretend to find them in any author before the time of Bede and Charlemaign [b].—[[a] *Habert.* Archierat. p. 664. [b] *Bingh.* Orig. Eccleſ. l. 8. c. 6. §. 21.]

ANTIMENSIA is alſo applied to other tables, uſed in offices of religion, beſides thoſe whereon the euchariſt is adminiſtered: ſuch *e. gr.* are thoſe whereon the hoſt is expoſed, *&c.* *Du Cange*, Gloſſ. Gr. T. 1. p. 85. ſeq in voc. Ἀντιμινσια.

The origin of the *Antimenſia* is deſcribed by Meurſius, when the biſhop had conſecrated a church, the cloth which had been ſpread on the ground, and over the communion table, was torn in pieces and diſtributed among the prieſts, who carried each a fragment away, to ſerve to cover the tables in their churches and chapels. Not that it was neceſſary that ſuch cloths ſhould be laid on all tables; but only on thoſe which either were not conſecrated, or at leaſt whoſe conſecration was doubted of. *Suic.* Theſ. Eccleſ. T. 1. p. 377. in voc. Ἀντιμινσιος.

ANTIMENSIUS, an antient officer in the Greek church, whoſe buſineſs was to introduce and place the communicants at the euchariſt. *Suic.* Theſ. Eccleſ. T. 1. p. 377. in voc. Ἀντιμινσιος.

Some have imagined that he had the care of the *Antimenſia*. But this rather belonged to the office of great *Scevophylax*.

He is otherwiſe called Ἀρχων των Ἀντιμινσιων, chief of the *Antimenſii*. V. *Du Cange*, Gloſſ. Gr. T. 1. p. 85.

ANTIMERIA, in grammar, a figure whereby one part of ſpeech is uſed for another. e. gr. *velle ſuum cuique eſt*, for, *voluntas ſua cuique eſt*; alſo, *populus late rex*, for *populus late regnans*.

ANTIMERIA, in a more reſtrained ſenſe, is a figure whereby the noun is repeated inſtead of the pronoun. V. *Ludovic.* Hebraiſm, p. 68.

The *Antimeria* is frequent in the Hebrew, and is ſometimes retained in our verſion of the old teſtament accordingly.—e. gr. *Hear my voice, ye wives of Lamech*, for my wives. Gen. c. iv. v. 23.

ANTIMETABOLE, Ἀντιμεταβολὴ, in rhetoric, a figure which ſets two things in oppoſition to each other. See *Voſſ.* Rhet. lib. 5. p. 404.

The word is Greek, compounded of ἄντι, againſt, and μεταβολὴ from μεταβάλλω, I ſhift or transfer; *i. e.* a ſhifting, or ſetting two things over-againſt each other.

This figure is twice examplified in an apophthegm of Muſonius; which, on account of its excellence, is called *aureum monitum*, the golden maxim or precept.

Ἂν τὶ πρᾶξης καλὸν μετὰ πόνε, ὁ μὲν πόνος ὀιχεῖαι, τὸ δὲ καλὸν μένει. Ἂν τὶ ποιήσης αισχρὸν μετὰ ἡδονῆς, τὸ μὲν ἡδὺ ὀιχεῖαι, τὸ δὲ αἰσχρὸν μένει.

In Engliſh thus,

Allowing the performance of an honourable action to be attended with labour; the labour is ſoon over, but the honour immortal: whereas, ſhould even pleaſure wait on the commiſſion of what is diſhonourable; the pleaſure is ſoon gone, but the diſhonour eternal.

ANTIMISIUM, Ἀντιμισιον, in antiquity, a table placed before the Roman tribunal, or judgment ſeat. *Suid.* Lex. in voc.

What relation this has to the *Antimenſia* in the Greek church does not appear. Some writers confound them together as the ſame thing. V. *Suic.* in voc. Ἀντιμινσιον.

ANTIMONARCHIST, a perſon who maintains *antimonarchical* principles.

Antimonarchiſts are otherwiſe denominated *monarchomachi*, and ſtand oppoſed to *antimonarchomachi*. V. *Mackenz.* Scot. Writ. T. 3. p. 167. *Wood*, Faſt. Oxon. T. 1. p. 263, & 267. Obſerv. Halens. T. 1. Obſerv. 1. §. 7. Act. Erud. Lipſ. An. 1716. p. 439.

Buchanan, Milton, Hottoman, Languet, Ludlow, Sydney, and others, are celebrated *Antimonarchiſts*.

ANTIMONARCHOMACHI, *Antimonarchomachiſts*, is uſed by ſome political writers to denote maintainers of monarchical or abſolute power veſted by divine right in the perſons of princes.

In which ſenſe, *Antimonarchomachi* ſtand oppoſed to *monarchomachi*.

King James the firſt, Salmaſius, Peter du Moulin, biſhop Bramhall, Albericus Gentilis, Ziegler, William and George Barclays, Bochart, *&c.* have diſtinguiſhed themſelves in the claſs of *Antimonarchomachiſts* [a]. Acker has treated profeſſedly of the *monarchomachiſts* and *Antimonarchomachiſts* [b].—[[a] Act. Erud. Lipſ. 1716. p. 440. [b] Comm. de Monarch. & *Antimonarchomachis*, Rudolſt. 1716. 4°. An extract of which is given in Act. Erud. Lipſ. loc. cit.]

ANTIMONIALS (*Cycl.*)—Beſides thoſe numerous preparations which take their denominations from antimony, the chief of which are enumerated under that article in the Cyclopædia, there are ſeveral other *Antimonial* medicines: Such are the crocus metallorum, Poterius's cordial, the tinctura metallorum, mercurius vitæ, or powder of algarot, bezoardicum minerale, ſulphur metallorum, the Carthuſian powder, or kermes mineral, *&c.* See CROCUS, TINCTURE, ALGAROT, &c.

Lemery deſcribes ſeveral other preparations of this mineral. *Lem.* Traitè de l'Antimoine paſſim.

ANTIMONIATED, ſomething tinged with the qualities, or reſembling the appearances, of antimony.

Dr. Woodward ſpeaks of a kind of ſtriated, or *antimoniated*, lead ore. Nat. Hiſt. Engl. Foſſ. T. 1. p. 207.

ANTIMONY. See the article STIBIUM.

Glaſs of ANTIMONY. See GLASS.

Butter of ANTIMONY. See BUTTER *of Antimony*.

ANTINOEIA, in antiquity, annual ſacrifices, and quinquennial games in memory of Antinous the Bithynian.

They were inſtituted at the command of Adrian the Roman emperor, at Mantinea in Arcadia, where Antinous was honoured with a temple and divine worſhip. *Potter*, Archæol. l. 2. c. 20.

ANTINOMIANS, in church hiſtory, denote a religious ſect, who maintain the law of no uſe or obligation under the goſpel diſpenſation.

In this ſenſe, the *Antinomians* ſtand contradiſtinguiſhed from the *Neonomians*. *Budd.* Iſag. ad Theol. l. 2. c. 7. p. 1294.

The *Antinomians* took their origin from John Agricola about the year 1335, who taught that the law is no ways neceſſary under the goſpel; that good works do not promote our ſalvation, nor ill ones hinder it; that repentance is not to be preached from the decalogue, but only from the goſpel. *Budd.* Iſag. ad Theol. l. 2. c. 7. p. 1195.

Luther, Rutherford, Schluſſelburg, Sedgwick, Gataker, Witſius, Bull, *&c.* have written refutations [a]; Criſp, Richardſon, Saltmarſh, Williams, *&c.* defences of the *Antinomians* [b]. Wigandus a compariſon between antient and modern *Antinomians* [c].—[[a] *Pfaff.* Introd. Hiſt. Liter. Theol. l. 3. §. 8. [b] *Budd.* lib. cit. p. 1414. [c] *Pfaff.* loc. cit.]

ANTIOCHENUM, in botany, a name given by Lobel and ſome others to that ſpecies of bind-weed, whoſe root is the ſcammony uſed in medicine. See the article CONVOLVULUS.

ANTIOCHIAN *Sect*, or *academy*, a name given to the fifth academy, or branch of academics.

It took the denomination from its being founded by Antiochus, a philoſopher cotemporary with Cicero. V. *Voſſ.* de Sect. Philoſ. c. 15. §. 3.

The *Antiochian* academy ſucceeded the Philonian.—As to point of doctrine, the philoſophers of this ſect appear to have reſtored that of the antient academy, except that in the article of the criterion of truth, Antiochus was really a Stoic, and only nominally an academic. *Thomaſ.* Introd. Phil. Ant. c. 1. §. 29.

ANTIOCHIAN *Epocha*, a method of computing time from the proclamation of liberty granted the city of Antioch about the time of the battle of Pharſalia. *Strauch.* Brev. Chronol. l. 4. c. 34.

This is called particularly in antient writers, χρηματισμος της Ἀντιοχειας; for what reaſon does not appear.

It is diſputed among chronologers whether the *Antiochian* epocha commences in the ſpring or the autumn before the battle of Pharſalia. The chronicle of Alexandria fixes it to the former; Scaliger and Calviſius to the latter. In the firſt year of this epocha began the firſt indiction; ſo that the *Antiochian* years being divided by fifteen, the remainder ſhews the true character of the cycle of indiction.

ANTIPAPINIANUS, Ἀντιπαπινιανος, a title given by the Greek lawyers to the fourth part of the digeſt, including four books, beginning with the title de pignoribus. *Cujac.* Obſerv. l. 7. c. 32. *Du Cange*, Gloſſ. Gr. T. 1. p. 87.

This is otherwiſe called *Antipapianus*, Ἀντιπαπιανος.

The *Antipapinian* was thus denominated, not as being intended in oppoſition to Papinian, but becauſe it was to ſerve in the ſchools of the civil law in lieu of the books of that lawyer, purſuant to an edict of the emperor Juſtinian; ſo that the *Antipapinian* was ſo far from being a refutation of Papinian, that it was only a ſubſtitute for his writings, which were not ſo proper for the uſe of the younger ſort of ſtudents. *Baill.* Entret. 4. p. 39.

ANTIPARASTASIS, Ἀντιπαραστασις, in rhetoric, a reply made to an opponent, by allowing part of his argument, and denying the reſt, *e. gr.* you may paint whatever you pleaſe, provided the public ſuffer no prejudice from it; but you muſt not, if it does. Vid. *Voſſ.* Rhet. l. 1. p. 145. See alſo CONCESSION, *Cycl.*

ANTIPASCHA, in eccleſiaſtical writers, denotes the firſt ſunday after Eaſter. *Meurs.* Gloſſ. p. 43. *Du Cange*, Gloſſ. Græc. T. 1. p. 87. ſeq. *Suic.* Theſ. Eccleſ. T. 1. p. 380.

This is otherwiſe called *dominica in albis*.

ANTIPATHES, among the antient naturaliſts, was uſed to expreſs any ſtone or gem, which according to their ſuperſtitious ideas of the virtues of gems at that time was ſuppoſed to have a power of reſiſting the force of inchantments. Pliny mentions a very valuable gem, called by the antients *Antipathes* for this very reaſon; and the black coral had the ſame name, on the ſame occaſion. *Plin.* Hiſt. Nat. l. 37. c. 10.

ANTIPATHY (*Cycl.*)—A large part of the inſtances of *Antipathies* are perhaps no better than fables, and a ſevere examination would leave them on no other footing than vulgar errors[a]. Thus the *Antipathy* between the toad and the ſpider, and that they poiſonouſly deſtroy each other, is famous; and ſolemn ſtories have been written of their combats, wherein the victory commonly falls to the lot of the ſpider. But of what toads or ſpiders this holds good, may be hard to ſhew. The Phalangium and deadly ſpiders are different from thoſe we generally find in England: but for theſe laſt, Dr. Brown aſſures us, that having incloſed a toad with ſeveral ſpiders in a glaſs, the ſpiders were ſeen without any reſiſtance, ſitting on his head and paſſing over all parts of his body; till he could find an advantage, when he ſwallowed them down, and that to the number of ſeven in a few hours[b].—[a *Morhof.* Polyhiſt. T. 2. c. 8. n. 10. b *Brown*, Vulg. Errors, l. 3. c. 27. p. 147. ſeq.]

Whether a lion be alſo afraid of a cock, as is related by many and believed by moſt, may be pretty eaſily imagined from what Camerarius relates, *viz.* That in the court of Bavaria, one of the lions leaping down into a neighbour's yard, eat up the cocks and hens. *Brown*, Vul. Err. l. 3. c. 27. p. 148. See the article SYMPATHY.

ANTIPATHY is ſometimes alſo uſed in a moral ſenſe to denote a conteſt between the mind and the body, or between reaſon and inclination. *Chauv.* Lex. Phil. p. 47.

ANTIPATHY is uſed in painting, for an oppoſition between the qualities of colours. *Du Piles*, Converſat. ſur la Connoiſ. de la Paint. p. 295.

This *Antipathy* is chiefly obſerved between colours, which endeavour, as it were, to predominate over each other, and which by their mixture deſtroy each other. *e. gr.* ultramarine and vermillion. This does not obtain in the clair obſcure; for tho' there be nothing more oppoſite to each other than black and white, as the one repreſents light, and the other darkneſs; yet they each preſerve themſelves in the mixture, and form together a grey which partakes of both.

ANTIPELARGIA, Ἀντιπελαργια, among the antients, a law whereby children are obliged to furniſh neceſſaries to their aged parents. *Calv.* Lex. Jur. p. 74.

The Ciconia, or ſtork, is a bird famous for the care it takes of its parents when grown old. V. *Suic.* Theſ. T. 1. p. 380. ſeq. in voc. Ἀντιπελαργωσις.

Hence, in ſome Latin writers, this is rendered *lex Ciconiaria*, or the ſtorks law. Paſſavant has publiſhed a diſſertation expreſs *de Antipelargia.* Baſil. 1672. 4°.

ANTIPERISTALTIC (*Cycl.*)—Phyſicians antient as well as modern have uſually had recourſe to the notion of an *Antiperiſtaltic* motion to account for the action of vomiting and the phænomena of the *miſerere mei*, or iliac paſſion. In behalf of the former M. Littre alledges that as the œſophagus, the ſtomach and inteſtines are but one and the ſame continued canal, every where lined with the ſame fleſhy fibres, and as it is allowed, that the inteſtines beſides their natural or periſtaltic motion (whereby being ſucceſſively contracted from above downwards, they expel their contents in this direction;) have alſo an *Antiperiſtaltic* or præternatural motion, whereby they contract from below upwards and thus reject their contents; it is highly probable that the other members of the ſame canal, *viz.* the ſtomach, and œſophagus are alſo ſometimes ſubject to the like *Antiperiſtaltic* motion; and return their contents to the mouth. V. Hiſt. Acad. Scienc. An. 1700. p. 37.

The cauſe of the *Antiperiſtaltic* motion is uſually aſſigned to be a ſtoppage of ſome of the inteſtines, but chiefly of the ilium. The mechaniſm whereby it is effected differs in nothing from that which produces the periſtaltic motion, except in the determination of the motion, which in iliac caſes prevents the fæces from proceeding on to the anus; ſo that the motion is periſtaltic from the ſtomach to the place of obſtruction; but when the fecal matters are arrived there, they give riſe to an *Antiperiſtaltic* motion by occaſioning a great influx of ſpirits into the fleſhy fibres adjoining; theſe being contracted, of courſe will compreſs, and propel the contents and chylous matters towards that ſide where there is the leaſt reſiſtance, which will be upwards, ſince an inſurmountable obſtacle is ſuppoſed downwards: conſequently they muſt riſe to the fibres next above, which being contracted in their turn, will raiſe them a ſtep further, till by degrees they have reached the pylorus, whoſe valve being forced, admits them into the cavity of the ſtoma ch, from whence they continue their aſcent to the mouth.

Some late ingenious authors ſeem to have over-turned the whole *Antiperiſtaltic* ſyſtem, and ſhewn this motion imaginary as well as un neceſſary for accounting for theſe diſorders. Meſſ. Chirac and Du Verney have endeavoured to prove this in reſ pect of vomiting, and M. Haguenot[a], and after him M. St. Andre[b], in the iliac paſſion.—[a Mem. Acad. Scienc. 1713. p. 472. ſeq. b Phil. Tranſ. N°. 351. p. 581.]

ANTIPHERNA, among the antient Greeks, denoted a kind of ſettlement made on a wife in caſe of ſurviving her huſband, as an equivalent for her dowry. *Potter*, Archeol. l. 4. c. 11. *Pitiſc.* Lex. Ant. in voc.

The word is Greek, Ἀντιφερνη, and was otherwiſe called ὑποθολον, ſometimes Ἀποδιμημα.

ANTIPHONALLY, in reſpect of church muſic, imports as much as alternately, or anthem wiſe.

The Greeks have a method of ſinging *Antiphonally*, *antiphonatim*, called by them παραλληλακιον, wherein two perſons ſing together and then are ſilent, and ſucceeded by two others, who ſing a while and then are ſilent, and ſo on. *Goar.* ad Euchol. p. 123. *Du Cange*, Gloſſ. Gr. T. 1. p. 89. *Schmid.* Lex. p. 54.

ANTIPHONARY, *Antiphonarium*, a book containing the antiphonæ, or anthems of the whole year. *Spelm.* Gloſſ. p. 33. *Du Cange*, Gloſſ. Lat. T. 1. p. 244. See ANTIPHONY.

This is otherwiſe called *reſponſonarium*, from the reſponſes therein contained. *Durand*, Ration. l. 6. c. 1. n. 24.

The author of the Roman *Antiphonary* was pope Gregory the great.

We alſo find mention of nocturnal and diurnal *Antiphonaries*, for the uſe of the daily and nightly offices; ſummer and winter *Antiphonaries*, alſo *Antiphonaries* for country churches, &c. *Du Cange*, loc. cit. *Lipen.* Bibl. Theol. T. 1. p. 64.

ANTIPHONY, *Antiphona*, (*Cycl.*) ſometimes denotes a ſpecies of pſalmody, wherein the congregation being divided into two parts, repeat the pſalms, verſe for verſe, alternately. *Iſid.* Orig. l. 6. c. 19. *Spelm.* Gloſſ. p. 33. *Bingh.* Orig. Eccleſ. T. 1. l. 14. c. 1. §. 10.

In this ſenſe, *Antiphony* ſtands contradiſtinguiſhed from *ſymphony*, where the whole congregation ſings together. See SYMPHONY, *Cycl.*

Antiphony differs from *reſponſorium*, in that in this latter the verſe is only ſpoke by one perſon, whereas in the former, the verſes are ſung by the two choirs alternately. Socrates calls it Ἀντιφωνον ὑμνωδιαν, the antiphonal hymnody, St. Ambroſe *reſponſoria*, or ſinging by reſponſals. *Du Cange*, Gloſſ. Græc. T. 1. p. 89.

The original of antiphonal ſinging in the weſtern churches is referred to the time of St. Ambroſe. That father is ſaid to have firſt introduced it into the church of Milan, in imitation of the cuſtom of the eaſtern church, where it appears to be of greater antiquity, tho' as to the time of its inſtitution, authors are not agreed; ſome dating it only from the reign of Conſtantius, while others pretend to find it in the time of Ignatius. V. *Bingh.* and *Spelm.* loc. cit.

ANTIPHONY is alſo uſed to denote the words given out at the beginning of the pſalm, to which both the choirs are to accommodate their ſinging. *Magr.* Vocab. Eccleſ. p. 18. ſeq. *Du Cange*, Gloſſ. Gr. T. 1. p. 89. *Rechenb.* Hiero. Lex. T. 1. p. 96.

ANTIPHONY, in a more modern ſenſe, denotes a kind of compoſition made of ſeveral verſes extracted out of different pſalms, adopted to expreſs the myſtery ſolemnized on the occaſion. *Magr. Du Cange*, & *Rechenb.* loc. cit.

ANTIPHONA *ad Introitum*, that antiently ſung in the introit of the maſs. *Du Cange*, Gloſſ. Gr. T. 1. p. 89.

ANTIPHONA *Invitatoria*, that repeated at the pſalm *venite exultemus*. *Schmid.* Lex. Eccleſ. p. 55.

ANTIPHONÆ *Majores*, thoſe ſeven uſed to be ſung in the time of Advent, at the magnificat, and during the ſeven days before Chriſtmas. *Schmid.* loc. cit.

ANTIPHONÆ *proceſſionales*, thoſe ſung at proceſſions.

ANTIPHONÆ *Rogationales*, thoſe rehearſed at rogations.

ANTIPHONY, in the antient muſic, differed from ſymphony. See the article SYMPHONY.

ANTIPHYSON, an appellation given by ſome antient writers to the load-ſtone. *Marcell.* Empir. de Medicam. c. 1.

The name imports as much as, *reflans*, or blowing back, or againſt; being taken from the operation of the magnet, whereby it repels iron, which was formerly ſuppoſed to be done by virtue of a blaſt, or breath emitted from it. V. Mem. Acad. Inſcrip. T. 6. p. 386. ſeq.

ANTIPOPE, a falſe or pretended pope; or one that is irregularly elected in oppoſition to another.

Church hiſtory is full of the elections, the intrigues, and the ſchiſms of *Antipopes*; their depoſitions by councils; their promiſes and oaths to abdicate; and ſometimes, tho' very rarely, their performance of their oaths.

There have been *Antipopes* in all ages. Geddes gives the hiſtory of no leſs than twenty-four ſchiſms in the Romiſh church, cauſed by *Antipopes*; ſome took their riſe from a diverſity of doctrine and belief, which led different parties to elect each their ſeveral pope; but the greater part from dubious controverted rights of election, the fruits of chicane and ambition. V. *Gedd.* Hiſt. of Schiſm in Rom. Church. p. 2. ap. ejuſd. Miſ. Tract. T. 3. & *L'Enfant*, Hiſt. du Conc. de Piſ. l. 1. & 2. Jour. des Scav. T. 76. p. 11. ſeq.

ANTI-PORTICO is uſed by ſome for a veſtible, or porch, at the entrance of an edifice. V. Giorn. de Letter. d' Ital. T. 23. p. 332.

ANTIPRAXIA, in the antient phyſic, denotes a contrariety of functions, temperaments, &c. in different parts of the body; in-

invented to account for that contrariety of ſymptoms which frequently concur in hypochondriac caſes, when, *e. gr.* the liver is charged with being immoderately hot, and the ſtomach exceſſively cold. *Caſt.* Lex. Med. p. 58.

The moderns, particularly Etmuller, refute the notion of an *Antipraxia*, on this principle, that the blood circulating duly tho' the whole body warms all the parts as well the ſtomach as liver proportionably. To which ſome advocates for the antient ſyſtem object, that this is confounding the preternatural ſtate with the natural.

ANTIPROBABILISM, the doctrine or ſyſtem of thoſe who hold it unlawful to follow the leſs probable opinion, in oppoſition to the more probable one.

There have been vigorous advocates for *Antiprobabiliſm*; for even among its greateſt enemies, the Jeſuits, F. Giſbert has a treatiſe expreſs in favour of *Antiprobabiliſm*, viz. *Antiprobabiliſmus, ſeu tractatus theologicus fidelem totius probabiliſmi ſtateram continens*, &c. Par. 1703. 4°. Jour. des Scav. T. 31. p. 938. Act. Erud. Lipſ. 1706. p. 373.

ANTIPROBOLE, Ἀντιπροβολη, in rhetoric, a figure whereby the defendant adopts or admits the charge brought againſt him by the proſecutor. *Heder.* Schul. Lex. p. 285.

E. gr. Suppoſing the proſecutor's προβολη to be, Titus has killed Cajus; the defendant's *Antiprobole* may be, I have killed him, but undeſignedly.

ANTIPROPEMPTICON, Ἀντιπροπεμπτικον, in poetry, a poem wherein a perſon going a journey addreſſes himſelf to his friends. Such is that of Ovid, l. 1. Triſt.

Cum ſubit illius triſtiſſima noctis imago, &c.

It is oppoſed to *propempticon*. See PROPEMPTICON.

ANTIPROTASIS, Ἀντιπρόλασις, in rhetoric, a ſolution of the *protaſis*. See PROTASIS.

ANTIPSORA, in pharmacy, remedies proper againſt the itch. *Zwing.* Specim. Mat. Med. c. 44. n. 5.

ANTIPYRETON, among phyſicians, an appellation given to the medicines againſt fevers. *Caſt.* Lex. Med. p. 58.

ANTIQUARE, among Roman lawyers, properly denotes the rejecting of a new law, or refuſing to paſs it. *Briſſ.* de Verb. Signif. p. 49. *Calv.* Lex. Jur. p. 74.

In which ſenſe, *antiquating*, differs from *abrogating*; as the latter imports the annulling an old law, the former the rejecting a new one.

It was a cuſtom among the Romans, when they voted for caſting out a new law propoſed, to give their votes by a ballot, on which was inſcribed the letter A, to denote *Antiquo*.

ANTIQUARE is alſo uſed for a law's growing obſolete, or into diſuſe, either by age or non-obſervance. *Calv.* Lex. Jur. p. 74.

ANTIQUARIUM, among the antients, denoted a place or apartment, wherein their antique monuments were preſerved. *Pitiſc.* Lex. Antiq. in voc.

This is otherwiſe denominated Αρχειον.

ANTIQUARTIUM is uſed by ſome modern practitioners, for a ſpecific againſt the quartan ague. *Caſtel.* Lex. Med. in voc.

Hence ſome call the Jeſuits bark *Antiquartium Peruvianum*. Wedelius alſo ſpeaks of an *eſſentia antiquartia*.

The *antiquartan* of Riverius is a preparation of mercurius dulcis, aurum fulminans, ſulphur of antimony, and ſcammony. Vid. *Ettmul.* Colleg. Chem. c. 5. n. 3.

ANTIQUARY, *Antiquarius* (*Cycl.*)—There was an antient college of *Antiquaries* erected in Ireland by Ollamh Todhla, 700 years before Chriſt, for compoſing a hiſtory of the country. And to this, ſay the Iriſh hiſtorians, it is owing, that the hiſtory and antiquities of that kingdom may be traced back beyond thoſe of moſt other nations. *Kenned.* Chron. Diſſert. ap. Mem. de Trev. 1705. p. 1873. ſeq. *Nicholſ.* Iriſh Hiſt. Libr. App. N°. 1. p. 179. ſeq.

Foundations of this kind have often been wiſhed for, and ſometimes alſo attempted in England.

Sir. H. Spelman ſpeaks of a ſociety of *Antiquaries* in his time, to whom his treatiſe of the terms, written in the year 1614, was communicated, he himſelf being one of the number.

The ſociety was formed by Cambden, Sir Robert Cotton, Stow, and others; in 1589 R. Carew was admitted into it. Application was made to Queen Elizabeth for a charter and houſe wherein they might hold their meetings, erect a library, and the like. But by the death of that princeſs, their application proved abortive. And for her ſucceſſor king James the firſt, he was far from favouring their deſign. V. *Nicholſ.* Engl. Hiſt. Libr. P. 3. c. 3. p. 199. ſeq. *Smith*, Vit. Cotton. Mem. Liter. de la Gr. Bret. T. 13. p. 243. ſeqq.

In the year 1717, this ſociety was revived again, ſince which time no interruptions having happened, it is at preſent in a very flouriſhing condition; and, by a late conſtitution, which limits the number of its members, the ſociety conſiſts of one hundred learned and ingenious men, of the nobility, gentry, clergy, &c. whoſe buſineſs, as members, is to diſcover the antiquities of their own, as well as thoſe of other nations.

For further particulars, ſee Maitland's hiſtory of London, l. 6. c. 4. p. 647.

The preſent ſociety of *Antiquaries* have no charter.

ANTIQUARY, in middle age writers, is uſed for a copiſt, or perſon employed in tranſcribing antient books.

Antiquarius differs from *librarius*, in that the latter copied new as well as old books, whereas the former was wholly employed in antient ones. *Du Cange*, Gloſſ. Lat. in voc.

In ſome monaſteries there was a houſe or appartment on purpoſe for the *Antiquarii*, called *domus antiquariorum*, ſometimes alſo *ſcriptorum*. *Du Cange*, ibid.

ANTIQUARIES were alſo thoſe employed in repairing books injured with age.

ANTIQUARY, *Antiquarius*, is alſo uſed, by antient writers, for the keeper of the *Antiquarium*, or cabinet of antiquities.

This officer is otherwiſe called *archæota*, or *antiquary* of a king, a prince, a ſtate, or the like.

King Henry VIII gave John Leland the title of his *Antiquary*, a title which ſays the author of his life, no body ever enjoyed beſides himſelf. But the reſtriction, we ſuppoſe was only intended, to be underſtood in reſpect of the kings of England; M. Schott we find had the title of *Antiquary* to the king of Pruſſia, P. Pedruzzi, that of *Antiquary* of the duke of Parma [a], M. Galland reſided ſome time in Turky, under the title of *Antiquary* of the king of France [b].—[a Mem. de Trev. 1721. p. 43. b Hiſt. Acad. Inſcr. T. 2. p. 745.]

The Univerſity of Oxford have ſtill their *Antiquary*, under the denomination of *cuſtos archivorum*. *Wood*, Ath. Oxon. T. 2. p. 563.

The kings of Sweden have been at great expences in order to illuſtrate the *antiquity* of their country, having eſtabliſhed an academy of *Antiquaries* with this ſingle view. Mem. de Trev. 1709. p. 161. ſeq.

The office of the antient Iriſh *Antiquaries* was to preſerve the genealogies of the kings of Ireland, to correct the regal tables of ſucceſſion, and deliver down the pedigree of every collateral branch of the royal family. *Nicholſ.* Iriſh Hiſt. Libr. App. N°. 1. p. 180.

P. Labbe and Petavius have publiſhed pieces expreſs concerning the apparatus of *Antiquaries*. Vid. *Lipen.* Bibl. Phil. p. 76. ſeq.

ANTIQUE (*Cycl.*)—The ſcience of *Antiques* is alſo called by Spon *archæographia*. Præfat. Miſcel. Erud. Antiq. *Fabric.* Bibl. Antiq. c. 5. n. 2. See ARCHÆOGRAPHIA.

Under this is included the knowledge of antient coins, medals, inſcriptions, buildings, ſtatues, ſculptures, MSS, veſſels, weights, meaſures, &c.

ANTIQUING, in book-binding, a method of ornamenting the edges of books with divers foliages and ramifications, by means of hot iron tools cut for the purpoſe. *Savar.* Dict. Com.

This kind of decoration was formerly much in uſe, eſpecially in France; but of late has fallen into neglect.

ANTIQUITY (*Cycl.*)—There are great diſputes concerning the *antiquity*, or age of the world.

Ariſtotle carried it even to eternity; and Parmenides, Pythagoras, and the Chaldeans were of the ſame opinion; but the generality of philoſophers, as well as divines and hiſtorians, have always held an origin of it. V. *Thomaſ.* Meth. Etud. Hiſt. Prof. l. 1. c. 1. §. 1. ſeq.

Though where to fix that origin, is the difficulty. The different ſyſtems of chronology of the Greeks, the Egyptians, the Jews, the Hebrew text, and the ſeptuagint verſion, of Scaliger, of Pezron, of Sir Iſaac Newton, &c. to ſay nothing of the Chineſe annals, leave the point infinitely embarraſſed.

Dom. Pezron thinks he has merited well of the public by adding 2000 years to the age of the world, which had been taken from it by Scaliger and others; but this did not hinder F. Martianay from entering a proſecution againſt him in the archbiſhop's court of Paris, for hereſy.—His crime was following the Heathen, rather than the Hebrew chronology, in which however he was preceded by the generality of the fathers and primitive writers of the church; among whom it appears to have been a common practice, to make 5500 years between the creation, and the incarnation. In reality, the Jews are charged with having corrupted their chronology; by which the moderns have been miſled. Mem. de Trev. 1707. p. 1272. *Valem.* Elem. de l'Hiſt. T. 1. p. 16. ſeq.

Some have propoſed to make a trace of the *Antiquity* of the earth, by an obſervation of the ſaltneſs of the ſea; others by obſerving the elevation of the bottom of the ſea, or the growth of its ſtrata.—One mark or proof of *Antiquity* has been ſtarted by Rudbeck, which he pretends to have carried to a demonſtration; it is taken from the thickneſs of a certain black cruſt, called in the Swediſh tongue, *Mat-iorden*, and *Swart-myllan*, which covers the ſurface of the earth, being formed of a mixture of rotten graſs and other herbs, with duſt, and a kind of mud, which the melted ſnow leaves behind it. According to this antiquary, there are at leaſt 500 years requiſite to form an inch thick of this cruſt, which in many places of Sweden is found to be upwards of ſeven inches thick, where urns have been dug up full of bones and aſhes. From whence it follows, according to this author, that it is upwards of 3500 years ſince burning the dead was practiſed in Scandinavia. Jour. des Scav. T. 43. p. 86.

Pliny ſeems even to hold the uſe of letters to be eternal, *literas ſemper arbitror Aſſyriis fuere.* He goes on to obſerve, that the Babylonians had aſtronomical obſervations written on tables of brick, for the ſpace of 720 years, according to Epigenes, or at leaſt of 480 years, according to Beroſus [a]; and concludes, *ex quo apparet æternus literarum uſus* [b]. But it is known that the Chaldeans pretended to aſtronomical obſervations of 470,000 years according to Cicero, or of 473,000 years according to Diodorus; and it may be added that Beroſus, who is cited by Pliny, and who wrote ſoon after the death of Alexander, affirmed, in the firſt book of his hiſtory of Babylon, that there were books preſerved, which comprehended the hiſtory of above 150,000 years. Hence it has been inferred by Voſſius, Perizonius, and others, that Pliny's text ought to be amended, the 720 years of Epigenes, to be turned into 720,000, and the 480 of Beroſus into 480,000 [c]. —[a *Plin.* Hiſt. Nat. l. 7. c. 56. b ibid. c Hiſt. Crit. Rep. Lett. T. 1. p. 17. ſeq.]

The Abbot Sevin [d] has endeavoured to ſet aſide the correction of the paſſage of Pliny in a diſcourſe expreſs. Perizonius has altered the reading of Pliny, as to the numbers; in which he is followed by the generality of critics [e].—[d Hiſt. Acad. Inſcript. T. 2. p. 239. ſeq. e Vid. Mem. de Trev. 1721. p. 422.]

M. Maſſon has given a defence of it againſt M. Sevin. Vid. Hiſt. Crit. Rep. Lett. T. 9. P. 1.

The Jeſuits are charged with being enemies of *Antiquity.* The fathers Papebroch, and Germon are famous for the attack they have made on antient charters; and F. Hardouin has attacked the *Antiquity* of books and MSS.

F. Bougeant has lately revived the ſyſtem of this laſt. He is confident there are no MSS. to be found above ſix hundred years old. Bibl. Franc. T. 13. p. 228.

Jealouſy is by ſome ſuſpected to have had a large hand in this diſpute; it has been ſuggeſted, that the archives of the Jeſuits, being leſs ſtored with the venerable monuments of *Antiquity* than thoſe of the Benedictins, and ſome other religious, they had undertaken to attack not only the authenticity of charters and manuſcripts, but of every thing that bears the character of *Antiquity.* Jour. des Scav. T. 69. p. 261. ſeq.

The *Antiquity* of religion has been often urged as a proof of the truth of it.—Jews, Gentiles, Chriſtians, Proteſtants, Papiſts, have all in their turns made uſe of the argument from *Antiquity.* It is indeed of the inartificial kind; and comes rather under the denomination of a preſumption than a proof; on the whole it ſeems to ſerve the cauſe of error better than of truth; it is founded on this, that as we allow God to be a juſt and good being, it is hardly to be conceived that he ſhould have ſuffered a great part of the whole world for many ages to have continued in a religion which he did not approve of. But ſuppoſing this, had not the heathens reaſon to condemn chriſtianity at its firſt appearance; for how could it conſiſt with the goodneſs and juſtice of God to have permitted the whole world, excepting Judea, to have continued in heatheniſm during all former ages. V. Bibl. Anc. Mod. T. 24. p. 300.

There is ſcarce a nation under heaven, but lays claim to a greater degree of *Antiquity* than the reſt of its neighbours; the Scythians, the Phrygians, the Chaldeans, Egyptians, Greeks, Chineſe, *&c.* pretend each to the honour of being the firſt inhabitants of the earth; ſeveral of theſe nations, leſt they ſhould be outſtripped in their pretenſions by any of the reſt, have traced up their origin to ages long before the creation. Hence the appellation *aborigines*, *indigenæ*, *terrigenæ*, *antelunares*, &c. The Athenians were not aſhamed to pretend to be *Autochthones*; and what is moſt remarkable, Socrates himſelf gives them this ridiculous appellation, which, as ſome others of the philoſophers have wiſely obſerved, only put them on a level with ants, and graſhoppers. Mem. Acad. Inſcript. T. 7. p. 498.

The Chaldeans pretend to aſtronomical obſervations of 470,000 years; they mention the preciſe king who reigned over them at the time of the deluge, whoſe name was Xiſuthrus, and attribute to him ſeveral things which we aſcribe to Noah. Bibl. Univ. T. 3. p. 102.

St. Auguſtin laughs at the folly of the Egyptians, who pretend to obſervations of the ſtars above 100,000 years old; in effect no people appear to have been warmer in the conteſt for *Antiquity* than thoſe of Egypt. They pretend two periods of time; one ſhorter, during which the throne of Egypt had been filled by men, the other almoſt infinite, wherein gods, and demi-gods, had wore the crown. From Iſis and Oſiris to Alexander they reckoned a ſpace of 23000 years, the time before that, while the gods reigned, made 42984 years more; the whole duration from the beginning of their monarchy amounting to 65984. De Civit. Dei l. 18. c. 40.

The computation of their dynaſties as given by Manetho a writer of their own, (of whom we have extracts in Syncellus, taken from Julius Africanus and Euſebius) extends to 5550 years before Alexander's time, and the Egyptian chronicle, cited by the ſame Syncellus, goes further, reckoning 36525 years. Diogenes Laertius makes no leſs than 48863 years from the reign of Vulcan. Yet the Scythians, the Phrygians, the Ethiopians, and ſome others ſtill inſiſted on their priority to the Egyptians; and in the judgment of many ſeem to have carried their point. Juſtin after Trogus gives the precedency to the Scythians; and affirms that they were always allowed to have been before the Egyptians. *Juſt.* Hiſt. l. 2. c. 1.

Pſammetichus, to make proof whether the Egyptians or Phrygians were the oldeſt, ordered two infants to be bred up without a word of any language being ſpoken before them. At two years old the ſhepherd who had the care of them heard them both one day ſtretching out their hands towards him, and crying *beccos*, *beccos*, which in the Phrygian tongue denotes bread; from that time the honour of *Antiquity* is ſaid to have been generally allowed to the Phrygians. But the fact M. Rollin obſerves muſt be falſe, ſince if they had never heard a word, they would never have ſpoken one. Jour. Liter. T. 16. p. 192.

The Ethiopians, M. Fourmont thinks, have of all other nations the beſt title; among the antients there were none but the Egyptians could diſpute it with them. Diodorus Siculus gives the hiſtory of this famous conteſt between the two nations. The Ethiopians were not a bit embarraſſed with the long ſeries of years in the Egyptian account, they allowed them all the *Antiquity* they could deſire, owned their great knowledge in the arts and ſciences, their great diligence and exactneſs in recording the actions of their kings, and heroes; but deſired them, in virtue of this great knowledge and exactneſs, to tell them the preciſe epocha when the Ethiopian nation commenced, and how much exactly the Ethiopians were younger than themſelves? The impoſſibility the Egyptians were under to do this ſeems to have given a victory to their adverſaries. Mem. Acad. Inſcript. T. 7. p. 499. ſeq.

Some think that the Armenians have a better claim to priority than any other nation, it being allowed that the country which they inhabit was the firſt that men trod on after the deluge, when they came out of the ark. But it appears at the ſame time, that Noah and his family made no long ſettlement there. Mem. des Miſſ. T. 3. p. 14.

But the Chineſe is doubtleſs the moſt antient monarchy in the univerſe; having cultivated the ſciences from the earlieſt ages; and ſubſiſted at leaſt theſe 4000 years with the ſame laws, manners, and uſages. *Freret.* Ap. Mem. Acad. Inſcript. T. 9. p. 362.

Some indeed have called in queſtion the truth and authenticity of the Chineſe annals, yet we find them confirmed, at leaſt as high as 660 years before Chriſt, by the annals of Japan. At worſt the Chineſe *Antiquities* ſtand on as good a footing as thoſe either of Greece or Rome. Their annaliſts both for order and chronology are not inferior to any of thoſe antients ſo much admired among us; but far ſurpaſs them in point of *Antiquity*, and have a better title to be credited, as having written by public authority, which can be ſaid of few Greek or Roman pieces, except perhaps the capitoline marbles, which are not properly a hiſtory. *Vignol.* Ap. Bibl. Germ. T. 14. p. 143.

We have no inconſiderable confirmation of the truth of the Chineſe account, from an antient obſervation of a grand conjunction of the planets under Chuen-Hio emperor of China, related by Martinius. That prince lived 2513 years before Chriſt. M. Kirchius has defended the obſervation againſt Caſſini, and ſhewn a conjunction muſt really have happened at the time mentioned by the Chineſe annals. Miſc. Berol. T. 3. p. 165. ſeq.

But the authenticity of this obſervation, and the whole of the Chineſe chronology, has been lately attacked by an ingenious author, Mr. Coſtar. See Phil. Tranſ. N°. 483.

It muſt not be forgot that the Iriſh alſo pretend to be the antienteſt of all nations; they trace their origin without interruption to Japhet [f]. But the Scots ſtill diſpute the priority with them; holding themſelves an elder branch of the Scythians, the firſt of men [g]. The Iriſh however are not like to yield the victory; on the plauſible pretence of their being called the *antient Scots*, they reduce their neighbour Scots to a very late origin, pretending they were not ſettled in North-Britain before the eleventh century; whereas the Scotiſh hiſtorians trace them in the ſame country before the birth of Chriſt. The writers on both ſides generally allow them to have come thither from Ireland. But, in ſo much obſcurity is every thing belonging to *Antiquity* involved, ſome deny even this: Mackenzie maintains, that there are greater preſumptions for believing that the Scots in Ireland took their origin from thoſe in North-Britain, than *vice verſa.*—[f Act. Erud. Lipſ. 1696. p. 249. g *Mackenz.* Scot. Writ. T. 1. pref. p. 3.]

In the reign of king Laogair, which commenced Ann. Dom. 427, a committee of three kings and three biſhops, whereof St. Patrick was one, and three antiquaries, was appointed to examine the genealogies of the principal families and antient records of the kingdom, and having purged them of all ſpurious relations, to depoſite them in the archives of the iſland, as a venerable and authentic collection. This body of records was called the great *Antiquity*, and its veracity was never to be queſtioned by future generations; the book of Armach, the pſalter of Caſhel, *&c.* are tranſcripts of this. *Nicholſ.* Iriſh. Hiſt. Libr. App. n. 1. p. 181.

In effect, the *Antiquities* of the northern kingdoms are so confused, that it is almost impossible to distinguish truth from fable. The first historians of these as of other countries were poets, who embellished their writings with allegories and figures, which posterity has since taken for facts; hence the Danes treat those things as fabulous which the Swedes hold for incontestable truths; and the Norwegians, equally jealous of both nations, question the truth of what is advanced by both. Mem. de Trev. 1711. p. 1200. seq.

There are *e. gr.* three different systems of Danish *Antiquities*; the first supposes Danus the founder of the kingdom and nation; the second takes things up higher, and goes back to Noah's ark; supposing that Gomer, grandson of Japhet came by sea into Europe, and traversing Scythia settled in Denmark; the third keeps a medium between the other two. Mem. de Trev. 1719. p. 125.

The British *Antiquities* before Cæsar's invasion are utterly dubious, not to say fabulous. Old chronicles speak of Samothes, the son of Japhet, as the founder of the British monarchy; Albion a descendant of Cham invaded it three hundred years after; and about 600 years after this, Brute grandson of Æneas came and took possession of the island in the year of the world 2880, giving it the name which it still retained when Cæsar made his attempt [h]. This is Jeffrey of Monmouth's system of the *Antiquities* of the British nation, which the generality of our historians admit for want of a better. It has been defended by A. Thomson of Queen's college, in the preface to his English translation of that writer [i].—[h V. Ouvr. des Scav. Juin. 1706. p. 258. i Ox. 1718. 8°. V. Nouv. Liter. 1718. p. 167. seq.]

M. de Pouilly has shewn that the Roman *Antiquities* for the first 400 years of that state are at least extremely uncertain. Mem. Acad. Inscript. T. 8. p. 21.

Dionysius Halicarnasseus has traced the Roman *Antiquities*, Josephus the Jewish *Antiquities*, Berosus the Chaldaic *Antiquities*, Sanconiathon the Phœnician *Antiquities*, Manetho and Marsham the Egyptian *Antiquities*.

Dionysius gave his book the title of Roman *Antiquities*, on account of the curious enquiries he had made concerning the origin of the Romans, by tracing them back to the remotest ages. For fidelity as well as instruction he is generally preferred to Livy; his accounts are more ample, and his facts described with more particulars; he gives a full idea of the Roman ceremonies, the worship of their gods, sacrifices, manners, customs, discipline, policy, courts, laws, *&c.* V. Mem. de Trev. 1722. p. 555. seq. Jour. des Scav. T. 72. p. 118. seq. But the question is, upon what authority? See Mem. Acad. Inscr. loc. cit.

There are two French translations of the book; one by father Le Jay [k], a Jesuit, which is elegant indeed, but complained of as too free, and often departing from the precise sense of the author; the other more literal and exact by M. Bellengar [l] doctor of the Sorbonne.—[k Par. 1724. 4°. 2 Vol. V. Jour. des Scav. T. 74. p. 304. Mem. de Trev. 1723. Bibl. Franc. T. 1. p. 284. l Par. 1723. 4°. 2 Vol. Jour. des Scav. T. 74. p. 426.]

The Phœnician *Antiquities* of Sanconiathon are preserved in part by Eusebius. We have an English translation of Sanconiathon, with notes by bishop Cumberland, and a continuation from the canon of Eratosthenes. Lond. 1720. 8°. V. Mem. Liter. de la Gr. Bret. T. 8. p. 371. seq.

The Chaldaic *Antiquities* of Berosus are lost, except a few fragments which have been collected by Jos. Scaliger, and since more fully by Fabricius [m]. Annius of Viterbo, a Dominican Monk, towards the close of the 15th century, would not suffer us to want such a treasure, but officiously went to work, and forged a Berosus out of his own brain, which he published at Rome in 1498 [n]. The Monk went further; and from the same mint soon after produced Manetho's supplement to Berosus, from the time of Ægyptus king of Egypt to the origin of the Roman state. The mischief is Manetho lived before Berosus; this anachronism alone had sufficed to betray the cheat.—[m V. Bibl. Græc. l. 6. c. 12. n. 9. n Id. ibid. necnon. in Bibl. Lat. l. 4. c. 13. n. 5.]

To the same class of suppositious *Antiquities* belong the Hetrurian, *Antiquitates Hetruscæ*, pretended to have been found by Scornelli near Volaterra, and published in 1636 by Curtius Inghiramus, who is generally supposed to have been the forger of them. A great number of fictitious names of antient authors are cited in this book to give the better face to the cheat; but the stile betrayed it. Allatius and Ernstius early detected the imposture. *Fabric.* Bibl. Lat. l. 4. c. 13. n. 3.

ANTIQUITY is more peculiarly used to denote the ceremonies, customs, and usages which obtained in antient times, either with regard to persons, places, or things.

Antiquities, in this sense, are usually divided into sacred, political, military, literary, and domestic; sometimes only into civil and ecclesiastical.

Academical ANTIQUITIES, the origins, usages, *&c.* of the antient academies, schools, colleges, and other literary societies. These bear a near relation to scholastic *Antiquities*, and make a branch or division of literary *Antiquities*. Herm. Conringius has given a body of academical *Antiquities* [o], Ursinus a treatise of the scholastical *Antiquities* of the Hebrews [p].—[o De Antiquitatibus Academ. Dissertationes sex *Helmst.* 1651. 4°. Supplement. Earund. *Helmst.* 1674. 4°. V. *Thurman.* Bibl. Acad. p. 4. seq. p *G. Ursini*, Antiquitates Hebraicæ Scholastico-Academicæ, *Hafn.* 1697. 4°. V. Nouv. Liter. Lubec. 1698. p. 57.]

Apostolical ANTIQUITIES, the acts, monuments, *&c.* of the first planters of christianity. See APOSTLE, *Cycl.* and *Suppl.*

Dr. Cave has published a treatise of apostolical *Antiquities*, Antiquitates Apostolicæ, or the lives, acts, *&c.* of the apostles, evangelists, *&c.* Lond. 1674. Fol. 1684. and 1686. an extract of it may be seen in *Kust.* Bibl. Nouv. Libror. 1698. p. 191. seq.

Biblical ANTIQUITIES, the notices of antient laws, ceremonies, events, *&c.* occuring in the scriptures.

These make a branch of ecclesiastical *Antiquities*, and bear a near relation to the Jewish, *&c. Antiquities*.

Some pretend to deduce most of the heathen *Antiquities* from the bible; others as Spencer, *&c.* take the contrary course, and deduce the *Antiquities* of the bible from those of heathenism.

To interpret scripture it is absolutely necessary regard be had to the heathen *Antiquities* alluded to in them, and these not only such as are directly aimed at, or approved, but also such as are purposely opposed. Thus Maimonides conceives the rites of the Zabii very beneficial for giving light to many positive Levitical precepts, which now for want of them seem strange and impertinent; and it would doubtless have much contributed to the clear distinction of the moral and judicial laws, to have known all the ceremonies of the Chaldean and Phœnician idolatry. V. *Dodwel*, Lett. of Advice 2. p. 196. seq.

Philo Judæus among the antients, and Quensted, Moncæus, Calmet, *&c.* among the moderns, have published treatises expres's concerning the *Antiquities* of the bible.

Christian ANTIQUITIES, those which relate to the antient state of the Christian church.

These are the same with what we otherwise call ecclesiastical *Antiquities*.

The Magdeburg Centuries are looked upon by protestants as a library of Christian *Antiquites*.

Mr. Bingham has published a learned system of Christian *Antiquities*.

Civil ANTIQUITIES, all that belong not to the head of *ecclesiastical*.

Evangelical ANTIQUITIES amount to much the same with those otherwise called *apostolical*.

Literary ANTIQUITIES, those relating the matters of learning and study, *e. gr.* schools, academies, sciences, doctors, degrees, professors, disciples, recitations, studies, books, paper, writing, pen, ink, copist, bookseller, library, letter, hieroglyphic, note, abbreviature, printing, *&c.*

National ANTIQUITIES, those employed in tracing the origin, antient actions, usages, monuments, remains, *&c.* of some nation or people.

Parochial ANTIQUITIES, those confined to the limits of one or more parishes, and conversant chiefly in what relates to its tithes, revenues, *&c.* of the churches.

Dr. Kennet has published a learned and curious work under the title of *parochial Antiquities*, attempted in the history of Ambrosden and Burchester, and other adjacent parts in the counties of Oxford and Bucks. Oxf. 1695. 4°. V. Phil. Transf. N°. 220. p. 259.

Political ANTIQUITIES, those relating to the origins of states, governments, magistrates, and laws.

Under these come the consideration of the antient commonwealths, empires, monarchies, councils, senates, inaugurations, ensigns, crowns, scepters, nobility, plebeians, slaves, dignities, titles, rewards, punishments, revenues, tithes, weights, measures, fairs, markets, sales, usury, testaments, burials, coins, and the like.

Sacred ANTIQUITIES, those relating to the religious worship, discipline, and belief of antient times and people. *Fabric.* Bibl. Antiq. c. 8.

These may be subdivided, into Heathen, Christian, and Mahometan, *&c.*

Reland has a treatise expres's on the sacred *Antiquities* of the Jews; Struvius on those of the Romans; Lakemacher on those of the Greeks; and Stillingfleet on those of the British churches.

Fabricius has given two plans of a Thesaurus, or body of *Antiquities*; the one of Hebrew *Antiquities*, after the manner of Grævius and Gronovius; the other of ecclesiastical *Antiquities*, divided into twelve books. He gives the names and titles of 156 authors to be included in the first, and 101 authors for the second. Jour. des Scav. T. 42. p. 533.

Gronovius has given a collection of the chief writers on the Greek *Antiquities*, Rouse [a], Pfeiffer [b], Bos [c], and bishop Potter [d], have given shorter systems; the last is the best esteemed: tho' found too short by some in what relates to the religion, the gods, vows, and temples of Greece. To supply this deficiency, Lakemacher [e] Greek professor at Helmstadt, has given us a treatise of the sacred *Antiquities* of Greece, and seems further to promise the civil, military, domestic, and literary *Antiquities* of Greece, in the same manner; what he has already given is very exact.—[a Archæologia Attica 1637. and 1671. 4°. V. *Fabric.* Bibl. Antiq. c. 2. p. 35. *Wood*, Ath.

Ath. Oxon. T. 2. p. 47. [b] Antiquitates Græcæ Gentiles Regiom. 1688 and 1708, 4°. V. Lakemach. Antiq. Græc. Sacr. in Præf. [c] Deſcriptio Antiquitatum Græcarum, *Frank.* 1714. 12°. [d] Archæologia Græca, or the *Antiquities* of Greece, Lond. 1713. 2 Vol. 8°. tranſlated into Latin and inſerted in Gronovius's Theſaurus; but the tranſlation is faulty. [e] Antiquitates Græcorum ſacræ. *Helmſt.* 1734. 8°.]

The beſt ſyſtem of Roman *Antiquities* yet extant is that of Roſinus, with Dempſter's notes [f]; Struvius indeed had in view a more accurate and perfect work of this kind [g]. But he never publiſhed more than the firſt part, *viz.* what relates to the religion of Rome [h].—[[f] Antiquitates Romanæ cum Th. Dempſteri Paralipomenis, Lugd. Bat. 1663. 4°. It. Traj. ad Rhen. 1710. 4°. V. Morhof. Polyhiſt. T. 1. l. 5. c. 2. §. 4. [g] V. Obſerv. *Halenſ.* T. 3. Obſ. 1. §. 1. [h] Syntagma Antiquitatum Romanarum, Jen. 1701. 4°. V. *Morhof.* Polyhiſt. T. 1. l. 5. c. 2. Hiſt. Crit. Rep. Lett. T. 5. p. 370.]

We have compendiums and introductions to the Roman *Antiquities* by Hoepfner, Nieuport, Godwin, Cantelius, Baſil Kennet, *&c.*

Heineccius has given a collection of Roman *Antiquities*, for illuſtration of the civil law; and Briſſonius another, drawn from the books of the civil law. Gravina's origines juris civilis is excellent on this ſubject.

A body of the writers on the Roman *Antiquities* has been publiſhed by Grævius, and another of thoſe on the Greek *Antiquities* by Gronovius, both under the titles of Theſauri.

A ſupplement to the former has been publiſhed by Sallengre. Danet and Pitiſcus have alſo publiſhed lexicons of the Roman *Antiquities*. Varro's books of Roman *Antiquities* are entirely loſt, excepting ſome fragments, preſerved by St. Auguſtin. Rerum Humanarum Antiquitates libri 25 & Divinarum 16. V. *Auguſt.* de Civit. Dei. l. 6. c. 3. *Fabric.* Bibl. Lat. l. 1. c. 7.

Pezron has a treatiſe expreſs on the *Antiquity* of times. L'Antiquité des tems retablié & defendué contre les Juifs & les nouveaux Chronologiſtes, Par. 1687. 4°. V. Act. Erud. Lipſ. 1687. p. 465. Ejuſd. Defenſe de l'Antiquité des tems, ou l'on ſoutient la Tradition des Peres & des Egliſes contre celle du Talmud, Par. 1691. 4°. V. Bibl. Univ. T. 24. p. 103. ſeq.

ANTI-RATIONALISTS, a name ſometimes given to divines, who in matters of religion are for humbling reaſon, and making it bend to faith; aſſerting that the abſurdity of a thing is no reaſon for rejecting it. Mem. de Trev. An. 1707. p. 1745.

In this ſenſe, the rigid Calviniſts and adherers to the ſynod of Dort are denominated *Anti-rationaliſts*, on account of the doctrine of abſolute predeſtination, *&c.* The Roman Catholics are alſo entitled to the ſame appellation, on account of the doctrine of tranſubſtantiation.—M. Bayle took ſhelter in the ſyſtem of the *Anti-rationaliſts*, the better to combat the Chriſtian doctrines of the origin of evil, providence, *&c.*

ANTIRRHETICUM, Ἀντιῤῥητικον, in literary hiſtory, denotes a refutation of ſome book, author, or opinion.

In this ſenſe, we alſo meet with *Antirrheſis*, Ἀντιῤῥησις.

ANTIRRHINUM, in botany. See SNAP-DRAGON.

ANTI-SABBATARIANS, a modern religious ſect, who oppoſe the obſervance of the Chriſtian-Sabbath. V. *Pagit.* Hæreſiogr. p. 134.

The great principle of the *Anti-ſabbatarians* is, that the Jewiſh ſabbath was only of ceremonial not moral obligation; and conſequently is aboliſhed by the coming of Chriſt.

ANTISAGOGE, Ἀντεισαγωγή, in rhetoric, a figure differing little from that called *conceſſion*. The following paſſage from Cicero is an inſtance of it; *Difficilis ratio belli gerendi; at plena fidei, plena pietatis: et ſi dicas, magnus labor, multa pericula proponuntur; at gloria ex his immortalis eſt conſecutura.* *Voſſ.* Rhet. l. 4. p. 390. See CONCESSION, *Cycl.*

ANTI-SCEPTIC, ſomething oppoſed to the reaſonings and ſyſtem of Pyrrhoniſts, or Sceptics.

We have ſtill extant, under the name of Sextus, (commonly, tho' without reaſon, ſuppoſed to be Sextus Empiricus) certain *Anti-ſceptic* diſputations, wherein the difference between good and evil, truth and falſehood, *&c.* is defended. V. *Fabric.* Bibl. Græc. l. 6. c. 7. p. 617.

ANTI-STANCARIANS, a ſect of German proteſtants, who oppoſe the doctrine of Stancarius, who aſſerted that juſtification was the ſole effect of Chriſt's human nature, excluſive of his divinity.

The *Anti-ſtancarians* therefore maintained that our juſtification by Chriſt is the fruit of the divine as well as human nature of Chriſt, and that the divinity ſuffered with his humanity on the croſs. *Prateol.* Elench. Hæret. l. 1. n. 50.

ANTISTASIS, Ἀντιστασις, in oratory, a defence of an action from the conſideration that had it been omitted worſe would have enſued. *Quint.* l. 7. c. 4.

This is called by Latin writers *comparativum argumentum*, ſuch, *e. gr.* would be the general's defence, who had made an inglorious capitulation, that without it, the whole army muſt have periſhed.

ANTISTATIS, in antiquity, denotes the gibbous part of the liver in the Grecian victims. *Potter*, Archæol. l. 2. c. 14.

ANTISTES, in eccleſiaſtical writers, a title uſually given to biſhops, tho' ſometimes alſo to prieſts or preſbyters. V. *Bingh.* Orig. Eccleſ. l. 2. c. 19. §. 13.

Some will have the appellation to have been peculiar to biſhops, excluſive of preſbyters.

But Bingham produces inſtances of the contrary. Sidonius Apollinaris reconciles the matter, when he diſtinguiſhes between an *Antiſtes* of the firſt and the ſecond order. L. 4. Ep. 11.

Among the antient Romans, *Antiſtes* was an appellation given to the chief or firſt order of prieſts in the provinces. *Struv.* Antiq. Rom. c. 12.

In which ſenſe, *Antiſtes* ſtands diſtinguiſhed from *patres* and *magiſtri*.—In the more uſual ſenſe notwithſtanding, *Antiſtes* denotes the ſame with *ſacerdos*.

There were alſo females of this quality under the title of *Antiſtæ*. *Pitiſc.* Lex. Ant. T. 1. p. 117. ſeq.

ANTISTICHON. See ANTISTOECHON.

ANTISTŒCHON, Ἀντιστοιχον, a grammatical figure whereby one letter is uſed inſtead of another. *Fabri* Theſ. p. 191. *Heder.* Schul. Lex. p. 287.

This is otherwiſe called *Anthiſtichon*, by ſome writers.

ANTISTROPHE (*Cycl.*)—It was cuſtomary among the Greeks on ſome occaſions, to dance round the altars, whilſt they ſung the ſacred hymns, which conſiſted of three ſtanzas, or parts; the firſt of which, called *ſtrophe*, was ſung in turning from eaſt to weſt; the other, named *Antiſtrophe*, in returning from weſt to eaſt. Then they ſtood before the altar, and ſung the epode, which was the laſt part of the ſong. *Potter*, Archæol. l. 2. c. 4.

ANTISTROPHE, in rhetoric, the ſame with what is more commonly called *epiſtrophe*. See EPISTROPHE.

ANTISYLLOGISM, Ἀντισυλλογισμος, in logic, a ſyllogiſm, which infers a contrary concluſion to that of another ſyllogiſm. *Voſſ.* Rhet. l. 3. p. 380. See SYLLOGISM, *Cycl.*

ANTITHENAR, (*Cycl.*) in anatomy, a muſcle called alſo the *Semi-interoſſeus Pollicis*. It is ſmall, flat and fleſhy, and is ſituated obliquely between the firſt phalanx of the thumb, and firſt bone of the metacarpus; 'tis fixed by one end toward the baſis of the firſt metacarpal bone near the firſt bone of the ſecond row of the carpus, from thence it runs obliquely toward the head of the firſt phalanx of the thumb, and is inſerted in the lateral external part of that bone, or on that ſide which is turned to the firſt metacarpal bone. It croſſes over the ſemi-interoſſeus indicis; this muſcle lying toward the back of the hand, the *Antithenar* here deſcribed toward the palm.

ANTITHENAR *Pedis*, a ſmall compound muſcle lying obliquely under the metatarſal bones, fixed poſteriorly in the lower parts of the ſecond, third and fourth of thoſe bones near their baſes, in the ligaments of theſe bones and of thoſe of the tarſus, and in a lateral aponeuroſis of the hypothenar, all theſe portions contracting into a ſmall compaſs are inſerted in the outſide of the external ſeſamoide bone of the firſt phalanx of the great toe. *Winſlow's*, Anatomy, p. 222.

ANTITHESIS (*Cycl.*) is ſometimes uſed for controverſy.

In this ſenſe, we meet with *antithetic* method, *antithetic* diſcourſes, *&c.* Vid. *Lang.* Inſt. Stud. Theol. Sect. 1. c. 2. Memb. 3. §. 1.

Marcion compoſed a volume of *Antitheſes*, or contrarieties and oppoſitions between the law and the goſpel. *Fabric.* Bibl. Græc. l. 5. c. 1. p. 201.

ANTITHETON, Ἀντιθετον, in rhetoric, a figure wherein contraries are ſet in oppoſition to each other.

We have an example of it in Cicero's fourth oration againſt Verres, *conferte hanc pacem cum illo bello; hujus prætoris adventum cum illius imperatoris victoria; hujus cohortem impuram cum illius exercitu invicto; hujus libidines cum illius continentia, &c.* *Voſſ.* Rhet. l. 5. p. 402. ſeq.

Some diſtinguiſh between the *antitheſis* and *Antitheton*. Voſſius thinks that in the *Antitheton* nouns and verbs are oppoſed; but in the *antitheſis* their epithets only. Others comprehend the *antitheſis* under *Antitheton*. *Voſſ.* ibid.

ANTITRAGICUS, in anatomy, a name given by Albinus to one of the muſcles of the eye, called by Santorini and others *muſculus Antitragi*.

ANTITRAGUS (*Cycl.*) is the thicker part of the anthelix [a], or that ridge juſt above the tragus [b].—[[a] *Gorr.* Def. Med. p. 40. *Caſt.* Lex. Med. p. 59. [b] *Drake*, Anthropol. l. 3. c. 12.] See TRAGUS, *Cycl.*

A twig of the hard portion of the auditory nerve, running on the back of the *Antitragus*, is ſometimes ſucceſsfully cauterized in the tooth-ach. Phil. Tranſ. N°. 299. p. 1981.

ANTLIA, Ἀντλια, or Ἀντλεια, an antient machine, ſuppoſed to be the ſame with our pump. *Fabri* Theſ. p. 192.

Hence the phraſe, *in Antliam condemnari*, according to the critics, denotes a kind of puniſhment, whereby criminals were condemned to drain ponds, ditches, or the like. V. *Sueton.* in Tiber. c. 51. *Caſaub.* ad Eund. *Artemidor.* Oneirocrit. l. 1. c. 50. *Lipſ.* Elect. l. 2. c. 15.

ANTOMOSIA, Ἀντωμοσια, in antient writers, an oath taken by both the parties in a criminal accuſation; whereby the accuſer charges the other with the fact, and the accuſed in his turn denies the ſame. *Suid.* Lex. T. 1. p. 232.

In which ſenſe *Antomoſia* amounts to the ſame with *diomoſia*, tho' ſome diſtinguiſh between the two, reſtraining *Antomoſia* to the oath of the perſon accuſed, whereby he engages to make no other than a fair defence; and *diomoſia* to the pro-

profecutor's oath, whereby he fwears that his accufation is juftly founded.

Others will have *Antomofia* properly to denote a law-fuit about things to which there are no witneffes, and which can only be decided by the oaths of the parties.—Others again will have it to be, where the accufed party alledging ficknefs for his non-appearance, the profecutor takes an oath, that the ficknefs is only feigned, upon which the judges proceed to fentence.

ANTONIANA *Aqua*, in the materia medica, the name of a medicinal water of Germany, remarkably pleafant to the taſte and of ſervice in many caſes as a medicine.

This water if mixed with any acid liquor raiſes a conſiderable effervefcence, and when mixed with rheniſh wine and ſugar, which is a common way of drinking it, it makes a great hiſſing and bubbling, and becomes turbid and milky. If powder of galls be added to it, it ſuffers no change but remains limpid and colourleſs; whence it is plain that it contains no iron, nor vitriol. Syrup of vitriol mixed with it turns the whole green, whence it is plain that it contains an alkali; and if oil of tartar be added to it, it becomes turbid and milky, and precipitates a white ſediment, whence it appears that there is either common ſalt or a calcarious earth in it. If it be expoſed ſometime to the air in an open veſſel, it, like all the other mineral waters, loſes its pungent taſte and pellucidity, becoming turbid and vapid. A quart of it evaporated with a very gentle heat leaves two ſcruples of a dry ſediment, which being ſeparated by another ſolution is found to be one half an alkaline ſalt, and the other a calcarious earth. Oil of vitriol mixed with the ſalt produces a great effervefcence, and a penetrating ſcent ariſes like that produced by the mixing oil of vitriol and common ſalt. Hence it appears that theſe waters contain a ſmall portion of an alkaline ſalt, a larger portion of ſea ſalt, and a yet larger of a calcarious earth, and with theſe a very conſiderable quantity of a ſubtile and penetrating mineral ſpirit.

It is a very temperate water, not too ſtrongly operating either by ſtool or urine; and hence it is a very proper drink for perſons in chronic and in many acute caſes, either alone or mixed with wine to ſupply the place of malt liquor, which is proper but in very few illneſſes. A long uſe of it alone may alſo prove of conſiderable ſervice in hypochondriac caſes. *Hoffman*, Oper. T. 5. p. 145.

ANTONIANA *Margarita*, in literary hiſtory, the name of a celebrated book written by Gomez Pereira a Spaniſh phyſician of the ſixteenth century; and thus entitled, to do honour to his father and his mother, who bore thoſe names. V. *Baill.* Dict. Crit. T. 3. p. 650. in voc. *Pereira*, Not. (c).

The *Antoniana Margarita* is the ſource from which Des Cartes borrowed his ſyſtem of the ſouls of brutes being mere machines. The author ſpent thirty years in the compoſition of it. It is now in the number of thoſe rare books only to be met with in the libraries of the curious.

ANTOSIANDRIANS, a ſect of rigid Lutherans who oppoſe the doctrine of Oſiander relating to juſtification.

Theſe are otherwiſe denominated *Oſiandro Maſtiges*.

The *Antoſiandrians* deny that man is made juſt, with that juſtice wherewith God himſelf is juſt; that is, they aſſert that he is not made eſſentially but only imputatively juſt; or, that he is not really made juſt, but only pronounced ſo. *Prateol.* Elench. Hæret. l. 1. n. 53.

ANTRUM *Pylori* (*Cycl.*) was thus denominated by Willis, who aſſigned it the office of keeping the firſt digeſted chyle, till that which was later taken into the ſtomach be digeſted; tho' if what Dr. Wharton ſuggeſts, that there are lacteals at the bottom of the ſtomach, be true, ſuch a proviſion ſeems unneceſſary. *Drake*, Anthropol. l. 1. c. 10. p. 42. ſeq.

ANTRUM *Genæ*, a large cavity in the fourth bone of the upper jaw, communicating with the foramina narium.

It was thus called by Caſſerius, but by Dr. Highmore *Antrum maxillæ ſuperioris*.

The *Antrum Genæ* is near two inches long, and above an inch in depth, ſeated between the lower margin of the orbit of the eye, and the dentes molares of the ſame ſide. Backwards the thin bony parts of this cavity, with the os ſphenoides, make the foramen lacerum externum; its lower ſurface makes a thin covering to all the roots of the dentes molares, as well as dens caninus of the ſame ſide. It is very thin, and on drawing any teeth to which it ſticks, is frequently taken along with it whereby this cavity is opened into the Alveolus, and conſequently into the mouth, to the great terror and ſurprize of the patient. *Drake*, Anthropol. l. 3. c. 10. p. 311. See ALVEOLI.

The *Antrum Genæ* appears to be the chief ſeat of the Ozena. Dr. Drake mentions an operation which he put in practice for the cure of that diſeaſe; taking out the foremoſt dens molaris, and not finding any aperture from its alveolus, as is frequently obſerved, he bored a hole through the alveolus into the *Antrum genæ*, whereby the pus which before lay in the *Antrum* run out, and the medicines daily injected by this aperture paſſed into the noſtrils whereby the patient was cured.

ANTRUM *Buccinoſum* is uſed by ſome anatomiſts for the cochlea of the ear. *Barthol.* Anat. l. 4. c. 6. *Caſt.* Lex. Med. p. 59. See COCHLEA.

ANTYLION, in the antient pharmacy, a kind of aſtringent malagma, deſcribed by Ægineta. *Ægin.* l. 7. *Gorr.* Med. Def. in voc.

ANTYX, in antiquity, the outermoſt round, or circumference of a ſhield. *Potter*, Archæol. l. 3. c. 4.

ANVIL (*Cycl.*)—Forged *Anvils* are better than thoſe of caſt work. Locksmiths have alſo a ſmaller kind of *Anvil* called the *ſtake*, which is moveable and placed ordinarily on their work bench. Its uſe is for ſetting ſmall cold work ſtraight, or to cut or punch on with the cold chiſſel, or cold punch. *Moxon*, Mech. Exerc. p. 3.

ANUS (*Cycl.*) is otherwiſe called *Anutus*, and by the Greeks δακτυλιος. *Caſt.* Lex. Med.

The office of the *Anus* for extruding the fæces has been diſcharged by the penis in males, and the vulva in females [a]. Sometimes alſo its defect has been ſupplied by a little hole no broader than a pea, at which the thinner part of the excrements has oozed out [b]. In other caſes a wound in the abdomen has ſupplied this office of the *Anus* [c].—[[a] Ephem. Acad. N. C. Dec. 2. An. 4. Obſ. 112. and Dec. 3. An. 2. Obſ. 123. [b] Ephem. Acad. N. C. Dec. 3. An. 1. Obſ. 123. [c] Nouv. Rep. Lett. T. 46. p. 204.]

In ſome creatures the *Anus* is found to have other uſes, the pond muſcle not only breaths but feeds by the way of the *Anus*; i. e. in other words, the ſame aperture ſerves indifferently for mouth and *Anus*. In fowl the *Anus* has apparently ſome concern in the action of reſpiration; there are found many veſicles extended from the bronchiæ thro' the abdomen to the *Anus* of fowls; which may be the cauſe of of its conſtant motion, the air having both ingreſs and egreſs there. Whence it is that they are alſo found to have an attractive power, and as ſuch are uſed by ſome, to draw out the poiſon and malignity in certain diſeaſes. It may be added, that a kind of alternate ſyſtole and diaſtole is perceived, at leaſt on many occaſions, in the *Anus* of divers quadrupeds, as cows, mares, *&c.* But what concern this has with the action of reſpiration, remains to be diſcovered. Hiſt. Acad. Scienc. 1710. p. 39.

That the *Anus's* of fowls, applied in malignant diſtempers to draw the infection out of the body, act like cupping glaſſes; inſomuch that the fowl has often ſtuck by its *Anus* to the part till it died. Mr. Templer affirms he has ſeen ſeven chickens thus applied to the groin of one perſon ſeized with the plague, which all ſtuck till they died. The eighth went quickly off and lived. Phil. Tranſ. N°. 86. p. 5031. See alſo Ephem. Acad. N. C. Dec. 2. An. 9. Obſ. 138.

The *Anus* of birds and quadrupeds is generally conſtant and regular, as to the place it occupies in the body; in fiſh it conſiderably differs in the various kinds, and makes one of their marks of diſtinction. In the generality of fiſhes it is placed nearer the tail than the other end of the body; but in ſome as in the gadi, pleuronecti, conger, *&c.* it is placed nearer the head. In almoſt all fiſh it is ſingle and placed in the lower part of the belly, but in ſome of the pleuronecti, it is either double and placed one on each ſide of the body, or ſingle and then placed only on one ſide. The middle of the body therefore is the general place of the *Anus* in fiſhes as the extremity of the trunk is in moſt other animals. *Artedi*, Ichthyolog.

Some animals there are whoſe *Anus* is regularly placed in other parts; in the ſnail, Malpighi aſſures us, it is in the neck, and that the fæces are diſcharged that way; in the pond muſcle we have already obſerved it is in the mouth. Phil. Tranſ. N°. 64. p. 1535. See alſo Mem. Acad. Scienc. 1710. p. 412.

Some authors ſpeak of attempts made not without ſucceſs, for conveying nouriſhment to the human body by nutritive clyſters conveyed up the *Anus*, where the common canal by the gula has been rendered impracticable. Mem. Acad. Scien. 1716. p. 237.

It may be added, that we have inſtances of births or deliveries by the *Anus*; dead fœtus's long detained in utero, finding no other out-let have been frequently voided piece-meal at the *Anus* [d]. Dr. Wallis's and Halley's caſe is much more extraordinary, who ſpeak of a male greyhound delivered of an entire whelp the ſame way. For Calculi or Stones, inſtances of their being voided by the *Anus* are frequent [e].—[[d] V. *Becker.* Mantiſſ. ad Tract. de Submerſ. morte ſine potu aquæ. p. 93. Mem. Acad. Scienc. 1702. p. 313. Phil. Tranſ. N°. 385. p. 171. [e] Phil. Tranſ. N°. 380. p. 433. Act. Erud. Lipſ. 1688. p. 204. Ephem. Acad. N. C. Cent. 4. Obſ. 136.]

The account the royal ſociety had from Dr. Wallis, of a greyhound dog that voided an animal reſembling a whelp *per Anum*, as ſtrange and incredible as it may ſeem, yet was ſtedfaſtly believed at Cheſter; and the creature was kept for ſome time in ſpirit of wine, having lived for ſome ſhort time after it came into the world, and being ſeen by Mr. Roberts of the ſociety. This is certain that it coſt the dog his life, to gratify the curioſity of ſome gentlemen, who diſſected him, but were diſappointed of their expectations. For my own part, ſays Dr. Halley, as I am determined *nihil temere credere*, ſo I dare not pretend to limit the power of nature. V. Phil. Tranſ. N°. 222. p. 316.

Imperforate ANUS. —Children are ſometimes born without an *Anus*; and it is very difficult to hit on the right part for making a perforation into the rectum of children thus born: becauſe the extremity of the gut is generally formed into a knot. For performing ſuch a perforation Mr. Petit recommends a trocar, the canula and circular plate of which are ſo ſlit open, as to ſerve as a groove for a biſtoury to be run in, to enlarge the aperture after the trocar has been puſhed into the gut. See Mem. de L'Acad. de Chirurg. Tom. 1.

ANUS *of the Brain* is properly the poſterior orifice of the canal called *aquæductus ſylvii*. *Heiſt.* Comp. Anat. n. 270. See AQUÆDUCT.

The appellation *Anus* was probably occaſioned by this, that the prominent medullary parts between which this canal paſſes, are on account of their figure called *nates*, and *teſtes*; whence it was natural enough to give this aperture between them the title of *Anus*, as that of *vulva* was given to the oppoſite, or anterior orifice. *Burggr.* Lex. Med. in voc.

AORIST (*Cycl.*)—Critics are divided as to the proper and primary import of the Greek *Aoriſts*. Some take them for mere variations of the præterperfect tenſe, introduced only for *copia* ſake without any peculiar ſignification; but it is certain the antient grammarians of that nation allowed a difference between the *Aoriſts* and præter tenſes. According to them, the præterperfect tenſe expreſſes a thing juſt now or lately compleated; whereas the *Aoriſt* denotes it paſt, but indeterminately without regarding whether it were lately or long ago. This diſtinction however is rejected by Gretſer, who produces inſtances among the antients, where the two are uſed indifferently. Urſinus[a] alſo allows this promiſcuous uſe; but looks deeper into the origin and reaſon of the *Aoriſt*. According to this writer, an *Aoriſt* is then properly uſed αοριστως, as an *Aoriſt*, when it does not denote any certain or definite time, but in reality comprehends all times. That this is the primitive uſage of the *Aoriſt*, he ſhews by a great number of inſtances. This appears a peculiarity in the Greek tongue, unknown in any other language, to have a tenſe merely indefinite, yet comprehending all the other tenſes[b]—[a In Epiſt. ad Aveman. ap. Ejuſd. Onomaſt. German-Græc. in fine. b Act. Erud. Lipſ. 1690. p. 471.]

The Greeks uſually diſtinguiſh two *Aoriſts*. Some however will not allow of any ſecond *Aoriſt*, maintaining that what grammarians call the ſecond *Aoriſt* is the ſame tenſe with the firſt, only under a little difference of termination. Bibl. Anc. Mod. T. 5. p. 250.

AORISTIA, Αοριστια, in the ſceptic philoſophy, denotes that ſtate of the mind wherein we neither aſſert nor deny any thing poſitively, but only ſpeak of things as ſeeming or appearing to us in ſuch a manner. *Sext. Empir.* Pyrrhon. Hypot. l. 1. c. 26. *Stanl.* Hiſt. Philoſ. P. 12. c. 26. p. 788.

The *Aoriſtia* is one of the great points or terms of ſcepticiſm, to which the philoſophers of that denomination had continual recourſe by way of explication, or ſubterfuge. Their adverſaries the Dogmatiſts charged them with dogmatizing, and aſſerting the principles and poſitions of their ſect to be true and certain.

AORTA (*Cycl.*)—Anatomiſts treat of the ſtructure of the *Aorta*, compreſſion of the *Aorta*, valves, coats, ramifications, &c. of the *Aorta*. Vieuſſens[a] alſo ſpeaks of a kind of veſicular glands in the parietes of the *Aorta*. Dr. Keil[b] gives a computation of the velocity of the blood in the *Aorta*.—[a Act. Erud. Lipſ. 1705. p. 459. Nouv. Rep. Lett. T. 35. p. 214. b Eſſ. on Anim. Œcon. p. 138.]

The *Aorta* iſſuing from the heart by one only trunk, is furniſhed with three ſemi-lunar valves to prevent the blood's regurgitating: immediately above theſe it ſends out to the heart two arteries called *Coronariæ*; and afterwards bending down in form of a bow, divides itſelf into what they call its aſcending and deſcending parts. *Heiſt.* Comp. Anat. n. 293. *Keil*, Anat. c. 7. Sect. 5. *Drake*, in Anthrop. l. 3. c. 15. gives a fine figure of the *Aorta*. See alſo Phil. Tranſ. N°. 280. p. 1188.

Aſcending AORTA, or rather trunks of the *Aorta*, are thoſe which take their courſe towards the upper and lateral parts of the body. Such are the two carotids, the ſubclavian, cervical, ſcapular, upper intercoſtal, mediaſtinal, upper diaphragmatic, mammary, axillary, and brachial arteries.

Deſcending AORTA, or trunk of the *Aorta*, ſometimes alſo called ſimply *Aorta*, is that which takes its courſe downwards thro' the thorax and abdomen to the *os ſacrum*. From this ariſe Ruyſch's bronchial artery, the lower intercoſtals, æſophageous, lower diaphragmatic, cæliac, epiploic, emulgent, ſpermatic, meſenteric, and hypogaſtric arteries.

The diviſion of the *Aorta* into aſcending and deſcending trunks, tho' generally received by anatomiſts is excepted to by Heiſter as leſs natural; and ſuited rather to the ſtructure of quadrupeds, as dogs, calves, and the like, from which it ſeems to have been originally taken, than to that of the human body. In reality the aſcending *Aorta* is not one ſingle trunk as the name ſhould import, but conſiſts of three large branches or trunks: in ſome inſtances there have even been four obſerved, ſcarce ever only two, and never one; which however is uſually the caſe in quadrupeds.

The flexure of the *Aorta* after its quitting the heart, and before its diviſion into aſcending branches, is noted by Dr. Lower as an inſtance of the wiſdom of the creator; to effect a more equable and gentle diſtribution of the blood to the ſeveral parts of the body. For whereas the orifice of the heart opens right upwards, if the *Aorta*, which receives the firſt impulſe, were continued in a ſtraight line up to the region of the head, the blood would be poured too ſwiftly and plentifully on the brain, and the inferior parts be defrauded of their vital liquor. To obviate this the *Aorta* is ſo diſpoſed that the blood does not run directly into the aſcending branches, the axillaries and carotids, but fetches as it were a compaſs by means of the flexure, which ſuſtains the firſt effort of the ejected blood, and directs the greateſt torrent towards the deſcending trunk. *Ray*, Wiſd. of God in Creat. P. 2. 356.

The Diſpoſition of the *Aorta* is varied according to the kinds of animals, their different poſtures, and other occaſions: in man, by reaſon of his erect ſituation, the blood tends to flow faſter and more plentifully by the deſcending than by the aſcending trunks; in brutes, which bend downwards, the contrary; in both, proper proviſions are made for an equable diſtribution. In the male ſex of our ſpecies, Dr. Pitcairn aſſures us, the deſcending *Aorta* has fewer ramifications, and conſequently the blood will flow ſlower proportionably than in that of the female ſex, where there are more ramifications, and conſequently the blood finding leſs reſiſtance will flow more largely to the lower parts of women than men, from which cauſe ariſe the menſes. Jour. des Scav. T. 56. p. 530.

The deſcending *Aorta* is liable to compreſſions from the ſtomach and inteſtinal tube, and that either ordinarily or extraordinarily. The firſt happens whenever the ſtomach, &c. is full; the ſecond, when it is dilated beyond meaſure by the plethora and ebullition excited in fevers. The effect in either caſe will be an interruption or diminution of the flux of blood to the lower parts of the body; and an increaſe of that to the head, and higher parts. The ordinary, according to Dr. Woodward, is neceſſary to ſupply the buſineſs of cogitation, furniſh matter for animal ſpirits, &c[a]. The extraordinary ſerves M. Silva[b] to account for the violent headachs, deliriums, and other ſymptoms of fevers.—[a Jour. des Scav. T. 69. p. 592. b Id. T. 89. p. 457.]

The *Aorta* is found in divers ſtates, natural, morbid, oſſified, cartilaginous, aneuryſmatical, polypoſe, calculoſe, &c.

Some will have oſſifications of the *Aorta* one of the great cauſes of ſudden deaths. Hiſt. Acad. Scienc. 1701. p. 35. ſeq.

In an old man who died at the age of 130, Dr. Keil found the *Aorta* in the abdomen and iliacs to be for the greateſt part cartilaginous, which apparently was one cauſe of his death. Phil. Tranſ. N°. 306. p. 2248. ſeq.

The academiſts naturæ curioſi give an inſtance of ſix nail-like ſtones, or calculi, found in a prominence of the *Aorta*, under the kidneys of a perſon who had died of a moſt acute pain in the region of the loins. At each pulſation of the artery, theſe would be driven againſt the membranous fibrillæ of the coat of the veſſel, and hence thoſe ſhooting pains; the cauſe of concretion is attributed to the too frequent uſe of the viperine powder, taken for an ulcerated breaſt. V. Ephem. Acad. N. C. Cent. 9. App. Obſ. 1.

For the ſinus's of the *Aorta*, ſee SINUS.

APÆDEUSIA, Απαιδευσια, denotes ignorance or unſkilfulneſs in what relates to learning and the ſciences.

Hence alſo perſons uninſtructed and illiterate are called *Apædeutæ*.

The term *Apædeutæ* was particularly uſed among the French in the time of Huet; when the men of wit at Paris were divided into two factions, one called by way of reproach *Apædeutæ* and the others *Eruditi*.

The *Apædeutæ* are repreſented by Huet, as perſons who finding themſelves either incapable or unwilling to undergo a ſevere courſe of ſtudy, in order to become truly learned, conſpired to decry learning and turn the knowledge of antiquity into ridicule, thus making a merit of their own incapacity. Vid. Mem. de Trev. An. 1722. p. 1310. ſeq.

The *Apædeutæ* in effect were the men of pleaſure. The *Eruditi* the men of ſtudy. The *Apædeutæ* in every thing preferred the modern writers to the antient, to ſuperſede the neceſſity of ſtudying the latter. The *Eruditi* decried the moderns, and valued themſelves wholly on their acquaintance with the antients.

APAGMA (*Cycl.*) is more properly uſed for a fracture of a bone, at or near the part whereby it is articulated with another. *Caſt.* Lex. Med. p. 59.

APAGOGE, Απαγωγη, (*Cycl.*) in the Athenian law, the carrying a criminal taken in the fact, to the magiſtrate. If the accuſer was not able to bring him to the magiſtrate, it was uſual to take the magiſtrate along with him to the houſe where the criminal lay concealed, or defended himſelf. Vid. *Pott.* Archæol. Græc. l. 1. c. 23.

APAGOGE, in mathematics, is ſometimes uſed to denote a progreſs or paſſage from one propoſition to another; when the firſt having been once demonſtrated, is afterwards employed in the proving of others. *Micræl.* Lex. Phil. p. 143.

APALACHINE, in botany, a name given by ſome authors to the ſhrub, called *Caſſine vera floridanorum* by other writers. Ind. Med. p. 11.

APAN-

APANTHROPY, in medicine, denotes a love of ſolitude, and averſion for the company of mankind. *Brun.* Lex. Med. in voc.

Apanthropy is by ſome reckoned among the ſymptoms, by others among the ſpecies or degrees, of melancholy; and alſo paſſes for an ill indication in leucophlegmatic caſes. V. *Wedel.* Pathol. Dogm. Sect. 3. c. 9.

APARACHITUM, among antient phyſicians, denotes a native or pure wine, not mixed with ſea water. *Caſt.* Lex. Med. p. 60.

In which ſenſe, *vinum aparachytum*, οινος απαραχυτος, amounts to the ſame with Αθαλασσος; and ſtands contradiſtinguiſhed from *vinum ſalſum*[a], οινος θαλαττιος or τεθαλασσωμενος. This mixture of wine with ſea-water was deemed a great invention among the antients[b].—[a V. *Celſ.* l. 1. c. 6. b V. *Dioſcor.* l. 5. c. 27. *Columel.* l. 12. c. 25. *Plut.* Quæſt. not.]

APARINE *Cleavers*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf and is bell-faſhioned, very wide, open at the mouth, and divided into ſeveral ſegments; the cup becomes a fruit, which is dry, covered with a very thin ſkin, and compoſed of two round bodies, which contain an umbilicated ſeed. The leaves of this plant are rough and hairy, and ſtand in rundles round the ſtalk.

The ſpecies of *Cleavers* enumerated by Mr. Tournefort are theſe:

1. The common *Cleavers*. 2. The ſmaller ſeeded *Cleavers*. 3. The rough ſeeded *Cleavers*. 4. The Portugal *Cleavers*, with echinated fruit. 5. The ſmooth ſeeded *Cleavers*. 6. The broad-leaved low mountain *Cleavers*. 7. The narrow-leaved low mountain *Cleavers*. 8. The blue flowered ſmall procumbent *Cleavers*, called by authors the little field madder. 9. The hoary ſeeded purple flowered *Cleavers*. 10. The little white flowered marſh *Cleavers*. 11. The ſmalleſt Spaniſh *Cleavers*. *Tournef.* Inſt. p. 114.

The *Cleavers* are known from the madders, by their having a dry fruit; and from creſſwort, by having five or more leaves at a joint; and finally from gallium, or ladies bedſtraw, by the leaves being rough or hairy.

APARINE, in the Linnæan ſyſtem of botany, makes a diſtinct genus of plants; the characters of which are theſe: the calyx is an extremely ſmall perianthium, placed on the germen, and divided by four notches at its end. The flower conſiſts of one ſingle petal which forms no tube, but is placed flat, and divided into four ſegments; the ſtamina are four pointed filaments ſhorter than the flower. The antheræ are ſimple; the germen of the piſtillum is double, and ſituated below the receptacle; the ſtyle is ſlender, ſomewhat bifid at the end, and of the ſame length with the ſtamina; the ſtigmata are headed. The fruit is compoſed of two roundiſh dry bodies, growing together, and armed with hooked hairs which make them rough and rigid and ſtick to things; the ſeeds are ſingle, roundiſh, umbilicated, and large. *Linnæi* Genera Plantarum, p. 24.

APARINE, in medicine.—The vulgar have an opinion of this plant as an antiſcorbutic, and eat it in ſpring with nettle-tops and the reſt of that tribe, to ſweeten their blood. It ſtands recommended by many authors as a remedy for the king's evil; and others have aſcribed a very powerful diuretic virtue to it; but theſe have in general ordered a very bad preparation of it for theſe purpoſes, the diſtilled ſimple water; doubtleſs a good decoction muſt be greatly preferable. We have the aſſurance of Dr. Palmer, from his own knowledge, that it is an excellent remedy in a gonorrhœa ſimplex.

APARITHMESIS, Απαριθμησις, in rhetoric, denotes the anſwer to the *protaſis* or propoſition itſelf. Thus if the *protaſis* be *appellandi tempus non erat*, the *Aparithmeſis* is *at tecum anno plus vixi*. Vid. *Heder.* Schul. Lex. in voc.

APARTISMENUS, Απαρτισμενος, in the antient poetry, an appellation given to a verſe, which comprehended an entire ſenſe or ſentence in itſelf. *Scalig.* Poet. l. 2. c. 29.

This is ſometimes alſo written, *Apartemenus*, i. e. ſuſpended, as not needing any following verſe.

APAULIA, Απαυλια, in antiquity, the third day of a marriage ſolemnity.

It was thus called, becauſe the bride, returning to her father's houſe, did απαυλιζεσθαι τω νυμφιω, lodge apart from the bridegroom. Some will have the *Apaulia* to have been the ſecond day of the marriage, *viz.* that whereon the chief ceremony was performed; thus called by way of contradiſtinction from the firſt day, which was called προαυλια. *Scalig.* Poet. l. 3. c. 100.

According to theſe authors, the third was properly called επαυλια. Others make απαυλια to be the ſame with επαυλια, whence a ſeeming difficulty ariſes, ſince thoſe two words import contraries, one ſeeming to denote the bride's lodging apart from the bridegroom, the other with him; but this may be eaſily ſolved by applying επαυλια to her lodging with her huſband, and απαυλια, to her departure from her father's houſe.

On the day called απαυλια, (whenever that was) the bride preſented her bridegroom with a garment called απαυλητηρια. *Potter*, Archæol. Græc. l. 4. c. 11. T. 2. p. 294.

APELLA, among phyſicians, a name given to thoſe, whoſe prepuce is either wanting, or ſhrunk, ſo that it can no longer cover the glans. *Brun.* Lex. Med. in voc.

Many authors have ſuppoſed this ſenſe of the word *Apella* warranted from the paſſage in Horace, *credat Judæus Apella, non ego. Hor.* Lib. 1. Sat. 5, v. 100.

But, according to Salmaſius and others, *Apella* is the proper name of a certain Jew, and not an adjective ſignifying circumciſed.

APENE, Απηνη, in antiquity, a kind of chariot wherein the images of the Gods were carried in proceſſion on certain days, attended with a ſolemn pomp, ſongs, hymns, dancings, &c. Vid. *Spanheim*, ad Callim. p. 565. *Pauſan.* Eliac. Prior. c. 19. p. 396. *Lakemach.* Antiq. Græc. Sacr. P. 1. c. 7. §. 16.

The *Apene*, or ſacred chariot of the Greeks, is called by Latin writers *Tenſa*.

It was very rich, made ſometimes of ivory, or of ſilver itſelf, and variouſly decorated. Vid. *Feſt.* de Verb. Signif. in voc. *Tenſa*

APENNIS, in antient laws, a deed or inſtrument made in favour of a perſon, who has loſt the title-deeds to his houſe or land by fire. *Du Cange*, Gloſſ. Lat. T. 1. p. 250. ſeq.

In ſuch caſe, an aſſembly of the people of the neighbourhood being called, and an exact enquiry made before the judge, another inſtrument was framed to confirm and ſecure the unhappy perſon's right. Id. Ibid.

APER, *Boar*, in zoology. See HOG and SUS.

APER is alſo uſed for the name of a ſea fiſh, called by ſome *Strivale* and *Riondo*. It approaches very much in ſhape to the faber or doree, but is much ſmaller. It is covered with fimbriated ſcales, and feels rough to the touch; its noſe is ſharp and turns a little upwards; its eyes are large; it has no teeth, and has two back-fins, the firſt ſhorter the laſt very long; the tail is not forked, and is tinged with red at the end; the gill fins are conſiderably long, and ſome of the nerves or rays of the long belly fin behind the anus, as well as ſome of thoſe of the anterior back fin, are prickly. It is very ſeldom found of more than three inches in length, and generally lives at the bottom of the ſea. It is caught in the Mediterranean after ſtorms, but either is not found about our coaſts, or its ſmallneſs makes it diſregarded. *Rondelet*, de Piſc. l. 5. c. 26. *Geſner*, de Aquat. p. 70. See Tab. of Fiſhes, N°. 19.

APER *moſchiferus*, a name by which many authors have called the *tajacu* of America. See TAJACU.

APER *Piſcis*, a name by which ſome authors have called the ſea-fiſh more uſually called the *Capriſcus*. *Willughby*, Hiſt. Piſc. p. 154. See the article CAPRISCUS.

APEREA, in zoology, the name of a ſmall American animal, of the rabbit kind, and ſeeming to be of a mixt nature between the rabbit and the mouſe, having exactly the ſhort roundiſh ears of the mouſe-kind, and all the other particulars of the rabbit. It grows, at its full ſize, to ten or twelve inches long, and its hair is juſt of the colour of our hares on the back and ſides, and whitiſh on the belly; its upper lip alſo is ſplit as in the hare, and its teeth, legs, &c. are wholly the ſame in ſtructure as in the hare, but its fore feet are divided into four toes, its hinder ones only into three; the claws are ſhort, and the middle toe of the hinder feet longer than the others. It has no tail, its head is a little longer than the hare's, and its fleſh in taſte wholly like the rabbit's; its manner of living and feeding is alſo wholly the ſame. *Ray*, Syn. Quad. p. 206.

APERIENS *Os*, in anatomy, a name given by ſome writers, to a muſcle of the mouth called by Albinus *biventer maxillæ inferioris*, and by others *digaſtricus*.

APERISTATON, in the antient phyſic, denotes an ulcer of a mild, or benign kind, and not attended with any ſevere ſymptom. *Gorr.* Def. Med. p. 42. *Caſt.* Lex. Med. p. 61. ſeq.

APERTOR *Oculi*, in anatomy, a name given by Spigelius and others to the muſcle called the *Aperiens palpebram*, and *levator palpebræ ſuperioris* by others.

APETALOUS, or APETALOSE *Plants*, (*Cycl.*) are ſuch as have an imperfect or ſtamineous flower. They are ſo called becauſe not compoſed of thoſe tender, fugacious, coloured leaves called *Petala*; but only of a calyx or cup, and of ſtamina or capillaments of ſtyles. Vid. *Ray*, Hiſt. Plant. l. 4. Phil. Tranſ. N°. 186. p. 284.

The *Apetalous* kind is ſubdivided by Ray, 1. Into ſuch whoſe fruits are not contiguous to their flowers, as in hops, hemp, nettles, ſpinach, mercury, palma chriſti, the American phyſic-nut, &c. 2. Such as have a triquetrous or triangular ſeed, as the docks, ſorrels, arſmarts, knot-graſs, ſnake-weeds, 3. Thoſe which have round compreſſed and otherwiſe figured ſeeds, as the pond-weeds, orraches, ſea-purſlane, the blites, the amaranthi, the beets, ſome kali's, &c. *Ray*, ibid. See Tab. 1. of Botany, Claſs 1.

APEUCTIC, Απευκτικον, in the antient poetry, denotes a kind of poem or prayer preferred to God for the averting ſome evil. *Scalig.* Poet. l. 3. c. 102.

In which ſenſe, *Apeucticum* ſtands contradiſtinguiſhed from *proſeucticum carmen*, which begs for ſome good, e. gr. *dii prohibete minas, dii talem avertite caſum, et placidi ſervate pios.*

APEX (*Cycl.*) is peculiarly uſed in antiquity for a kind of cap or covering of the head, wore by the Flamens, or prieſts of Jupiter.

Jupiter. V. *Salmuth.* ad Pancir. P. 1. Tit. 24. p. 176. *Struv.* Synt. Antiq. Rom. c. 12. p. 563. *Feſt.* de Verb. Signif. p. 15. *Pitiſc.* Lex. Ant. T. 1. p. 120. ſeq.

This was otherwiſe denominated *Pileus Epiroticus*, or *Albanus*; by the Greeks πιλημα πυργωλων, and Κυρβασιαν.

The *Apex* is deſcribed as a ſtitched cap in form of a helmet, with the addition of a little ſtick fixed on the top, and wound about with white wool. *Kenn.* Rom. Ant. Not. P. 2. l. 5. c. 8. p. 321. *Pitiſc.* loc. cit.

The other Flamens only wore the *Apex*, in the time of performing divine ſervice; the Flamen dialis always wore it out of doors; for within it was allowed him to be bareheaded. *Soler.* de Pil. Sect. 2. *Pitiſc.* loc. cit. See APICULUM.

APEX was alſo uſed among the Romans for the creſt of a helmet. V. *Salmaſ.* Exerc. ad Solin. p. 385.

APEX is alſo uſed by grammarians for a long accent or mark, to denote that a ſyllable is to be pronounced long. *Quinctil.* l. 1. c. 7.

Quinctilian condemns the practice of putting the *Apex* on all long ſyllables; yet in ſome caſes he allows the *Apex* neceſſary, *e. gr.* where the different lengths of a ſyllable diſtinguiſh the different ſenſes of a word, as in malus, which as long, or ſhort, denotes an ill man, or an apple-tree. See ACCENT, *Cycl.* and *Suppl.*

APHACHA, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the papilionaceous kind, and its piſtil, which ariſes from the cup, finally becomes a pod which contains roundiſh ſeeds. To this it is to be added, that there are only two leaves at every joint of the ſtalk, and that the tendrils grow from the alæ of theſe leaves.

There is only one known ſpecies of *Aphaca*, which is the yellow vetchling, called by ſome the bind-weed-leaved vetch. *Tournef.* Inſt. p. 399.

APHÆRESIS, Αφαιρεσις, (*Cycl.*) in medicine, denotes a neceſſary taking away or removal of ſomething that is noxious. In ſurgery, it ſignifies an operation whereby ſomething ſuperfluous is taken away. *Brun.* Lex. Med. in voc. *Nent.* Fund. Med. T. 2. Tab. 5. §. 4. *Van Horn.* Microtec. Sect. 1. §. 17.

APHANIS, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a tubular perianthium remaining till the ſeeds are ripe; it conſiſts of one leaf divided at the extremity into eight ſegments, which are extremely ſmall, and alternately different in ſize. There are no petals; the ſtamina are four erect, pointed, and very ſmall filaments, inſerted on the rim of the cup; the antheræ are roundiſh. The piſtillum has two germina of an oval figure, and two ſtyles of the ſame length with the ſtamina, inſerted on the baſis of theſe germina; the ſtigmata are headed. The cup ſupplies the place of a fruit, ſhutting together at its mouth, and containing two oval, pointed, compreſſed ſeeds, of the length of the ſtyles. *Linnæi* Genera Plantarum, p. 53.

APHASIA, Αφασια, in the ſceptic philoſophy, denotes a ſtate of doubt, wherein a Perſon not knowing what to determine on, it is beſt for him to be ſilent. *Sext. Empir.* Pyrrh. Hypotyp. l. 1. c. 26. Bibl. Anc. Mod. T. 14. p. 52. *Stanl.* Hiſt. of Philoſ. p. 788.

In this ſenſe, *Aphaſia* ſtands oppoſed to *phaſis*, under which are included both aſſertion and negation.

APHELIA, Αφελεια, in rhetoric, is uſed to denote ſimplicity of diction. See DICTION, *Cycl.*

APHESIS, Αφεσις, in the Athenian laws, was when a perſon deeply indebted deſired the people to remit part of the debt, by reaſon of his diſability to make payment. *Potter*, Archæol. l. 1. c. 24. *Budd.* Iſag. ad Theol. l. 2. c. 7. p. 1314.

Voetius has a diſſertation expreſs on the words *Apheſis* and *pareſis*, and their difference.

APHETERIA, in the antient military art, a kind of engines uſed in the beſieging of towns. *Suid.* Lex. T. 1. p. 394.

Suidas does not mention their particular form or ſtructure. Aquinus takes them to have been of the projective kind. Vid. *Aquin.* Lex. Milit. T. 1. p. 56.

APHILANTHROPY, among phyſicians, denotes the ſtate or diſorder, wherein a perſon has an unnatural diſreliſh for mirth and ſociety, and indulges ſolitude, and melancholy. Vid. *Wedel.* Pathol. Dogm. Sect. 3. c 9.

APHIOCEM, a compoſition made principally of the buds of hemp before they flower. It is much in uſe among the Arabs, and has the intoxicating quality of opium. *Pocock*'s Egypt, p. 181.

APHLASTUM, Αφλαστον, in the antient navigation, a wooden ornament, ſhaped like a plume of feathers, faſtened on the gooſe's or ſwan's neck uſed by the antient Greeks in the heads of their ſhips. *Aquin.* Lex. Milit. T. 1, p. 56.

The *Aphlaſtum* had much the ſame office and effect in a ſhip, that the creſt had on the helmet. It ſeems alſo to have had this further uſe, *viz.* by the waving of a party-coloured ribband faſtened to it, to indicate from what quarter the wind blew.

The *Aphlaſtum* was the proper ornament of the head, as the *Acroſtolium* was of the ſtern.

The Greek *Aphlaſtum*, anſwered to, and was probably the origin of the Latin *Apluſtre*.

APHORISM, Αφορισμος, (*Cycl.*) is uſed in eccleſiaſtical writers for the leſſer excommunication, by which the delinquent was cut off from the benefit of the ſacraments and the prayers of the faithful; but allowed to bear a part in the reſt of the ſervice. V. *Bingh.* Orig. Eccleſ. l. 16. c. 2. §. 7. ſeq.

APHORISM is alſo uſed for a kind of figure in rhetoric, whereby ſomething that has beed ſaid is limited or corrected. This is otherwiſe called *Diori ſmus*. *Micræl.* Lex. Phil. p. 145.

APHORISTIC, ſomething relating to or partaking of the nature of aphoriſms.

The *Aphoriſtic* method ſtands contradiſtinguiſhed to the *ſyſtematic*, or methodical, as alſo to the *diexodic*, or diſcurſive way.

The *Aphoriſtic* method has great advantages, as containing much matter in a ſmall compaſs; ſentiments are here almoſt as numerous as expreſſions; and doctrines may be counted by phraſes. Every thing is cloſe and pertinent, no room for uſeleſs diſcuſſions, or for languiſhing connections, and tranſitions; there is hardly a word to be loſt. V. *Bac.* de Augm. Scient. l. 6. c. 2. Jour. des Scav. T. 79. p. 362.

APHRACTI, Αφρακτοι, in the antient military art, denotes open veſſels, without decks or hatches, furniſhed only at head and ſtern with croſs planks, whereon the men ſtood to fight. *Kenn.* Rom. Ant. Not. P. 2. l. 4. c. 20. *Pitiſc.* Lex. Ant. T. 1. p. 121.

The *Aphracti*, or open veſſels, ſtood contradiſtinguiſhed from *cataphracti*, or covered ones.

APHRODISIA, Αφροδισια, in antiquity, feſtivals in honour of the goddeſs Αφροδιτη, or Venus.—There were ſeveral of theſe *Aphrodiſia* obſerved in divers parts of Græce; the moſt remarkable was that at Cyprus, firſt inſtituted by Cinyras, out of whoſe family certain prieſts of Venus were elected, and for that reaſon named Κινυραδαι. At this ſolemnity ſeveral myſterious rites were practiſed: all who were initiated to them offered a piece of money to Venus as an harlot, and received as a token of the goddeſs's favour a meaſure of ſalt, and a φαλλος; the former becauſe ſalt is a concretion of ſea-water, to which Venus was thought to owe her birth; the latter becauſe ſhe was the goddeſs of wantonneſs. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 372. ſeq.

APHRODISIA, or APHRODISIASMUS, in medicine, denotes the uſe of venery, or the act of copulation between male and female. *Brun.* Lex. Med. in voc.

APHRODISIA is alſo uſed for the age of venery, more frequently denomineted *puberty*. *Rul.* Lex. Alch. in voc.

APHRODISIACS, in pharmacy, denote medicines proper to increaſe the ſeed, and promote luſt, or an inclination to venery.

In which ſenſe *Aphrodiſiacs* ſtand contradiſtinguiſhed from *Antaphrodiſiacs*.

It is diſputed whither the uſe of *Aphrodiſiacs* be lawful for a Chriſtian, the rigid caſuiſts abſolutely repeal them [a]. The more moderate allow of them, where uſed for an honeſt and laudable end, *viz.* the propagating the human ſpecies [b].—

[a] *Junck.* Conſpect. Therap. Tab. 18. p. 472. [b] *Vater.* Phyſ. Exper. App. c. 1. q. 4.]

Some authors give the appellation *Aphrodiſiaca*, to the epilepſy. See EPILEPSY, *Cycl.*

APRODISIACE, in the writing of the antients, a name given to a gem, ſuppoſed, according to the idle traditions of thoſe times, to have a power of procuring love to the perſon who wore it about him; all the deſcription we have of it is, that it was of a pale fleſh colour; but the ſtone as well as its virtues are wholly unknown to the world at preſent.

APHRODISIUS, in chronology, denotes the eleventh month in the Bythinian year, commencing on the 25th July in ours. *Wolf.* Elem. Chron. §. 120.

APHRODITARIUM, in the antient pharmacy, denotes a kind of dry medicine, compounded of frankincence, the ſcales of copper, ceruſs, ſtarch, and pomegranates, mixed in equal quantities. *Æginet.* l. 4. c. 40. *Gorr.* Def. Med. in voc.

The name is alſo given to a kind of collyrium, mentioned by Galen. De Compoſ. Medic. l. 4.

APHRODITES, in natural hiſtory, a name given by ſome authors to the fineſt ſpecies of amethyſt.

The antients had a way of diſtinguiſhing what they allowed to be gems, into ſeveral kinds, according to their degrees of colour: theſe they called ſo many ſpecies, and gave to each its peculiar name. This has been the occaſion of no little confuſion among the writers on theſe ſubjects, by ſeemingly enlarging the number of the gems. The pæderos and gemma veneris of the antients are the ſame ſtone with this, tho' many have applied theſe names to the opal.

APHROGALA, in the antient phyſic, denotes a kind of whipt cream, or milk agitated till it be converted wholly into froth. *Brun.* Lex. Med. p. 103.

The *Aphrogala* is directed by Galen, as proper againſt hot diſorders of the ſtomach. Method. Medend. l. 7. c. 4.

APHROLITRUM, in the antient phyſic, denotes the ſpume, or froth of *litrum*.

In which ſenſe, *Aphrolitrum* ſeems to amount to the ſame with *Aphronitrum*. Hoffman affirms that the *nitron* and *litron* only differ in dialect [a]. It appears, however, there was a great

great difference between the two medicines [b], *Aphrolitrum* reſembling meal, or farina, and being of a kind of intermediate virtue between *Aphronitrum* and ſalt [c].—[a Officin. Paralip. c. 53. b *Brun.* Lex. Med. in voc. c *Gorr.* Def. Med. p. 65.]

APHRONITRE, *Aphronitrum* (*Cycl.*)—Mercatus ſuppoſes *Aphronitrum*, *nitrum*, and *ſpuma nitri*, to have been much the ſame, and only to have differed in degree or point of excellence. *Mercat.* Metalloth. Vatic. Arm. 2. c. 9.

The *ſpuma nitri*, called by the Greeks αφρος του νίτρου, becauſe lighteſt, is ſaid by Pliny [a] to have been the beſt. Galen however and Serapion expreſsly diſtinguiſh between *nitrum* and *Aphronitrum*. [a] *Plin.* Hiſt. Nat. l. 31. c. 10.

Greek authors expreſſed two different ſubſtances by the word *Aphronitrum*, the one only a particular appearance of the *natrum*, or native nitre of thoſe ages; and the other a factitious ſubſtance, the froth or ſpume of the veſſels in which they boiled and purified their nitre. The earlieſt authors, however, diſtinguiſhed theſe two, calling the factitious ſubſtance *aphros nitrou* and the native *Aphronitron*; and Galen plainly tells us that theſe were two different ſubſtances. *Hill*'s Hiſt. of Foſſ. p. 390.

APHROSELENOS, Αφροσελήνος, among antient naturaliſts, a denomination given to the *Selenites*, or *lapis ſpecularis*. V. *Mercat.* Metalloth. Arm. 7. c. 11. p. 154. See SELENITES.

APHTHÆ (*Cycl.*) are ſometimes underſtood of ulcers in other parts of the body, beſides the mouth and palate.

Hippocrates applies the word to ulcers in the pudenda of women, alſo to thoſe in the aſpera arteria, and Galen ſpeaks of the teſticles as ſubject to the ſame diſeaſe. V. *Caſt.* Lex. Med. p. 63.

APHUA *Gobites*, in zoology, the name of a ſmall fiſh common in the Mediterranean and ſome other ſeas, and called by us the ſea-loach. It never exceeds three or four inches in length, its body is round, and flatted a little on the back, its colour is white variegated with black ſpots, its eyes are placed in the upper part of the head and are very prominent, its back fins are rigid and ſomewhat prickly, and its back and the upper part of its ſides are ſometimes variegated with brown ſpots. *Rondelet*, de Piſc.

APHYLLANTHES, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the liliaceous kind, and is compoſed of ſix petals which ariſe from the center of a ſquammoſe and in ſome degree tubular cup; the piſtil ariſes alſo from the cup and finally becomes a trigonal turbinated fruit, which when ripe burſts into three parts or cells, which contain roundiſh ſeeds. *Tournef.* Inſt. p. 657.

There is only one known ſpecies of this plant, which is the Montpelier *Aphyllanthes*, called by ſome the blue Montpelier *Pink*.

APIARIA, in natural hiſtory, the name given by authors to [a] fly found only in Autumn, and frequently met with on parſley; it is a two winged fly of a deep and ſhining black, and gathers wax on its legs in the manner of the bee.

APIASTELLUM, in botany, the name of two different ſpecies of plants with different authors; Dodonæus expreſſing by it the common balm, and Apuleius the black bryony. *Ger.* Emac. Ind. 2.

APIASTER, in zoology, a name given by ſome authors to the bee-eater, called by the generality of authors *Merops*. See the article MEROPS.

APIASTRUM, in botany, a name given by the antients to two different plants of ſuch contrary form and qualities, that it is unlucky they ſhould have given occaſion of confounding them together, as miſtakes about them might be of fatal conſequence. The one of theſe plants was the poiſonous water crowfoot; which they called *Apiaſtrum*, becauſe of its having leaves that ſomewhat reſembled ſmallage. The other *Apiaſtrum* is the common garden baum, ſo called by theſe writers, from their having obſerved that the bees were very fond of it; beſides this they have in ſome places called the ſelinum by this name, from its reſembling parſley, which they alſo called apium; and ſome of them have extended the name even to the animal world, and given it to a ſort of bird that feeds on bees. The difference between the two firſt *Apiaſtra* is ſo great, that it might be ſuppoſed no one could err about them, yet we find that Pliny has not eſcaped them, for he tells us, that baum is called by this name, becauſe bees eat it, and that it is condemned as a poiſon in Sardinia, as if the ſame thing was a ſalutiferous herb in Italy, and a poiſon in Sardinia.

APICULUM, in antiquity, a kind of thread or fillet which the Flamens wore, in the heat of ſummer, in lieu of the *Apex*. *Pitiſc.* Lex. Ant. T. 1. p. 121. See APEX.

Feſtus ſpeaks of the *Apiculum*, as a cover for the *Apex*; but the paſſage ſeems to be corrupt.

APIOS, in botany, a name given by many authors, to thoſe ſpecies of the tithymal, or ſpurge, which have tuberoſe or knobby roots. See the article TITHYMALUS.

APIOS is alſo the name given by Boerhaave to ſome of the leguminous plants, compriſed by Linnæus under the name *glycine*. *Boerh.* Ind. Alt. 146.

APIS, the bee, in zoology. See the article BEE.

APISTOS, a name given by ſome of the writers of the middle ages to the ſtone called aſyctos, or aſiictos, by Pliny. See the article ASIICTOS.

APIUM, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the umbelliferous kind, and is roſaceous, or compoſed of ſeveral regular leaves diſpoſed in a circular form. Theſe ſtand upon a cup, which finally becomes a fruit compoſed of two ſeeds, which are ſmall, gibboſe, and ſtriated on one ſide, and flat, and ſmooth on the other; to this it may be added, that the leaves are branched, or placed on ramoſe ribs.

The ſpecies of *Apium* enumerated by Mr. Tournefort are theſe.

1. The common cultivated *Apium*, called garden-parſley. 2. The curled-leaved garden *Parſley*. 3. The great broad-leaved garden *Parſley*, called in ſome places the Engliſh *Parſley*. 4. The Macedonian *Parſley*. 5. The roundiſh leaved Portugal *Apium*. 6. The Pyrenæan *Apium*, with the appearance of thapſia, called by ſome *Alpine ſeſeli*. 7. The *Apium* commonly called *Aniſe*, with large ſweet-ſcented ſeed. 8. The *Apium* called *Aniſe*, with ſmaller ſweet-ſcented ſeed. 9. The marſh *Apium*, called ſmallage. 10. The cultivated ſweet *Apium*, called by the gardeners *celeri*. 11. The ſmaller marſh *Apium*. *Tournef.* Inſt. p. 305.

The marſh *Apium* or ſmallage is the ſame with what botaniſts alſo call ελεοσελινον, *eleoſelinum*, ſometimes *paludapium*, and *Apium paluſtre*, and is of ſome uſe in medicine. V. *Gorr.* Def. Med. p. 132.

The root is chiefly uſed in medicine: it is about the thickneſs of a thumb, whitiſh, fibrous, of a warm taſte, and a fragrant ſmell; being one of the five greater openers of the ſhops. It is grateful and detergent, promotes urine, diſlodges gravel, and is alſo recommended in diſorders of the breaſt, and to promote expectoration. V. *Quinc.* Diſp. P. 2. n. 293. *Junck.* Conſp. Therap. Tab. 9. p. 266. It. Tab. 5. p. 153.

Its ſeed is alſo of the number of the leſſer hot ſeeds; and its leaves are given in decoction, or the expreſſed juice of them, in all nephritick complaints. The root is greatly recommended againſt ſuppreſſions of the menſes, and of the lochia, and is ſaid to be alone a remedy for the king's-evil, but this wants proof.

The antients had an opinion, that being eaten by a woman who gave ſuck, the infant would become epileptic. *Lang.* Epiſt. Med. l. 1. p. 333.

APIVORUS *Buteo*, in zoology, the name by which authors call the bird known in Engliſh by the name of the honey-buzzard. It is ſomewhat larger than the common buzzard; its beak is black, very much hooked, and protuberant in the middle, and covered to the noſtrils with a black wrinkled ſkin; its mouth opens very wide and is yellow within. Its head is grey and flatted, and the bottoms of the feathers on the hinder part of the head, and the back are white; its back is of a mouſe colour, but ſome of the wing feathers are white in part, and the wings and tail have a broad line of grey, and another of black acroſs them; the tail is very long and is mottled with black and white. Its throat and tail underneath are of a pure ſnow white, and its breaſt and belly mottled with white and black; its legs are ſhort ſtrong and yellow, and its claws very ſharp and black. It builds its neſt with ſticks covered with wool, and ſometimes uſes the deſerted neſt of a kite to lay and breed its young in, which it feeds principally with the nymphs, or maggot worms of bees and waſps; and it is common to find pieces of honey-combs in the neſts. It feeds on newts, frogs, and other ſmall animals, and is remarkable for running very ſwiftly on the ground: the female is larger than the male, as in moſt other birds of prey. *Ray*, Ornitholog. p. 39. See BUTEO.

APLUSTRE, or AMPLUSTRE, in the antient navigation, a carved tablet, ſomewhat after the manner of a ſhield, fixed by way of decoration to the extremity of a ſhip's head. V. *Scheff.* de Milit. Nav. l. 2. c. 6. *Salmaſ.* Exerc. ad Solin. p. 404. *Pitiſc.* Lex. Ant. T. 1. p. 122.

The word is apparently formed of the Greek αφλαστον, which imported much the ſame.

The *Apluſtre* is alſo called in antient writers, *tabulatum*, and Σανιδιον.

The roſtra or beaks of ſhips were ſometimes alſo called *Apluſtria*.

But ſome think that the *Apluſtre* anſwered to what we call the flag, or enſign. V. *Moreau* de *Mautour*. Ap. *Salengre*, Mem de Literat. Tom. 7. Part. 1. pag. 445.

APNOEA, in medicine, denotes a want of breath, or loſs of reſpiration.

In this ſenſe is the word uſed among the antients, not as importing a total privation of breath, which would only be another name for death; but to denote the reſpiration very ſmall, and ſlow, ſo as to ſeem quite gone, as is the caſe in ſuffocations of the uterus, apoplexies, ſyncopes, lethargies, &c. *Caſt.* Lex. Med. p. 63.

APOBAMINA is uſed by ſome phyſicians for a liquor wherein pieces of gold, or chains heated red hot, have been extinguiſhed, in order to fortify the ſpirits and principal members. Vid. *Cardan*, de Subtil. l. 5. Theatr. Chem. T. 1. p. 626. *Caſtel.* Lex. Med. in voc.

APOBATHRÆ, Αποβαθραι, in antiquity, a kind of little bridges, or ſtairs, joining the land to ſhips, or one ſhip to another. *Potter*, Archæol. l. 3. c. 16.

Theſe were alſo called Επιζωθραι, and κλιμακες.

APOBEE, in botany, a name given by the natives of Guinea to a ſpecies of corn-marygold, called by Petiver *chryſanthemum acaulon Guineenſe foliis longis anguſtis*, from its having long and narrow leaves, and no ſtalk to ſupport the flower. The people of the place uſe this in the ſmall-pox, and other eruptive fevers, boiled in water, and the liquor drank warm. Phil. Tranſ. N°. 232.

APOBOMIOI, Αποβωμιοι θυσιαι, in antiquity, ſacrifices offered on the bare earth, without altars. *Potter*, Archæol. l. 2. c. 2.

APOCARITES, or APOCARITÆ, in eccleſiaſtical hiſtory, antient heretics who aſſerted that the human ſoul is part of, or derived from, the ſubſtance of God. *Prateol.* Elench. Hæret. l. 1. n. 57.

The *Apocaritæ* are ranked as a branch of Manichees.

APOCARPASUM, in natural hiſtory, a name given by the antient Greeks, to a poiſonous drug, called alſo ſometimes ſimply *Carpaſum*; it was the exudation of a tree growing in the country of the Abyſſines, and was ſo like the fineſt myrrh, that it was often mixed among it, and many lives were loſt by adminiſtring it as myrrh. The wood of the tree which produced it was alſo poiſonous, tho' in a leſs degree, and was called by the ſame writers *Apocarpaſum*, as the wood of the balm of Gilead tree is *Apobalſamum*.

APOCATASTASIS, Αποκαταστασις, denotes the entire reſtitution, or redintegration of a thing.

In this ſenſe, we read of the *Apocataſtaſis* of the world, or of all things, Αποκαταστασις Παντων. V. *Pfaff.* Inſt. Hiſt. Eccleſ. Sect. 18. §. 3. Ejuſd. Inſt. Theol. P. 2. c. 12. p. 574.

APOCATASTASIS, among aſtronomers, denotes the period of a planet, or the time wherein it returns to the ſame point of the Zodiac from which it ſet out. *Micræl.* Lex. Phil. p. 148. *Sturm.* Math. Juven. T. 3. p. 162.

APOCATASTASIS is alſo uſed in medicine to denote the ſubſiding, or ſinking of a thing.

In this ſenſe, we read of the *Apocataſtaſis* of urine, the *Apocataſtaſis* of tumours; and other diſeaſes. V. *Brun.* Lex. Med. p. 105.

APOCATHARSIS, in a general ſenſe, denotes the ſame with *Catharſis*, or expurgation.

In this ſenſe, we read of *Apocatharſes* of bile, Αποκαθαρσεις χολης, a ſymptom mentioned by Thucydides in the plague of Athens [a]. Quincy [b] defines *Apocatharſis* a purging upwards and downwards, on what authority I know not. Hence alſo *Apocathartica*, a denomination ſometimes given to what we otherwiſe call ſimply *cathartics*.—[a V. *Brun.* Lex. Med. p. 105. b *Quinc.* Lex. Med. p. 30.]

APOCHA, Αποχη, in the civil law, denotes an acquittance, or receipt given by the creditor to his debtor for money paid. *Briſſ.* de Verb. Signif. p. 51. *Calv.* Lex. Jur. p. 76.

In which ſenſe the word ſtands contradiſtinguiſhed, from *antapocha*, which is given by the debtor to the creditor.—Reuſner and Zieglerus have diſſertations expreſs *de apochis*. *Lipen.* Bibl. Jur. p. 21.

APOCRISIARIUS (*Cycl.*)—The *Apocriſiarii*, or *reſponſales*, are uſed in eccleſiaſtical hiſtory for a ſort of reſidents in the imperial city, in the name of foreign churches and biſhops, whoſe office was to negotiate as proctors at the emperor's court in all eccleſiaſtical cauſes, wherein their principals were concerned.

The inſtitution of *Apocriſiarii* ſeems to have been in the time of Conſtantine, or not long after, when the emperors being become Chriſtians, foreign churches had more occaſion to promote their ſuits at court than formerly; at leaſt we find the office eſtabliſhed by law in the time of Juſtinian. In one of the novels it is ordered, that as no biſhop was to be long abſent from his church without ſpecial command from the emperor, if any one had occaſion to negotiate any eccleſiaſtical cauſe at court, he ſhould prefer his petition either by the *Apocriſiarius* of his church, appointed for ſuch purpoſe, or by the Œconomus, or ſome of his clergy ſent expreſs.

The *Apocriſiarii* ſeem to have been of the clergy; thus Anatolius a deacon of Alexandria was *Apocriſiarius*, or reſident, for Diocorus his biſhop at Conſtantinople, by which means he gained an opportunity of being choſen biſhop of Conſtantinople on the death of Flavian. And Evagrius obſerves the ſame of Eutychius, that from being *Apocriſiarius* to the biſhop of Amaſia, he was immediately advanced to be biſhop of the royal city after Mennas [a]. In imitation of the *Apocriſiarii* of churches, almoſt every monaſtery had their *Apocriſiarius* likewiſe, whoſe buſineſs was not to reſide in the royal city, as the former did, but to act as proctors for their monaſtery or any member of it, when they had occaſion to enter any appearance at law, before the biſhop under whoſe juriſdiction they were. This appears from another of Juſtinian's novels, which requires the Aſcetics in ſuch caſes to anſwer by their *Apocriſiarii*, or reſponſales; theſe were ſometimes alſo of the clergy, as appears from the acts of the 5th general council, where one Theonas ſtiles himſelf preſbyter and *Apocriſiarius* of the monaſtry of mount Sinai. The Latin tranſlator calls him *Ambaſiator*, which is not ſo proper, tho' it in ſome meaſure expreſſes the thing; ſince in after times the emperors alſo gave the name *Apocriſiarii* to their own ambaſſadors, and it became the common title of every legate whatſoever [b].—[a *Bingh.* Orig. Eccleſ. l. 3. c. 13. Sect. 6. b *Suic.* Theſ. Eccleſ. & *Du Cange*, Gloſſ. Gr. in voc. Αποκρισιαριος.

APOCRISIS, Αποκρισις, literally denotes an anſwer. Under the denomination αποκρισεις, or *Reſponſa*, were antiently included not only the reſcripts of the emperors to the petitions of parties, but all manner of decrees and mandates. *Du Cange*, Gloſſ. Lat. T. 1. p. 254. in voc. *Apocriſiarius*.

We have ſeveral books extant under the title of *Apocriſes*, and ſome in oppoſition to theſe, under the title of *Ant-Apocriſes*. *Baill.* Tr. des Anti. §. 173.

APOCRYPHAL (*Cycl.*) is often uſed to denote things falſe, or ſpurious.

We meet with numerous *Apocryphal*, or ſpppoſititious books, publiſhed under the names of patriarchs, prophets, evangeliſts, apoſtles, primitive fathers, ſaints, martyrs, &c. *Apocryphal* propheſies, *Apocryphal* goſpels, *Apocryphal* epiſtles, *Apocryphal* acts, *Apocryphal* apocalypſes, &c.

The writing of books under ſpurious names and obtruding them for the works of inſpired authors, tho' once reputed laudable, and conſecrated under the name of pious fraud, was condemned very early by an apoſtolical canon, in the inſtance of a prieſt, who was depoſed for forging the acts of Paul and Thecla. *Bingh.* Orig. Eccleſ. l. 17. c. 5. §. 18.

Fabricius has publiſhed the fragments and remains of the *Apocryphal* books both of the old and new teſtament, *i. e.* ſuch as bear the names of prophets, apoſtles, &c. who lived under the one teſtament or the other, with notes, &c. *Fabric.* Codex Pſeudepigraphus veteris Teſtamenti, Hamb. 1722 and 1723. 8°. 2 Vol. Codex Apocryphus novi Teſtamenti, 2 Vol. Hamb. 1719, &c. 8°.

APOCRYPHAL is alſo uſed to denote thoſe books which are not authorized or received as authentic by the catholic church.

In this ſenſe is the word uſed by the council of Rome, under pope Gelaſius. *Du Cange*, Gloſſ. Lat. T. 1. p. 256.

APOCRYPHAL is more peculiarly applied to denote certain books of the old teſtament extant only in Greek, admitted by the church of Rome as canonical, but rejected by the reformed churches as no part of holy writ; ſuch are the books of Judith, Wiſdom, Tobit, Baruch, Maccabees, the third and fourth books of Eſdras.

In this ſenſe *Apocryphal* ſtands diſtinguiſhed from canonical, tho' the Romiſh church diſowns the diſtinction. See the articles CANON and CANONICAL.

Authors are divided as to the origin of the appellation *Apocryphal*, and the reaſon why it was given to theſe books. See the *Cyclopædia* and *Carpzov.* Introd. ad Libr. Bibl. P. 1. c. 1. §. 2. It. c. 2. §. 1.

The *Apocryphal* books were not received into the canon, either of the Jews, or antient Chriſtians, but were firſt made canonical by a decree of the council of Trent.

The *Apocryphal* books are alſo called *Acanonical*, Ακανονιστοι; and by ſome writers, *eccleſiaſtical* books, becauſe, tho' not held of divine authority, they were allowed to be read in churches, as containing many things tending to edification, and godly inſtruction; on which account they continue ſtill in uſe in the church of England, though forbidden in the other reformed churches. Vid. *Suic.* Theſ. T. 1. p. 151. in voc. Ακανονιστος.

Wolfius gives the literary hiſtory of the *Apocryphal* books, their various editions, tranſlations, commentaries, &c. Bibl. Hebr. l. 2. Sect. 3. ſeq. T. 2. p. 192. ſeq.

APOCRYPHAL *Hereſy*, is the opinion of thoſe, who allowed only the *Apocryphal*, or ſuppoſititious writings of the prophets and apoſtles, rejecting the genuine books of ſcripture, as not canonical. *Prateol.* Elench. Hæret. l. 1. n. 56

Of this number, we are told, were the Manichees, Gnoſtics, Nicolaitans, Valentinians, and others.

APOCYMA, in the materia medica of the antients, a name given by the Greek authors to a ſort of cement, uſed to daub over the bottoms of their ſhips, to preſerve them from injuries by the water; they called this alſo by the name of *Zopiſſa*, and Aviſenna and Serapion call it *Ketran*, *Kitran*, or *Alkitran*. It was a mixture of bees-wax and pitch melted together, and after it had been ſoaked ſome time in the ſea-water it was ſuppoſed to have peculiar virtues, and was uſed in many compoſitions.

APOCYNUM, in botany. See DOGSBANE.

APODACRYTICA, Αποδακρυτικα, in pharmacy, medicines proper to excite tears. *Caſt.* Lex. Med. p. 64. b.

Some alſo uſe the term *Apodacrytica*, for remedies proper to ſuppreſs tears. *Blanch.* Lex. Med. p. 59.

APODECTÆ, Αποδεκται, in antiquity, a denomination given to ten general receivers, appointed by the Athenians, to receive the public revenues, taxes, debts, and the like. *Pott.* Archæol. l. 1. c. 14.

The *Apodectæ* had alſo a power to decide controverſies ariſing in relation to money and taxes, all but thoſe of the moſt difficult nature and higheſt concern, which were reſerved to the courts of judicature.

APODECTÆI, Αποδεκται, in the Athenian government, officers appointed to ſee that the meaſures of corn were juſt. *Pott.* Archæol. l. 1. c. 15.

The *Apodectæi* were nearly related to the *agaronomi*.

APODEMICA, Αποδημικη, the doctrine or ſcience of travelling, whether for knowledge or devotion's ſake. *Micræl.* Lex. Phil. p. 146.

Jo. Meraker has publiſhed an *Apodemica* [a]. Ranzovius a *methodus apodemica* [b].—[a Erff. 1634. 12°. b Lipſ. 1588. 12°. V. *Lipen.* Bibl. Med. p. 41.]

APODES, in a general ſenſe, denotes things without feet. Zoologiſts apply the name to a fabulous ſort of birds, ſaid to be found in ſome of the iſlands of the new world, which being entirely without feet, ſupport themſelves on the branches of trees by their crooked bills. What is related of their manner of reſting at night is ſtill more extraordinary, that they hang in cluſters in the open air only bound together by their bills, and ſupported by the denſity of the atmoſphere [a]. The Germans and Dutch have alſo their *Apodes*, a ſort of birds ſomewhat like ſwallows, whoſe legs and feet are ſo very ſmall that they ſeem rather formed for creeping than running [b].—[a V. *Lang.* Epiſt. Medic. 6. l. 3. p. 917. b *Brun.* Lex. Med. p. 109.]

APODICTICAL *Method* (*Cycl.*) is uſed by ſome writers to denote the ſyſtematical or ſcientifical method of teaching, or writing. *Paſch.* de Var. Mod. Moral. Trad. c. 6. §. 1. p. 469.

APODIOXIS, Αποδιοξις, in rhetoric, a figure whereby we either paſs over a thing ſlightly, or refer treating of it to ſome other time or place. *Fab.* Theſ. p. 201. *Heder.* Schul. Lex. p. 307.

This is alſo called by Latin writers, *rejectio*, e. gr. *Quid ego ſenatum defendam, judices? Equidem debeo*, &c. Again, *Quid ego ſenatum hoc loco defendam, judices? Fiat id rectius tum quum*, &c.

APODIOXIS, in logic, the rejection of ſuch things as do not neceſſarily belong to the queſtion to be conſidered. *Micræl.* Lex. Phil. p. 148.

APODIXIS, Αποδειξις, in rhetoric, denotes an evident proof, or demonſtration of a point. *Quint.* Inſt. Orat. l. 1. c. 10.

We have ſeveral books extant under the names of *Apodixes*, and ſome by way of anſwer to theſe, under that of *Antapodixes*. V. *Baill.* Tr. des Anti. §. 174.

APODIXIS, Αποδειξις, in middle age writers, denotes a receipt for money paid. *Du Cange*, Gloſſ. Lat. T. 1. p. 257. in voc.

In which ſenſe it amounts to the ſame with *Apocha*.

APODIXIS is alſo ſometimes uſed for a ſpecimen or proof of a thing.

APODOSIS, Αποδοσις, in rhetoric, makes the third part of a compleat exordium, being properly the application, or reſtriction, of the *protaſis*. *Heder.* Schul. Lex. p. 307.

The *Apodoſis* is the ſame with what is otherwiſe called *Axioſis*, αξιωσις; and ſtands oppoſed to *protaſis*. e. gr. *protaſis*, all branches of hiſtory are neceſſary for a ſtudent; *Cataſceue*, ſo that without theſe he can never make any conſiderable figure; *Apodoſis*, but literary hiſtory is of a more eſpecial uſe, which recommends it, &c.

APODOSIS is alſo uſed, in ſpeaking of ſimilies, for that part which makes the application of them. *Heder.* Schul. Lex. p. 308.

APODOSIS is alſo uſed in a rhetorical period, for the conſequent to a *protaſis*, or antecedent preceding. *Heder.* loc. cit.

APODOSIS is alſo uſed for a return to ſomething antecedent, or that went before.

This is otherwiſe called *antiſtophe*.

APODYTERIUM, Αποδυτηριον, in antiquity, a ſtripping room, or apartment at the entrance of baths, wherein perſons dreſſed and undreſſed. *Lang.* Epiſt. Med. 50. p. 225. *Pott.* Archæol. l. 1. c. 8. It. l. 4. c. 19.

This was otherwiſe denominated *coriceum*, *gymnaſterium*, and *ſpoliarium*.

Some will have the *Apodyterium* to have been the ſame with the *coniſterium*; but Voſſius ſhews they were two different places. De Quat. Art. Popul. c. 3. §. 13.

The word is formed of the Greek, αποδυειν, *exuere*, to put off, or undreſs.

APOGRAPHE, Απογραφη, in the antient law, was when a perſon being ſued for money ſuppoſed due to the public, pleaded that the charge was unjuſt, and withal produced all the money he was poſſeſſed of, and declared by what means it came to his hands.

Suidas adds, that απογραφη is ſometimes taken for an action againſt ſuch, as neither paid the fines laid upon them before the ninth prytanea following their ſentence, nor were able to give ſufficient ſecurity to the city. *Pott.* Archæol. Græc. l. 1. c 23.

APOGRAPHE, in the Roman law, denotes a catalogue, or inventory of goods. *Calv.* Lex. Jur. p. 76. b.

APOLEPSIS, Απολειψεως δικη, in the Athenian laws, an action of divorce; brought when a woman had fled from her huſband. *Pott.* Archæol. l. 1. c. 24.

APOLEPSIS, in the antient phyſic, denotes a retention of the urine, or any other matter which ought to be evacuated. *Brun.* Lex. Med. p. 107. a.

APOLEPSIS is alſo underſtood of an interception of the blood or ſpirits, or an extinction of the native heat of the veins.

APOLEPSIS is alſo a denomination of a ſpecies of apoplexy, wherein the ſpeech, ſenſe, motion, &c. ſuddenly fail. *Blanc.* Lex. Med. p. 59.

This ſeems to coincide with what is otherwiſe called a *catalepſis*. See CATALEPSIS, *Cycl.* and *Suppl.*

The word is ſometimes alſo written Απολημψις, *apolempſis*, and Απολημψια, *Apolepſia*.

APOLIDES, Απολιδες, in antiquity, thoſe condemned for life to the public works, or exiled into ſome iſland, and thus diveſted of the privileges of Roman citizens. *Pitiſc.* Lex. Ant. T. 1. p. 123.

APOLINOSIS, in the antient phyſic, a method of curing fiſtula's by means of raw flax. *Brun.* Lex. Med. in voc.

APOLLINARIAN *Games*, in Roman antiquity, were inſtituted in the year of Rome 542. The occaſion was a kind of oracle delivered by the phophet Marcus after the fatal battle at Cannæ, declaring, that to expel the enemy, and cure the people of an infectious diſeaſe, which then prevailed, ſacred games were to be annually performed in honour of Apollo. The prætor to have the direction of them; and the decemviri to offer ſacrifices after the Grecian rite. See *Livy*, l. 25. c. 12.

The ſenate ordered that this oracle ſhould be obſerved the rather, becauſe another of the ſame Marcus, wherein he had foretold the overthrow at Cannæ, had come true; for this reaſon they gave the prætor twelve thouſand aſſes out of the public caſh to defray the ſolemnity. There were ſacrificed an ox to Apollo, as alſo two white goats, and a cow to Latona: all with their horns gilt. Apollo had alſo a collection made for him, beſides what the people who were ſpectators gave voluntarily. The firſt prætor by whom they were held was P. Cornelius Sylla. For ſome time they were moveable or indictive, but at length were fixed, under P. Licinius Varus, to the fifth of July, and made perpetual.

The men, who were ſpectators at theſe games, wore garlands on their heads; the women performed their devotions in the temples at the ſame time, and at laſt they caroufed together in the veſtibles of their houſes, the doors ſtanding open.

The *Apollinarian* games were only ſcenical; and at firſt only obſerved with ſinging, piping, and other ſorts of muſic; but afterwards there were alſo introduced all manner of mountebank-tricks, dances, and the like, yet ſo as that they ſtill remained ſcenical, no chariot races, wreſtling, or the like laborious exerciſes of the body being ever practiſed at them. *Heder.* Schul. Lex. p. 30. ſeq. *Nicol.* Abram. in Not. ad Cicer. Philip. 2. c. 23. *Fabric.* Bibl. Ant. c. 22. §. 7. *Macrob.* Saturn. 1. 17. *Pitiſc.* Lex. Ant. T. 2. p. 114.

Danet, and others, confound the *ludi Apollinares* with the *actiaci*. *Danet*, Dict. Ant. in voc. *Aquin.* Lex. Milit. T. 1. p. 57. b.

APOLLINARES *Ludi* was alſo a general name given to all ſcenical games. V. *Scalig.* Poet. l. 1. c. 30.

Theſe were alſo called *Ludi liberales*, and *ſcenici*.

They differed from the *ludi theatrales*, in that the former were celebrated with all ſorts of plays, farces, poems, recitations, &c. the latter only by dancing, and muſic. *Scalig.* loc. cit.

This kind of *Apollinarians* had their ſhare in almoſt all the ſolemn games.

APOLLINARIS, in botany, a name given by ſome authors to henbane. *Ger.* Emac. Ind. 2.

APOLLONIA, Απολλωνια, in antiquity, feaſts ſacred to Apollo at *Egialea*.

The occaſion of their inſtitution is thus related. Apollo after his victory over Python, went to Egialea, accompanied with his ſiſter Diana; but being frighted thence, fled into Crete. After this the Egialians were infected with an epidemical diſtemper; and being adviſed by the prophets to appeaſe the two offended deities, ſent ſeven boys and as many virgins, to entreat them to return, Apollo and Diana accepted their piety, and came with them to the citadel of Egialea, in memory of which a temple was dedicated to Pitho the goddeſs of perſuaſion; and it became a cuſtom to appoint choſen boys and virgins, to make a ſolemn proceſſion, in ſhew, as if they deſigned to bring back Apollo and Diana; which ſolemnity was continued till Pauſanias's time. *Pott.* Arcæol. Græc. l. 2. c. 20. T. 1. p. 370.

APOLLOGUE (*Cycl.*)—We find many things in authors concerning the origin of *Apologues* [a], the diſtinguiſhing characters of *Apologues*, the uſe and advantages of the way of teaching by *Apologues* [b]. — [a V. *Bayle*, Dict. Crit. in voc. *Eſope*, Not. (A). b *Shafiſb.* Charact. T. 3. p. 206. ſeq. *Paſch.* de Var. Mod. Moral. Trad. c. 2. §. 12. ſeq. *Budd.* Iſag. ad Theol. l. 1. c. 4. p. 293.]

Apologue differs from fable, *fabula*, μυθος, as the former is uſed in ſpeeches, and harangues to perſuade; the latter in tragedies, comedies, and other pieces of poetry, to inſtruct and correct the manners. *Apologue* alſo differs from *ænus*, as the latter is only calculated for the uſe of men, and carries a graver and weightier admonition; whereas *Apologues* are propoſed to children. *Apologue* differs from parable, as the latter is a ſimilitude drawn from natural, moral, or any other branches of knowledge; the former only from moral topics. Others ſtate the difference thus; that parables are taken from the doings of men, *Apologues* from thoſe of brutes, or even of things inanimate; ſo that parables require probability in the narration, which *Apologues* do not. *Paſch.* de Var. Mod. Moral. Trad. c. 2. §. 20.

APOLYSIS, in a general ſenſe, the ſolution, or reſolution of any thing. Thus we read of the *Apolyſis* of a diſeaſe, the *Apolyſis* of a bandage, or the like. *Brun.* Lex. Med. p. 107. b.

APOLYSIS, in a more particular ſenſe, denotes the excluſion of any thing: Thus we read of the *Apolyſis* of the fœtus, the ſecundines, and the like.

APOMELI, in medicine, a kind of decoction prepared of honey, or an honey-comb mixed with vinegar, and boiled a ſhort time, till the qualities of both be united, and the acrimony of the vinegar allayed. *Caſt.* Lex. Med. p. 65.

This is ſometimes alſo called by the Greek writers οξυγλυκυ, *Oxyglycy*, or οξυγλυκες, *Oxyglyces*.

The *Apomeli* is repreſented as a kind of medium between mulſe and oxymel. It was antiently of great uſe among the Greeks, as a detergent, promoter of ſtool, urine, &c.

APOMYOS *Deus*, in the heathen mythology, a name under which Jupiter was worſhipped at Elis, and Hercules as well as Jupiter at the Olympic Games. Theſe Deities were ſupplicated under this name, to deſtroy or drive away the vaſt numbers of flies which always attended at the great ſacrifices: And in thoſe which accompanied the Olympic games, the firſt was always to the *Apomyos*, or Myiagrus Deus, that he might drive away the flies from the reſt. The uſual ſacrifice was a bull; and Pliny tells us, that on this the inſects would go off in whole myriads, in form of clouds, and not return to moleſt the prieſts in the reſt of their ſolemnities, during the whole time. This ſeems to ſtand upon the ſame rank with many other of Pliny's miracles.

APONEUROTICUS *muſculus*, in anatomy, a name given by Spigelius, and ſome others, to a muſcle of the thigh, called by Cowper and Winſlow the *Muſculus lati Tendinis*, and *Muſculus faſciæ latæ*. Winſlow has called it, with more propriety, the *Muſculus Vaginæ femoris*.

APONIA, among phyſicians, a ſtate of indolence, or the abſence of pain [a]. In which ſenſe, the word amounts to the ſame with *Anodynia*. Hence alſo *Apona*, Απονα, is uſed by ſome for medicines which do not excite pain [b].—[a *Gorr.* Def. Med. b *Brun.* Lex. Med. in voc.]

APONOGETON, in Botany, a name given by Pontedera to a genus of Plants, called by Micheli and Linnæus *Zannichellia*. See ZANNICHELLIA.

APOPEMPTIC, Αποπεμπτικος, in the antient poetry, a hymn addreſſed to a ſtranger on his departure from a place to his own country. *Scal.* Poet. l. 3. c. 113.

The antients had certain holy days, wherein they took leave of the gods with *apopemptic* ſongs, as ſuppoſing them returning each to his own country. The deities having the patronage of divers places, it was but juſt to divide their preſence, and allow ſome time to each. Hence it was, that among the Delians and Mileſians we find feaſts of Apollo, and among the Argians feaſts of Diana, called *Epidemiæ*, επιδημιαι, as ſuppoſing theſe deities then more peculiarly reſident among them. On the laſt day of the feaſt they diſmiſſed them, following them to the altars with *apopemptic* hymns.

APOPHASIS, Αποφασις, in the Athenian laws, was ſometimes uſed for the ſame with Απογραφη. *Suid.* Lex. T. 1. p. 300.

APOPHASIS was alſo uſed for the account given of eſtates, at the exchange of them for the avoiding public employments. When any man would excuſe himſelf from any troubleſome and chargeable truſt, by caſting it on another richer than himſelf, the perſon produced had power to challenge him to make an exchange of eſtates, and thereby compel him to undergo the office he had before refuſed. *Pott.* Archæol Græc. l. 1. c. 23.

APOPHASIS, Αποφασις, in the civil law, an anſwer or reſcript of the prince. *Calv.* Lex. Jur. p. 76.

Among logicians the word is alſo uſed for a negation or denial.

APOPHASIS, in rhetorick, a figure whereby we really ſay or adviſe a thing, under a feigned ſhew of paſſing over, or diſſuading it.

Quintilian makes the *Apophaſis* a ſpecies of irony [a]. Scaliger holds it the ſame with what is otherwiſe called *Occupatio* [b].—[a Inſt. l. 9. c. 2. b Poet. l. 3. c. 8.]

APOPHLEGMATISM, Αποφλεγματισμος, in medicine, the operation of purging phlegm or pituita from the head.

Apophlegmatiſm is of two kinds, the one a purgation of pituita by the noſtrils, *Apophlegmatiſmus per nares*; the other by the mouth, *Apophlegmatiſmus per os*.

APOPHLEGMATISM by the mouth is a kind of particular Salivation, differing from the general kind, in that, in the former not only ſaliva is brought from the ſalival glands, but other mucous and ſerous humours from the parts bordering upon the mouth. *Junck.* Conſp. Therap. tab. 7. p. 237.

This is more particularly by ſome authors denominated *Maſtication*. See MASTICATION, *Cycl.*

Some define it a ſhort ſpitting, *ſputatio brevis*, by way of contradiſtinction from a proper ſalivation, which is a long or continued ſpitting.

APOPHLEGMATISM *by the noſtrils* is a peculiar kind of evacuation, whereby the mucous humour lodged in the head, and liable to offend the ſame, is diſcharged either by the ſpontaneous action of the parts, or the uſe of proper medicines. *Junck.* l. c. tab. 6. p. 213. ſeq.

APOPHLEGMATIZANTS (*Cycl.*) are of two kinds, one adminiſtred by the way of the mouth, and intended to operate by ſpitting; the other given by the noſtrils, to operate by ſneezing, &c.

The former are more particularly denominated *Maſticatories*, or *Salivatories*. The latter *Errhines*, or *Sternutatories*.

Our dictionary-writers ſeem all to fail in this article; ſome reſtraining *Apophlegmatizants* to the noſe, as Blancard and Quincy; others to the mouth, as Caſtellus and Bruno.

The claſs of *Apophlegmatizants* adminiſtered by the mouth are by ſome ſubdivided into two ſorts: The firſt, properly denominated *Maſticatories*, conſiſt of thoſe which are merely inſipid, or without all acrimony; but which, by chewing in the mouth, draw ſaliva from the neighbouring glands. Such are paper, a leaden bullet, cryſtal, maſtic, and the like. See MASTICATORY, *Cycl.*

The ſecond, properly denominated *Apophlegmatizants*, are thoſe compoſed of acrimonious particles, which vellicating the membranous coats of the mouth, occaſion a more plentiful diſcharge of ſaliva, by which thoſe acrimonious particles are diluted and deterged.: Such are tobacco, ſage, and the like. *Nent.* Fundam. Med. T. 1. tab. 4. §. 9. p. 283.

Their chief uſe is in ſerous or watry diſorders of the head, apoplexies, hydrocephalus's; ſometimes alſo in diſorders of the eyes, the tooth-ach, and the like. V. *Boerh.* de Mat. Medic. p. 127. *Nent.* l. c. T. 2. tab. 24. p. 122.

The claſs of *Apophlegmatizants* adminiſtred by the noſe may be divided, 1°. into ſuch as operate without ſneezing, by reſolving the humours lodged in the glands of the noſtrils, and gently exciting the glands to an excretion. Theſe are more particularly denominated *Errhines*. Id. ibid. See the article ERRHINA, *Cycl.* and *Suppl*

2°. Such as operate by ſtrongly ſtimulating the membrane of the noſtrils, raiſing a ſneezing, and expelling the humours with violence. *Nent.* loc. cit. *Junck.* Conſp. Therap. tab. 6. p. 215.

Theſe are more properly denominated *Ptarmics* and *Sternutatories*. See PTARMICA and STERNUTATIVE, *Cycl.*

Such are tobacco, ſnuffs of divers ſorts, hellebore, &c.

APOPHORETA, in antiquity, preſents made to the gueſts at a feaſt, or other entertainment, which they carried away with them. *Lipſ.* Saturn. l. 1. c. 16. *Du Cange*, Gloſſ. Lat. T. 1. p. 258.

The word is formed of the Greek Αποφορεω, I carry away.

Veſpaſian gave *Apophoretæ* to the men in the Saturnalia, and to the women on the calends of March. *Suet.* in Veſp. c. 19.

Hence alſo Martial calls the fourteenth book of his Epigrams *Apophoreta*:—And in imitation of him, Grotius gives the ſame title to a book of his Poems. V. *Fabric.* Bibl. Lat. l. 2. c. 20.

The name *Apophoreta* was afterwards appropriated to the veſſel wherein the preſents were put. *Iſid.* orig. l. 20. c. 4.

It was ſometimes alſo applied to the caſe wherein relicts were kept.

APOPHRADES, Αποφραδες, in phyſic, denotes a ſort of unhappy days, wherein either no criſis, or an ill one, is to be expected. V. *Lang.* Epiſt. Medic. 36. l. 1. p. 161.

APOPHTHEGM, a ſhort, wiſe, and pithy ſaying. *Cic.* de offic. l. 1. c. 29.

Such is that of Cyrus: He is unworthy to be a magiſtrate, who is not better than his ſubjects. Or this; He that will not take care of his own buſineſs, will be forced to take care of that of others. Or that of Artaxerxes Mnemon, when reduced to hunger by the loſs of his baggage; How much pleaſure have I hitherto lived a ſtranger to? Or that of Cato; *Homines nihil agendo diſcunt male agere*. Or, finally, that of Auguſtus, σπευδε βραδεως, *feſtina lente*.

Plutarch, Eraſmus, and others, have publiſhed collections of *Apophthegms*. Harſdorffer has publiſhed the art of *Apophthegms*, *Ars Apophthegmatica*, in High Dutch, under the fictitious name of *Quirinus Pegeus*. Alph. Panormita has given four books of the *Apophthegms* of Alphonſus king of Arragon, which have been illuſtrated with commentaries by Æneas Silvius. *Paſch.* de Var. Mod. Mor. Trad. *Lipen.* Bibl. Phil. T. 1. p. 84.

The modern books under the titles of *Ana*, *Table-talk*, and the like, are full of the *Apophthegms*, or memorable ſayings, of learned men; as *Scaliger*, *Thuanus*, *Menage*, *Selden*, &c.

APOPHYGE, or APOPHYGIS, (*Cycl.*) in architecture, is properly a large concave or arched member, ſerving either to connect two flat members together, or to join a flat member to another not flat. *Wolf.* Elem. Archit. §. 109.

In this ſenſe we may diſtinguiſh two *Apophyges*, the upper and lower.

Upper APOPHYGIS is that part, or ſweep, whereby a large flat member of the upper part of an order is connected to the lower. Id. in Lex. Math. p. 127.

This is alſo called by the French *le Congé d' Enhaut*, and by the Italians *il Cavo di ſopra*.

Lower APOPHYGIS, *Apophygis inferior*, is a concave member which connects two flat parts in the lower part of an order. This the French call *le Congé d' Embas*, and the Italians *il Cavo di Baſſo*, ſometimes alſo *il Vivo di Baſſo*. Id. ibid.

APOPHYSIS (*Cycl.*) is the ſame with what we otherwiſe call proceſs, eminence, probole, projecture, protuberance, ecphyſis, head, and the like. *Van Horn.* Microcoſm. §. 11. p. 8.

Apophyſes differ from *Epiphyſes*, as theſe latter are only appendages adhering or contiguous to a bone; whereas the former are productions or continuations of the bone itſelf, ſhooting out from it like branches from the trunk of a tree. *Barthol.* Libel. 4. Anat. c. 1. See EPIPHYSIS, *Cycl.*

Apophyſes, with regard to figure, may be reduced to two kinds, round and long.

The former are called by the general name of *heads*. Theſe may be ſubdivided into two ſorts: If the head be large, oblong, and very prominent, it is called ſimply, Κεφαλη, *caput*, head; if flat and low, Κονδυλος, *condylus*.

The long kind are alſo ſubdivided into acute and obtuſe: The acute terminating in a point, is called Κορωνη, *corona*, from the reſemblance it bears to a quail's bill. There are divers ſpecies of this, diſtinguiſhed according to their figure, by different names; that reſembling a ſtyle or bodkin is called *ſtyloides*, στυλοειδης, or *graphioides*, γραφιοειδης; that reſembling a breaſt, *maſtoides* or *mammaria*, μαστοειδης; that reſembling an anchor, *anchoroides*, αγκοροειδης; that reſembling a crow's bill, *coracoides*, Κοραϰοειδης; that reſembling a tooth, οδοντοειδης, or *dentiformis*. Hence alſo the terms *glenoides*, *condyloides*, *pterygoides*, *corone*, *trochanter*, &c.

The obtuſe kind terminating in a head, is called *cervix*, *collum*, or neck. V. *Blaſ.* Comm. ad *Veſling.* c. 2. p. 16. *Heiſt.* Comp. Anat. §. 49. See CERVIX, &c.

The general uſe of *Apophyſes* is, 1°. For the greater conveniency of articulation, whether it be with or without motion. 2°. To afford a more commodious origination and inſertion to the muſcles; and 3°. To defend other parts. Their particular uſes will be indicated under the proper articles of each bone, *&c.* *Heiſt.* Compend. Anat. §. 50. p. 19.

APOPHYSIS is alſo applied by Hippocrates to certain fleſhy excreſcences, found in moles, and female fœtus's of ſeven months, as appearing rather proceſſes, and origins of members, than diſtinct members, ſuch as he ſays may be found in male fœtus's. V. *Caſt.* Lex. Med. p. 66. a.

APOPHYSIS *Raviana* denotes the larger proceſs of the malleus of the ear, into which the muſcles of the bone are inſerted. *Heiſt.* Comp. Anat. n. 68. p. 25. See MALLEUS.

APOPLANESIS, Αποπλανησις, in oratory, a kind of fallacious defence, and ſlurring over, darkening and concealing things, in order to blind the judges, or the audience. *Fab.* Theſ. in voc.

APOPLANESIS, in a more particular ſenſe, denotes a ſort of confutation, wherein the ſpeaker promiſes to anſwer what the adverſary objects in another place, but which being too difficult to anſwer, is afterwards forgot and left to paſs unanſwered. *Heder.* Schul. Lex. p. 315.

APOPLECTIC *Veins*, a name ſometimes given to the jugulars. Theſe are ſometimes alſo denominated among antient writers *ſoporales*.

Some writers reſtrain *apoplectic* to the internal jugular, aſcending by the ſide of the trachea. *Barthol.* Anat. Libel. 1. c. 6.

APOPLECTICA, *Apoplectical medicines*, a name uſed by ſome for what we more properly call *antapoplectics*. *Brun.* Lex. Med. in voc.

APOPLECTICAL *Balſams*, is a name given by ſome writers to a ſort of ſweet ſcented balms, prepared of diſtilled oils, and uſed by way of perfume. V. *Boerh.* New Meth. Chem. P. 3. p. 10. ſeq.

APOPLEXY (*Cycl.*)—This diſtemper is alſo denominated by Roman writers *Sideratio*. *Lang.* Epiſt. Med. p. 106.

The word Αφωνος, in Hippocrates, includes both *Apoplexies* and ſyncopies. *Friend*, Hiſt. of Phyſ. T. 1. p. 93.

Serous or lymphatic *Apoplexies* are thoſe chiefly incident to old men, in whom the vital heat is greatly abated. The young and corpulent are expoſed to the ſanguineous kind.

Some condemn the common method of letting blood from any vein in this diſtemper, giving emetics, or ſharp clyſters, and applying bliſters; but inſiſt much on the advantage of arteriotomy, and recommend cordials. *Calderwood*, new Meth. of cur. Apoplex. ap. Med. Eſſ. Edinb. Abrid. vol. 2. p. 460.

A late author thinks that the carus, cataphora, or ſubeta Avicennæ, lethargy, coma vigil, or typhomania Galeni, palſy, paraplegia, hemiplegia, *&c.* are nothing but different ſpecies of the *Apoplexy* in a leſſer degree. Medic. Eſſ. Edinb. Vol. 1. p. 266.

APOPLEXY is alſo reckoned among the diſeaſes of hawks, being a diſtemper which ſeizes their heads, occaſioned by too much greaſe and ſtore of blood, or their having ſtood too long expoſed to the heat of the ſun, or having been ſuffered too long flights in the heat of the day. Dict. Ruſt. T. 1. in voc.

Horſes are alſo ſaid to be ſubject to *Apoplexies*, occaſioned by want of exerciſe, or too plentiful feeding.

The diſtemper ſhews itſelf by a giddineſs, reeling, trembling, and ſometimes falling ſuddenly down, without ſenſe or motion. The cure is by taking a large quantity of blood from the neck, applying volatile ſpirits to the noſtrils. Farr. D. p. 28.

APOPLISTÆ, Αποπλισται, in antient laws, a ſort of officers in in the country, appointed to diſarm all private perſons, or thoſe not entitled to have arms; for the prevention of miſchief and violence. *Du Cange*, Gloſſ. Lat.

APOPOMPAE, Αποπομπαι, in antiquity, certain days in which ſacrifices were offered to the gods called *Pompæi*. Who theſe deities were is doubtful; certain it is, that Πομπαιος denotes any perſon that conducts another in his way; and therefore was applied to Mercury, who was believed to be Pluto's gentleman-uſher, and to conduct the ſouls of deceaſed perſons to the ſhades below. Potter however is rather inclined to think that theſe days belonged to the gods, called Αποπομπαῖοι, *i. e.* Αποτρόποι, (for αποπομπή is by Phavorinus expounded αποτροπή) otherwiſe named Λύσιοι, αλεξίκακοι, αποτρόπαῖοι, φύξιοι, and *Averrunci*, becauſe they were thought to avert evils; ſuch were Jupiter, Hercules, and others. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 370.

APOPOMPÆUS, αποπομπαῖος. See AZAZEL.

APOPOMPES, Αποπομπης δικη, in Greek antiquity, an action of divorce, when the huſband had put away his wife. *Pott.* Archæol. Græc. l. 1. c. 24.

This ſtands contradiſtinguiſhed from *Apolepſis*. See the article APOLEPSIS.

APOPSYCHIA is ſometimes underſtood of effluvia, emitted from the ſun, moon, and other heavenly bodies; to which their influences on ſublunary things is aſcribed. *Voſſ.* de Scient. Mathem. c. 37. §. 2.

APORIA, in rhetoric, denotes a ſtate of doubt or wavering, wherein the orator appears undetermined whether to ſay a thing or not, *e. gr.* *Eloquar an ſileam?* Shall I ſpeak out, or hold my tongue? *Micræl.* Lex. Phil. p. 149.

This is otherwiſe called doubting, *dubitatio*, *addubitatio*.

APORON (*Cycl.*)—This word is ſometimes alſo uſed among law writers for an inexplicable ſpeech, or diſcourſe. *Calv.* Lex. Jur. p. 77. a.

APORRHOEA, (*Cycl.*) in phyſic, is ſometimes particularly uſed for morbid or contagious miaſmata, or effluvia from unwholeſome bodies. *Brun.* Lex. Med. p. 109.

APORRHOEA is alſo uſed to denote a ſhedding or falling off of the hair. See the articles ALOPECIA, BALDNESS, *&c.* *Cycl.* and *Suppl.*

APOSIOPESIS, Αποσιώπησις, in rhetoric, is commonly uſed to denote the ſame with *Ellipſis*. Jul. Scaliger diſtinguiſhes them. The latter, according to him, being only the ſuppreſſion of a word; as, *me, me: adſum qui feci*; the former, the omitting to relate ſome part of the action; as

Dixerat, atque illam media inter talia ferro
Collapſam adſpiciunt.——————

Where the poet does not mention how *Dido* killed herſelf. See ELLIPSIS. *Cycl.*

This figure is of uſe to keep up the grandeur and ſublimity of a diſcourſe. Vid. *Voſſ.* Rhet. l. 5. p. 345, 346, 352.

APOSITION, *Apoſitio*, in medicine, an averſion for food.

Apoſition amounts to much the ſame with *Anorexia*; though ſome make a difference; alledging that the latter imports no more than an inappetency, or want of deſire to eat; the former, an averſion or loathing of it. *Linden.* Select. Med. Ex. 13. §. 79.

APOSPASMA, in medicine, denotes a ſolution of continuity in ſome organical part, as a membrane, ligament, or the like. *Brun.* Lex. Med. in voc.

APOSPASMA is alſo applied to metalline recrements, as tutia, melanteria, miſy, ſory, or the like. *Ludov.* Diſſ. Pharmac. 1. p. 538.

APOSPHACELISIS, Αποσφακελισις, in the antient phyſic, denotes a Mortification of a fleſhy part, happening in caſes of wounds, and fractures, from too tight a ligature. *Caſtel.* in voc. and *Brun.* Lex. Med. p. 110.

APOSPHRAGISMA, Αποσφραγισμα, in antiquity, the figure or impreſſion of a ſeal. *Fab.* Theſ. p. 204.

It was forbid among the antients to have the figure or image of God on their rings or ſeals. To this purpoſe the precept of Pythagoras, Εν δακτυλιω εικονα Θεου μη περιφερειν! But in proceſs of time, this grew little regarded; it was uſual enough to have the figures of Egyptian and other deities, as well as of heroes, monſters, friends, anceſtors, and even brutes on their dactyli, or ring ſeals. Thus Cæſar had the image of Venus, Pollio of Alexander, Auguſtus of the ſphinx, Pompey of a frog, Lentulus of his grandfather, *&c.*

APOSPONGISMUS, among antient phyſicians, the application of a ſponge, whether dry or ſoaked with water, either to cleanſe the filth from a part, or to appeaſe pains, allay itching, or refreſh the ſpirits. *Caſtel.* lex. in voc. *Gorr.* Def. Med. p. 46.

APOSTAGMA, in natural hiſtory, the muſt or juice which runs from the grapes ere they be trodden or preſſed.

This is otherwiſe called *Apoſtalagma*; ſometimes, on account of its great ſweetneſs, γλυκυς; ſometimes *protropum*. *Linden.* Ex. 10. §. 206.

APOSTASIOU DICE, Αποστασιου δικη, in the Athenian laws, an action brought againſt foreigners ſojourning at Athens, who neglected to chuſe themſelves patrons. *Potter*, Archæol, l. 1. c. 24. p. 129.

APOSTASIOU DICE, Αποστασιου δικη, was alſo an action brought by a maſter or patron againſt his ſervants or clients, for refuſing to perform the ſervices they were bound to. *Pott.* Archæol. l. 1. c. 24.

APOSTASIS, Αποστασις, in phyſic, uſually ſignifies the ſame with abſceſs. See IMPOSTHUMATION.

In which ſenſe, the word is uſed by Hippocrates and others promiſcuouſly with Αποστημα, *Apoſtem.*

APOSTASIS, in a more particular ſenſe, denotes a departure or removal of the morbid matter, in the criſis or ſolution of a diſeaſe. *Junck.* Conſp. Chirurg. tab. 6. p. 66.

In which ſenſe, the word is alſo uſed by Hippocrates and the antients, as different from *Apoſtem.*

Apoſtaſis, in this ſenſe, is of two kinds; the firſt, Καθ' ἐκκρισιν; the ſecond, Καθ' ἀποθεσιν.

Ἀποστασις καθ' ἐκκρισιν denotes an excretion or efflux of the matter.

Under this are included immediate eruptions, and the like evacuations, whereby the containing cauſe of a diſeaſe, and the chief matter of it, are thrown off from the nobler and more intimate parts of the body, through the leſs noble and external parts.

Ἀποστασις καθ' Ἀποθεσιν denotes a tranſlation of the morbid matter from the principal to ſome other leſs noble parts, but without any total expulſion of it from the body.

Inſtances of this kind are chiefly in acute fevers, where their progreſs has been diſturbed, or a bad regimen been obſerved. *Junck.* lib. cit. p. 66.

Later writers have been led into great inaccuracies in relation to the preciſe differences and characters of Hippocrates's *Apoſtaſis* and *Apoſtema.* Dr. Stahl has given a diſſertation expreſs on the ſubject. *Goelic.* Hiſt. Chirurg. Recent. §. 563. p. 564.

APOSTASIS is alſo uſed by Hippocrates for a fracture of a bone, wherein ſome part is entirely ſeparated or broken off. *Hippocr.* de Fract. ap. *Brun.* Lex. Med. p. 111. a.

APOSTATE, in a general ſenſe, ſignifies a deſerter from the true religion. See APOSTACY, *Cycl.*

In which ſenſe, *Apoſtate* amounts to much the ſame with lapſed, perverted, &c.

Apoſtates to Mahometaniſm are commonly called *Renegado's.*

The *Greeks* frequently confound *Apoſtates* with Heretics. *Suic.* Theſ. Eccleſ. T. 1. p. 124. in voc. Αιρετικος.

The Emperors Adrian and Julian are on record in church hiſtory as *Apoſtates.* The former, according to Lampridius, having begun to erect temples to Chriſt, was prevailed on by the Præfectus Sacrorum to deſiſt, leſt all the world ſhould turn Chriſtians, and the other temples be deſerted.

The puniſhment of *Apoſtates* from Chriſtianity to Judaiſm was left by Conſtantine to the diſcretion of the Judges, who, when they thought fit, were at liberty to condemn them to death. The ſubſequent emperors, in lieu hereof, enacted confiſcations. The ſtate of theſe new Jews was much worſe than that of the native Jews. Theſe latter had many privileges; the former were not allowed to make wills, nor was their teſtimony admitted in the courts of juſtice. *Bing.* Orig. Eccleſ. l. 16. c. 6. §. 1.

APOSTATE is alſo uſed for a religious, who having taken the vows, quits the monaſtic profeſſion without leave. *Du Cange*, Gloſſ. Lat. T. 1. p. 259. ſeq. in voc. *Apoſtatare.*

APOSTATE is alſo applied to the prieſts who throw aſide the tonſure, and abandon the clerical life.

In a decree of pope Nicolas, publiſhed in 1059, theſe are called *Apoſtatæ Julianiſtæ*, or Julian *Apoſtates*, in alluſion, we ſuppoſe, to the tradition of the emperor Julian's having been in holy orders. Theſe, unleſs they returned to the clerical, were excluded all benefit of Chriſtian communion. Cod. tit. *de Apoſtatis*, l. 1. *du Cang.* Gloſſ. Lat. T. 1. p. 259.

APOSTATE, in eccleſiaſtical writers, a perſon who falls away voluntarily into heatheniſm, after having for ſome time made profeſſion of Chriſtianity.

Apoſtates differed from common lapſers into idolatry, in this, that the latter fell by Violence, and the terror of perſecution; but *Apoſtates* by principle and choice, out of a diſlike to chriſtianity, and a love of gentiliſm. As the lapſers generally returned as ſoon as they had opportunity, *Apoſtates* commonly continued ſuch all their days.

The ſtate of *Apoſtates* in the antient church was even worſe than that of heretics. The imperial laws, at leaſt from the time of Theodoſius, denied *Apoſtates* the common privileges of Roman ſubjects, depriving them of the power of diſpoſing of their eſtates by will, &c. [a] No man might make them his heirs, nor could they ſucceed to any inheritance. They were to have no commerce or ſociety with others; their teſtimony was not to be taken in law; in fine, they were to be infamous to all intents. They were not ſo much as allowed the right of ſanctuary. If they were not baniſhed, it was only for the greater puniſhment, to live among men, and not enjoy the common privileges of men; nor were they ever to regain their antient ſtate. Though they repented and returned it was to be no benefit to them: Their repentance could never obliterate their crime: Such was their condition in temporals. And, by ſome canons in the church, they were not leſs ſeverely treated in ſpirituals. The council of *Eliberis* forbad communion to the laſt to all *Apoſtates* [b].—[a *Bing.* Orig. Eccleſ. l. 16. c. 6. §. 4. b Id. Ibid. It. l. 8. c. 11. §. 6. *Suic.* Theſ. T. 1. p. 472.]

APOSTERIGMA, in the antient phyſic, denotes a reſt or ſupport for a diſeaſed part, without binding. *Brun.* Lex. Med. p. 111.

Such are pillows, cuſhions, and the like.

The word ſeems alſo to have been uſed by *Hippocrates* for a ſtoppage, or obſtruction of ſome vaſcular part.

APOSTHUME (*Cycl.*) is particularly uſed for a diſeaſe of hawks, which occaſions ſwellings in the head, ariſing from a redundancy of humours, and a preternatural heat of that part. *Ruſt.* Dict. T. 1. in voc.

The *Apoſthume* diſcovers itſelf by the ſwelling of the eyes, a moiſture iſſuing from the ears, and their wings extremely ſlothful.

APOSTIL, *Apoſtilla*, in matters of literature, a marginal addition, or note to a book, paſſage, or the like.

APOSTLE (*Cycl.*)—The *Apoſtles* are called by the Arabs *Havarioun*, *q. d.* whitſters or fullers, from their profeſſion, ſay ſome; but, according to others, becauſe repreſented by the antient Chriſtians, in their pictures, as clothed in white, and that their tradition informed them, that they appeared thus to the believers. The Arabs alſo give them the denomination *Aſhab Jeſa*, *q. d.* Companions, or diſciples of Chriſt; but never that of *Raſſoulon*, or *Morſeloun*, which properly ſignifies *Apoſtles*, or meſſengers. The former appellation they reſerve wholly for their own prophet Mahomet, and the latter for the patriarchs and prophets of the Old Teſtament. *d'Herbel.* Bibl. Orient. p. 439.

Jo. Simon has a diſcourſe expreſs, to ſhew that the *Apoſtles* were all Lutherans, none of them papiſts. Collegium Apoſtolico-Lutheranum contra Kellium, S. G. quod omnes Apoſtoli fuerint Lutherani, nulli Papiſtæ. Wittemb. 1676. 4°.

Fabricius gives a liſt of the chief writers, who have treated of the origin, office, &c. of the *Apoſtles.* *Fabric.* Bibl. Antiq. c. 13. §. 11.

APOSTLE is alſo a title or appellation given to Chriſt by the author of the epiſtle to the Hebrews, to John the Baptiſt by Tertullian, to the ſeventy diſciples, to the diſciples of the *Apoſtles*, and even to ſeveral who preached and propagated the goſpel long after the *Apoſtles* days. V. *Fabric.* Bibl. Antiq. c. 13. §. 11.

We even read in Dr. Grabe of a female *Apoſtle*, *Apoſtola*, or ἡ Αποστολος, *viz.* St. Thecla; and the ſame title appears to have been given to other godly women. *Grab.* Spicil. T. 1. p. 331. Grotius obſerves, that Conſtantine the Great was called *Apoſtle* among the princes, εν Βασιλευσι Αποστολος. *Grot.* de Jur. Summ. Poteſt. p. 21.

APOSTLE is alſo thought by many to have been the original name for biſhops, before the denomination *Biſhop* was appropriated to their order. At firſt the name biſhop and preſbyter are ſuppoſed to have been common to all miniſters of the firſt and ſecond order; during which time the appropriate name for biſhops, to diſtinguiſh them from meer preſbyters, was that of *Apoſtles.* Thus Theodoret ſays expreſly, the ſame perſons were antiently called promiſcuouſly both biſhops and preſbyters, whilſt thoſe who are now called biſhops, were called *Apoſtles.* Thus, he ſays, Epaphroditus was the *Apoſtle* of the Philippians, Titus the *Apoſtle* of the Cretians, and Timothy the *Apoſtle* of the Aſiatics. *Bing.* Orig. Eccleſ. l. 2. c. 2. ſec. 1.

APOSTLE, in middle age writers, is alſo uſed to denote the book of St. Paul's epiſtles, or the epiſtle which was taken out of them. *Du Cange*, Gloſſ. Lat. T. 1. p. 262.

In this ſenſe we meet with, reading the *Apoſtle*; then follows the *Apoſtle*, *deinde ſequitur Apoſtolus*, that is, a leſſon out of St. Paul's epiſtles.—Let him read the *Apoſtle* and the goſpel, &c. This is ſometimes alſo called *Apoſtolicum.* The ſub-deacon had the care of the *Apoſtolicum*, and the archdeacon of the *Evangelium*, or goſpel.

APOSTLE, *Apoſtolus*, is alſo uſed for a letter dimiſſory given by a biſhop, either to a clerk, or a layman, when going into another dioceſe; the layman for ordination there, and the clerk either to be admitted to adminiſter the ſacraments, or be entered in the catalogue of another church. *Du Cange*, Gloſſ. Lat. T. 1. p. 262. See DIMISSORY, *Cycl.*

Apoſtoli were alſo given by officials, and eccleſiaſtical judges, in caſe of perſons ſent to Rome on appeals to the pope.

All letters of appeal were ſometimes alſo denominated *Apoſtoli.* Matth. Paris writes the word, in this ſenſe, *Apoſtilli.* Hiſt. p. 458.

APOSTLES is alſo a denomination of a ſect of heretics, more frequently called *Apoſtolici.* *Du Cange*, Gloſſ. Lat. T. 1. p. 263. See APOSTOLICI, *Cycl.*

APOSTOLÆUM, or APOSTOLIUM, in eccleſiaſtical writers, denotes a church dedicated to, and called by, the name of an *Apoſtle.* *Bingh.* Orig. Eccleſ. l. 8. c. 1. §. 8. *Suic.* Theſ. T. 1. p. 473.

Sozomen ſpeaks of the *Apoſtolæum* of St. Peter at Rome, of the *Apoſtolæum* of St. Peter and St. Paul at Quercus near Chalcedon.

In this ſenſe *Apoſtolæum* ſtands diſtinguiſhed from *Prophetæum*, *Martyrium*, &c.

APOSTOLARE, APOSTOLICARE, *Apoſtolizing*, in ſome middle age writers, denotes the being preferred to the dignity of pope. *Du Cange*, Gloſſ. Lat. T. 1. p. 261.

APOSTOLATE, in a general ſenſe, is uſed for miſſion.

In this ſenſe Olearius has a diſcourſe expreſs concerning the *Apoſtolate* of Chriſt. Lipſ. 1681. 4°.

APOSTOLATE more properly denotes the dignity or office of an apoſtle of Chriſt. See APOSTLE, *Cycl.* and *Suppl.*

APOSTOLATE is alſo uſed, in antient writers, for the dignity or office of a biſhop.

In this ſenſe, we meet with ſeveral letters, petitions, requeſts, *&c.* directed to biſhops under the title of your *Apoſtolate*, *Apoſtulatus*, or *Apoſtolatus veſter*. *Du Cange*, Gloſſ. Lat. T. 1. p. 261.

But as the title *Apoſtolicus*, had been appropriated to the pope, ſo that of *Apoſtolate* became at length reſtrained to the ſole dignity of the popedom, under which title the biſhops of Rome were addreſſed even by kings and emperors; We beſeech your *Apoſtolate*; we intreat your *Apoſtolate*. The popes even made no ſcruple of uſing it in ſpeaking of themſelves; you have ſignified to our *Apoſtolate*; it ſeems good to our *Apoſtolate*, &c.

Every biſhop's ſee was antiently dignified with the title of *ſedes Apoſtolica*, an Apoſtolical ſee, which is now the peculiar denomination of the ſee of Rome. The catholic church, ſays Auſtin, is propagated, and diffuſed over all the world by the *Apoſtolical* ſees, and the ſucceſſion of biſhops in them. It is plain this is not ſpoken only of the biſhop of Rome, but of all other biſhops whatſoever. Sidonius Apollinaris uſes the ſame expreſſion, in ſpeaking of a private French biſhop, *viz.* that he ſat five and forty years, in his apoſtolical ſee. *Bingh.* Orig. Eccleſ. l. 2. c. 2. Sect. 3.

Pope Siricius himſelf gives all primates the appellation *Apoſtolici*, and it continued to be their title to the days of Alcuin, who ſpeaking of the election of biſhops, ſays, when the clergy and people have choſen one, they draw up an inſtrument, and go with their elect to the *Apoſtolicus*; by whom he means not the pope, but the primate or metropolitan of every province, who had the right and power of conſecration. *Bingh.* Orig. Eccleſ. l. 2. c. 16. Sect. 24.

APOSTOLICUM, Αποστολικον, is a peculiar name given to a kind of ſong or hymn, antiently uſed in churches.

The *Apoſtolicum* is mentioned by Greg. Thaumaturgus as uſed in his time. Voſſius underſtands it as ſpoken of the apoſtles creed; Suicer thinks this impoſſible, for that this creed was then unknown in the churches of the eaſt. *Suic.* Theſ. Eccleſ. T. 1. p. 473. ſeq.

APOSTROPHE, in medicine, denotes a loathing or averſion for food. *Æginet.* l. 3. c. 37. *Linden.* Exerc. 14. §. 63. *Caſtel.* Lex. Med. in voc.

In which ſenſe the word amounts to the ſame with *Apoſition*. See APOSITION.

APOSYRMA, Αποσυρμα, in medicine, denotes a deſquamation, or ſcaling of the ſkin.

In which ſenſe the word amounts to much the ſame with abraſion. Greek writers uſe the word *Apoſyrmata*, for what the Latins call *Abraſa*, viz. a ſuperficial kind of exulcerations, which raiſe the ſkin. *Brun.* Lex. Med. p. 111. b.

APOTAXOMENI, in eccleſiaſtical antiquity, a name antiently given to Monks on account of their renouncing the buſineſs and pleaſures of the world. *Bingh.* Orig. Eccleſ. l. 7. c. 2. §. 14.

APOTEICHISMUS, Αποτειχισμος, in the antient military art, a kind of line of circumvallation drawn round a place in order to beſiege it. *Potter*, Archæol. Att. l. 3. c. 10.

This was alſo called *Periteichiſmus*, περιτειχισμος.

The firſt thing the antients went about, when they deſigned to lay cloſe ſiege to a place, was the *Apoteichiſmus*; which ſometimes conſiſted of a double wall, or rampart, raiſed of earth; the innermoſt to prevent ſudden ſallies from the town; the outermoſt to keep off foreign enemies from coming to the relief of the beſieged. This anſwered to what is called lines of contravallation and circumvallation, among the moderns.

APOTELESMA, Αποτελεσμα, in a general ſenſe, denotes an effect of ſome cauſe. *Scheibl.* Topic. c. 6. n. 10.

APOTELESMA is alſo uſed for a prognoſtic, or natural prediction of an event.

In which ſenſe *Scaliger* ſpeaks of the *Apoteleſmata* of Hippocrates. The anſwers of aſtrologers deduced from the conſideration of the ſtars are particularly called *Apoteleſms*, or *Apoteleſmata*.

APOTELESMATA is more particularly uſed by aſtrologers for the effects of the ſtars and planets on ſublunary bodies. *Voſſ.* de Scient. Mathem. c. 37. §. 1.

In which ſenſe *Apoteleſmata* amount to the ſame with influences.

Some will alſo have *Apoteleſmata* to denote little figures and images of wax, made by magical art to receive the influence of the ſtars, and uſed as helps in divination. *Bingh.* Orig. Eccleſ. l. 16. c. 5. §. 1.

APOTELESMATICA, Αποτελεσματικη, the ſcience of apoteleſms, or the art of foretelling future events, from the aſpects and configurations of the heavenly bodies. *Voſſ.* de Scient. Mathem. c. 37. §. 1.

In this ſenſe, *Apoteleſmatica* amounts to the ſame with what we otherwiſe call *judicial aſtrology*.

Sozomen denominates this, *apoteleſmatical* aſtronomy. L. 3. c. 6.

Hence alſo aſtrologers are called *Apoteleſmatici*, as ſynonimous with mathematici, genethliaci, Chaldæi, *&c.* *Bingh.* Orig. Eccleſ. l. 16. c. 5. §. 1.

APOTHECARY (*Cycl.*)—In writers of the middle age, *Apothecaries* are called *confectioners*, *confectionarii*.

The perſon, attributes, and office of an *Apothecary*, are well deſcribed by Hofman, in his Clav. ad Schrod. p. 29.

The antient phyſicians were their own *Apothecaries*.

In Muſcovy, we are told, there are no *Apothecaries* at all; but then there are no phyſicians neither, except two or three retained by the court, and thoſe rather for ſtate than ſervice [a]. Travellers ſpeak of a famous *Apothecary*'s ſhop at Dreſden, furniſhed with four thouſand ſilver pots, all filled with the choiceſt drugs [b].—[a V. Nouv. Rep. Lett. T. 13. p. 506. b V. Jour. des Scav. An. 1676. p. 267.]

There are in London two kinds of *Apothecaries*, the wholeſale and the retail; it is the retail *Apothecary* that the phyſician is concerned with. The retail *Apothecary* generally acts by rule, follows his orders, and compounds with art and care; tho' he will ſometimes ſubſtitute a *quid pro quo*, and now and then venture to reverſe an order. According to the ſkill and care of this trader, he is more or leſs liable to be impoſed on by the druggiſt, and the trading chemiſt, all of them uſually ſelling what they buy; but if the *Apothecary* be here often deceived, how ſtands it with the phyſicians and the patient? *Shaw*'s Lectures, p. 194.

The retail *Apothecaries*, however, deal more in ſubſtitution, than in ſophiſtication; the prudent phyſician will therefore preſcribe what is uſually kept, and is proper to keep in the ſhops, or what otherwiſe is eaſily obtainable; and if there are other abuſes committed in this part of pharmacy, they may perhaps be chiefly attributed to want of ſkill or conduct in the phyſician. *Shaw*'s Lectures, p. 195.

At Paris the *Apothecaries* make a part of the company of *merchands epiciers*, that is grocers. *Savar.* Dict. Comm. in voc.

The company of *Apothecaries* were incorporated by a charter from king James I. procured at the ſolicitation of Dr. Mayerne and Dr. Atkins; till that time they only made a part of the grocers company; plumbs, ſugar, ſpice, Venice treacle, mithridate, *&c.* were ſold in the ſame ſhop and by the ſame perſon. The reaſon of ſeparating them was, that medicines might be better prepared, and in oppoſition to divers perſons who impoſed unwholeſome remedies on the people. Obſerv. on Caſe of Will. Roſe. §. 2.

Will. Roſe an *Apothecary* was proſecuted in 1704 by the college, for practiſing phyſic, or making up ſeveral bolus's, electuaries, and juleps, and ſelling and delivering them to one Sale a butcher without the advice of a phyſician, and not being licenſed by the college [c]. Thus is the caſe ſtated on the part of the defendants, *Apothecaries*, in their petition to parliament for a writ of error to reverſe a judgment obtained againſt them in the queenſbench: On the behalf of the phyſicians it is repreſented ſomewhat otherwiſe, from the teſtimony of Sale himſelf, *viz.* that Roſe kept his patient under hand for a year together, without giving him any relief, and brought in a bill of near fifty pounds; yet Sale being afterwards forced to apply to the diſpenſary, received his cure in ſix weeks, for leſs than forty ſhillings charge. See Obſerv. on his Caſe printed in 1704.

It was diſputed on this occaſion, what the buſineſs of an *Apothecary* is? Whether it be reſtrained to the making, compounding, and ſelling good and wholeſome medicines; or whether it alſo extend to the preſcribing and directing the uſe of them? Obſerv. §. 9.

The *Apothecaries* appealed to conſtant uſage, as the beſt expounder of their charter; and urged, that ſelling a few lozenges, or a ſmall electuary to any aſking for a remedy for a cold, or in other ordinary or common caſes, or when the medicine has known and certain effects, is not to be deemed unlawful, or practiſing as a phyſician, when no fee is taken or demanded for the ſame. Obſerv. §. 10. See alſo Neceſſ. and Uſefuln. of Diſpenſaries, and Anſwer to Tentam. Medicin. paſſim.

APOTHECARY, *Apothecarius*, in writers of the middle age, denotes a ſhop-keeper, or ware-houſe-keeper. *Du Cange*, Gloſſ. Lat. T. 1. p. 263. ſeq.

The word is formed af *Apotheca*, or rather of the barbarous word *Apothecar*, a ſhop.

APOTHECARIUS is alſo uſed to denote a ſtore-keeper, or officer appointed to have the direction of a magazine, granary, *&c.* See GRANARY, *Cycl.* and *Suppl.*

In which ſenſe *Apothecarii*, Αποθηκαριοι, is ſometimes rendered by *horrearii* and *rationarii*.

APOTHERAPIA, Αποθεραπεια, in phyſic, properly denotes a compleat or finiſhed cure. *Caſt.* Lex. Med. P. 68. a.

APOTHERAPIA is alſo uſed, in the gymnaſtic art, for the laſt part of all regular exerciſe, *viz.* friction or unction with oil, before as well as after bathing. V. *Lang.* Epiſt. Medic. 50. l. 1. p. 229.

The deſign of this was partly to cleanſe the ſkin from any filth or duſt, it might have contracted during the exerciſe, and partly to remove wearineſs.

Hence that part of phyſic which directed the due performance of this was denominated *Apotherapeutica*, Αποθεραπευτικη. *Caſt.* loc. cit.

Caſp. Bauhin has a treatiſe expreſs under the title of Αποθεραπευτικη Ιαλρικη. Baſ. 1581. 4°.

APOTHERMUM, Αποθερμον, in antient writers, a ſharp kind of ſauce, like that prepared of muſtard, oil, and vinegar, or of vinegar alone. *Caſt.* Lex. Med. p. 68.

APOTOME (*Cycl.*)—Euclid makes ſix ſorts of *Apotomes*.

APOTOME *Prima*, is when the greater number is a rational number, and the difference of the ſquares of both numbers is a ſquare number, *e. gr.* $3-\sqrt{5}$, where the difference of the ſquares 9 and 5 is the ſquare number 4. The ſame holds in $6-\sqrt{20}$, for that the difference of the ſquares 36 and 20, is the ſquare number 16.

APOTOME *Secunda*, is where the leſſer number is a rational number, and the ſquare root of the difference of the ſquares of both numbers has a ratio expreſſible in numbers to the greater number, ſuch is $\sqrt{18}-4$, for that the difference of the ſquares 18 and 16 is 2, and $\sqrt{2}$ is to $\sqrt{18}$ as 1 to 3, becauſe $\sqrt{18}=3\sqrt{2}$. The ſame holds of $\sqrt{48}-6$, for that the difference of the ſquares 48 and 36 is 12; and $\sqrt{12}$ is to $\sqrt{48}$ as 1 to 2, for $\sqrt{12}=2\sqrt{3}$, and $\sqrt{48}=4\sqrt{3}$, or elſe $\sqrt{48}=2\sqrt{12}$.

APOTOME *Tertia*, is when both the numbers which are ſubſtracted from each other are irrational numbers, and the ſquare root of the difference of their ſquares has a ratio in numbers to the greater. This holds in $\sqrt{24}-\sqrt{18}$, for the difference of their ſquares 24 and 18 is 6, and the ſquare root thereof $\sqrt{6}$ is to $\sqrt{24}$ as 1 to 2, for $\sqrt{24}=2\sqrt{6}$.

APOTOME *Quarta*, is when the greater number is a rational number, and the ſquare root of the difference of the ſquares of both numbers has no ratio to it in numbers. Such is $4-\sqrt{3}$, for that the difference of the ſquares, 16 and 3, is 13, but the ſquare root of 13, *viz.* $\sqrt{13}$ has no numerical ratio to 4.

APOTOME *Quinta*, is when the leſſer number is a rational number, and the ſquare root of the difference of the ſquares of both numbers has no ratio in numbers to the greater number. Such is $\sqrt{6}-2$, for that the difference of the ſquares 6 and 4, is 2, and $\sqrt{2}$ has to $\sqrt{6}$ no ratio in numbers.

APOTOME *Sexta*, is where both numbers are irrational, and the ſquare root of the difference of their ſquares has no ratio in numbers to the greater. Such is the caſe in $\sqrt{6}-\sqrt{2}$, for the difference of the ſquares 6 and 2 is 4, and the root thereof 2 has to the $\sqrt{6}$ no ratio in numbers.

Peter Ramus cenſures Euclid's doctrine of *Apotomes*, and even all the reſt delivered in the tenth book concerning irrational lines in the following terms.

Materies decimo libro propoſita, eo modo eſt tradita, ut in humanis literis atque artibus ſimilem obſcuritatem nuſquam deprehenderim; obſcuritatem dico non ad intelligendum, quid præcipiat Euclides,—ſed ad perſpiciendum penitus et explorandum, quis finis et uſus ſit operi propoſitus, quæ genera, ſpecies, differentiæ ſunt rerum ſubjectarum; nihil enim unquam tam confuſum vel involutum legi vel audivi. Schol. Mathem. l. 21. p. 252.

He adds that the inventors of theſe matters made but an ill uſe of their time. Kepler anſwers Ramus, and ſhews, that on this doctrine is laid the foundation of the knowledge of the ſtructure of the world; he does not heſitate to ſay: *veſtrum eſto carpere quæ non intelligitis, mihi, qui rerum cauſas indago, præterquam in decimo Euclidis ſemitæ ad illas nullæ patuerunt.* The reaſon is that Euclid makes uſe of the knowledge of irrational lines to prove the properties of the five regular bodies, out of which Kepler, in his *myſterium coſmographicum*, deduces the number of the planets, and the magnitude of the world. Kepler alſo makes uſe of the ſame doctrine in his *Harmonice mundi*, where he ſhews the reaſons of the harmonical proportions. Harmon. Mund. l. 1. in Præf. p. 3.

Oughtred has publiſhed *Declarationem Elementi decimi Euclidis*, which has been reprinted with his Clavis at Oxford 1693; but he ſeems to have made the matter more obſcure, by an improper uſe of ſigns. Michael Slifelius has given a clear explanation of the whole tenth book of Euclid, and particularly of the doctrine of *Apotomes*, in his *Arithmetica integra*. Lib. 1. c. 23. p. 187 ſeq. *Wolf.* Lex. Math. p. 128. ſeq.

APOTOME, in muſic, is the difference of the tone major and Limma, expreſſed by $\frac{2187}{2048}$. There is a miſtake in the Cyclopædia, when it is ſaid, that the *Apotome* is the part remaining of an entire tone when the greater ſemi-tone has been taken from it. V. *Wallis* Append. ad Ptolem. Harm. p. 170. Oper. Tom. 3. See TONE and LIMMA.

The *Apotome* is by ſome authors, as Bœthius[a], called *hemitonium majus*; and the limma, *hemitonium minus*. He alſo calls the difference of theſe two *comma*[b].—[[a] Ap. *Wallis*, loc. cit. [b] *Wallis*, ibid.]

APOTRAGOPOGON, in the materia medica, a name given by ſome of the old authors to the *labdanum*. It is mentioned in a preſcription recorded in Galen from ſome of the empiricks of his time, it being the cuſtom of thoſe people who were fond of ſecrets, to diſguiſe the names of the things they uſed, that no body might find out what they meant. Many have ſuppoſed that this word ſtood for ſome ſort of the herb *tragopogon*, or goat's beard; but the whole meaning of its being made a name of *labdanum* was that this gum, which is produced from the ciſtus, is wiped off from the beards of the goats that feed on that ſhrub in the dewy mornings. See LABDANUM.

APOTROPÆA, Αποτροπαια, in the antient poetry, verſes, compoſed for averting the wrath of incenſed deities. *Scal.* Poet. l. 3. c. 102. Theſe amounted to much the ſame with *Apeuctic* verſes. See the article APEUCTIC.

APOZEM, (*Cycl.*) *Apozema*, is ſometimes alſo corruptly written *Apozim*. *Du Cange*, Gloſſ. Lat. T. 1. p. 264. in voc. *Apozimare*.

In writers of the barbarous age we meet with *Apozimare*, to infuſe, to make an *Apozem*. *Du Cange*, loc cit.

Apozem differs from infuſion on account of the greater degree of heat made uſe of in preparing the former, whereby the *Apozem* becomes more fitly impregnated with thoſe parts of the ſubject which are readily ſoluble in boiling water.

Apozems are medicines of the extemporaneous kind, and therefore the leſs uſed, by reaſon what is once made up will not keep. What is directed in this form, is generally ſent to the patient in the quantity of a quart at a time, to be drank off plentifully as common drink. *Quinc.* Pharm. Lect. 12. p. 132.

Apozems are frequently made of infuſions, that is, by firſt digeſting and drawing the infuſion of plants, then boiling the ſubject over again in the ſame liquor for an *Apozem*. Vid. *Boerh.* New Meth. of Chem. P. 3. Proc. 2. p. 20. ſeq.

APPANAGE (*Cycl.*)—Loiſel, cited by Menage, chuſes to deduce this word from the French *Appenner*, to feather, q. d. *donner des Pennes*, to give a young prince, turned out of his father's houſe feathers or means to fly and ſhift for himſelf. V. *Menag.* Orig. Franc.

St. Julien ſtarts another etymon, *viz.* from the old French word *Apaner*, which ſignifies to cut and deal every one his ſhare of bread.

The *Appanage* is unalienable; collateral branches do not inherit it. The eldeſt ſon alone is heir to the whole *Appanage*; but is to allow the younger an honourable maintenance. Vid. *Chopin.* Tract. du Domaine, l. 2. and 3.

In France *Appanages* are of two kinds, royal and cuſtomary; the firſt only granted to males the kings brothers, excluſive of the females. Theſe are not ſo properly alienations of the kings demeſnes as diſmembring of them. *Aubert*, Ap. Richel. Dict. T. 1. p. 96.

Cuſtomary *Appanages* are thoſe granted to women, the king's ſiſters.

Hoffmeiſter, Lyſerus, Schilter, Muller, Berger, &c. have diſcourſes expreſs concerning the laws and rights of *Appanage*. V. Bibl. Jur. Imper. c. 4. *Lipen.* Bibl. Jur. p. 21. Bibl. Germ. T. 9. p. 226.

Hertius, Thomaſius and Lombardus have treated expreſsly on the difference between *Appanage* and *Parage*.—The ſecond aſſerts the difference to be real, the firſt fictitious. Bibl. Jur. Imper. loc. cit.

Joach. Meierus has publiſhed a body of all the writers on *Appanage* and *Parage*, in one volume in folio. Corpus juris Appanagii, &c. continens ſcriptores quotquot inveniri potuerunt, qui de Appanagio et Paragio ex inſtituto egerunt—Lemgov. 1727. An account of which is given in Act. Erud. Lipſ. 1728. p. 49. ſeq.

APPARATOR *Comitatus* (*Cycl.*)—There was formerly an officer called by this name, for which the ſheriffs of Buckinghamſhire had a conſiderable yearly allowance; and in the reign of queen Elizabeth, there was an order of court for making that allowance. But the cuſtom and reaſon of it are now altered. *Hales*, Sher. Acco. 104.

APPARATUS *Chemical.* See VESSELS.

APPARENT (*Cycl.*)—APPARENT-*Diſtance*, in optics, that diſtance which we judge an object to be from us when ſeen afar off, being commonly very different from the true diſtance; becauſe we are apt to think that all very remote objects, whoſe parts cannot well be diſtinguiſhed, and which have no other object in view near them, to be at the ſame diſtance from us, though perhaps the one is thouſands of miles nearer than the other, as is the caſe with regard to the ſun and moon. *Stone*, Mathem. Dict. in voc. *Apparent.* See DISTANCE.

APPARENT *Figure*, in optics, that figure or ſhape, which an object appears under when viewed at a diſtance, being often very different from the true figure, for a ſtreight line viewed at a diſtance may appear but as a point; a ſurface, as a line; and a ſolid, as a ſurface; and each of theſe of different magnitudes, and the two laſt of different figures, according to their ſituation with regard to the eye. Thus an arch of a circle may appear a ſtreight line; a ſquare or oblong, a trapezium, or even a triangle; a circle, an ellipſis; angular magnitudes, round; a ſphere, a circle, &c.

Alſo any ſmall light, as a candle, ſeen at a diſtance in the dark, will appear magnified, and farther off than really it is. Add to this, that ſeveral objects ſeen at a diſtance, under angles that are ſo ſmall as to be inſenſible, as well as each of the angles ſubtended by any one of them and that next to it; then all theſe objects will appear not only to be contiguous, but to conſtitute, and ſeem but one continued magnitude. Id. Ibid.

APPARITION, (*Cycl.*) in a general ſenſe, the appearance or ſemblance of a thing.

APPARITION is alſo uſed to denote a ſpectre, or præternatural appearance of ſome ſpirit, or the like.

We read of *Apparitions* of angels, genii, dæmons, fairies, witches, departed ſouls, &c. *Apparitions* of God, of Chriſt, the Virgin, ſaints, prophets, and of the devil himſelf.

Several inſtances of *Apparitions* occur in the bible; that of Samuel, raiſed by the witch of Endor, has occaſioned great diſputes.

We find great controverſies among authors, in relation to the reality, the exiſtence or non-exiſtence, the poſſibility or impoſſibility of *Apparitions*. The Chaldeans, the Jews and other nations have been the ſteady aſſerters of the belief of *Apparitions*. The diſbelief of ſpirits and *Apparitions*, is by ſome made one of the marks of infidelity, if not of atheiſm.

Many of the *Apparitions*, we are told of in writers, are doubtleſs mere deluſions of the ſenſe; many others were ſeen but in dreams or deliquiums; many others are fictions contrived merely to amuſe, or anſwer ſome purpoſe. *Apparitions* it is certain are machines that on occaſion have been of good ſervice both to generals, to miniſters of ſtate, to prieſts and others. It has been controverted whether an *Apparition* be any proof of a future ſtate.

The abbé de St. Pierre has a diſcourſe expreſs on the phyſical method of ſolving or accounting for *Apparitions*; he makes them the effect of feveriſh dreams, diſturbed imaginations, *&c.* V. Mem. de Trev. An. 1726. p. 119. ſeq.

APPARITOR (*Cycl.*)—In middle age writers, *Apparitors* are alſo called *Barigildi*, *Paritaderii*, *Statores*, and *Taxeatæ*. V. *Du Cange*, Gloſſ. Lat. in voc. *Barigildi*, &c.

APPARITOR is alſo uſed in ſome antient Engliſh laws, for a judge or juſtice. *Wilk.* Gloſſ. ex LL. Hen. 1. c. 9. & 20.

APPEASING *Remedies*, in medicine, are thoſe which aſſuage the pain in a diſeaſe, and give the patient ſome reſt, or reſpite; and at the ſame time contribute to the cure.

Theſe amount to the ſame with what we otherwiſe call *paregorics*, *anodynes*, &c. *Brun.* Lex. Med. in voc. *Sedatio.* See PAREGORICS, &c. *Cycl.*

APPELLANT, a perſon who appeals, or brings an appeal. See APPEAL, *Cycl.*

APPELLANTS is particularly uſed in our time, for thoſe among the French clergy, who refuſe to ſubſcribe the conſtitution *unigenitus*, and appeal from it, either to the pope better informed, or a general council.

The French biſhops, prieſts, monks, and even nuns are divided into *Appellants*, and *non-Appellants*. The Janſeniſts and their followers are generally *Appellants*.

APPELLEE, in the common law, is a party appealed, or againſt whom an appeal is brought.

In the civil law *Appellee*, *Appellatus*, properly belongs only to the judge before whom an appeal is brought. *Calv.* Lex. Jur. p. 79. a

APPENDICULA denotes a little or diminutive *Appendix*. See APPENDIX, *Cycl.* and *Suppl.*

The word is ſcarce uſed, except by anatomiſts, in the phraſe, *Appendicula vermiformis*.

APPENDICULA *Vermiformis*, in anatomy, a name given by ſome to the inteſtine cæcum, which they conſider only as an appendage of the colon, and not as the true cæcum of the antients. V. *Van Horn.* Microcoſm §. 22. p. 26. *Drake*, Anthrop. l. 1. c. 11. p. 49. See CÆCUM, *Cycl.* and APPENDIX *Vermiformis*, *Suppl.*

APPENDICULÆ *Aſteriarum*, *Wires of Aſteriæ*, a name given by the writers on natural hiſtory, to certain ſmall branches which are placed in a circular order at different diſtances upon the columns of the aſteriæ. They are, however, very ſeldom found thus fixed, but are uſually met with looſe among the aſteriæ in the ſtrata of clay, or immerſed by themſelves in thoſe of ſtone; they are compoſed of a number of ſhort joints, the largeſt being always that which has been placed next the body of the aſteria, the reſt growing gradually ſmaller, and conſeqently the body taperer to the end. *Hill*'s Hiſt. of Foſſ. p. 654. See ASTERIA.

APPENDIX *Vermiformis* (*Cycl.*)—Mr. Monro aſſures us he never ſaw the *Appendix vermiformis* of any of the human fœtus's which he diſſected, diſtended with meconium, and therefore he cannot allow it as a reſervoir of the fæces during geſtation. From the numerous mucous lacunæ in the human *Appendix*, and the like ſtructure in the cæca of brutes, its uſe ſeems to be to furniſh mucus to lubricate the internal ſurface of the great ſac of the colon, and to moiſten the fæces in it, that they may be more eaſily puſhed forward out of this part of the gut, where there is the greateſt difficulty in their progreſs, and where by ſtagnating too long, they may bring on troubleſome ſymptoms. Witneſs the diſeaſe called *placenta inteſtinalis*. Med. Eſſ. Edinb. Vol. 4. Art. 12.

APPERCEPTION, or ADPERCEPTION, is uſed by Leibnitz and his followers, for an attribute of the mind conſidered as conſcious of or reflecting on its own perceptions. *Wolf.* Pſychol. Empir. §. 234.

In which ſenſe the word amounts to the ſame with what Des Cartes and others call *conſcience* or *conſciouſneſs*.

APPETITE (*Cycl.*) is divided by ſome authors into ſenſitive and rational.

Senſitive APPETITE is that which ariſes from a confuſed notion of goodneſs in the object, as apprehended chiefly by the ſenſes. Or it may be defined, an inclination of the ſoul towards an object on account of ſomething good confuſedly apprehended in it. *Wolf.* Pſychol. §. 580.

The ſchoolmen alſo call this *animal Appetite*, and *ſenſualitas*. Sometimes alſo they give the *ſenſitive Appetite* the denomination of *Appetite* in general; and divide it into iraſcible and concupiſcible, the firſt being no other than what we call averſion; the ſecond, the proper *ſenſitive Appetite*. The diviſion in effect is not taken from different powers, but from different acts of the ſame power.

The *Appetite* conſidered as inclining to good, is called *concupiſcible*, as flying from evil *iraſcible*.

In this view *ſenſitive Appetite* is that whereby we deſire a good, or avoid an evil confuſedly apprehended.

Some ſchoolmen, however, give a different account of the difference between concupiſcible *Appetite*, and the iraſcible. According to the Thomiſts, concupiſcible *Appetite* is that whereby we are led on towards good; and iraſcible *Appetite* that whereby we are led towards ſome difficult good, or hard to be arrived at. But the Scotiſts combat this diſtinction, aſſerting it to be the character of the concupiſcible *Appetite*, to incline towards every thing good, whether it be difficult or not.

Rational APPETITE is that which ariſes from a diſtinct repreſentation of good in the object. The ſchoolmen alſo call this *Intellectual Appetite*. This may be defined an inclination of the ſoul to an object, on account of the good we know, or think we diſtinctly perceive to be in it. *Wolf.* Pſychol. empir. §. 880.

In this ſenſe *Rational Appetite* is no other than what we call *Will*. See WILL, *Cycl.*

To render a thing an object of *Appetite*, it muſt be known, at leaſt imperfectly. Hence that Axiom of the antients, *Ignoti nulla cupido.*

The *Senſitive Appetite* admits of degrees, is ſtronger towards ſome objects, than towards others, and towards the ſame object at one time than at another; conſequently, it is ſuſceptible of menſuration, though the meaſure is not yet diſcovered. But the degree of *Appetite* changes, if the judgment we make of the good or evil of the object, be changed. Id. ibid. §. 599. ſeq.

Rules of APPETITE are thoſe which the ſoul obſerves in deſiring or willing things. Id. ibid. §. 902.

Such are theſe, that whenever we deſire a thing, we repreſent it to ourſelves as good; that whenever an evil thing appears good to us, we deſire it; and that we never deſire evil but under the notion of good, not even, when of two evils we chuſe the leaſt, *&c.* Id. ibid. §. 892. ſeq.

Law of APPETITE is the general principle, or ſource of the rules of *Appetite*. Id. ibid. §. 903.

The *Law of Appetite* is this propoſition, that whatever we repreſent to ourſelves as good, that we deſire. Id. ibid. §. 904.

The great power therefore, which man has over his moral conduct, conſiſts in the power he has of repreſenting objects to himſelf as good or evil. This is the ſource of the cultivation of all virtues.

In ſome caſes the *ſenſitive* and *rational Appetites* conſpire, or lead the ſame way, *e. gr.* When the ſame food that is found agreeable to the palate is alſo known to be wholeſome. In this caſe the object appears to us both confuſedly and diſtinctly good. *Wolf.* Pſychol. §. 908. ſeq.

This conformity is a point of great moment in moral matters, being the higheſt perfection man is capable of arriving at. The great problem of ethics is *to reduce the ſenſitive Appetite to a conformity with the rational* The general foundation of the ſolution has been above intimated; but the problem admits of as many particular caſes, as there are different virtues. Confucius is ſaid to have directed all his endeavours, from his youth upwards, to this end; which, by the time he arrived at his ſeventieth year, he had attained, inſomuch that the *ſenſitive Appetite* of its own accord ſubmitted to the *rational.* Id. ibid. §. 909.

In effect, the two *Appetites* are uſually intermixed: And hence it may happen that the *rational* may be ſtrengthened and heightened, as well as thwarted, by the *ſenſitive*, ſince this laſt admits of degrees; conſequently, when it conſpires with the former, or tends towards the ſame object, it cannot but fortify it. Id. ibid. §. 912.

The more uſual caſe is, when the two *Appetites* run counter to each other, and contend for the maſtery; ſuch, *e. gr.* is that in a ſick perſon, who being convinced that a certain medicine would do him good, has an utter averſion to its ſmell and taſte, ſo that he both deſires and abhors the ſame thing in a great degree. Id. ibid. §. 917.

The reaſon of this combat between our inclinations is, that we repreſent a thing to ourſelves, in the diſtinct way, good, which, in the confuſed way, appears evil; and *vice verſa*. Hence the ſource of that antient complaint, *Video meliora proboque*, *deteriora ſequor.*

APPETITE is reſtrained, by a late ingenious writer, to ſuch of our deſires as have a previous, painful and uneaſy ſenſation, antecedently to any opinion of good in the object; nay, ſo as that the object is often chiefly eſteemed good only for its allaying this pain or uneaſineſs, or if it give alſo poſitive pleaſure, yet the uneaſy ſenſation is previous to, and independent of this opinion of good in it. *Hutcheſ.* Eſſ. on Paſſ. §. 4. p. 89. ſeq.

Of this kind are hunger and thirſt, and the deſires between the ſexes; to which deſires there is an uneaſy ſenſation previous, even in thoſe who have little other notion of good in the objects, than allaying this pain or uneaſineſs. There is ſomething like to this in the deſire of ſociety, or the company of our fellow creatures.

Other deſires and averſions, neceſſarily preſuppoſe an opinion of good and evil in their objects; and the deſires or averſions, with their concomitant uneaſy ſenſations, are occaſioned by this opinion or apprehenſion.

Thus no man is diſtreſſed for want of fine ſmells, harmonious ſounds, beautiful objects, wealth, power, or grandeur, previouſly to ſome opinion formed of theſe things as good, or ſome prior ſenſation of their pleaſures. In like manner virtue and honour as neceſſarily give us pleaſure, when they occur to us, as vice and contempt give us pain; but, antecedently to ſome experience or opinion of this pleaſure, there is no previous uneaſy ſenſation in their abſence, as there is in the abſence of the objects of *Appetite*. Id. ibid. p. 91.

Exceſſive APPETITE, in medicine. See OREXIS.

Defective APPETITE—The defect of *Appetite* is of two kinds, and is uſually divided, by medical writers, under two names, the anorexia and nauſea. See ANOREXIA, *Cycl.*

The anorexia is a too great abſtinence from foods, which ſometimes has its origin from depravations of the ſtomach, ſometimes from other cauſes more remote.

The nauſea is defined to be a plenary abſtinence from foods, being a complaint of the ſame nature and origin with the anorexia, but differing in degree.

Theſe complaints are alſo divided by authors into two kinds, ſometimes be ingidiopathic, which is the caſe when the ſtomach itſelf is depraved, ſometimes ſymptomatic, which is the caſe when they appear for a time, but the *Appetite* returns again in the abſence of ſome other diſeaſe which occaſioned them. Theſe ſymptomatic nauſeas and anorexias are ſometimes of long continuance, as in caſes of dropſies, hectics, and other chronic diſorders; and ſometimes tranſitory, or of very ſhort duration, as in acute fevers. The nauſea of women with child is different from theſe.

The ſigns are very obvious, ſo far as a diſtaſte to food, which is common to both; but there is this difference, that in an anorexia the patients uſually eat ſomething, though without *Appetite*, and are troubled always with a pain and uneaſineſs in the ſtomach after it; but in the nauſea there is a greater diſreliſh of food of all kinds, and frequent ſtraining to vomit.

Men of idle lives, and ſuch as drink too freely of ſtrong liquors, are ſubject to idiopathic defects of *Appetite*, from actual injuries in the ſtomach; others labouring under the different diſeaſes before-mentioned, are as often ſubject to the ſymptomatic. *Junck.* Conſp. Med. p. 601.

The idiopathic anorexia and nauſea, have for their cauſes mucous, acid, and nidorous crudities in the ſtomach; they are ſometimes alſo occaſioned by a regurgitation of bile toward the orifice of the ſtomach, eſpecially when this is occaſioned by a violent fit of anger, and that juſt upon a meal. The ſymptomatic defects of *Appetite* are wholly owing to nature's being employed in ſome extraordinary labour in the expelling ſome other morbific matter, whence the ordinary office of concoction, and diſtribution of the chyle, is impeded for a time. Anorexias and nauſeas, when idiopathic, are eaſier to be cured than when ſymptomatic, becauſe the ſeat of the diſeaſes allows of medicines immediately to reach it; but when ſymptomatic, they can never be cured but by the cure of the diſeaſe, and that often proves of the obſtinate kinds.

As to the cure of idiopathic complaints of this kind, the mucous humours in the ſtomach muſt be firſt attenuated by the digeſtive ſalts, ſuch as vitriolated tartar, antimoniated nitre, and the like; after theſe, if there be no contraindication in the particular caſe, a vomit is to be given, eſpecially to perſons who are ſubject to reaching; and to this muſt be joined ſome purging medicine, that the matter may be at once voided both upwards and downwards; and in ſuch caſes where vomits are not proper, the buſineſs is to be effected by purges alone. After theſe things have been done, the proper medicines for reſtoring the tone of the parts are to be given, ſuch are the gentle bitters and ſtomachics, as gentian, zedoary, ſmall centaury, galangals, and the like, in tinctures or infuſions, and with theſe the gentle chalybeates.

In caſes where a bilious matter is the cauſe, nitrous and attemperating medicines are moſt proper, and, in the beginning, a gentle emetic. After the cure of the more common caſes, where a mucous matter is the cauſe, the eating a large quantiy of pepper, ginger, or the other hot things, is a good means of preventing a return.

In the ſymptomatic caſes, the *Appetite* uſually returns as ſoon as the diſeaſe that occaſioned the want of it is removed; but if this does not happen, there wants no further aſſiſtance than a ſmall doſe of ſome chalybeate before meals.

It is a very unhappy practice, but a too common one, to give the hot ſtomachic medicines, in caſes of ſymptomatic defects of *Appetite*, with an idle attempt to cure what is merely a ſymptom, while the primary diſeaſe remains: By this means the defects of *Appetite* can never be cured, and the original diſeaſe is often rendered worſe.

Small centaury is recommended beyond all other medicines in an idiopathic defect of *Appetite*, and its extract lightly acidulated with ſpirit of ſulphur, has often been known to perform very great things, by being regularly taken, in ſmall doſes, before dinner, for ſeveral weeks together: And Baglivi is particularly large in the praiſes of hiera picra in theſe caſes. Good wine ſometimes alone will do great ſervice, but when it is the menſtruum for infuſions of the bitters, it always adds very greatly to their virtue. People of a ſanguine habit, when afflicted with a loſs of *Appetite*, always find great relief in acids of the milder kind; and thoſe of a leucophlegmatic habit are often cured by taking ſmall doſes of elixir proprietatis every day before dinner. Some perſons are very fond of external applications to the ſtomach in theſe caſes, but theſe are rarely found to be of any great ſervice. The beſt of them is a plaiſter of tacamahaca, with oil of maſtic. *Junckers*, Conſp. Med. p. 602.

APPLAUSE, (*Cycl.*) in antiquity, differed from acclamation, as the latter was articulate and performed with the voice, the former with the hands. See the article ACCLAMATION, *Cycl.* and *Suppl.*

Among the Romans, *Applauſe* was an artificial muſical kind of noiſe, made by the audience or ſpectators to expreſs their ſatisfaction. It was performed by a motion of the hands; though we find ſome diſpute about the nature and manner of the motion. In ſome of the antients it is repreſented as done by a colliſion of the fingers, *extremis manibus excitatis*. Some will even have it to have been no other than what we call ſnapping the fingers, uſed among us to denote our contempt of a thing: While others, with more probability, reduce it to a colliſion of the palms of the two hands, not with both the hands flat; but the fingers of the right hand being a little contracted, it was ſtruck in due cadence on the palm of the left. V. *Ferrar.* de Acclam. & plauſ. l. 1. c. 1. ſeq. *Pitiſc.* Lex. Ant. T. 2. p. 443. in voc. *Plauſus.*

There were three ſpecies of *Applauſe*, denominated from the different noiſes made in them, *viz. Bombus*, *Imbrices*, and *Teſtæ*; the firſt a confuſed din, made either by the hands or the mouth; the ſecond and third by beating on a ſort of ſounding veſſels placed in the theatres for this purpoſe. *Pitiſc.* loc. cit. See BOMBUS, *&c.*

Perſons were inſtructed to give *Applauſe* with ſkill; and there were even maſters who profeſſed to teach the art. The proficients in this way let themſelves out for hire to the vainglorious among the poets, actors, *&c.* and were properly diſpoſed to ſupport a loud *Applauſe*. Theſe they called *Laudicoeni*, and Σοφοκλεις. *Pitiſc.* Lex. Ant. T. 2. p. 21. in voc. *Laudicoeni.*

At the end of the play, a loud peal of *Applauſe* was expected, and even aſked of the audience, either by the chorus, or the perſon who ſpoke laſt. The formula was, *Spectatores plaudite*, or *Valete & plaudite.*

The plauſores, or applauders, were divided into chori, and diſpoſed in theatres oppoſite to each other like the choriſters in cathedrals, ſo that there was a kind of concert of *Applauſes.*

APPLE (*Cycl.*) denotes a well known fruit, of a roundiſh figure, of conſiderable uſe both as a food, a remedy, and likewiſe as yielding cyder.

Apples are no natural fruit, but the mere creatures of art. The way of propagating them is by ſowing kernels in the ground, which only produce crabs or wildings, different in figure and taſte from the parent fruit. To turn theſe to *Apples* is the buſineſs of engrafting. A cyon of an *Apple*-tree inſerted into a crab-ſtock, occaſions the crab-tree from that time to produce *Apples* of the ſame quality with thoſe from whence the cyon was taken. Mr. Ray lays it down as a rule, that the fruit always follows the cyon. Philoſ. Lett. p. 348. See alſo *Boyle*, Phil. Work Abr. T. 1. p. 250.

Theſe are called *Orchard Apples*, *mala hortenſia*, by way of contradiſtinction from crabs or wildings, called *mala ſylveſtria. Quinc.* Diſp. p. 2. n. 451. p. 202. It. n. 452. p. 452.

The *Apple* is compoſed of four diſtinct parts, *viz.* the pill, the parenchyma, the branchery, and the coare.

The pill or ſkin is only a dilatation of the outermoſt ſkin or rind of the bark of the branch on which it grew.

The parenchyma or pulp, as tender and delicious as it is found, is only a dilatation, or as Dr. Grew [a] calls it, a ſwelth, or ſuperbience of the inner part of the bark of the branch. This appears not only from the viſible continuation of the bark from the one thro' the pedicle or ſtalk to the other; but alſo from the ſtructure common to both, as being both compoſed of bladders; with this only difference, that whereas in the bark, the veſiculæ are ſpherical, and very ſmall, ſcarce exceeding $\frac{1}{16}$ part of an inch in diameter; in the pulp they are oblong, and very large, generally meaſuring $\frac{1}{3}$ of an inch in length. But all uniformly ſtretched out by the arching of the veſſels from the coare towards the circumference of the *Apple* [b].—[a Anat. of Veget. l. 1. c. 6. p. 40. b *Grew*, Ibid. l. 4. c. 1. §. 3. p. 179. ſeq.]

The branchery, or veſſels are only ramifications of the woody part of the branch ſent throughout all the parts of the parenchyma the greater branches being made to communicate with each other by inoſculations of the leſs. The main branches are uſually twenty; ten of them diſtributed thro' the

the parenchyma, moſt of which enarch themſelves towards the cork or ſtool of the flower, the other ten running from the ſtalk in a directer line, at laſt meet the former at the cork, and are there inoſculated with them. To theſe branches the coats of the kernels are faſtened. Moſt of the branches were originally extended beyond the fruit, and inſerted into the flower for the due growth thereof; but when the fruit afterwards grew to a head, and thus intercepted the aliment before ſent to the flower, this latter being ſtarved and falling off, the ſervice of the ſaid branches becomes appropriated wholly to the fruit, fifteen to the pulp, and five to the ſeed.

The *Apple* coare is originally from the pith of the branch; the ſap of which finding room enough in the parenchyma, thro' which to diffuſe itſelf, quits the pith, which by this means hardens into coare. Id. Ibid. l. 1. c. 6. §. 2.

Mr. Boyle has given ſeveral experiments on *Apples* in the air-pump, and the production of air, *&c.* thereby. V. Phil. Work Abridg. T. 2. p. 567. ſeq. 609. 630. ſeq. 645. ſeq.

APPLE is alſo a name given to divers fruits, bearing ſome reſemblance in figure, rotundity, and the like to the orchard *Apple*.

The ananas is particularly denominated, *pine-Apple*. See ANANAS, and PINE-*Apple*.

Oak-APPLES are a kind of excreſcences or exudations of the nutritious juice of that tree, joined with ſome degree of putrefaction.

The like are ſometimes alſo found on willows.

It is a kind of prognoſtic among country people, that if the oak-*Apple*, when broken, be found full of worms, which it ſometimes is, it bodes, if not a plague, yet an unhealthy year. *Cole*'s Art. of ſimpl. c. 13. p. 4. ſeq.

Bitter APPLE, a name ſometimes given to the colocynthis. *Quinc.* Diſp. P. 2. n. 406. p. 178. See COLOCYNTHIS.

Prickle APPLE is remarkable for the ſeveral tuſſucks or bunches of thorns, with which it is armed all around; each bunch conſiſting of ſix or eight thorns, ſome erect, others couched a little, and crooked outwards, of ſeveral lengths from one inch to above two. V. *Ligen.* Hiſt. of Barbad. p. 70. *Grew*, Muſ. Reg. Societ. P. 2. c. 2. p. 186.

APPLE *Marchaſite*, ſo called by Dr. Grew, on account of its figure, as being round except on one ſide, where it falls in and has a ſtalk like a young *Apple*. *Grew*, Muſ. Reg. Societ. P. 3. Sect. 2. c. 3. p. 336.

Among the antient ornaments of churches we read of *golden Apples*, *poma aurea* [a], by which it ſhould ſeem, we are to underſtand the globular parts of candleſticks [b].—[[a] *Du Cange*, Gloſſ. Lat. T. 3. p. 371. ſeq. in voc. *Malum*. Id. T. 4. p. 342. in voc. *pomum*. [b] Id. Ibid.]

Some antient cuſtomaries alſo ſpeak of *Apples* of wax, *poma de cera*.

APPLE *of the Eye*, a popular name for the pupil.

Burrhus, in a letter to Bartholin, relates divers caſes wherein he cut aſunder the *Apple of the eye* in ſeveral animals, and ſqueezed out the humours, even the chryſtalline itſelf; yet afterwards reſtored the animals to ſight. He adds, that the eyes of birds on which he had performed this operation looked better, and more vivid after it than before; and that he had even tried the experiment on many perſons with ſo much ſucceſs, that there remained not the leaſt appearance of a ſcar on their eyes. Phil. Tranſ. N°. 64. p. 1355.

Love APPLE. See LYCOPERSICON.

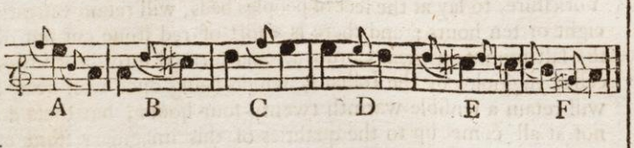
Mad APPLE. See MELONGENA.

APPLE, *Pomum*, is generally underſtood among botaniſts, of any fleſhy, veſicular fruit, containing more ſeeds than one. *Mart.* Lect. in Bot. p. 20. See POMA.

APPLE *Fly*, in natural hiſtory, the name given by authors to a ſmall green fly found ſometimes within an *Apple*, and hatched of a worm or maggot, very frequently found infeſting that fruit.

Gum of APPLES. See GUM.

APPOGGIATURA, in muſic, according to Graſſineau, is when in any part of a ſong, there are two notes at ſome diſtance from one another, as a third, or fifth; and in ſinging ſuch paſſage, the muſicians puts in ſmall intermediate notes aſcending, or deſcending: as in the example A. Muſic. Diction. in voc.



But the *Appoggiatura* is not always intermediate, unleſs it be in the order of time; (ſee the examples B and C) nor is it confined to diſtant notes. It may be uſed in paſſing from a note to the neareſt ſound either above or below it. See the examples D, E, and F.

The *Appoggiatura* is commonly marked by a ſmaller kind of note, as in the examples before given.

APPOINTE'E (*Cycl.*)—Theſe have been ſuppreſſed in France, except in the regiment of French guards, where forty *Appointees* are ſtill retained to each company of 150 men. *Guill.* Gent. Dict. P. 2. in voc.

Till the year 1670 they had alſo captains and lieutenants under the appellation of *Appointees*, who without reſiding in the regiment received their pay.

APPOINTE'E, in heraldry, is when two or more things are placed touching each other at the points or ends. *Corn.* Dict. des Arts. T. 1. p. 48. a

APPOSITORIUM, in chemiſtry, denotes a veſſel made of earthen ware or glaſs, of a conical figure, whoſe bigger end receives the neck of a retort, while the narrower is inſerted into the receiver. *Junck.* Conſp. Chem. Tab. 3. p. 60.

Its uſe is, where a ſtrong open fire is required to prevent the red hot retort by the immediate contact of its neck from burſting the receiver.

APPREHENSION (*Cycl.*) is generally uſed by Logicians for a ſimple attention to any object of ſenſe, or imagination, without paſſing a judgment, or making any inference.

Thus when we view the ſun's diſk appearing thro' a cloud, and fix our attention thereon, but without carrying our thoughts any further, we are ſaid ſimply to *apprehend* the ſun. After the like manner when the image of any abſent thing, *e. gr.* a lion ſeems as it were preſent to our imagination, and we view this image, but terminate our attention in the mere view, we have a ſimple *Apprehenſion* of a lion.

In this ſenſe ſimple *Apprehenſion* is diſtinguiſhed from idea, or notion, as the operation from the effect. *Wolf.* Philoſ. Ration. p. 33, 34, 35.

Philoſophers uſually confound ſimple *Apprehenſion* with pure ſenſation, and the more mechanical perception of external objects; by which means ſome ſuggeſt the firſt and fundamental diſtinction between human reaſon and the inſtinct of brutes is loſt.—Simple *Apprehenſion*, ſay they, is an act or operation of the mind, and not of the ſenſes; which laſt is common to us with brutes, but the firſt a perfection and excellency of an human ſoul. We are to ſuppoſe the imagination plentifully ſtored with ideas of ſenſation, without the concurrence of the pure intellect. In this common ſtore-houſe they lye in confuſion, disjoined and unranged, without any other order, than that in which they chance to be tranſmitted; and were there no immaterial principle at all within us, they would always remain in the ſame diſorderly condition undiſturbed and unobſerved. V. *Brown*, Proceed. Extent. *&c.* of Hum. Underſtand. l. 2.

Some object to this, that it is impoſſible to diſtinguiſh the ſimple *Apprehenſion* of an idea, without forming any judgment or drawing any inference concerning it, from the ſimple perception, or if you will the ſenſation of that idea; unleſs perhaps the latter may be applied only to the effect of a preſent object; whereas the other may alſo be uſed, when its idea is recalled by the memory and received by the intellect. Preſ. Stat. Rep. Lett. T. 2. p. 114. ſeq.

APPRENTICESHIP, the ſtate or condition of a perſon bound apprentice.

In France the ſons of tradeſmen, living in their father's houſe till 17 years of age, are reputed to have ſerved an *Apprenticeſhip* [a]. In that country the times of ſerving are different in the different profeſſions, from three years to eight.—After ſerving out an *Apprenticeſhip*, the perſon becomes what they call an *aſpirant*, or candidate for maſter-ſhip, and is to be examined by proper officers as to his ſkill and proficiency, and alſo exhibit a *chef d' ouvre* or maſter-piece in the art he has been bred to, ere he be ſuffered to ſet up to practiſe for himſelf [b]. —[[a] *Savar.* Dict. Comm. T. 1. p. 119. [b] *Savar* Dict. Comm. T. 1. p. 169. in voc. *Aſpirants*.]

APPROACH, (*Cycl.*) in gardening, is uſed in ſpeaking of the method of inarching or inoculating, which is called grafting by *Approach*. See INOCULATING.

Some phyſicians alſo ſpeak of a method of curing diſeaſes by touching or *Approach*. See APPROXIMATION.

APPROACHES, (*Cycl.*) *in Fortification*.—The antients made their *Approaches* towards the place beſieged much after the ſame manner as the moderns. M. de Follard ſhews, that they had their trenches, their ſaps, parallels, *&c.* which tho' uſually held of modern invention, appear to have been practiſed long before, by the Greeks, Romans, Aſiatics, *&c.* *Follard*, in Polyb. T. 2. p. 161.

APPROACHING, in fowling, a term uſed to expreſs ſuch deviſes as are contrived for the getting within ſhot of ſhy birds. It is principally uſed in marſhy low places. The beſt method of *approaching* is by means of three hoops tied together at proper diſtances according to the height of the man that is to uſe it, and having boughs of trees tied all round it, with cords to hang it over his ſhoulders; a man getting into this, conceals himſelf and approaches by degrees toward his game in the form of a moving buſh.

Geeſe, ducks, and teal, quit the waters in the evening and paſs the night in the fields, but at the approach of morning they return to the water again, and even when on the water they will retire to great diſtances, on the approach even of a horſe or cow, ſo that the buſineſs of the ſtalking horſe is of little uſe; but this deviſe of *approaching*, by the moving buſh ſucceeds tolerably well with them. Dict. Ruſt T. 1. in voc.

APPROBATION, a ſtate or diſpoſition of the mind wherein we put a value upon, or become pleaſed with ſome perſon or thing.

Moraliſts are divided on the principle of *Approbation*, or the motive which determines us to approve and diſapprove. The Epicureans will have it to be only ſelf-intereſt; according

to them, that which determines any agent to approve his own action, is its apparent tendency to his private happineſs; and even the *Approbation* of anothers action flows from no other cauſe but an opinion of its tendency to the happineſs of the approver, either immediately or remotely. Others reſolve *Approbation* into a moral ſenſe, or a principle of benevolence by which we are determined to approve every kind affection either in ourſelves or others, and all publickly uſeful actions, which we imagine to flow from ſuch affection, without any view therein to our own private happineſs. *Hutcheſ.* Inquiry into Orig. Beauty, *&c.* Tract. 2. Sect. 4. p. 179. and his Eſſ. on Paſſ. p. 207. ſeq.

APPROBATION is more particularly uſed for a teſtimony given of the goodneſs, or value of a thing, *e. gr.* ſuch a thing meets with univerſal *Approbation*.

It is a maxim among Civilians, *approbare dicitur qui non improbat*. He is judged to approve who does not diſapprove. *Calv.* Lex. Jur. in voc.

By the civil law, a mere *Approbation* of a crime after commiſſion, does not make a perſon guilty, but an *Approbation* attended with fact, is equivalent to a command. *Wood*, Inſt. Imper. Law. l. 3. c. 7. p. 250.

APPROBATION is more particularly uſed, in ſpeaking of recommendations of books, given by perſons qualified or authorized to judge of them.

Thoſe appointed to grant licences, and imprimaturs frequently expreſs their *Approbations* of books. The biſhop of Meaux's expoſition came out with the *Approbations* of the pope and ſeveral cardinals [a]—It has been an antient cuſtom to demand *Approbations* of books from the pope. Mabillon [b] ſays, after John the deacon, that the power of *approving*, or cenſuring books belongs to the pontiff, jure divino.—[a Work of Learn. T. 3. p. 83. b Act. Sanct. Bened. præf. c. 7. p. 90. ſeq. *Baill.* Jugem. de Scav. P. 1. c. 9.]

Boileau had the honour of a royal *Approbation*. Louis XIV. in the privilege granted for publiſhing the works of that poet declares that he does it *en vûe de donner au public par la lecture de ſes ouvrages la meme ſatisfaction que ſa majeſte en a reçûe*. V. Jour. des Scav. T. 53. p. 361.

APPROVEMENT (*Cycl.*) is ſometimes uſed for appropriating, or enjoying the profits of a thing to a man's-ſelf. See APPROPRIATION, *Cycl.*

This is called, in writers of the barbarous age, *Appruare* and *Approvare*. *Du Cange*, Gloſſ. Lat. T. 1. p. 270.

Some think the word derived from *ad* to and *provanda* or *præbenda*, ſuſtenance.

APPROVER (*Cycl.*) is particularly uſed in antient law writers, for a bailiff or land ſteward, appointed to have the care of a mannor, franchiſe or the like, and improve and make the moſt of it for the benefit of his maſter. *Du Cange*, Gloſſ. Lat. T. 1. p. 270.

In this ſenſe the word is alſo written *Appruare*. V. *Flet.* l. 2. c. 76. §. 1. Item. c. 82. §. 2.

APPROVERS are called, in middle age writers, *probatares* and *approbatores*. *Du Cange*, Gloſſ. Lat. T. 4. p. 430. in voc. *probatores*.

APPROXIMATION, (*Cycl.*) in medicine, denotes a magnetical kind of cure, or method of tranſplanting a diſeaſe into ſome other ſubject, whether animate or vegetable, by bringing it in immedite contact with the patient. *Brun.* Lex. Med. in voc.

APPROXIMATION, in algebra. See EQUATION.

APPULSE, (*Cycl.*) in a general ſenſe, a thing's being brought to, or in contact with another.

Articulation is either by *Appulſe*, i. e. when one of the moveable organs touches and reſts on ſome of thoſe which are immoveable; or without *Appulſe*, only by inclination of the moveable organ to the immoveable. *Hold.* Elem. of Speech. p. 35.

APPULSE *of Cattle*, *Appulſus pecoris*, in the civil law, the right of driving them to water. *Calv.* Lex. Jur. p. 79. b.

This is ranked in the number of ſervices.

The word is formed from *ad* to and *pellere* to drive.

APPULSE, in aſtronomy, is but a ſtep towards a tranſit, occultation, conjunction, eclipſe, *&c.*

M. Flamſted [a], M. de la Hire [b] and others [c] have given obſervations of the moon's *Appulſes* to the Pleiades.—[a Phil. Tranſ. N°. 76 p. 3061. It. N°. 86. p. 5034. b Mem. Acad. Scienc. An. 1708. p. 385. c V. Mem. Ibid. p. 382.]

The *Appulſes* of the planets to the fixed ſtars have always been of great uſe to aſtronomers in order to fix the places of the former. The antients wanting an eaſy method of comparing the planets with the ecliptic, which is not viſible, had ſcarce any other way of fixing their ſituations, but by obſerving their tract among the fixed ſtars, and remarking their *Appulſes* to ſome of thoſe viſible points. Hiſt. Acad. Scienc. An. 1710. p. 417.

Dr. Hally has publiſhed a method of determining the places of the planets, by obſerving their near *Appulſes* to the fixed ſtars. Phil. Tranſ. N°. 369. Art. 1.

The beſt method of diſcovering the longitude at ſea, is by obſervations of the *Appulſes* of the moon to the fixed ſtars.

An anonymous author has publiſhed an advertiſement to aſtronomers, of the advantages that may accrue from the obſervation of the moon's frequent *Appulſes* to the Hyades, during the three then enſuing years, 1718, 19, 20. Phil. Tranſ. N°. 354. Art. 1. ſee alſo Miſc. Berol. T 3. p. 169.

Of all the celeſtial obſervations hitherto made, none are capable of ſo perfect an exactneſs, as the near *Appulſes* of the moon and planets to the fixed ſtars; for though the places of the ſtars have not as yet attained their ultimate preciſion, yet ſuch obſervations are ever good, the places of the planets being thereby aſcertained in proportion to the correctneſs of any catalogues that may be made hereafter. But the ordinary number of ſtars, with which the planets may be thus compared, being ſmall, the opportunities of obſerving are conſequently rare; whence appears the great uſe of a full catalogue of all the teleſcopical ſtars within the zodiac, *viz.* that thereby opportunities of obſerving *Appulſes* may be more frequent. Since the royal obſervatory at Greewich was put under Dr. Halley's care, he endeavoured to put himſelf in a condition to ſupply the many and great vacancies to be met with in the preſent zodiac, and for the further ſervice of aſtronomy publiſhed a map, or planiſphere, of the ſtarry zodiac. Wherein are accurately laid down all the ſtars, to which the moon's *Appulſe* has ever been obſerved in any part of the world. Phil. Tranſ. N°. 369. p. 209. ſeq.

APRICOT. See the article PRÆCOCIA *Mala*.

A PRIORI, (*Cycl.*) in philoſophy.—A thing is ſaid to be known *a priori*, which is found out by reaſoning. *Wolf.* Pſychol. §. 491. ſeq.

APROSCLETOS DICE, Απροσκλητος δικη, in the Greek law, a ſentence paſſed againſt a perſon without having firſt cited him to appear. *Calv.* Lex. Jur. p. 79. a.

Such ſentences were null in themſelves.

APSINTHATUM, Αψινθιον, in phyſic, a kind of potion to ſtrengthen the ſtomach; of which we meet with divers formulas in the antient writers. *Caſtel.* Lex. Med. in voc. Vid. *Aet.* l. 3. c. 69. ſeq.

It was doubtleſs thus denominated, becauſe compoſed in great part of *Abſynthium*, or wormwood. *Gorr.* Med. Def. p. 68. Hence alſo Αψινθιτης οινος, *vinum Abſinthitis*, ſtill in uſe.

APSYCHIA, in medicine, a ſwooning or fainting away, called alſo *Lipopſychia* and *Apopſychia*. *Brun.* Lex. Med. in voc.

APSYCTOS, a word uſed by Pliny and other of the antients, as the name of a ſtone found in Arcadia, and of the colour of iron, the quality of which they ſay was, that when once heated red hot, it would never grow cold again. It is eaſy to ſee that this is an impoſſibility; and that ſome errors among the antients, and miſunderſtandings of their works by later writers, have given the occaſion for propagating ſo idle an opinion.

Pliny mentions alſo a ſtone called *Aſyctos*, which when once heated would continue hot for a week; but this ſeems only the copy of ſome other author who had written with more moderation on the ſame ſtone before deſcribed, as being unextinguiſhable for ever. It is probable that all the accounts of this ſtone aroſe only from miſunderſtandings of the relations given by the earlieſt writers of our aſbeſtus; but if their accounts were any thing like theſe, they muſt have been very widely diſtant from the truth, ſince no ſtone ſo ſoon cools as the aſbeſtus; a piece of cloth made of it, if heated red hot, and laid in that condition on a piece of white paper, cooling ſo quickly that it does not burn the paper; this has been an experiment often tried.

Metaphraſtus tells us, that our tutelary ſaint and patron St. George being condemned to be burnt alive, the Pagan judges were ſo terrified with the miracles wrought by him in the name of Jeſus Chriſt, that they thought he would be able by means of that name to put out a common fire, and therefore, ordered him to be thrown alive into a heap of the aſbeſtus made red hot, and then covered with as much more. It ſeems by this that the author underſtood aſbeſtus to be the unextinguiſhable ſtone called *Apſyctos* by the old writers, and that this ſtone being once heated could not be cooled again even by miracle; but Bollandus concludes from the accounts moſt to be depended upon, that it was no other than quick lime that this ſaint was burnt alive in. Philoſ. Tranſ. N°. 172. p. 1055.

We have ſome ſtones indeed in England, that when once heated will retain a warmth a long time, but all the other accounts ſeem groundleſs; our warming ſtone uſed in Cornwall and Yorkſhire, to lay at the feet of peoples beds, will retain warmth eight or ten hours; and there is a ſort of red ſtone cut out of the ſalt mountains near Cordova, and formed into broad tiles called ruggiolos by the Italians, which being once well heated will retain a ſenſible warmth twenty-four hours; but theſe do not at all come up to the qualities of this imaginary ſtone of the antients. See ASBESTUS.

APSYRTUS, in the materia medica of the antients, a name given to the common marrubium, or horehound, a plant at that time as well as now eſteemed very good in coughs, and other complaints of the breaſt.

APTITUDE, or APTNESS, (*Cycl.*) is often uſed in ſpeaking of the talents of the mind, for a promptitude, or diſpoſition to learn things with eaſe and expedition. *Charlt.* Diſc. of Diff. Wits. Sec. 2. Art. 2.

In which ſenſe *Aptneſs* amounts to the ſame with what the the Greeks call Ευμαθια, and the Latins *bona indoles*, and we ſometimes *docility*.

Charlton divides *Aptneſs* into theſe parts, *viz.* acuteneſs, ſagacity, and memory.

APUA, in zoology, the name of a ſmall ſea fiſh, ſuppoſed by many to be produced of the ſlime and mud of the ſhores. But ſuch opinions are all groundleſs and idle. There are two ſpecies of theſe fiſh, 1. the *Apua* vera, 2. the *Apua* phalerica. The firſt, or *Apua* vera is extremely ſmall, ſeldom exceeding two inches in length; it is uſually white, but ſometimes a little reddiſh; its eyes are black, it has no ſcales; and is ſo ſoft and tender as to be ſufficiently dreſſed almoſt as ſoon as it has come within the reach of the fire. The other, or *Apua phalerica*, is larger, but ſo ſoft that it even melts away between the fingers in handling it, is very fat, and often affords a ſort of oil when large quantities of it lie any time together. *Ray*, Ichthyogr. p. 343.

APUA *Membras*, in zoology, a name by which ſome have called the *pilchard*. *Willughby*, Hiſt. Piſc. p. 224. See PILCHARDUS.

APUS, (*Cycl.*) in aſtronomy, a conſtellation of the ſouthern hemiſphere placed near the pole, between the triangulum auſtrale, and the chameleon, ſuppoſed to repreſent the bird of paradiſe. *Keil*, Aſtron. Lect. 6. p. 50.

The *Apus* is ſuppoſed one of thoſe birds called *Apodes*, as having no feet. See APODES.

There are four ſtars of the ſixth, three of the fifth, and four of the fourth magnitude, in the conſtellation *Apus*.

Dr. Halley in 1677, obſerved the longitude and latitude of the ſtars in *Apus*, which Hevelius in his prodromus reduced with ſome alteration to the year 1700.

P. Noel has alſo given the places of theſe ſtars, with their right aſcenſions and declinations for the year 1687 [a]: But his obſervations differ widely from thoſe of Dr. Halley. Hevelius has repreſented the figure of *Apus*, and its ſtars, in his firmamentum ſobieſcianum, according to Halley's account; Noel has done the like, according to his own account. Wolfius, with what juſtice we will not pretend to ſay, gives the preference to this laſt [b].—[a Obſerv. Mathem. in Ind. and Chin. Fait. c. 4. p. 50. ſeq. b *Wolf.* Lex. Math. p. 138.]

APUTTASY, in botany, a name given by the people of Guinea to a tree, a decoction of which is in great uſe among them for waſhing the mouth to cure the ſcurvy in the gums, and preſerve the teeth; the leaves of this tree ſtand very irregularly, ſometimes in pairs, ſometimes alternately, and ſometimes at ſmaller, ſometimes at greater diſtances from one another. They have ſcarce any pedicle: they are broad at the baſe, and narrow at the point; ſmooth and gloſſy above, and whitiſh and ſomewhat hoary underneath; eſpecially the larger ribs, which being obſerved againſt the light are clouded; the largeſt leaves are two inches and a half long and about one inch broad; the tree is large and ſpreading. Phil. Tranſ. N°. 232.

APYCNI, απυκνοι, in the antient muſic, was uſed for ſuch chords or ſounds of the ſcale, as could never enter the ſpiſſum. They were fixed, or *Stabiles*. *Wallis*, Append. Ptolem. Harm. p. 165. See PYCNI, STABILES, GENUS, SPISSUM.

APYCNON, Απυκνον, *non ſpiſſum*, *rarum*, in the antient muſic, was applied to thoſe two conjunct intervals of a tetrachord, which taken together were greater than the third. *Wallis*, Append. ad Ptolem. Harm. p. 165.

This happened only in the two diatonic genera. See the article SPISSUM.

APYRENOS, properly ſignifies without kernels. The Greek writers, however, did not always keep up rigidly to the ſenſe of this word, but ſometimes applied it to ſuch fruits as had fewer and ſofter kernels than others of the ſame kind; thus the meſpilus tricoccus, or three kernelled medlar, was called by Theophraſtus and others meſpilus *Apyrenos*, becauſe the others having each five ſeeds, this was ſingular in not having ſo many.

APYROI, Απυροι, in antiquity, a denomination given to altars whereon ſacrifice was offered without fire. *Potter*, Archæol. Græc. l. 2. c. 2.

In which ſenſe the word ſtands contradiſtinguiſhed from *Empyroi*. See ALTAR.

APYROMETALLUM, in metallurgy, a name by which ſome authors have called gold, from its reſiſting the force of fire. *Aldrov.* Muſ. Met. p. 38.

APYRON, Απυρον, ſomething that has not undergone the fire. In this ſenſe, *ſulphur vivum*, or native ſulphur, is particularly denominated *Apyron*. *Caſtel.* Lex. Med. in voc. *Dioſcor.* l. 5. c. 124.

Some authors alſo give the denomination *Apyros*, Απυρος, to a modern proceſs for making Æthiops mineral without fire, by trituration alone.

AQUA (*Cycl.*)—AQUA *Alexiteria ſimplex*, the name now given in the London diſpenſatory to the ſimple water commonly called milk water. It is ordered to be made in the following manner: Take mint a pound and half, tops of ſea-wormwood, and leaves of angelica, all freſh and green, of each a pound; add as much water as is neceſſary to prevent burning, and diſtil off three gallons. *Pemberton*'s Lond. Diſp. p. 236.

AQUA *Alexiteria ſpirituoſa*, the name of a compound or cordial water, brought into uſe by the late London diſpenſatory. It is ordered to be made of half a pound of green mint, and four ounces of angelica leaves, with the ſame quantity of tops of ſea-wormwood, and a gallon of proof ſpirit; adding water enough to prevent burning, and diſtilling off a gallon. *Pemberton*'s Lond. Diſp. p. 243.

This with a double proportion of the angelica, and the addition of a pint of vinegar after the diſtillation, makes what is called the the *Aqua Alexiteria ſpirituoſa cum aceto*, which is intended to ſtand in the place of the treacle water, of the former diſpenſatories.

AQUA *Aluminoſa Bateana*, a form of medicine in the new London pharmacopœia, compoſed in the following manner; take alum and white vitriol of each half an ounce, water a quart; boil the whole together, that the ſalts may be diſſolved; and then letting it ſettle, filtre it thro' paper. *Pemberton*'s Lond. Diſp. p. 346.

Quincy gives another proceſs for making alum-water; as alſo its uſe in medicine: for which ſee the article ALUMINOUS.

AQUA *Fortis* (*Cycl.*) is uſed for ſtaining wood, and book-binders uſe it to throw on their leather to marble it; it is alſo uſed for ſtaining bone and ivory. *Boyle*'s Works, Abr. Vol. I. p. 133.

Silver is very nicely and finely purified by means of this menſtruum in the following manner; diſſolve ſilver that has been copelled in a clean glaſs body, with a ſufficient quantity of *Aqua fortis*; if the ſolution is at all turbid, filtre it thro' paper into another clean glaſs; pour into this ſolution by little and little ſpirit of ſalt, or a ſolution of common ſalt, or ſal armoniac, enough to produce a perfect *Aqua regia*. The limpid ſolution will now immediately become milky: let it reſt for ſome hours, and all the ſilver will ſubſide to the bottom in form of a white powder, which may be the ſooner effected, by pouring a large quantity of pure water on the ſolution if highly charged. Waſh the powder with many freſh waters or with the phlegm of ſpirit of ſalt or *Aqua-fortis*, till the calx and water are both perfectly inſipid; then ſeparate the remaining water by a filtring paper, and dry the calx. Put this into a crucible well rubbed over on the inſide with ſoap, and cover it with about one half of any fixed alkaline ſalt very dry and beaten to a fine powder; ſqueeze the whole well down with a finger; cover the crucible with a tile, and ſet it in a wind furnace; make at firſt a middling fire, only to make the veſſel grow red hot, and then encreaſe it to a higher degree; when the fuſion is compleated take out the crucible, and let the ſilver either cool in it, or elſe pour it into an ingot. *Cramer*'s Art of Aſſaying, p. 256.

Aqua-fortis diſſolves iron, copper, lead, ſilver, mercury, regulus of antimony, and tin imperfectly, but gold not at all; it alſo diſſolves biſmuth and zink.

Common *Aqua-fortis* when poured upon ſilver uſually grows troubled in the beginning of the operation of ſolution; and a little after this is perfected, there is made a precipitation of a whitiſh powder. This ſhews the imperfection of the menſtruum, and is wholly owing to the careleſſneſs or ignorance of the perſons employed in making it.

This powder ſometimes melts in the fire with pot-aſhes, and gives a regulus of ſilver at the bottom of the veſſel; ſometimes it melts with difficulty in the fire, and has all the characteriſtics of the calx of ſilver precipitated from *Aqua-fortis* by oil of vitriol. The fault of this *Aqua fortis* happens either from the uſe of too violent and long continued a fire, or becauſe the mixture of the vitriol and the nitre have been careleſsly made, or too large a proportion of the former uſed; in this caſe, when the the diſtillation draws towards an end, there appear white milky fumes in the recipient; theſe are vitriolic, and this phænomenon plainly ſhews the fault of the menſtruum, and might ſerve to prognoſticate the before-mentioned precipitation. This calx of ſilver ſeldom proves fluid in the fire, but runs into a kind of *luna cornea*, and ſhews that the nitre has been impure, and has contained ſome portion of ſea-ſalt. *Cramer*'s Art of aſſaying, p. 35.

For this reaſon, no *Aqua-fortis* ought to be uſed but what has been firſt carefully proved by the proper trials with ſilver and the other metals; and as the diſſolution, eſpecially that by which gold is ſeparated from ſilver with *Aqua-fortis*, is conſiderably hindered and impeded by this defect, and is made uncertain by this ſort of precipitation, that portion of oil of vitriol, and of ſpirit of ſalt which thus ſpoil the *Aqua-fortis* muſt be ſeparated from it before it is uſed; this may be done in the following manner. Pour one thirtieth or fortieth part of the menſtruum to be uſed into a ſmall cucurbit, and over a gentle fire, diſſolve in it ſome ſilver ſo as wholly to ſaturate the *Aqua-fortis*. If the liquor looks turbid and milky in the beginning of the ſolution, it is a proof that it wants to be purified; paſs the warm ſolution thro' a filtre, and when it is perfectly clear pour it drop by drop into the reſt of the *Aqua-fortis*, which is to be purified, till the dropping in the ſmalleſt drop of it will not any longer turn the whole milky as it did at firſt; then let it reſt ſome hours, that the precipitated calx may ſubſide, which done drop in again, and ſo on till this milkineſs is no longer produced. Finally, the clear *Aqua-fortis* is to be poured carefully off, or filtred thro' a four doubled paper, and it is then found to be pure, and fit for all the operations it may be required in.

Some uſe ſilver allayed with copper, or even copper itſelf for the precipitating of the ſpirit of ſea-ſalt or vitriol from the *Aqua-fortis*; but this, tho' it may ſucceed when the vitriolic ſpirit only is to be precipitated, fails when that of marine ſalt is to be ſeparated; becauſe this being mixed with *Aqua-fortis* diſſolves copper per-

perfectly. The oil of vitriol is indeed carried out of the *Aqua-fortis* by copper, but not ſo perfectly as by ſilver. It appears by this operation, that the precipitating body and that to be precipitated adhere to one another and ſink to the bottom together: this is the method uſed by the aſſayers.

The beſt *Aqua-fortis* is often tinged with a greeniſh colour, which happens if *Aqua-fortis* having been expoſed ſome days to the air, and loſt its red fuming ſpirit, there be poured to it ſome freſh ſtrong *Aqua-fortis* ſtill emiting its fumes, or if *Aqua-fortis* be diluted with water. As this colour may however proceed from copper diſſolved in it, to be certain that it does not, a little is to be poured into a cucurbit, and as much of ſome alkaline liquor to be added to it as will ſaturate the acid. Then if there be ever ſo little copper in it, the colour becomes a deep blue, and there is a cloudy precipitation made, becauſe the nitre has been regenerated by this proceſs, and does not diſſolve copper, ſo much as *Aqua-fortis* does: But if there be no copper in the *Aqua-fortis*, the colour diſappears.

The nice aſſayer, after having carefully proved his *Aqua-fortis*, muſt concentrate it to a certain degree; for, if too weak, it often retards the ſolution, and ſometimes does not even affect the ſilver; but this concentration is only to be in a certain degree; for, if carried too far, and the *Aqua-fortis* made too ſtrong by it, it vaniſhes into fumes, which ruſh violently out of the receiver, or veſſel the ſolutions are made in, tho' ſufficiently high, and carries away a part of the ſilver with it in vapours; and if there is any thing of gold in the ſilver, it will be corroded into a fine duſt, which it proves very difficult afterwards to collect together. *Cramer*'s Art of Aſſaying, p. 36.

When *Aqua-fortis* is too weak, it is to be put into a deep cucurbit, and the watry part is to be drawn from it, by a gentle fire, till yellow fumes begin to ariſe. To find out whether it be too ſtrong, the following method is to be uſed: Melt together one part of gold, and four parts of ſilver; of this make a flat plate, which cut into three or more parts; roll up each part, that it may be conveniently put into the neck of a cucurbite; when rolled up, and gently heated at the fire, put it into a cucurbit, and pour upon it three times its weight of *Aqua-fortis*, ſet it in a gentle heat: If the ſilver is eroded from the gold, and the gold retain the ſame figure of a piece of a plate rolled up, and there appear no reddiſh duſt at the bottom of the veſſel, then the *Aqua-fortis* has its proper degree of ſtrength: But if the diſſolution has been made with ſo much violence, that the gold was eroded, or the plate almoſt broken, then the *Aqua-fortis* was too ſtrong. It muſt then be diluted with a tenth, or an eighth part, of *Aqua-fortis* Phlegm, or, if that is not at hand, with the ſame quantity of common water. This done, the trial is to be repeated, by the diſſolution of a like plate rolled up; and this ſeveral times over, till the ſilver be diſſolved, without the leaſt diminution of the gold. By this the aſſayer is aſſured of a due degree of ſtrength in his menſtruum, for all the purpoſes he requires it for.

Aqua-fortis is better than in the common ſtate, when it is recovered by fire from a metal which had been diſſolved by it. It may be almoſt entirely recovered by fire, from ſuch ſolutions. Lemery, in his curious account of the arbor martis, obſerves, that the experiment ſucceeds much better with *Aqua-fortis*, drawn once from a diſſolution of iron, than with the common kind; and Cramer gives a very accurate and ready way of obtaining ſuch a revived *Aqua-fortis*, in any quantity, in this manner: Put into a glaſs alembic, a pound or more of any metalline ſolution, in *Aqua-fortis*; diſtil it into a large recipient, over a gentle fire, ſo that the drops may follow one another, at the interval of ſome ſeconds. When the liquor of this quantity is thus drawn off, let ſuch another quantity be put warm into the ſame cucurbit, to the reſiduum of the former; let this be diſtilled in the ſame manner, till all its liquor is drawn off, and then more added, till the whole quantity intended to be diſtilled, is thus diveſted of its liquor. After all this, when the yellowiſh vapours begin to appear from the Remainder, a dram of ſuet muſt be put into the veſſel, leſt the diſſolved metal ſhould, when dried up, adhere ſo faſt to the ſides of the veſſel, as to give great trouble in ſeparating it; and when, at laſt, the calx ſhall be quite dry, let it be ſeparated and fuſed with Pot-aſhes; thus will the metal be recovered, and the receiver will contain the *Aqua-fortis* revived from it.

The Germans build many arguments on the nature of fire, on a ſuppoſed experiment of Borrichius, which tends to prove, that *Aqua-fortis*, mixed with oil of turpentine, will take fire; but the experiment itſelf is fallacious, and, in reality, gives only the appearance of flame, not any real fire.

The mixture ordered by Borrichius is four ounces of oil or ſpirit of turpentine, and ſix ounces of *Aqua-fortis*, both very ſtrong, and newly made: Theſe are to be put together into a glaſs body, and this being ſet in the ſun, they will ferment together for ſome time, and a thick ſmoak will iſſue out, which, in the ſun-beams, reſembles flame; but if flax, or any other inflammable ſubſtance be placed in it, it will never take fire; and if the experiment be made in a dark room, where the fermentation ſucceeds equally well, there is no appearance of flame at all. In the making the experiment, candles are to be kept at a diſtance, for the ſmoak, raiſed from theſe liquors, will take fire at the flame of any other body, tho' at ſome diſtance, and the experimenter may be impoſed on. Phil. Tranſ. N°. 150.

AQUÆ-*Hauſtus*, in the civil law, a right of drawing water, and carrying it through another's ground. *Calv.* Lex. Jur. p. 80. a.

Aquæ-hauſtus is a ſpecies of ſervice, differing from *Aquæ-ductus* in this, that in the latter, water is only conveyed in pipes, or paſſages, under ground; whereas in the former, it may be carried by cattle. Add, that *Aquæ-hauſtus* could only be from a well, but *Aquæ-ductus* from either well or ſpring.

AQUA *Mercurialis*, a preparation of *Aqua-regia*, and ſublimate of mercury, with a little mercury, placed in a ſand heat, till the ſolution of the mercury be made. *Kirch.* Mund. Subter. l. 11. §. 2. c. 3. p. 261.

'Tis a mark of perfection of the *Aqua mercurialis*, if it turn a piece of copper caſt into it, of a ſilver colour. *Kirch.* loc. cit.

'Tis by this water, that the alchymiſts pretend, all metalline bodies may be reduced to their firſt matter, or mercury.

AQUÆ *Pavor* is uſed by ſome to denote the *Hydrophobia*. V. Phil. Tranſ. N. 147. p. 162.

AQUA *Regia*.—This menſtruum, beſides gold, diſſolves iron, copper, tin, mercury, regulus of antimony, biſmuth, and zink: It diſſolves lead better than the ſpirit of ſea-ſalt alone, but it becomes turbid in the ſolution. If it has its requiſite degree of ſtrength it does not diſſolve ſilver. If the quantity of marine ſalt, in the *Aqua-regis*, be too ſmall, however, it will then more or leſs corrode and diſſolve the ſilver. An exact ſeparation of gold and ſilver is therefore better made by *Aqua-fortis*, than by this acid; as the former can never diſſolve gold, whereas the latter may, and very frequently does, more or leſs, corrode and diſſolve ſilver. See AQUA-*fortis*, *ſupra*.

AQUA *Sicca Philoſophorum*, a cant term, invented by ſome alchymiſts for the flowers of zink, called by ſeveral other as unmeaning names, by theſe writers; as ſericum, philoſophic cotton, and talc.

A preparation of theſe flowers, by means of vinegar, has alſo been called oil of talc, and many great properties aſcribed to it; but it is truly no other than the oil of the grape, from which the vinegar was made, and has no title to any thing that has been ſaid of it. See TALC.

AQUA *Sulphurata*, *Sulphur-water*, a new name for what was originally called *Gas Sulphuris* by Van Helmont.

It is water impregnated with the fumes of burning ſulphur; and is conveniently prepared in the following manner. Take a quart of water, and half a pound of brimſtone; put the water into a large glaſs receiver; place it with its mouth ſideways, and then let the ſulphur be ſet on fire, in an iron ladle fixed to a wooden plug, made to go freely into the neck of the receiver, which ſhould be pretty long. This plug will then keep the ladle up horizontally, that it ſhall not dip into the water, and a cloth is to be thrown ſlightly over the mouth of the receiver, to confine the fumes. Let the burning of the ſulphur be repeated as often as the fumes from the laſt ſubſide, till the whole is burnt away. *Pemberton*'s Lond. Diſp. p. 211. See GAS, *Cycl.*

AQUA *Vitriolica cærulea*, a form of medicine in the late London Pharmacopœia, made in the following manner: Take blue vitriol three ounces, allum and ſtrong ſpirit of oil of vitriol, of each two ounces, water a pint and a half; boil the ſalts in water till they are diſſolved, and then add the oil of vitriol, and finally, ſtrain the whole through paper. *Pemberton*'s Lond. Diſp. p. 347.

AQUÆMANILIS is particularly uſed, in eccleſiaſtical writers, for a kind of baſon or laver, antiently placed in the veſtibles of churches, ſerving to waſh the hands in.

Aquæmanilis ſtood contradiſtinguiſhed from *Urceolus*, as the former was placed under the hands, the latter above them, from whence the water trickled down by a cock.

The prieſt alſo, after celebrating maſs, waſhed his fingers in an *Aquæmanilis*.

In the inventories of church plate, we frequently find mention of *Aquæmaniles*, *Aquaminilia*, *Aquiminalia*, of ſilver gilt, wrought, *&c.* V. *Du Cange*, Gloſſ. Lat. T. 1. p. 238. ſeq.

AQUATIA, in middle-age writers, a right of fiſhing three days in the year. *Du Cange*, Gloſſ. Lat. T. 1. p. 285.

In antient deeds, we find divers grants of this privilege of *Aquatia*, or *Aquatura*, ſometimes alſo called *Aquaria*.

In ſome writings *Aquatia* ſeems alſo to have ſignified a fee, or other ſervice, paid for the privilege of fiſhing.

AQUALICULUS, in anatomy, a name given by ſome to the region of the body, wherein the trunk terminates, and the thighs commence, and in which alſo the privities are placed. *Caſt.* Lex. Med. in voc. *Blaſ.* Not. ad Veſling. c. 1. p. 3.

The *Aqualiculus* is the ſame with what others call *Pubes*, others the *Hypogaſtrium*, *Sumen*, *Imus Venter*, &c.

AQUATIC *Inſects*. See INSECTS.

AQUATICUM, in middle-age writers, is a right of uſing a water. Hence *Aquaticum in Foreſta*, &c. *Du Cange*, Gloſſ. Lat. in voc.

AQUA-

AQUATUM, in ſome phyſical writers, denotes a thing diluted with water. *Brun.* Lex. Med. p. 116.

AQUATUM *Ovorum* is uſed, by ſome naturaliſts, for what is otherwiſe called *Grando*, but more uſually *Chalaza*. *Brun.* lib. cit. See CHALAZA.

AQUIFOLIUM, *Holly*, according to Tournefort, the name of a genus of plants, the characters of which are theſe: The flower conſiſts only of one leaf, and is of the rotated kind; the piſtil ariſes from the cup, and is fixed in the manner of a nail to the middle of the flower, and finally becomes a juicy fruit or Berry containing ſeeds, gibboſe on one ſide, and flat on the other.

The ſpecies of *Holly* enumerated by Mr. *Tournefort*, are theſe: 1. The common *Holly*. 2. The *Holly* with leaves variegated with yellow. 3. The *Holly* with leaves variegated with white. 4. The *Holly* with ſilvery thorns, and ſilvery edges to the leaves. 5. The rounder-leav'd *Holly*, with ſilvery thorns, and ſilvery edges to the leaves. 6. The *Holly* with ſilvery ſpines, and with leaves edg'd on one ſide only with a ſilvery white. 7. The longer-leav'd *Holly*, with yellow ſpines, and yellow edges to the leaves. 8. The rounder-leav'd *Holly*, with yellow ſpines, and yellow edges to the leaves. 9. The yellow-berried *Holly*: And 10. The *Holly* with the whole ſurface of the leaves echinated, called hedge-hog *Holly*. *Tourn.* Inſt. p. 600.

AQUILA, (*Cycl.*) *The Eagle.*—The general character of theſe birds is, that they are birds of prey, flying about in the day-light, not like the owl kind in the night, very large in ſize, extremely bold and fierce, and have beaks growing crooked, immediately from their inſertion at the head. The eagle differs from the hawk in ſize, and from the vulture in the crookedneſs of his whole beak. *Willoughby's* Ornithol. p. 26. See Tab. of Birds, N° 1.

AQUILA *Brava*, in Botany, a name given by the Portugueſe to the *Agallochum Sylveſtre*. See AGALLOCHUM. *Hofm.* Lex. in voc. *Tarum.*

AQUILA *Criſtata*, the *Creſted Eagle*, a name under which Nieremberg has deſcribed an American ſpecies of bird, of the *Eagle* kind, called by the Indians *Yzquahtli*. It has a yellow and black beak, pale yellow legs, and the belly white, variegated with black; its neck is of a browniſh yellow, its back and tail variegated with brown and black, and it has a very fine creſt of black feathers on its head. It is, by much, the largeſt of all the eagles, yet it is eaſily tamed, and fitted for the diverſions of hawking. This is placed by Mr. Ray among the birds, the deſcriptions of which he is very ſuſpicious of. *Ray's* Ornithol. p. 299.

AQUILA *Marina*, *Sea Eagle*, in ornithology, a name uſed by ſome authors for the *Haliœtus*, or oſprey. *Willoughby's* Ornith. p. 29.

AQUILA *Marina*, the *Sea Eagle*, in ichthyology, the name of a ſpecies of cartilaginous flat fiſh, of the paſtinachia marina kind. It is generally found ſmall, but ſometimes grows to a very large ſize. Its head is large for a fiſh of this genus, and ſomewhat reſembles a toad's in ſhape; its eyes are large and prominent; its mouth is placed in the under part of the head, and is large, and furniſhed with ſtrong teeth. Its ſides are broad and and thin, and repreſent the expanded wings of an eagle, whence it had its name. *Salvian*, de Aquat. p. 112. See Tab. of Fiſhes, N° 67.

AQUILÆ *Arbor*, in botany, a name given, by ſome authors, to the tree whoſe wood is the agallochum, or lignum aloes of of the ſhops. *Kempf.* Amon. Ex. p. 903.

AQUILEGIA, *Columbine*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the polypetalous, anomalous kind, conſiſting of ſeveral irregular petals, ſome being plain, and others hooded, or galeated, and both placed in an alternate order.

The piſtillum ariſes from the center of the flower, and is ſurrounded with ſtamina. This finally becomes a fruit, in which ſeveral capſules are collected together into a ſort of head: Theſe uſually contain flat oval ſeeds. *Tourn.* Inſt. p. 488. See Tab. 1. of Botany, Claſs 11.

The ſpecies of *Columbine* enumerated by Mr. *Tournefort*, are theſe: 1. The common wild *Columbine*. 2. The ſingle garden red *Columbine*. 3. The ſingle garden white *Columbine*. 4. The bluiſh white *Columbine*. 5. The browniſh *Columbine*. 6. The hairy *Columbine*, with viſcous flowers. 7. The ſingle fleſh-coloured garden *Columbine*. 8. The ſingle garden *Columbine*, with flowers variegated with blue and purple. 9. The ſingle white garden *Columbine*, with flowers ſtreaked, and ſpotted with blue. 10. The great flowered mountain *Columbine*. 11. The ſmall flowered mountain *Columbine*, with leaves like meadow rue. 12. The thalictrum-leav'd *Columbine*, with extremely ſmall white flowers. 13. The tall early flowering Canada *Columbine*. 14. The low early flowering Canada *Columbine*. 15. The double garden *Columbine*, with great blue flowers. 16. The double garden *Columbine*, with great violet-colour'd flowers. 17. The double garden *Columbine*, with great white flowers. 18. The double garden *Columbine*, with great greyiſh flowers. 19. The double garden *Columbine*, with great red flowers. 20. The double garden *Columbine*, with great deep red flowers. 21. The purple flowered *Columbine*. 22 The great double variegated *Columbine*. 23. The great garden *Columbine*, with double violet-colour'd flowers. 24. The great garden *Columbine*, with double browniſh flowers. 25. The double garden *Columbine*, with ſmall flowers. 26. The garden *Columbine*, with inverted roſe-like flowers. 27. The garden *Columbine*, with white inverted flowers. 28. The garden *Columbine*, with fleſh-coloured inverted flowers. 29. The garden *Columbine*, with inverted blue flowers. 30. The garden *Columbine*, with double roſe-like flowers. 31. The purple ſtellated *Columbine*. 32. The red-flowered ſtellate *Columbine*. 33. The violet flowered ſtellate *Columbine*. 34. The ſtellate *Columbine*, with white flowers variegated with black ſpots. 35. The ſtellate *Columbine*, with variegated flowers. 36. The ſtellate *Columbine*, with grey flowers, variegated with purple ſpots. 37. The greeniſh-flowered degenerate *Columbine*. 38. The degenerate *Columbine*, with greeniſh purple flowers. *Tourn.* Inſt. p. 429. See COLUMBINE.

AQUILEGIA, in medicine.—The flowers of this plant are of different colours, ſome blue, ſome purple, ſome white, and ſome of them indented. The blue is only uſed in apothecaries ſhops, where the ſeed, the flower, and the herb, are all employed. It is moderately drying, opening, and healing. It purifies the blood, and removes obſtructions of the liver and ſpleen. It diſſipates the bile, and is of ſingular efficacy in curing the jaundice. A powder, or emulſion of its ſeeds, as alſo its diſtilled water, are of great ſervice in the jaundice; in which caſe, its extract may be alſo uſed with ſucceſs.

Many other virtues are aſcribed to it by medical writers: It removes the ſcurvy; promotes a diſcharge of urine, and the monthly evacuations of women; cures a beginning dropſy; is excellent for the breaſt and lungs; reſiſts all kinds of poiſon; cures wounds, and removes pains of the belly and matrix. Its ſeed, reduced to powder, and taken in wine, is recommended by Cluſius in tedious labours, coſtiveneſs of children, pains in the ears, *&c.* The flowers have a cordial quality, and are eſteemed good in malignant fevers, ſmall pox, and meaſles. Its ſyrup is excellent in diſorders of the throat and breaſt; and a decoction of the whole herb and root in wine, with the addition of a little ambergreaſe, is alſo recommended againſt impotency and barrenneſs. Vid. *Burrgr.* Lex. Med. and *James*, Med. Dict. in voc.

AQUILICIUM, or AQUÆLICIUM, in antiquity, a ſacrifice, celebrated among the Romans, in time of exceſſive droughts, to obtain rain of the gods. *Pitiſc.* Lex. Ant. T. 1. p. 140. a. *Voſſ.* Etym. in voc. *Aqua.*

Danet calls this *Aquiliciana*. The prieſts who officiated at it were denominated *Aquilices*, *quia aquam eliciebant*, becauſe they brought down water: But where he finds this new order of prieſts, he does not tell us. *Danet*, Lex. Ant. in voc. *Aquiliciana.*

By this, however, it ſhould ſeem, that the antient Romans feaſted for the ſame end as the moderns faſt.

AQUILIFER, among the Romans, an enſign-bearer, who carried the ſtandard on which the eagle was repreſented. *Danet*, Lex. Ant. in voc. *Signa.* See SIGNA.

AQUILUS, among the antients, a dark, or duſky colour, approaching to black. *Fab.* Theſ. p. 215.

Hence ſome of the heathen gods were called *Dii Aquili*, *q. d. Nigri.*

AQUIMINARIUM, in antiquity, a kind of luſtral veſſel, wherein the Romans carried their holy water for expiation, and other religious offices. *Pitiſc.* Lex. Ant. T. 1. p. 140. a.

AQUIQUI, in natural hiſtory, the name of a particular ſpecies of monkey, called by the people of Braſil, the king monkey, as being much larger than all the other monkeys.

This creature has in his throat a hollow, and very hard, but thin, and ſemi-tranſparent bone, two inches and a half long, an inch and half, or more, in height, and nearly two inches in breadth. It has at one end an aperture, an inch wide every way, and on the top is furrowed ſo, as to repreſent a puppy's ſkull: It is placed in the throat, or at the upper end of the larynx, near the epiglottis, and ſerves the creature, when he pleaſes to make a very loud noiſe. *De Laët.* Ind. Occ. L. 25. c. 5.

AQUO, in zoology, a name by which ſome authors have called the ayonus, a fiſh much approaching to the nature of the alauſa, or ſhad. *Benedictus Jovius.* See AYONUS.

ARA *parva*, *the little Altar*, a denomination, in the antient ſurgery, given to an elegant kind of bandage, ſaid to have been invented by Soſtratus. *Gal.* de Faſciis. n. 96. *Brun.* Lex. Med. in voc. See BANDAGE.

ARABIAN, (*Cycl.*) in a general ſenſe, ſomething belonging to Arabia, or the Arabs.

Some writers ſpeak of an *Arabian* church, founded by the apoſtles St. Peter and St. Paul, who are ſaid to have travelled thither. Whence we alſo find frequent mention of *Arabian* biſhops and biſhoprics. V. *Fabric.* Lux. Evang. c. 41. p. 693. The *Arabian* learning is divided into two ſtates, or periods, *viz.* Ante-Mahometan, and Mahometan.

Little is known concerning the firſt, which yet muſt have been both very conſiderable, and very antient, if, as is generally allowed by the modern learned, Job were of that nation, at leaſt lived in the country[a], and his friends of the ſect of *Sabæans*. We are alſo aſſured, that Porphyry, Pythagoras, and

and Democritus, travelled into Arabia to converſe with their ſages [b].—[a V. *Carpzov.* Introd. ad Libr. Poet. V. T. c. 2. §. 45. *Reinhard*, Comp. Hiſt. Phil. P. 1. c. 1. §. 4. b *Gundling*, Hiſt. Philoſ. Mor. c. 4. §. 1. ſeq.]

The *Arab* learning in this period, conſiſted, according to *Abulpharagius* [a], in the knowledge of their language, the propriety of diſcourſe, the compoſition of verſe, and the ſcience of the ſtars: But their chief attention ſeems to have been to oratory and poetry [b].—[a *Abulph.* Hiſt. Dynaſt. 9. p. 101. b V. *Renaudot.* de Barbar. Ariſt. Verſion. §. 6. *Fabric.* Bibl. Græc. l. 6. c. 5. §. 6.]

The ſecond period is more diſtinguiſhed, at leaſt from the time of Al-Mamon, the ſeventh caliph of the family of the *Abaſſides*, who flouriſhed about the year 820, and has the honour of being the founder of the modern *Arabian* learning. That prince, Elmacinus [a] tells us, was not only learned himſelf in aſtronomy, and the ſcience of the winds, but outwent all the European patrons, ever heard of, in the encouragement he gave to ſciences, and the pains he took to propagate them. He ſent for all the beſt books out of Chaldea, Greece, Egypt, and Perſia, relating to phyſic, aſtronomy, coſmography, muſic, chronology, *&c.* And penſioned a number of learned men, ſkilled in the ſeveral languages and ſciences, to tranſlate them into Arabic [b]. By this means, divers of the Greek authors, loſt in their own country and language, have been preſerved in Arabic [c].—[a *Elmac.* Hiſt. Saracen. l. 2. c. 8. b *Leo African.* de Viris Illuſtrib. ap. Arabes, c. 1. *Fabric.* Bibl. Græc. l. 6. c. 9. c *Greav.* in Pref. ad Tab. Geogr. *Voſſ.* de Sect. Philoſ. c. 3. §. 17. *Gundling.* loc. cit.]

Not but great defects are charged on theſe *Arabic* tranſlators, who, for want of ſkill in the Greek, or acquaintance with their ſubject, have often obſcured and miſrepreſented their author's meaning; as has been more eſpecially complained of in reſpect of Ariſtotle. *Morhof.* Polyhiſt. Philoſ. l. 1. c. 10. From that time *Arabia* became the chief ſeat of learning; and we find mention in Abulpharagius [a], Pocock [b], D'Herbelot [c], and Hottinger [d], of learned men, and books without number.—[a *Abulphar.* Hiſt. Dynaſt. b *Poc.* Not. ad Abulphar. c *D'Herb.* Bibl. Orient. d *Hottinger*, Bibl. Quadrip.]

The *Arabian* oratory, according to Renaudot, conſiſted in a luxuriancy of quaint, high flown words, epithets, and deſcriptions. *Renaud.* loc. cit.

The *Arabian* poetry may be divided into two ages. The antient, according to Voſſius, was no other than rhiming; was a ſtranger to all meaſure, and rule; the verſes looſe and irregular, confined to no feet, number of ſyllables, or any thing elſe, ſo they rhimed at the end; oftentimes all the verſes in the poem ended with the ſame rhime. 'Tis in ſuch verſe that the alcoran is ſaid to be written. See ALCORAN.

The modern *Arabian* poetry takes its date from the chaliphate of al Raſchid, who lived toward the cloſe of the eighth century: Under him poetry became an art, and laws of proſody were laid down: But in this there is no proper diſtinction of long and ſhort ſyllables; but the whole depends on rhime, a certain number of letters, and, in the obſervation of certain *Cæſuræ*, which are found, by carefully diſtinguiſhing the moveable conſonants from the quieſcent. A ſyllable to which a quieſcent letter is added at the end, becomes long by poſition, as that where this is wanting becomes ſhort by poſition. Bibl. Univ. T. 9. p. 231. ſeq. *Clark*, Proſod. Arab. c. 1.

Samuel Clark has publiſhed an expreſs treatiſe on the *Arabic* proſody. Scientia Metrica & Rythmica, Seu Tractus de Proſodia Arabica, Oxon. 1661. 8°.

Renaudot adds, that the *Arab* compoſitions in verſe are ſtill wild and irregular, being neither epic, dramatic, lyric, or reducible to any other kind. Their hymns to God, and their tales and jocular ſtories, are in the ſame ſtyle.

Their compariſons, in which they abound, are taken, with little choice, from tents, camels, hunting, and the antient manners of the *Arabs*. *Renaud.* de Barbar. Ariſtot. Verſion. §. 7. *Fabric.* Bibl. Græc. l. 6. c. 5. §. 6.

ARABIAN *Philoſophy* is divided into two periods, or ages, *viz.* The time of ignorance, as they denominate it, before the miſſion of Mahomet; and the time of knowledge, ſince.

The *Arabian philoſophy*, before Mahomet, was Sabian, and included the ſyſtem and ceremonies of that ſect of idolaters [a]. This it was that Mahomet ſet himſelf to decry; and he is even ſaid by ſome, to have carried his oppoſition ſo far, as to prohibit, if not puniſh, all ſtudy of philoſophy [b]. But his followers, by degrees, got over this reſtraint; the love of learning encreaſed; till, under the memorable caliphate of Al-Mamon, Ariſtotle's philoſophy was introduced and eſtabiſhed among them; and from them propagated, with their conqueſts, through Egypt, Africa, Spain, and other parts. *Avicenna* only flouriſhed in the eleventh century, and Averrhoes a hundred years after him; ſo that the honour of tranſlating the Greek philoſophy, by many attributed to theſe authors, is not juſtly due to them: Though they were the chief propagators of it through the countries of Europe [c].—[a *Sale*, Prelim. Diſc. to Koran, §. 4. p. 14. ſeq. b *Ryſſet*, Contin. *Voſſ.* de Sect. Philoſ. c. 3. §. 16. *Thomas.* Introd. Phil. Ant. c. 1. §. 59. c *Walch*, Hiſt. Logic. l. 2. Sec. 2. §. 4.]

Their method of philoſophizing was faulty; they followed Ariſtotle implicitly, and, in aſtrology, run into ſtrange ſuperſtitions. They founded ſchools and academies, gave themſelves much to ſubtilties and diſputation, and divided into ſeveral ſects. *Hotting.* Analect. Diſ. 6. *Gundling.* loc. cit.

As they choſe Ariſtotle for their maſter, they chiefly applied themſelves to that part of philoſophy called Λογικη, and thus became proficients in the knowledge of words, rather than things. Whence they have been ſometimes denominated, *Maſters of the wiſdom of words*; ſometimes the *Talking ſect.* Their philoſophy was involved in quaint arbitrary terms and notions, and their demonſtrations drawn from thence, as from certain principles, *&c.* *Walch*, loc. cit.

ARABIAN *Logic* was that of Ariſtotle, as explained by Avicenna and Averrhoes. Thoſe commentators had taken immenſe pains to illuſtrate their author; but the latter being born in Spain, and both of them utterly unacquainted with the Greek tongue, they had nothing but a faulty mutilated tranſlation to go by, which frequently miſrepreſented the author's real ſenſe, ſo that 'tis no wonder they made no greater advances in the art. *Rhodig.* Lect. Antiq. l. 3. c. 2. *Horn.* Hiſt. Phil. l. 5. c. 10. *Gentz.* Hiſt. Philoſ. P. 2. §. 2. *Morhof.* Polyhiſt. Philoſ. l. 1. c. 10. *Walch*, ubi ſupra.

Majus and Spanheim have treatiſes expreſs on the *Arabian* philoſophy of Job; Leo Africanus has given the lives of the *Arabian* philoſophers. Hottinger and D'Herbelot accounts of *Arabian* books, authors, *&c.* *Struv.* Bibl. Philoſ. c. 3. §. 4.

ARABICO-ARISTOTELIAN, a title ſome give to the philoſophy of Ariſtotle, as taught and explained by the Arabs. *Reinhard.* Comp. Hiſt. Phil. c. 5. §. 2.

This philoſophy commenced with the caliphate of Al-Mamon, in the ninth century. The chief philoſophers of this ſect are Avicenna, and Averrhoes.

Nicholas Antonio has given an *Arabico-Spaniſh* library, or an account of writers born in Spain, who have written in *Arabic.* Bibl. Hiſp. T. 2. p. 231.

ARABIAN *Phyſic* and *Phyſicians* ſucceeded the Grecian, and handed down the art to us, having made conſiderable improvements, chiefly in the pharmaceutical and chemical parts.

Schelhammer obſerves, that, beſides a number of obſervations relating to the cauſes and hiſtory of diſeaſes, they greatly enlarged the liſt of ſimple medicines, adding much to the advantage of the practice of phyſic. 'Tis certain we owe to them moſt of our ſpices and aromatics, as nutmegs, cloves, mace, and other matters of the produce of India. We may add, that moſt of the gentler purgatives were unknown to the Greeks, and firſt introduced by the *Arabs*, as manna, ſena, rhubarb, tamarinds, caſſia, *&c.* 'Twas they likewiſe who brought ſugar into uſe in phyſic, where, before, only honey was uſed. They alſo found the art of preparing waters and oils, of divers ſimples, by diſtillation and ſublimation. V. *Schelham.* Addit. ad Conring. Introd. Medic. c. 3. n. 21. p. 126.

The firſt notice of the ſmall pox, and the meaſles, is likewiſe owing to them [a]. Laſtly, the reſtoration of phyſic in Europe took its riſe from their writings [b].—[a Bibl. Anc. Mod. T. 20. p. 400. ſeq. b *Schelham.* loc. cit.]

There are Latin verſions of moſt of the writings of the *Arab* phyſicians, but thoſe generally miſerably done, beſides that moſt of them are become ſcarce. It has long been wiſhed, that better verſions were made; but this is now ſcarce to be hoped for. Bibl. Anc. Mod. T. 20. p. 400. *Schelham.* loc. cit.

Abon Oſſaiba, or, as Dr. Friend calls him, Abi Oſbaia, has given a hiſtory of the *Arabian* phyſicians [a]. The like has been done by Ebnal Daiah. b M. Le Clerc has given a ſketch, and Dr. Friend [c], an ample hiſtory of the *Arabian* phyſic. We have alſo a notitia of all the *Arabian* phyſicians, by Fabricius [d].—[a D'Herbel. Bibl. Orient. p. 31. See alſo *Friend*, Hiſt. Phyſ. P. 2. p. 34. b Id. ib. p. 43. c Hiſt. Phyſ. P. 2. d Bibl. Græc. l. 6. c. 9. §. 4. *Junck.* Conſp. Phyſiol. tab. 1. §. 18. ſeq.]

ARABIC *Marble*, *Arabicum Marmor*, a name given by the antient Greeks, to a ſpecies of marble brought from Egypt and Arabia, and remarkable for its beautiful whiteneſs. See MARMOR.

ARABIST, a perſon curious of, and ſkilled in the learning and languages of the Arabians.

Erpenius and Golius were great *Arabiſts*. The former is ſaid to have written the language in its utmoſt purity and perfection, inſomuch that his letters to the emperor of Morocco, were the admiration of that court. *Baill.* Jugem. de Scav. T. 2. P. 3. n. 742.

Severinus gives all the ſurgeons in the thirteenth century, the title *Arabiſts*, *Arabiſtæ*. *Friend*, Hiſt. Phyſ. T. 2. p. 301.

ARACARI, in zoology, the name of a Braſilian bird, of the woodpecker kind. It is of the ſize of our common green woodpecker, and has a very large, ſharp, and ſomewhat hooked beak. Its head and neck are covered with black feathers, which terminate in a rounded figure on the back. Its breaſt and belly are of a pale yellow, variegated with a glow of ſeveral other colours; and on the breaſt there is a broad tranſverſe line, of a fine blood red; its back wings, and tail, are of a blackiſh green: But at the origin of the tail there is a

very broad line of a blood red. *Marggrave*, Hiſt. Braſil. See Tab. of birds, N°. 14. and the article PICUS.

ARACHNOIDES, in natural hiſtory, the name of one of the genera of the echini marini, the diſtinguiſhing characters of which are, that it is of a circular circumference, but variouſly broken in at the edges. The mouth is round and placed in the center of the baſe, and the aperture for the anus is quadrangular, and ſituated in one of the ſides, on the upper ſuperficies, but near the edge. *Klein*, Echin. p. 33. See Tab. of teſtaceous and cruſtaceous animals, N°. 8.

ARACHNOIDES, in anatomy. See ARANEOSA *Tunica*.

ARACUS *Aromaticus*, in the materia medica, a name given by ſome authors to the vanilloes uſed in chocolate making.

ARAF, or AL-ARAF, in the Mahometan theology, a kind of ſeparation or partition-wall between paradiſe and hell. *Sale*, Prelim. Diſc. to Koran. §. 4. p. 94.

This is alſo called *Al Orf*, but more frequently in the plural *Al Aráf*; formed of the Arabic verb *Arafa*, to diſtinguiſh or ſeparate.

ARAHUM, or HARAHUM, in antient writers, denotes a place conſecrated or ſet apart for holy purpoſes. *Spelm.* Gloſſ. p. 38. *Du Cange*, Gloſſ. Lat. T. 1. p. 287.

Hence the phraſe, in *Araho jurare* or *conjurare*, to make oath in the church; for that by the Ripuarian laws, all oaths were to be taken in the church, on the relicks of the ſaints.

ARAIS ALNIL, in botany, the name given by the people of Ægypt, to the *faba Ægyptia*, or heads of the *niluſar*, a kind of water lilly growing in the Nile. *Proſper Alpin.*

ARALIA, in botany, the name of a genus of plants, the characters of which are theſe; the flower is of the roſaceous kind, being compoſed of ſeveral petals arranged into a circular form. Theſe flowers ſtand on a cup, which afterwards becomes a ſoft fruit, or roundiſh ſucculent berry which contains oblong ſeeds. *Tournef.* Inſt. p. 300.

There is only one known ſpecies of this genus, the *Aralia Canaderſis* of authors.

ARALIA, in antient law writers, denotes arable or ploughing lands. *Spelm.* Gloſſ. p. 37.

This is otherwiſe denominated *Aratoria*, *araturia*.

In domeſday, for Eſſex, we meet with, *decem acras prati*, *duos runcal*, *quatuor Aralia*.—Where *Aralia* ſeems to denote land fit for ploughing or tillage, by way of contradiſtinction from *runcalia* which was over-run with briars and thorns. *Du Cange*, Gloſſ. Lat. T. 1. p. 287.

ARANEA *Concha*, in natural hiſtory, the name of a kind of ſea-ſhell of which there are ſeveral ſpecies, we call them in Engliſh the ſpider ſhells; they are of the family of the murex and their peculiar character is the having digitated lips. The ſeveral ſpecies have different numbers of fingers, from the lip of the ſhell, as four, five, ſix, ſeven, or eight. See MUREX.

ARANEOSA *Tunica* is uſed by ſome for a peculiar coat of the eye inveſting the chryſtalline, of a fine reticular texture, reſembling a cobweb, called alſo *Arachnoides*.

Some have alſo applied the term *Araneoſa tunica* to the vitreous or glaſſy tunic. *Caſt.* Lex. Med. in voc.

ARANEUS, in zoology. See SPIDER.

ARANEUS *Marinus*, the *ſea-ſpider*, a name by which ſome authors have called the fiſh more uſually known by the name of *Draco marinus*, and ſuppoſed to have ſomething venomous in the ſpines of its back-fin. *Aldrovand.* de Piſc. p. 258. See DRACO *Marinus*.

ARATEIA, Ἀρατεῖα, in antiquity, a yearly feſtival celebrated at Sicyon, on the birth day of *Aratus*, wherein divers honours were paid by a prieſt conſecrated to this ſervice, who for diſtinction's ſake wore a ribband beſpangled with white and purple ſpots.

The *Arateia* were ſolemnized with much pomp of muſic, the choriſters of Bacchus attending. *Plut.* in Arat. *Potter*, Archæol. l. 2. c. 20.

ARARAUNA, in zoology, the name of a Braſilian bird of the macaw kind, its bill is black, its eyes blue, and their pupils black, the ſkin about the eyes is white, variegated with fine and ſmall black feathers as if wrought with a needle; its legs and feet are brown; above the beak there is a ſmall tuft of green feathers, and below it a circle of black ones ſurrounds the throat, the reſt of the throat, the breaſt, and belly, are all yellow, and its neck, back, and wings blue, but a little yellow is mixed among the blue at the ends of the wing feathers, and theſe are all black underneath. *Marggrave*, Hiſt. Braſil.

ARBOR *Dianæ*. See DIANÆ *Arbor*.

ARBOR *Martis*. See MARTIS *Arbor*.

ARBOREOUS (*Cycl.*)—Mich. Mayer has a treatiſe *de volucre Arborea*, or the *Arboreous* bird, by which he means, the barnacle. V. *Sibbald.* Prodrom. Hiſt. Nat. Scot. P. 2. Sect. 3. c. 6. Act. Erud. Lipſ. An. 1685. p. 176.

Schmeider has publiſhed an account of an *Arboreous* cloud, *de nube Arborea*, a cloudy meteor reſembling the appearance of a tree, frequent in Saxony, where it is made a prognoſtic of the change of weather. Vid. Act. Erud. Lipſ. ſupp. T. 6. p. 154. ſeq.

Schultzius has given the hiſtory of a green *Arboreous* frog, *de ranunculo viridi Arboreo*, called by the Greeks, δενδροβάλης, becauſe uſually found ſitting on trees, being of a colour as green as their own leaves. Ephem. Acad. N. C. Dec. 2. An. 6. Obſ. 157.

Naturaliſts ſpeak of a kind of oyſter, or ſhell-fiſh called *Arborea*, on acount of its adhering and growing to trees and ſhrubs on the ſea-coaſt; Dr. Woodward had ſeveral of theſe *oſtreæ Arboreæ*, in his collection, found in divers parts of England and other countries. V. Woodw. Cat. Engl. Foſſ. P. 2. p. 44. It. Catal. For. Foſſ. P. 2. p. 8.

ARBORESCENT, a term uſed to denote any thing that ſhoots or grows up in form of a tree.

Botaniſts ſpeak of *Arboreſcent* ſhrubs, and plants[a]; the *ſedum Arboreſcens*[b], &c. Mineraliſts treat of *Arboreſcent* metals, *Arboreſcent* ſilver, *Arboreſcent* iron, *Arboreſcent* ſtones, &c[c]. The fungus marinus is ranked by ſome in the claſs of *Arboreſcent* fluors[d]; the chemiſts produce *Arboreſcent* chryſtallizations, which they call philoſophical trees.—[[a] V. Phil. Tranſ. N. 198. p. 682. *Grew*, Muſ. Reg. Societ. P. 2. c. 2. [b] Phil. Tranſ. N°. 111. p. 51. [c] *Wooodw.* Nat. Hiſt. Engl. Foſſ. P. 1. p. 238. [d] Phil. Tranſ. N°. 129. p. 738.]

Zoologiſts give inſtances of *Arboreſcent* animals, particularly fiſhes.

The *Arboreſcent* ſtar fiſh, *ſtella Arboreſcens*, is one of the curioſities of nature found in ſeveral cabinets of natural rarities. It is deſcribed as upwards of a foot in diameter, having its mouth in the middle; the figure of the trunk is pentangular, and from the five angles ariſe as many branches, which ſubdivide into ſeveral others, and thoſe again into other leſſer ones, till the laſt are ſcarce thicker than horſe hairs, and in number, by a moderate eſtimate above a thouſand. The *ſtella Arboreſcens* in ſwimming ſpreads all his branches like a net to their full length; and as he perceives any prey within them, draws them in again; and thus takes it with all the dexterity of a fiſherman. *Grew*, Muſ. Reg. Societ. P. 1. Sect. 5. c. 4. p. 122. See STAR-*Fiſh*.

ARBUSCULA is uſed by Bradley, to denote a little or dwarf tree, above the rank of ſhrubs, but below that of trees, ſuch *e. gr.* as the elder. *Bradley*, Dict. Botan. in voc.

ARBUSTUM, implies a number or multitude of trees, planted for the fruit ſake. *Fab.* Theſ. p. 220.

Such are *oliveta*, *avellaneta*, *vineta*, &c.

The word was more peculiarly applied to a place planted with trees for faſtening vines to, which are hence called by Columella *Arbuſtivæ*. De Arborib. c. 16.

ARBUSTUM is ſometimes alſo uſed to denote an orchard, or field wherein trees are planted at ſuch diſtance, that there is room for ploughing, and growing corn between. *Bradl.* Botan. Dict.

ARBUTUS, *the Strawberry-Tree*, in botany the name of a genus of plants, the characters of which are theſe; the flower conſiſts only of one petal of the globular bell faſhioned kind. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower; this finally becomes a roundiſh fleſhy fruit, divided into five cells, and containing a number of ſeeds affixed to a placenta.

The ſpecies of *Arbutus* enumerated by Mr. Tournefort are theſe.

1. The common *Arbutus*, with ſerrated leaves. 2. The ſerrated-leaved *Arbutus*, with oblong turbinated fruit. *Tournef.* Inſt. p. 598.

ARCA *Cordis* is uſed by ſome anatomiſts to denote the *pericardium*. *Blaſ.* Not. ad Veſting. c. 10. p. 145. See PERICARDIUM, *Cycl.*

ARCÆ *Cuſtos*, a title antiently given to the archdeacon, on account of his having the cuſtody of the churches cheſt, or treaſure. *Bingh.* Orig. Eccleſ. l. 2. c. 21. §. 5.

ARCANGIS, in the Turkiſh armies, an inferior kind of infantry, which ſerve as *enfans perdus*, and to harraſs and pillage the enemies frontiers. *Tournef.* Voyag. Lett. 13. T. 2. p. 36.

The *Arcangis* are an order inferior to the Janiſaries; and when any of them diſtinguiſh themſelves, are uſually preferred into the Janiſaries order.—They have no pay, but are to ſubſiſt on their plunder.

ARCANNA, a kind of red chalk, called by phyſiologiſts *rubrica fabrilis*, as being uſed by carpenters to colour their lines, for marking timber, &c. *Savar.* Dict. Com. T. 1. p. 129. *Aubert.* Ap. Richel. Dict. T. 1. p. 113. a.

ARCANUM *Duplicatum Catholicum*, in medicine, a name given by Wedelius, to a compound medicine given by him and others of the ſame time, with great ſucceſs, in a peſtilential fever, attended with a dyſentery which raged for many years together in Germany, and yielded ſo well to nothing as to this medicine. It was compoſed of bezoar, plantane-root, and the root of colchicum. This laſt root has generally been eſteemed a poiſon of late times, tho' the authors of the greateſt antiquity have ſhewn a much greater reſpect for it, and called it the ſacred root, or hierobulbus. *Wedelius*, de Colchico.

ARCEUTUM is uſed, in ſome antient law writers, for a procuration due to a biſhop, abbot, or archdeacon, from their clergy in time of entertainment. *Du Cange*, Gloſſ. Lat. in voc.

ARCH (*Cycl.*)—ARCH *of a Brick-Kiln*. See the article BRICK.

ARCH-*Angel*, in botany, a medicinal plant, called by botaniſts, *lamium*. It is of ſome uſe as a balſamic, &c. See the article LAMIUM.

There are two kinds of it, *viz.* the white *Arch-angel*, *lamium album*; and red, whoſe flowers are reputed ſoft and lubricating, and

as ſuch adminiſtred in ſome female weakneſſes, as the whites, and difficulty of urine. A conſerve of them is alſo made in the ſhops but ſeldom preſcribed. *Quinc.* Diſpenſ. P. 2. n. 181.

ARCH-*Count*, *Archicomes*, a title antiently given to the earl of Flanders, on account of his great power and riches. *Du Cange*, Gloſſ. Lat. T. 1. p. 301. *Spelm.* Gloſſ. p. 39.

ARCH-*Monaſtery*, *Archimonaſterium*, an appellation ſometimes given to the greater monaſteries, and abbies. *Du Cange*, Gloſſ. Lat. T. 1. p. 307.

ARCH-*Notary*, *Archinotarius*, the primicerius or chief of the notaries. *Du Cange*, Gloſſ. Lat. T. 1. p. 307. in voc. *Archinotarius*.

This officer is ſuppoſed by ſome to have differed from the *Arch*-chancellor, tho' wherein the difference conſiſted does not appear.

ARCH-*Subdeacon*, *Archiſubdiaconus*, the firſt or chief among the ſubdeacons, as the archdeacon is among the deacons. *Du Cange*, Gloſſ. Lat. T. 1. p. 310. in voc. *Archiſubdiaconus*.

In ſome copies of the Roman ordinal, he is called *ſubarchidiaconus*.

ARCHÆUS, among the chemiſts, ſignifies that peculiar fluid among the vegetable claſſes, which determines every particular plant to its odour, taſte, and other qualities.

The fruit of a plant is the part in which the ſeed is conceived and formed, the ſeed is the embryo of the plant with a placenta or cotyledon, to which it is faſtened by an umbilical ſtring. The cotyledons uſually contain a balſam which appears to be the laſt and higheſt preparation of the moiſt kind, which nature here lays up for the uſe of the offspring. In this is an oily tenacious matter, which repels all other moiſt things, defends the embryo, and by its tenacity retains and fetters the thin pure ſpirit, which is the ultimate bounds and object of the actions of nature in plants, and which would elſe eaſily fly away; this the chemiſts call the *Archæus* and ſpiritus rector; the oil is too groſs ever to enter the fine veſſels of the embryo. But this ſpirit being invigorated by a vegetable power probably breathes a vital principle, and impreſſes the ſpecific character on the food deſtined for the embryo, by which means every thing afterwards turns to the proper nature of the plant; in this ſpirit the fragrant odour, and peculiar taſte of the plant is lodged, and even its colour has a near dependance on it. *Boerhaave*'s Chem. p. 143. See the article ARES.

ARCHARD, in commerce, a kind of green fruit, pickled in vinegar, much valued throughout the Eaſt-Indies. *Savar.* Dict. Comm. Suppl. p. 27.

The beſt are thoſe brought from Perſia, in bottles, much like ſmall cucumbers among us.

ARCHÆOGRAPHIA, the art of deſcribing or explaining antiquities.

M. Spon, firſt erected the knowledge of what relates to antiques into a particular branch of ſcience under the denomination of *Archæographia*. *Spon*, in Pref. ad Miſcell. Erud. Antiq.

ARCHÆOTA, Αρχαιωλης, a keeper of antient records. *Pitiſc.* Lex. Ant. T. 1. p. 157. b.

ARCHAISM, properly denotes a phraſe, or diction now obſolete, and out of uſe, tho' antiently deemed good, or paſſable.

Etymologic ARCHAISM, *Archaiſmus Etymologicus*, is when either an obſolete word, declenſion, or conjugation is uſed.

Syntactic ARCHAISM, *Archaiſmus Syntacticus*, is an unuſual and obſolete conſtruction in diſcourſe.

ARCHED (*Cycl.*)—ARCHED-*Skene*, or *Scheme*, in architecture, is uſed to denote a flat *Arch*, leſs than a ſemicircular one.

ARCHEMY, *Archemia*, is uſed by ſome to denote the art of tranſmuting leſs perfect metals into the more perfect. *Brun.* Lex. Med. p. 122. in voc. *Archimia*. *Du Cange*, Gloſſ. Lat. T. 1. p. 963. in voc. *Chimia*. See TRANSMUTATION, *Cycl.* and *Suppl.*

In which ſenſe *Archemy*, differs from *Alchemy*, as a part from the whole.

ARCHENDA, in the antient phyſic, a kind of powder prepared of *alcanna* and leaves of the Egyptian liguſtrum, wherewith the people ſmeered their feet after bathing; as a preſervative againſt ſweating and ſtench of that part. *Proſp. Alpin.* de Medic. Ægypt. l. 3. c. 18. p. 113. in voc. *Caſtel.* Lex. Med. in voc.

ARCHES, among navigators, is particularly uſed for the Archipelago.

Gothic ARCHES, in architecture. See ARCHES *of the third and fourth point*, Cycl.

ARCHIEROSYNES, Αρχιερωσυνης, in the Grecian antiquity, a high-prieſt veſted with authority over the reſt of the prieſts, and appointed to execute the more ſacred and myſterious rites of religion. V. *Potter*, Archæol. l. 2. c. 3. p. 206.

The Athenians had ſeveral of theſe *Archieroſynes*, almoſt each god having his high-prieſt, who preſided over the reſt of the miniſters of that deity; as the *Daduchus* over the prieſts of Hercules; the *Stephanophorus* over thoſe of Pallas, &c.

Among the Opuntians there were only two high-prieſts, one belonging to the cœleſtial gods, the other to the dæmons or demi-gods. The Delphians had five, who were denominated, οσιοι, *q. d.* holy, one of whom had the care of the ſacrifices, and was called οσιωλης, or the purifier; another had the care of the oracle, and was called Αφηλας.

ARCHIGERONTES, in antiquity, the chiefs or maſters of the ſeveral companies of artificers at Alexandria. *Calv.* Lex. Jur. p. 86. a. *Schm.* Lex. Eccleſ. p. 71.

Some have miſtaken the *Archigerontes* for the arch prieſts, appointed to take the confeſſions of thoſe who were condemned to the mines.

ARCHIGUBERNUS, ARCHIGUBERNETA, or ARCHIGUBERNITES, in antiquity, the commander of the imperial ſhip, or that which the emperor was aboard of. *Pitiſc.* Lex. Ant. T. 1. p. 158. a.

The *Archigubernus* was not thus denominated from the extent of his command, but from his having the command of the emperor's veſſel; much as *archiater* denoted the emperor's phyſician.

Some have confounded the office of *Archigubernus* with that of *præfectus claſſis*, or admiral, but the former was under the command of the latter.

Potter takes the proper office of the *Archiguberneta* to have been, to manage the marine affairs, to provide commodious harbours, and order all things relating to the ſailing of the fleet, except what related to war. *Pott.* Archæol. Græc. l. 3. c. 19.

ARCHIMAGUS, in the antient Perſian religion, the chief prieſt or head of the order of magicians.

The *Archimagus* anſwered to the high-prieſt among the Jews, or the pope now among the Romaniſts, being the head of the whole religion. *Prideaux*, Connect. P. 1. l. 4. p. 314.

The *Archimagus* reſided in the fire temple, a place held in the ſame veneration among them, as the temple of Mecca among the Mahometans; every perſon of the ſect, being under a kind of obligation to make a pilgrimage to it once in their lives. Zoroaſter is ranked as the firſt *Archimagus*.

ARCHIPRESBYTER was antiently uſed for a dignitary in cathedral churches, who acted in many caſes in the biſhop's room, as his deputy. *Du Cange*, Gloſſ. Lat. T. 1. p. 308.

Archipreſbyter appears to have been the ſame with what in the church of Alexandria was called *protopreſbyter*. *Spelm.* Gloſſ. p. 39.

After the like manner, in the eaſtern empire we meet with *protopapa* for *archipapa*.

Valeſius obſerves, that in the church of Conſtantinople, the biſhops had a power of diſtinguiſhing and giving precedency to ſuch of their clergy as they thought deſerved it, and that theſe were what they called Αρχιπρεσβυτεροι. That he who is now called archprieſt was then denominated πρωτοπαπας, q. d. firſt of the prieſts, the title παπας, in thoſe days being applied to meer prieſts as well as biſhops. In. Not. ad. Socrat. Hiſt. Eccleſ. l. 6. c. 9.

In the decretals, we find a chapter *de officio Archipreſbyteri*, wherein precedence is given to the archdeacon over the archprieſt; tho' according to the ordination, the latter ſhould precede: but the archdeacon has acquired a juriſdiction, and the archprieſt has none. *Aubert.* Ap. Richel. Dict. T. 1. p. 115. a.

Archipreſbyter was afterwards a title given to thoſe now called *rural deans*, who act under the archdeacons. Id. ibid.

Fulrad abbot of St. Dennis is called, in an epiſtle of pope Adrian, *Archipreſbyter Franciæ*, whom on other occaſions we find denominated *ſummus Capellanus regis Pepini*, chief chaplain of king Pepin. *Du Cange*, loc. cit.

ARCHISYNAGOGUS, in the Jewiſh hiſtory, the chief or ruler of the ſynagogue.

Theſe are ſometimes alſo called the angels or princes of the ſynagogues: the Jews alſo called them Chachamim, *i. e.* wiſe.

Archiſynagogues were perſons of authority in each ſynagogue, who preſided in aſſemblies held therein, invited thoſe to ſpeak whom they judged capable of it; and decided all diſputes relating to money, &c. They had a power to have thoſe whipped who were convicted of acting contrary to the law; alſo a right of excommunicating or caſting out of the ſynagogue, thoſe whom they found to merit this puniſhment. Their number was different according to the extent of the city, or the number of perſons that came to the ſynagogue; in ſome there were ſeventy, in others eight or ten, and in others not above one. Vid. *Baſn.* Hiſt. des Juif. l. 7. c. 7. *Vitring.* de Synagog. *Calm.* Dict. Bibl. T. 1. p. 183. a.

ARCHITECTOGRAPHIA, the deſcription of antient buildings, temples, theatres, arches, pyramids, baths, gates, aquæducts, tombs, and the like. *Fabric.* Bibl. Antiq. c. 5. §. 2. p. 124.

ARCHITHALASSUS, in conchyliology, a name given by ſome authors to a very beautiful and precious ſhell of the voluta kind, called by us the admiral.

The curious in Holland have three ſpecies of this ſhell, which they call *Architalaſſus primus*, *ſecundus*, and *Aurantius*, the admiral, the vice admiral, and the orange admiral. See the article ADMIRAL.

ARCHITRICLINUS, Αρχιτρικλινος, in antiquity, the maſter or director of a feaſt, charged with the order and œconomy of it, the covering and uncovering of the tables, the command of the ſervants, and the like.

The

The word *Architriclinus* properly imports the chief or maſter of a triclinium or dining room. His office properly differed from that of *modimperator*, or *arbiter bibendi*, as the latter was appointed by the gueſts, the *Architriclinus* by the perſon who gave the feaſt.

The *Architriclinus* was ſometimes alſo called *ſervus triclinia-rcha*, and by the Greeks προγευστης, i. e. *præguſtator*, or foretaſter. Potter alſo takes the *Architriclinus* for the ſame with the *ſympoſiarcha*. *Pott.* Archæol. Græc. l. 4. c. 20. See the article SYMPOSIARCH.

ARCHIVIST, *Archiviſta*, a keeper of an archive. See ARCHIVE, *Cycl.*

Archiviſts are alſo called in the Greek laws, or collection of records, *chartophylaces* and *nomophylaces*. In the Roman law, *chartularii*, *ſcribæ*, *logothetæ*, *primiſcrinii*, *protoſcribæ* and *archiotæ*.

Under the emperors, the *Archiviſt* was an officer of great dignity, held equal to the proconſuls, veſted with the quality of a count, ſtiled *clariſſimus*, and exempted from all public offices, and taxes. Among the antient Greeks and Perſians, the truſt was committed to none but men of the firſt rank; among the Franks, the clergy being the only men of letters, kept the office among themſelves.

Since the erection of the electoral college, the archbiſhop of Mentz has had the direction of the archives of the empire. *Eckhard.* Sched. de Tabular. Ant. §. 22. *Reimman*, Idea Syſt. Liter. p. 371.

ARCHIZUPANUS, Αρχιζυπανος, a title given to the prince or deſpot of Servia. *Du Cange*, Gloſſ. Græc. p. 466.

The word is compounded of Αρχι and ζυπανος, governor.

In an epiſtle of pope Innocent the III^d, he is called Magnus Jupanus.

ARCHONTIUM, Αρχοντιον, denotes a dignity in the Greek church. *Suic.* Theſ. Eccleſ. T. 1. *Du Cange*, Gloſſ. Græc. in voc.

In this ſenſe the word is ſometimes alſo written *Archontia*, Αρχοντια.

We alſo find *Archontium* uſed for a degree in the church, as a diaconate.

ARCION, in botany, a name given by ſome of the antient writers on medicine, to the plant we call tuſſilago, or colt's foot. Neophytus ſuppoſes, that the name was originally *Arciophylla*, the arcium-leav'd plant; the leaves of the colt's foot, when large, approaching ſomewhat to the nature of thoſe of the arcium, or burdock, in their tough texture and hoaryneſs underneath. See TUSSILAGO.

ARCIVÆ *Aves*, in antiquity, birds which gave bad omens, either by their flight, noiſe, or manner of eating. *Pitiſc.* Lex. Ant. T. 1. p. 216. a. in voc. *Avis*.

They were called *Arcivæ*, ſometimes alſo *Arculæ*, *quia arcebant ne quid fieret*, prevented or forbad things being done. *Danet*, Dict. Ant. in voc.

ARCTAPELIOTES, in coſmography, the wind which blows at the 45°. from the north, towards the eaſt. *Wolf.* Elem. Geogr. §. 212.

In this ſenſe *Arctapeliotes* amounts to the ſame with what we call a north-eaſt wind.

ARCTOMYS *Palæſtinorum*, in zoology, the name of an animal of the rat kind, but very large, being of a middle ſize between the rat and the rabbit; it lives in caves, and feeds on vegetables, and is a fierce and bold creature. It uſes its fore feet as hands, and has a cuſtom of ſitting on the buttocks, and in this poſture looks very like a bear. *Ray*'s Syn. Quad. p. 221.

ARCUALIA *Oſſa*, in anatomy, a name uſed by ſome for the oſſa ſyncipitis, by others for the oſſa temporum. *Barthol.* Anat. libel. 4. c. 6. *Brun.* Lex. Med. in voc.

ARCUALIS *Sutura*, among ſurgeons, denotes the coronal ſuture. See SUTURE, *Cycl.*

ARCUATION, in gardening, the term uſed for the raiſing of trees by layers. The firſt thing, in order to do this with ſucceſs, is to chuſe large and ſtrong mother plants, which are uſually called among the gardeners, ſtools. It is no matter whether the trees be crooked, or otherwiſe deformed; and the larger they are the better: They are to be cut down cloſe to the ground. Theſe are to be planted in a border ſix feet wide, and in a ſtrait line ſix feet aſunder: The border muſt be well trenched, or dug clear from all roots, clods, ſtones, or other obſtructions.

Theſe trunks, or ſtools, being planted in this trench, will each throw out twenty, thirty, or forty plants, which may be begun to be laid about the Michaelmas following; and if the ſtools have been properly manag'd, they will alſo by this time have thrown out five, ſix, or more, main branches out of the root; and on every one of theſe, as many ſide or collateral branches. Theſe main branches muſt be bent down to the ground; and ſome gardeners cut them half through, that they may bend the more eaſily.

When the main branches are thus laid all round the ſtool, then they muſt be pegg'd faſt down; and after this the ſide ones and ſmall ones may be ſerved in the ſame manner; the main branches, or ſhoots, muſt be covered with earth all over, except the top; and the ſmall ſide branches muſt be covered two or three inches thick upon the joints; and many give all the branches a twiſt, in order to make them take root the ſooner. Some ſtrawy dung ſhould now be laid over them, in order to keep them moiſt; and they muſt have a large baſon of earth made round them, in order to hold the water during the enſuing ſummer. They muſt, if the weather be dry, be watered two or three times every week. About the middle of September following, they may be opened, to ſee if they have taken root; if not, they muſt be let alone till the next ſpring, and by that time they will be fit to tranſplant into the nurſery. Elms, Limes, Poplars, Willows, Platanus's, and many other trees, ſucceed very well in this operation. *Miller*'s Gardeners Dict.

ARCUBALISTA, in the military art, a kind of baliſta, probably made after the faſhion of a bow. *Aquin.* Lex. Milit. T. 1. p. 70. a.

It is mentioned by Vegetius; but the deſcription of it omitted by him, as too well known then, though now hard to be gueſſed at. *Veget.* l. 4. c. 22.

Thoſe who fought with this weapon were called *Arcubaliſtarii*, ſometimes *Manubaliſtarii*. *Veget.* l. 4. c. 21. *Aquin.* loc. cit.

ARCUCCIO, an inſtrument uſed in ſome parts of Italy, to prevent the overlaying of children by their nurſes. It conſiſts of a ſemicircular piece of wood, or head-board, of one foot and an inch diameter; to each ſide of which, a board three foot two inches and an half long, is faſtened. Each of theſe has an hollow on the upper edge, near to the head-board, for the nurſes breaſt to reſt in when ſhe gives ſuck; and a ſemicircular arch of iron is fixed to them, near the other end. From the top of the head-board, to the middle of the iron arch, there is a bar of wood fixed, on which the nurſe leans when ſhe ſuckles the child. The *Arcuccio*, with the child in it, may be ſafely laid under the bed-clothes in the winter. Phil. Tranſ. N°. 422. §. 6.

ARDAMON, or ARDAMA, in antiquity, a veſſel of water placed at the door of a perſon deceaſed, till the time of burial, as a token that the family was in mourning, and to ſerve to ſprinkle and purify perſons as they came out of the houſe. *Lakemak.* Antiq. Græc. Sacr. P. 3. c. 3. §. 5. *Pott.* Archæol. l. 4. c. 3.

This was otherwiſe denominated γαυγα; and, from the matter of which it was ordinarily made, οστρακον.

ARDEA, *the Heron*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of birds, of the order of macrorynchæ, or long beak'd. The characters of this genus are, that the middle toe of each foot is ſerrated or jagged, with a ſeries of ſcales on its outer ſide. Of this genus are the heron and bitourn. *Linnæi*, Syſt. Nat. p. 45. See HERON.

ARDEOLA, in zoology, the name of a very beautiful bird, of the Braſils, of the heron kind, but no larger than a pigeon. Its neck is extremely long; its head is of a ſteel-coloured gloſſy hue, with an intermixture of white, and pale brown ſpots; its neck and belly are variegated with white and grey, and its back is black, with a mixture of a browniſh and a ſteel colour. The long feathers of its wings are greeniſh, but have each a grey ſpot at their end. Its tail is covered with its wings when folded, and it walks very ſtately. *Marggrave*'s Hiſt. Braſil.

ARDENTES, in middle age writers, an appellation given to thoſe afflicted with the *Ignis Sacer*, or *Eryſipelas*. *Du Cange*, Gloſſ. Lat. in voc. See ERYSIPELAS.

They were thus called, as ſeeming to be ſcorched or burnt with the diſeaſe.

Hence alſo the abby of St. Genevieve at Paris is called *Domus Ardentium*, by reaſon, as it is ſaid, that great numbers were cured of that diſtemper at the ſhrine of this ſaint, in the reign of Lewis the VIth.

AREA, *Field*, among microſcopical writers. See FIELD.

AREB, a kind of imaginary money, uſed in the dominions of the great mogul. *Savar.* Dict. Comm. Supp. p. 27.

Four *Arebs* are equal to one crou, or 100 laes; One laes to 100,000 roupies.

ARECA, in natural hiſtory, denotes the Indian or Malabar nut, or the fruit from which we obtain the *Catechu*. *Alleyn*, Diſpenſ. p. 95. See it repreſented in Tab. of Microſcopical Objects, Claſs 2.

The name is alſo given to the tree which produces the nut, called in Engliſh, the drunken date. *Bradl.* Dict. Bot. T. 1. in voc.

The *Areca* is a celebrated fruit of the Indies, the commerce and conſumption of which is incredible in the eaſt; being in uſe equally among poor and rich, who chew it with the leaves of betel, to promote ſpitting, cleanſe the gums, &c. *Savar.* Dict. Com. T. 1. p. 135. ſeq. *Corn.* Dict. T. 1. p. 54. b. See the article BETEL.

AREM, or AL-AREM, a vaſt mound, or dam, which formed a ſtupendous reſervoir above the city Saba, whoſe rupture cauſed an inundation, famous in eaſtern writers. *Sale*, Prelim. Diſ. to Koran. §. 1. p. 10.

The word *Arem* is Arabic, and literally ſignifies any mound, or dam, for the containing of water.

Mahomet, in his Koran, ſpeaks of the inundation of *Al-Arem*. c. 34. V. *Sale*, Not. ad loc.

The *Arem* was built by Abdſhems, ſurnamed Saba, who having built the city of that name, built this wall, or mound, to ſerve as a baſon, or reſervoir, to receive the water which

came

came down from the mountains, not only for the accommodation of the inhabitants of that city, and the watering their lands, but alſo to keep the country in better ſubjection, by being maſter of their water. The *Arem* ſtood like a mountain above their city, almoſt eighty fathoms high, and was built ſo ſtrong, that there were no apprehenſions of its ever failing: But it gave way, at length, in the night, and carried away the whole city, with all the towns and people in the country. *Pocock*, Specim. Hiſt. Dynaſt. p. 57. *Sale*, Prelim. Diſ. loc. cit.

ARENARIA, in zoology, the name of a bird, called in Engliſh the ſanderling, and in ſome places, particularly in Cornwall, the curwillet.

It is a water-bird, of the long legg'd, and open footed, not webbed kind, and is a little larger than the tringa minor, or ſand-piper; its body is of a longiſh ſhape, and its beak ſtrait, black, ſlender, and about a finger's breadth long. Its head is ſmall, and variegated with black and grey; its neck is more perfectly grey, and its ſhoulders are very beautifully variegated with black and white, and black and grey; the reſt of the back is paler. The wings are long, reaching, when folded, beyond the end of the tail; the long feathers of them are variegated with brown and white. The tail is ſhort, and variegated with grey and black. The belly is white as ſnow, and the breaſt white, but with a reddiſh caſt, and ſometimes variegated with reddiſh ſpots. It is common about the ſea ſhores, and generally flies in large flocks.

ARENARIA, in antient writers, is uſed for ſand pits, or ground out of which ſand is dug. *Vitruv.* Arch. l. 2. c. 4.

ARENARII, in antiquity, gladiators who combated with beaſts in the arena, or amphitheatre. The *Arenarii* were ſlaves of the loweſt rank, ſo that though manumitted, they were not capable of being Roman citizens. They were the ſame with what were otherwiſe called *Beſtiarii*. *Pitiſc.* Lex. Ant. T. 1. p. 167. ſeq. See BESTIARII, *Cycl.*

ARENARIUM, in eccleſiaſtical writers, denotes a cemitery or burying-ground.

The *Arenaria* were properly a kind of pits, or holes under ground, wherein the antient chriſtians, not only buried their dead, but held their religious aſſemblies, in times of perſecution. *Baron.* Annal. an. 130. n. 2. *Du Cange*, Gloſſ. Lat. T. 1. p. 317.

ARES, a term framed by Paracelſus, to expreſs a hidden diſpoſer, in the three principles of things, from which each being receives its proper form and ſubſtance, and aſſumes its own ſpecific nature, not that of any other being. *Rul.* Lex. Alch. p. 54. ſeq.

To conceive this occult ſyſtem of the antient chemiſts, we are to ſuppoſe one general or univerſal ſubſtance, called iliaſtes, which makes the matter of all bodies. This iliaſtes is diſpoſed by the archæus, into three kinds, *viz.* ſalt, ſulphur, and mercury, by which all things are dipoſed into their ſeveral genuſes. Here the *Ares*, or ſecond diſpoſer, comes in, and, from theſe genera, produces ſpecies and individuals. See the article ARCHÆUS.

Paracelſus diſtinguiſhes the *Ares* into archeical, which is natural, and chemical, which is artificial. *Brun.* Lex. Med. p. 122. b.

ARETALOGI, in antiquity, a ſort of philoſophers, chiefly of the Cynic or Stoic tribe, who having no ſchool or diſciples of their own, haunted the tables of great men, and entertained them in their banquets with diſputations on virtue, vice, and other popular topics. V. *Pitiſc.* Lex. Ant. T. 1. p. 167.

Theſe are ſometimes alſo denominated *Circulatores Philoſophi*. In this ſenſe, the word is derived from the Greek αρετη, virtue, and λογος, diſcourſe. Some authors chuſe to derive the word from αρετος, *gratus*, agreeable; and define *Aretalogi*, by perſons who ſtrive to divert and entertain their audience with jokes and pleaſant tales; which latter ſeems the more natural explication. *Calv.* Lex. Jur. p. 87. b.

ARGEMON, or ARGEMA, Αργεμον, or Αργεμα, in medicine, an ulcer about the iris of the eye, comprehending part of the white, and part alſo of the black. *Gorr.* Def. Med. in voc.

The *Argemon* appears of a red colour, on the outſide of the iris, and white within it. When it ſpreads far, and eats deep, it ſometimes occaſions the uvea to fall.

ARGEMONE, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, or compoſed of ſeveral leaves, arranged in a circular form. From the center of the flower there ariſes a piſtill, which finally becomes an unicapſular ſeed-veſſel, of an oval figure, with ſeveral ribs running from its baſe to its apex, the intermediate ſpaces being occupied by valves, which finally open at their tops; and from every rib there runs out a placenta, which is loaded with ſeeds, uſually of an orbicular figure. *Tourn.* Inſt. p. 239.

There is only one known ſpecies of *Argemone*, which is the plant, uſually called by botanical writers, the thorny Mexican poppy.

The rough headed poppies, called *Argemones* by ſome writers, are by no means of this genus, but properly of the corn-poppy kind. See PAPAVER.

ARGEMONION, in botany, a name given by ſome of the later Greek writers, to the plant called ſarcocolla by the other writers of their times. This was ſuppoſed by ſome to be the ſame with the argemone, a kind of wild poppy; but on examining the deſcription of it, given by Neophytus, who calls it *Argemone altera*, as a plant very different from the common kind, we find that it is the agrimony that is meant by this name.

ARGENTARIA *Creta*, *Silver Chalk*, in natural hiſtory, a name given to an earth, not properly a chalk, but a kind of tripela. It is a very beautiful earth, of a looſe friable texture, and perfectly pure white. While in the ſtratum it is dry, friable, and duſty, and flies from the pickax in large irregular maſſes, of an obſcurely plated, or laminated ſtructure; and ſplits more readily into flat pieces, than in any other direction; but its lamina are always very irregular. When dry, it becomes ſomething harder, and retains the ſame chalky whiteneſs, and is of a looſe, ſpungy texture, very light, and of a rough, uneven, duſty ſurface. It adheres very ſlightly to the tongue, is hard and harſh to the touch, breaks eaſily between the fingers, and a little ſtains the hands. It makes no efferveſcence with acids, and ſuffers very little change in the fire. It is dug in Pruſſia, and is much eſteemed for cleaning plate. It has alſo been found in France, and of late in Ireland. *Hill*'s Hiſt. of Foſſ. p. 807.

ARGENTARIUS is more freqently uſed in Roman writers for a money-changer or banker.

In this ſenſe, *Argentarii* amount to the ſame with the Greek Αργυροπραλαι, or Αργυρομοιβοι, and the Latin *nummularii*, *cambiatores*, *coactores*. *Du Cange*, Gloſſ. Lat. T. 1. p. 320.

The *Argentarii* were monied people, who made a profit either by the changing, or lending of money at intereſt. Theſe had their tabernæ, or offices, in the forum romanum, built there as early as the reign of L. Tarquinius Priſcus.

The *Argentarii* and *fæneratores* were much hated, on account of their covetouſneſs and extortion.

Mark Anthony taxed Auguſtus Cæſar with being the grandſon of an *Argentarius*; hence he was alſo called by Caſſius Parmenſis, *nummularii nepos*. *Pitiſc.* Lex. Ant. in voc.

ARGENTARII is alſo applied, in the civil law, to thoſe who adorned military arms with ſilver or gold.

In which ſenſe the word amounts to the ſame with *Barbaricarii*. See BARBARICARII.

ARGENTARIUS, in writers of the middle age, an officer entruſted with the cuſtody of money.

In this ſenſe *Argentarius* amounts to the ſame with the Greek Αργυροφυλαξ, and our caſhier.

The French had antiently their *Argentarius Regis*, or *Argentier du Roy*, into whoſe hands the treaſurer yearly paid a certain ſum out of the revenue, for ſupport of the houſhold. *Du Cange*, Gloſſ. Lat. T. 1. p. 320.

AEGENTARIUS *miles*, in our old writers, an officer of the exchequer, whoſe buſineſs it was to carry up the bag of money from the lower exchequer to the higher, in order to its being examined or told. *Spelm.* Gloſſ. p. 40.

ARGENTATI *Milites*, in antiquity.—Livy, l. 6. ſpeaks of *Argentati Milites*, as diſtinguiſhed from *Aurati*. Aquinas ſuppoſes theſe to have been ſimilar to the argyraſpides and chryſaſpides; but the deſcriptions do not quadrate. Livy only repreſents the *Argentati* as cloathed in white linen coats. *Aquin.* Lex. Milit. in voc. See the article ARGYRASPIDES, *Cycl.*

ARGENTEUM *Os*, in natural hiſtory. See Os *Argenteum*.

ARGENTICOMUS, among antient aſtrologers, denotes a kind of ſilver-hair'd comet, of uncommon luſtre, ſuppoſed to be the cauſe of great mutations below. *Vital.* Lex. Math. p. 62.

ARGENTIL, an old Engliſh name for the plant called *Percipier Anglorum*; in Engliſh, parſly piert, or parſley breakſtone. *Ger.* Emac. Ind. 4.

ARGENTINA, in ichthyology, the name of a genus of fiſhes of the malacopterygious kind; the characters of which, according to Artedi, are theſe: The body is oblong and cylindric; the teeth are placed on the tongue and palate. Artedi mentions only one ſpecies of this genus; this has large eyes, and the tail forked: The back fin contains ten bones; the pectoral fins contain fourteen bones; the belly fin eleven, and the pinna ani nine. The anus is placed very near the tail; and the ventricle is blackiſh. The appendices of the pylorus are ſix or ſeven in number. The air bladder is conic at each end, and is of a fine ſilvery colour. It is caught about the ſhores of Italy. *Artedi*, Gen. Piſc. 5.

Mr. Ray deſcribes the *Argentina* to be a ſmall fiſh of the harengiform kind, caught in the Mediterranean, and common in the markets of Rome, &c. Its body, he ſays, is oblong and rounded, not flat, like that of the herring. Its back is of a greeniſh grey, and very pale; its belly, and the lower part of its ſides, are white, ſilvery, and ſhining, looking as if covered with leaf ſilver. Its mouth is moderately large, but it has no teeth; but on the extremity of the tongue there are placed ſix or eight crooked ones, and there are ſome aſperities anſwering to theſe in the palate. The eyes are large, and the part of the head which is between the eyes, is of a purpliſh colour. The Brain is ſeen through the ſkull, divided into three lobes. Its tail is forked, and its air bladder is of a ſingular ſhape, not being divided into two, but tapering to a point at each end. *Ray*'s Ichthyography, p. 2209.

ARGENTINA, a medicinal plant, nearly reſembling cinquefoil, of ſome uſe as a cooler and aſtringent.

Argentina is called in Engliſh, *Silver Weed*, or *Wild Tanſey*, and among the botaniſts, *Potentilla* and *Pentaphylloides*. Antiently there was a diſtilled water, and a conſerve ordered from its flowers, but they are now out of uſe. *Alleyn*, Dipenſ. p. 17. See PENTAPHYLLOIDES.

ARGESTES, Αργηστης, is uſed by Vitruvius for the wind, which blows from that quarter of the horizon, which is 75°. from the ſouth, and weſtward. *Vitruv.* Archit. l. 1. c. 6.

Ricciolus, followed by other moderns, uſes *Argeſtes* for the wind which blows at 22°. 30′. from the weſt towards the north; coinciding with what is otherwiſe called *weſt north weſt*. *Ricciol.* Aſtron. Reform. l. 10. p. 452. *Wolf.* Elem. Geogr. §. 212.

ARGETENAR, in aſtronomy, a ſtar of the fourth magnitude, in the flexure of the conſtellation Eridanus. *Vital.* Lex. Math. p. 62. See ERIDANUS, *Cycl.*

Argetenar is repreſented in Bayer, by the Greek letter τ. Its longitude according to Hevelius in 1700, was 5°. 53′. 22″. and its latitude 38°. 28′. 47″. ſouthward. *Hevel.* Prodrom. Aſtron. p. 286. *Wolf.* lib. cit. p. 164.

ARGONAUTIC, ſomething belonging to the Argonauts. See the article ARGONAUTS, *Cycl.*

The *Argonautic* expedition is one of the greateſt *epochas*, or periods of hiſtory, which Sir Iſaac Newton endeavours to ſettle, and from thence to rectify the antient chronology. This he ſhews by ſeveral authorities, to have been one generation or about thirty years earlier than the taking of Troy; and forty three years later than the death of Solomon. Vid. Preſ. Stat. Repub. Lett. T. 1. p. 274. ſeq.

In confirmation of this he gives an aſtronomical proof which may be reduced to what follows; the ſphere appears to have been firſt formed at the time of the *Argonautic* expedition, partly from the teſtimony of Laertius, who obſerves that Muſæus one of the Argonauts made a ſphere; partly from this, that Chiron, another of the Argonauts, is ſaid by an antient writer to have firſt framed the conſtellations; and partly alſo from this, that moſt of the antient conſtellations delineated on the ſphere, are no other than the heroes embarked in that voyage. Sir Iſaac Newton ſhews, the firſt ſphere was probably formed by Chiron and Muſæus; two of the number of the Argonauts, for the uſe of this expedition itſelf.

Now it is more than probable, that in the firſt ſphere, the colures, or cardinal points of the equinoxes and ſolſtices, were in the middle of the conſtellations, Aries, Cancer, Chelæ, and Capricorn: conſequently this was their ſituation at the time of the *Argonautic* expedition. And by computing backwards from the preſent ſituation of the colures, to the time when they muſt have been in the middle of theſe aſteriſms, we find it coincides very nearly with the time before alledged. Id. Ibid. p. 277. ſeq.

ARGONAUTICA, *Argonautics*, in literary hiſtory, poems on the ſubject of the expedition and actions of the Argonauts.

We have the *Argonautics* of Orpheus in epic verſe publiſhed with notes by H. Stephens, and ſince by Eſchenbachius. Vid. *Fabric.* Bibl. Græc. l. 3. c. 21. §. 3. Id. Ibid. l. 1. c. 18. p. 112. Bibl. Univ. T. 15. p. 97. ſeq.

The *Argonauticon* of Valerius Flaccus is ſtill extant in eight books in Latin heroics, compoſed in imitation of Apollonius, but not compleated, at leaſt is not now to be found complete. Burman obſerves that the imitator has often ſurpaſſed his original [a]; ſome give it the ſecond place after the Æneid. Burman has given a fine edition of it at Leiden, 1724, 4° [b]—

[a] *Fabric.* Bibl. Lat. l. 2. c. 14. §. 2. ſeq. Id. Bibl. Græc. l. 3. c. 21. §. 4. [b] Act. Erud. Lipſ. An. 1724. p. 281. ſeq. Giorn. de Letter. d' Ital. T. 33. P. 2. p. 487.]

The *Argonautics* of Apollonius Rhodius is an heroic poem, conſiſting of four books: it has both its beauties and defects. Quintilian calls it *non contemnendum opus*. Tanaquil Faber cenſures it for the inequality of the ſtile; Caſaubon for the inaccuracy of the geography; Rapin for the want of agreeable and intereſting incidents and events; Heinſius taxes the periodology, œconomy, &c. V. *Fabric.* loc. cit. *Heder. Schul.* Lex. p. 378.

ARGUMENT (*Cycl.*)—ARGUMENT *from Affection*, *Argumentum ab amore*, ſtands oppoſed to the *Argumentum ab invidia*; as in the latter, the paſſions are engaged to make a perſon appear odious; ſo the former is a method of engaging the reaſon by means of the affections, and of preſenting an author in ſuch a light, as may prejudice readers in his behalf. Bibl. Germ. T. 5. p. 220.

M. Fabricius of Helmſtaldt has a diſſertation on the *Argumentum ab amore*.

ARGUMENTUM *ad ignaviam*, or the lazy *Argument*, a method of reaſoning which always concludes in favour of inaction. Mem. de Trev. An. 1729. p. 1713.

This the Greeks call Αργὸς λογὸς, q. d. idle, ſluggiſh reaſon. It is reducible to this or ſome other equivalent form, either it is decreed by deſtiny that you ſhall recover of this diſeaſe, or it is decreed you ſhall not recover; but the deſigns of deſtiny will be accompliſhed whether you imploy a phyſician or not, it is therefore uſeleſs to call in a phyſician. *Cicero*, de Fato. c. 12.

The Turks are ſo convinced of a fatality in all things, that they actually remain inactive in the time of a plague, without uſing any precaution to preſerve themſelves from the contagion. Hence it is, that all quarentines, and other means for ſtopping the progreſs of this diſtemper, are unknown among them. V. *Leibn.* Eſſ. de Theod. in Pref. p. 10. ſeq. Mem. of Liter. T. 3. p. 47.

ARGUMENTUM *ad ignorantiam*, that drawn from our ignorance and unacquaintedneſs with things, and importing that there are many reaſons for or againſt ſuch an opinion which we are unacquainted withal, or incapable of penetrating into.

In the diſpute about the nature and origin of the ſouls of brutes, we are frequently expoſed to the *Argument* which Mr. Lock calls *ad ignorantiam*, being forced to own we are ignorant of an infinity of things which might be alledged againſt their immateriality and conſequently immortality. V. *Le Clerc*, Bibl. Choiſ. T. 9. p. 38.

There are no kind of *Arguments* more frequent than thoſe *ab ignorantia ducta*, wherein people conclude that a thing is falſe becauſe they do not underſtand how it can be true, not conſidering that there are an infinite number of things, of which we can give no account, whoſe truth nevertheleſs is not to be queſtioned, *e. gr.* the communication of motion, the cauſe of gravity, or elaſticity, the union of ſoul and body, &c. V. *Le Clerc.* Bibl. Anc. Mod. T. 27. P. 379. ſeq.

ARGUMENTUM *ab invidia ductum*, that made uſe of to render an adverſary's opinion odious. *Wolf.* Log. §. 1050.

This kind of *Argument* is chiefly framed by drawing falſe or obnoxious conſequences from a doctrine which another delivers for true.

This *Argument* is but too frequent among divines; ſome have therefore called it the *theological Argument*. M. Le Clerc has a diſſertation expreſs on the *Argumentum theologicum ab invidia ductum*.

The progreſs of arguing *ab invidia* may be reduced to the following heads. 1. The opinion or doctrine oppoſed is ill explained. 2. It is compared with the doctrine of ſome other infamous or odious writers. 3. Odious names and appellations are beſtowed on it. 4. The point in queſtion is exaggerated, or the difference widened. 5. The author is reproached for departing from the common forms of ſpeech. 6. The reaſons on which his doctrine is ſupported are ſtudiouſly concealed. 7. The inconveniences which ariſe from the contrary doctrine are ſuppreſſed. 8. Invidious conſequences are drawn from the adverſary's doctrine. 9. Malicious ſuſpicions are caſt on them. 10. Their novelty is alledged againſt them as a crime. 11. Thoſe in authority are urged to ſuppreſs them. 12. Several matters are brought into the controverſy foreign to the merits of it, merely to create hatred. 13. Things indifferent are always taken on the worſe ſide. 14. An appeal is made from proper judges to improper.

It is needleſs to give inſtances of the uſe of this way of arguing; our polemical writers are full of little elſe, it is indeed the eaſieſt of all others: ideots may uſe it, if they have but malice and impudence enough; and generally the weakeſt and moſt ſhameleſs are the moſt forward, and go fartheſt in it.

A perſon who is a ſtranger to the method of demonſtrating, thinks a thing neceſſarily follows from another, which has no connection with it; he that is utterly ignorant of all principles, being unable to prove any thing by intrinſic *Arguments*, always flies to extrinſic ones, to the drawing of conſequences by the *Argumentum ab invidia*. Id. Ibid. p. 1212.

Some have given theſe the denomination of *conſequentarii*. *Wolf.* Logic. §. 1040.

ARGUMENTUM *a tuto*, that drawn from the conſideration of its being ſafer to chuſe one ſide of the queſtion than the other, ſuppoſing the evidence equal on both ſides.

The *Argument* for chriſtianity drawn *a tuto* is reducible to this, that it is ſafer and better to believe there is a God, and that Chriſt is the ſon of God, and redeemer of mankind, than to deny it; by reaſon a miſtake is of much leſs miſchievous conſequence on the former ſide than the latter. Dr. Gaſtrel ſtates it thus; that which promiſes me great happineſs, if I believe it, and infinite miſery, if I diſbelieve it, I am under an obligation to believe; but chriſtianity, &c.

The *Argument a tuto* or *a tutiori*, from the ſafer ſide, has been much uſed by ſome divines, eſpecially againſt Atheiſts and Infidels; its authority has been the ſubject of great diſputes; as it aims to convince by other means than that of evidence. Clark and Leibnitz allow it only a moral force.

This way of arguing was firſt ſtarted by Arnobius, and has been adopted by ſeveral other advocates for chriſtianity, as Paſchal, Tillotſon, Gaſtrel, &c. M. Jurieu openly owns, it was by this argument he was induced to believe the myſteries of chriſtianity; lord Shaftſbury, Pfaffius, and ſome others have endeavoured to explode it.

The only caſe where this *Argument* may be had recourſe to is, when the reaſons for and againſt the propoſition are exactly equal; the propoſition muſt alſo be of ſuch nature as to admit of nothing certain to be concluded of its truth or falſehood from the proper evidence.

The uſe of the *Argument a tuto*, ſuppoſes we can believe what we will without other reaſon than our own pleaſure or conveniency; and that the underſtanding, tho' preſſed by an

equal weight of reaſons upon both ſides, yet may incline to the one rather than the other, and that there are ſome doctrines neceſſary to ſalvation, which whether they be true or falſe, no human wit is able to diſtinguiſh: a ſuppoſition which ſeems iujurious to the wiſdom and goodneſs of God. In effect, to grant that all theſe principles of religion, there is a God, a Providence, a Saviour, *&c.* may be conteſted on both hands with equal *Arguments*, is not this to furniſh weapons to Atheiſts and Infidels, who will be apt to reaſon thus: whether there is, or is not a God, cannot be clearly proved by any proper *Arguments* or evidence; therefore whether I believe or diſbelieve the exiſtence of a God, it will amount to the ſame, ſince a truth which it is a crime to reject, muſt be clear and evident. On the whole, the *Argument* is equally applicable to the ſupport of falſehood as of truth; and accordingly we find it uſed by Papiſts to make converts from proteſtantiſm. They argue thus, the Proteſtants allow that ſalvation may be had in the church of Rome; but the church of Rome denies that Proteſtants can be ſaved; therefore it is ſafer to be in the Roman than in the Proteſtant communion. Malbranch alſo makes uſe of the ſame way of arguing to ſhew the inſignificancy of ſecond cauſes, and refers all the actions of creatures to the immediate agency of the deity.

But tho' the *Argument* be improper for proving the truth of any doctrine, it may be of uſe to move the will and excite us to action [a]. This reaſoning may be allowed; a thing which promiſes me pleaſure without danger is preferable to another where equal pleaſure is attended with danger; hence the *Argument* may be of ſome uſe with perſons of diſſolute morals, whoſe looſeneſs and inſenſibility diminiſh the force of other *Arguments* [b].—[a Vid. Act. Erud. Lipſ. An. 1724. p. 177. ſeq. b Bibl. Germ. T. 7. p. 231.]

The truth is, in the conduct of life, whether religious or moral, metaphyſical preciſion and proof is not to be demanded, a degree of certitude, ſuch as that, to which men of ſenſe are uſed to reſign, ſuffices where the object is human actions; to wait for evidence to act, would be never to act at all; and to take no ſide, would be to take the ſide of not acting. *Benoit*, Diſc. Sur. le Conſent. de tous les Peuples. Mem. de Trev. An. 1714. p. 240. ſeq.

M. Moſheim has a diſſertation expreſs on the force of the *Argument from the ſafeſt ſide* in theology, wherein he ſhews that it is of no force, with regard to the conviction of the mind, tho' it may be of uſe for perſuading or directing the actions. De Vi Argumenti quod *a tuto* dicitur in Theologia. *Wolfemb.* 1723. 4°. Vid. Act. Erud. Lipſ. loc. cit.

M. Aſtruc recommends the uſe of the *Argumentum a tuto* in the time of a plague, *i. e.* to act in ſuch manner as if we were convinced of the contagion, even tho' we had reaſon to doubt of it, becauſe there is no great harm in an error on the one ſide, tho' it might be fatal on the other. Vid. Jour. des Scav. T. 76. p. 562.

ARGUS, in natural hiſtory, the name given by authors to a peculiar ſpecies of porcellane ſhell, the variegations of which are a ſort of round ſpots repreſenting the eyes in a peacock's tail.

There are two kinds of this ſhell, a greater and a ſmaller; and beſides theſe there is a ſhell very nearly approaching to them in its ſhape and variegation, called the *Pſeudo-Argus*. See PORCELLANE.

ARGUTIÆ, witty and acute ſayings, which commonly ſignify ſomething further than what their mere words at firſt ſight ſeem to import.

Writers on rhetoric ſpeak of divers ſpecies of *Argutiæ*, viz.

ARGUTIÆ *ab Alieno*, when ſomething is ſaid, which ſeems repugnant either to the nature and property of a thing, or to common cuſtom, the laws, *&c.* which yet in reality is conſiſtent therewith; or when ſomething is given as a reaſon of another, which yet is not the reaſon of it. For inſtance, *ſi Caius nihil didiciſſet, erraſſet minus:* again, *aureum hoc ſæculum eſt, quia plurimus jam auro honos venit.*

ARGUTIÆ *ab alluſione*, thoſe wherein alluſion is made to ſome hiſtory, fable, ſentence, proverb, or the like, *e. gr. multi umbram captant & carnem amittunt.*

ARGUTIÆ *a comparatis*, when two things are compared together, which yet at firſt ſight appear very different from each other, but ſo as to make a pretty kind of *ſimile* or *diſſimile*, e. gr. *par eſt pauper nil cupiens principi omnia habenti.*

ARGUTIÆ *a repugnantibus*, when two things meet in a ſubject, which yet regularly cannot be therein; or when two things are oppoſed to each other, yet the epithet of the one is attributed to the other, *e. gr. dum tacent, clamant. Heder. Schul.* Lex. p. 380. ſeq.

ARGYRITÆ *Agones*, Αγωνες Αργυριται, in antiquity, games where money was the prize. *Pott.* Archæol. l. 2. c. 23.

ARGYRITIS, in natural hiſtory, a name given by the antients to a ſubſtance reſembling ſilver; ſome of the writers of the middle ages ſay that it was of the colour of ſilver, variegated with ſpots of gold; they ſeem to have taken it for a native foſſil; but the account given by Pliny of the *Argyritis* of the antients, ſhews it to have been a recrement of ſilver caſt up in form of froth in the refining.

In this laſt ſenſe, *Argyritis* was uſed to ſignify ſuch litharge as was of a white colour, by way of diſtinguiſhing it from that which was yellow, which they dignified with the name *Chryſitis*, as we do at preſent that of litharge of gold. Dioſcorides calls the litharge of ſilver alſo calabrites or calaurites; this was a name given to it from a peculiar place from whence the antients received it in great quantity; this place was not Calabria as ſome have ſuppoſed, from the name when ſpelt in that manner, but Calaura, an iſland near Crete, where there were metallurgic furnaces always at work, and from whence the Greeks were ſupplied with great quantities of all the recrementa metallica which they uſed in medicine.

The *Argyritis* of theſe later writers ſeems to have been a ſtone, the magnetis lapis of the antients mentioned by Theophraſtus, and by him carefully diſtinguiſhed from what we call the magnet or loadſtone; he ſays it had all the brightneſs of ſilver, and might even deceive the obſerver at firſt ſight, and be taken for that metal: cups and other veſſels for the ſervice of the table were made of this ſtone in the time of the Greeks, but in all their deſcriptions we have no account of thoſe variegations of gold in it, mentioned by the after writers; theſe ſeem to have been adventitious ornaments to the ſtone, either thrown in by the artiſt in the working, or elſe by the deſcriber.

ARGYRODAMAS, Αργυροδαμας, in natural hiſtory, a ſort of ſilver coloured talc, which bears the fire, and neither burns, melts, nor changes its hue. Vid. *Cæſalp.* Art. Med. l. 3. c. 32. *Plot*, Nat. Hiſt. Stafford. c. 3. §. 20.

Hence its denomination among the antients of *Argyrodamas*, *quaſi argentum indomitum.*

ARGYROGONIA, Αργυρογονια, is uſed by ſome alchymiſts for a kind of argentific, or ſilver-making ſeed, of a white colour, pretended to be procurable from a ſolution of that metal perfectly concocted. *Brun.* Lex. Med. p. 124.

Argyrogonia ſtands contradiſtinguiſhed from *Chryſogonia.*

ARGYROLIBANOS, in the materia medica of the antient Greeks, a word uſed to expreſs the white kind of olibanum.

It was common among the Greeks, to affix this word *Argyros* to the beginning of the names of things, to expreſs their being of the colour of that metal, thus argyrolithos expreſſed a ſtone of a ſilver colour. The yellow olibanum or frankincenſe was in the ſame manner expreſſed, by prefixing the word *chalcos* to the name, thus chalcolibanos is uſed in the apocalyps, but this word has been grievouſly miſunderſtood, and ſuppoſed to mean a ſort of braſs or of copper dug in mount Lebanon.

ARIADNIA, Αριαδνεια, in antiquity, ſolemn feſtivals held at Naxos in honour of Ariadne. *Plut.* in Theſeo.

The *Ariadnia* are ſaid to have been inſtituted by Theſeus, in attonement for his cruelty in expoſing Ariadne big with child on that coaſt. They were of a mournful caſt, one part of the ceremony was for a young woman to lie down and counterfeit all the agonies of a woman in labour. *Pott.* Archæol. l. 2. c. 20.

There was alſo ſaid to have been another feſtival of the ſame name, held at the ſame place, in honour of another Ariadne.

ARIDED, in aſtronomy, a fixed ſtar of the ſecond magnitude, in the extremity of the ſwan's tail. *Vital.* Lex. Math. in voc.

This is alſo called *hierezim* and *Adigege.*

ARIDELOSIS, Αριδηλωσις, in rhetoric, is ſometimes uſed for the figure commonly called *ſynonimia. Voſſ.* Rhet. l. 5. p. 276. See SYNONIMY, *Cycl.*

ARIDULLAM, in natural hiſtory, the name of a foſſil ſubſtance uſed in the Eaſt-Indies in intermittent fevers.

It is of a greeniſh yellow colour, and coarſe texture, and when burnt emits fumes ſmelling like arſenick. It is properly of the zarnick kind, tho' ſomewhat different from all the European kinds. See ZARNICH.

ARIDURA, in phyſic, a drineſs, or want of juice, and moiſture, in the parts.

ARIDURA is alſo uſed by ſome for an *Aridity*, or conſumption. *Rul.* Lex. Alch. p. 71.

ARIDURA is more particularly uſed to denote a hectic fever. *Dol.* Encycl. l. 4. c. 4.

ARIDURA is more frequently uſed, by modern writers, to denote a particular atrophy, or waſting of ſome ſingle member of the body.

In which ſenſe it amounts to the ſame with what we otherwiſe call *withering.*

ARINGA, in ichthyology, a name given by Paulus Jovius and others to the herring.

ARIOLI, in antiquity, a kind of prophets, or religious conjurers, who by abominable prayers, and horrible ſacrifices at the altars of idols, procured anſwers to their queſtions concerning future events. *Iſid.* Orig. l. 8. c. 9. *Struv.* Synt. Ant. Rom. c. 6. p. 312.

Theſe are alſo called *Harioli*, and their operation, *Hariolation.* Sometimes they were denominated *Aruſpices*, or *Haruſpices.*

The *Arioli* were diſtinguiſhed by a ſlovenly dreſs, diſorderly and matted beards, hair, *&c.*

ARISARUM, *Friars-Coul*, in botany, the name of a genus of plants, the characters of which are theſe. The fruit and inner part of the flower are the ſame with thoſe of the arum and dragons, but the flower itſelf is hooded or ſhaped like a friars-coul.

The ſpecies of *Ariſarum* enumerated by Mr. Tournefort are theſe.

1. The

1. The common broad-leaved *Ariſarum*. 2. The greater broad-leaved *Ariſarum*. 3. The *Ariſarum*, with the flower terminated in a ſharp point. 4. The large-leaved trifoliate American *Ariſarum*. 5. The leſſer trifoliate American *Ariſarum*. *Tournef.* Inſt. p. 161.

The leaves and flowers of *Ariſarum* are deterſive and vulnerary; and applied either in the form of ointment or decoction, they cure malignant ulcers. Its root taken in powder, is eſteemed againſt the plague; the doſe being from a ſcruple to a dram. Of the root alſo are made collyria, which are effectual in curing fiſtulas of the eyes; but by collyria, Dioſcorides does not mean, what we call ſo, but tents made in the ſhape of a collyrium. It corrupts the pudendum of any animal whatever, if introduced into it. V. *Lemery*, des drog. in voc.

ARISH (*Cycl.*)—The Perſian *Ariſh*, according to Mr. *Greaves*, is a long meaſure equal to $38\frac{364}{1000}$ Engliſh inches. Treat. Pract. Geom. p. 9.

ARISI, *Rice*, an Indian word, which does not properly ſignify the plant which produces the rice, but the ſeed itſelf, when cleanſed from its huſk, and render'd fit for uſe. The Indians call it *Ariſi* in this ſtate; but in the huſk, and upon the plant, they call it *nellon*.

ARISTA *of Corn*, in botany, the ſharp-pointed prickle which ſtands out from the huſk or end of the grain, and is commonly known in Engliſh by the name of the awn, or beard. *Miller*'s Gardner's Dict.

ARISTA, in ichthyology, a name given by Gaza, and ſome other writers, to a fiſh called, by the generality of authors, *Atherina* and *Hepſetus*. See ATHERINA.

ARISTOLOCHIA, *Birthwort*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is tubular, and faſhion'd like a tongue, and is uſually crooked. The cup finally becomes a membranaceous fruit, of a globular, an oval, or a cylindric figure, and is divided into ſix cells, which contain a number of flatted ſeeds, lying cloſely upon one another.

The ſpecies of *Ariſtolochia*, enumerated by Mr. Tournefort, are theſe.

1. The round rooted *Birthwort*, with a blackiſh purple flower. 2. The round rooted *Birthwort*, with a purpliſh white flower. 3. The true long rooted *Birthwort*. 4. The Spaniſh long rooted *Birthwort*. 5. The upright clematite *Birthwort*. 6. The creeping clematite *Birthwort*. 7. The many rooted *Birthwort*, called *Piſtolochia*. 8. The little hoary *Piſtolochia*. 9. The cretic ever green *Piſtolochia*. 10. The Virginian many rooted *Birthwort*, with auriculated leaves. 11. The knotted ſtalk'd Virginian *Piſtolochia*, called Virginian ſnakeroot by ſome. 12. The oriental *Ariſtolochia*, with ſpear-pointed leaves. 13. The ſweet ſmelling ever green clematite *Birthwort*. 14. The white flowered ever green clematite *Birthwort*. 15. The long ſtalk'd climbing *Birthwort*, with leaves like thoſe of the hatchet vetch. 16. The long leav'd climbing American *Birthwort*, with creeping roots. 17. The creeping rooted American *Birthwort*, with heart-faſhion'd leaves, and very long blackiſh purple flowers. 18. The creeping rooted American *Birthwort*, with trifid or ivy-like leaves, and large flowers. 19. The creeping rooted American *Birthwort*, with an umbilicated leaf like the aſarum, and a very long flower. *Tourn.* Inſt. p. 162.

The roots of *Ariſtolochia* are ranked among the nervous ſimples, and highly eſteemed for their power of cleanſing the womb, both as provoking the menſtrual diſcharges, and promoting delivery. Some alexipharmic qualities are alſo aſcribed to them; on which account they have a place in the compoſition of the theriaca, and ſome other medicines of the ſame tribe. Externally applied, they are reckoned detergent and ſuppurative, and, for that reaſon, make a part of the ſtyptic plaiſters of Crollius and Paracelſus. Taken internally, they are great reſolvers of viſcidities, and therefore much recommended againſt the gout, aſthma, &c. They allay the exceſſive pains after child-birth, and are very ſerviceable for the neceſſary purgations on that occaſion. V. *Quinc.* Pharm. P. 2. §. 1. p. 89. *Burggr.* and *James*, Lex. Med. in voc.

ARISTOPHANEUM, Αριστοφανειον, in the antient phyſic, a name given to a kind of emollient plaiſter, prepared of pitch, wax, opopanax, apochyma, and vinegar. *Gorr.* Def. Med. p. 51. b.

ARISTOTELIA, Αριστοτελεια, in antiquity, annual feaſts, celebrated by the citizens of Stagiris, in honour of Ariſtole, who was born there; and in gratitude for his having procured from Alexander the rebuilding, and re-peopling of that city, which had been demoliſhed by king Philip. *Ammon.* in Vit. Ariſtot. *Stanl.* Hiſt. of Philoſ. P. 6. c. 8.

ARISTOTUS, in ichthyology, a name given by Albertus and others to the fiſh which we call the ſhad, or the mother of herrings. See the articles THRISSON and CLUPEA.

ARITHMETIC (*Cycl.*)—*Decadal* ARITHMETIC, that performed by the nine figures and a cypher, ſuppoſed to be the invention of the Arabians, and was, no doubt, taken from the number of our fingers; becauſe theſe are commonly made uſe of in computations, before people learn arithmetic.

Political ARITHMETIC. See POLITICAL.

ARITHMETICAL *Muſic* is that part of the ſcience of muſic which conſiders the relations of ſounds and numbers.

ARLYNG, in zoology, a name by which the common œnanthe is called, in many parts of England. See the article OENANTHE.

ARM (*Cycl.*)—We have an account of a man whoſe *Arm*, with the ſcapula, was torn off by a mill, and who was cured without any hæmorrhage. See Phil. Tranſ. N° 449. §. 5.

ARMADA, or ARMATA, a naval army, or fleet equip'd for war.

In this ſenſe we ſay the Spaniſh *Armada*, the Portugueſe *Armada*. The captain baſſa, before he puts to ſea with his *Armada* of galleys, uſually makes a viſit to the tomb of the famous *Barbaroſſa*. Phil. Tranſ. N° 152. p. 345.

ARMADILLA, in the Spaniſh America, denotes a ſquadron of men of war, to the number of ſix or eight, from twenty-four to fifty pieces of canon, which the king maintains, to prevent foreigners from trading with the Spaniards and the Indians, both in time of war, and peace. *Savar.* Dict. Comm. Suppl. p. 30. *Aubert.* ap. Richel. Dict. T. 1. p. 120. c.

The veſſels of this *Armadilla* are thoſe that have made ſo much noiſe, under the name of *Guarda Coſta's*.

They have even power to take all Spaniſh merchant-ſhips they meet with on the coaſts, that have not licences from the king. The ſouth ſea has its *Armadilla*, as well as the north ſea. The ordinary abode of the former are at Calao, a port of Lima; that of the latter at Carthagena.

ARMADILLO, in zoology, the name of an animal ſomewhat approaching to the hedge-hog kind, and called by the Latin authors the *Echinus Braſilienſis*.

This creature gathers himſelf up, when he pleaſes, head, feet, and tail, within his ſhell, and becomes as round as a ball; and this he does, not only when purſued, but every time he ſleeps. He is ſo good at digging, that, unleſs tied up, he will make his way out under the walls of a houſe. He is extremely valued among the Braſilians, for the whiteneſs and delicacy of his fleſh, and is a great diſh in their beſt feaſts. The plates of his ſhell, powder'd, and given in a doſe of a dram, are eſteem'd a ſudorific, and a remedy for the lues venerea. *Barlæus* de Reb. Braſ. p. 222. See Tab. of Quadrupeds, N° 21.

ARMAMAXI, in antiquity, a kind of Scythian chariots, or carriages, compoſed of two wheels, variouſly adorned with crowns, ſhields, breaſt-plates, and other ſpoils, carried in proceſſion after the images of the gods and great men. *Pitiſc.* Lex. Ant. T. 1. p. 177. a.

The word is hybrid, compounded of the Latin *Arma*, and the Greek Αμαξα, *Plauſtrum*, carriage.

Theſe were ſometimes alſo called *Amaxi*, or *Amaxæ*.

ARMATIUM, Αρμαλιον, in the antient phyſic, a deterſive kind of collyrium, of great value in removing aſperities of the eyelids. *Gorr.* Def. Med. p. 52. a.

Its chief ingredients were æs uſtum, gum ammoniac, and the roots of the tree *Thus*. The preparation is deſcribed by Galen, Aëtius, Paulus, and Scribonius.

ARMATURE, *Armatura*, in a general ſenſe, is the ſame with what we otherwiſe call armour.

ARMATURA is more particularly uſed in the antient military art, for a kind of exerciſe, performed with miſſive weapons, as darts, ſpears, arrows, and the like. *Aquin.* Lex. Milit. T. 1. p. 82. a.

In this ſenſe, *Armatura* ſtands contradiſtinguiſhed from *Palaria*; the latter being the exerciſe of the heavy armed, the former of the light armed.

The *Armatura* was practiſed with great diligence among the Romans: They had their campidoctores, on purpoſe to inſtruct the tyrones, or young ſoldiers, in it. Under it were included, the throwing of the ſpear or javelin, ſhooting with bows and arrows, &c. *Kenn.* Rom. Ant. Not. P. 2. l. 4. c. 13. *Pitiſc.* Lex. Ant. T. 1. p. 177. ſeq.

ARMATURA is alſo an appellation given to the ſoldiers who were light armed. *Veget.* l. 2. c. 15.

Aquinus ſeems, without reaſon, to reſtrain *Armatura* to the tyrones, or young ſoldiers, under diſcipline or tutorage in the exerciſe above-mentioned. *Aquin.* Lex. Milit. T. 1. p. 82.

ARMATURA is alſo a denomination given to the ſoldiers in the emperor's retinue. *Du Cange*, Gloſſ. Lat. T. 1. in voc.

Of theſe we find two ſchools, mentioned in the notitia imperii, called the *Armaturæ Seniores*, and *Armaturæ Juniores*. Their commander was entitled *Tribunus Armaturarum*.

Pancirollus ſuppoſes them to have been thus called, becauſe heavily armed, or rather becauſe completely armed, or becauſe their order conſiſted of ſuch as had been diſciplin'd in arms under the campidoctor.

ARMED *Loadſtone*. See LOADSTONE.

ARMENA, in botany, a name given by Pliny to a kind of wild aſparagus; but the antient Greeks have uſed the ſame word to expreſs the young ſhoots of the common aſparagus, at the time when they are eaten; and not only theſe, but the young ſprouts of the cabbage, and of all other eſculent plants.

ARMENIACA, *Apricot*, in botany, the name of a genus of trees, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form. The piſtil ariſes from the cup, and finally becomes

becomes a fleſhy fruit, of a roundiſh figure, but uſually a little compreſſed ſideways, and having a furrow down its middle. This fruit contains a flatted ſtone, which includes a kernel of the ſame figure. The ſpecies of *Apricot* enumerated by Mr. Tournefort are theſe.

1. The large fruited *Apricot*, with a bitter kernel. 2. The large fruited *Apricot*, with a ſweet kernel. 3. The *Apricot* with a middle ſiz'd oblong yellowiſh fruit, with a ſweet kernel. 4. The *Apricot* with a ſmall ſmooth yellow fruit, and a ſweet kernel. 5. The *Apricot* with a middle ſiz'd oblong fruit, partly yellow, partly red, and with a ſweet kernel. 6. The *Apricot* with a round fruit, of the ſize of a hazel nut, partly red, and partly yellow. 7. The common ſmall *Apricot*. 8. The *Apricot* with ſmall fruit, of the ſize of a hazel nut, and of a yellowiſh red throughout. 9. The *Apricot* with a middle ſiz'd oblong fruit, partly yellow, and partly green. 10. The *Apricot* with oblong middle ſiz'd fruit, of a gold colour, and green. 11. The *Apricot* with oblong fruit, of the ſize of a hazel nut, partly yellow, and partly of a bright red. *Tourn.* Inſt. p. 613.

ARMENIACUM, in natural hiſtory, a name uſed by Aëtius, and ſome other authors, for the lapis armenus, or blue ochre. See the article ARMENUS.

ARMENIUM, among the antient Greek writers, the name of the fine blue ore of copper, called lapis armenus at this time; but it has appeared ſtrange to ſome, that Zoſimus Panapolitanus, and ſome other of the old chemical writers, have mentioned the *Armenium* as one of thoſe foſſils which yield a fine yellow colour. This author ranks it, on this occaſion, with ochre, terra pontica, orpiment, and ſeveral other of the yellow foſſils: And Theophilus, and ſome other of the medical writers, have compared the yellow colour of the ſkin, in ſome caſes, and the yellow tinge of the urine, to the *Armenium*.

It has perplexed the interpreters of their works to reconcile theſe paſſages to the common ſenſe of the word: But the true account of them is, that tho' the antient writers among the Greeks uſed this word *Armenium* only as the name of the lapis armenus, all the later writers, from the time of Galen downwards, uſed it as the name of the Armenian bole of that author. Now tho' our modern bole armenic is red, it is very plain, from all the antient writers, that their bole armenic was yellow; and it was indeed juſt ſuch a colour as might be compar'd to ochre of ſome kinds.

ARMENUS LAPIS, *Armenian Stone*, in natural hiſtory, a mineral ſubſtance, which is but improperly called a ſtone, being no other than an ochreous earth, and properly called blue ochre. It is a very valuable ſubſtance in painting, being a bright and florid blue. It was in ſo high eſteem as a paint, among the antients, that counterfeits were continually attempted to ſerve in its place: And Theophraſtus has recorded it as a thing judged worthy a place in the Ægyptian annals, which of their kings had the honour of inventing the factitious kind; and he tells us the genuine native ſubſtance was a thing of that value, that preſents were made of it to great perſons; and that the Phœnicians paid their tribute in it. *Hill*'s Theophraſtus, p. 130.

It is a very beautiful earth, of an even and regular texture, and of a fine blue; ſometimes deeper, ſometimes paler, and frequently mixed with green. It is ſoft, tender, and light; of an even, but ſomewhat duſty, ſurface; it adheres firmly to the tongue, and is dry, but not harſh to the touch. It eaſily breaks between the fingers, and does not ſtain the hands. It is of a brackiſh diſagreeable taſte, and does not ferment with acids. It is a very ſcarce foſſil, but is found very pure, tho' in but ſmall quantities, in the mines at Goſſelaer in Saxony. It is frequently found ſpotted with green, and ſometimes with black; and very often is mixed among the green ochre, called *Berggruen* by the Germans, which has thence, by ſome, been erroneouſly called by its name. *Hill*'s Hiſt. of Foſſils, p. 65.

ARMILAUSA, in antiquity, a ſhort military coat, put over the thorax, and reaching down only to the knee. *Aquin.* Lex. Milit. T. 1. p. 83. ſeq. *Pitiſc.* Lex. Ant. T. 1. p. 179.

It was thus called, as being divided both before and behind, and only cloſe about the ſhoulders, *in Armos tantum clauſa*, quaſi *Armiclauſa*. *Iſid.* Orig. l. 19. c. 22.

The word is ſometimes alſo written *Armeclauſa*, *Armilauſia*, *Armicaſia*, and *Armilcaſia*.

ARMILAUSA is alſo applied, in eccleſiaſtical writers, to the ſcapular of monks and canons; thus called, on account of its hanging from the arms, or ſhoulders. *Schmid.* Lex. Eccleſ. p. 73. ſeq.

The ſame habit is vulgarly called *Patience*.

ARMILLATI *Milites*, thoſe who wore bracelets on their left arms, beſtowed on them by the generals, or emperors. Tho' the term is more frequently applied to ſoft and effeminate ſoldiers, who wore bracelets on their arms, not as the rewards of their proweſs, but marks of their foppery. *Aquin.* Lex. Milit. T. 1. p. 84. a.

ARMILUSTRIUM (*Cycl.*)—Some will have the *Armiluſtrium* to have been a kind of ſacred game, wherein arms were uſed; held annually in honour of Titus Tatius. Donatus ſuppoſes them to have been performed by the ſalii, armed with helmets, ſhields and ſpears, or at leaſt carrying theſe weapons in proceſſion. *Donat.* de Urb. Rom. l. 3. c. 13. *Aquin.* Lex. Milit. in voc.

ARMINIUS, in literary hiſtory, a celebrated romance in the German language, thus called from the name of its hero, the great champion, and deliverer of the Germans from the Roman yoke. V. Act. Erud. Lipſ. 1689. p. 287. It. 1690. p. 271. *Arminius* was compoſed by Caſpar von Lohenſtein, ſyndic of Breſlau. It abounds not only in intrigues of love, and feats of valour, but in moral and political inſtructions; and contains a large field of antient and modern learning. The finiſhing of it was left by the author's death to another. Some have ſuſpected that the late emperor Leopold was concealed under the character of *Arminius*, but that ſuggeſtion ſeems without ground. *Paſch.* de Var. Mod. Moral Tradend. c. 2. p. 197. *Stoll.* Introd. Hiſt. Liter. P. 1. c. 1. §. 16. p. 12.

ARMONIAC. See the article SAL.

ARMORACIA, in botany, a name given by the antients to a kind of radiſh. Pliny mentions it, but his account leaves us very much in the dark; for in one place he ſays, that there are two kinds of radiſh, the common garden kind, and the wild one; which laſt, the Greeks, he ſays, called *Agrion* and *Ponticiarmon*, and the Latins *Armoracia*. By this it ſhould appear, that the wild radiſh was called by the Romans *Armoracia*; but he afterwards ſays expreſsly, that the garden radiſh was common in Italy, and was called by them *Armoracia*.

There ſeems to be ſome error in the copy of Pliny, in this latter place, the firſt having the moſt title to our aſſent, as the garden radiſh needed no other name than that of *Raphanus*, by which it was ſufficiently known among the Romans in Pliny's time. The name *Armoracia* is by ſome written *Arboracea*, and ſeems to be given the plant from the circles in its root, which when cut tranſverſely, reſemble the ſeveral annual circles in the trunks of trees. *Pliny*, L. 27. *Ger.* Emac. Ind. 2.

ARMORIAL, ſomething that relates to arms, or heraldry. In this ſenſe we ſay an *Armorial* figure, *Armorial* bearing, *Armorial* enſign, the *Armorial* lilly of *France*, *Armorial* lion or leopard of England, &c.

There have been great diſputes, and even wars, for the *Armorial* figures of Sweden, the three crowns, which the Danes have alſo claimed. By a treaty concluded under the mediation of king James the VIth, of Scotland, it was agreed, that all contention for the three crowns ſhould ceaſe; that the kings of Denmark and Sweden ſhould have equally the liberty to uſe the ſame for ever, on condition that the king of Denmark ſhould not, by ſuch uſe, pretend to any right or title over the kingdom of Sweden. *Niſbet*, Eſſ. on Armor. c. 16. p. 206. The antient *Armorial* figures of the Engliſh banner royal were three leopards, which the Scottiſh heralds, on the acceſſion of king James the firſt, aſſerted were originally thoſe of the dukedoms of Normandy and Aquitain, and conſequently were to give precedency to the royal *Armorial* figure of Scotland, the lion rampant. The Engliſh denied, that the *Armorial* figures, borne for England, were thoſe of Normandy and Aquitain, tho' not to be diſtinguiſhed from them in appearance, and aſſerted them to be new ones aſſumed by their kings ſince the conqueſt.

To make this appear, William Segar, garter king at arms, delivered a manuſcript to king James, entitled, The variation of the arms and badges of the kingdom of England, from the time of Brutus, a thouſand years before the incarnation, till the year one thouſand ſix hundred after the incarnation; which is ſtill extant. The occaſion of compoſing it was, that king James had delivered it as his opinion, that England had no certain arms belonging to it: In anſwer to which, Segar endeavours to ſhew, that tho' no nation had changed their arms oftener than the Engliſh had done, by reaſon of the ſeveral invaſions and conqueſts made by the Romans, Saxons, Danes, and Normans; yet, that ſince king Henry the Second's time, who left the Norman leopards, and took the Engliſh lions, the arms of England had been moſt conſtant. But the mixture of fabulous tradition in his work, does no great honour to the cauſe he maintains. He deſcribes, *e. gr.* the arms of each of the three ſons of Brute, among whom the iſland was divided: The eldeſt, named Lochern, to whom that part, now called England, fell, bore for his arms, *or, a lion paſſant guardant, gules*. The ſecond, to whom Albania, now Scotland, fell, bore *a lion rampant, gules*, which to this day, with the addition of the double treſſure, continues the arms of Scotland, &c. Some have aſked a reaſon for changing thoſe leopards into lions, or making a diſtinction between leopards and lions *paſſant guardant!* For that 'tis ſaid, in heraldry, there is none; a *lion paſſant* and full faced, ſhewing both his eyes, which the Engliſh call *guardant*, being called a leopard by the French, and other nations. It may be added, that the antient Engliſh *Armorial* figures are called leopards by ſeveral antient Engliſh, as well as French and Latin heralds and hiſtorians. *Niſbet*, Eſſ. on Armor. c. 14. p. 160. ſeq.

ARMORIAL is alſo a title given to ſeveral books, which contain the arms of a number of perſons of quality. *Richelet*, Dict. in voc.

In this ſenſe we meet with the French *Armorial*, the Spaniſh *Armorial*, &c. See ARMORY, *Cycl.*

ARMORIC, or AREMORIC, ſomething that belongs to the province of Bretagne, or Britanny, in France.

The name *Armorica* was antiently given to all the northern and weſtern coaſt of *Gaul*, from the *Pyreneans* to the *Rhine*; under which name it was even known in Cæſar's time. *Cæſ.* de Bell. Gall. l. 7. c. 14. *Aubert.* ap. Richel. Dict. T. 1. p. 123. b.

The word is of bas breton, origin, and denotes as much as maritime; compounded, according to M. Menage, of *ar*, upon, and *more*, ſea. *Menage*, Orig. Franc. p. 48. b.

ARMORIC, abſolutely uſed, denotes the language in uſe among the inhabitants of Britanny.

The French uſually call this language *bas breton.*

The *Armoric* is a dialect of the Welch, and ſiſter of the Corniſh language.

The inhabitants of Britanny, of Cornwall, and of Wales, ſtill underſtand each other's ſpeech; tho' conſiderable diverſities have crept in between theſe languages, ſince their ſeparation from each other.

The inhabitants of Britanny, Mr. Lluyd obſerves, by their intercourſe with the French, have much altered their antient orthography; beſides that there are ſeveral words in the *Armoric* which have no affinity with the Welch; and that both the *Armoric* and Corniſh retain ſeveral antient words and phraſes which are loſt in the Welch. *Mem.* de Trev. an. 1711. p. 651. ſeq.

Julian Manoir, a jeſuit, has publiſhed an *Armoric* grammar and vocabulary in French, which has been tranſlated into Engliſh by M. Williams, and publiſhed with notes by Mr. Lluyd [a]. Before him Yvon Quillivere had publiſhed an *Armoric* vocabulary at Paris, 1521 [b].—[a In Archæol. tit. 3 & 4. p. 180. ſeq. b *Nichols.* Eng. Hiſt. Lib. P. 1. c. 3. p. 29.] Toland has given a catalogue of ſeveral *Armoric* words, which prove to be Iriſh; alſo a vocabulary *Armoric* and *Iriſh.* Collect. of Pieces, T. 1. New Mem. of Liter. T. 12. p. 106. ſeq.

ARMOURER, a maker of arms, or armour.

The Roman *Armourers* were diſpoſed in certain places in the empire, it being forbid either to ſell or buy, or make arms elſewhere. They were exempt from all offices, and taxes, and received a ſalary from the public.

When once they had taken the employment on themſelves, neither they, nor their children, were allowed to quit it. To prevent this, they had a kind of note, or ſtigma, impreſſed on the arm, whereby they might be known. If any of them fled, or ſecreted their ware, the reſt were obliged to anſwer for him; on account of which, the effects of ſuch as died without a legal heir, went to the college. *Pitiſc.* Lex. Ant. T. 1. p. 752. b. in voc. *Fabricenſes.*

There were fifteen *Armamentaries*, or repoſitories of arms, in the eaſtern empire, placed near the frontiers, and nineteen in the weſtern. V. *Pitiſc.* Lex. Ant. T. 1. p. 752. a. in voc. *Fabricæ.*

ARMOURER of a ſhip, a perſon whoſe office is to take care the arms be in a condition fit for ſervice. Dict. Marin. p. 44.

ARNABOS, in the materia medica, a name of an aromatic drug, deſcribed by Paulus Ægineta, and other of the Greek phyſicians, and ſuppoſed to be the ſame with the *Zarnab* of Aviſenna, that is with the carpeſia of the more antient Greek writers.

This was a drug much uſed as an aromatic and cordial, and allowed in many caſes to be a good ſubſtitute for cinnamon. It was the young ſhoots of the cubeb-tree, or ſomething of that kind, though poſſibly not the very tree which bears the cubebs, becauſe the Greeks ſay, it bore no fruit at all. It grew in Pamphylia, on certain mountains, from the names of which Galen has given it two epithets, expreſſing two different kinds, the laertiac and pontic. We know of no tree which does not bear ſome fruit; and it is very poſſible that this tree, from which the Greeks gathered their *Arnabos* or carpeſia, might bear the cubebs, tho' they did not know it; the *Arnabos* being gathered in ſpring, while the twigs were full of ſap, and before the fruit, or even the flowers appeared.

The carpaſium of the Greeks, which was a poiſonous gum, reſembling myrrh in colour, is ſometimes written carpeſia; but this muſt be carefully diſtinguiſhed from this carpeſia or *Arnabos.*

There is ſome reaſon to ſuſpect, however, that either the Greeks were not well ſettled about the ſenſe of the word *Arnabos*, or elſe that they made it ſignify two different things; for though many of them give accounts, which ſhew, that what they mean by that word is the ſame with the carpeſia, the young ſhoot of a tree, yet others ſeem to expreſs a bark by it.

Galen, who has given us the beſt account extant of the carpeſia, mentions the *Arnabos* in another part of his works, as a thing no way allied to the *Carpeſia*, but as a ſort of caſſia, or bark, reſembling cinnamon, and often uſed for it. He even makes the country of the *arnabos* and carpeſia different; for he tells us, that the *arnabos* was brought from the Eaſt Indies, and that the carpeſia grew only in Pamphylia.

Upon the whole, it does not appear certain, whether the zarnab, *Arnabos*, and carpeſia, were things alike in virtue, but ſomewhat differing in form; or whether they were all the ſame plant, not deſcribed with ſufficient accuracy.

ARNALDIA, in phyſic, a ſlow malignant kind of diſeaſe, frequent formerly in England; the moſt diſtinguiſhing ſymptoms whereof was a falling of the hair. *Brün.* and *Blanc.* Lex. Med. in voc.

Authors are much at a loſs for the nature, and kind of this diſeaſe, which appears to have been peculiar to our country. From the deſcription given of it in an antient chronicle, Mollerus concludes it to have been a ſpecies of the venereal diſeaſe, as that diſtemper appeared in thoſe days in this country. *Moller.* Diſſ. Philol. Hiſt. de Arnald. V. *Aloys* Luiſin. Aphrodiſiac. T. 1. p. 554.

ARNICA, in botany, a ſpecies of doronicum, with plantane leaves. See DORONICUM.

Dr. Bruckner recommends the decoction of *Arnica Vera*, or plavienſis, in feveriſh diſorders, accompanied with hæmorrhagies, efflorescentiæ, *&c.* Select. Med. Francof. T. 1. vol. 3. art. 4.

ARNOTTA, in botany, a name given by the peaſants of Burgundy, and many other places, to certain roots which they frequently turn up, from five or ſix inches depth in plowing the ground. They carefully collect theſe, and eat them, after roaſting in the aſhes, or otherwiſe; in which ſort of cooking they acquire the taſte of a cheſnut, and are found to be a very wholeſome and nouriſhing food. They are blackiſh on the outſide, and white within, and are of the ſize of a ſmall Walnut.

Ruellius is of opinion, that theſe are the ornithogalium roots of Dioſcorides; but there appears not the leaſt ground for ſuch a conjecture. Some others have thought them to be the roots of the apion, or apios; but this is yet more abſurd.

Some have called them *Pſeudorapios*, but with very little reaſon; for they are no other than the roots of the bulbocaſtanum, or earth-nut, which is common all over Europe, and anſwers to the deſcription of them in all particulars. The derivation of the name *Arnotta* has been variouſly gueſſed at; but it ſeems to be only a falſe pronunciation of the Dutch word Ertnote, which is earth-nut. See BULBOCASTANUM.

ARNULPHIN, *Arnulphinus*, a coin of the value of a ducat and an half, current in ſome parts of France in the 15th Century. *Du Cange*, Gloſſ. Lat. in voc.

AROLEC, the name of a weight, in uſe in ſome parts of America, and in quantity equal to twenty-five pounds of our weight.

AROMA is, by ſome authors, particularly applied to denote myrrh. *Linden*, Select. Medic. Ex. 10. §. 125. See the article MYRRH, *Cycl.* and *Suppl.*

AROMA *Philoſophorum* is uſed by ſome for ſaffron. *Hoffm.* Clav. ad Schrod. p. 459. See SAFFRON, *Cycl.* and *Suppl.*

Others give the appellation *Aroma Philoſophorum* to Paracelſus's aroph. See the article AROPH.

AROMA *Germanicum*, a denomination given by Platerus to elecampane. *Quinc.* Diſp. P. 2. n. 303.

AROMATIC (*Cycl.*)—Powders which have *aromatic*, or other acrid particles in them, not only abſorb liquors, but give more or leſs ſtimulus; and as the effect of all irritation is ſome degree of inflammation, which in ſores is principally removed by a ſubſequent increaſed ſuppuration, theſe powders may aſſiſt to ſeparate corrupted from ſound parts. Such of them as have balſamic particles in their compoſition, encourage the ſuppuration moſt.

Several of them reſiſt the putrefaction of animal ſubſtances, and therefore may preſerve a carious bone, or the matter coming from it, from ſuch a high degree of putrefaction as they might otherwiſe go to.

Beſides theſe effects on the ſore, regard muſt always be had to their operation, if any of their particles are abſorbed by the blood-veſſels, for ſome of them produce more or leſs of fever, others become purgatives, *&c.* Med. Eſſ. Edinb. Vol. 5. art. 24.

AROMATISATION, in pharmacy, the art of mixing aromatic, or ſpicy matters, as cinnamon, mace, and the like, with ſome drug, or other medicine, partly to augment its virtue, and partly to render it more agreeable to the palate, or the ſmell. *Savar.* Dict. Com. T. 1. p. 154.

AROMATITIS, Ἀρωματῖτις, in the antient phyſiology, a kind of bituminous ſtone, by ſome repreſented as a gem, both in ſmell and colour reſembling myrrh. *Gorr.* Def. Med. p. 57. It is ſaid to have been found in Arabia and Egypt, and to have been in great uſe among ladies, as a perfume.

AROPH, a term uſed by Paracelſus, to denote a medicine endued with a power of breaking or diſſolving the ſtone in the human body. *Burggr.* Lex. Med. T. 1. p. 1046. ſeq.

In which ſenſe *Aroph* amounts to the ſame with *Lithontriptic.*

Paracelſus ſpeaks of the *Aroph* to the following effect: The peccant matter is carried away by *Aroph*, which is reduced, by diſtillation, from bread to a liquor.

Van Helmont aſſures us, he was poſſeſſed of the *Aroph*, and ſpeaks of the wonderful effects he had produced by it. He deſcribes it as a remedy for the ſtone in the kidneys, prepared under dung, with a mixture of rye bread; and adds, that the

word *Aroph* imports as much as *Aroma Philoſophorum*; by which, on other occaſions, was denoted ſaffron. By this it ſhould ſeem, that *Aroph* was a preparation of ſaffron and rye-bread, digeſted with ſpirit of wine, in a horſe-dung heat, and at length diſtilled.

Cnoeffelius gives the proceſs at large, as deduced chiefly by conjecture, from two paſſages in Paracelſus. V. *Cnoeffel.* in Ephem. Acad. N. C. Dec. 1. an. 4. obſ. 109.

AROPH *Paracelſi* is alſo a name given to a kind of chemical flowers, elegantly prepared by ſublimation, from equal quantities of *lapis hæmatitis* and ſal armoniac; ſaid to be of great efficacy in quartan agues, the plica polonica, and hypochondriac diſeaſe. V. *Hoffm.* Clav. Schrod. p. 179. *Boerh.* Elem. Chem. P. 2. p. 35. *Junck.* Conſp. Therap. tab. 16. p. 454.

This is alſo called *Aroma Philoſophorum.*

AROPH is alſo uſed to denote *Mandragora.* *Rul.* Lex Alch. p. 71. See MANDRAGORA, *Cycl.* and *Suppl.*

ARORNOS, in botany, a name by which ſome authors have called the juniper. *Ger.* Emac. Ind. 2.

ARQUATA, in zoology, the name of a bird, called alſo by ſome *numenius*, and commonly known in England by the name of the *Curlew.*

The male, in this ſpecies, is ſomewhat ſmaller than the female, and is called the *Jack Curlew.* It is a conſiderably large bird, weighing 28 ounces. Its head, neck, and back are covered with feathers blackiſh in the middle, and greyiſh and tawney at the edges. On the throat and breaſt, the middle of the feathers are blackiſh alſo, and their edges white, or a little tawney. The belly and the rump are white. Its wings are mixed of black and white. Its beak is black, extremely long, ſlender, and crooked. Its legs are alſo long, and of a bluiſh brown. It is well known to be a very delicately taſted bird. *Ray*'s Ornithology, p. 217.

ARQUATA *Minor*, in zoology, the name uſed by authors for the bird called by our ſportſmen the *Wimbrel.* See the article WIMBREL.

ARRACHE'E, in heraldry, is uderſtood of repreſentations of plants forcibly torn up by the roots, with their roots hanging at them. *Niſb.* Herald.

In this ſenſe *Arracheé* amounts to the ſame with what is otherwiſe called *eradicate*, or *eraſed.*

ARRACK. See the article RACK.

ARRENDARE, in antient law books. See the article ARRENTATION, *Cycl.*

ARRENDARE is alſo uſed, in the Scottiſh law, for the letting out the uſe of a thing, in conſideration of a certain rent. *Skeu.* de Verb. Signif. p. 10.

ARREPTUS, in middle age writers, denotes a dæmoniac, or perſon poſſeſſed. This is alſo written *Arrepticius.* *Du Cange*, Gloſſ. Lat. T. 1. p. 340.

In this ſenſe we meet with *Arrepti a Dæmone Homines.* The *Arrepti* were not to be admitted to holy orders.

ARREST (*Cycl.*)—*Arreſts*, or *Arrets*, among farriers, denote a ſort of mangy tumours on the ſinews of the hind legs of a horſe, between the ham and the poſtern; called alſo *Rat-tails.* *Guill.* Gent. Dict. in voc.

The name is taken from the reſemblance they bear to the *Arretes*, or back-bones of fiſhes.

Arrets bear a near reſemblance to ſcratches.

ARRESTS of ſoldiers. See SOLDIERS.

ARRESTOGRAPHER is applied, by ſome French writers, to thoſe who have publiſhed collections of *Arrets.* *Richel.* Dict. T. 1. p. 126. a.

In this ſenſe Papon, Louet, Brodean, Henrys, *&c.* are celebrated *Arreſtographers.*

ARREYERS, *Arraiatores*, in our ſtatutes, officers that had the care of the ſoldiers armour, and whoſe buſineſs it was to ſee them duly accoutred. Stat. 12. R. 2. c. 6.

In ſeveral reigns, commiſſioners have been appointed for this purpoſe. *Cowel.*

ARRHAPHON, Αρραφον, denotes a ſkull without ſutures, found to be the cauſe of incurable cephalalgias. *Caſt.* Lex. in voc. *Arrhabon.*

ARRHENOGOGON, in botany, a name given by ſome to the parietaria, or pellitory of the wall. *Ger.* Emac. Ind. 2.

ARRIAGI, in the materia medica, a name given by ſome authors, particularly by Serapio and Aviſenna, to a fine kind of camphor.

It is ſometimes written *Alriagi* and *Alriachi*, or ſimply *Riachi.* It ſeems to be very nearly allied to that fine kind, called *Canſur* or *Canzuri*; and authors in general agree, that it is the ſame ſort, purified by art. They ſay, that the *Canzuri* had its name from a place called Canſur, where it was produced, and that the *Alriagi* was called ſo from the name of a certain king of that country, who firſt found out the method of whitening it by refining.

It is evident that the Arabians ſpeak of the alcanſuri and *Alriagi* as very little differing; and Aviſenna places them together as the beſt camphor, mentioning after them the alazed and alazrac, as of inferior value. It is ſaid, that the name of this monarch who invented the method of purifying camphor, was Riach, and that it was done by means of the ſun's heat, tho' ſome ſay by fire. It is certain, that we in Europe uſe fire in this proceſs, but we do not know what the ſun may be able to do there.

ARROBAS, or AROBAS, a weight uſed in Spain, Portugal, and the foreign dominions of both.

The *Arrobas* of Portugal is alſo called *Arata*, and contains thirty-two Liſbon pounds; that of Spain contains twenty-five Spaniſh pounds.

In Peru it is called *Arroue.* *Savar.* Dict. Comm. T. 1. p. 154. in voc. *Arobe.* See ARROUE.

ARROUE, or AROUE, a weight uſed in Peru, and other parts of the Spaniſh America.

The *Aroue* is no other than the Spaniſh *Arroba.* It weighs twenty-five pounds, French weight. Its chief uſe is in weighing the herb paraguay, uſed in theſe countries for tea, in ſuch quantity, that Peru alone conſumes ſeventy-five thouſand Arouas in a year. *Savar.* Dict. Com. T. 1. p. 154.

ARROW, (*Cycl.*) in ſurveying, is uſed for ſmall ſtrait ſticks about two feet long, ſhod with iron ferrils. Their uſe is to ſtick into the ground, at the end of the chain. See SURVEYING, *Cycl.* and *Suppl.*

Elf-ARROWS. See ELF-*Arrows.*

Magical ARROWS. See the article MAGICAL.

ARS *Theſſalica*, *Theſſalian Art*, is uſed by antient writers, for a ſpecies of magic, whereby it is pretended, they could draw the moon and ſtars out of heaven. *Struv.* Synt. Antiq. Rom. c. 6. p. 307.

It was denominated *Theſſalian* from its ſuppoſed inventors, the people of Theſſaly.

ARSE *Verſe*, in antiquity, a term, or formula, inſcribed on doors, to prevent fire.

It is ſaid to be of Tuſcan origin, where the word *Arſe* ſignifies avert, and *Verſe* fire. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 181. a.

ARSELLA, in botany, a name given by ſome of the Greek writers, to the *Argemone*, a kind of wild poppy; and by others, to the common *Agrimony.* Both one and the other of theſe plants they alſo at times called *Sarcocolla.*

ARSENIC (*Cycl*)—This ſubſtance being reduced to a fine powder, and well mixed with ſome of the calcareous earths, and ſuch as are not to be affected by fire, is rendered, by this management, much more fixed than in its own nature. If to this mixture a little tartar be added, and it be then moiſtened with water, and preſſed down with ſmall plates of iron, in a veſſel able to reſiſt the greateſt fire, and this veſſel be cloſed every way, except a ſmall aperture, and expoſed to a violent fire, the matter is converted into a white brittle regulus of iron, not to be reduced to its former ſtate, but by long continuance in an open fire.

If copper be treated in the ſame manner with *Arſenic*, it acquires the ſame whiteneſs, but ſtill retains its malleability in a great degree, eſpecially if it be afterwards melted with tartar and borax, that all the ſuperfluous *Arſenic* may be evaporated. Tin and *Arſenic* mixed, and ſet over the fire, turn immediately to aſhes.

Lead mixed with *Arſenic*, and expoſed to the fire, is, in great part, immediately carried away in form of a thick ſmoak; the remainder is a glaſs of a fine ſaffron colour. Silver is alſo penetrated by *Arſenic* in the ſame manner, and loſes its malleability; but the *Arſenic* vaniſhes from it in a ſtrong fire, in the form of a ſmoak. Gold, penetrated by *Arſenic*, becomes very brittle, and loſes its colour; and, being ſuddenly thrown into a violent fire, part of it is ſublim'd.

Arſenic is in itſelf more fixed than ſulphur, and may be very ſtrictly united to ſeveral metals, earths, and ſtones, not excepting even glaſs itſelf, the vitreſcent ſtones, and ſalts; ſo that it remains with them, tho' melted in the moſt violent fire, evaporating but little; and when forced away by the joint action of air and fire, always carries away a part of the ſubſtances it was mixt with. The glaſſes in which this penetrating body is ſublim'd, are alſo pervaded by its vapours, ſo that they become white throughout their whole ſubſtance. It melts in many of the matrixes, in which it lies hidden, when ſuddenly put into a ſtrong fire. Thus in the white Pyrites, which is a ſubſtance hardly to be conquered by fire alone, becauſe it contains a great quantity of an unmetallic earth, with a very little of a martial one, it turns to a maſs, in appearance of a ſemi-metallic reguline nature, but not ſo in reality; becauſe a great part of it is unmetallic, and is not to be ſeparated from the *Arſenic*, unleſs by means of a fire carefully raiſed by degrees; which at length forces the *Arſenic* to abandon the more fixed parts: And very nearly the ſame happens to all the metals and ſemimetals with *Arſenic*; nay, it adheres to their ſcoriæ, and to their calxes, and melts with them, and is not to be ſeparated from them, but by means of a ſlow roaſting.

The efficacy of *Arſenic* is very great in producing dry ſolutions; and this is conſiderably encreaſed, when it is joined with a body which is fix'd and fuſible in the fire; as for inſtance, with the glaſs of lead: The effect of this mixture is much greater than that of ſimple glaſs of lead, or litharge alone. All the *Arſenics*, ſublim'd with ſulphur, are diſcovered by the flame they give, on melting them with nitre; but pure white *Arſenic* yields no flame on this trial.

The experiment is to be made in this manner: Beat

to

to powder a few ounces of the pureſt nitre, and put it into a deep crucible; put it into a wind furnace, and add gradually hot coals about it, but let them be ſuch as have done crackling, otherwiſe the veſſel may burſt. The coals muſt only reach up to the middle of the crucible, and it muſt be covered, to prevent any thing from falling into it, when the nitre is melted, and is moderately red, add to it the powder of a fine white piece of cryſtalline *Arſenic*, a noiſy ebullition is immediately made, and the nitre ſwells up, foams, and would run over the top of the veſſel, if not very large and wide; an arſenical fume is at firſt emitted, having the ſmell of garlic, and after this the ſmell of aqua-fortis. If the vapour of this mixture be ſaved in diſtillation, it is much the ſame with the penetrating ſpirit of nitre; but it is a very dangerous proceſs, for the veſſels uſually burſt in the operation. In this experiment great care muſt be uſed, that the *Arſenic* be perfecty pure and clean, for the minuteſt animal or vegetable fibre, even ſo much as the ſplinter of a box the *Arſenic* may have been kept in, or any thing of that kind, will make a very impetuous and violent deflagration with nitre melted and red hot. *Cramer*'s Art of Aſſaying.

Arſenic is attracted with a different force by different metals, and attracts them reciprocally; of all metals, it abſorbs iron moſt greedily; after this copper, tin, lead, and ſilver, in this order of ſucceſſion; therefore, all metals may be freed from the foulneſs of *Arſenic* by iron. The ſcoriæ may be uſed for this purpoſe in fuſion, in an open fire; for though they do not produce this effect as ſcoriæ, yet here being reduced to iron again, they act in the ſame manner as if pure iron had been put in.

This poiſonous mineral, though not found native in its perfect form, but buried in ores of various kinds, yet is capable of being ſeparated, and raiſed out of that ore, by the vapours continually paſſing through the earth; and, in this caſe, is carried up into the air, and occaſions many of the epidemical and fatal diſeaſes, to which the countries, where minerals abound under the earth, are ſubject. Cattle, whoſe noſes are kept nearer the ground than the human organs of reſpiration, are ſooner and more violently affected by theſe exhalations, which are often too heavy to affect any thing much above the ſurface, not riſing high up into the air, but falling almoſt immediately down on the ſurface again, and there deſtroying the herbage, and occaſioning that barrenneſs which is better known than underſtood in all the mine countries. When theſe poiſonous exhalations are thus heavy, they are of no great hurt to man, but when they are lighter and more ſubtle, though they are neceſſarily leſs ſtrong, yet, being carried up to his mouth and noſe, they are ſufficient to affect with the moſt terrible ſymptoms. Delafont does not ſcruple to attribute the plague itſelf to the air's being infected with theſe arſenical exhalations, entering the human body, either by the pores, or by reſpiration, or both. If they are taken in only by the breath, they affect the lungs and brain principally; but if they enter by the pores, they attack all parts at once, and there operate not by coagulation, as Willis ſuppoſes, but by corroſion, proceeding from a ſaline and acrid quality, with which we know the fumes of *Arſenic* to be endued. Many of the bodies of thoſe who have died of the plague, have been found, on opening, to have the lungs and ſtomach affected, exactly in the ſame manner as in perſons who die by ſwallowing *Arſenic*; the lungs inflamed, and the inner coat of the ſtomach eroded, and often black and corrupted. The origin of many other epidemical diſeaſes, as well as that of the plague, may be referred to the ſame cauſe; and the diſeaſes may be varied according to the varying of the fumes which occaſion them, which may be ſometimes plainly and ſimply arſenical, ſometimes mixed of arſenical, ſulphureous, ſaline, mercurial, and the like; and theſe may not equally affect all perſons, but may ſpare thoſe whoſe bodies are in a more temperate ſtate, and only affect thoſe who are full of blood, who have obſtructions, or perturbations of the humours, or who are of depraved conſtitutions. *Delafont*'s Diſſert. Medic. de Peſte.

The general opinion of the contagiouſneſs of the plague, and other epidemical diſeaſes, is carried much too far; doubtleſs many perſons, in the time of a general viſitation of a country with ſuch a diſeaſe, do take it by infection; but theſe are but a ſmall part of the number of the ſick, a thouſand being affected with it from the peſtilential nature of the air; that is, a thouſand have it primarily, for ten who have it by infection from other ſick perſons. It is obſerved, that many who are continually converſant among the ſick in theſe diſeaſes, yet eſcape it wholly; and there is ſo much in the temperament of the body, neceſſary for receiving the diſeaſe, that it is a queſtion whether any thing be to be allowed for the effect of the contagiouſneſs of the diſeaſe; the perſons who catch it by this means, muſt firſt be in a ſtate of body proper to receive it, and ſuch will receive it without the aſſiſtance of contagion, from the mere arſenical or other poiſonous ſtate of the air. *Delafont* de Peſte.

Arſenic, though a virulent poiſon, has been introduced into medicine. Mr. Boyle mentions a balſam made of it, with nitre and ſpirit of wine, or vinegar, as efficacious in the cure of venereal ulcers. See his Works, vol. I. p. 57, 501.

Dr. Cheyne mentions pills made of *Arſenic*, as uſed for the cure of obſtinate quartans. *Cheyne*, Nat. Method of curing diſeaſes.

ARSENOQUITA, from the Greek Αρσενοκοίτης, in middle-age writers, a ſodomite, or one who practices male venery.

Ratherius Veronenſis complains in his days, the clergy were ſo univerſally corrupt, that there was not one but was either an adulterer or an *Arſenoquite*. Quam perdita Tonſuratorum univerſitas tota, ſi nemo in eis qui non aut Adulter aut ſit *Arſenoquita*. *Du Cange*, Gloſſ. Lat. T. 1. p. 342.

ARSEPEDONAPTÆ, Αρσεπιδονακται, in antiquity, a name given by ſome to the Egyptian prieſts, or doctors. *Euſeb.* de Præpar. Evang. N. 4. p. 472. *Reimman*, Ant. Liter. Ægypt. §. 1.

ARSMART, in the botanic pharmacy, a medicinal plant, of a hot, pungent, penetrative taſte, whence it is alſo called *Hydropiper*, or water-pepper. Botaniſts call this plant *Perſicaria*, and ſometimes *Perſicaria non maculoſa*, by way of diſtinction from another ſpecies of that plant called *Perſicaria mitis*, or *Maculoſa*. See PERSICARIA.

Arſmart, by its heat and pungency, becomes almoſt intolerable to the tongue; and hence it obtains in ſcorbutic, hypochondriac, and other diſorders, ariſing from a ſluggiſh circulation of the fluids.

Several value its diſtilled water for its efficacy in the ſtone in the kidneys or bladder. Some alſo uſe the plant in external applications, particularly to diſſipate bruiſed blood; others for the toothach, *&c.* *Boyle*'s Works abr. T. 1. p. 46. *Junck.* Conſp. Therap. tab. 16. p. 439. *Quinc.* Pharm. P. 2. n. 331. *Lemer.* Treat. des Drog. p. 647.

ARSURA, in antient cuſtoms, a term uſed for the melting of gold or ſilver, either to refine them, or examine their value. *Spelm.* Gloſſ. . 45. b.

The method of doing this is explained at large in the black book of the exchequer, aſcribed to Gervaiſe in the chapter *de Officio Militis Argentarii*, being in thoſe days of great uſe, on account of the various places, and different manners in which the king's money was paid.

ARSURA is alſo uſed for the loſs or diminution of the metal in the trial. In this ſenſe, a pound was ſaid *tot ardere Denarios*, to loſe ſo many pennyweights.

ARSURA is alſo uſed for the duſt and ſweepings of ſilverſmiths, and others, who work in ſilver melted down. *Du Cange*, Gloſſ. Lat. T. 1. p 343.

ARSURA is alſo uſed, in ſome writers, for the diſeaſe called Eryſipelas, or *Ignis Sacer*. *Du Cange*, loc. cit. See ERYSIPELAS, *Cycl.* and *Suppl.*

ART *and* PART, in the law of Scotland, is uſed for being an accomplice of a crime, either by aiding or adviſing.

The facts inferring *Art and Part* need not be particularly laid in the libel or indictment, for theſe general words, as terms of ſtated ſignification, are ſufficient. Yet theſe facts may be ſet forth, and it is proper ſo to do, if the proſecutor chooſes to confide in the court rather than in the jury. V. *Mackenz.* Crim. Law.

Alſo in the criminal letters, the perſons of the accomplices muſt be deſcribed by proper names and deſignations.

One may be *Art and Part*, 1°. By giving counſel to perpetrate, without diſtinction, whether the crime would have been committed without ſuch counſel or not. This being what can never be perfectly known. But it is to be obſerved, that in the more atrocious crimes, he that gives counſel is equally puniſhed as him that commits them; but in the leſs atrocious leſs ſeverely. And ſometimes reaſons of mitigation are taken from the age, the manner of adviſing, *&c.*

2°. By aid and aſſiſtance, and that either previous, or concomitant, or ſubſequent, to the commiſſion of the crime. The firſt rarely comes up to *Art and Part*, unleſs very particularly qualified; the ſecond commonly does, and it is eaſily known, if it does not; the third never, and hardly deſerves the name, unleſs it be in providing for the criminal's eſcape. But any of the three make *Art and Part*, if the perpetration was premeditated.

3°. By a clear and explicit mandate to commit the crime, or to do ſomewhat unlawful in itſelf, which with great probability might produce it, if executed by the hand of the mandatory, and not that of another.

ARTABA, Αρταβη, an antient meaſure of capacity uſed by the Perſians, Medes, and Egyptians.

The Perſian *Artaba* is repreſented by Herodotus as bigger than the Attic medimnus by three Attic chœnixes; from which it appears, that it was equal to 6 $\frac{3}{4}$ Roman modii; conſequently that it contained 166 $\frac{2}{3}$ Pounds of wine or water; or 126 $\frac{2}{3}$ pounds of wheat. *Beverin.* de Pond. & Menſ. P. 2. p. 125.

The Egyptian *Artaba* contained five Roman modii, and fell ſhort of the Attic medimnus by one modius; conſequently held 133 $\frac{1}{3}$ pounds of water or wine, 100 pounds of wheat, or 60 of flour.

The Babylonians allowed their god Belus twelve *Artabas* of fine flour for his daily ſuſtenance; which will amount to 60 Roman modii, and conſequently 720 pounds of flour.

The Median *Artaba* was of the ſame content with the Attic medimnus,

medimnus, and consequently equal to six Roman modii, held 160 pounds of water, or wine, and 120 of wheat. Id. Ibid.

ARTADA, or ARTADAR, is used by some writers for realgar burnt, or calcined; commended by Paracelsus in malignant ulcers, and by Forestus for the cure of the Polypus. *Brun.* Lex. Med. p. 125. See REALGAR, *Cycl.*

ARTANITA *of the Antients.* See LEONTAPETALON.

ARTEMISIA, Αρτεμισια, in antiquity, yearly festivals observed in divers cities of Greece, particularly Delphi, in honour of Diana, surnamed *Artemis.* *Pott.* Archæol. l. 2. c. 20.

In the *Artemisia*, a mullet was sacrificed to this goddess, as being thought to bear some resemblance to her, in regard it is said to hunt and kill the sea-hare. *Athen.* l. 7.

ARTEMISIA, in the botanical pharmacy, a medicinal herb of great efficacy as an uterine, and promoter of the menses. *Gorr. Blanc. Lemer. Burgr.* in voc.

Artemisia is the same with what is popularly called *mugwort*; among botanists it is also known under the denomination of *Artemisia vulgaris major*, *Artemisia rubra*, and *Artemisia officinarum.* *Lemer.* p. 82.

It is much used in female complaints, both internally and externally: it is held an opener and discutient, a cleanser of the uterus, promoter of the menses, and of delivery. But it is more esteemed among midwives and nurses than among physicians. Its chief use in the shops is in a compound syrup which takes its name from it. *Junck.* Consp. Therap. Tab. 10. p. 312. *Quinc.* Dispens. P. 2. n. 58.

The Chinese Moxa is the produce of a sort of mugwort called *Artemisia Chinensis.* See MUGWORT.

ARTEMONITES, *Artimonitæ*, in church history, heretics in the third century who denied the divinity of Christ, asserting him to have only had a human nature, tho' divinely sent, and more excellent than the prophets. *Prateol.* Elench. Hærit. l. 1. n. 70.

The *Artemonites* absolutely denied that Christ is any where in scripture called God. Whence a late writer [a], who calls himself an *Artemonian*, endeavours to prove that they must have read the beginning of St. John's gospel differently from the present reading; and that instead of *and the word was God*, they read *and the word was of God:* not, καὶ Θεὸς ἦν ὁ λογος, but, Θεου ἦν ὁ λογος [b].—[a Init. Evang. S. Joann. ex. Antiq. Eccles. Restit. c. 28. b *John*, c. 1. v. 1.]

The *Artemonites* are the same with what in other writers are called *Theodotiani*, *Pauliani*, *Samosateani*, and *Photiniani*; and coincide nearly with the modern *Socinians.* *Ittig.* Hist. Photin. §. 8.

ARTENNA, in zoology, the name of a water-bird, of the size of a hen, of a browniſh colour on the back, and white on the belly; having a hooked bill, and its three fore toes connected by a membrane, but the hinder one loose. It is found on the island Tremiti in the Adriatic sea, and is supposed to be the *avis Diomedis* of the antients. *Ray*, Ornitholog. p. 251. See DIOMEDIS *Avis.*

ARTERIA *Venosa*, Αρτηρια φλεβωδης, a name given by the antients to what we call the pulmonary vein, or that vessel whereby the blood is conveyed from the lungs to the left ventricle of the heart.

The denomination was antiently given it, on a supposition of its being an air vessel, and that it served for the conveyance of the vital aura from the lungs to the heart. *Gorr.* Def. Med. p. 54. b.

ARTERIACS, *Arteriaca*, medicines proper for disorders of the trachea, and the voice.

Arteriacs are reduced by Galen to three kinds. 1. Such as are void of all acrimony, serving to mollify the asperities of the part; to which kind belong, gum tragacanth, after famius, amylum or starch, milk, &c. 2. Those of an acrimonious quality, whereby they stimulate even the sound parts; such are honey, turpentines, bitter almonds, iris root, &c. 3. Those of an intermediate kind, soft and mild, yet detergent; such are butter, and divers sappings made of almonds, milk, honey, &c. *Gorr.* Def. Med. p. 54. seq.

ARTERIOSUS *Canalis.* See CANALIS *Arteriosus.*

ARTERIOTOMY (*Cycl.*)—This operation is not performed so often among us as it was among the more antient surgeons, for fear of an aneurism, or too profuse hæmorrhage, yet if it be well adapted to the patient's Disorder, and carefully performed, it may often prove of the greatest service, and will not be attended with any ill consequences.

This operation is now seldom performed on any but the temporal arteries, which may be opened very easily by the lancet as they lie close under the skin, and lying close upon the os frontis, they may be readily compressed against it, and there is no danger of a profuse hæmorrhage, or aneurism; but even in this most convenient part, it must be acknowledged that the opening an artery is much more difficult than the opening a vein, as the vessel seldom appears plainly thro' the skin, and there is no guide but its vibration under the finger.

In the operation of *Arteriotomy*, the patient must be placed in a good light, and the surgeon must place two fingers of his left-hand, at a small distance from each other both on the artery. He must then observe the course of the vessel, and cut down into it deeper than in phlebotomy, and raise the point of the lancet, so as to make a sufficient orifice: in this he need not fear the cutting of the vessel quite thro', for even that is attended with no ill consequences after deligation. If now the blood follows the lancet in a very florid and salient stream, you may be satisfied the artery is well opened; if this is not the case it must be cut again, but as in this operation, the fine point of a lancet is liable to be broke against the bone; the use of a small scalpel is preferable. A pound or a pound and half of blood should be taken by this operation: when the sufficient quantity of blood is taken, the deligation must be made with three compresses, each larger than the other, laying on the smallest first, in which must be included a farthing, a bit of lead, or of chewed paper to compress the artery against the bone, and the head must continue tied up with a proper bandage eight days. *Heister*'s Surgery, p. 354.

ARTERY (*Cycl.*)—Mr. Weitbrecht concludes, from the small quantity of blood thrown out of the heart into the *Arteries*, and the great resistance in the capillary *Arteries*, that all or much the larger share of what is sent out of the heart, is retained in the *Arteries* during the systole of the heart, and is sent forward into the veins, by the contraction of the *Arteries*, but so, that the veins can have no pulsation, because so much as is received from the veins is thrown into the heart at the same time. The smallness of the quantity of blood thrown out of the heart makes him think, that the pulsation of the *Arteries* cannot be so much owing to their distention, as to their change of place; and he says he perceived, upon trial, that all the *Arteries* of the body are not dilated or contracted at the same time.

The auricles also, according to him, serve to give an impetus to the blood in the ventricles of the heart; for the blood moves so slow in the veins, that its momentum would not be sufficient to distend, and to give a spring great enough to the ventricles. The pulmonary blood acquiring considerable velocity by the motion of the lungs, requires a much less auricle from the blood of the vena cava. See Comment. Acad. Petrop. Tom. 6, & 7.

ARTERY *wounded.* When an *Artery* is wounded and not entirely divided, if it be a large one, the wounded fibres instantly contract themselves; by this means they dilate the orifice of the wound, and render it difficult to stop the flux of blood; and tho' the hæmorrhage be stopped for a little time, yet it will often burst out again on a sudden violently, or at least produce a dangerous tumour called an aneurism. This also will frequently be the case when only the external coat of the *Artery* is wounded, for by this means the internal coat of the *Artery* is left to sustain the whole impulse of the pulsation which it being unequal to, is forced by degrees into a tumour like a bag, which frequently brings on great mischiefs. *Heister*, p. 27.

ARTHRITES, in medicine. See GOUT.

ARTHRITICA, in botany, a name given by some to the primrose. *Ger. Emac.* Ind. 2.

ARTHRODIA, (*Cycl.*) in natural history, the name of a genus of crystal. *Hill*'s Hist. of Foss. p. 189.

The word is derived from the Greek ἀρθρωδης, complex, or joined together. The bodies of this genus are crystals, always found in complex masses, great numbers of them being always joined together, and either incrusting and covering over the outsides of roundish stony nodules, or else lining the cavities within such or other stony nodules; they are of the imperfect kind, having only single pyramids, which are usually very long, and very short and slender columns. The bodies on or in which these are found have been called by authors echinated or concave crystalline balls. See Tab. of Fossils, Class. 3.

Of this genus there are five known species. 1. A colourless and very bright one, found sometimes clustered together on the surfaces of small nodules, but more frequently in the cavities of flints, and very common in many parts of England; particularly wherever there are chalk-pits that have flints in them. 2. A dull and whitish one; this has shorter and more obtuse pyramids than the former, and is common in many parts of the kingdom, sometimes in the form of the echinated, sometimes of the concave crystalline ball, and sometimes encrusting the narrow fissures in strata of stone. 3. A blackish one with very short pyramids; this is the hardest and brightest of all the crystal class, tho' usually found very small. It is frequent in the forest of Dean in Gloucestershire, and is sometimes found among the other kinds about Bristol. 4. A very broad and blunt one, with a very short column; this is found in Cornwal, Yorkshire, and some other places, but no where so plentifully as in Gloucestershire; where it is generally found in the shape of the echinated crystalline ball. And, 5. One with a very long and narrow pyramid; this is found in vast abundance in Germany and Saxony; and not unfrequently with us in the inside of hollow stony nodules, about Kings-Weston in Gloucestershire, and in some other places. *Hill*'s Hist. of Foss. p. 192.

ARTICHOAK, in gardening.—We at present cultivate only one sort of *Artichoak* in the gardens about London, which is the red kind; the green *Artichoak* was once in great repute, but it is now never planted.

The manner of propagating this useful plant, is from slips or suckers taken from the old plant in February and March; these, if planted in a good soil, will produce a good fruit the au-

autumn following. The old *Artichoak* ſtocks are to be dreſſed in the latter end of February or beginning of March; this muſt be thus performed; with a ſpade remove all the Earth from about the ſtock, down below the Part from which the young ſhoots are produced. Then make choice of two of the cleareſt and ſtraighteſt, and moſt promiſing plants which are produced from the under part of the ſtock, let theſe be left for a crop; then with a thumb, force off all the other buds and young ſhoots cloſe to the Head of the ſtock, from whence they are produced, and with the ſpade draw the earth about the two plants which are left, cloſing it faſt with the hands to each of them, and ſeparating them aſunder as far as can be without breaking them, then crop off the tops of the leaves which hang down.

When this is done, a crop of ſpinach may be ſowed between the ſtocks, which will be gathered off before they come to ripen; in the beginning of May when the *Artichoaks* begin to fruit, all the young plants produced ſince the dreſſing muſt be removed, and all the ſuckers taken off, leaving only the one principal fruit; and when the *Artichoak* is fit to gather, the ſtock muſt be cut down cloſe to the ground, that it may ſhoot out new ſprouts before October, which is the ſeaſon for earthing them, or as the gardners call it landing the *Artichoak* ſtocks. *Miller*'s Gardners Dict.

The earthing them is thus done; cut off all the ſprouts cloſe to the ground, then dig trenches between the rows covering up the ſtocks with the earth in ridges; thoſe *Artichoaks* which are planted in a moiſt rich ſoil will always produce the largeſt fruit, but the roots will not live thro' the winter in a very moiſt one.

The *Artichoak* is a pleaſant, wholeſome, and very nouriſhing food; the roots are reckoned to be apperitive, cleanſing, and diuretic; good for the jaundice, and to provoke urine.

The French and Germans eat not only the heads, but alſo the young ſtalks boiled, and ſeaſoned with butter and vinegar. The Italians ſeldom boil the heads, but eat them raw, when young, with ſalt, oil, and pepper.

Artichoaks have the reputation of promoting venereal inclinations to a very great degree; the ſtalks, preſerved in honey, are ſaid to be an excellent pectoral; but they ſhould firſt be blanched, like celery.

The common leaves, boiled in white wine whey, are much commended in the jaundice, as is alſo the juice of theſe leaves. Vid. *James*'s Dict. Med. T. 2. in voc. See CINARA.

Jeruſalem ARTICHOAK is the root of a ſpecies of ſun-flower of the perennial kind, which is propagated in many gardens for the uſe of the kitchen; it is a very agreeably taſted root, but watery and windy, and therefore at preſent generally diſregarded.

It is propagated by planting out the ſmaller roots, or even pieces of the larger, which have buds to them in the ſpring or autumn; they muſt be allowed a very conſiderable diſtance, for they ſpread immoderately, and multiply very quick. The autumn following when their ſtems decay, the roots may be taken up for uſe. They are but an unſightly plant tho' very tall, and are commonly placed in obſcure corners of a garden. *Miller*'s Gardeners Dict.

ARTICULATED *Libel*, *Libellus Articulatus*, that wherein the parts of a fact are ſet forth to the judge in ſhort, diſtinct articles. *Calv.* Lex. Jur. p. 92.

This amounts to the ſame with what is otherwiſe called *Libellus poſitionalis*.

ARTICULATED *Leaf*. See LEAF.

ARTICULATED *Radius*, in natural hiſtory. See RADIUS *articulatus*.

ARTIFICERS, thoſe who work with the hands, and ſell things faſhioned by them into other forms.

Artificers amount to the ſame with what we otherwiſe call *handicrafts* and *mechanics*; ſuch are ſmiths, carpenters, taylors, ſhoemakers, weavers, and the like.

By the Engliſh laws, *Artificers* in wool, iron, ſteel, braſs or other metal, going out of the kingdom into any foreign country without licence, are to be impriſoned three months, and fined in a ſum not exceeding one hundred pounds. And ſuch as going abroad and not returning on warning given by our embaſſadors, *&c.* ſhall be diſabled from holding lands by deſcent or deviſe, from receiving any legacy, *&c.* and be deemed aliens. Stat. 5 Geo. I. c. 27.

The Roman *Artificers* had their peculiar temples, where they aſſembled and choſe their own patron, to defend their cauſes: They were exempted from all perſonal ſervices. Taruntenus Paternus reckons thirty-two ſpecies of *Artificers*, and Conſtantine thirty-five, who enjoyed this privilege. The *Artificers* were incorporated into divers colleges or companies, each of which had their tutelar gods, to whom they offered their worſhip. Several of theſe, when they quitted their profeſſion, hung up their tools, a votive offering to their gods. *Pitiſc.* Lex. Antiq. T. 1. p. 182.

Artificers were held a degree below merchants, and argentarii, or money-changers, and their employment more ſordid. Some deny, that in the earlieſt ages of the Roman ſtate, *Artificers* were ranked in the number of citizens; others, who aſſert their citizenſhip, allow that they were held in contempt, as being unfit for war, and ſo poor that they could ſcarce pay any taxes. For which reaſon they were not entered among the citizens, in the cenſors books; the deſign of the cenſus being only to ſee what number of perſons were yearly fit to bear arms, and to pay taxes towards the ſupport of the ſtate. It may be added, that much of the *Artificers* buſineſs was done by ſlaves, and foreigners, who left little for the Romans to mind but their huſbandry and war. V. *Dionyſ. Halicarn.* l. 2. p. 98. It. l. 9. p. 583. *Sigon.* de Ant. Jur. Civ. l. 2. c. 12. *Pitiſc.* ubi ſupra. T. 1. p. 182.

Ramazini has a treatiſe expreſs on the diſeaſes of *Artificers*. De Morbis Artificum Diatriba, Mutin. 1700. 8°. See Mem. de Trev. 1704. p. 920.

ARTIFICER *by Fire*, a denomination ſometimes given to chemiſts, and workers in metals. *Suic.* Theſ. T. 1. p. 620. in voc. Βαναυσος.

ARTIFICIAL (*Cycl.*)—ARTIFICIAL *Muſic*, that which is according to the rules of art; or executed by inſtruments invented by art. It is alſo uſed, in another ſenſe, for ſome artful contrivance in muſic; as when a piece is ſung in two parts; one whereof is by B molle, or flat, and the other by B ſharp. See *Artificii muſicali del Signor Vitali*.

ARTIFICIAL *Lightning*. See LIGHTNING *Artificial*.

ARTIFICIAL *Magnets*. See MAGNETS.

ARTILLERY (*Cycl.*)—ARTILLERY *Guard* is a detachment from the army to ſecure the artillery. This corps is in the front, and their centries are round the park. Upon a march they go in the front and rear of the *Artillery*, and muſt be ſure to leave nothing behind. If a gun or waggon break down, the captain is to leave a part of his guard to aſſiſt the gunners and matroſſes in getting it up again.

ARTIPHYES, Αρτιφυης, in the antient phyſic, denotes an even, entire, and perfect critical day; ſuch, according to Hippocrates, are the fourteenth and forty-ſecond days. *Brun.* Lex. Med. p. 134.

ARTISCUS, Αρτισκος, in medicine, denotes a troche, but more particularly that prepared of viper's fleſh, mixed up with bread, to be uſed in the compoſition of venice treacle. *Gorr.* Def. Med. p. 55. b.

Theſe are more particuly called *Artiſci Theriaci*, or theriacal troches.

They were formerly in great vogue, and brought with much parade from venice; but Zwelfer [a] diſcovered their vanity; ſince which time, vipers powder has been generally ſubſtituted for them, in the preparation of the treacle [b].—[a] In Pharmac. Auguſt. Animadv. ad cl. 12. p. 209. ſeq. [b] *Brun.* Lex. Med. p. 133. ſeq.]

ARTIST, in a general ſenſe, a perſon ſkilled in ſome art.

In this ſenſe, we ſay, an excellent, a curious *Artiſt*. The preheminence is diſputed between antient and modern *Artiſts*, eſpecially as to what relates to ſculpture, painting, and the like. At Vicenza, we are told of a privilege granted to *Artiſts*, like that of clergy in England; [a] in virtue of this, criminals adjudged to death, ſave their lives if they can prove themſelves the moſt excellent and conſummate workmen in any uſeful art. This benefit is allowed them *in favorem artis*, for the firſt offence, except in ſome particular crimes, of which coining is one. [b] The exception is juſt, ſince here the greater the *Artiſt*, the more dangerous the perſon.—[a] *Evel.* Diſc. of Medals, c. 7. p. 237. ſeq. [b] *Evel.* loc. cit. p. 238.]

De Piles mentions a blind *Artiſt* at Paris, who by only feeling the features of a face, could take, and mould the exact likeneſs of it in wax. *De Piles*, Cours de Peint. p. 329. *Wolf.* Pſychol. Rat. §. 162.

There are ſmall encouragements for *Artiſts* at Siam, where if a perſon ſhould arrive at any excellency, he would for his reward be obliged to work for the emperor gratis. Jour. des Scav. T. 19. p. 264.

ARTIST, *Artiſta*, in an academical ſenſe, denotes a philoſopher or proficient in the faculty of arts. *Heuman.* Via ad Hiſtor. Liter. c. 4. §. 39.

In the early ages of univerſities, the ſeven liberal arts compleated the whole courſe of ſtudy or philoſophy, as it was called. Whence the maſters in this faculty were denominated *Artiſts*.

The word is barbarous, formed in the ninth century, from *Ars*, with a termination which belongs rather to Greek words than to Latin.—An anonymous author has given the hiſtory of the word *Artiſt* as uſed for a philoſopher. Vid. Obſerv. Halenſ. T. 6. Obſ. 14. p. 118. ſeq.

From the ſame origin come alſo the words *Artiſtic*, *Artiſticus*, and *Artigrapher*, *Artigraphus*, found in ſome writers of thoſe ages.

ARTIST is more peculiarly underſtood of a chemiſt or alchemiſt. Obſerv. Halenſ. T. 6. Obſ. 23. §. 1.

In which ſenſe it is, that Paracelſus and other Adepts uſe the word.

We find frequent mention in authors of this claſs of *Elias Artiſta*, or Elias the *Artiſt*, who is to come ſome time before the diſſolution of the world, and reſtore and make perfect all arts and ſciences, but eſpecially the gold making art, and uſher in a truly golden age, or millennium.

The lower and meaner things in this ſublime art, Paracelſus obſerves, God has permitted to be already diſcovered; but for the greater and more important matters, as the tranſmutation of other metals into gold, they are reſerved to the coming of Elias the *Artiſt*. *Paracelſ.* de Vitriol. c. 8. Obſ. Halenſ. loc. cit. §. 3.

The Roſicrucians have alſo their Paraphraſes concerning the coming of Elias the *Artiſt*, who is in a more particular manner, the reſtorer of their myſterious art.

ARTIZOAS, Ἀρτιζῶας, is uſed by ſome antient phyſicians for an infant ſhort-lived, by reaſon of a difficult birth, whereby he was long detained in the paſſage from the womb. *Gorr.* Def. Med. p. 55. b. *Brun.* Lex. Med. p. 134. b.

ARTOMELI, Ἀρτομελι, in the antient pharmacy, a kind of cataplaſm, prepared of bread and honey, applied chiefly to the precordia. *Brun.* Lex. Med. in voc.

ARUM, *Wake-Robin*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, of a very ſtrange figure, repreſenting, in ſome degree, a hare's ear; from the bottom of the flower ariſes a piſtil, which at its baſe is ſurrounded by a great number of embryos, each of which finally ripens into a roundiſh or oval berry, containing one or two ſeeds. To theſe marks it may be added, that the leaves are not divided.

The ſpecies of *Arum*, enumerated by Mr. Tournefort, are theſe:

1. The common *Arum*, with plain leaves. 2. The common *Arum*, with leaves ſpotted with white. 3. The common *Arum*, with leaves ſpotted with black. 4. The round leav'd ſpotted *Arum*. 5. The large *Arum* with white veins, and black ſpots on the leaves. 6. The largeſt Italian white-vein'd *Arum*. 7. The great Veroneſe white-vein'd *Arum*. 8. The Conſtantinople *Arum*. 9. The ſpotted flowered Arabian *Arum*. 10. The low broad leav'd Ceyloneſe *Arum*, with a ſcarlet piſtil. 11. The great Egyptian *Arum*, commonly called the Colocaſia. 12. The great large-rooted Ceyloneſe *Arum*. 13. The African *Arum*, with white ſweet-ſcented flowers. 14. The great flowered Indian *Arum*, with flowers four foot long. 15. The little eatable *Arum*, with leaves like thoſe of the water-lilly. 16. The little eatable *Arum*, with leaves like the arrow-head, of a deep green. 17. The great American *Arum*, with leaves of changeable colours, like a pigeon's neck. 18. The white-flowered narrow-leav'd climbing American *Arum*. 19. The narroweſt-leav'd climbing American *Arum*. 20. The heart-leav'd climbing American *Arum*. 21. The perforated ivy-leav'd climbing *Arum*, with large leaves. 22. The tree *Arum*, with leaves like thoſe of the arrow-head. 23. The tall cannacorus-leav'd Indian *Arum*. 24. The *Arum* with narrow, ridged and pointed leaves. 25. The large heart-leav'd *Arum*, with red tuberoſe roots. 26. The great leav'd American *Arum*, with red flowers and fruit. 27. The great American *Arum*, with red leaves, bordered with an edge of green. 28. The great yellow flowered American *Arum*. 29. The great leav'd climbing American *Arum*, with very long fruit. 30. The ſmall-flowered purple-berried American *Arum*. 31. The two-leav'd Arabian ſpotted *Arum*. 32. The Indian *Arum*, with ſcorzonera leaves. 33. The narrower-leaved Indian *Arum*, called by ſome ſerpentaria minor; and 34. The leaſt and narroweſt-leav'd American *Arum*, called by ſome, the narrow-leav'd ariſarum. *Tourn.* Inſt. p. 158. See ARISARUM and DRACONTIUM.

The root of *Arum* is extremely pungent and volatile, which quality makes it recommended in all viſcidities, phlegmatic and ſcorbutic caſes; becauſe it penetrates and rarifies tough concretions and infarctions of the glands and capillary veſſels. It has alſo been preſcribed in humerous aſthma's, and obſtructions of the bronchia. Van Helmont commends it greatly with vinegar, in bruiſes and falls, as ſerving to prevent the blood from ſtagnating, and falling into grumes, upon the injured parts. Some have affirmed, a dram of this root, freſh powdered, and taken in any proper vehicle, to be an infallible remedy againſt poiſon, and the plague. Matthiolus commends, with great reaſon, a cataplaſm of it, freſh bruiſed, and cow-dung to be applied hot, in arthritic pains. As this root, kept dry, ſoon loſes its efficacy, the compound powder of the ſhops, which takes it name from it, muſt be of little or no ſignification. V. *Quinc.* Pharm. P. 2. Sect. 4. p. 131. ſeq.

ARUNCUS, in botany, the name of a genus of plants called by Tournefort and others *barba capræ*. The characters of the genus are theſe:

The male flower has for its cup a one-leav'd perianthium, which is coloured, and is plain at the baſe, and lightly divided into five erect ſegments. The flower conſiſts of five oval petals inſerted into the cup, and ſcarce reaching beyond the ſegments of it. The ſtamina are about twenty in number, and are erect capillary filaments, doubly as long as the petals of the flower. The antheræ are ſimple. The piſtil has the rudiments of three germina. In the female flower the cup and petals are the ſame as in the male, the piſtil has three germina, which, by degrees, go off into a ſhort ſtylus, with ſimple ſtigmata. The fruit is compoſed of three ſeeds, of a pointed figure, ſurrounded by a cruſt.

This plant has been ſuppoſed to be of the ſame genus with the filipendula, but, by the cloſe examination of the flowers, they appear to be extremely different. *Linnæi*, Gen. Plant. p. 484. *Tourn.* Inſt. p. 141.

ARUNDO, *Reed*, in the Linnæan ſyſtem of botany, makes a diſtinct genus of plants, of the graſs kind; the diſtinguiſhing characters of which are, that the calyx, or flower-cup, is a bivalve erect glume, compoſed of two long, pointed, naked, or beardleſs valves, and containing one or more flowers. The flower is compoſed of two valves, of the length of the cup, theſe are oblong and pointed, and have a downy matter growing from their baſes to the length of the flower. The ſtamina are three capillary filaments; the antheræ are oblong, and ſplit at both ends. The germen of the piſtillum is oblong; the ſtyles are two in number, reflex, capillary and hairy; the ſtigmata are ſimple; the flower encloſes the ſeed, and does not open to let it fall; the ſeed is ſingle, oblong, pointed at both ends, and adorn'd with a long pencil of down from its baſe. *Linnæi*, Syſtem. Naturæ, p. 19.

ARUNDO *Indica*, in the materia medica, the name of the *Arundo ſanguinem draconis manans* of Moriſon. The plant from the fruit of which, by maceration in warm water, they get a kind of dragon's blood, which makes the fine red of the Indian varniſhes. *Dale*'s Pharm. p. 266.

ARURA, in antiquity, denotes a kind of land meaſure, amounting, according to Suidas, [a] to fifty feet, and, according to others, to one hundred cubits [b].—[[a] *Suid.* Lex. T. 1. p. 335. [b] *Magr.* Vocab. Eccleſ. p. 25. a.]

Strabo obſerves, that Egypt was antiently divided into prefectures, each of which was ſubdivided into toparchies, and thoſe into other leſſer portions, the ſmalleſt of which were denominated *Aruræ*, Ἀρουραι. *Strab.* Geogr. l. 18.

ARURA, Ἀρουρα, in middle age writers, denotes a field ploughed and ſowed.

ARUSPICI *Libri*, a kind of ſacred writings among the antient Hetrurians, wherein the laws and diſcipline of the *Aruſpices* were deſcribed. *Struv.* Synt. Ant. Rom. c. 6. p. 253.

Theſe were alſo called *Rituales*, ſometimes *Fulgurales Libri*, as directing how to take indications from thunder, lightning, *&c.*

ARVUM, in antient agriculture, properly denoted ground ploughed, but not ſowed. *Varr.* de Re Ruſt. l. 1. c. 24. *Fab.* Theſ. in voc.

Tho' the word is alſo ſometimes extended to all arable, or corn land, in contradiſtinction from paſture.

ARX, in the antient military art, a town, fort, or caſtle, for defence of a place. *Pitiſc.* Lex. Ant. T. 1. p. 184.

The *Arx*, in antient Rome, was a diſtinct edifice from the capitol, tho' ſome have confounded the two: According to Ryckius, the *Arx*, properly ſpeaking, was a place on the higheſt part of the capitoline mount, ſtronger and better fortified than the reſt, with towers and pinnated walls; in which was alſo the temple of Jupiter Capitolinus. *Struv.* Synt. Ant. Rom. c. 11. p. 522. ſeq.

ARX alſo denoted a conſecrated place on the palatine mount, where the augurs publickly performed their office.

Some will have the *Arx* to have been the augural temple; but Varro expreſsly diſtinguiſhes between the two. *Struv.* loc. cit. c. 6. p. 276.

ARX was particularly uſed for a public place in Rome, ſet apart for the operations of the augurs. *Feſt.* de Verb Signif. in voc. *Liv.* I. c. 18. & X. c. 7. *Struv.* Synt. Antiq. c. 6. p. 274.

In which ſenſe, *Arx* amounts to the ſame with what is otherwiſe called *Auguraculum*, and *Auguratorium*, and in the camp *Augurale*.

Out of this *Arx* it was that the feciales, or heralds, gathered the graſs uſed in the ceremony of making leagues and treaties. *Liv.* I. c. 24.

ASA, among naturaliſts. The writers of the later ages have formed this word *Aſa* from the *Laſar* of the antients, and attributed it to a gum very different from that antiently known by the name they have thus corrupted.

The *Aſa* of the antients was an odoriferous and fragrant gum, and the *Aſa* of the after ages had ſo little title to this epithet, that they diſtinguiſhed it by one, expreſſing its being of an offenſive or ſtinking ſmell.

The Arabian writers, according to this diſtinction, deſcribe two kinds of *Aſa*, the one ſtinking, the other aromatick; and the modern Greeks preſerv'd the name *Aſa*, or *Laſar*, to the ſtinking gum the Latins called by that name, but added a diſtinctive epithet to expreſs its ill ſmell, and called it *Scordolaſarum*. Thus Myrepſus always calls the ſame gum *Scordolaſarum*, that the Latin writers call *Aſſafœtida*.

The commentators on theſe writers explain the words *Laſaron* and *Scordolaſaron* often by the phraſe *Opium Cyrenaicum* and *Opium Quirinacium*. Aviſenna tells us, that the *Aſſafœtida* is one of the moſt ſtinking gums in the world, and that great quantities of it are brought from Kirvan. Kirvan, with him, is *Cyrene*, and thus far, as well in the nature of the drug, as in the place of its production, this author and the commentators perfectly agree.

ASA *Dulcis*, in the materia medica, a name by which ſome authors have called the *Benjamin*, or *Benzoinum* of the ſhops. *Dale*, Pharmac. p. 303. See BENZOIN.

ASA *fœtida*—The *Aſa fœtida* plant is recommended by Mr. Lawrence to be cultivated in our fields, for the food of cattle, inſtead of clover, ſaintfoin, or other ſuch herbs as we ſow among corn, and make into hay, in the ſucceeding ſummers, and uſe as food for cattle at other ſeaſons.

This gentleman is of opinion, that the ſheep, fed on this plant, would afford mutton of a much finer flavour than any that we are at preſent acquainted with. But it ſeems ſtrange, that this ſhould be the effect of theſe creatures feeding on a plant of ſo ſtrong a ſcent, that, as the ſame author obſerves, one drachm of the freſh root ſmells more than a hundred weight of the drug, as kept by the druggiſts, and that the whole air is ſtrongly and very diſagreeably ſcented with it, wherever it grows. Upon the whole, it ſeems probable, that tho' this plant, or the cyſtiſus, or ſeveral others, might be cultivated in England for the food of cattle, yet not any one would be ſo eaſily raiſed, or make ſo great an advantage to the farmer as the ſaintfoin. *Tull*'s Huſbandry. See SAINTFOIN.

ASÆVIS *Abſolutio*. See ABSOLUTIO, *Cycl.*

ASARINA, in botany, the name of a little plant, which alone makes a diſtinct genus, having its name from the reſemblance of its leaves to thoſe of *Aſarum*. Its characters are theſe: The flower is tubular, and perſonated, ſomewhat reſembling that of the antirrhinum. From the cup of this there riſes a piſtil which is fixed in manner of a nail to the hinder part of the flower; this afterwards becomes a fruit, or capſule, divided into two cells, and containing numerous ſeeds, affixed to a placenta. *Tourn.* Inſt. p. 171.

ASAROTA, Ασαρωτα, in antiquity, a kind of painted pavements, in uſe before the invention of Moſaic work. *Plin.* Hiſt. Nat. l. 36. c. 25.

The moſt celebrated of theſe, was that at Pergamus, painted by Seſus, wherein was ſeen the appearance of crumbs, as if the floor had not been ſwept after dinner, which, according to Pliny, gave the denomination to all the reſt.

The word is formed from the privative α, and σαιρω, I ſweep. V. *Pitiſc.* Lex. Ant. T. 1. p. 187.

———*Varias ubi picta per Artes*
Gaudet humus, ſuberantq; navis Aſarota *figuris.*
Stat. Sylv. 1. 3. 55.

M. Perrault, diſſatisfied with Pliny's account, takes the *Aſarota* to have rather been a black kind of pavements, which, by reaſon of their ſpunginess, drank up all that was ſpilt on them, ſo that there was no need to ſweep them. *Perraul.* ad Vitruv. l. 6. c. 5. V. *Danet.* Dict. in voc.

ASARUM, *Aſſarabacca*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the ſtamineous kind, being compoſed of a number of ſtamina which ariſe from a cup, divided into three ſegments. The hinder part of this cup finally becomes a fruit, which is uſually of an angular figure, and is divided into ſix cells, containing angular ſeeds.

The ſpecies of *Aſarum*, enumerated by Mr. Tournefort, are theſe:

1. The common *Aſarum*. 2. The great American *Aſarum*. 3. The Virginian low broad-leav'd *Aſarum*. *Tourn.* Inſt. p. 501.

The common *Aſarum* is of conſiderable value as a ſternutatory; it is alſo ſometimes preſcribed as a vomit, and will operate violently both that way, and by ſtool. Many give it a place alſo among the diuretics, and preſcribe it, in that intention only, in ſmaller doſes. It is alſo a powerful emmenagogue, and has been recommended by authors in the gout, dropſy, and many other chronic diſorders.

ASASI, in botany, a name given, by the people of Guinea, to a tree, the leaves of which being boiled in water, and held in the mouth, cure the tooth-ach. This tree, in its form and manner of growing, reſembles the laurel; the leaves are very hard and ſtiff, and grow alternately on the ſtalks; they have ſhort pedicles, and the branches are blackiſh and rugged, but they are variegated with ſmall reddiſh ſpangles, or ſcaly protuberances. Phil. Tranſ. N°. 232.

ASBESTOS, (*Cycl.*) or ASBESTUS, in natural hiſtory, the name of a genus of foſſils, of the claſs of the Fibrariæ, the characters of which are, that the bodies of it are flexile and elaſtic, and compoſed of ſingle and continuous filaments. There are five known ſpecies of this genus, four of which have their filaments naturally collected into compact maſſes, and one which has them always naturally looſe and diſunited.

The word *Aſbeſtus* has been uſed by naturaliſts in general, as the diſtinguiſhing name not of a ſingle ſpecies, but of a whole genus of foſſils, and not only comprehending all the ſpecies, but all thoſe alſo of the amianthus, a genus to be diſtinguiſhed by its ſhort and abrupt filaments. See Tab. of Foſſils, Claſs 1. and the article AMIANTHUS.

While this was the caſe, and the word *Aſbeſtus* ſeem'd to imply only one ſpecies of body, it ſeemed very difficult to reconcile the accounts of one author with thoſe of another, or to believe the ſtories related of the manufactures of it. The antients ſeem to have been very early acquainted with the art of ſpinning, and making the longer threaded kinds of it into cloth: The art was ſuppoſed, ſoon after, to be loſt, but this for no other reaſon, than the not diſtinguiſhing that there were ſeveral kinds or ſpecies of the ſtone; and people imagining every ſtone that would bear a ſtrong fire without hurt, to be *Aſbeſtus*, and all *Aſbeſtus* to be of the ſame ſpecies, wonder'd they could not do what their forefathers had done, while the one work'd with the proper materials, a long-threaded genuine *Aſbeſtus*, the other with a very improper one, perhaps one of the ſhort-fibred amianthi. Thus the art ſeem'd loſt, while, in reality, it was only the true and right ſpecies of the ſtone that was ſo, and notwithſtanding the many very little ſucceſsful attempts which have at times been made in later ages, the perſon who will compare the ſeveral ſpecies now known, and ſelect that which the length and ſoftneſs of its threads ſhews to be fitteſt for ſuch a work, will doubtleſs find it poſſible to do more than has of late been thought poſſible with it.

In the days of Pliny there ſeems to have been no good ſpecies known. What he deſcribes under the name of *Aſbeſtus* being properly an amianthus, and that of a very poor kind, unfit to be ſpun into cloth, and he not diſtinguiſhing that his and the *Aſbeſtus* of earlier times were different ſubſtances, ſays of *Aſbeſtus* in general, that it was not to be wrought without extream difficulty. The art ſeems indeed, in his time, to have been wholly loſt, but he gives evident proofs, that it was once known, ſpeaking of cloaths made of it, which himſelf had ſeen cleaned by burning.

Dioſcorides, who wrote a little before the time of Pliny, deſcribes very accurately another ſpecies of *aſbeſtos*, one very fit for working into cloth, and accordingly ſpeaks of it as an art well known, they making it into napkins, &c. at that time, and ſeeming to have had them in pretty common uſe. Since the days of theſe authors, the art has been many times loſt, and in ſome degree found again, according to the accounts of authors; but the true ſtate of the caſe every way appears to be, that it was ſtill not the art, but the proper ſpecies only, that was loſt; whenever a tolerable good kind has appeared, there have never been wanting one or other who have ſhewed there was no great difficulty in making cloth and paper of it, if they could have it in ſufficient quantity. It is firſt neceſſary to obſerve, that, in the ſearching after this ſubſtance, the diſtinction between the *Aſbeſtus's* and amianthus's is carefully to be obſerved, the one of theſe being compoſed of the long threads, and the other of very ſhort and abrupt ones; this is their great diſtinction, and all the *Aſbeſtus's*, or long-threaded ones, are more or leſs fitted for this work, and none of the amianthi, or ſhort-threaded ones, are at all ſo.

The ſpecies of the long-threaded incombuſtible bodies, or *Aſbeſtus's*, properly ſo called, are theſe: 1. A ſoft greeniſh kind, with ſlender and crooked filaments. This is found in the iſland of Angleſea, and in ſome parts of Wales, lodged in form of horizontal veins, in a greeniſh variegated marble. 2. A whitiſh brown ſilky kind, with very long and flat filaments: This lies looſe in the earth, and is found in vaſt quantities in many of our American plantations, particularly Penſilvania and Virginia. 3. A grey ſilky kind, with long and rounded filaments. This is found near the ſurface of the earth, in many parts of the Highlands of Scotland. 4. A greyiſh green ſilky kind, with long and very ſlender filaments. This is found on and near the ſurface of the earth, and on the ſea ſhores in the iſland of Cyprus, and in ſome parts of Italy. 5. A white, looſe, thready kind, with broad filaments, never forming themſelves into maſſes, but always remaining looſe. This is found near the ſurface of the earth, in many parts of Scotland.

Theſe are the diſtinct ſpecies of proper *Aſbeſtus*, ſeparated from the amianthi, and all of theſe ſeem capable of being worked into cloth, paper, &c. The firſt kind ſeems leaſt proper for this uſe, becauſe of its ſhortneſs; and the ſecond would give trouble, by the weakneſs of its filaments, all the reſt ſeem as if they might be worked with eaſe, and of theſe, the laſt perhaps would be found preferable to all. As this is the product of our own dominions, 'tis pity ſome ingenious perſon does not heartily ſet about the recovering, by its means, ſo curious a manufacture of the antients, ſo long thought loſt. *Hill*'s Hiſt. of Foſſils, p. 101. ſeq.

ASCARIDES. See the article WORMS.

ASCENDENS *Obliquus*, in anatomy, a name given by Fabricius, and others, to a muſcle called by the generality of writers, *Obliquus internus abdominis*.

ASCENDENT *Stalk*. See STALK.

ASCENSCIONAL *Force*. See the article FORCE.

ASCESIS, Ασκησις, properly denotes exerciſe of the body. It is formed from the verb Ασκειν, uſed by the antients in ſpeaking of the ſports and combats of the athletæ. V. *Caſaub.* Exercit. ad Baron. ſec. 13. *Suic.* Theſ. T. 1. p. 549.

ASCESIS is alſo uſed by philoſophers, to denote an exerciſe conducive to virtue, or to the acquiring a greater degree of virtue. *Budd.* Anal. Hiſt. Philoſ. p. 411. ſeq.

This is particularly denominated, the philoſophical *Aſceſis*, becauſe practiſed chiefly by philoſophers, who make a more peculiar profeſſion of improving themſelves in virtue; on the model whereof the antient Chriſtians introduced a religious *Aſceſis*. The antient philoſophers had peculiar kinds of exerciſes, appropriated to ſtrengthen each kind of virtue, and to weaken each vice; particularly voluptuouſneſs, ambition, and covetouſneſs. The practices were called by the Pythagoreans *Agones*, *Baſani*, and *Aſceſes*. Buddeus has a diſſertation expreſs on the *philoſophical Aſceſis*. Exerc. Hiſt. Mor. de ΑΣΚΗΣΕΙ Philoſophica ext. ap. ejuſd. Analect. Hiſt. Philoſ. p. 409. ſeq.

ASCETERIUM, in eccleſiaſtical writers, is frequently uſed for a monaſtery, or place ſet apart for the exerciſes of virtue and religion. *Suic.* Theſ. T. 1. p. 54. *Magri.* Vocab. Eccleſ. p. 25. *Schm.* p. 75.

The word is formed from *Aſceſis*, exerciſe, or *Aſcetra*, one who performs exerciſe. Originally it ſignified a place where the athletæ, or gladiators performed their exerciſes.

In barbarous and middle age writers, we find the word *Aſceterium* variouſly corrupted; ſometimes it is written, *Aſſiſterium*; ſometimes, *Archiſterium*, *Architerium*, *Arciſterium*, *Aciſterium*, *Aſcyſterium*, &c.

ASCIA, in antiquity, an inſtrument ſuppoſed of the ax-kind, uſed in the fabric of the Roman tombs, and frequently repreſented thereon.

The formula *ſub Aſcia dedicare*, is frequently found inſcribed on antient tomb-ſtones. We alſo meet with *rogum Aſcia ne poleito*, among the antique laws of the twelve tables. Theſe expreſſions, and the figure of the *Aſcia*, as ſeen on the tombs, have puzzled ſeveral antiquaries.

Some pretend that the word *Aſcia* is compounded of an α, and σκια; and that *ſub Aſcia dedicare*, ſignified to erect a monument in the open air. Others ſuppoſe the *Aſcia* to have been a ſort of a hatchet, wherewith ordinary people poliſhed their tombs; which were only made of brick; and that this was the practice forbidden by the laws of the twelve tables: *rogum Aſcia ne poleito.* Dom. Mabillon thinks it ſignifies an ax; and that by the formula, *ſub Aſcia*, we are to underſtand the pain of death threatened to thoſe who ſhould violate the ſepulchre.

F. Meneſtrier imagines that *Aſcia* is a maſon's trowel, for which he quotes Vitruvius's architecture *macerata calx Aſcia domatur*; and that *ſub Aſcia dedicavit*, ſignifies that he who erected the monument took a trowel with mortar on it, and laid the firſt ſtone of the work; a ceremony which is practiſed to this day in great buildings. *Vitruv.* l. 7 c. 2.

Others explain *Aſcia* by a hammer, which the Gauls placed on tombs as a Taliſman, to keep them inviolable; and that they uſed certain formula's of conſecration and imprecation on this hammer, which they held in the air over the monument, conjuring that inſtrument not to aſſiſt in deſtroying a work which it had helped to raiſe.

F. Martin rejects all theſe opinions, and with probability enough affirms, that the *Aſcia* was a howe, or ſort of a pick-ax for digging up the ground, which is to this day called *Aſſados*, or *Aiſſados* in Languedoc. This *Aſcia* he pretends was not an inſtrument of common uſe, but conſecrated and employed only for digging of graves; and that it is the ſame with what Sidonius Apollinarius calls *raſtrum funebre*, wherewith the Gauls digged their graves. *Sidon. Apoll.* l. 3. Ep. 12.

This he thinks appears plainly to be the ſignification of the word, from the Latin proverb, *Ipſe mihi Aſciam in crus impegi*; which is what often happens to thoſe who work with this inſtrument. Hence alſo he explains the law of the twelve tables, wherein the *Aſcia* is mentioned: thoſe laws, he obſerves, were written when the Romans talked Greek either entirely, or in a great meaſure; for that all the terms of this law are merely Greek, not Latin: Rogus, he obſerves, is not a funeral pile, but a ditch or grave, Ῥωγὰς or Ῥωγμὸς: *Aſcia* a howe, or a pick-ax, and comes from ἄσκω or ἀσκέω to labour, cultivate, work; nor does *poleito* come from the Latin word polire, to poliſh or ſmooth, but from πολέω, to till, dig, or plow up; and in this ſenſe the Greeks ſaid δίπολος γῆ ἢ τριπολος, a piece of ground that had been twice and thrice tilled.

On this footing this famous law, which has racked the brains of all our antiquaries to explain it, contained only a prohibition to dig graves with an inſtrument of iron, or copper, ſuch as the *Aſcia*. In reality it was a tradition obſerved by the remoteſt antiquity, that no inſtrument made of thoſe metals ſhould be uſed in ſepulchres.

Dom. Martin has given a diſſertation expreſs concerning the funeral monuments of the Romans, conſecrated *ſub Aſcia*. La Relig. des Gaul. T. 2. l. 5. V. Preſ. Stat. Rep. Lett. T. 1. p. 116. ſeq.

ASCIA is alſo uſed in ſurgery, for a kind of bandage, ſomewhat oblique or crooked; whoſe form and uſe are well deſcribed by Scultetus, in his Armam. Chirurg. P. 1. Tab 54. Fig. 3. ſeq.

ASCINDOE, in botany, a name given by the people of Guinea to a ſhrub, which they uſe in medicine, boiling it in water and giving the decoction in gonorrhœas, and the like complaints. Petiver has named it the prickly Guinea ſhrub with roundiſh crenated leaves, and filamentous flowers. The leaves are about an inch wide, and about an inch and half long, they ſtand on ſhort foot-ſtalks; and at the ends of the branches. There ſtand cluſters of ſtamineous flowers, the thorns on the large branches are very ſtrong. Phil. Tranſ. N°. 232.

ASCLEPIAS, *Swallow-wort*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is bell-faſhioned, open at the mouth, and divided into ſeveral ſegments. From the cup there riſes a piſtil, which is fixed in the manner of a nail in the hinder-part of the flower, and to which there adheres a head divided into five parts. This piſtil ripens into a fruit, uſually conſiſting of two vaginæ of a membranaceous ſtructure, and opening from the baſe to the apex: this fruit contains many ſeeds winged with down, and affixed to a placenta in the manner of ſcales. It is alſo diſtinguiſhed from the apocynums and periplocas, which are the genera it is neareſt allied to, by its not yielding a milky juice. *Tournef.* Inſt. p. 93.

The ſpecies of *Aſclepias* enumerated by Mr. Tournefort are theſe:

1. The common white flowered kind. 2. The narrow-leaved, yellow-flowered kind. 3. The black-flowered kind. 4. The African kind, with thick pods called by ſome *fritillaria craſſa*. And 5. The African *Aſclepias* with longer and leſs dentated leaves.

For the medical virtues of *Aſclepias*, ſee VINCETOXICUM.

ASCOGEFYRUS, Ασκογεφυρος, in middle-age writers, denotes a bridge ſupported on bags made of leather, or bullocks hides. Such bridges appear to have been in uſe among the antients [a], and to have given the denomination to a tribe of Arabs, hence called *Aſcitæ* [b].—[a *Plin.* Hiſt. Nat. l. 6. c. 9. b *Du Cange*, T. 1. p. 350. *Aquin.* p. 88. ſeq.]

Hence alſo the appellation *Aſcomanni*, given to pirates, by reaſon of their uſing bridges, or rather boats made of leather; from *Aſcos*, *Utris*, and *Man.* Id. ibid.

ASCOLIASM, *Aſcoliaſmus*, in antiquity, a kind of game, wherein they held one foot from the ground, and danced, hopping on the other. *Pollux.* l. 9. c. 7. *Pitiſc.* T. 1. p. 188.

He that held the ſport longeſt, and made the largeſt hops, was the conqueror. Sometimes the gameſters purſued and brought each other down. Another ſpecies of this exerciſe was performed at the *Aſcolia*. See ASCOLIA, *Cycl.*

ASCRIPTI, or ADSCRIPTI, in antiquity, thoſe who entered their names in the colonies, and became coloni. *Feſt.* De Verb. Signif. in voc. *Calv.* Lex. Jur. p. 43. b.

ASCRIPTITII, or ADCRIPTITII, a kind of villains who, coming from abroad, ſettle in the lands of ſome new lord, whoſe ſubjects or ſervants they commence; being ſo annexed to the lands, that they may be transferred and ſold with the ſame. *Du Cange*, Gloſſ. Lat. T. 1. 351. *Calv.* Lex. Jur. p. 43.

Theſe are more peculiarly denominated *Aſcriptitii glebæ*; ſometimes *Servi glebæ*.

The *Aſcriptitii* are annexed to the lands they hold, ſo that they cannot ſtir from it; beſides, that whatever they acquire accedes to the benefit of the lord of the land. *Calv.* p. 43. b.

ASCRIPTITII is ſometimes alſo uſed in ſpeaking of aliens or foreigners, newly admitted to the freedom of a city or country. *Calv.* Lex. Jur. p. 94.

ASCRIPTITII was alſo uſed in the military laws, for the recruits appointed to ſupply the loſſes of the legions, called alſo *Accenſi*. *Feſt.* de Verb. Signif. *Calv.* Lex. Jur. in voc. p. 44. a. *Aquin.* Lex. Milit. p. 89. a. See ACCENSI, *Cycl.* and *Suppl.*

Salmaſius will have *Aſcriptitii*, or *Aſcriptivi*, to have been uſed for thoſe who were only entered into the muſter-rolls, to receive the benefit of ſervice, without any actual attendance; otherwiſe called *Supernumerarii*. V. *Aquin.* loc. cit.

ASCRIPTIVI, in antiquity. See ASCRIPTITII.

ASCUS, in natural hiſtory, a word uſed by De Laet, as the name of that pouch or bag which nature has given to the opoſſum, or poſſum, as our common people in America call it, for the receiving the young ones into in time of danger.

This *Aſcus* is a ſkinny bag, ſeparate from the reſt of the body, and only adhering by a membrane to the bottom of the belly. It is a vulgar error to ſuppoſe, that the young of this animal are taken back again into the womb, in time of danger, they being only at liberty to creep in and out of this bag, prepared on purpoſe for them. Scaliger calls the bag ſcrotum ſubventrale, and Peter Martyr, uterus exterior; by which we may ſee how confuſed and improper ideas theſe authors have had of the nature and uſe of this part. See OPOSSUM.

ASCYRUM, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, conſiſting of ſeveral petals, arranged in a circular form. The cup is alſo compoſed of ſeveral leaves, and from it there ariſes a piſtil, which finally becomes a pyramidal fruit, conſiſting of five cells, and containing a great number of oblong ſmall ſeeds.

Authors in general have not uſed the word *Aſcyrum* in this determinate ſenſe, but have made it the name of two or three of the ſpecies of hypericum; but Mr. Tournefort, who has aſcertained it in this manner to a diſtinct genus, enumerates the three following ſpecies of it;

1. The large flowered *Aſcyrum*, with very large ſeed-veſſels. 2. The ſmall-leav'd *Aſcyrum*, with very large flowers, deſcribed in Wheeler's Itinerary; and 3. The upright willow-leav'd *Aſcyrum*, with large flowers. *Tourn.* Inſt. p. 236.

ASELLUS, in zoology, the name of a genus of fiſhes, including the cod and whiting kind. The principal ſpecies of this are, 1. The *Aſellus major*, or common cod-fiſh. 2. The *Aſellus Huitingo Pollachius*, or whiting-pollack. 3. The *Aſellus niger*, called the coal-fiſh, and, in Cornwal, the rawling pollack. 4. The *Aſellus luſcus*, or blind whiting, called

called in Cornwall, the blind, and more usually, the bib. 5. The *Asellus Æglefinus*, or haddock. 6. The *Asellus mollis*, or common whiting. 7. The *Asellus mollis minor*, the mollo of the Venetians. 8. The *Asellus striatus*, called by the Germans, the darsch. 9. The *Asellus flavescens*, called by the Germans, the blank. To which may be added the *Asellus merlucius*, or hake; and the *Asellus longus*, or ling. All which see under their proper heads. *Willughby*'s Hist. Pisc. p. 160.

ASELLUS is also a name used by many authors for the common millepedes, called in English, woodlice and sows. *Johns.* de Insect. 126. See MILLEPEDES, *Cycl.* and *Suppl.*

ASHES (*Cycl.*)—The *Ashes* of all kinds of fuel make a fine manure for lands. They are the most proper for cold and wet lands, and should be kept dry till the time of using them, that the rain may not wash out their salts. One load of dry *Ashes* are found by the farmers to go as far as two loads that have been more carelesly kept. The wetting them moderately sometimes with urine, or soap-suds, adds to their virtue. Six loads of common *Ashes* are generally allowed to an acre, but two load of those, preserv'd in this manner, will be sufficient for the same quantity of ground.

The advantage that vegetable *Ashes* are of to land is abundantly seen in the profit of the farmer, by burning his stubble, *&c.* But sea-coal *Ashes* are the best for cold lands, and their virtue is found to be the most lasting of that of any kind.

Ashes are a great improvement for grass ground, as well as ploughed lands. On the former they are to be strewed in April, and on the latter, as soon as the corn is sown.

Soap-Ashes, after the soap-boilers have done with them, are found also to be of very great advantage to cold and sowre lands. The worst sort of land we have, which is naturally over-run with furze and heath, has been tried with this manure, in large quantities, and vast crops of wheat have been obtained from it for six years together. *Mortimer*'s Husbandry.

Kiln-*Ashes*, such as are made of straw, furze, *&c.* are as good as any, but they are very light. The maltsters in the West of England sift these over their corn and grass, but being very light, this must by no means be done in windy weather, and succeeds best of all when done just before rain or snow.

Pot-ashes, after the pot-ash-men have done with them, are also of great service; but as they have been, in a great measure, deprived of their salt, they are to be laid on in considerable quantity.

Turf-ashes are very good for all sorts of land, but especially for clay land; but these are much the better, when mixed first with lime. *Miller*'s Gardener's Dict.

Pot-ASHES. See POT-ASHES.

ASIARCHA, Ασιαρχης, in antiquity, the superintendent of the sacred games in Asia. *Montfauc.* Palæogr. l. 2. c. 6. p. 161.

The *Asiarcha* differed from the *Galatarcha*, *Syriarcha*, &c. This dignity is also called *High Priest of Asia*, Αρχιερευς Ασιας, in the Latin version of the New Testament, *Prince of Asia*, *Princeps Asiæ*. Act. c. xix. v. 31. τινες δε και των Ασιαρχων. Quidam de Asiæ principibus. *Calm.* D. Bibl. p. 211. Not.

'Tis disputed to what Asia, or division of the East, the *Asiarchs* were allotted; whether to Asia Minor, or the Proconsular Asia. V. *Walc.* Parerg. Acad. p. 152.

Some will have the *Asiarchs* to have been persons of rank, chosen in the way of honour, to procure the celebration of the solemn games, at their own expences. V. *Grot.* and *Hamm.* Annot. ad Act. xix. 31. *Calm.* loc. cit.

ASIICTOS, in natural history, a name given by the antients to a stone, described to have been of a black colour, variegated with spots and veins of red.

Pliny tells us this stone had the remarkable property of retaining heat a long time, and that, when once warmed, it would not grow cold again in a week. Salmasius quarrels with the word, and says, that it ought to be *Apsyctos*, αψυκτος.

ASILUS, in zoology, the name used by many for the *Luteola*, or *Regulus non cristatus*, an extremely small bird, common among willows. *Ray*'s Ornithology, p. 164. See LUTEOLA.

ASINARII, an appellation given, by way of reproach, to the antient Christians, as well as Jews, from a mistaken opinion, among heathens, that they worshipped an ass.

The appellation was originally given to the Jews, and only became applied to the Christians, by confounding the two religions: The Jews were charged with keeping a golden ass's head in the sanctuary of the temple, to which, on certain occasions, they paid adoration; in memory of a herd of asses, which, in their passing through the wilderness, shewed Moses the way, under a cruel want of water, to a spring. V. *Tacit.* Hist. l. 5. c. 3.

Some had even the impiety to represent Christ with an ass's ears, and one foot hoofed, holding a book, with the inscription *Deus Christianorum* ονοχηλος. *Crinit.* de Honest. Discipl. l. 1. c. 9.

ASINIUS *Lapis*, a name given by some writers of the middle ages, to a stone, said to be found in those places frequented by the wild ass.

The description of it is, that it is white, with a cast of yellow; its figure roundish or oval, and its usual size that of a walnut; and that it was soft in comparison of the generality of stones, and was subject to leave holes on the surface, which did not penetrate thro' its whole substance; and finally, that where it was broken, it appeared bright and glossy, and of a pale yellowish colour.

Its virtues were against disorders of the head, the bites of venomous animals, and poisons. There does not seem to be any stone now known that perfectly resembles this, according to the description; but if we consider the general inaccuracy of the writers of these times, it appears more than possible, that this stone may have been the *Bezoar*, badly described. See BEZOAR.

ASINUS *Piscis*, in zoology, a name given by some authors to the *Æglefinus*, or common haddock, called also *Onos*. *Willughby's* Hist. Pisc. p. 170. See the article ÆGLEFINUS.

ASIO, in zoology, a name given by Aldrovandus, and others, to the otus, or lesser horn owl. *Aldrovand.* de Avis. See the article OTUS.

ASKER, a name used in some parts of England for the water-newt, or Elf. *Ray*'s Engl. Words. p. 2.

ASLANI, in commerce, a name given to the Dutch doller, current in most parts of the Levant. *Savar.* Dict. Comm. T. 1. p. 166.

The word is also written corruptly, *Asselani*. It is originally Turkish, and signifies a lion, which is the figure stamped on it. The Arabs taking the figure of the lion for a dog, call it *Abukesh*.

The *Aslani* is silver, but of a base alloy, and oftentimes counterfeit. It is current for 115 or 120 aspers. See ASPER.

ASP, in natural history, a small poisonous kind of serpent, whose bite gives a speedy but easy death.

It is said to be thus denominated from the Greek ασπις, shield, in regard to its manner of lying convolved in a circle, in the center of which is the head, which its exerts, or raises, like the umbo or umbilicus of a buckler.

This species of serpent is very frequently mentioned by authors, but so carelesly described, that it is not easy to determine which, if any of the species known at present, may properly be called by this name. It is said to be common in Africa, and about the banks of the Nile: And Bellonius mentions a small species of serpent which he had met with in Italy, and which had a sort of callous excrescence on the forehead, which he takes to have been the *Aspis* of the antients. *Ray*'s Syn. Anim. p. 288. See ASP.

Naturalists mention three species of *Asps*; the first called *Cherſæa*, the second *Chelidonia*, and the third *Ptyas*, the most fatal of all. V. *Gall.* de Theriac. c. 8. *Aldrovand.* l. de Serp. & Drac. c. 7.

It is with the *Asp* that Cleopatra is said to have dispatched herself, and prevented the designs of Augustus, who intended to have carried her captive to adorn his triumphal entry into Rome [a]. But the fact is contested: Brown places it among his vulgar errors. The indications of that queen's having used the ministry of the *Asp*, were only two almost insensible pricks found in her arm. In reality, Plutarch says, it is unknown what death she died of [b].—[[a] *Ægin.* l. 5. c. 19. [b] V. *Brown*, Vulg. Err. l. 5. c. 12. p. 212.]

Lord Bacon makes the *Asp* the least painful of all the instruments of death: He supposes its poison to have an affinity to opium; but to be less disagreeable in its operation [a]; which does not so well quadrate with the description of the symptoms given by Dioscorides and others. Immediately after the bite, the sight becomes dim, a sensible tumour arises, a moderate pain is felt in the stomach [b].—[[a] *Bac.* Nat. Hist. Cent. 7. §. 643. [b] *Dioscor.* l. 6. c. 54.]

Matthiolus adds, that the bite is followed by a stupor of the whole body, paleness, coldness of the forehead, continual yawning, nictitation of the eyelids, inclination of the neck, heaviness of the head, sinking into a profound sleep, and lastly convulsions. *Matthiol.* Comm. ad loc. cit. *Dioscor.*

The bite of the *Asp* is said by Aristotle to admit of no remedy. Pliny and Ægineta allow of no other cure, but to cut off the wounded part. Others recommend burning the part, with the internal use of hot alexipharmic medicines. V. *Kirch.* Mund. Subter. l. 9. §. 2. T. 2. p. 143. *Burggr.* Lex. Med. T. 1. p. 1156. seq.

The antients had a plaister called δι' Ασπιδων, made of this terrible animal, of great efficacy as a discutient of strumæ, and other indurations, and used likewise against pains of the gout. The flesh and skin, or exuvia of the creature, had also their share in the antient materia medica. *Gal.* Theriac. ap. *Aldrov.* loc. cit. p. 213. Aët. l. 15. *Brun.* & *Burggr.* Lex. Med. in voc.

ASPARAGUS, in botany, the name of a genus of plants, the characters of which are these: The flower is of the rosaceous kind, being usually composed of six leaves, arranged in a circular form; from the center of the flower arises a pistill, which finally becomes a soft fruit, or a roundish berry, containing a number of hard seeds. To this it may be added, that the leaves are always fine and slender.

The species of *Asparagus*, enumerated by Mr. Tournefort, are these: 1. The common garden *Asparagus*. 2. The fine-leav'd

leav'd wild *Aſparagus*. 3. The ſea *Aſparagus*, with thicker leaves. 4. The ſharp-leav'd *Aſparagus*, called by many authors, *Corruda*. 5. The prickly *Aſparagus*, with four or five ſpines at every inſertion. 6. The prickly *Aſparagus*, with larger thorns. 7. The African prickly *Aſparagus*. 8. The great ſpreading prickly *Aſparagus* of Ceylon. 9. The Spaniſh *Aſparagus*, with very large prickles. *Tourn.* Inſt. p. 300.

ASPARAGUS was alſo uſed by the antient Greeks, to expreſs not only the young ſhoots of the plant of that name, but any other young ſprouts of an eatable plant. The ſprouts of the ſeveral kinds of cabbage were particularly expreſſed by this word, or ſometimes by the compound term *Crambaſparagus*. There was an opinion among the old phyſicians, that the young ſhoots of the cabbage were good in diſtemperatures of the eyes; but that, when eaten to exceſs, they would exulcerate the kidneys and bladder. Athenæus has given their opinions on this ſubject at large, from the oldeſt writers, in his chapter of the cabbage; and Pliny, according to a too frequent cuſtom with him, has tranſlated theſe accounts; but has attributed all the virtues and danger to the common *Aſparagus*. He alſo ſays, that it is a provocative to venery. This account is taken from the Greek writers ſaying the ſame of the *Orminum* or *Horminum*, which he ſuppoſes to have been the ſame with *Aſparagus*, becauſe the young ſhoots of *Aſparagus* were called *Ormena* by the Greeks. They did not however attribute this word only to the ſhoots of the *Aſparagus*, but all other young ſhoots of eſculent plants were alſo called *Ormena*.

ASPARAGUS is a medicinal plant, which furniſhes one of thoſe, called, the five opening roots.

Aſparagus, popularly called *Sparrow-graſs*, is a known diuretic; its top, or head, taken in the way of food, readily diſcovers itſelf in the ſmell of the urine [a]: But its root is ſtill more ſtrangely endued with that quality, as containing more of the ſalt from which it is derived. Hence it becomes, among us, an ingredient in all compoſitions, intended to cleanſe the viſcera, and guard againſt jaundices, dropſies, *&c.* It is alſo of ſome uſe as a pectoral; and makes a chief ingredient in the ſyrup of marſhmallows, againſt the ſtone [b]. Tho' foreign phyſicians ſpeak more ſparingly of the uſe and virtues of this medicine [c].—[[a] V. *Boyle*, Phil. Work. Abr. T. 3. p. 570. [b] *Quinc.* Diſpenſ. P. 2. §. 5. n. 342. [c] *Junck.* Conſp. Therap. tab. 5. p. 162. and *Burggr.* Lex. Med. in voc.]

For the propagation, cultivation, *&c.* of this plant, ſee the article SPERAGE.

ASPASIA, among antient phyſicians, a conſtrictive medicine for the pudenda muliebria. It conſiſted only of wool, moiſtened with an infuſion of unripe galls. V. *Caſtel.* Lex. Med. in voc.

ASPASTICUM, Ασπαστικὸν οἰκον, in eccleſiaſtical writers, a place, or apartment, adjoining to the antient churches, wherein the biſhop and preſbyters ſat to receive the ſalutations of the perſons who came to viſit them, deſire their bleſſing, or conſult them on buſineſs. *Bing.* Orig. Eccleſ. l. 8. c. 7. §. 8. *Magri.* Vocab. Eccleſ. p. 25. *Suic.* Theſ. T. 1. p. 556.

This is alſo called *Aſpaticum*, *Diaconicum*, *Receptorium*, *Metatorium* or *Meſatorium*, and *Salutatorium*; in Engliſh, *Greeting-Houſe*.

ASPER, (*Cycl.*) in ichthyology, a ſmall fiſh caught in the Rhone, ſo called from the roughneſs of its ſcales. Its head is large, in proportion to its body, and of a pointed ſhape. It has no teeth, but its jaws are ſharp to the touch. It is of a dark red colour, with large black ſpots. It is good to eat, being eſteemed apperitive. V. *Lemery*, des drog. in voc.

ASPER is alſo a Turkiſh coin, three of which make a medine. *Pocock*'s Egypt, p. 175. See MEDINE.

ASPERGILLUM, in antiquity, a long bruſh made of horſe-hair, fixed to a handle, wherewith the luſtral water was ſprinkled on the people in luſtrations and purifications. *Horſl.* Britan. Rom. l. 2. c. 1.

This is alſo denominated *Aſpergile*, and *Aſperſorium*. *Pitiſc.* Lex. Ant. T. 1. p. 191.

The antients, in lieu of a bruſh, made uſe of branches of laurel and olive.

ASPERGILLUM is alſo uſed in eccleſiaſtical writers, to denote the inſtrument in Romiſh churches, wherewith holy water is ſprinkled. *Magri.* Vocab. Eccleſ. p. 25.

The *Aſpergillum* is uſually made of metal, ſometimes of gold itſelf, with hairs at the end. Antiently, in lieu hereof, they uſed a fox's tail. The Greeks uſe branches of ocymum; the Latins, on Holy Thurſday, hyſſop.

ASPERGELLUS, in botany, the name given by Micheli to that genus of moſſes called, by Dillenius and others, *Byſſus*. Linnæus preſerves the name of *Byſſus* to theſe plants, but he removes them out of the claſs of moſſes, and places them under the general ſeries of fungus's, defining them to be fungus's compoſed of diſtinct capillary fibres, without knots.

ASPERIFOLIOUS, or ASPERIFOLIATE *Plants*, according to Mr. Ray, make a diſtinct genus; the characters of which are, the having the leaves alternately placed on the ſtalks, and producing, after every flower, four ſeeds. They all poſſeſs the ſame general virtues, and are ſub-aſtringent, and uſeful both internally and externally, as agglutinants.

ASPERJULA, a medicinal plant, reputed warm, and drying, recommended as an hepatic, and detergent.

This is alſo called *Aſpergula odorata*, and *Rubeola montana odorata*; in Engliſh, *Woodruffe*.

The antients directed it externally in cataplaſms, to aſſuage and diſcuſs tumours, and applied it to the feet to promote delivery. But the moderns own no ſuch qualities in it; nor do they much uſe it internally. See ASPERULA.

ASPERUGO, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is of a rotated form, and divided into ſeveral ſegments at the edge. The cup is ſhaped like a ſort of baſin, and from it ariſes a piſtill, which is fixed like a nail to the lower part of the flower, and is ſurrounded by four Embryo's, which afterwards become as many ſeeds, reſembling a viper's head in ſhape, and remaining in the cup, which becomes much enlarged.

The ſpecies of this genus are only two.

1. The common *Aſperugo*, which has been called by ſome, the procumbent bugloſs; by others, a ſort of echinum, and by many, a hound's-tongue, and ſuppoſed to be the topiaria of Pliny. 2. The tender ſtalk'd *Aſperugo*, with white flowers. *Tourn.* Inſt. p. 135.

The ASPERUGO, in the Linnæan ſyſtem of botany, is characterized thus: The cup is an erect perianthium, conſiſting of one leaf, divided into five ſegments at the edge, and having two little jaggs between the ſeveral ſegments. This remains when the flower is fallen. The flower is compoſed of only one petal, in form of a cylindric tube, very ſhort, and terminated by five ſlight ſegments; the opening of the flower is covered by five ſmall convex prominent ſcales, converging towards each other. The ſtamina are five filaments, very ſhort, and placed in the opening, or mouth of the flower. The antheræ are of an oblong form, and covered. The piſtil has four flatted germina; the ſtyle is ſlender and ſhort; the ſtigma is obtuſe. The cup ſerves in the place of a fruit; it is large, erect, compreſſed, and ſhut together in the manner of two parallel planes, and ſhews, on its extreme edge, five prominent ſegments. The ſeeds are four in number, and oblong, and, when view'd together, they appear flatted. The eſſential character of this genus is the figure of the cup. *Linnæi*, Genera Plantarum. p. 61.

ASPERULA, *Woodruffe*, in the Linnæan ſyſtem of botany, this makes a diſtinct genus of plants, the characters of which are, that the calyx is a very ſmall perianthium, ſituated upon the germen, and divided into four ſegments. The flower is compoſed of one petal, which is a cylindric tube of ſome length, divided into four ſegments at the end, the ſegments long, obtuſe, and bent backward. The ſtamina are four filaments placed at the top of the tube. The antheræ are ſimple. The germen of the piſtil is double, roundiſh, and placed below the receptacle. The ſtyle is ſlender, and bifid at the end. The ſtigmata are headed. The fruit is compoſed of two dry globoſe bodies, growing together. The ſeeds are ſingle, roundiſh, and large. *Linnæi* Genera Plantarum, p. 25.

The leaves and roots of this plant dried, are eſteemed aperient and diuretic; they are recommended in the obſtructions of the liver, and are thence ſuppoſed a great medicine in the jaundice.

ASPHALTA, in natural hiſtory, the name of a genus of foſſils, the characters of which are theſe: They are ſolid, dry, opake, inflammable ſubſtances, found in detach'd maſſes, of no regular ſtructure, nor viſible grain, breaking with equal eaſe in any direction, very light, not very hard, fuſible, and readily inflammable, burning ſome time with a greeniſh white flame, and leaving a reſiduum of white aſhes.

Of this genus there are only three known ſpecies. 1. A ſhining black kind, called the *Bitumen Judaicum*, or Jews pitch. This is of a deep black, of a leſs offenſive ſmell than the other kinds, and is found in large lumps in many parts of Egypt. 2. A hard ſtinking black ſpecies: This is a much more coarſe and foul kind, and is very common on the ſhores of the dead ſea, and in all the country thereabouts; but is not peculiar to that part of the world, being found alſo in France, Italy, and many other places: This yields an oil, which is an excellent cement, and is ſuppoſed to have been that uſed in building the walls of the antient Babylon. The third is a browniſh black ſtinking kind. This is the coarſeſt of all, and is common in Germany, and in ſome parts of England, particularly in Shropſhire, where it is called the pitch-ſtone. *Hill*'s Hiſt. of Foſſils, p. 414. See ASPHALTOS, *Cycl.*

ASPHALTIS *Water*. See *Dead* SEA.

ASPHODELUS, *Aſphodel*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the lilliaceous kind, but conſiſts of only one petal, divided into ſix ſegments. The piſtil ariſes from the center of the flower, and finally becomes a fruit of a ſomewhat roundiſh, yet three-cornered form, and of a fleſhy texture. This, when ripe, opens at the point, and ſhews that it is compoſed of three cells, each of which contains a number of triangular ſeeds.

The ſpecies of *Aſphodel*, enumerated by Mr. Tournefort, are theſe:

1. The larger white-flowered branched *Aſphodel*, called the male *Aſphodel*. 2. The ſmaller white-flowered branched *Aſphodel*. 3. The ſingle-ſtalk'd not branched *Aſphodel*. 4. The purple *Aſphodel*, with ſpotted leaves. 5. The broad-ſtalked *Aſphodel*, with rough flatted leaves. 6. The yellow-flowered yellow-rooted *Aſphodel*. 7. The ſmaller narrow-leav'd yellow-flowered African *Aſphodel*. 8. The yellow Italian ſpiral *Aſphodel*, with large flowers. 9. The ſmalleſt white *Aſphodel*; and 10. The *Aſphodel*, with fiſtulous leaves. *Tourn.* Inſt. p. 343.

The ſeveral ſorts of this plant all flouriſh very well in any ſoil that is not too wet, which is ſubject to rot the roots in winter; and the way to increaſe them, is by parting their roots in Auguſt, before they ſhoot up their freſh green leaves. They may alſo be raiſed from ſeeds ſown in Auguſt, and the Auguſt following the plants produced from theſe may be tranſplanted into beds, and will produce flowers the ſecond year. They muſt not be planted in ſmall borders, among tender flowers, for they will draw away all the nouriſhment, and ſtarve every thing elſe. *Miller*'s Gardener's Dict.

The roots of *Aſphodel* are of an acrimonious taſte, and heating quality; being drank, they promote urine, and the menſes; and the weight of a dram taken in wine, is uſed with ſucceſs in pains in the ſide, coughs, convulſions, and ruptures. It is good againſt bites of ſerpents, and makes a good cataplaſm for foul ſpreading ulcers, inflammations, *&c.* The aſhes of the burnt root, rubbed on an alopecia, cauſe new hair to ſpring. V. *Lemery*, des drog. and *James*, Dict. Med. in voc.

ASPHURELATA, in natural hiſtory, a term uſed by Dr. Hill, to expreſs thoſe metallic foſſils which are fuſible by fire, and not malleable in their pureſt ſtate. Theſe have been uſed to be confounded with the metallic ſalts, and ſeveral other different bodies which contain metalline particles, under the little determinate name of ſemi-metals.

The *Aſphurelata* are all, in their native ſtate, penetrated by, and intimately mixed with, ſulphur, and other adventitious matters, and reduced to the ſtate of what is commonly called ore. *Hill*'s Hiſt. of Foſſils, p. 622.

Of this ſeries of foſſils there are only five diſtinct bodies. Theſe are antimony, biſmuth, cobalt, zink, and cinnabar. Which ſee under their heads.

ASPHYXIA, Ασφυξια, is uſed by antient phyſicians, to denote a privation, or ceſſation, of the pulſe, through the whole body, and all its arteries. *Caſt.* Lex. Med. in voc.

In ſtrictneſs, no ſuch ceſſation can ever happen, except in caſe of death; but in ſome other caſes, the pulſe is found ſo remiſs and languid, as not to be perceivable by the touch.

Hence the *Aſphyxia* is conſidered as an attendant of deep faintings, or deliquiums; and amounts to much the ſame with what is otherwiſe called *Lipopſychia* or *Syncope*.

ASPHYXIA is alſo uſed by ſome for a privation of pulſe in ſome one part of the body, *e. gr.* an arm, or the like. *Burggr.* Lex. Med. in voc.

ASPILATES, or ASPLENITES, in the writings of the antients, the name of a ſtone, famous for its virtues againſt the ſpleen, and many other diſorders; it was to be applied externally, and faſtened on to the part with camel's hair. Theſe, and the like accounts of virtues in ſtones, are, at this time very juſtly laughed out of the world. It is not eaſy to ſay what ſtone, of thoſe known to us at preſent, was meant by the antients under this name; all the account they have left us of it being, that it was of a flame colour, and that it was found in Arabia, ſometimes in the earth, and ſometimes in the neſts of certain birds. They mention alſo another kind of it, which was of a ſilvery white.

ASPIS, the *Aſp*, in zoology. See ASP.

ASPLENIUM, *Miltwaſt*, in botany, the name of a genus of plants, the characters of which are theſe: The leaves are of a peculiar figure, differing from thoſe of all the others of the ſame claſs, in their having a ſinuated margin. The flowers are not diſcovered, but the under part of the leaf is found thick covered with ſcales, from under which there emerge a ſort of globular capſules, ſurrounded each with an elaſtic ring, which, by its contracting, burſts the capſules, and diſperſes the ſeeds.

The ſpecies of *Aſplenium*, enumerated by Mr. Tournefort, are theſe:

1. The common *Aſplenium*, or ceterach. 2. The branched *Aſplenium*. 3. The great branched African *Aſplenium*, with ſhining ſtalks. 4. The tall hairy American *Aſplenium*. 5. The propendent curled American *Aſplenium*. *Tourn.* Inſt. p. 544.

ASPLENIUM, in the Linnæan ſyſtem of botany, is the name of a very large genus of capillary plants, taking in, beſides the ſpleenworts, uſually ſo called, the lingua cervina, or hart's tongue, and the trichomanes, or Engliſh maiden-hair, with all the ſpecies of each. The character of this genus is, that the fructifications are diſpoſed in right lines, under the diſk of the ſeveral leaves. See the articles PHYLLITIS and TRICHOMENES.

ASPOLATHUS, in botany, a name by which ſome authors have called the *Acacia*. *Ger.* Emac. Ind. 2. See ACACIA, *Cycl.* and *Suppl.*

ASPRATITES *Piſces*, in middle-age writers, denote ſhell-fiſh, of the ragged or cruſtaceous kind. *Du Cange*, Gloſſ. Lat. T. 1. p. 358.

In which ſenſe they ſtand oppoſed to *Leieſtria*.

Others will have the word denote thoſe which reſide in ſtony places of rivers, *&c.*

In which ſenſe it amounts to the ſame with *Saxoſi*.

ASPREDO, in ichthyology, a name given by Geſner to the *Cernua fluviatilis*, called by us, in Engliſh, the *Ruffe*.

It is a genuine ſpecies of pearch, and is diſtinguiſhed, by Artedi, by the name of the pearch with one back finn, and with the cavernous head. See CERNUA.

ASPRIS, in botany, a name uſed by ſome authors for the bitter oak, called *Cerrus*, *Cerris*, and *Ægilops*, by other writers. *J. Bauhin*, Vol. 1. p. 277.

ASS, a well known four-footed animal, of conſiderable uſe.

Ass, in antiquity. The coronation of the *Aſs*, was a part of the ceremony of the feaſt of Veſta, wherein the bakers put bread crowns on the heads of theſe quadrupeds; *Ecce coronatis panis dependet Aſellis. Ovid.* Faſt. l. 6. v. 311.

Hence, in an antient calendar, the ides of June are thus denoted; *Feſtum eſt Veſtæ. Aſinus coronatur!*

This honour, it ſeems, was done the beaſt, becauſe, by its braying, it had ſaved Veſta from being raviſhed by the lampſacan God. Hence the formula, *Veſtæ delicium eſt Aſinus.*

In the conſualia, horſes, as well as aſſes, had the honour of a coronation; perhaps on account of the Sabine women, whom the Romans brought home on theſe beaſts. Some have aſked for the affinity between the god of council, and an *Aſs?* 'Tis anſwered, both are grave and deliberative. Hence, among the cabbaliſt Jews, the *Aſs* is the ſymbol of wiſdom. *Pitiſc.* Lex. Ant. T. 1. p. 191.

Order of ASSES, *Aſinorum Ordo*, a denomination given to the Mathurins, or Trinitarians, by reaſon they were antiently obliged, in travelling, to ride on *Aſſes*, not horſes. *Du Cange*, Gloſſ. Lat. T. 1. p. 353. *Schmid.* Lex. Eccleſ. p. 76.

This obligation was ſet aſide, by a new rule given the order by pope Clement in 1267.

ASSA *Dulcis* and *Fœtida*. See the article ASA.

ASSABA, the name given by the people of Guinea to a ſhrub which they are very fond of, for its medicinal virtue; they boil it in water, and rub it on a bubo, and it proves a cure. Phil. Tranſ. N°. 232.

ASSAC, or ASSAX, in the materia medica of the antients, the name given by the Arabians to the gum ammoniac of the Greeks; but by many of the qualities attributed to this drug, it does not appear to be the ſame that is now called ſo.

ASSAPOORY, in natural hiſtory, a name given by the people of the Eaſt Indies to a peculiar ſpecies of ſlate, which they uſe in medicine, reducing it to powder, and ſtrewing this on burning coals, that the ſick perſon may receive the fumes of it. It is principally uſed to children, when they are diſordered by taking cold. The ſmell of it, while burning, is very offenſive.

ASSARIUM, ασσαριον, denotes a ſmall copper coin, being a part or diminutive of the *As*.

The word ασσαριον is uſed by Suidas indifferently with οβολος, and νομισμα, to denote a ſmall piece of money; in which he is followed by Cujacius, who defines ασσαριον by *Minimus Æris nummus. Cujac.* Obſerv. l. 7. c. 33.

We find mention of the *Aſſarion* in the goſpel of St. Matthew, c. x. v. 29.

Among Greek writers of the middle age, we frequently find *Aſſarium*, and Κοδραντης for quadrans, uſed as ſynonimous. Thus *Aſſarium uncias quatuor*; *Quadrans uncias quatuor*[a]. Tho' Seb. Paulus, from a paſſage in Marcellus Empiricus, concludes, that the *Aſſarium* was, in reality, only a fourth part of the uncia[b]. Gronovius, from a paſſage of St. Epiphanius, infers, that there were two kinds of *Aſſaria*; one of ſilver, called ασσαριον τω αργυρω, or *Aſſarium Argenteum*, equivalent to the Attic drachm, or the ſix thouſandth part of a talent; the other of copper, ασσαριον χαλκω, equivalent to the tenth part of the *Obolus*, or the ſixtieth part of a *Denarius*[c].—[[a] *Euſeb.* περι ταθμων. [b] V. *Mantiſſ.* ad Beverin. p. 231. [c] V. *Paul.* Add. ad Beverin. de Ponder. p. 32. ſeq.]

ASSARON, an antient Jewiſh meaſure of capacity, equal to the tenth part of the Ephah. *Calm.* D. Bibl. T. 1. p. 217. See EPHAH.

The *Aſſaron* is the ſame with what is more frequently called *Omer*, or *Gomer*.

Joſephus calls it Εσσαρον; in the Hebrew it is alſo written *Aſſarith*. V. *Arbuth.* Tabl. p. 101.

ASSATH, or ASSACH, in the antient Welch cuſtoms, a kind of purgation, wherein a party accuſed purged himſelf by the oath of three hundred compurgators. *Spelm.* Gloſſ. p. 46.

ASSAY-*Ballance* (*Cycl.*)—The flat pieces of glaſs often placed under the ſcales of an *Aſſay-Ballance*, ſeem, by their power of electricity, capable of attracting, and thereby making the lighter ſcale preponderate, where the whole matter weighed is ſo very ſmall. See Phil. Tranſ. N°. 480. p. 245.

The electricity of a flat ſurface of about three inches ſquare, has been known to hold down one ſcale, when there were about two hundred grains weight in the other. Lib. cit. N°. 479. p. 98.

ASSERAC, among the Turks. See ASSIS.

ASSERIDA, in botany, a name given by the people of Guinea to a kind of ſhrub, the leaves of which being chewed, are a

cure

cure for the colics to which that people are ſo ſubject. Phil. Tranſ. N°. 232.

ASSIDENT *Sign*, *ſignum aſſidens*, in medicine, a ſymptom which uſually attends a diſeaſe, but not always. *Caſt.* Lex. Med. in voc.

Thus a dry rough tongue, thirſt, and watching, are *Aſſident ſigns* in an ardent fever.

In this ſenſe *Aſſidents* differ from *Pathognomonics*, which are inſeparable from the diſeaſe; *e. gr.* in the pleuriſy, a pungent pain in the ſide; in an acute fever, difficulty of breathing, *&c.* collectively taken, are pathognomic ſigns; but that the pain extends to the hypochondrium or clavicle; or, that the patient lies with more eaſe on one ſide than on the other, are *Aſſident ſigns*.

ASSIDUUS, or ADSIDUUS, among the Romans, denoted a rich or wealthy perſon.

The word in this ſenſe is formed from *as aſſis*; q. d. a monied man.

Hence we meet with *Aſſiduous* ſureties, *Aſſidui fidejuſſores*, anſwering to what the French now call city ſureties or ſecurities, *cautions Bourgeoiſe*. *Calv.* Lex. Jur. p. 95.

When Servius Tullius divided the Roman people into five claſſes, according as they were aſſeſſed, or taxed to the public; the richer ſort who contributed aſſes, were denominated *Aſſidui*; and as theſe were the chief people of buſineſs, who attended all the public concerns; thoſe who are diligent in attendances came to be denominated *Aſſidui*. *Rævard.* ad Leg. XII. Tab. c. 9. *Calv.* loc. cit.

ASSIDUI was alſo uſed for volunteers, or thoſe who ſerved in the army at their own expence. *Feſt.* de Verb. Signif. in voc. *Aquin.* Lex. Milit. p. 91. a.

ASSIGNABLE *Magnitude*, in geometry, is uſed for any finite magnitude. And

ASSIGNABLE *Ratio*, for the ratio of any finite quantities. *Mac-Laurin*'s Fluxions, Art. 325.

ASSIMILATION, *Aſſimilatio*, in rhetoric, a figure denoting ſimilitude. Thus Cicero de Offic. *Quod ſi ea, quæ acceperis utenda, majore menſura, ſi modo poſſis, jubet reddere Heſiodus: quidnam beneficio provocati facere debemus? An non imitari agros fertiles, qui multo plus afferunt, quam acceperunt?* Scaliger diſtinguiſhes *Aſſimilation* into ſeveral ſpecies. V. *Voſſ.* Rhet. l. 5. p. 381.

ASSIRATUM, in antiquity, a bloody draught, wherewith treaties were ratified. *Feſt.* de Verb. Signif. in voc. *Pitiſc.* Lex. Ant. T. 1. p. 192.

It was made of wine, and blood, called by the antient Romans *Aſſir*.

ASSIS, in phyſiology, either denotes opium, or a powder made of hemp ſeed, which being formed into boles about the bigneſs of cheſnuts, is ſwallowed by the Egyptians, who are hereby intoxicated, and become ecſtatic and full of the moſt agreeable viſions. *Alpin.* de Medic. Egypt. l. 4. c. 2. p. 121. *Brun.* Lex. Med. in voc.

This is alſo called by the Turks *Aſſerac*.

ASSISII, in eccleſiaſtical writers, denote perſons beneficed in a cathedral church, not in a rank below that of canons.

The *Aſſiſii* probably anſwered to our minor canons. *Schmid.* Lex. Eccleſ. p. 77. *Du Cange*, Gloſſ. Lat. T. 1. p. 363.

They are ſuppoſed to have been thus called, either becauſe an *Aſſiſia*, or penſion was aſſigned them; or, according to the gloſs, from *aſſiduus*, becauſe they ought to be conſtant in attending the ſervice of the church.

ASSISUS, in antient law writers, denotes a thing demiſed, or farmed out for ſuch an aſſiſe, or certain rent in money, or proviſions. Hence *terra Aſſiſa* was commonly oppoſed to *terra dominica*; this laſt being held in demeſne, or occupied by the lord, whereas the former was let out to tenants. Hence alſo *redditus Aſſiſus* denote the ſet or ſtanding rent. *Kennet*, Gloſſ. Paroch. Antiq. in voc.

ASSITHMENT, or ASSYTHMENT, in the law of Scotland, is a compenſation given for a man ſlain. Vid. *Sken.* de Verb. Signif. p. 24.

Aſſithment is the ſame with what, in the Engliſh law, is called *Man-Bote*. See the article BOTE.

ASSIUS *Lapis*, Ασσιος λιθος, in phyſiology. See LAPIS *Aſſius*.

ASSIZES, in Scotland. See JUSTICIARY.

ASSRUMINA, in botany, the name given by the people of Guinea, to the ſhrub whoſe leaves they uſe as a cure for the long worms, which are found in their fleſh in thoſe parts of the world; they only bruiſe the leaves, and apply a large lump of the maſs to the part where the worm is, and they are eaſed at once without the pain and hazard of drawing it out. Phil. Tranſ. N°. 232.

ASSURRITANI, or ASSURRANI, a branch of donatiſts, in the middle of the fourth century. The *Aſſurritani* maintained, the ſon inferior to the father; they rebaptized their converts from the catholics, and aſſerted that the church is not compoſed of good and bad, but of the good alone. *Prateol.* Elench. Hereſ. p. 69.

ASSYRIAN *Letters*, *Litteræ Aſſyriæ*, a denomination given by ſeveral Rabbins, and Talmudiſts to the characters of the preſent Hebrew alphabet, as ſuppoſing them to have been borrowed from the *Aſſyrians* during the Jewiſh captivity in Babylon. *Montfauc.* Palæogr. Græc. l. 2. c. 1. p. 120.

ASSYTHMENT. See ASSITHMENT.

ASTAKILLOS, a denomination given by Paracelſus to a malignant gangrenous ulcer in the legs, occaſioned by a mercurial ſalt in the blood. This is alſo called by him, *araneus*, and *ulcus araneum*, the ſpider's ulcer. *Paracelſ.* l. de Ulcer. c. 18. *Brun.* Lex. Med. in voc.

ASTALIN, in antient writers, the ſame with *aſtanda*.

ASTANDA, in antiquity, a royal courier or meſſenger, the ſame with *angarus*. *Calv.* Lex. Jur. p. 95. a.

King Darius of Perſia is ſaid by Plutarch, in his book on the fortune of Alexander, to have formerly been an *Aſtanda*. *Calv.* loc. cit. See ANGARI.

ASTARILÆ, ASTHARITÆ, or ASTHAROTHITÆ, a name given by ſome to the Jews, who fell into the worſhip of *Aſtaroth*, or *Aſtharoth*, the goddeſs of the Sydonians, ſuppoſed the ſame with *Aſtarte*, or the moon. V. *Prateol.* Elench. p. 69. *Calm.* Dict. Bibl. T. 1. p. 218.

Prateolus treats of the *Aſtharitæ* as a particular ſect; but that author is fond of multiplying religious ſects: After the ſame manner he makes a ſect of *Molochitæ*, or worſhippers of Moloch; of *Remphanitæ*, or votaries of Remphan; and of *Thophetitæ*, who ſacrificed in the valley of Tophet, *&c.*

ASTEISM, Αστεισμος, in rhetoric, a genteel irony, or handſome way of deriding another. V. *Quint.* l. 8. c. 6. *Fab.* Theſ. p. 274. Such, *e. gr.* is that of Virgil.

Qui Bavium non odit, amet tua Carmina Mævi, &c.

Diomed places the characteriſtic of this figure, or ſpecies of irony, in that it is not groſs and ruſtic, but ingenious and polite.

ASTER, in botany. See STAR-*Wort*.

ASTER, in mineralogy, a denomination given to a ſpecies of Samian earth. *Mercat.* Metalloth. Arm. 1. c. 7. p. 15. See the article SAMIAN.

ASTER *Atticus*, a medicinal plant called alſo *inguinalis*, and in Engliſh *Golden Star-wort*. *All.* Diſpenſ. p. 31.

Its ſeeds are eſteemed deobſtruent, and the flowers cardiac: The leaves alſo have the credit of being vulnerary, but no part of the plant is much in uſe.

ASTER *Thalaſſius*, Αστηρ θαλασσιος, the *ſtella marina*, or ſtar-fiſh. See STELLA *Marina*.

ASTER is alſo a denomination, in the antient pharmacy, given to a kind of medicine, invented by Andromachus, againſt defluxions, and divers other pains. *Gal.* de Compoſ. Medic. l. 7. c. 5. *Brun.* Lex. Med. in voc.

ASTERIA, in zoology, a name by which ſome authors have called the *Accipiter Palumbarius* or Goſhawk. *Ray*'s Ornithology, p. 51. See the article PALUMBARIUS *Accipiter*.

ASTERIA is alſo the name of a gem, uſually called the cat's eye, or *Oculus Cati*. It is a very ſingular and very beautiful ſtone, and ſomewhat approaches to the nature of the opal, in having a bright encluded colour, which ſeems to be lodged deep in the body of the ſtone, and ſhifts about, as it is moved, in various directions; but it differs from the opal in all other particulars, but, above all, in its want of the great variety of colours ſeen in that gem, and in its ſuperior hardneſs.

It is uſually found between the ſize of a pea, and the breadth of a ſixpence, and is almoſt always of a ſemicircular form, broad and flat at the bottom, and rounded and convex at the top; it is naturally ſmooth and poliſh'd, and is uſually wore with its natural poliſh. It has only two colours, a pale brown and a white, the brown ſeeming the ground, and the white playing about in it, as the fire colour in the opal. It is conſiderably hard, and will take a fine poliſh, but is uſually worn with its native ſhape and ſmoothneſs.

It is found in the Eaſt and Weſt Indies, and in Europe. The iſland of Borneo affords ſome very fine ones, but they are uſually ſmall; they are very common in the ſands of rivers in New Spain; and in Bohemia they are not unfrequently found immerſed in the ſame maſſes of Jaſper with the opal. *Hill*'s Hiſt. of Foſſils, p. 601.

ASTERIA, is alſo the name of a figur'd ſtone. See STAR-*Stone*.

ASTERISCUS, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the radiated kind; its diſk is compoſed of ſeveral floſcules, and its outer edge of ſemi-floſcules. Theſe are all placed on the embryo ſeeds, and are incloſed in a cup of a ſtellated form, the parts of which ſtand out beyond the flower. The embryos finally become flat and marginated ſeeds.

The ſpecies of *Aſteriſcus*, enumerated by Mr. Tournefort, are theſe:

1. The annual *Aſteriſcus*, with ridged leaves to the flower. 2. The annual *Aſteriſk*, with ridged leaves to the flower, and with flowers of a ſulphur colour. 3. The tall annual *Aſteriſcus*, with ridged leaves to the flower, and with ſmall flowers. 4. The low *Aſteriſcus*, with ridged leaves to the flower, and with very ſmall flowers. 5. The annual ſpreading ſea *Aſteriſk*. 6. The annual ſpreading freſh-water *Aſteriſk*. 7. The perennial ſpreading ſea *Aſteriſk*. *Tourn.* Inſt. p. 497.

ASTEROPHYTON, in natural hiſtory, a name given by Linkius, and ſome other authors, to a kind of ſtar-fiſh, which is compoſed of a great number of cylindric rays, each branching out into ſeveral others, ſo as to repreſent the branched

branched ſtalks of a very intricate ſhrub. See the article STELLA *Marina*.

ASTEROPODIUM, in natural hiſtory, the name given by authors to a kind of extraneous foſſil, of an imbricated texture, compoſed of a number of ſmall convex or concave plates, and ſerving, when entire, as a baſe, or root, to the aſteria, or ſtar-ſtone.

It is very plain, that this is the remains of ſome animal body, probably of the ſtar-fiſh kind, to which the aſteria have alſo once belonged; but our imperfect knowledge in the animal hiſtory, has not yet aſcertained us of the particular creature; the moſt probable conjecture is, that it is the magellanick ſtar-fiſh, the rays of which nicely and exactly repreſent ſome of the more perfect aſteropodia. *Hill*'s Hiſt. of Foſſils, p. 654. See STAR-*Stone*.

ASTEROPODIUM *Minus*, in natural hiſtory, a name given by authors to the ſeveral joints, or plates, of which the common or complex *Aſteropodium* is made; when theſe happen to be found ſingle, as they frequently are in ſome places in the ſtrata of clay: they are ſmall bodies, ſometimes roundiſh, ſometimes oblong, ſometimes ſquare, or of other numbers of angles, and are convex on one ſide, and concave on the other. *Hill*'s Hiſt. of Foſſils, p. 654. See Tab. of Foſſils, Claſs 10.

ASTERISCUS, a name given, by ſome authors, to ſome of the ſpecies of *Buphthalmum*. See BUPHTHALMUM.

ASTHMA (*Cycl.*)—ASTHMA *Convulſive*, is a violent convulſive compreſſion of the muſcles of the breaſt, in which nature's effort ſeems to be the relieving herſelf from the load of a plethora, by a ſpitting of blood, tho' ſhe fails in the attempt.

The *convulſive Aſthma* reſembles the incubus, or night-mare, in many particulars; but it never ſeizes any body, but when awake, whereas the other uſually attacks them when between ſleep and waking; and this is a much more laſting complaint, and more frequent, in the returns of its fits, than the other. The incubus alſo prevents reſpiration in ſo violent a degree, that the perſon can form no articulate ſound. But the *convulſive Aſthma* ſuffers a ſomewhat more free reſpiration, and the uſe of the voice. The incubus is a diſeaſe of very little danger; the *convulſive Aſthma*, on the contrary, is a very dangerous, and often fatal, diſorder. *Junker*'s Conſp. Med. p. 634.

Signs of it. Theſe are a terrible ſhortneſs of breath, which differs from that of the ſuffocative catarrh only in this, that it is ſomewhat leſs violent, and is not attended with that terrible ſenſation of a ſtuffing up of the breaſt: This is attended with a numbneſs of the limbs, and a general laſſitude of the whole body; there is a violent compreſſion felt in the breaſt, and about the ſhoulders, with a great palpitation of the heart. The face is red in ſome parts, and ſeems tumid, and the temporal arteries are diſtended. The bowels are uſually coſtive, and there is a dimneſs often in the eyes, and ſometimes an alienation of the mind. Theſe ſymptoms uſually come on in an evening, and laſt an hour or two. Often, however, the fits are of much longer duration, and ſometimes they obſerve regular periods, at different diſtances of time.

Perſons ſubject to it. Thoſe of plethoric habits, are much more ſubject, than any other people, to this diſeaſe. It does not often ſeize young perſons, except in conſequence of other diſeaſes, and in that caſe it uſually is a very bad omen. It is moſt common to people of a middle age, and, with them, ſometimes returns with frequent, but leſs violent, fits, for many years together; ſometimes it is more violent, and takes them off in a very little time. People often fall into this diſeaſe, from having been uſed to periodic bleedings, or cuppings, and having afterwards neglected them; thoſe who change a buſy or laborious life, for an idle or ſedentary one, alſo often fall into it; as do thoſe who have had the gout, thrown back by improper medicines. Women alſo ſometimes fall into it from ſuppreſſions or imminutions of the menſes; and men of hypocondriac habits, from ſuppreſſions of habitual evacuations of blood from the hæmorrhoidal veins. The cauſes of this diſeaſe are very various, and it is ſometimes an idiopathic, ſometimes a ſymptomatic, complaint; it very often attends malignant fevers, and arthritic complaints, and joins itſelf with other diſtemperatures of the breaſt.

Prognoſtics in it. This, tho' not immediately deſtructive, is often a very dangerous complaint, and, in a ſhorter or longer time, proves fatal to the patient. In middle-aged people it uſually brings on either acute fevers, or ſpitting of blood; and, in old people, palſies, apoplexies, or ſuffocative catarrhs. It rarely remains what it was. *Junker*'s Conſp. Med. p. 636.

Method of Treatment. In the time of the fit, a glyſter is to be immediately given, and if no other ingredients for it be in readineſs, recent urine will ſerve; after this, bleeding is to be ordered, unleſs where there is a contra-indication, and after this the emotion of the blood is to be allayed by nitrous and cinnabarine powders; with theſe the gentle diaphoretics may be joined, eſpecially in caſe of a fever attending it, which very frequently happens. Where the caſe is very urgent, a ſmall doſe of the ſtorax pill may be added to the powder, to be taken at night. Externally, ſpirit of wine and camphire may be rubbed on the breaſt and ſhoulders, eſpecially where the patient has been uſed to cupping, and has neglected it; rubbing the ſhoulders with a flannel, often has a good effect alſo; and fumigations may be uſed of amber, ſtorax, and maſtich, with the flowers of citrine ſtæchas. When the fit is off, the patient ſhould uſe frequent waſhing the feet in warm water, and ſhould be always blooded in the foot in ſpring and fall; he ſhould alſo take gentle purges at times, and if the neglect of habitual cuppings, or ſuppreſſions of the hæmorrhoids, or, in women, of the menſes, have concurred, great care is to be taken to bring all back to their old ſtate again, otherwiſe no radical cure can be expected: Finally, a mixture of ſpirit of hart's-horn, and tincture of ſalt of tartar, ſhould be given to promote an equal diſtribution of the blood to all parts of the body.

Bleedings in the time of the fit, tho' they always give relief, yet are as much to be avoided as poſſible, ſince they ſubject the patient to frequent returns, and make it always neceſſary to repeat them at the time; for as nature intends, by this *Aſthma*, the relieving herſelf from a plethora, by a diſcharge of blood, when ſhe finds this intent anſwered by the opening a vein, ſhe will always afterwards bring on this diſeaſe, when at all moleſted by a plethora, and will never ſuffer it to go off but by the ſame means. In a firſt attack of this diſeaſe, bleeding is not abſolutely neceſſary, and is therefore always to be carefully avoided, but in caſes where cuſtom has made it neceſſary, it muſt be done, and a large quantity always taken away. Bleeding in the arm is found moſt ſerviceable in the time of the fit, and in the foot, by way of prevention. Vomits, in theſe caſes, are often very hurtful, and the more violent ones always dangerous, in conſideration of the ſpitting of blood, which there is always a greater or leſſer tendency to; yet, in caſes where a full meal has juſt preceded it, and where there is no immediate reaſon againſt it, a ſmall doſe of ſome gentle vomit may be properly given, after bleeding, and a glyſter. A ſweat very often ſucceeds the more violent fits of this diſorder, and is always obſerved to do the patient good; this is promoted by the nitrous and cinnabarine medicines. When this diſeaſe is attended with hypocondriac complaints, the mixtura ſimplex, well camphorated, is found of great uſe, as it diſpels the flatulencies which, in this caſe, are joined with, and always greatly exaſperate, the diſeaſe. The volatile ſalts are to be avoided in the time of the fit, and all anodynes, if given while the bowels are in a coſtive ſtate, bring on miſchief. The giving, in this caſe, the expectorating medicines, which are ſerviceable in other *Aſthmas*, is not only uſeleſs, as there is, in this caſe, nothing to be expectorated, but it is alſo dangerous. Finally, in caſes where there are hypocondriac complaints joined with this diſeaſe, the application of leeches to the hæmorrhoidal veins is attended uſually with great ſucceſs. *Junck.* Conſp. Med. p. 633.

ASTIPULATOR, *Adſtipulator*, in the civil law. See STIPULATOR.

ASTIPULATOR, in the Roman order, he by whoſe conſent and leave a nun takes the religious habit. *Du Cange*, Gloſſ. Lat. T. 1. p. 366.

ASTORCHA, in botany, a name by which ſome authors call the yellow ſtæchas, and others the purple, commonly called, the Arabian. *Ger.* Emac. Ind. 2.

ASTRÆA, in aſtronomy, a name which ſome give to the ſign *Virgo*, by others called *Erigone*, and ſometimes *Iſis*. *Vital.* Lex. Math. p. 70.

The poets feign that juſtice quitted heaven to reſide on earth, in the golden age; but, growing weary of the iniquities of mankind, ſhe left the earth, and returned to heaven, where ſhe commenced a conſtellation of ſtars, and from her orb ſtill looks down on the ways of men. *Dan.* Lex. Ant. in voc.

———*Et Virgo cæde madentes*
Ultima Cæleſtum terras Aſtræa reliquit.
Ov. Metam. l. 1. v. 149.

ASTRAGALOIDES, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the papilionaceous kind, and its piſtil, which ariſes from the cup, finally ſomewhat reſembles a ſmall boat in ſhape, and contains kidney-ſhap'd ſeeds. See Tab. 1. of Botany, Claſs 10.

There is only one known ſpecies of this genus, which is the Portugal *Aſtragaloides*, called by ſome, the *woolly Aſtragalus*, with thick roots. *Tourn.* Inſt. p. 398.

ASTRAGALOTE, Ἀστραγαλῶτη, in natural hiſtory, a ſpecies of foſſil allum, thus called, from its reſembling a talus, or ankle-bone; whence it is alſo denominated *Talare*. *Mercat.* Metalloth. arm. 3.

ASTRAGALUS, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the papilionaceous kind, and its piſtil, which ariſes from the cup, covered with a membraneous ſheath, finally becomes a bicapſular pod, containing kidney-ſhap'd ſeeds. To this it may be added, that the leaves ſtand in pairs on the middle ribs, the end of each of which is terminated by a ſingle leaf. *Tourn.* Inſt. p. 415.

The ſpecies of *Aſtragalus*, enumerated by Mr. *Tournefort*, are theſe:

1. The tuberous-rooted, climbing, aſh-leav'd *Aſtragalus*.
2. The perennial *Aſtragalus*, with purple ſpiked flowers.
3. The *Aſtragalus*, with pale blue, or pale purple vetch-like flowers.
4. The perennial, ſpiked *Aſtragalus*, with pale-coloured

loured flowers, and black ſtreaks in them. 5. The onobrychis-like mountain *Aſtragalus*. 6. The yellow perennial procumbent *Aſtragalus*, or common wild *Aſtragalus*. 7. The yellow perennial *Aſtragalus*, with double bladder-like pods. 8. The procumbent annual yellow Montpelier *Aſtragalus*. 9. The broad-leav'd, annual, procumbent, ſea *Aſtragalus*, with flowers ſtanding on pedicles. 10. The narrow-leav'd annual *Aſtragalus*, with blue flowers adhering cloſe to the ſtalks. 11. The narrow-leav'd annual blue-flowered *Aſtragalus*, with flowers ſtanding on pedicles. 12. The yellow ſweet-ſcented African *Aſtragalus*. 13. The Canada *Aſtragalus*, with greeniſh yellow flowers. 14. The Montpelier *Aſtragalus*. 15. The white flowered Montpelier *Aſtragalus*. 16. The tall alpine fox-tail *Aſtragalus*. 17. The procumbent *Aſtragalus*, with hairy and cluſter'd pods. 18. The dwarf *Aſtragalus*, with pods of the form of the epiglottis. 19. The hoary *Aſtragalus*, with crooked pods. 20. The Engliſh purple mountain *Aſtragalus*. 21. The vetch-leav'd, procumbent, branched, alpine *Aſtragalus*, with oblong blue flowers, gathered into heads. 22. The alpine bladder-fruited *Aſtragalus*, with leaves like thoſe of the tragacanth. 23. The branched tragacanth-leav'd alpine *Aſtragalus*, with blue glomerated flowers. 24. The alpine *Aſtragalus*, with narrow vetch-like leaves, and pale yellow flowers. 25. The Pyrenean *Aſtragalus*, with roundiſh vetch-like leaves, and yellow glomerated flowers. 26. The Pyrenean *Aſtragalus*, with Barba Jovis leaves, and pale yellow flowers, collected into heads. *Tourn.* Inſt. p. 416.

The root of this plant, drank in wine, ſtops a looſeneſs, and provokes urine. Dried to a powder, it is, with good effect, ſprinkled on old ulcers, and ſtops bleeding. V. *Lemery*, des drog. in voc.

ASTRAGALUS, (*Cycl.*) in anatomy.—According to the natural ſituation of the foot, and the connection of it with the leg, the *Aſtragalus* is the ſuperior, or firſt bone of the tarſus.

This bone may be divided into two portions, one large and poſterior, the other ſmall and anterior; the firſt is, as it were, the body of the bone, the latter an apophyſis, tho' commonly called, the anterior portion. The body, or poſterior portion, has four ſides, one ſuperior, two lateral, and one inferior. The upper ſide is the largeſt, it is covered all over with a cartilage, and is cylindrically convex from before backward, with a depreſſion running through the middle of its breadth, which repreſents half a pulley, and is continuous with the two lateral cartilaginous Sides, of which the external is broader than the other. The upper ſide is articulated with the lower ſide of the baſis of the tibia, the internal lateral ſide with the inner ankle, and the external lateral ſide with the outer ankle; below the internal lateral ſide there is a great depreſſion without a cartilage, and ſeveral other inequalities. The lower ſide is likewiſe cartilaginous, and obliquely concave, for its articulation with the os calcis. At the very loweſt and poſterior part of the body of the *Aſtragalus*, on the edge of the lower ſide, is a ſmall oblique ſmooth notch, or channel, for the paſſage of the tendons.

The apophyſis, or anterior part of the *Aſtragalus*, is diſtinguiſhed from the body by a ſmall depreſſion on the upper part; and on the lower part by a long oblique unequal notch, very broad toward the outſide. The anterior ſide of this apophyſis is all cartilaginous, and obliquely convex, for its articulation with the os ſcaphoides. The lower ſide, which is likewiſe cartilaginous, is parted in two, and articulated with the os calcis, being diſtinguiſhed from the lower ſide of the body of the bone, by the long oblique notch already mentioned. Beſide theſe two cartilaginous ſides, there is a third below the anterior, toward the inner part, which, in the dried ſkeleton, touches nothing. *Winſlow*'s Anatomy, p. 97.

ASTRANTIA, in botany, the name of a genus of umbelliferous plants, the characters of which are theſe: The flower is of the roſaceous kind, conſiſting of ſeveral petals, the ends of which are uſually bent backwards, and which are diſpoſed in a circular form, on a cup which afterwards becomes a fruit, compoſed of two ſeeds, involved in a curled calyptra. The flowers of this genus are collected into a ſort of head, and ſurrounded with a leafy crown. Some of the flowers in this genus of plants are barren, and the cups of theſe are wider. See Tab. 1. of Botany, Claſs 7.

The ſpecies of *Aſtrantia*, enumerated by Mr. Tournefort, are theſe: 1. The great *Aſtrantia*, with purple crowns to the flowers. This is called by ſome the ſanicle-leav'd black hellebore. 2. The great *Aſtrantia*, with white crowns to the flowers. And 3. The ſmaller *Aſtrantia*, called by ſome, the little alpine hellebore. *Tourn.* Inſt. p. 314.

This plant is cultivated in the gardens of botaniſts, and flowers in July. Its black and fibrous roots are only uſed in medicine, which are ſaid to purge melancholic humours. Hildanus preſcribes it alſo for the cure of a ſchirrous ſpleen. V. *James*, Med. Dict. in voc.

ASTRAPÆA, in natural hiſtory, a name given by the antients to a ſtone, ſince called, improperly, *Aſtrapia*, and by ſome *Aſtrapea*. The deſcription we have of it, is, that it was a blue ſtone, or blackiſh one, with white variegations, running in the form of waves, and clouds in it. Some ſpecimens of the Perſian lapis lazuli are of this kind, but they are rare. It is probable that the antients meant theſe, by the name, but as they are not a diſtinct ſpecies, they were in the wrong, to confound the ſame ſtone under two names.

ASTRARII, in middle-age writers, the ſame with *Manſionarii*, thoſe who live in the houſe, or family, at the time, for inſtance, when a perſon dies. *Du Cange*, Gloſſ. Lat. T. 1. p. 367.

Theſe are alſo denominated *Aſtro-addicti*, *q. d.* tied to the hearth. *Videndum ſi nepos & avunculus ſub eadem poteſtate anteceſſoris ſimul fuerunt* Aſtrarii *tempore mortis, eo quod ambo reperiuntur in atrio ſive in* Aſtro. *Bract.* l. 4. Tr. 3. c. 11. It. l. 2. c. 36. §. 6.

ASTRARIUS *Hæres* is uſed, in our old writers, where the anceſtor, by conveyance, hath ſet his heir apparent, and his family, in a houſe, in his life-time. *Coke*, 1. Inſt. 8 b.

Spelman carries the import of the word further, as if it denoted an heir to whom the inheritance was given by his predeceſſor in his own life, by a writing in form. *Spelm.* Gloſſ. p. 48.

The word is formed from *Aſtre*, an antient French term for the hearth of a chimney.

ASTRICTION, *Adſtrictio*, in medicine, an operation intended partly to conſtringe the parts and pores of the body, when too looſe, and partly to reſtrain the courſe of the humours, when too fluid.

Aſtriction, with regard to the object, is of two ſorts; the firſt employed on the too much relaxed ſolids; the ſecond on the fluids, chiefly in Hæmorrhages; intended to moderate or reſtrain the flux of blood thro' the cuſtomary paſſages, as the noſe, menſes, lochia, and the like: And ſometimes alſo to ſtop extraordinary and unuſual Hæmorrhages, ariſing from violent cauſes. *Nent.* Fund. Med. tab. 4. T. 1. p. 323.

ASTRICUS *Lapis*, in natural hiſtory, a kind of figured ſtone, broken or cut from the *Enaſtros*, after the ſame manner as the *Trochitæ* from the *Entrochi*. *Mercat.* Metalloth. arm. 9. c. 7. p. 230.

ASTRINGENTS (*Cycl.*)—*Aſtringent* medicines are to be carefully avoided in all kinds of Inflammations, and in all inflammatory caſes, for they diſturb nature in the effort ſhe is making to relieve herſelf from a congeſtion of blood in the part, and prevent that free paſſage which the blood ought to have, and which alone can make a cure, or break through the obſtruction that is the real diſeaſe.

Aſtringent powders, externally applied, in caſes of a procidentia ani, in which the common practice is to ſprinkle them upon that part of the gut which is out, ſhould always be extreamly finely powdered, for otherwiſe they adhere, by their large particles, to the inner coat of the gut, and when it is replaced, bring on a teneſmus, the effect of which is a relapſe into the former complaint; in this caſe alſo *Aſtringents*, which are too violent, act juſt contrary to what they ought, and prevent, inſtead of promoting, a cure. This is a very common accident, from the making allum, an ingredient in theſe powders, in too large a quantity, tho' a ſmall portion of it is very proper. *Junck.* Conſp. Med.

Mr. Petit concludes, from a great many experiments he made in covering pieces of fleſh with the different ſorts of *Aſtringents* employed in hæmorrhages, that ſome act only as abſorbents; ſuch are earthy ſubſtances, moſt of the *aſtringent* plants, ſome gums, reſins, and animal ſubſtances. Other *Aſtringents* abſorb, and, at the ſame time, their ſaline and ſulphureous particles, inſinuating themſelves into the fleſh, preſerve it from corruption. Vitriol and alum, which are acknowledged to be among the ſtrongeſt *Aſtringents*, appeared, by his experiments, to abſorb moſt humidity. V. Mem. Acad. Scienc. An. 1732.

ASTROBOLISM, Αστροβολισμος, the ſame with *Sphacelus*; tho' properly applied to plants which are deſtroyed in the dog-days, as if blaſted by that ſtar. *Caſtel*, Lex. in voc.

ASTROCYNOLOGIA, Αστροκυνολογια, a deſcription of the canicular, or dog-days, and their effects. See CANICULAR. Maria Florentinius, a noble Genoeſe, has written an *Aſtrocynologia*. V. Act. Erud. Lipſ. an. 1702. p. 514.

ASTROGNOSIA, the art of knowing the fixed ſtars, their names, ranks, ſituations in the conſtellations, and the like.

Strauchius, formerly profeſſor at Wittenberg, publiſhed a work expreſs on the ſubject, which may be of uſe to learners; but a knowledge of the ſtars is better had from Bayer's *Uranometria*, commonly referred to by aſtronomers, when they ſpeak of the ſtars, as in this work, all the fixed ſtars are denoted by letters, partly of the Greek, and partly of the Latin, alphabets; and from Hevelius, in his *Firmamentum Sobieſcanum*; and Flamſtead, in his *Hiſtoria Cœleſtis*, where the ſtars are all laid down in maps expreſs. To the ſame end conduce cœleſtial globes, planiſpheres, Dr. Halley's *Zodiacus Stellatus*, and the like. *Wolf.* Lex. Math. p. 193. ſeq.

ASTROITES, (*Cycl.*) in natural hiſtory, the name of a ſpecies of foſſil coral, compoſed of either ſingle or complex tubules, lodged in different ſpecies of ſtone; theſe are ſtriated from the centre to the circumference, and, in ſome kinds, the ends of the tubules are prominent, above the ſurface of the maſs, in others they are level with it, and in others they are ſunk below it.

The corals which are lodged in theſe maſſes, are alſo of different

ferent ſhapes, according to their various ſpecies; in ſome they are round, and in others angular, and in ſome the columns are perfectly ſeparate, in others, the ſtriæ of the ſeveral columns run one into another. The ſtones which contain the hollowed ſtars, are often beſet with numerous tubercles, and the ſtars are often elegantly hollowed, and not unuſually they are full of cavities, round at their external ſurface, and only ſtarr'd at the bottom: The cavities of theſe alſo often run very deeply and irregularly into the ſubſtance of the ſtone.

ASTROLUS, in natural hiſtory, a name given by authors to a white and ſplendid ſtone, ſmall in ſize, and of a roundiſh figure, reſembling the eyes of fiſhes.

ASTROMETEOROLOGIA, the art of foretelling the weather, and its changes, from the aſpects and configurations of the moon and planets. *Wolf.* Lex. Math. p. 198.

This makes a ſpecies of aſtrology, diſtinguiſhed by ſome under the denomination of *Meteorological Aſtrology*.

Dr. Goad publiſhed a large work in folio, expreſs on this ſubject, 1686, which he afterwards tranſlated from Engliſh into Latin, and publiſhed it at London in 1690. 4°. containing a ſort of ſyſtem of prognoſtications of the weather. To the ſame head alſo belong Coke's *Meteorologia*, firſt publiſhed in Engliſh, and ſince in High Dutch at Hamburgh, 1691, 8°.

ASTOMI, Ασομοι, in anthropology, people feigned without mouths. Pliny ſpeaks of a nation of *Aſtomi* in India, who lived only by the ſmell or effluvia of bodies, taken in by the noſe. *Brown*, Vulg. Err. l. 3. c. 21. p. 131.

Men without mouths are certainly fables; or, at beſt, monſters; for we have inſtances of children born, not only without mouths, but heads.

The pond muſcle is obſerved by naturaliſts, to be a ſort of *aſtomoſe* animal. It takes in it food by the anus, that is, at the ſame aperture whereby it evacuates it again.

ASTROPECTEN, in natural hiſtory, a name given by ſome authors, to a ſpecies of ſtar-fiſh, compoſed of a body, or central nucleus, furrowed in the manner of the ſhells of the common ſcallop, and parting into five principal rays, from each of which there iſſue ſeveral tranſverſe proceſſes, covered with a hairy down.

ASTROSCOPE, *Aſtroſcopium*, a kind of aſtronomical inſtrument, compoſed of two cones, on whoſe ſurface the conſtellations, with their ſtars, are delineated, by means whereof the ſtars may eaſily be known. *Wolf.* Lex. Math. p. 207.

The *Aſtroſcope* is the invention of Wil. Schukhard, formerly profeſſor of mathematics at Tubingen, who publiſhed a treatiſe expreſly on it, in 1698.

ASTROSCOPIA, the art of obſerving, and examining the ſtars, by means of teleſcopes, in order to diſcover their nature and properties. *Wolf.* Lex. Math. p. 206.

Huygens improved this art conſiderably, in his *Aſtroſcopia compendiaria tubi optici molimine liberata*; where he ſhews how to manage the largeſt glaſſes without help of a tube. *Wolf.* Elem. Dioptr. §. 372. See TELESCOPE.

ASTROTHEMATA, in aſtrology, the places or poſitions of the ſtars, in a theme of the heavens. *Vital.* Lex. Math. p. 73.

ASTROTHESIA is uſed by ſome for a conſtellation, or image in the heavens, compoſed of ſeveral ſtars. *Vital.* loc. cit.

ASTRUM, or ASTRON, a conſtellation, or aſſemblage of ſtars. In which ſenſe it is diſtinguiſhed from *Aſter*, which denotes a ſingle ſtar.

Some apply the term in a more particular ſenſe, to the great dog, or rather to the great bright ſtar in his mouth. *Vital.* Lex. Math. p. 72.

In this ſenſe we meet with *In Aſtro, extra Aſtrum*, &c.

ASTURIS, in zoology, a name by which ſome authors have called the *Accipiter Palumbarius*, or Goſhawk. *Ray*'s Ornithol. p. 51. See the article PALUMBARIUS *Accipiter*.

ASTYNOMUS, Αστυνομος, (*Cycl.*) in antiquity, an officer at Athens, appointed to take care of the ſtreets, inſpect the buildings, waters, &c. *Pott.* Archæol. l. 1. c. 15. *Pitiſc.* Lex. Ant. p. 194.

The *Aſtynomi* at Athens were much the ſame with the Ædiles at Rome. Ariſtotle, as cited by Harpocratian, makes ten *Aſtynomi*, five in the city, and as many in the Piræus. Sam. Petit, imagining a corruption in the numbers of Harpocratian's text, inlarges their number to fifteen, of which he diſtributes ten to the city, and five to the Piræus.

The *Aſtynomi* were officers of weight and authority, and are frequently called, in the antient laws, curators, or fathers of the ſtate; ſometimes ſimply fathers, *patres*.

Papinian wrote a treatiſe expreſs concerning the *Aſtynomi*. *Pitiſc.* loc. cit.

ASYMPTOTE (*Cycl.*)—*Aſymptotes* are diſtinguiſhed into various orders.

An *Aſymptote* is ſaid to be of the *firſt order*, when it coincides with the baſe of the curvilinear figure: Of the *ſecond order*, when it is a right line, parallel to the baſe; of the *third order*, when it is a right line oblique to the baſe; of the *fourth order*, when it is a common parabola, that has its axis perpendicular to the baſe; and, in general, of the *order* $r+2$, when it is a parabola, the ordinate of which is always as a power of the baſe, whoſe exponent is r. See *Maclaurin*'s Fluxions, Art. 334. ſeq.

The *Aſymptote* is oblique to the baſe, when the ratio of the firſt fluxion of the ordinate to the fluxion of the baſe, approaches to an aſſignable ratio, as its limit; but it is parallel to the baſe, or coincides with it, when this limit is not aſſignable.

The determination of the *Aſymptotes* of curves, is a curious part of the higher geometry. Mr. de Fontenelle has given ſeveral theorems relating to this ſubject, in his *Geometrie de l'Infini*. But this matter is treated of with greater accuracy by Mr. *Maclaurin*, in his fluxions, book I. chap. 10. where he has been careful to avoid the modern paradoxes, not to ſay jargon, concerning infinites and infiniteſimals.

The areas bounded by curves, and their *Aſymptotes*, though indefinitely extended, ſometimes have limits to which they may approach, ſo as to differ leſs from thoſe limits, than by any given quantity. This happens in hyperbolas of all kinds, except the firſt, or Apollonian. The ſame is alſo true of the area, compriſed between the logarithmic curve and its *Aſymptote*. V. *Maclaurin*, B. 1. c. 10. See LOGARITHMIC *Curve*.

Thoſe who do not ſcruple to ſuppoſe the curve and its *Aſymptote*, to be infinitely produced, ſay, that the infinitely extended area becomes equal to its limit.

The *aſymptotical* area in the common or Apollonian hyperbola, and in many other curves, has no limit; and it is uſual to ſay, theſe areas are infinitely great; by which, however, no more is meant, than that the curve, and its *Aſymptote*, may be extended, till the ſpace comprehended between them, exceeds any given magnitude.

Some authors, and Dr. Wallis among the reſt, have talked of ſome of theſe areas, as if they were more than infinite. This happened from an analogy they imagined between poſitive, nothing, and negative, and what is finite, infinite, and and more than infinite. Lib. cit. Art. 294. See the article HYPERBOLA.

Solids generated by hyperbolic areas, revolving about their *Aſymptotes*, have ſometimes alſo their limits; and ſometimes they may be produced, till they exceed any given ſolid. See Art. 307, 309, of the before-mentioned author.

When a curve, and its *Aſymptote*, are ſuppoſed to be produced infinitely, and the area, compriſed between them, to revolve about the *Aſymptote*, the ſurface generated will be finite, or infinite, according as the area of the generating figure is finite or infinite. *Cotes*, Harm. Menſ. p. 94. Schol. *Maclaur.* Flux. Art. 339. p. 283.

For the *Aſymptotes* of curves, deſcribed by the interſections of right lines revolving about given poles, ſee Mr. *Maclaurin*'s Fluxions, Art. 313. ſeq.

Parabolic ASYMPTOTE. See PARABOLIC *Aſymptote*.

ATABULUS, in phyſiology, a provincial wind in Apulia, of a dry pinching quality, and very noxious in its effects. V. *Plin.* Hiſt. Nat. l. 17. c. 24. *Senec.* Queſt. Nat. l. 5. c. 17. *Vital.* Lex. Math. p. 73.

The antient naturaliſts ſpeak of the *Atabulus* in terms of horror, on account of the ravage it made among the fruits of the earth, which it ſcorched, or withered up.

ATANTA, in botany, a name given by the people of Guinea to a kind of ſumach, called, by Petiver, *Rhus Guineenſe trifoliatum ſerratum ſcabium*, from its being trifoliate, and having rough and ſerrated leaves. This ſomewhat reſembles the hoary trifoliate African ſumach of Plukenet, but it differs in this, that its leaves are edged with prickles, whereas thoſe of Plukenet's kind are only deeply ſinuated. The people of Guinea are very fond of this, for its medicinal virtues; they give it as a reſtorative, boiled in water. Phil. Tranſ. N°. 232.

ATCHE, in commerce, a ſmall ſilver coin, current in the ſtates of the Grand Seignor, equal to about a third part of the Engliſh penny.

The *Atche* is the ſmalleſt coin uſed in Turkey; where there is no copper money current, except in the province of Babylon.

Some call the *Atche* the little *Aſper*: It is ſtamped like the *Para*, with Arabic characters. Three or four *Atches* are commonly given in exchange for the *Para*. *Savar.* Dict. Comm. Suppl. p. 35. ſeq.

ATEGAR, a weapon among the *Saxons*, which ſeems to have been a hand dart. The word comes from the Saxon *Aëton*, to fling, or throw, and *Gar*, a weapon. *Spelman* and *Blount*, in voc.

ATELEIA, Ατελεια, or Ατελειη, denotes an exemption from tribute, taxes, or other burthens. *Calv.* Lex. Jur. p. 96. a. Ατελεια λειτουργημαλων, is particularly uſed, in ſome antient laws, for an exemption from offices, granted the Egyptian clergy by Conſtantius. *Bing.* Orig. Eccleſ. l. 5. c. 3. §. 12.

ATH, ATHA, or ATHE, among our Anglo-Saxon Anceſtors, ſignifies an *oath*, eſpecially that taken by way of Purgation. *Du Cange*, Gloſſ. Lat. T. 1. p. 369.

In this ſenſe we meet with breaking of *Ath*, privilege of *Ath*, *Atha*, and *Ordela*.

ATHENA, Αθηνα, in the antient phyſic, a plaiſter, or liniment, commended againſt wounds of the head and nerves, of which

we find deſcriptions given by Oribaſius, Ælius, and Ægineta. V. *Gorr.* Def. Med. p. 8. a.

ATHANASIA, Αθανασια, among the antient phyſicians, an epithet given to a kind of antedotes, ſuppoſed to have the power of prolonging life, even to immortality. V. *Gorr.* Med. Def. p. 8. a.

In the Auguſtan diſpenſatory we ſtill find a medicine under the Appellation of *Athanaſia Magna*, commended againſt dyſenteries and hæmorrhages. *Brun.* Lex. Med. p. 88. a.

ATHANASIA, in botany, is uſed in ſome authors for tanzy. *Ger.* Em. Ind. 2.

ATHENATORIUM, among chemiſts, a thick glaſs cover, placed on a cucurbit, having a ſlender umbo, or prominent part, which enters like a ſtopple, within the neck of the cucurbit. *Brun.* Lex. Med. p. 88. b.

ATHENIPPUM, Αθενιππον, in the antient phyſic, a collyrium, commended againſt divers diſeaſes of the eyes; thus denominated from its inventor Athenippus. *Gorr.* Def. Med. p. 8. b. Its deſcription is given by Scribonius Largus, and by Gorræus after him. Ubi ſupra.

Galen mentions another *Athenippum*, of a different compoſition, by which it appears, this was a denomination common to ſeveral collyriums.

ATHERINA, in ichthyography, a name given by Rondeletius, and ſome other authors, to the *Hepſetus*, or *Anguella*, a ſmall fiſh, common on the ſhores of the Mediterranean; but by Bellonius appropriated to a fiſh of a different genus. *Willughby*, Hiſt. Piſ. p. 209.

The *Atherina* of this laſt author is a ſmall fiſh of the length and thickneſs of a finger, of a fine white colour, and, when held up againſt the light, as tranſparent as glaſs; its eyes are large, and its finns are placed two on the ſides, two in the middle of the belly, and only one on the back, which is thin, and very ſlender. In this particular it remarkably differs from the hepſetus, which has two back fins. *Bellonius*, de Piſcib.

ATHLETIC (*Cycl.*)—ATHLETIC *Habit*, Αθλητικη ἑξις, denotes a ſtrong hale conſtitution of body.

Antiently it ſignified a full, fleſhy, corpulent ſtate, ſuch as the *Athletæ* endeavoured to arrive at. *Gor.* Med. Def. p. 8. b.

The *Athletic habit* is eſteemed the higheſt pitch of health; yet is it dangerous, and the next door to diſeaſe; ſince when the body is no longer capable of being improved, the next alteration muſt be for the worſe. *Burggr.* Lex. Med. p. 1179. a *Brun.* Lex. Med. p. 88. b.

The chief object of the *Athletic* diet, was to obtain a firm, bulky, weighty body, by force of which, more than art and agility [a], they frequently overpowered their antagoniſt: Hence they fed altogether on dry, ſolid, and viſcous meats. In the earlier days, their chief food was dry figs, and cheeſe, which was called *Arida Saginatio* ξηρα τροφη, and Ασκησις διαξηρων ισχαδων: Oribaſius, or, as others ſay, Pythagoras, firſt brought this in diſuſe, and ſubſtituted fleſh in lieu thereof. They had a peculiar bread, called κολλυπια: They exerciſed, eat and drank without ceaſing: They were not allowed to leave off eating, when ſatiated, but were obliged to cram on till they could hold no more: By which means they at length acquired a degree of voracity, which, to us, ſeems incredible, and a ſtrength proportional [a]. Witneſs what Pauſanius relates of the four celebrated athletæ, Polydamus the Theſſalian, Milo the Crotonian, Theagenes the Thaſian, and Euthymus the Locrian: The ſecond is ſaid to have carried a bull on his back a conſiderable way, then to have knocked him down with a blow of his fiſt, and laſtly, as ſome add, devoured him at a meal [b].—[a V. *Gorr.* loc. cit. *Burggr.* Lex. Med. T. 1. p. 1177. *Pitiſc.* Lex. Ant. T. 1. p. 197. b *Dan.* Dict. Ant. in voc.]

ATHLETIC *Weight*. See the article WEIGHT.

ATHLOTHETA, Αθλοθεια, in antiquity, an officer appointed to ſuperintend the public games, and adjudge the prizes. *Pott.* Archæol. l. 2. c. 21.

The *Athlotheta* was the ſame with what was otherwiſe called *Æſymneta*, *Brabeuta*, *Agonarcha*, *Agonotheta*, &c.

ATINGA GUACU MUCU, in zoology, the name of a Braſilian bird of the ſtarling kind. It reſembles the thruſh in ſize. Its head is very large and thick, and its neck long. Its tail is very remarkably long, being no leſs than nine fingers breadth in length, and is compoſed of ten feathers. Its head, neck, back, wings, and tail, are all of a duſky blackiſh brown; its tail darker than the reſt, but the ends of all the tail-feathers are white, or of a mixture of brown and white; the throat, breaſt, and belly, are grey, and on its head it has two ranges of long feathers, which it can raiſe at pleaſure into a ſort of double creſt, or two horns. *Marggrave*'s Hiſt. Braſil. See Tab. of Birds, N°. 31.

ATIZOE, in the writings of the antient naturaliſts, a name of a ſtone uſed in the conſecration and anointing of kings. Pliny deſcribes it to have been of a lenticular figure, and of the ſize of three fingers, of a bright ſilvery colour, and of a pleaſant ſmell. He ſays it was found in India, and in ſome other places. Agricola is of opinion, it was a kind of bitumen.

ATLANTIDES, in aſtronomy, a denomination given to the Pleiades, or ſeven ſtars, ſometimes alſo called *Vergiliæ*. They are thus called, as being ſuppoſed by the poets to have been the daughters either of Atlas, or his brother Heſperus, who were tranſlated into heaven. *Fab.* Theſ. p. 284.

ATLANTIS (*Cycl.*)—*New* ATLANTIS is the name of a fictitious, philoſophical commonwealth, of which a deſcription has been given by lord Bacon.

The *new Atlantis* is ſuppoſed to be an iſland in the South Sea, to which the author was driven, in a voyage from Peru to Japan. The compoſition is an ingenious fable [a], formed after the manner of the Utopia of Sir Thomas More, or Campanalla's city of the ſun. Its chief deſign is to exhibit a model or deſcription of a college, inſtituted for the interpretation of nature, and the production of great and marvellous works, for the benefit of men, under the name of Solomon's houſe, or the college of the ſix days work. Thus much, at leaſt, is finiſhed; and with great beauty and magnificence. The author propoſed alſo a frame of laws, or of the beſt ſtate or mould of a commonwealth. But this part is not executed [b].—[a V. Pref. to Atlan. ap. *Bac.* Work. T. 3. p. 235. b *Shav.* Bibl. Phil. c. 7. §. 14. p. 291. *Paſch.* de Var. Mod. Mor. trad. c. 2. p. 214.

ATMOSPHERE (*Cycl.*)—Galileo, having obſerved that there was a certain ſtandard altitude, beyond which no water could be elevated by pumping, took an occaſion from thence to call in queſtion the doctrine of the ſchools, which aſcribed the aſcent of water in pumps, to the *fuga vacui*, and in the room thereof he happily ſubſtituted the hypotheſis of the air's preſſure and gravitation. It was to him, indeed, little better than an hypotheſis, ſince it had not then theſe confirmations from experiments, which were afterwards found out by his ſcholar Torricellius, and other ſucceeding philoſophers, particularly Mr. Boyle.

The gravity and preſſure of the air is clearly proved by the Torricellian experiment [a]; and was further confirmed by Monſieur Paſcal's imitation of that experiment with water [b]. Other experiments have alſo been made, with fluids variouſly combined [c].—[a V. the article AIR, *Cycl.* b See *Cotes*, Hydroſt. Lect. VIII. c Ibid.

Mr. Cotes has given us a computation of the weight of all the air which preſſes upon the whole ſurface of the earth. He finds this weight to be equal to that of a globe of lead of ſixty miles diameter. The computation proceeds on theſe principles: That the weight of a column of air, reaching to the top of the *Atmoſphere*, is moſt commonly equal to a column of water, having the ſame baſis, and the altitude of 34 feet; that the ſemi-diameter of the earth is equal to 20,949,655 feet; and that the ſpecific gravity of water is to that of lead as 1000 to 11,325. *Cotes*, Hydroſt. Lect. p. 112, 113.

No one has yet been able to determine, how far the air may admit of condenſation and rarefaction. It is, however, certain, that there are, in nature, ſome limits which cannot be exceeded. No condenſation can reach ſo far as to cauſe a penetration of parts; and if the rarefaction of the air be ſtill greater, as its diſtance from the ſurface of the earth increaſes, its ſpring will be at length ſo weakened, that the force which every particle of it endeavours to tend upwards, from the particles which are next below it, will be weaker than the force of its own gravity, which endeavours conſtantly to detain it. The rarefaction of the air muſt be therefore bounded, where theſe two oppoſite forces come to balance each other. But though it be certainly true, that the air cannot poſſibly expand itſelf beyond a certain meaſure, on account of its gravity, yet, ſince men have not hitherto been able to ſet any bounds to its utmoſt expanſion, it is equally certain, that we cannot define the limits of the *Atmoſphere*.

Yet we may collect how much the air is rarified, at any propoſed altitude from the ſurface of the earth: For if any number of diſtances from the ſurface of the earth be taken in an arithmetical progreſſion, the denſities of the air, at thoſe diſtances, will be in a geometrical progreſſion: And as the rarity of any body is reciprocally as its denſity, it follows, that as the diſtances from the ſurface of the earth do increaſe in an arithmetical progreſſion, ſo do the different degrees of rarity in the air increaſe in a geometrical progreſſion. See *Cotes*'s Hydroſt. Lect. p. 119—122. where he proves this in a very eaſy manner, and in a method intelligible to thoſe who are not acquainted with the properties of the hyperbola, and logarithmic curve made uſe of by Dr. Halley, and Dr. Gregory, in their reaſonings on this ſubject.

From hence it may be determined how much the air is rarified at any propoſed elevation from the earth's ſurface: For the elevation will be every where proportionable to the logarithm of the rarity. If then, by experiment, we can find the rarity of the air at any one elevation, we may, by the rule of proportion, find what is the rarity at any other propoſed elevation, by ſaying, as the elevation at which the experiment was made, is to the elevation propoſed, ſo is the logarithm of the air's rarity, which was obſerved at the elevation where the experiment was made, to the logarithm of the air's rarity at the elevation propoſed.

By Monſieur Paſcal's experiment at the Puy de Dome, and by Mr. Caſwell's, made upon Snowden-Hill, it appears, that at the altitude of 7 miles, the air is about 4 times rarer than at the ſurface of the earth. Hence it follows, that at the altitude of 14 miles, the air is 16 times rarer than at the ſurface;

and, at the altitude of 70 miles, about a million of times rarer; and at the altitude of 500 miles, if the *Atmoſphere* can reach ſo far, the air muſt be rarified ſo much, that if a globe of what we breathe, of an inch diameter, were as much dilated, it would occupy a larger ſpace than the whole ſphere of Saturn.

But it is to be obſerved, that theſe computations of the rarity of the *Atmoſphere*, at different heights, are founded on this principle, that the denſity of the air is every where proportionable to the ſuperincumbent weight.

Now this rule holds true only upon the ſuppoſition, that the heat is uniform, at different diſtances from the earth; for if the air be hotter in one part than in another, the air will be more rarified in the hotter part, than it will be in the cooler, altho' preſſed by the ſame weight, or at the ſame altitude above the earth's ſurface.

This obſervation will alſo ſhew how precarious the common method of meaſuring the heights of mountains by the barometer is. See MOUNTAIN.

It appears from the obſervations of aſtronomers, of the duration of twilight, and of the magnitude of the terreſtrial ſhadow in lunar eclipſes, that the effect of the *Atmoſphere* to reflect and intercept the light of the ſun, is ſenſible to the altitude of between 40 and 50 miles. So far then we may be certain that the *Atmoſphere* reaches; and at that altitude we may collect from what has been already ſaid, that the air is about 10,000 rarer than at the ſurface of the earth. How much further the *Atmoſphere* may extend, we are altogether ignorant. *Cotes*, ibid. p. 123—125.

The *Atmoſphere* has a refractive power, which is the cauſe of many phænomena. Alhazen the Arabian, who lived about A. D. 1100, ſeems to have been more inquiſitive into the nature of refractions than the preceding writers. So that having made experiments upon this ſubject, at the common ſurface betwixt air and water, air and glaſs, water and glaſs, or cryſtal, and being prepoſſeſſed with the old opinion of cryſtalline orbs in the regions above the *Atmoſphere*, he had the boldneſs to ſuſpect a refraction there alſo. This, he tells us, may be proved, by taking the diſtance of a ſtar from the pole of the equator, both when it is very low, and when very high, near the zenith; and he affirms, that the former polar diſtance will be found leſs than the latter, by reaſon of the refraction of the rays: And this, if we may credit friar Bacon, was taken from Ptolemy's eighth book of aſpects. But Dr. Smith obſerves, that if it be ſo in the book of aſpects, which the doctor could never meet with, it muſt have been written by Ptolemy, after his almageſt, whereby it appears that he had no ſuſpicion that ſuch effects as that above-mentioned were cauſed by a refraction of the rays of the ſun, or ſtar. *Smith*'s Optics, rem. 355.

However, it is certain that Alhazen deduced ſeveral properties of this kind of refraction; as that it increaſes the altitudes of all objects in the heavens; that it contracts their diameters, and diſtances from each other; and that it cauſes the twinkling of ſtars. But neither Alhazen, nor his follower Vitellio, knew any thing of its juſt quantity, which was not known to any tolerable degree of exactneſs, till Tycho Brahe, with incredible diligence, ſettled it.

Neither did Tycho, or Kepler, diſcover in what manner the rays of light were refracted by the *Atmoſphere*. Tycho thought the refraction was chiefly cauſed by denſe vapours, very near the earth's ſurface. Kepler placed the cauſe wholly at the top of the *Atmoſphere*, which he took to be uniformly denſe; and thence he determined its altitude to be little more than that of the higheſt mountains. But the true conſtitution of the denſity of the *Atmoſphere*, deduced afterwards from the Torricellian experiment, afforded a juſter idea of theſe refractions, eſpecially after it appeared, by a repetition of Mr. Lowthorp's experiment, that the air's refractive power is proportionable to its denſity.

By this variation of the air's denſity, a ray of light, in paſſing through the *Atmoſphere*, is continually refracted at every point, and thereby deſcribes a curve, and not a ſtrait line, as it would have done were there no *Atmoſphere*; or were its denſity uniform.

This refractive power of the *Atmoſphere* increaſes the altitude of the ſtars, and contracts their intervals; it alſo cauſes the ſun and moon to appear of an oval figure, when near the horizon. But it is to be obſerved, that the horizontal moon appears oval but rarely, eſpecially in the evenings of warm weather, the refractions being then ſmaller. V. *Smith*'s Optics, rem. 371. See alſo the article REFRACTION, *Cycl.* and *Suppl.*

The *Aſmoſphere*, or air, has alſo a reflective power; and this power is the cauſe that enlightens objects ſo uniformly on all ſides. The abſence of this power would occaſion a ſtrange alteration in the appearances of things, their ſhadows would be ſo very dark, and their ſides enlightened by the ſun ſo very bright, that, probably, we could ſee no more of them than their bright halves; ſo that, for a view of the other halves, we muſt turn them half round, or, if immoveable, muſt wait till the ſun could come round upon them. Such a pellucid unreflective *Atmoſphere* would indeed have been very commodious for aſtronomical obſervations upon the courſe of the ſun and planets among the fixed ſtars, viſible by day as well as by night; but then ſuch a ſudden tranſition from darkneſs to light, and from light to darkneſs immediately, upon the riſing and ſetting of the ſun, without any twilight, would have been very inconvenient and offenſive to our eyes.

Alhazen, and others, attempted to determine the height of the *Atmoſphere*, from the conſideration of the twilight, as before mentioned, and in the cyclopædia. The reſult of the computation was 50 miles for the height of the *Atmoſphere*, or reflective matter above the earth's ſurface. But this height, according to Dr. Halley's correction, in Phil. Tranſ. N°. 181. will be reduced to about 44½ miles.

It will follow as a conſequence from this, that any place is conſtantly enlightened in the day-time by rays reflected from every part of a ſegment of the *Atmoſphere*, whoſe height is about 44 ½ miles, and whoſe circular baſe is about 1200 miles in diameter. See *Smith*'s Opt. rem. 384.

Thus tho' the *Atmoſphere* is greatly aſſiſtant to the illumination of objects, yet it muſt alſo be obſerved, that it ſtops a great deal of light. By Monſieur Bouguer's experiments, it ſeems that the light of the moon is frequently 2000 times weaker in the horizon, than at the altitude of 66 degrees; and that the proportion of her lights at the altitudes of 66 and 19 degrees is about 3 to 2. The lights of the ſun muſt bear the ſame proportion to each other at thoſe heights; which Monſieur Bouguer made choice of, as being the meridian heights of the ſun, at the ſummer and winter ſolſtices, in the latitude of of Croiſic in France. *Boug.* Eſſai dioptr. ſur la gradat de la lumiere, p. 12. ap. *Smith*, Opt. rem. 95.

It has been ſaid that a ray of light paſſing through the *Atmoſphere* deſcribes a curve: To find the nature of this curve is a problem of no ſmall difficulty, for which the curious may conſult *Taylor*, Meth. increm. p. 108. ſeq.

This ingenious author computes the refractive power of the air to be to the force of gravity at the ſurface of the earth, as 320 millions to 1.

There have been often ſeen in the *Atmoſphere* ſome very luminous parts, even near the zenith about midnight. It has been thought that theſe luminous parts are nothing elſe but terreſtrial exhalations floating in the air, at a prodigious altitude, and thereby reflecting the light of the ſun, which they are expoſed to, at that great height, to our eyes.

But Mr. *Cotes* juſtly obſerves, that it will be next to impoſſible to give any tolerable account, how thoſe exhalations can be denſe enough to reflect ſo copious a light at that vaſt diſtance; and at the ſame time be ſupported, by a medium, ſo much rarer than the air we breathe in. It ſeems therefore more probable, that theſe extraordinary lights proceed from ſome ſelf-ſhining ſubſtance, or aerial phoſphorus.

A ſurprizing appearance of this kind was ſeen at Cambridge, on the 20th of March, in the year 1706. It was a ſemicircle of light, of about two thirds of the ordinary breadth of the milky way, but much brighter. The top of it paſſed very near the zenith of that place, inclining about 4 or 5 degrees to the north; it croſſed the horizon at a very ſmall diſtance from the Weſt, towards the South, and again, about as far from the Eaſt towards the North. It was moſt vivid, and beſt defined about the weſtern horizon, and moſt faint about the zenith, where it firſt began to diſappear. There was at the ſame time an *Aurora borealis*. The ſame appearance was ſeen in Lincolnſhire, at the diſtance of about 70 miles north of Cambridge, and there the ſemicircle ſeemed to lie in the plane of the equator. From theſe two obſervations compared together, it may be collected, that the matter, from which that light proceeded, was elevated above the earth's ſurface between 40 and 50 miles. *Cotes*, Hydroſt. Lect. p. 125, 126.

F. de Lana thought he had contrived an aeronautic machine for navigating the *Atmoſphere*[a]: Sturmius, who examined it, declared it not to be impracticable[b]: But Dr. Hook was of a different opinion, and detected the fallacy of the contrivance[c]. Roger Bacon long before propoſed ſomething of the ſame kind. The great ſecret of this art, is to contrive an engine ſo far lighter than air, that it will raiſe itſelf in the *Atmoſphere*, and, together with itſelf, buoy up and carry men with it. The principle on which it is to be effected, is by exhauſting the air of a very thin and light, yet firm, metalline veſſel, with an air pump.—[[a] V. Prodrom. c. 6. which is alſo given in Engliſh in *Hook*'s Philoſ. Collect. N°. 1. p. 18. ſeq. [b] Colleg. Curioſ. Tent. 10. *Morhof.* Polyhiſt. Philoſ. l. 2. p. 2. c. 22. * 2. [c] *Hook*, lib. cit. p. 28. ſeq.]

But the hopes of ſucceſs in ſuch an enterprize will appear very ſmall, if it be conſidered, that if a globe were to be formed of braſs, of the thickneſs only of $\frac{1}{12}$ inch, that globe muſt be above 277 feet in diameter to ſwim in the air; and if, as de Lana ſuppoſes, the diameter of the globe were but 25 feet, the thickneſs of the metal could not exceed $\frac{1}{133}$ of an inch. V. *Herman.* Phoronom. p. 158.

ATOCION, Ἀτοκιον, in antient naturaliſts, denotes an abortive medicine, or a medicament proper to expel the fœtus after conception. *Plin.* Hiſt. Nat. l. 29. c. 4.

ATOLLENS *Oculi*, in anatomy, a name given by Albinus to one of his *Quatuor recti musculi oculi*; this is the muscle called by Molinett, and others, the *Superbus*, and by Cowper, the *Elevator oculi*.

ATONICS, in grammar, words unaccented. See ACCENT, *Cycl.*

ATRA *Dies*, in antiquity, denotes a fatal day, whereon the Romans received some memorable defeat. V. *A. Gell.* l. 5. c. 15. *Plut.* in Quæst. Rom. qu. 15.

The word literally imports a black day; a denomination taken from the colour, which is the emblem of death, and mourning. Whence the Thracians had a custom of marking all their happy days with white stones, or calculi; and their unhappy days with black ones, which they cast, at the close of each day, into an urn. At the person's death, the stones were taken out, and from a comparison of the numbers of each complexion, a judgment was made of the felicity or infelicity of his course of life. V. *Plin.* l. 7. *Dempst.* in Paralip. ad Rosin. l. 4. c. 9.

The *Dies Atræ*, or *Atri*, were afterwards denominated, *Nefasti*, and *Posteri*.

Such, in particular, was the day when the tribunes were defeated by the Gauls, at the river Allia, and lost the city; also that whereon the battle of Cannæ was fought; and several others marked in the Roman calendar, as *Atræ*, or unfortunate. V. *Struv.* Antiq. Rom. Synt. c. 8. p. 376. seq.

ATRAGENE, the name by which the viorna, or traveller's joy, a small winding shrub, common in hedges, is known in the shops. *Dale*, Pharm. p. 162.

ATRAPHAXIS, in botany, the name of a genus of plants, according to Linnæus, called by Dillenius, a species of the atriplex. The characters are these: The cup is permanent and coloured; it consists of two leaves, which stand opposite one to another, and are of an oval form. The flower consists of two roundish sinuated petals, larger than the leaves of the cup, and permanent. The stamina are six capillary filaments of the length of the cup; the antheræ are roundish. The germen of the pistil is compressed, there is no style. The stigmata are two in number, and are capitated; the cup shutting itself up, finally includes the seed, which is single, roundish, and somewhat compressed. *Linnæi*, Gen. Pl. p. 153. *Dill.* Hort. Elth. p. 40.

ATRESIA, Ἀτρησια, in medicine, imperforation, or the state of those persons who want some natural aperture. *Brun.* Lex. Med. p. 90. a.

ATRETI, Ἀτρητοι, those persons, of either sex, in whom the anus, or genitals, are imperforate, or close, whether naturally, or occasioned by some accident, or disease, as the growth of some fleshy excrescence, or a membrane which stops the orifice. *Gorr.* Med. Def. p. 62. a. *Brun.* Lex. Med. p. 90. b.

ATRICAPILLA, in zoology, the name of a little bird, commonly known by the name of the black cap, and called, by some other authors, *Ficedula*, *Sycalis*, or *Melanchoryphus*, and by the Italians *Caponegro*. See MELANCHORYPHUS.

ATRICES, or ATTRICES, in medicine, small tubercles about the anus, which sometimes disappear, and then return again, at least while in their early state. *Brun.* Lex. Med. in voc.

The *Atrices* are ranked in the number of condylomata, or fici. Some authors also give the denomination *Atrici* to a kind of latent wounds in the extremity of the rectum, which however do not perforate the same. *Brun.* ubi supra.

ATRIENSES, in antiquity, a kind of servants, or officers, in the great families at Rome, who had the care and inspection of the atria, and the things lodged therein.

These are otherwise called *Atriarii*, though some make a distinction between *Atrienses* and *Atriarii*; suggesting that the latter were an inferior order of servants, perhaps assistants of the *Atrienses*, and employed in the more servile offices of the atrium, as to attend at the door, sweep the area, &c. V. *Pitisc.* Lex. Ant. T. 1. p. 199. a.

The *Atrienses* are represented as servants of authority and command over the rest: They acted as procurators, or agents, of their master, in selling his goods, &c. To their care were committed the statues and images of the master's ancestors, &c. which were placed round the atrium; and which they carried in procession at funerals, &c.

In the villa's, or country-houses, the *Atrienses* had the care of the other furniture, and utensils, particularly those of metal, which they were to keep bright from rust. Other things they were to hang from time to time in the sun, to keep them dry, &c. They were cloathed in a short white linen habit, to distinguish them, and prevent their loitering from home. V. *Calv.* Lex. Jur. p. 96. b. *Heder.* Lex. p. 461. *Pitisc.* loc. cit. *Fab.* Thes. p. 286.

ATRIPLEX, *Orach*, in botany, the name of a genus of plants, the characters of which are these: The flower has no petals, but is composed only of a number of stamina and a pistil, arising from a five-leav'd cup. The pistil finally becomes a flat orbiculated seed, inclosed in the cup in the manner of a capsule. Some species of *Atriplex* have also another sort of fruit, placed in a different part of the plant, not in that of the flowers. The embryo's of this fruit are large, and consist of two angular leaves, which nicely enclose and surround a seed of a roundish figure.

The species of *Atriplex* enumerated by Mr. Tournefort, are these:

1. The pale green garden *Atriplex*. 2. The red garden *Atriplex*. 3. The broad-leav'd *Atriplex*, or shruby halimus. 4. The Spanish shrubby procumbent sea *Atriplex*, 5. The racemose moorish shrubby sea *Atriplex*, with silvery leaves, like those of the common knot-grass. 6. The narrow-leav'd sea *Atriplex*, called by many halimus, and sea purslain. 7. The sea *Atriplex*, with jagged leaves. 8. The sea *Atriplex*, with narrow dentated leaves. 9. The halimus-leav'd *Atriplex*. 10. The little narrow-leav'd sea *Atriplex*. 11. The perennial sea *Atriplex*, with spear-pointed leaves, scarce at all hoary. 12. The common *Atriplex*, with spear-pointed leaves. 13. The *Atriplex*, with long and narrow leaves. 14. The *Atriplex*, with extremely long and narrow leaves. 15. The wild *Atriplex*, with roseate, starry, and compressed fruit. *Tourn.* Inst. p. 505.

This plant is sometimes cultivated in gardens as a culinary herb, being used as spinach, and, by some, much preferred to that herb: But there are few in England that are fond of it. It is to be sown in the spring as spinach, and must be eaten while it is young; for when it is run up to seed, it is very strong. If suffered to scatter its seed in a garden, it will make itself a lasting inhabitant, without farther trouble; the seeds often remain many years in the ground, and every time it is turned up, send up new plants. *Miller*'s Gard. Dict.

All the species of *Atriplex* are cooling and emollient. The leaves are sometimes used in clysters, and in cataplasms, intended to soften tumours, and to abate pains. Some give the seeds internally as diuretics, and others recommend them against disorders of the uterus and menses. V. *Quinc.* Dispens. P. 2. Sec. 1. §. 59.

ATRIUM, in ecclesiastical antiquity, denotes an open place, or court, before a church, making part of what was called the *Narthex*, or *Ante-Temple*. *Bingh.* Orig. l. 8. c. 3. §. 5.

The *Atrium* in the antient churches was a large area, or square plat of ground, surrounded with a portico or cloyster, situate between the porch or vestible of the church, and the body of the church.

Some have mistakenly confounded the *Atrium* with the porch or vestible, from which it was distinct; others with the narthex, of which it was only a part. *Schmid.* Lex. Eccles. p. 77.

The *Atrium* was the mansion of those who were not suffered to enter further into the church. More particularly, it was the place where the first class of penitents stood, to beg the prayers of the faithful, as they went into the church.

ATRIUM is also used, in the canon law, for the cemetery, or church-yard.

In this sense we find a law, prohibiting buildings to be raised in *Atrio Ecclesiæ*, except for the clergy [a]; which the glossary explains thus; id est *in Cœmeterio*, which includes the space of forty paces around a large church, or thirty round a little church, or chapel [b].—[[a] *Gratian.* 12. q. 1. c. 4. [b] *Spelm.* Gloss. p. 48. a.]

ATROPHY. See *Defect of* NUTRITION.

ATTAGEN, in zoology, a name by which authors have called two different species of birds, tho' of the same genus, both being of the gallinaceous kind. The *Attagen* of Aldrovandus is the francolino of the Italians, a bird very like our red game, or perhaps the same with it; and the *Attagen* of Gesner, and many others, is the gallina corylorum, or hazelhen. *Ray*'s Ornithology, p. 125. See the articles FRANCOLINO and HAZEL-*Hen*.

ATTALICÆ *Vestes*, in antiquity, garments made of a kind of cloth of gold. *Jun.* Paint. of Ant. c. 8. §. 9.

They took the denomination from Attalus, surnamed Philometer, a wealthy king of Pergamus, who was the first, according to Pliny, who procured gold to be woven into cloth. Hist. Nat. l. 3. c. 48.

ATTALUS, Ἀτταλος, and ATTALICUS, Ἀτταλικος, in the antient physic; epithets given to certain medicines, described by Galen, but now out of use. *Gorr.* Def. Med. p. 62. b.

ATTEMPERATION, in rhetoric, &c. the casting a restriction, or softening, on something said by the formulas, *Fama est, ut perhibent*, &c. *Scal.* Poet. l. 3. c. 35.

ATTENUANTS, in the materia medica. See INCIDENTS.

ATTERMINING, in our old writers, is used for a time, or term, granted for payment of a debt, according to Blount.

ATTILUS, a river fish, of the sturgeon kind, called by some adello, adano, and adeno. It grows to a very large size, and, when full grown, casts its scales, and never has any fresh ones in their place, but remains perfectly smooth; in which it differs from the common sturgeon. But it seems not to differ in any essential point from the huso germanum. It is an eatable fish, but is greatly inferior in taste to the sturgeon. *Willughby*'s Hist. Pisc. p. 241. See the article HUSO.

ATTORNARE, in the original sense, signified to turn over money and goods, that is, to assign and appropriate them to certain

certain perſons, or uſes. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

This is more peculiarly called *Attornare rem*, to attorn a thing. *Quos quidem quatuor ſolidos attornavi ad unam protantiam, faciendam in conventu Oſencienſi.* Id. Paroch. Antiq. p. 209.

ATTORNARE *Perſonam* denotes to depute a repreſentative, or proxy, to appear and act for another. *Kenn.* Gloſſ. in voc.

Thus in trials at common law, the plaintiff, or defendant, retained *Attornatum ſuum poſitum in loco ſuo ad lucrandum vel perdendum.* Id. Paroch. Antiq. p. 405.

ATTORNATO *faciendo vel recipiendo*, in the common law, a writ to command a ſheriff, or ſteward, of a county-court, or hundred-court, to receive and admit an *Attorney* to appear for the perſon that oweth ſuit of court. F. N. B. 156. Every perſon that owes ſuit to the county-court, court-baron, *&c.* may make an *Attorney* to do his ſuit. Stat. 20. H. 3. c. 10. *Blount*, *Cowel.*

ATTROW, in botany, a name given by the people of Guinea to a plant which they uſe in caſes of ſwellings, boiling the leaves in water, and uſing the decoction by way of a fomentation.

It is a ſpecies of kali, and is called by Petiver Kali Guineenſe foliis poligoni, floribus verticilli in modum diſpoſitis, from its leaves reſembling the common knot-graſs, and its flowers growing in rundles round the ſtalks. Phil. Tranſ. N°. 232.

ATTRUMMAPHOC, in botany, a name given by the people of Guinea to a ſhrub which they uſe in medicine; they boil it in water, and give the decoction in the venereal diſeaſe. The juice of it, when freſh preſſed out, is alſo uſed, ſnuffed up the noſtrils, to promote ſneezing, and cure ſeveral diſorders of the head and eyes. Phil. Tranſ. N°. 232.

It is a ſpecies of colutea, called by Petiver *Colutea lanuginoſa floribus parvis ſiliquis piloſis deorſum tendentibus*, and Dr. Herman calls it an *Aſtragalus*. Commelin tells us alſo, that it is called, by the inhabitants of Ceylon, *pilæglias*. It grows in ſandy places, and riſes to about a yard high; the root is fibrous and whitiſh, the ſtalks are woody and reddiſh, and very hairy; the leaves grow by pairs, with one at the extremity, ſometimes three, and ſometimes five, growing on a rib; they are covered on both ſides with a ſoft woolline's, and have a ſtyptic and aſtringent taſte. The flowers are of the papilionaceous kind, and grow in long ſpikes, upon a naked pedicle; the cup is compoſed of ſix hairy leaves, and the pod is hairy, and of a roundiſh ſhape, like a packthread, and about three quarters of an inch long; the pedicles of the ſingle pods are very ſhort, and the ſeeds are ſmall, and lie lengthwiſe in the pod, ſeparated by thin partitions.

ATYPOS, *Erratic*, or *Irregular*, a word uſed by the old writers in medicine, for ſuch diſeaſes as did not obſerve any regularity in their periods.

Others have alſo uſed the ſame word in a very different ſenſe, namely, for deformities and irregularities in the limbs; and others, for perſons, who from ſome defects in the organs of ſpeech, cannot articulate certain particular ſounds.

AVANIA, in the Turkiſh legiſlature, a fine for crimes, and, on deaths, paid to the governor of the place. In the places where ſeveral nations live together under a Turkiſh governor, he takes this profitable method of puniſhing all crimes among the Chriſtians, or Jews, unleſs it be the murther of a Turk. *Pocock's* Egypt. vol. 2. p. 2. p. 30.

AVANTE, Αυαντη, among the old writers in phyſic, a name given to a diſeaſe, ſeeming, from their accounts of it, the ſame we call hypochondriaſm. Hippocrates has left us the following account of it.

The patient can neither bear abſtinence, nor eating; when faſting, he has a rumbling in his belly, with a gnawing pain in his ſtomach, and vomits up variety of matters, as bile, ſaliva, phlegm, and an acrimonious matter, and, after vomiting, ſeems to be a little eaſier. After eating, he is moleſted with eructations, and an inflammatory heat and redneſs; he always fancies he has occaſion to make a plentiful ſtool, but uſually voids only wind; he is afflicted with a pain in his head, and a pricking, as if with needles, in different parts of his body; his legs ſeem heavy, and he becomes very weak and extenuated.

In this caſe a purge muſt be given, and after that a vomit; the head is particularly to be purged: The patient is to abſtain from fat, oleous, and ſweet foods, and not to indulge himſelf in much drinking. After meals provoke vomiting, and, if the ſeaſon permit, after the uſe of aſſes milk, and whey, let him take a vomit or a purge, which ever ſhall be judged moſt ſuitable to his caſe. If it be ſpring, or ſummer, let him bathe in cold water; if autumn, or winter, let him uſe unctions, and much exerciſe, or take a journey. His diet muſt be cool and laxative; and, if coſtive, emollient clyſters muſt be adminiſter'd.

This is a chronic diſeaſe, and ſeldom leaves a man till old age, nay often accompanies him thro' that, to the grave.

AUBIN, in horſemanſhip, a kind of broken gait, or pace, between an amble and a gallop; reputed a defect in a horſe. *Guill.* Gent. Dict. P. 1. in voc.

AUCTORATI, in Roman antiquity, an appellation given to ſuch as entered the liſts as gladiators.

Others will have the *Auctorati* to have been gladiators who received wages; or who hired themſelves, for money, to perform in the games, or ſpectacles. *Pitiſc.* T. 1. p. 204. a. *Briſſ.* de Verb. Signif. p. 68. a. *Calv.* Lex. Jur. p. 98. b. *Aquin.* Lex. Milit.

The *Auctorati* degraded themſelves by the act; and became ſervile and infamous.

AUCTORATUS *ad ſepeliendum patrem*, in Quintilian, denotes a perſon who let himſelf out to perform as a gladiator, in order to raiſe money to bury his father. *Quint.* Declar. 302.

AUCTORATI *Milites* alſo denoted ſoldiers bound by oath, and the receipt of wages, to ſerve in war. *Aquin.* Lex. Milit. p. 103. b.

In this ſenſe *Auctorati* ſtand oppoſed to *Exauctorati*, who were diſbanded.

The ſtipend they received for their ſervice, was denominated *Auctoramentum.*

AUCTORATAS *Senatus*, in the Roman antiquity. See SENATUS *Auctoritas.*

AUDIANISM, the ſyſtem or ſentiments of Audius and his followers; particularly as to the belief of the human figure of the deity.

Audianiſm amounts to the ſame with *Anthropomorphiſm.*

Audianiſm appears to be much earlier than Audius: Many, both among the antient Jews, Heathens, and primitive Chriſtians, ſeem to have given into ſentiments much like thoſe of the Audians. Not to mention that M. le Clerc makes Moſes the patriarch or founder of *Audianiſm.* 'Tis certain, the antient Sadducees, the Ebionites, Seleucus, Hermias, Melito biſhop of Sardis, Tertullian, and others, held the deity corporeal. Epicurus calls God, Ανθρωπομορφος. M. Bayle charges the like belief on all the Gentiles.

The chief argument urged by Audius, was that paſſage in Geneſis, *Let us make man after our own image*, which he held, is not to be underſtood of the formation of the ſoul of man; (as that came not in courſe till afterwards) but merely of the formation of the body of man; ſince immediately after the words *Let us make man*, &c. the inſpired writer ſubjoins, and God took of the duſt of the earth, and made man. Conſequently, added he, it muſt have been the body of man that God made after his own image: And therefore God has a body like the human. This he confirmed by two other proofs; the firſt, from the apparitions of God to the prophets, recorded in the Old Teſtament, which ſeem to infer, that he muſt have been corporeal. 2°. From thoſe paſſages in ſcripture which attribute eyes, ears, hands, feet, *&c.* to the Divine Being, all which they interpreted according to the letter. V. *Schrod.* Diſſ. de Hæreſ. Audian §. 7. ſeq. *Jour.* des Scav. T. 63. p. 336.

Vogt has a diſſertation on *Audianiſm* before Audius. De Audianiſmo ante Audium. ext. ap. ejuſd. Bibl. Hiſt. Hæreſeol. T. 1. p. 600.

AUDITIONALIS *Scholaſticus*, in middle-age writers, is uſed for an advocate who pleads cauſes for his clients in audiences. *Du Cange*, Gloſſ. Lat. T. 1. p. 383.

AVELLANA *Purgatrix*, in the materia medica, the fruit of a ſpecies of ricinus. See RICINUS.

AVELLANDA, in botany, a name given by the Spaniards to the roots of the Tarſi, or ſweet Cyperus. Theſe are eſculent, and of a very delicious taſte; they ſeem to have had the name from their likeneſs to the avellana nux, or hazelnut. Garcias, and ſome others, have thought that the cureas of Malabar was the ſame with the *Avellanda* of Europe. But this does not ſeem to be the caſe, for the cureas is a fruit probably the ſame with the fruit *Bel*, deſcribed by the Arabians, and tho' of the ſame ſize and ſhape with the *Avellanda*, has a hard coat like the common filbert. The cureas of Egypt is indeed a root, but it is very different from theſe, being as long and as thick as a man's arm.

AVENA, *the Oat*, in the Linnæan ſyſtem of botany, makes a diſtinct genus of plants, the characters of which are, that the cup is a glume, containing many flowers, compoſed of two valves, and made up of a looſe arrangement of the flowers; the valves are ſharp pointed and bellied, and are large, lax, and without beards or awns. The flower is compoſed of two valves, the inferior one is of the ſize of the cup, but harder, ſomewhat cylindric, bellied, and pointed at each end, and ſends from its back part a beard or awn, ſpirally inſerted, and bent as it were with a knee. The ſtamina are three capillary filaments; the antheræ are oblong, and ſplit into two at the ends. The germen of the piſtillum is obtuſe; the ſtyles are two in number, erect, and curled, and the ſtigmata are curled or waved. The flower very firmly encloſes the ſeed, which is ſingle, oblong, and ſlender, and pointed at each end, and furrowed along the middle.

AVENUES (*Cycl.*)—All *Avenues* that lead to a houſe, ought to be at leaſt as wide as the whole front of the houſe, if wider they are better ſtill; and *Avenues* to woods and proſpects ought not to be leſs than ſixty feet wide. The trees ſhould not be planted nearer to one another than thirty-five feet, eſpecially if they are trees of a ſpreading kind, and the ſame ought to be the diſtance, if they are for a regular grove.

The

The trees moſt proper for *Avenues* with us, are the Engliſh elm, the lime, the horſe-cheſnut, the common cheſnut, the beech, and the abele. The Engliſh elm will do in all grounds, except ſuch as are very wet and ſhallow; and this is prefer'd to all other trees, becauſe it will bear cutting, heading, or lopping in any manner, better than moſt others. The rough or ſmooth Dutch elm is approved by ſome, becauſe of its quick growth; this is a tree which will bear removing very well, it is alſo green almoſt as ſoon as any plant whatever in ſpring, and continues ſo as long as any, and it makes an incomparable hedge, and is preferable to all other trees for lofty eſpaliers. The lime is valued for its regular growth, and fine ſhade: The horſe cheſnut is proper for all places that are not too much expoſed to rough winds. The common cheſnut will do very well in a good ſoil, and riſes to a conſiderable height, when planted ſomewhat cloſe, tho' when it ſtands ſingle, it is rather inclin'd to ſpread than to grow tall. The beech is a beautiful tree, and naturally grows well with us in its wild ſtate, but it is leſs to be choſen for *Avenues* than the before-mentioned, becauſe it does not bear tranſplanting well, but is very ſubject to miſcarry. Laſtly, the abele is fit for any ſoil, and is the quickeſt grower of any foreſt tree. It ſeldom fails in tranſplanting, and ſucceeds very well in wet ſoils, in which the others are apt to fail. The oak is but little uſed for *Avenues*, becauſe of its ſlow growth.

The old method of planting *Avenues* was with regular rows of trees, and this has been always kept to till of late; but we have now a much more magnificent way of planting *Avenues*, this is by ſetting the trees in clumps, or plattoons, making the opening much wider than before, and placing the clumps of trees at about three hundred feet diſtance from one other. In each of theſe clumps there ſhould be planted either ſeven or nine trees; but it is to be obſerved, that this is only to be practiſed where the *Avenue* is to be of ſome conſiderable length, for in ſhort walks this will not appear ſo ſightly as ſingle rows of trees. The *Avenues* made by clumps are fitteſt of all for parks. The trees in each clump ſhould be planted about thirty feet aſunder, and a trench ſhould be thrown up round the whole clump, to prevent the deer from coming to the trees to bark them. *Miller*'s Gardner's Dict. in voc.

AVER *Land*, in our old writers, ſeems to have been ſuch lands as the tenants did plough and manure, *cum Averiis ſuis*, for the proper uſe of a monaſtery, or the lords of the ſoil. Mon. Angl. ap. *Blount*.

AVERA, in doomſday-book, denotes a day's work of a ploughman, or other labourer, which the king's tenants in his demeſne lands were obliged to pay the ſheriff. *Spelm.* Gloſſ. p. 51. a.

AVERAGE, in agriculture, a term uſed by the farmers in many parts of England, for the breaking of corn fields, eddiſh, or roughings. The word ſignifies, in law, either the beaſts which tenants and vaſſals were to provide their lords on certain occaſions, or, among the merchants, the money laid out to repair loſſes by ſhipwreck. In the firſt of theſe ſenſes, the word is derived from averium, a labouring beaſt; in the ſecond, from averia, goods or chattles; from the French, avoir, to have or poſſeſs. In the laſt, or the farmer's ſenſe, it may be derived from haver, an Engliſh name for oats, or from averia, beaſts, being as much as feeding for cattle or paſturage. *Ray*'s Engliſh Words, p. 3.

AVERIIS *captis in Withernam*, a writ for the taking of cattle to his uſe, who hath cattle unlawfully diſtrained by another, and driven out of the county where they were taken, ſo that they cannot be replevied by the ſheriff. Reg. orig. 82. If the cattle are put into any ſtrong place in the ſame county, the ſheriff may take the poſſe comitatus, and break into it, to make the replevin. But when they are driven out of the county, he hath no authority to purſue them. *Blount*, *Cowel*.

AVERRHOA, in botany, the name of a genus of plants, the characters of which are theſe: The perianthium is ſmall, erect, and compoſed of five leaves. The flower is compoſed of five lanceolated petals, which ſtand erect on the lower part, and are expanded at the top. The ſtamina are ten ſetaceous filaments, half of which are of the length of the flower, and the other half ſhorter; theſe ſtand alternately together, and are terminated by roundiſh apices or antheræ. The germen of the piſtil is oblong, and faintly pentangular; the ſtyles are five in number, and are ſetaceous and erect; and the ſtigmata are ſimple. The fruit is a turbinated pomum, obtuſely pentangular, having five cells, and in each of them ſeveral ſeeds of an angular form, ſeparated by membranes. *Linnæi*, Gen. Plant. p. 201. Hort. Malab. v. 3. p. 47.

AVERRHOISTS, a ſect of peripatetic philoſophers, who appeared in Italy ſome time before the reſtoration of learning, and attacked the natural immortality of the ſoul.

They took their denomination from *Averrhoes*, a celebrated interpreter of Ariſtotle, born at Cordova in Spain, in the twelfth century, from whom they borrowed their diſtinguiſhing doctrine. The founder of this ſect, *Averrhoes*, is ſometimes called the commentator, by way of eminence, as being ſuppoſed to have entered beſt of all the commentators into the ſentiments of the philoſopher; inſomuch that ſome have pretended the ſoul of Ariſtotle had migrated into the body of Averrhoes. V. *Stoll.* Introd. Hiſt. Liter. p. 655. *Thomas*, Cautel. P. 1. p. 88. *Vives* de Corrupt. Art. l. 5. 179.

This author attacked what the Greek interpreters and commentators had all taught. He maintained that, according to Ariſtotle, and even according to reaſon (which was then thought the ſame thing) the immortality of the ſoul could not ſubſiſt. His reaſoning was thus—Mankind, according to Ariſtotle, is eternal; ſo that if ſouls don't periſh, we muſt either have recourſe to a metempſychoſis, which that philoſopher rejects; or, if there be always new ſouls producing, there muſt at length be an infinity of ſouls. But an actual infinity is impoſſible, according to the ſame Ariſtotle. Conſequently the ſouls, i. e. the forms of organical bodies muſt die with their bodies; at leaſt the paſſive underſtanding belonging peculiarly to each; ſo that nothing remains but the intellectus agens, which is common to all mankind; and which, according to Ariſtotle, was external, and operated wherever it met with organs diſpoſed thereto: As the wind produces a kind of muſic, when it happens to blow into the pipes of a well adjuſted organ. The Averrhoiſts took this for an invincible demonſtration, and hence held that there is a certain ſublunar intelligence, the participation whereof made our *intellectus agens*.

Others, among the ſchool philoſophers, leſs implicitly devoted to Ariſtotle, held an univerſal ſoul, the ocean of all particular ſouls; and believed this univerſal alone capable of ſubſiſting for ever, while particular ones are born and die; i. e. riſe out of it, and return into it, or are reunited therewith. The ſouls of animals riſe by withdrawing like drops out of their ocean, when they find a body proper for them to animate; and periſh by rejoining the ocean of ſouls, when the body becomes unfit, as rivulets loſe themſelves in the ſea. And many held that God is the univerſal ſoul; the others ſuppoſed it ſubordinate, and created.

The anima mundi of Plato has been taken by ſome in this ſenſe. But it was more likely the ſtoics ſhould give into this common ſoul, which abſorbs all others. Thoſe who are of this opinion may be called monopſychites, in regard there is, according to them, only one ſoul which truly ſubſiſts. M. Bernier obſerves, that this opinion obtains almoſt univerſally among the learned in Perſia, and the ſtates of the Great Mogul. It ſeems alſo to have got among the cabaliſts and myſtic divines—Spinoſa was much of the ſame opinion; teaching that there is but one ſingle ſubſtance in the world, whereof particular or individual ſouls are only tranſient modifications. Several late authors in Germany have held ſomething like it. The deification of the myſtics, according to Leibnitz, is a rivulet from the ſame fountain.

The *Averrhoiſts*, who held that the ſoul was mortal, according to reaſon, or philoſophy, yet proteſted to ſubmit to the chriſtian theology, which declares it immortal. But the diſtinction was held ſuſpicious; and this divorce of faith from reaſon, was rejected by the doctors of that time, and condemned by the laſt council of the Lateran, under Leo X^th^. yet it was ſtill maintained covertly: Pomponatius, Cæſalpinus, and others, were ſuſpected of it. But the corpuſcular philoſophy now introduced in Italy, ſeems almoſt to have extinguiſhed Averrhoiſm. *Walch.* Parerg. Acad. p. 321. *Leibnitz*, Theod. §. 7. ſeq. *Bud.* Comp. Hiſt. Philoſ. c. 5. §. 4. *Bayle* in Averrhoes. It. in Niphus.

AVERSIONE *Vænire*, or *Locare*, in writers of the civil law, ſeems to denote the ſelling, or letting things in the lump, without fixing particular prices for each piece. *Briſ.* de Verb. Signif. p. 70. a. *Calv.* Lex. Jur. p. 100. b. *Pitiſc.* Lex. Ant. T. 1. p. 206. a.

AVERTI, in horſemanſhip, is applied to a regular ſtep or motion enjoined in the leſſons. *Guill.* Gent. Dict. P. 1. in voc.

In this ſenſe they ſay, *Pas averti*, ſometimes *Pas ecouté*, and *Pas d'ecole*, which all denote the ſame.

The word is mere French, and ſignifies adviſed, apprized, *&c.*

AUGITES, Αυγιτης, among antient naturaliſts, a kind of gem, of a pale green colour, inferior in value to the topaz. *Agric.* Foſſil. l. 6. p. 292. *Caſt.* Lex. Med. in voc.

It is uſually ſuppoſed the ſame with the *callais* or *calais*, tho' this was diſputed even in Pliny's time. Hiſt. Nat. l. 37. c. 10.

AUGURAL, ſomething relating to the augurs.

The *Augural* inſtruments are repreſented on ſeveral antient medals. V. *Evel.* Diſc. of Med. c. 2. p. 33.

AUGURAL *Supper*, *Cæna Auguralis*, that given by a prieſt on his firſt admiſſion into the order, called alſo by Varro *Adjicialis*. De re ruſt. l. 3. c. 6.

AUGURAL *Books*, *libri Augurales*, thoſe wherein the diſcipline and rules of augury were laid down. *Cic.* de Divinat. l. 1. c. 33.

AUGURALE, the place in a camp where the general took auſpicia.

auſpicia. This anſwered to the *Auguratorium* in the city. *Struv.* Synt. Ant. Rom. p. 275.

AUGURALE is alſo uſed, in Seneca, for the enſign or badge of an augur, as the lituus. *Senec.* de Tranquill. c. 12.

AUGURATORIUM, a building on the palatine mount, where public auguries were taken. *Struv.* Synt. Ant. Rom. c. 6. p. 272.

This is alſo called *Auguraculum*, and arx.

AUGUST, in reſpect of chronology, denotes the eighth month of the Julian year.

This was called, in the antient Roman calendar, *Sextilis*, as being the ſixth from March, from which the Romans began their computation. The emperor Auguſtus changed the name, and gave it his own; not that it was the month in which he was born, but becauſe it had been fortunate to him, by ſeveral victories which he had gained in it. *Macrob.* Saturn. l. 1. c. 12. *Struv.* Antiq. Rom. Synt. c. 8. p. 348.

Our Saxon anceſtors called it *Weod-monath*, that is, weed-month, by reaſon of the plenty thereof in this ſeaſon. *Spelm.* Gloſſ. p. 420. a.

AUGUST is alſo uſed, in middle-age writers, for a power, or licence, of going out of a city in harveſt-time to reap, *&c.* *Du Cange*, Gloſſ. Lat. T. 1. p. 390.

AUGUSTATICUM, in middle-age writers, denotes a largeſs, or donative, of an emperor, to the people, or ſoldiery. *Du Cange*, loc. cit.

AUGUSTEUM *Marmor*, in the natural hiſtory of the antients, a name given to the common green and white marble, ſo frequent in uſe with us for tables, *&c.* and called by our artificers Ægyptian marble. The Romans however made a diſtinction between the differences of this marble, in regard to the diſpoſition of its veins, for thoſe pieces of it which had the white matter diſpoſed into a ſort of arches, were called the Auguſtan marble, while thoſe which had the white in a more diffuſed and leſs regular form, were called the Tiberian marble. But theſe are too ſlight diſtinctions; for the ſame block of marble, nay ſometimes the compaſs of the ſame table, affords us both the Auguſtan and Tiberian kind. *Hill*'s Hiſt. of Foſſils, p. 482.

AVIGNON *Berry*, a name given, by ſome, to the Lycium fruit. See LYCIUM.

AVIS, *bird*, in zoology. See BIRD.

AVIS *Longa*, a name given by Nieremberg to the *Hoitlallotl* of the Americans, a bird very remarkable for the ſwiftneſs of its running.

AVIS *Trivea*, a name under which Nieremberg has deſcribed an American bird, of the ſize of a thruſh, brown and black on the back, and yellow under the belly, it imitates the human voice, and is called, by the natives, *ceoan*. See the article CEOAN.

AVIS *Pennipulchra*, the name of an American bird, deſcribed by Nieremberg, and called by the Indians *Quetzaltototl*. It is of the ſize of a pigeon, and is all over its body of the more beautiful colours of the peacock. It has a creſt of very elegant feathers on its head, and its beak is crooked and yellow, its legs alſo are yellowiſh. *Ray*'s Ornithol. p. 302.

There are, beſide this ſpecies, three or four others, which he deſcribes under this general name, giving their Indian names, *Tzanatl*, *Hoitzitzillin*, *Tzinitzian*, and *Totoqueſtal*, which ſee under the ſeveral terms. Mr. Ray has, however, rang'd all theſe under the number of birds the accounts of which he is either dubious about, or ſuſpicious of the truth of.

AVIS *Scica*, a name given by Nieremberg to the *Hoactli*, or *Tobactli*, a large bird, common on the lakes of Mexico. See HOACTLI.

AVIS *Tropicorum*, the name of a bird, commonly called alſo, in Engliſh, the *tropic bird*. It is of the ſize of the common duck. Its beak is red, about two fingers breadth long, ſomewhat crooked, and ſharp at the point. It has on each ſide of the head a long white line, extended from the angles of the beak. Its belly is white, as is alſo its back, but this is beautifully variegated with oblong black ſtreaks. Its wings are very long, and their feathers partly black and partly white. Its legs are white, its feet black, and the toes all connected together by a membrane, and its tail, ſo far as is yet known, ſeems extreamly ſingular, appearing to conſiſt of only two long feathers. *Ray*'s Ornithol. p. 250.

It is only found about the *Tropics*, and thence has its name. See Tab. of Birds, N°. 52.

AVIS *Venti*, the bird of the wind, a name by which Nieremberg has called a bird of Mexico, called by the natives *Heatototl*.

AUK, in zoology, a name given by ſome to a bird called the *Alka* in Latin, and more commonly known among us by the name of the *Razor-bill*, a web-footed fowl, wanting the hinder toe. See the article ALKA.

AULETES, Αυλητης, in antiquity, denotes a flute-player.

One of the Ptolemies, kings of Egypt, father of Cleopatra, bore the ſurname, or denomination, of *Auletes*.

AULOS, in zoology, a name by which ſeveral of the antient writers nave called the ſolen, or razor-fiſh. See SOLEN.

AUNE, in commerce, a long meaſure, uſed in France, and other countries; it is of different lengths in different places. See MEASURE, *Cycl.*

AURA, in chemiſtry, a certain fine and pure ſpirit, found in every animal or vegetable body; but ſo ſubtle, as only to be perceptible by its ſmell and taſte, or other effects, not found in any other but that body. This *Aura* exhibits the proper character of the body, by which it is accurately diſtinguiſhed from all others; but is itſelf too fine and thin to be ſeen by the eyes, tho' armed with a microſcope; or felt by the hands, and withal is extreamly volatile; ſo that, when pure and ſingle, it flies off by its great mobility, mixes with the air, and is received into the great chaos of all volatiles, and there, ſtill retaining its ſame nature, it floats till it falls down in ſnow, hail, rain, or dew, when it again enters the boſom of the earth, impregnates it with its prolific virtue, and is at length received by other juices of the earth, and conveyed into the bodies of animals and vegetables; and, by this revolution, paſſes into new bodies, whoſe maſs it animates and directs. This ſubtle fluid is lodged in the oil of the body, to prevent its being diſſipated and thrown off, and hence it is, that all the antient alchymiſts ſay ſpirit reſides in ſulphur. *Boerh.* Chem. p. 168.

AURANTIUM, the orange-tree, in botany. See ORANGE.

AURANTIUS *Piſcis*, in ichthyology, a name given by Nieremberg to the *Dorado*, or dolphin, a ſpecies of the coryphæna, diſtinguiſhed from the others by its forked tail.

AURARIA *Ars*, in middle-age writers, the goldſmiths art. Hence alſo *Collegium Aurarianum*.

AURARIA *Functio*, *Penſio*, or *Præſtatio*, a tax or tribute to be paid in gold. *Du Cange*, Gloſſ. Lat. p. 393.

The collector hereof was denominated *Suſceptor Aurarius*, or *Chryſypodectes*.

AURATA, in zoology. See GILT-*Head*.

AURELIA, in natural hiſtory. See WEB-*Caſe*.

AURICHALCUM. See ORICHALCHUM.

AURICULA *Urſi*, *bears ears*, or, as they are vulgarly called, *Auriculas*, in botany, a diſtinct genus of plants, the characters of which are theſe: The flower is funnel-ſhaped, conſiſting of one leaf, divided into ſeveral ſegments at the rim. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower. It afterwards ripens into a roundiſh fruit, partly covered by the calyx, and opening at the top, is ſeen to be full of ſmall ſeeds, fixed to a placenta.

The ſpecies of *Auricula Urſi*, enumerated by Mr. Tournefort, are theſe: 1. The yellow *Auricula*. 2. The purple *Auricula*. 3. The large flowered *Auricula*, with a velvety flower of a blackiſh purple, and a large and very white umbo. 4. The fleſh-coloured *Auricula*, with a large undulated flower, with a very large white umbo. 5. The variegated flowered *Auricula*, with a large undulated flower, and very large yellow umbo. 6. The *Auricula*, with a triple variegated umbo. 7. The *Auricula* with a very large gold yellow radiated umbo. 8. The *Auricula*, with a very large gold-coloured ſtellated umbo. 9. The white *Auricula*. 10. The large flowered ferrugineous black *Auricula*. 11. The *Auricula* with numerous and variegated leaves, and a very large flower. 12. The variegated flowered *Auricula*. 13. The round-leav'd *Auricula*. 14. The narrow-leav'd alpine *Auricula*. 15. The duſty or mealy-leav'd *Auricula*. 16. The fleſh-coloured *Auricula*, with leaves not ſerrated. 17. The ſmalleſt fleſh-coloured and white *Auricula*. 18. The beautiful red *Auricula*, with leaves hoary, and veiny on their under ſide. 19. The red-flowered jagged-leav'd *Auricula*, called *cortuſa* by Mathiolus. 20. The violet-flowered jagged-leav'd *Auricula*. 21. The great yellow double *Auricula*. 22. The great double white *Auricula*. 23. The great double purple *Auricula*. 24. The great double *Auricula*, with blackiſh purple velvety flowers. 25. The great double ſcarlet *Auricula*. 26. The great variegated double-flowered *Auricula*. 27. The graſſy-leaved alpine *Auricula*, with flowers like thoſe of the yellow jaſmine. *Tourn.* Inſt. p. 122.

The varieties raiſed by ſeeds from theſe ſpecies, are endleſs, and are one of the greateſt ornaments of the Dutch and Engliſh gardens.

The ſeveral ſpecies of the *Auricula*, when not in flower, are known by their thick hoary leaves, which are uſually terminated by a point.

Tho' this herb is ſeldom kept in the ſhops, it nevertheleſs ſtands recommended as a vulnerary, and as ſuch is found of ſervice, both for internal and external purpoſes. Mixed with ointments and plaiſters, it is reckoned good in ruptures. Four or ſix ſpoonfuls of the water, in which it has been boiled, taken every morning, is ſaid to cure coughs and ulcers of the lungs. The juice of its flowers removes ſpots of the face, and beautifies the ſkin; and with the ſame intention ſome diſtil a water from it. V. *James*, Dict. Med. in voc.

AURICULÆ *Primus Muſculus*, in anatomy, the name given by Fallopius to one of the muſcles of the head, called by Albinus the *Attollens Auriculam*, and by Winſlow the *ſuperior Auriculæ*. See SUPERIOR.

AURICULÆ *Secundus Muſculus*, in anatomy, a name given by Fallopius, and others, to the muſcles of the ears, called, by Albinus, *Retrahentes Auriculam*. Theſe are three in number, and ſo like one another, that they are eaſily miſtaken for one. Riolanus calls them the *Proprius Auris Externa*.

AURIFLAMMA, in the French hiſtory, properly denotes a flag, or ſtandard, belonging to the abby of St. Dennis, ſuſpended over the tomb of that ſaint, which the religious, on occaſion of any war in defence of their lands, or rights, took down, with great ceremony, and gave it to their protector, or advocate, to be borne at the head of their forces. *Du Cange*, Gloſſ. Lat. T. 1. p. 394. ſeq.

The word is alſo written *Auriflambe*, *Auriflambeum*, *Oriflamme*, and *Oriflambe*.

It is ſuppoſed to have taken the denomination on account of its yellow, or golden colour, from *Aurum* and *flammata*, which was a name given to all flags.

In later times the kings of France had the *Auriflamma* carried before them in all their military expeditions; and great virtue was ſuppoſed to be in it. Du Cange conjectures, that this practice came not in uſe before Lewis the ſixth, who acquired the county of Vilcaſſin, to which the protection or advowſon of the abbey of St. Dennis was annexed.

AURIFLAMMA is alſo ſometimes uſed to denote the chief flag, or ſtandard, in any army.

AURIFUSIA, AURIFUGIA, or AURIPHRIGIA, in middle-age writers, denote gold fringes, or borders, uſed on Veſtments, &c. V. *Spelm.* Gloſſ. p. 52. a.

AURIGRAPHUS, χρυσογραφος, in middle-age writers, a copiſt, or calligrapher, who wrote in gold letters. *Du Cange*, Gloſſ. Lat. T. 1. p. 397.

AURIS *Aſini*, *Aſſes Ears*, a name given, by naturaliſts, to a ſpecies of ſea-ſhell, ſuppoſed to reſemble the ear of an aſs in ſhape. It is of the family of the murex, and of that kind which has an alated and jagged lip. It is known by the crookedneſs of the beak, and the redneſs of the inſide of the mouth. There is another ſhell nearly allied to this, called *Auris Porci*. See MUREX.

AURIS *Marina*. See EAR-*Shell*.

AURIS *Porci*, *Hog's Ear*, in natural hiſtory, a name given by authors to a ſea-ſhell, a ſpecies of the murex kind, of that ſeries which have for their peculiar character an alated and laciniated lip. This ſpecies is of a ſort of triangular figure, and is ridged and furrowed very deeply. There is another ſhell very nearly allied to this, which is called *Auris Aſini*. See MUREX.

AURORA (*Cycl.*)—We read of an *Aurora Auſtralis*, a kind of light ſeen in the ſky, towards the ſouth, ſomewhat reſembling thoſe often ſeen towards the north. See Phil. Tranſ. N°. 461. Sect. 23, 24, and 25.

AURORA *Borealis*.—Mr. Euler thinks the cauſe of the *Aurora Borealis* not owing to the zodiacal light, as Mr. de Mairan ſuppoſes; (ſee AURORA *Borealis*, *Cycl.*) but to particles of our atmoſphere, driven beyond its limits by the impulſe of the light of the ſun. On this ſuppoſition, he endeavours to account for the phænomena obſerved concerning this light. He ſuppoſes the zodiacal light, and the tails of comets, to be owing to a ſimilar cauſe. See TAIL *of Comets*, and ZODIACAL *Light*.

This light ſometimes appears remarkably red, as it happened Dec. 5. 1737. of which we have very full accounts from divers parts of Europe, in the Phil. Tranſ. N°. 459. Sect. 7. p. 583—606.

AURORA *Surgens*, a phraſe, uſed by alchemiſts, to expreſs the multiplicative virtue of the philoſophers ſtone. Theat. Chym. T. 1. p. 169.

AURUM *ad Reſponſum*, among the Romans. See MAGISTER *Scrinii Diſpoſitionum*.

AURUM *Muſivum*, the antient name of what has been ſince called *Aurum moſaicum*. This old name is brought into uſe again in the London diſpenſatory, and the preparation directed to be made in the following manner: Take tin one pound, flower of brimſtone ſeven ounces, ſal armoniac and purify'd quickſilver, of each half a pound; melt the tin, and add to it the quickſilver, and when this is cold, reduce it to powder, and mix it with the other ingredients. Then ſublime the compound in a matraſs, and the *Aurum Muſivum* will be found under the part ſublimed, with a ſmall quantity of foulneſs at the bottom. *Pemberton*'s Lond. Diſp. p. 220.

AURUM *Potabile* (*Cycl.*)—Mr. Boyle gives us a method of making *Aurum Potabile* in an hour or two, without a furnace, or any other diſtilled liquor than rectified ſpirit of wine. See his Works abr. vol. 1. p. 63.

AURUM *Sophiſticum*, *mimic gold*, a chymical preparation, made as follows: Take fine diſtilled verdegreaſe eight ounces, crude Alexandrian tutty four ounces, borax twelve ounces, ſaltpetre one ounce and a half; pulverize and mix them altogether, tempering them with oil to the conſiſtence of a plaiſter; then put a german crucible into a wind-furnance, heat it red hot, and putting your maſs into it, let it be covered, and the furnace filled with coals over the crucible. When the maſs is melted, let it cool of itſelf, then break the crucible, and you will find at the bottom a fine regulus, like gold, weighing about four ounces, which being malleable, may be wrought into any form. V. *Smith*, Laboratory, p. 34.

AUSTRO-AFRICUS, the ſouth-ſouth-weſt point, or wind. *Wolf*, Elem. Geogr. §. 213.

AUSTROMANCY, *Auſtromantia*, properly denotes ſooth-ſaying, or a vain method of predicting futurity, from obſervations of the winds. *Rul.* Lex. Alchym. p. 96.

AUTER *Droit*, in law, is where perſons ſue, or are ſued, in another's right; as executors, adminiſtrators, &c.

AUTERFOIS *Acquit*, in law, a plea by a criminal, that he was heretofore *acquitted* of the ſame treaſon or felony. For one ſhall not be brought in danger of his life, for the ſame offence, more than once. 3 Inſt. 213.

AUTOCABDALI, Αυτοκαβδαλοι, in antiquity, an order of muſicians, who wore an ivy crown, or garland. *Fabric.* Bibl. Græc. l. 5. c. 40. p. 759.

Scaliger ſeems to rank them in the number of mimi. *Scal.* Poet. l. 1. c. 10.

AUTOCHTHONES, Αυτοχθονες, an appellation aſſumed by ſome nations, importing that they ſprung, or were produced, from the ſame ſoil which they ſtill inhabited.

In this ſenſe, *Autochthones* amounts to the ſame with *Aborigines*.

The Athenians valued themſelves on their being *Autochthones*, ſelf-born, or γηγενεις, earth-born, it being the prevailing opinion among the antients, that, in the beginning, the earth, by ſome prolific power, produced men, as it ſtill does plants. *Potter*, Archæol. l. 1. c. 1.

The proper *Autochthones* were thoſe primitive men, who had no other parent beſide the earth.

But the name was alſo aſſumed by the deſcendants of theſe men, provided they never changed their antient ſeat, nor ſuffered other nations to mix with them. V. *Fab.* Theſ. p. 319.

In this ſenſe it was that the Greeks, and eſpecially the Athenians, pretended to be *Autochthones*, and, as a badge thereof, wore a golden graſshopper woven in their hair, an inſect ſuppoſed to have the ſame origin.

AUTOCRATOR, Αυτοκρατωρ, a perſon veſted with an abſolute independent power, by which he is rendered unaccountable to any other for his actions.

The power of the Athenian generals, or commanders, was uſually limited; ſo that, at the expiration of their office, they were liable to render an account of their adminiſtration. But, on ſome extraordinary occaſions, they were exempted from this reſtraint, and ſent with a full and uncontroulable authority: In which caſe they were ſtiled Αυτοκρατορες. *Pott.* Archæol. l. 3. c. 5.

The ſame people alſo applied the name to ſome of their ambaſſadors, who were veſted with a full power of determining matters according to their own diſcretion. Theſe were denominated Πρεσβεις Αυτοκρατορες, and reſembled our *Plenipotentiaries*. Id. ib. c. 7.

AUTOCRATOR was alſo a title given the Roman emperors, firſt to Julius, and afterwards to his ſucceſſors, like that of Cæſar, or Auguſtus. *Dion.* l. 33. *Calv.* Lex. Jur. p. 105. a.

AUTODIDACTUS, Αυτοδιδακτος, a perſon ſelf taught, or who has had no maſter, or aſſiſtant of his ſtudies, beſides himſelf. V. *Morhof.* Polyhiſt. T. 1. l. 1. n. 14. *Bud.* Iſag. ad Theol. l. 1. §. 15. c. 3. *Suic.* Theſ. Eccleſ. T. 1. p. 581.

Autodidactus is uſed in divers ſenſes, ſometimes to denote a perſon who received his knowledge immediately from heaven, without any help of ſtudy. In which ſenſe the word occurs in Homer [a], and Clemens Alexandrinus [b].—[[a] Odyſſ. l. 22. v. 347. [b] Pædag. l. 3. c. 8.]

Sometimes for him who acquires his knowledge without either inſtruction by word of mouth, or reading of books. Such were the inventors of ſciences and laws.

Sometimes, and that moſt uſually, for him who arrives at learning by the uſe of books alone, without the aſſiſtance of any maſter, or inſtruction by word of mouth.

AUTOGLYPHUS *Lapis*, a ſtone, mentioned by Plutarch, and ſome other of the antients, as having naturally impreſſed on it the figure of Cybele. It is ſaid to have been found in Sagaris, a river of Perſia. Doubtleſs if any ſuch ſtone ever exiſted, the prieſts had got it made to deceive the people.

AUTOLITHOTOMUS, he who cuts himſelf for the ſtone.

Of this we have a very extraordinary inſtance given by Reiſelius, in the ephemerides of the academy naturæ curioſorum. Ephem. Acad. N. C. dec. 1. an. 3. obſ. 192.

Some chuſe to read the word, *Hautholithotomus*, or *Heautolithotomus*, ſuppoſing it formed on the model of Terence's *Heautontimorumenos*. *Brun.* Lex. Med. p. 95. a.

AUTONOMIA, a power of living, or being governed by our own laws and magiſtrates.

The liberty of the cities which lived under the faith and protection of the Romans, conſiſted in their *Autonomia*, i. e. they were allowed to make their own laws, and elect their own magiſtrates; by whom juſtice was to be adminiſtred, and

and not by Roman preſidents or judges, as was done in other places, which were not indulged the *Autonomia*. *Pitiſc.* Lex. Ant. T. 1. p. 229. a.

AUTOPHOSPHORUS, Αὐτοφωσφόρος, is, by ſome, uſed to denote phoſphorus, on account of its kindling as it were of itſelf. V. *Caſt.* Lex. Med. p. 95. a.

AUTOPRACTI, in the civil law, thoſe indulged this privilege, that they ſhould not be ſummoned or compelled to pay taxes, or tributes, by the collectors, but ſhould be left to their own free will. L. 34. Cod. Theodoſ. de Annon. and trib. ap. *Du Cange*, T. 1. p. 403.

Of this number were men of diſtinguiſhed dignity, and thoſe eminent for their probity and honour.

AUTOPYROS, Αὐτοπυρος, in the antient diet, an epithet given to a ſpecies of bread, wherein the whole ſubſtance of the wheat was retained, without retrenching any part of the bran.

Galen deſcribes it otherwiſe, viz. as bread where only the coarſer bran was taken out—On which footing, it was a medium between the fineſt bread, called *Similagineus*, and the coarſeſt, called *Furfuraceous*. *Bud.* de Aſſe, l. 5. p. 549. *Gorr.* Def. Med. p. 64. a. *Caſt.* Lex. Med. p. 95. b.

This was alſo called *Autopyrites*, and *Syncomiſtus*, συγκομιστος. See BREAD.

AUX, in aſtronomy, that point in a planet's path, or orbit, wherein it is at its greateſt diſtance from the centre of the world. *Wolf.* Lex. Math. p. 222. *Vital.* Lex. Math. p. 98.

Hence the antients, who conſidered the earth as the center, uſe *Aux* in the ſame ſenſe with *Apogee*. Among the moderns, on the contrary, it denotes the *Aphelium*.

Some alſo uſe *Aux* to denote the arch of the ecliptic, intercepted between the firſt point of aries, and the point wherein the ſun, or a planet, is at its greateſt diſtance from the earth. *Wolf.* loc. cit.

AUXESIS, Αὔξησις, (*Cycl.*) in rhetoric, ſometimes ſignifies the ſame with *Increment*. See INCREMENT.

AWAIT, in our old ſtatutes, is uſed to ſignify what we now call *waylaying*, or lying in *wait*, to execute ſome miſchief. In Stat. 13 R. 2. c. 1. it is ordained, that no charter of pardon ſhall be allowed before any juſtice, for the death of a man ſlain by *await*, or malice prepenſed, &c. *Blount*.

AXAMENTA, in antiquity, a denomination given to the verſes, or ſongs, of the Salii, which they ſung in honour of all men. The word is formed, according to ſome, from *Axare*; q. d. *nominare* [a]. Others will have the *Carmina Saliaria* to have been denominated *Axamenta*, on account of their being written εν τοις Αξωσι, in *Axibus*, or on wooden tables [b].—[[a] *Meiers*, Critic. Sine Criſſ. c. 2. p. 71. in Not. [b] *Walth.* Lex. Muſ. p. 60. b.]

The *Axamenta* were not compoſed, as ſome have aſſerted, but only ſung by the Salii. The author of them was Numa Pompilius; and, as the ſtyle might not be altered, they grew in time ſo obſcure, that the Salii themſelves did not underſtand them. Varro ſays they were ſeven hundred years old. *Quint.* Inſt. orat. l. 1. c. 11. V. *Pitiſc.* Lex. Ant. T. 1. p. 235.

AXAMENTA, or ASSAMENTA, in antient muſic, hymns or ſongs performed wholly with human voices. *Buleng.* de Theat. l. 2. c. 4. p. 343.

AXIOM, Αξιωμα, (*Cycl.*) in rhetoric, is uſed by Hermogenes to denote grandeur, dignity, and ſublimity of ſtyle. *Voſſ.* Rhet. l. 6. p. 433.

AXIOS, Αξιος, a form of acclamation, antiently uſed by the people in the election of biſhops. When they were all unanimous, they cried out Αξιος, he is worthy, or Αναξιος, unworthy. V. *Bingh.* Orig. l. 4. c. 2. §. 6.

AXIOSIS, Αξιωσις, in rhetoric, denotes the third part of an exordium; ſometimes alſo called Αποδοσις, and containing ſome new propoſition more nearly relating to the matter in hand, than the Προλασις.

Thus in Cicero's oration *pro Milone*, the *Protaſis* is, *non poſſum non timere, judices, viſa hâc nova judicii forma*; the καλασκευη, *Nec enim ea corona confeſſus veſter cinctus eſt, qua ſolebat*; the Αξιωσις, *Sed me recreat Pompei conſilium, cujus ſapientiæ non fuerit, quem ſententiis judicum tradidit, telis militum dedere*; the baſis, βασις, *Quamobrem adeſte animis judices, & timorem, ſi quem habetis deponite*. *Voſſ.* Rhet. *Heder.* Schul. Lex. p. 495.

AXIS, in zoology, the name of a very remarkable animal of the deer kind in all reſpects, except that neither the male nor female have horns; the tail is conſiderably long, and the whole ſhape and make extreamly like the fallow deer. The female is ſmaller than the male, and both are of a reddiſh tawney colour, variegated with ſpots of white; the belly is white. The voice is much more loud and ſhrill than that of the deer. It is very plain that this creature is neither of the red nor fallow deer kind, whence Bellonius, who ſaw it at Cairo in Egypt, was induced to call it the *Axis*. *Ray*'s Syn. *Quad. Bellon.*

AXUNGIA *Lunæ*, an affected name given by the German chemiſts to the *Terra Goltbergenſis*, from their imagining that it contains ſome particles of ſilver, and owes to them its virtues in medicine. *Dale*'s Pharmac. p. 19. See the article GOLTBERGENSIS *Terra*.

AXUNGIA *Solis*, is uſed for the terra ſileſiaca, and ſaid to be good againſt the plague, peſtilential fevers, &c. *Boyle*'s Works abr. vol. 1. p. 59. it. fol. edit. p. 501.

AZAB, in the military orders of the Turks, ſignifies a particular body of the ſoldiery taken in, or added firſt to the janizaries, but now become a ſeparate body from them.

The word, in the oriental languages, ſignifies an unmarried perſon, and the original order of theſe was, that they ſhould be ſingle men.

The *Azabs* in Egypt have been great rivals to the janizaries, and ſometimes they have got the better. Their inſtitution and officers are the ſame with thoſe of the janizaries; but with this difference, that from oda baſhees they are made ſerbajees, and from that office caias, and come into the divan. On the contrary, among the janizaries, when any one is made a ſerbagee, 'tis laying him aſide, and he is no farther advanced. *Pocock*'s Egypt, p. 169.

AZALEA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a ſmall upright perianthium, of a different colour from the reſt of the plant, divided into five ſegments, and remaining when the flower is fallen. The flower conſiſts of one petal of double the length of the cup, wide open at the top, narrow at the baſe, and lightly divided into five curled ſegments. The ſtamina are five ſlender filaments inſerted into the receptacle. The antheræ are ſimple. The germen of the piſtillum is roundiſh. The ſtyle is ſlender, of the length of the flower, and remains when that is fallen. The ſtigma is obtuſe. The fruit is a round capſule, divided into five cells. The ſeeds are numerous and roundiſh. *Linnæi*, Genera Plantarum, p. 66.

AZAROLA, a tree of the meſpilus kind, and ſomewhat related to our common white thorn, but having a much larger fruit. The fruit of this is much eſteemed in Italy, and from thence it has been introduced into England.

It is to be propagated by budding or grafting on the common hawthorn, and ſhould be planted in a moiſt ſoil, and a warm ſituation, where it will annually produce great quantities of fruit. Theſe are ſhaped like the common haws in our hedges, but they are much larger, and are not fit for eating till they begin to decay, as is the caſe in the common medlar. It is a common miſtake to plant theſe trees againſt warm walls, ſuppoſing they will not produce fruit with us without that aſſiſtance, but it is a very erroneous opinion, for they produce both more and better taſted fruit as ſtandards. *Miller*'s Gardener's Dict.

AZARUM, a ſmall, dry, blackiſh, ſtringy, medicinal root, much uſed in France as a ſpecific for the farcy in horſes. *Savar.* Dict. Comm. T. 1. p. 204. ſeq.

The *Azarum*, called alſo *Nardus Sylveſtris*, grows in the Levant, Canada, and about Lyons in France. The firſt is reputed the beſt. It is given in powder, from the quantity of an ounce to two.

AZAZEL, in jewiſh antiquity. See SCAPE-GOAT.

AZED, in the materia medica, a name given by the Arabian writers to a kind of camphor, which they make the third in value, placing it after the alcanſuri and abriagi. The firſt of theſe was the fineſt of all the kinds of camphor, and was collected tolerably pure from the tree, as it grew in Canſur, the place whence it was named; the abriagi was the ſame camphor, rendered yet more pure by ſublimation. This was a diſcovery of one of the kings of that country, and the camphor was named from him. The third kind, or *Azed*, was the ſame with what we now receive from the Indies, under the name of crude or rough camphor. The word *Azed* ſignified only large, and was uſed to expreſs the camphor, formed into ſuch large cakes, as it is alſo at this time. Aviſenna ſays this camphor was groſs, of a duſky colour, and much leſs bright and pellucid than the other kinds.

AZEDARACH, the *bead tree*, in botany, the name of a genus of trees, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form. In the center of the flower there ſtands a tube, which ſurrounds a piſtil ariſing from the center of the cup. This piſtil finally becomes a roundiſh ſoft fruit, containing a ſtone, which is ſtriated, and uſually divided into ſeveral cells, containing oblong ſeeds.

The ſpecies of *Azedarach*, enumerated by Mr. Tournefort, are theſe: 1. The blue flowered aſh-leav'd *Azedarach*. 2. The ever green *Azedarach*. *Tourn.* Inſt. p. 616.

AZELFOGE, in aſtronomy, a fixed ſtar of the ſecond magnitude, in the ſwan's tail. *Wolf.* Lex. Math. p. 233. a. ſeq. *Vital.* Lex. Mathem. p. 79.

Hevelius aſſigns its longitude for the year 1700, ♓ 1°. 16′. 45″. and its latitude northward, 59°. 57′. 53″. Prodrom. Aſtron. p. 184.

AZOOPHAGUS, in natural hiſtory, a term uſed by authors to expreſs ſuch inſects or animals as feed on herbs, never eating the fleſh of any living creature.

AZOTH, (*Cycl.*) a name given by ſome to the philoſophers ſtone. When the Arabs began to cultivate the ſtudy of chymiſtry, the metaphorical and hieroglyphical manner of writing,

writing, which obtained among them, ſeems to have given riſe to a practice of calling the means made uſe of for bringing metals to perfection, by the name of medicines, the imperfect metals by the name of ſick men, and gold by that of a ſound and lively perſon. From hence the ignorant fall into the error of ſuppoſing, that theſe were to be underſtood in a literal ſenſe, eſpecially upon finding the impurities of the baſer metals, called by the name of leproſies, the moſt incurable of all diſeaſes; and hence roſe that opinion, which has ſince ſpread itſelf far and wide, that the imperfect metals might be turned into gold, and the bodies of ſick men into ſound ones, by the ſame preparation. To this preparation they gave the name *Azoth*, or the philoſophers ſtone, and to its poſſeſſors the name of adepts. *Boerhaave*'s Chym. p. 26.

AZURIUM, a hard chymical maſs, produced from two parts of mercury, a third part of ſulphur, and a fourth of ſal ammoniac. Theat. Chym. T. 2. p. 437. *Brun.* Lex. Med. p. 96. b.

AZYMITÆ, in church hiſtory, a name given to thoſe who communicate with bread not leavened or fermented. *Spelm.* Gloſſ. p. 54. a.

The Greeks, in the eleventh century, called the Latins, by way of reproach, *Azymitæ*, and their clergy, Ἀζυμῖται ἱερεις. *Du Cange*, Gloſſ. Lat. T. 1. p. 414.

AZZALUM, in the antient phyſiology, a ſpecies of iron, reputed the moſt excellent of all, ſuppoſed to have been brought from India. Whence it was called *Indicum*, but, in reality, according to ſome, brought from China. *Plin.* Hiſt. Nat. l. 34. c. 14. *Pancirol.* de Reb. Memor. tit. 13.



B.

B, (*Cycl.*)—In muſic, *b* is uſed to denote a flat, or the lowering of a ſound by a ſemi-tone minor. Thus A ♭ or ♭ A is the flat of A, or the ſemi-tone minor below A.

B, *b*, *quadro* or ♮, in the ſcale of muſical notes, ſignifies the ſound which is a tone above A, and a ſemi-tone below C.

In the works of the muſicians of former ages we often meet with the mark ♮ alone, to ſignify the ſame ſound as *b* ♮. The letter B, among them, ſignified what we now call B flat: but among modern muſicians, B is more commonly uſed for the ſound which is a tone above A; and to denote B flat, or the ſemi-tone major above A, B ♭ or ♭ B is uſed.

B is alſo uſed as an abbreviation of *baſſo* or baſs. Hence B. C. ſtands for *baſſo continuo*, or the thorough baſs.

BAAL, in antiquity, the ſupreme being among the Phenicians. See DÆMON, *Cycl.*

BAALIM, in Antiquity, inferior deities among the Phenicians. See DÆMON, *Cycl.*

BAARAS, BAHARAS or BACHARAS, a miraculous kind of root, ſaid to grow on mount Lebanon, in a valley called *Baaras*, whence the name, near the city Macheron.

Joſephus repreſents it as of a flame colour, and emitting rays of light in the night time, like a ſtar, but diſappearing in the day; on which footing it ſhould make a vegetable phoſphorus. This property it may be ſuppoſed to derive from the ſoil, which abounds in bitumen: not unlike the plains of Puzzuoli, which being replete with ſulphur, will flaſh under the horſes feet. But what the hiſtorian adds, concerning the difficulty and danger of pulling up this root, its ſhunning the hand, and retiring under-ground, with the extraordinary means uſed to ſtop it, and the expedient to pull it up, are ſo much on the marvellous, that we dare not relate them. The root, it ſeems, was highly prized for its virtue in curing epilepſies and poſſeſſions. V. *Joſeph.* de Bell. Jud. l. 7. *Salmuth* ad *Pancir.* P. 2. T. 1. p. 60. *Corn.* T. 1. p. 79.

BABBLING, among hunters, is when the hounds are too buſy after they have found a good ſcent. *Cox.* Gent. Recr. P. 1. p. 15.

BABYLONIAN, BABYLONIC, or BABYLONISH *Epocha*, *Gemara*, *Hours*, &c. See the articles EPOCHA, GEMARA, HOUR, &c. *Cycl.*

The *Babylonian* monarchy, hiſtory, &c. is the ſame with what is otherwiſe denominated, the *Chaldean*, or *Aſſyrian*, &c. V. *Strauch.* Brev. Chron. p 181.

In antient writers, we find frequent mention of *Babylonica Texta*, a rich ſort of weavings, or hangings, denominated from the city *Babylon*, where the practice of interweaving divers colours, in their hangings, firſt obtained. *Plin.* Hiſt. Nat. l. 8. c. 48. *Jun.* Pict. Vet. l. 2. c. 8.

Hence alſo *Babylonic* garments, *Babylonic* ſkins, *Babylonic* carpets, houſings, &c. *Briſſ.* de Verb. Signif. *Calv.* Lex. Jur.

Babylonica Solana, coverings laid over couches, &c. painted with gold, purple, and other colours. *Pitiſc.* Lex. Ant. T. 1. p. 237. a.

BABYLONIAN, *Babylonius*, is alſo uſed in ſome antient writers for an aſtrologer, or any thing relating to aſtrology.

Hence *Babylonia Cura* [a], the art of caſting nativities, and *Numeri Babylonii* [b], the computations of aſtrologers. — [[a] *Claud.* Paneg. Conſ. Honor. v. 18. [b] *Hor.* l. 1. Od. 12.]

BABYLONICS, *Babylonica*, in literary hiſtory, a fragment of the ancient hiſtory of the world, ending at 267 years before Chriſt; and compoſed by Beroſus or Beroſſus, a prieſt of Babylon, about the time of Alexander.

Babylonics are ſometimes alſo cited in ancient writers by the title of Caldaics. V. *Stanl.* Hiſt. Philoſ. p. 1034.

The *Babylonics* were very conſonant with ſcripture, as Joſephus and the antient chriſtian chronologers aſſure; whence the author is uſually ſuppoſed to have conſulted the Jewiſh writings. *Beroſus* ſpeaks of an univerſal deluge, an ark, &c. He reckons ten generations between the firſt man and the deluge, and marks the duration of the ſeveral generations by *ſari*, or periods of 223 lunar months; which reduced to years, differ not much from the chronology of Moſes. *Freret.* in Mem. Acad. Inſcr. T. 8. p. 282. ſeq. See SAROS, *Suppl.* CYCLE, GENERATION, CHRONOLOGY, &c. *Cycl.*

The *Babylonics* conſiſted of three books, including the hiſtory of the ancient Babylonians, Medes, &c. But only a few imperfect extracts are now remaining of the work; preſerved chiefly by Joſephus, and Syncellus. Where all the paſſages of citations of antient authors out of Beroſus are collected with great exactneſs. Annius of Viterbo kindly offered his aſſiſtance to ſupply the loſs; and forged a compleat Beroſus out of his own head. The world has not thanked him for the impoſture. V. *Fabric.* Bibl. Græc. l. 6. c. 12. §. 9

BABYROUSSA, in zoology, the name of an animal, called by ſome, *Porcus Indicus*, or the Indian hog. It is of the ſize and ſhape of a ſtag. Its head and its tail reſemble thoſe of a boar, and its legs and feet, the goats. But beſides all theſe ſingularities, there is another thing in which it differs from all the other known animals, which is, that it has four *dentes exerti*, or long and crooked tuſks, two of which ariſe from the lower jaw, and the other two from the upper, making their way through the fleſh. Some have choſe to call them horns, but they are certainly more properly diſtinguiſhed by the name of teeth, as they have each their alveolus, from which they grow juſt in the manner of teeth, and are of the ſubſtance of ivory, not of horn. The creature is found in the iſland of Borneo. *Ray*, Syn. Quad. p. 96.

BAC, in navigation, is uſed for a praam, or ferry-boat. *Aubin.* Dict. marin. p. 59. See the article FERRY, PRAAM, &c.

BAC, in brewing, a large flat kind of tub, or veſſel, wherein the wort is put to ſtand and cool before boiling. *Savar.* Dict. com. p. 207.

The ingredients of beer paſs through three kinds of veſſels. They are maſhed in one, worked in another, and cooled in a third, called *Bacs* or coolers.

BAC, in diſtillery, veſſels into which the liquor to be fermented is pumped from the cooler, in order to be worked with yeaſt. *Shaw*'s Chem. Lect. p. 216.

BACANTIBI, Βακαντιβοι, in eccleſiaſtical antiquity, wandering clerks, who ſtrolled from church to church. V. *Bingh.* Orig. Eccleſ. l. 6. c. 4. §. 5.

The word ſeems formed by corruption from *Vacantivi*.

BACCÆ *Bermudienſes*, in the materia medica, the name of the fruit or berries of the *Sapindus*, or ſoapberry-tree. *Dale*, Pharm. p. 309.

BACCALARIA, in middle age writers, denotes a kind of country farms, conſiſting of ſeveral manſes. *Du Cang.* T. 1. p. 418.

BACCALARIA *Dominicaria*, or *Indominicata*, was more particularly uſed for a farm belonging to the lord, and kept in his own hands.

BACCHÆ, in antiquity, the prieſteſſes of Bacchus, who celebrated the orgia, or myſteries of that god. See BACCHANALIA.

The *Bacchæ* were originally a troop of bold enthuſiaſtic women, who attended Bacchus in his traditionary expedition to the Indies, and were the chief means of his conqueſt.

The *Bacchæ* were alſo denominated *Mænides*, ſometimes *Baſſarides*, from a garment worn by them called *Baſſara*: ſometimes *Thyades*, and ſometimes again *Mimallonides*, *Clodones*, &c. V. *Suid.* T. 2. p. 332.

The *Bacchæ* were cloathed with the ſkins of wild beaſts; they went with their hair looſe, were crowned with ivy, and carried in their left hand the thyrſus. Ovid deſcribes the habit and equipage of the *Bacchæ*. Met. l. 6. v. 592.

Vite caput tegitur; lateri cervina ſiniſtro
Vellera dependent; humero levis incubat haſta.

They ran through the mountains, crying out *Evohe Bacche*, q. d. Let Bacchus live happily. In their frantic humours they tore flocks to pieces, and eat their fleſh raw: when they approached the Indian army, they took to their drums and cymbols, which joined with their howling ſhrieks, and producing their thyrſus's twiſted, terrified the enemy's elephants, and put them to flight. *Lucian* in Dial. Suid. T. 1. p. 411. *Danet*, in Voc. *Bacchus*. *Pitiſc.* Lex Ant. T. 1. p. 238. *Aquin.* Lex. Mil. T. 1. p. 108.

After the return from India, a feaſt was inſtituted by them, in honour of Bacchus, where their frantic exploits were yearly renewed.

BACCHÆ was alſo uſed for the ivy crowns or garlands worn by the prieſts of Bacchus, in offering ſacrifices to him. *Suid.* T. 1. p. 411. *Pitiſc.* T. 1. p. 438 a.

BACCHANALIA, (*Cycl.*) — Plutarch will have the Grecian *Dionyſia*, anſwering the Roman Bacchanalia, to be the ſame with the Egyptian *Pamylia*, celebrated in honour of Oſiris, who was the ſame with the Grecian Bacchus. *Plut.* de Iſid & Oſir.

The *Bacchanalia* at Athens were at firſt very ſimple; a veſſel of wine adorned with a vine branch was brought forth; after this followed a goat; then was carried a buſhel of figs, and laſtly, the *Phalli*. *Plut.* de Cupid. Divit. p. 527.

Many frantic ceremonies were afterwards added, ſome of which are mentioned in the Cyclopædia, to which we may add, that the frantic rout attending theſe ceremonies, was, upon one of the ſolemnities of this god, followed by perſons carrying certain ſacred veſſels; the firſt of which was filled with water; after which went a ſelect number of honourable virgins, called, Κανηφοραι, becauſe they carried little baſkets of

gold, filled with all ſorts of fruit: in theſe conſiſted the moſt myſterious part of the ſolemnity; and therefore to amuſe the common people, ſerpents were put into them, which ſometimes crawling out of their places, aſtoniſhed the beholders. Next was the Περιφαλλια, being a company of men carrying τας φαλλας, which were poles, to the end of which were fixed things in the form of a man's privities. Theſe perſons were crowned with violets and ivy, and had their faces covered with other herbs; they were called Φαλλοφοροι, and the ſongs repeated by them φαλλικα ασματα. After theſe followed the Ιθυφαλλοι, in women's apparel, with garments ſtriped with white, and reaching to their ancles, garlands on their heads, gloves compoſed of flowers on their hands, and in their geſtures imitating drunken men. There were alſo certain perſons called Λικνοφοροι, whoſe buſineſs it was to carry the λικνον or myſtical van of Bacchus, a thing ſo eſſential to this, and other ſolemnities and ſacrifices of this god [a]. Such at leaſt were the Athenian *Bacchanalia*: for the method of celebrating them among the Romans, ſeems not to have been altogether ſo frantic. In reality the *Bacchanalia* was a Grecian feaſt, and never publickly eſtabliſhed at Rome, though long tolerated, and held in the night-time, in the grove of Simila. After its prohibition, recorded at large by Livy, particular perſons ſeem to have continued its uſe. Tacitus gives an elegant deſcription of the *Bacchanalia*, as celebrated by Meſſalina [b]. [[a] *Pott.* Archæol. Græc. T. 1. l. 2. c. 20. p. 383. *Lakemak.* Antiq. Græc. Sacr. P. 4. c. 2. §. 12. p. 610. ſeq. *Pitiſc.* T. 1. p. 238. [b] V. *Tacit.* Anal. 11. c. 31.]

There were divers ſorts of Dionyſia or *Bacchanalia*, among the Greeks; for the name is frequently given to all the ſolemn feaſts of Bacchus.

The firſt held in the ſpring, in the month Elaphebolion, called Διονυσια Αστικα or τα εν Αστει, becauſe ſolemnized within the city, ſometimes μεγαλα, or the great *Bacchanalia*; and ſometimes abſolutely and by way of eminence Διονυσια, or *Bacchanalia*, as being the moſt celebrated of all the feaſts of this deity at Athens.

The ſecond held in autumn, in the month Poſideon, and called more particularly Ανθεια, lenæa; ſometimes τα κατ' Αγρους, or the rural feaſt, becauſe celebrated in the field; ſometimes alſo Διονυσια μικρα, or the leſſer *Bacchanalia*. *Lakemak.* Antiq. Græc. Sacr. P. 4. c. 2. §. 12. *Pott.* Archæol. l. 2. c. 20. p. 384.

The antheſteria are by ſome thought to have been ſacred to Bacchus, under the denomination of Διονυσια Αγχαια, or old *Bachanalia*. *Lakemak.* l. c. See ANTHESTERIA.

The others take theſe to have been two different feaſts, and the latter no other than the great *Bacchanalia*, called Αρχαια, or Αρχαιοτερα, by way of contradiſtinction from the leſſer, or rural ſort, which are denominated Νεωτερα, or the newer.

To theſe may be added the Διονυσια Βραυρωνια, held at Brauron, a borough of Attica; Νυκτηλια, not to be revealed; Αρκαδικα, held by the Arcadians; Τριετηρικα, held by the Thebans in memory of Bacchus's three years expedition into India. *Pott.* l. c. p. 384. *Lakemak.* p. 614.

Jo. Nicolai and Jac. Herrenſchnidius have diſcourſes expreſs on the antient *Bacchanalia* [d]. M. du Rondel [e], has given an apology for the *Bacchanalia*, and ſhewn they were not ſo bad as they have been repreſented.—[[d] V. *Fabric.* Bibl. Ant. c. 10. §. 10. [e] In Diſſ. de Chænice Pythag. publiſhed in French at Amſt. 1690. 12mo.]

Some writers call the Romiſh carnaval, the *Chriſtian Bacchanalia*. *Fabric.* l. c. p. 332. See CARNAVAL.

BACCHANALIA, bacchanals, is alſo a name given to pictures, or *baſſo relievos*, whereon the feaſt is repreſented, conſiſting chiefly of dancings, nudities, and the like.

There are antique bacchanals ſtill ſeen on ſeveral antient friezes. The bacchanals painted by Pouſſin are excellent. *Felib.* ap. Trev. Dict. T. 1. p. 782.

BACCHARACH *Wine*, a name of a particular kind of wine, by ſome eſteemed a kind of Rheniſh; but Portzius, who has written expreſly on the ſubject, obſerves, that it differs from all the common Rheniſh wine, in colour, odour, taſte and virtue. When the wine is firſt made, it is of a yellowiſh colour, but they take off this by means of ichthyocolla cut and ſteeped in fair water for ten or twelve hours, and then torn to pieces, and mixed with the wine, but only in a ſmall quantity. They add only ſo much of the wine as they ſuppoſe capable of diſſolving it; and then letting it ſtand ſix or ſeven days, they put it into a ſieve, and pouring ſome more wine on it, they waſh it through; and thus percolated, they pour it out of one veſſel into another till it froths; they then pour the whole into a proper quantity of the wine, to clarify it and take away its colour. Some add, at the ſame time, a quantity of ſand, or of powdered white glaſs, which being heavy, and entangling themſelves in the foul matter of the wine, carry it to the bottom with them. When they pour this ſolution into the veſſel, they uſe a little ſtick with a piece of thin board perforated at the end of it, with which they beat the wine in the veſſel, to mix the ſolution of iſinglaſs everywhere with it. Four or five days ſtanding quiet after this, ſeparates all the fœces, and the wine is then drawn out into other veſſels pure and colourleſs. *Portzius* de vin. Rhen.

The *Baccharach* wine is of a very agreeable taſte, and in its qualities is rather inciſive than diuretic; it is alſo accounted ſtomachic, and is famous for quickening the ſpirits more and ſooner than any other wine.

The *Baccaharach* wine agrees with the other wines, in that more ſpirit is obtained from it than from the Greek, Muſcodine, or any other of the ſweet wines.

The ſpirit diſtilled from this and other thinner wines is alſo more fine than the richer wines.

BACCHARIS, BACCHAR, in botany, commonly called *plowman's ſpikenard*, a ſweet ſcented ſhrubby plant. The leaves are rough, and of a ſize between thoſe of the violet and mullein. The ſtalk is bent into angles, and riſes to the height of a cubit, is ſomewhat rough, and not without ſuckers. The flowers are of a purple colour inclining to white, and have a fragrant ſmell; and the roots are like hellebore, and ſmell like cinnamon. It delights in a rough dry ſoil. See CONYZA.

This plant is but rarely uſed in medicine; though ſome reckon it a good vulnerary, and uſeful in bruiſes, &c.

The *Baccharis* is the *Conyza major vulgaris* of C. Bauhin. V. *Ray*'s Synopſ. & Hiſt. Plant. *Boerhaav.* index, &c. See alſo *Miller*'s Gard. Dict. voc. *Conyza*.

Monſ. Vaillant makes the *Baccharis*, (in French, *Bacchante*) a genus of the corymbiferous claſs, and enumerates its ſpecies in Mem. Acad. des Sciences, Anno 1719.

He ſuppoſes *Baccharis* to be derived from Bacchus, Βακχος, the god of wine; becauſe the plants to which the ancients gave this name had a vinous ſmell, or perhaps, becauſe they were uſed as a preſervative againſt the diſtemper called Βακχος by the Greeks, which they conſidered as an inchantment.

BACCHARIS, Βακχαρις, was alſo the name of a ſweet ointment among the ancients, perhaps from this herb's being a principal ingredient in it.

BACCHI, in mechanics, a kind of antient machines, in form of goats, uſed by Jupiter in his wars againſt the giants.

Rubeck deſcribes two kinds of *Bacchi*, one made like the battering ram, wherewith Jupiter demoliſhed the enemies fortifications; the other contrived to caſt fire out of; from whence the Greeks are conjectured to have framed their idea of chimera. *Rudbeck*, Atlant. P. 3. c. 13. Phil. Tranſ. N°. 302. p. 2078.

BACCHIC, ſomething relating to the ceremonies of Bacchus.

The celebrated intaglia, called Michael Angelo's ring, is a repreſentation of a *Bacchic* feaſt.

BACCHIC *Song*, *Bacchicum carmen*, is ſometimes uſed for a *chanſon à boire*, or compoſition to inſpire jollity. But in a more proper ſenſe, it is reſtrained to a dithyrambic ode, or hymn. V. Mem. Acad. Inſcrip. T. 7. p. 293.

BACCHICA, in botany, is uſed for ivy, *hedera*. *Blancard* Lex. Med.

BACCOFOE, in botany, the name of a fruit very common in Guinea. It is like the banana, except that it is whiter, thicker, and ſhorter. The taſte and ſmell are both very agreeable; and ſome pretend, that on cutting it through tranſverſely, there is the figure of a crucifix repreſented on each ſide of it. Phil. Tranſ. N°. 108.

BACCHUS, in zoology, a name given by ſome to the *myxon*, a fiſh of the mullet kind, remarkable for the red colour of its lips, and the extremity of the covering of the gills. *Willughby* Hiſt. Piſc. p. 276. See the articles MYXON and MUGIL.

BACHARIS, in botany. See BACCHARIS.

BACK, in the manege, and among farriers. A horſe's *Back* ſhould be ſtreight, not hollow, which is called *ſaddle backed*: horſes of this kind are generally light, and carry their heads high, but want in ſtrength and ſervice. A horſe with a weak back is apt to ſtumble. Ruſt. Dict. in voc. *Reins*.

In the French riding ſchools, to mount a horſe *a dos*, is to mount him bare-backed, without a ſaddle. *Guill.* Gent Dict. p. 1.

BACK *of a chimney*, the hind part between the jaumbs and the hearth, uſually formed of brick, ſometimes tiles.

Iron BACK, is a large plate of caſt-iron, frequently adorned with figures in low relievo, ſerving not only to preſerve the ſtonework of the chimney back, but alſo to reflect the heat of the fire forwards. V. *Davil.* Courſ. d' Archit. P. 1. pl. 57. and 58.

BACK *of a hip*, among builders, denotes the two planes on the outſide of the hip, lying parallel with the adjoining ſide and end of the roof. *Neve*, Build. Dict. in voc. *Hip*. See HIP.

BACK *painting*, is uſed by ſome for the art of paſting of prints, and other deſigns on glaſs. *Smith.* Art of Paint. c. 19.

BACKS, among dealers in leather, denote the thickeſt and beſt tanned hides uſed chiefly for ſoles of ſhoes. *Hought.* Collect. T. 1. N°. 123. p. 322.

BACKS, in diſtillery. See BAC.

BACKBEROND, or *Backberend*, in law writers, denotes a criminal caught carrying off ſomething on his back. *Spelman.* p. 55. a. *Skinner*, Etym. voc. Forens.

In this Senſe, Bracton uſes it for a ſpecies of what the civilians call manifeſt theft, *furtum manifeſtum*. *Bract.* l. 3. Trac. 2. c. 32.

In the foreſt laws, *Backberond* is one of the four circumſtances, or caſes, wherein a foreſter may arreſt the body of an offender againſt vert, or veniſon in the foreſt. The others are *ſtalle-*

ſtable-ſtand, *dog-draw*, and *bloody-hand*. *Manwood* of Foreſt Laws, p. 2. *Cowel*. *Blount*. Terms de Ley.

BACKING *a colt*, the operation of breaking him to the ſaddle, or bringing him to endure a rider.

To *back* a colt they uſually take him into ploughed ground, trot him a while, to rid him of his wantonneſs; then having one to ſtay his head, and govern the chaffing rein, the maſter mounts his back, not ſuddenly, but by degrees, firſt making ſeveral offers or half-riſings: when he bears theſe patiently, he mounts in earneſt, and ſettles in his place, cheriſhing him, &c. V. Dict. Ruſt. in voc. Gent. Recr. p. 44.

BACKING *a horſe*. See HORSE.

BACK-WORM, a name given by ſportſmen to a diſeaſe very common to hawks, and called alſo the *filander*. The worms are lodged between the ſkin and the fleſh, and grow to a great length, ſome of them being not leſs than half a yard long. They are very troubleſome to the bird, and will at length kill it, if they be not deſtroyed in time. Their uſual place is under the ſkin of the lower part of the back, towards the rump.

There are ſeveral ſymptoms which diſcover the bird to be troubled with this diſeaſe, the principal are the ſtinking of its breath, the croaking and mourning in the night, ruffling and writhing the tail, and the ſmallneſs of the dung.

The beſt method of cure is this: ſqueeze out the juice of ſome ſtrong and well-grown wormwood, put into it as many cloves of garlick as it will conveniently cover; let the cloves be well cleaned of all ſkins, and pierced with holes; this is to ſtand a few nights, and afterwards one of the cloves is to be given, freſh taken out of the liquor every evening, for four nights together, and after a reſt of a few days, the ſame number given again, and ſo on till the diſeaſe is got the better of. Others give a ſcouring of waſhed aloes, muſtard-ſeed, and agarick, of each equal quantities. Dict. Ruſtic. in voc.

BACOBA, in botany, a name by which ſome authors call the bonana-tree, or *muſa fructu breviori*. *Piſo*. p. 76.

BACON, ſwin's fleſh ſalted and dried in the chimney. Writers on this branch of œconomics give rules for the hanging, the ſalting, and curing of *bacon*, larding with *bacon*, &c. V. *Collins*, Salt. and Fiſhery, p 123, and 129.

BACON *ſward*, denotes the thick outer ſkin taken off the lard or fat.

Old hiſtorians and law writers ſpeak of the *ſervice of the* BACON, a cuſtom in the manor of Whichenacre in Staffordſhire, and Priory of Dunmore in Eſſex; in the former of which places, by an antient grant of the lord, a flitch of *bacon*, with half a quarter of wheat, was to be given to every married couple, who could ſwear, that having been married a year and a day, they would never within that time have once exchanged their mate for any other perſon on earth, however richer, fairer, or the like. But they were to bring two of their Neighbours to ſwear with them that they believed they ſwore the truth. On this the lord of another neighbouring manor, of Rudlow, was to find a horſe ſaddled, and a ſack to carry the bounty in, with drums and trumpets, as far as a day's journey out of the manor: all the tenants of the manor being ſummoned to attend, and pay ſervice to the *bacon*. V. *Plot*. Nat. Hiſt. Stafford. c 10. §. 77.

The *Bacon of Dunmore*, firſt erected under Henry III. was on much the ſame footing; only the tenor of the oath was, that the parties had never once repented, or wiſhed themſelves unmarried again. *Plot*. l. c. §. 80.

BACTROPERATA, an antient appellation given to philoſophers by way of contempt, denoting a man with a ſtaff and a budget. *Hieron* in Matth. c. 10.

The word is alſo written *Bactropereta*. It is compounded of βακτρον, ſtaff, and πηρα, bag, or budget.

Du Cange is of opinion, it ought to be written *Bactroperita*; and that it denoted a traveller, or pilgrim, who carried a ſtaff and a leathern bottle of wine, as the word is explained by Papias. Dict. de Trev. T. 1. p. 787.

We ſuppoſe it is of the ſame people, that Paſchaſius Radbertus ſpeaks, under the corrupt name of *Baccoperitæ*, or *Bacchionitæ*, whom he deſcribes as philoſophers who had ſo great a contempt for all earthly things, that they kept nothing but a diſh to drink out of; and that one of this order ſeeing a peaſant ſcooping up the water in his hand, threw away his cup as a ſuperfluity; which is nothing but the old ſtory of Diogenes the Cynic. Dict. de Trev. T. 1. p. 782.

BACULARES, a ſect of anabaptiſts, ſo called, as holding it unlawful to bear a ſword, or any other arms, beſides a ſtaff. *Pratol* Elench. Hæret. P. 1. l. 2. §. 2.

BACULARIUS, in writers of the middle age, an eccleſiaſtical apparitor, or verger; who carries a ſtaff, *bacculus*, in his hand, as an enſign of his office. *Du Cange*, Gloſſ. Lat. T. 1. p. 425.

BACULI Sti. *Pauli*, or batoons of St. Paul, a kind of figured ſtones of the ſame ſubſtance with thoſe reſembling the briſtles of ſome american Echini, called by Dr. Plott *Lapides Judaici*. *Lhuyd*. in Ray Phil. Lett. p. 235.

BACULOMETRY, *Baculometria*, (*Cycl.*) — is properly that branch or ſpecies of geodeſia, which finds heights and diſtances, by the help of ſtaves. *Wolf*. Lex. Math. 235.

Schwenter has explained this art in his geometria practica; the rules of it are alſo laid down by Wolfius [a], in his elements; Ozanam alſo gives an illuſtration of the principles of *baculometry* [b]. — [[a] Elem. Geom. § 183, 197, 201, 205, 243, 262, ſeq. 271, 345. [b] Dict. Math.]

BACULOSUS *Eccleſiaſticus*, in ſome antient laws, is uſed for a biſhop or abbot, dignified with the paſtoral ſtaff, or crozier. *Spelm*. Gloſſ. p. 55. a.

BADGER, in zoology. See the articles TAXUS and MELES.

BADIAGA, in the materia medica, the name of a ſort of ſpungy plant, common in the ſhops in Moſcow, and ſome other northern kingdoms.

The uſe of it is the taking away the livid marks from blows and bruiſes, which the powder of this plant is ſaid to do in a night's time.

We owe the knowledge of this medicine, and its hiſtory, to the accurate Buxbaum. He obſerves, that the plant is always found under water, and is of a very ſingular and peculiar nature.

It ſomewhat reſembles the *alcyoniums*, and ſomewhat the ſpunges, but differs greatly from both, in that it is full of ſmall round granules, reſembling ſeeds. It is of a looſe, light, and ſpungy ſtructure, and is made up of a number of fibres of an herbaceous matter, and is dry, rigid, and friable between the fingers.

This may ſerve as the generical character of the *badiaga*, of which this accurate obſerver has found three different ſpecies. The firſt of theſe he calls the great *badiaga*; this is mentioned in Loſel's *Flora Pruſſica*, under the name of *Muſcus aquaticus ceratoides*, the horned water moſs; and Breynius calls it an elegant ſpecies of ſpunge; the ſeeds of this large kind are whitiſh, and are convex on one part, and hollowed on the other, in the manner of the crabs eyes; the ſmell of this ſpecies is very offenſive, and reſembles the ſmell of ſome rank fiſh.

The ſecond ſpecies is ſmaller, and leſs branched than this, and is remarkable for its yellow ſeeds. It is like the former, of a dark blackiſh green colour, and of a fiſhy rank ſmell; this uſually adheres either to the mud at the bottom of lakes, or to ſome ſmall water plants, ſuch as the three leaved duckweed, or the like, whereas the former is generally found ſticking to old boards. This loves ſtanding water, and is called the leſſer *badiaga*.

The third kind is the grey, or aſh-coloured *badiaga*; this is the plant called the branched brittle river-ſpunge, by Mr. Ray. This is a much more elegant plant than either of the other ſpecies, and much approaches to the nature of the branched ſpunges, but it is very brittle; the branches of this often grow together, and form cavities between them occluded on all ſides. The ſeeds of this ſpecies Buxbaum had not an opportunity of obſerving, but judged from a ſimilarity in the other parts of the plants, that they were like thoſe of the reſt. Act. Petrop. Vol. 2. p. 344.

BADIGEON, a mixture of plaiſter and free-ſtone, well ground together, and ſifted; uſed by ſtatuaries to fill up the little holes, and repair the defects in ſtones, whereof they make their ſtatues and other work. *Savar*. Dict. Com. p. 209.

Maſons give the ſame name to a kind of mortar made of the duſt, or fragments of free-ſtone, wherewith they colour, or ſmeer over the common plaiſter, to give it a reſemblance of free-ſtone.

The ſame term is alſo uſed by joiners, for ſaw-duſt mixed with ſtrong glue, wherewith they fill up the chaps, and other defects in wood, after it is wrought.

BADOUCE, in natural hiſtory, the Eaſt Indian name of a fruit, very common in that part of the world. It is round, and of the ſize of one of our common apples; it is yellow on the outſide, and white within. It reſembles the mangouſtan; but its pulp is more tranſparent; its taſte is very agreeable, and has ſome reſemblance of that of our gooſeberries.

BÆTUS, in ichthyology, a name given by Ariſtotle, and other of the antient Greeks, to the fiſh called by the Latin writers *cottus*; particularly to that ſpecies of it which we call the *bull-head*, or the *miller's-thumb*. See COTTUS.

BÆTYLOS, or BÆTYLION, in antiquity, a kind of ſtones worſhipped among the Greeks, Phrygians, and other nations of the eaſt; ſuppoſed by modern naturaliſts to be the ſame with our *ceraunia*, or thunder-ſtone. *Mercat*. Metalloth. Arm. 9. c. 16. p. 240. See the article CERAUNIA.

The *Bætylos*, among the Greeks, is repreſented as the ſame with the *abadir* among the Romans. See the article ABADIR.

The *Bætyli*, repreſented by the ancient mythologiſts, are conſidered by ſome as a kind of animated ſtatues ſuppoſed to have been invented by Cælus, in his war againſt Saturn. Others derive their origin and worſhip from the ſtone which Saturn is ſaid to have ſwallowed by miſtake for his ſon Jupiter: others from the pillar of ſtone, which the patriarch Jacob erected at Bethel [b]; and which was afterwards worſhipped by the Jews [c]. And hence the uſual etymology of the word [d]. —[[b] Geneſ. c. 28. v. 18. [c] *Fabric*. Cod. Apocr. vet. Teſt. T. 1. c. 440. §. 134. Mem. Acad. Inſcrip. T. 3. p. 178. [d] V. *Voſſ*. Etym. p. 60. b.]

The prieſts of Cybele carried a *Bætylos* on their breaſt, repreſenting the mother of the gods. But it is a miſtake to ſuppoſe, that this was the only repreſentation of the goddeſs that they carried about with them. V. *Banier*. in Hiſt. Ac ad. Inſcrip. T. 3. p. 361.

These *Bætyli* were much the object of the veneration of the antient heathens. Many of their idols were no other. In reality no sort of idol was more common in the eastern countries, than that of oblong-stones erected, and hence termed by the Greeks, κιονες, pillars.

In some parts of Egypt they were planted on both sides of the highways. In the temple of Heliogabalus, in Syria, there was one pretended to have fallen from heaven. There was also a famous black stone in Phrygia, said to have fallen from heaven. These were most commonly nothing but shapeless stones, though honoured, as representing the mother of the gods. The Romans sent for it, and the priests belonging to it, with much ceremony, Scipio Nasica being at the head of the embassy. V. *Banier.* Hist. Acad. Inscrip. Tom. 3. p. 362. *Strab.* Geogr. l. 17. *Pott.* Archeol. l. 2. c. 2. p. 190. seq.

BAG, (*Cycl.*)—BAG, *faculus*, in medicine and pharmacy, denotes a kind of fomentation, prepared of proper ingredients, inclosed in a *bag*, to be applied externally to a part diseased, for present relief. *Barchuy's* Pharm. Synop. p. 132.

Dispensatory writers describe cordial *bags*, used in deliquiums; *bags* for the side, for the stomach, in weaknesses of the stomach; anodyne *bags* to ease pain in any part. *Quinc.* Pharm. P. 4. §. 14.

Wines and ales are frequently medicated by putting into them *bags* full of proper ingredients.

Sweet *bags*, are compositions of perfumes, scented powders, and the like, inclosed in *bags*, to give a fragrancy to clothes or the like. *Salmon.* Polygr. l. 5. c. 13.

Petty BAG. See PETTY *Bag*.

BAGADAT, a name by which some call the carrier pidgeon, the *Columba Tabellaria* of Moore. This name is probably a composition of the word Bagdat, the name of the city from whence they are sometimes brought to Europe; being originally brought thither from Bazora. *Moore's* Columb. p. 29.

BAGAUDÆ, or BACAUDÆ, an antient faction of peasants, or malcontents, who ravaged the Gauls.

The Gauls being oppressed with taxes, rose about the year of Christ 290, under the command of Amand and Elian; and assumed the name *Bagaudæ*, which according to some authors, signified, in the Gallic language, forced rebels; according to others, tribute; according to others, robbers; which last signification others allow the word had, but then it was only after the time of the *bagaudæ*, and doubtless took its rise from them. V. *Du Cange*, Gloss. Lat. T. 1. p. 431. *Pitisc.* Lex. Ant. T. 1. p. 238. *Menag.* Orig p. 69. b. *Aquin.* Lex Milit. T. 1. p. 108. a.

BAGGAGE, is particularly used in the military art, for the necessaries, utensils, apparel, &c of the officers and soldiers.

The *baggage* includes also women, children, suttlers, &c.

The *baggage* is well called by Roman writers, *Impedimenta*, on account of the great trouble and expence attending it. Unless strict discipline be kept, great inconveniences may arise from it; whence several military laws and ordinances relating to the *baggage*. Of late times, they have the precaution, when any expedition that requires dispatch is undertaken, or when a battle is expected, to send away the *baggage* to some place of security. *Fæsch.* Ingen. Lex. p. 930. b.

The *Baggage* waggons before a march are appointed a rendezvous, where they are marshalled by the waggon-master general, according to the rank the several regiments bear in the army. On a march, they are sometimes ordered to follow the respective columns of the army, sometimes to follow the march of the artillery, and sometimes to make a column of themselves. The general's *baggage* is generally first. If the army march from the right, the *baggage* of that wing has the van; if from the left, the *baggage* of the left has the van. Each waggon has a distinguishing flag, to shew to what regiment it belongs. *Guillet.* p. 2.

Packing up the BAGGAGE, *vasa colligere*, was a term among the Romans, for preparing to go to the war, or to be ready for an expedition. *Aquin.* T. 2. p. 415. a.

The formula whereby the soldiers declared they were in readiness, was, *vasa conclamare.*

The Romans distinguished two kinds of *baggage*, a *greater* and *less*: The lesser was carried by the soldier on his back, and called *sarcina*; consisting of the things most necessary to life, and which he could not do without. Hence *colligere sarcinas*, packing up the *baggage*, is used for decamping, *castra movere.*

The *greater* and heavier was carried on horses and vehicles, and called *onera*. Hence *onera vehiculorum*, *sarcinæ hominum.* The *baggage* horses were denominated *sagmentarii equi. Aquin.* Lex. Milit. T. 2. p. 268. a. It. p. 261. b.

The Roman soldiers in their marches were heavy loaden, insomuch, that they were called by way of jest, *muli mariani*, and *ærumnæ*. They had four sorts of *luggage*, which they never went without, *viz.* corn, or *buccellatum*, utensils, valli, and arms.—Cicero observes, that they used to carry with them above half a month's provisions; and we have instances in Livy, where they carried provisions for a whole month. Their utensils comprehended those proper for gathering fewel, dressing their meat, and even for fortification, or intrenchment, and what is more, a chain for binding captives.

For arms, the foot carried a spear, shield, saw, basket, rutrum, hatchet, lorum, falx, &c. Also stakes or pales, *valli*, for the sudden fortifying a camp; sometimes seven or even twelve of these pales were carried by each man, though generally, as Polybius tells us, only three or four.

On the Trajan column we see soldiers represented with this fardle of corn, utensils, pales, &c. gathered into a bundle and laid on their shoulders. V. *Lipsi* de milit. Rom. l. 5. dial. 2.

Thus enured to labour, they grew strong, and able to undergo any fatigue in battle; the greatest heat of which never tired them, or put them out of breath. In after-times, when discipline grew slack, this luggage was thrown on carriages, and porter's shoulders.

The Macedonians were not less inured to hardship than the Romans: when Philip first formed an army, he forbid all use of carriages: yet with all their load, they would march in a summer's day, twenty miles in military rank. V. *Aquin.* T. 2. p. 106. seq. *Pitisc.* T. 1. p. 944.

BAGGING *of Hops.* See HOPS.

BAGOI, among the antient Persians, were the same with those called by the Latins, *spadones*, viz. a species of eunuchs, in whom the canal of the penis was so contorted by a tight vinculum, that they could not emit the semen. *Plin.* Hist. Nat. l. 13. c. 4. *Calv.* Lex. p. 107. b.

BAGPIPE, this instrument was called by the Romans *utricularis tibia*, and the players thereon, *utricularii*; by the Greeks Ασκαυλοι. Some also take *nablion*, or *nablon*, mentioned by Strabo, and others, for a *bagpipe*. *Pitisc.* Lex. Ant. T. 2. p. 1126. b. & 246. b.

The invention of the *bagpipe* is by some derived from Tubal, who is called in Scripture *Pater canentium organo & cithara.* Others attribute it to Pan; others to Mercury; others to Faunus; others to Marsyas; and others to the young Sicilian shepherd Daphnis, who first composed pastorals.

The *bagpipe* was used to celebrate the praises of heroes and great men, as well as at sacrifices, solemn feasts, combats, funerals, &c. The *bagpipe* is only an improvement of the calamus or oaten pipe, by combining of several different sizes together; but much mended by the bellows being added to it, which is said to be the invention of a king of Phrygia. Before his time the instrument being blown by the mouth, subjected the player to much grimace; to prevent which, the antients used a kind of bridle, or leathern collar, called *capistrum*, which coming over the mouth, pressed the lips and cheeks so tight, as only just to leave room for giving breath to the pipe. Journ. des Scav. T. 6. p. 270.

An anonymous French author has published a treatise of the *bagpipe*, *traité de la musette*, with a new method of learning to play on it without a master. Fol. Par. 1672. V. Jour. des Scav. T. 6. p. 268.

BAGRE, in zoology, a small bearded fish of the anguilliform kind, of which there are several species. The most common of these, called simply the *bagre*, is to be known by these characters. Its body is oblong, the beginning of its back is elevated, and its head is pointed, or of a conic form, and covered with a hard crust or shell, reaching to the beginning of the back. Its usual length is about a foot; its beard, for all the fish of this name have beards, is composed of six fibres; the four lower of which are of a finger and an half long, and the two upper of the length of the whole body of the fish. It has seven fins besides the tail; of which the two that are below the gill-fins, and one placed erect on the summit of the back, have each a strong, bony, and serrated horn, of their own length; the others are supported by softer prickles; the tail is forked; it has no scales, but is covered over the whole body with a soft mucous skin of a silvery whiteness, and the beard, the head, and fins, are all of the same colour; the eyes are large, the mouth small, and without teeth. It is caught in the American seas, and is eaten; but if any body is wounded by its thorns, it generally gives great pain, and is difficult to cure. *Margrave's* Hist. Brasil.

The other species are some larger, others smaller, and have other slight distinctions; but they are all bearded, and all have thorns at some of their fins.

BAGRE *de Rio*, a name by which some call the fish more frequently known by the name of *Nhamdia*. *Margrave's* Hist. Brasil. See the article NHAMDIA.

BAHAR, or BARR, a weight used at Ternate, Moca, in the Moluccas, Achem, and divers other parts of the East Indies. Lex. Mercat. p. 385.

There are two kinds, the *great*, wherewith spice is weighed, equivalent to 200 catis, at 26 taels to the cati, amounting to 481 pounds 4 ounces, Paris measure.

The *little bahar* serves for the weighing quicksilver, vermilion, ivory, silk, musk, and other precious wares, containing likewise 200 catis, but at 22 tael to the cati, amounting to about 401 pounds 7 ounces, Paris measure. The Chinese *bahar* is 300 catis, but each cati only equal to 16 taels. *Savar.* Dict. Com. p. 211.

BAHIRA, among the antient Arabs, a name given to one of the four kinds of camels or sheep, which for some reasons of their religion, were turned out at liberty, with an ear-mark, no longer

longer to be used for service like other cattle. Vid. Kor. c 5. *Sale*, not ad loc. p. 96.

The *Bahira*, with the *Saiba*, *Wasita*, and *Hami*, were abolished by Mahomet, as no ordinance of God. Vide *Sale*, Prelim. Disc. to Koran, §. 5. p. 128, seq.

Authors are not agreed as to the characters of the *Bahira*.

BAILIAGE, is used for the office of a bailiff, for the place where he keeps his seat, and for the territory subject to his jurisdiction; which last is also denominated *bailiwick*.

French Compté is divided into three grand *bailiages*; most of the provinces of Germany are divided into *ampts* or *bailiages*, that is, into a number of cantons, containing each several villages, a city or town where the bailiff resides, who is properly the prince's officer, and obliged to look after his affairs.

Water BAILIAGE, *or* BAILAGE, is an antient duty received by the city of London, for all goods and merchandises brought into or carried out of the port. Lex. Mercat. p. 135.

BAILIFF, (*Cycl.*)—The name *bailiff*, *bailivus*, appears to have been first brought into England by the Normans. It is true, we find it in the laws of Edward the Confessor, chap. 35; where sheriffs, aldermen, *&c.* are called *bailiffs* of the king: *Vicecomites*, *aldermanni*, *& præpositi hundredorum & wapentachiorum*, *& cæteri* ballivi *domini regis*; but *Spelman*, with probability, takes the word not to have been in use, but added of later times.

We meet with divers species and denominations of *bailiffs* in these and the neighbouring countries; as *provincial*, *royal*, *itinerant*, and *heretable bailiffs*; *bailiffs* of France, of the Empire, of boroughs, of courts baron, of franchises, manors, *&c.*

Provincial BAILIFF, *Bailivus Provincialis*, among the French, was an officer appointed to administer justice in a certain province, or county, with an authority somewhat like that of our justices of assize, instituted by the dukes and counts in their several territories, after they had procured the inheritance of them. These acted in the name, and by authority, not of the king, as justiciaries, but of the dukes, or counts, who appointed them, and whose deputies they were. Spelman takes them to be the same with what, among our Saxon ancestors, were denominated *aldermen of counties*, and *graves*, or *reves*, which afterwards became *vicecomites*, and sheriffs. *Spelm.* p. 57. b.

Appeals lay from these to the *bailiffs* of France, *bailivi Franciæ*, who were those appointed over the provinces originally belonging to the crown.

Royal BAILIFFS, *Bailivi Regii*, were those over provinces afterwards annexed to the crown. Something like these still subsists in Scotland, under the title of high or heretable *bailiffs*; as those of Cunningham, Carrick, and Kyle; the first in the family of the earls of Eglington, the second, of the earl of Cassils, the third, of the earl of Loudon. *Chamberl.* Pres. State of Brit. P. 2. p. 680.

BAILIFFS *of Boroughs*, *Bailivi Burgorum*, were magistrates antiently in cities and towns, answering, in some measure, to what of later times was called *portgrave*, *mayor*, &c.

Canterbury was a *bailiff* town five hundred years ere it was made a mayor town. Westminster, Southwark, Scarborough, *&c.* are still governed by *bailiffs*. *Somn.* Antiq. Cant. p. 366.

Bailiffs differ in this from mayors, that the latter are always single in one place, whereas there was usually two *bailiffs* to a city, as formerly at London, and sometimes four, as at Norwich. *Spelm.* Gloss. p. 58. *Du Cange*, T. 1. p. 439.

BAILIFF *of the Empire*, was antiently the vicar or regent of the empire; as appears from a letter of Henry of Flanders to pope Innocent III. wherein he says, the princes, barons, and knights, have elected me *bailiff of the empire*; *bailivus imperii*. Dict. de Trev. T. 1. p. 804.

BAILO, or BALIO, a name given at Constantinople, to the embassador of Venice residing at the Port; who also does the office of consul of his nation. Diction. de Trev. T. 1. p. 799.

The word is doubtless the remains of the word *bajulus*, which the modern Greeks and Turks have formed into *bailo*. *Savar.* Dict. Com. p. 212.

The Venetian consuls at Aleppo, Alexandria, Smyrna, and other parts of the Levant, are also denominated *bailo*.

BAIOCCO, a money in modern Rome, equivalent to a tenth part of the *julio*, or a hundredth part of the ducat. *Moor.* Math. Comp. c. 3. p. 20.

The *baiocco* is worth about nine deniers, French money. *Savar.* Dict. Com. p. 214.

BAIRAM, (*Cycl.*)—The *Little* BAIRAM is properly that held at the close of the fast Ramazan, beginning with the first full moon in the following month *Shawal*. This is called in Arabic *Id al Fetz*, or the Feast of breaking the Fast; by European writers, the Turkish Easter, because it succeeds Ramazan, which is their Lent, more usually the *Great Bairam*, because observed with great ceremony and rejoicing at Constantinople, and through Turky, for three days, and in Persia for five or six days, at least by the common people, to make themselves amends for the mortification of the preceding month. Vid. *D'Herbel.* Bibl. Orient. in voc. *Bairam*.

This feast commencing with the new moon, the Mahometans are very scrupulous in observing the time when the new moon commences; to which purpose, observers are sent to the tops of the highest mountains, who, the moment they spy the appearance of a new moon, run to the city, and proclaim *Muzhdaluk*, welcome news; as it is the signal for beginning the festivity. Vid. *Hyd.* Not. ad Bobov. Liturg. Turc. §. 4. p. 134. The ceremonies are described at large by *Rycaut* [b] and *Tournefort* [c].—[b Vid. Pref. Stat. Ottom. Emp. l. 2. c. 24. p. 125, seq. c Voyage du Levant, T. 1. Lett. 1. p. 176. Idem, T. 2. Lett. 14. p. 2.

The Greater BAIRAM, is properly that held by the pilgrims at Mecca, commencing on the tenth of Dhu lhajia, when the victims are slain, and lasting three days. This is called by the Arabs, *Id al adha*, that is, the feast of sacrifice, as being celebrated in memory of the sacrifice of Abram, whose son God redeemed with a great victim [d]. By European writers it is called the *Lesser Bairam*, as being less taken notice of by the generality of the people, who are not struck with it, because the ceremonies, it is observed withal, are performed at Mecca, the only scene of the solemnity [e]. ——[d Vid. Koran, c. 37. e Vid. *Sale*, Prelim. Disc. to the Koran, p. 151]

On the feast of *Bairam*, after throwing little stones, one after another, into the valley Mina, they usually kill one or more sheep, some a goat, bullock, or even a camel; and, after giving part thereof to the poor, eat the rest with their friends. After this, they shave themselves. The second is a day of rest. On the third, they set out on their return home. Vide *Reland.* de Relig. Mahom. p. 116. See also *Bobov.* de Liturg. Turc. § 4. p. 133, seq. *Tournef.* Voyag. T. 1. Let. 1. p. 27.

BAIT, (*Cycl.*)—*Baits* make a capital article in angling; on the choice whereof, much of the sport depends; different seasons, and different game, having their appropriate *baits*. The red, or earth worm is good for the small fry most of the year round; and small fish are good *baits* for pikes at all times; sheep's blood and cheese are good *bait* in April; the bobs, dried wasps, and bees, are for May; brown flies for June; maggots, hornets, wasps, and bees, for July; snails in August; grasshoppers in September; corn, bramble berries and seeds, at the fall of the leaf; artificial pastes are for May, June, and July, and frogs for March. Sportsm. Dict. T. 1. in voc.

We meet with divers kinds of *baits*; live, and dead *baits*, ledger, and walking *baits*, &c.

Live BAITS, again, are either *natural* or *artificial*.

Natural BAITS include all kinds of worms, as the red worm, maggot, and the like; also frogs, grasshoppers, hornets, bees, brown flies, snails, roaches, bleak, gudgeon, and loaches. Vide Gent. Angl. p 25, seq.

Artificial BAITS, are flies of all kinds and shapes, made of silk, feathers, and the like. The variety of which is very great; there being not only different ones for every season and month of the year, but almost for every fish.

There are several *artificial baits*, for intoxicating of fowl, and yet without tainting or hurting the flesh, so as to make it unfit to eat.

Dead BAITS, are pastes of divers sorts, made of corn, cheese, fruits, wasps dried or undried, sheeps blood, boiled beans, and the like.

Ledger BAIT, is that which remains fixed in one certain place, while the angler may be absent; used especially in fishing for pike. *Cox.* Gent. Recr. P. 4. p. 45.

Walking BAIT, is that which the angler attends, while he keeps moving from place to place, in quest of the fish. Vid. Dict. Rust. in voc.

BAITS *of Hemp*, denote bundles of that plant, pulled and tied up, ready for steeping in the water. *Hought.* Collect. N° 347. T. 2. p. 390. See FLY and FISHING, *Cycl.* and *Suppl.*

Live BAITS, are to be kept each sort separate, and fed with those things which they like best.

The red worm is to be kept in rich black mould, with a little fennel chopped among it; a little ox or cow dung, newly made, is also a very acceptable thing to them. They may be kept in a box, with small holes in it, or in a bag. Red worms, and all other sorts, scowr quickly, and grow very tough and bright, on putting them into a thin clout, greased with fresh butter, or grease, before they are put into moss.

This is the best of all things to keep them in; but the moss must be first very well washed, and the water squeezed dry out again. As to food, a spoonful of cream, dropped into the moss once in three or four days, is better than any thing else. The moss is to be changed every week, and kept in a cool place.

White large maggots are an excellent *bait* for many sorts of fish, and they are to be kept on sheep's suet and liver, chopped small. They will thrive extremely on this sort of food.

Frogs and grasshoppers are to be kept in wet moss, and long grass; and, on moistening this afresh every evening, it will keep a long time. They are to have the legs and wings cut off, when they are used.

Live flies must be used as they are caught; but wasps, bees, hornets, and humble-bees, may be preserved dry.

The best method of drying them, is putting them in an oven after the bread is drawn. Care must be taken that they are not scorched; and when they are taken out, they are to have the heads dipped in sheep's blood. This is to be suffered to dry on, and then they are to be preserved in a box. They will keep very well for three or four months.

BAITING, among ſportſmen, the application of a proper bait, in a convenient manner, for the catching of game, or the like.

In this ſenſe, we ſay, *baiting* a hook, &c [a]. For cod, they bait with herring, mackarel, &c [b].—[[a] Vid. Gent. Angler, p. 29. [b] *Savar.* T. 1. p. 399.]

BAITING, or rather BATING, in falconry, is when a hawk flutters with her wings, either from perch or fiſt, as if it were ſtriving to get away.

BAITING alſo denotes the act of ſmaller, or weaker beaſts attacking, and haraſſing greater and ſtronger ones.

In this ſenſe, we hear of the *baiting* of bulls and bears by maſtiff or bull dogs, with ſhort noſes, that they maytake the better hold. Whales are *baited* by a kind of fiſh called *oriæ*, or *killers*; ten or twelve of which will attack a young whale at once, and not leave him till he is killed. Philoſoph. Tranſact. N° 287. p. 265.

Houghton gives us the hiſtory of *bull-baiting*, a ſport peculiar to England, and favouring, like ſome others, of our antient gothiciſm. Some of our countrymen are ſaid to be fond enough of it; to buy bulls on purpoſe, and travel with them, at great charge, to all the chief towns around.

Policy, in ſome caſes, enjoins *bull-baiting*. This animal is rarely killed without being firſt *baited*; the chaffing and exerciſe whereof makes his fleſh tenderer and more digeſtible. In reality, it diſpoſes it for putrefaction; ſo that, unleſs taken in time, *baited* fleſh is ſoon loſt.

But a ſpirit of barbariſm had the greateſt ſhare in ſupporting the ſport: bulls are kept on purpoſe, and exhibited as ſtanding ſpectacles for the publick entertainment. The poor beaſts have not fair play; they are not only tied down to a ſtake, with a collar about their necks, and a ſhort rope, which gives them not above four or five yards play, but they are diſarmed too, and the tips of their horns cut off, or covered with leather, to prevent their hurting the dogs. In this ſport, the chief aim of the dog is to catch the bull by the noſe, and hold him down; to which end, he will even creep on his belly: the bull's aim, on the contrary, is, with equal induſtry, to defend his noſe; in order to which, he thruſts it cloſe to the ground, where his horns are alſo in readineſs to toſs the dog. *Hought.* Collect. N° 108. T. 1. p. 289, ſeq.

BAJULATIO, the office of a *bajulus*, or bailiff. *Spelm.* p. 56. a. See BAJULUS and BAILIFF.

BAJULUS, (*Cycl.*) in ancient writers, properly denotes a guardian, or governour of a youth.

The word is derived from the Latin verb *bajulare*, to carry, or bear a thing in the arms, or on the ſhoulders. *Calv.* Lex. Jur. p. 107. b.

Caſſeneuve traces the origin of the name, as well as office, with great exactneſs. Vid. Orig. in voc. *Bailiff.*

Children, and eſpecially thoſe of condition, had antiently, beſide their nurſe, a woman called *gerula*, as appears from ſeveral paſſages of Tertullian; when weaned, or ready to be weaned, they had men to carry them about and take care of them, who were called *geruli* and *bajuli*, *à gerendo & bajulando*. Hence, in the gloſſes of Papias, we meet with *gerulus portitor*, *gerulus nutritor*, and, in the *Catholicon parvum*, *bajulus portitor*, *portiteur*, *ou bailleur à nourrice*. Hence it is, that governours of princes, and great lords, were ſtill denominated *bajuli*, and their charge or government *bajulatio*, even after their pupils were grown too big to be carried about. The word paſſed in the ſame ſenſe into Greece; Cedrenus, ſpeaking of Antiochus, governor of the emperor Theodoſius the younger, calls him βαιυλον; and Codinus ſpeaks of the office of μιγαλω βαιυλω, who was governor of the emperor's ſon; on which occaſion, Julius Pacius obſerves, that he was called *bajulus*, becauſe he bore the prince about when young. *Caſſen.* l. c. See alſo *Spelm.* p. 56. a. Dict. de Trev. T. 1. p. 811. *Du Cange*, Gloſſ. Gr. T. 1. p. 168. *Voſſ.* Etym. p. 61. a.

BAJULUS is alſo uſed for a pædagogue, or perſon who has the care of inſtructing children. *Du Cange*, Gloſſ. Lat. T. 1. p. 474.

BAJULUS is alſo uſed by Latin writers in the ſeveral other ſenſes, wherein *bailiff* is uſed among us. See BAILIFF.

BAJULUS was alſo the name of a conventual officer in the antient monaſtries, to whom belonged the charge of gathering and diſtributing the money and legacies left for maſſes and obits; whence he was alſo denominated *bajulus obituum novorum*. Dict. de Trev. T. 1. p. 812.

BAKER. See BAKING.

The *bakers* of London make the nineteenth company. They were incorporated about the year 1307, and conſiſt of a maſter, four wardens, thirty aſſiſtants, and one hundred and forty-nine on the livery, beſides the commonalty. New View Lond. §. 3. p. 596.

The *bakers* of London are under the juriſdiction of the lord mayor and aldermen.

The French had formerly a *great baker*, *grand panetier de France*, who had the ſuperintendency of all the *bakers* of Paris. But, ſince the beginning of this century, they have been put under the juriſdiction of the lieutenant general *de police*. *Savar.* Dict. Comm. T. 2. p. 957. in voc. *Panetier*. Trev. Dict. Univ. T. 1. p. 1155. *Du Cange*, Gloſſ. Lat. T. 3. p. 117. in voc. *Panitarius*. *Le Long.* Bibl. Hiſt. p. 708.

In ſome provinces of France, the lord is the only *baker* in his ſeigneury; keeping a publick oven, to which all the tenants are obliged to bring their bread. This right is called *furnagium*, or *furnaticum*, and makes part of the *bannalite*. Vid. *Du Cange*, Gloſſ. Lat. T. 2. p. 560. in voc. *Furnagium*.

BAKERS *Central Rule*. See CENTRAL *Rule*, *Cycl.*

BAKING, (*Cycl.*) is uſed for the expoſing a ſubſtance, incloſed in a cruſt, to the fire.

This makes an operation in pharmacy, uſed in the making of an oil of earth worms, commended againſt arthritic, ſhooting pains. The worms having ſtood ſome time to putrify, are covered up, together with the veſſel they are in, with a wheaten cruſt, and ſet in the oven: by which they are converted to a thick yellow oily liquor. *Etmull.* ad Ludov. Pharm. p. 422. *Caſtel.* p. 592. a.

BAKING *Herrings*. See HERRING.

BAKING *of Porcelain*. The determining the due degree of heat for the *baking* the China ware, and the finding out the proper time it ſhould remain in that heat, are two very eſſential points in the manufactory of this elegant ware. Perhaps our Engliſh attempts to imitate it, would be brought nearer the perfection we are aiming at, by a juſt regard to theſe particulars, than by many other leſs material articles, about which we ſeem more ſolicitous.

It is generally ſaid, that the Chineſe judge of the proper degree of *baking* for their ware, by obſerving when the gold and colours appear moſt perfect and brilliant, and then taking the thing out of the fire. But this is an idle opinion; for the colours are not ſeen at all, while the veſſel is red hot in the fire, but only appear gradually as it cools. The way they judge of the *baking* being enough, is by looking down into the furnace; when they can diſtinguiſh the whole range of the veſſels all equally red hot, and ſee one from another to the very bottom of the furnace, they know that the fire is ſtrong enough, and ought not to be encreaſed any farther. From this time they diligently watch the things; and when they perceive the inequalities on the ſurface of the coloured parts diſappear, and theſe coloured parts blend themſelves ſo with the reſt, as to make one even ſurface, they then know that the whole is done, and have nothing farther to do, but to let them cool as gradually as poſſible, to prevent their cracking.

This method of judging ſerves them very exactly for their ſmall furnaces; but when they are employed about the larger, they are forced to judge by other ſort of ſigns. When the flame that comes out of the furnace is not ſo red as at firſt, but becomes whitiſh, and the veſſels, as far as can be ſeen, appear thoroughly red, and when the whole furnace is ſo perfectly heated, that on looking in at the top, the floor is ſeen bright and ſhining; theſe are the tokens of the thing's being almoſt done, and what remains is to be performed by trial. The uſual way is to take out the pieces ſingly at different times, and obſerving when the colours and the varniſhing are as bright and perfect as they ſhould be. The fire is then to be put out by degrees, and the furnace gradually cooled. Obſervat. ſur les Coutumes de l'Aſie.

BALA, in botany, a name uſed by ſome authors for the *muſa* or plantain tree, called alſo the *banana* and *ficoides* by others. Hort. Mal. Vol. 1. p. 17.

BALÆNA, the whale. In the Linnæan ſyſtem of zoology, this makes a diſtinct genus of fiſhes, of the order of the *plagiuri*, or thoſe with tranſverſe tails. The diſtinguiſhing characters of which are, that it has a kind of horny teeth in its upper jaw, and uſually no fin upon the back. *Linnæi* Syſtema Naturæ, p. 51.

BALÆNA, in the Artedian ſyſtem of ichthyology, is not made the common name of all the whales, but only of one genus of them; the characters of which are theſe: the tail is placed horizontally, as in all the cetaceous fiſhes; in the upper jaw, there are ſeveral horny laminæ, which ſerve in the place of teeth, but there are none in the lower; the fiſtula or pipe is double, and is ſituated either in the middle of the head, or in the forehead or ſnout; the back uſually has no fin.

The ſpecies of *balænæ*, according to this generical character, are theſe: 1. The *balæna* with the fiſtula in the middle of the head, and with the back growing pointed toward the tail. This is the *balæna major* and *vulgaris* of authors; the common great whale. The lower jaw in this is much broader than the upper, and covers it on both ſides. The fiſtula is double, and ſtands directly between the eyes in the middle of the forehead. The eyes are ſmall, and placed very diſtant from one another. The females have two teats, not in the breaſt, but a little above the pudenda, in the lower belly. The tail is a little forked, and the head of a depreſſed figure. 2. The *balæna* with the fiſtula in the middle of the head, and with a tubercle reſembling a fin, on the lower part of the back. This is the ſpecies of fiſh called the *fin-fiſh*, or *fin-whale*, by us, and ſeems to have been the *phyſolus* and *phyſeter* of the antients. It is as long as the Greenland whale, but not more than one third of its thickneſs, being long and narrow, or ſlender. The back is leſs bent than that of the Greenland whale; and it throws up the water from its fiſtule in a very vehement and forcible manner. 3. The *balæna* with a double fiſtula in the ſnout, and a coniform protuberance toward the lower end of the back.

The

The ſnout of this is much more acute than in any of the others, and the belly has ſeveral *plicæ*. It has been ſeen near fifty feet long. The eyes are ſmall, and the fiſtules are placed ſix feet from the tip of the ſnout. 4. The *balæna* with a double fiſtule in the forehead, and with the lower jaw much broader than the upper. The lower jaw in this fiſh is of a ſemicircular figure. The fiſtula is of a pyramidal figure, and divided by a ſeptum towards the forehead. This has been found of twenty-eight feet long. *Artedi* Gen. Piſc. 44.

BALAM-PULLI, in botany, a name uſed by ſome authors for the tree whoſe fruit is the tamarind of the ſhops. Hort. Malab. Vol. 1. p. 39.

BALANCIER, a machine uſed in the ſtriking of coins, medals, counters, and the like. *Savar.* p. 219. See COINAGE, *Cycl.*

BALANITES, in natural hiſtory, a name given by the antients to a ſtone, ſeeming to have been one of the ſemipellucid gems. They deſcribe two ſpecies of it; the one of which was yellow, and the other green, but each having veins of a flame colour. Their deſcriptions are too ſhort for us to be able to aſcertain, what ſtones, among thoſe known at this time, they meant.

Some think the *balanites* to have been the *lapis judaicus*, on account of its acorn like figure and ſize. *Plin.* Hiſt. Nat. l. 37. c. 10. *Hardou.* not. ad loc.

BALANUS, (*Cycl.*) in natural hiſtory, the name of a genus of ſhell-fiſh; the characters of which are theſe: they are a multivalve ſhell, of the ſhape of an acorn, and are compoſed of twelve laminæ; the mouth, in moſt ſpecies, is wide; in ſome, it is very narrow. See the figure in Tab. of Shells, N° 26.

The *balani* may be arranged under the two ſubdiſtinctions of wide and narrow mouthed.

Of the larger and wider mouthed *balani* we have the following ſpecies. 1. The turban or Turkiſh crown ſhell. 2. The cup *balanus*. 3. The ſtriated tulip *balanus*. 4. The bell *balanus*. 5. The purple *balanus*. 6. The grey *balanus*.

Of the narrow mouthed kind, which are uſually ſmaller, we have the following. 1. The narrow mouthed red *balanus*. 2. The narrow purple *balanus*. 3. The ſix-plated *balanus*, ſtriated at the mouth, every other piece being bifid, occult, and of a ſquare figure. 4. The ſlender rediſh-yellow *balanus*.

BALANUS *Marinus*. It is a very common error to miſtake the names of the multivalve ſhells, ſo far, as to confound the *balani* and *conchæ anatiferæ*, as they are called, together; though they be extremely different.

The *balani* are found affixed in cluſters to a thouſand different ſubmarine things; ſuch as the harder ſea plants, all ſorts of teſtaceous, and cruſtaceous ſea animals, rocks, and timber. Notwithſtanding that, the greater number of naturaliſts, and all the later ones, have placed this ſhell among the multivalves, there have not been wanting ſome, who have ranked it with the univalves; and this, ſeemingly, is its moſt juſt place. For although it ſeems formed of ſeveral pieces, they are, in reality, all joined together, and never can open or ſeparate. This does not anſwer to the character of what we mean by valves. A late French writer, who has taken great pains in this part of natural hiſtory, has, however, given but a very indifferent reaſon for its being placed among the multivalves, in ſaying, it ought to be ſo, becauſe there are always ſeveral of this ſpecies found growing together. He might have as well called the oyſters multivalves, for the ſame reaſon. Though the ſhell of the *balanus* does in reality conſiſt only of one piece, the fiſh incloſed in it has four hard ſubſtances affixed to its head, which it ſhews when it thruſts itſelf out of the ſhell in ſearch of prey; and theſe may have been called by ſome, ſhells, though of a very particular kind; and if they can be allowed ſuch, they will bring it, in ſome degree, toward the claſs of the multivalves; though, perhaps, in the ſtricteſt juſtice, no nearer than the operculum of the wilks, and other univalve ſhells, brings them to the bivalves.

When the body of the fiſh appears out of the ſhell, theſe four ſhells are ſeen to be fixed to the mouth of the creature, and are of a triangular figure, and diſpoſed in form of a croſs. From the center of this croſs there iſſues a plume, or feathery ſubſtance, compoſed of many pieces, and reſembling the plumes of the *anatiferæ* and *pollicipedes*. This plumoſe ſubſtance has been taken, in the darker ages of natural hiſtory, for the rudiments of a bird in the *anatiferæ*, and, by ſome, in theſe ſhells. The four hard ſubſtances fixed to the head of the fiſh, ſerve to cloſe up the aperture of the mouth of the ſhell, when the creature is at reſt in it; for there is no motion in the ſeveral pieces of which the ſhell itſelf is compoſed; and therefore, the creature would be always expoſed to injuries in it, as much as if naked, were it not for theſe ſubſtances, which ſerve in the ſame office as the operculum in the wilks, and *cochleæ*, and are here much more neceſſary than in thoſe ſhells. Hiſt. Nat. Eclair. p. 857.

The ſmall fiſh which nature has covered with this ſhell, is of a very admirable ſtructure. Lewenhoek acknowledges, that he never met with any animal, in which ſo many objects of wonder lay open to the naked eye as in this. It has twelve legs or arms, which are crooked, and garniſhed with a great number of hairs: theſe twelve they elevate on all occaſions; and, beſides theſe, they have eight others, which are much ſmaller, and ſtand lower. Their body is, in all reſpects, like that of the *concha anatifera*. It is cartilaginous and mucous, and of an ill taſte. The ſhell ſhapes itſelf, at the baſe, to the figure of the ſurface of whatever it grows to, and ſticks very firmly to it.

BALASS, or BALLAS, a precious ſtone, of the ruby kind; whence it is alſo denominated *ballas-ruby*.

BALATITI, in natural hiſtory, a name given by the people of the Philippine iſlands to a ſpecies of bird, by the flight of which they divine the event of things. They have alſo two other birds, the one of which they call *Tigmemanvequin*, and the other *Salaeſac*. This laſt kind is beautifully coloured, and has a very long and large beak, of a browniſh colour, and ſhining.

BALBUSARDUS, in zoology, the name uſed by authors for the bird called in Engliſh the *Bald Buzzard*. It is of the long-winged and hawk kind, and has been deſcribed by Aldrovandus, and ſome other authors, under the name of the *Haliætus* and *Morphnus*, two kinds of the eagle.

It is a conſiderably large bird, growing near to ſixty ounces in weight. Its beak is black and crooked, and covered with a blueiſh red ſkin down to the noſtrils, and protuberant between the noſtrils and the bending part. The iris of the eyes is yellow, and the pupils large, and the whole very prominent. It is of a blackiſh and ferrugineous or ruſt colour on the back, and the back part of its head is covered with white feathers; whence it obtained the name of *Bald Buzzard*. Its throat, breaſt, and belly, are white, and its thighs are covered with white and ſoft feathers. Its legs are long, and its toes very thick and ſtrong, and of a blueiſh white. *Willughby*, Ornithol. p. 37.

It frequents the ſhores of ponds and rivers, and ſometimes of the ſea, where it preys on fiſh. It builds on the ground among reeds, and lays three or four large white eggs, little leſs than hens eggs.

BALCONY, (*Cycl.*) — *Balconies* are a kind of open galleries without the walls of buildings, contrived chiefly for the convenience of looking around, ſeeing proceſſions, cavalcades, and the like.

The parts of a regular *Balcony*, according to Mr. Le Clerc, are the terrace or platform, which make the floor, the balluſtrade, which incloſes it, and the conſoles, which ſupport it. *Le Clerc*, Traité de l'Archit. p. 174, ſeq.

The *Balcony* is ſometimes alſo ſupported by a little entablature, the cornice whereof makes the terrace, and the frieze and architrave continued, the ſides; the whole being farther ſupported by conſoles.

Where there is but one, it is uſually in the middle of the front of the edifice, and level with the firſt floor above ſtairs: ſometimes they are made of wood, ſometimes of caſt iron; the former ſurrounded with a rail, or balluſtrade, the latter wrought in various figures in demi-relievo. Some are alſo made of bar iron, faſhioned in crail-work, or flouriſhes of divers fancies. *Neve*, Build. Dict. in voc.

Sir Henry Wotton ſpeaks of a kind of *Balconies* at Venice, called *Pergoli*, erected on the very point of the angle of the wall; contrary to the common rule, that all outlets ſhould be at a diſtance from the angle; it being a ſoleciſm in building, to weaken that part which is to ſtrengthen all the reſt.

BALCONY, in a ſhip, denotes a gallery either covered or open, made abaft, either for ornament, or convenience of the captain's cabin. *Aubin* Dict. de Marine, p. 61.

BALDACANIFER, corruptly alſo written *Balcanifer*, denotes a ſtandard-bearer; chiefly in the antient order of knights templars. *Aquin.* Lex. Milit. T. 1. p. 108.

BALDACHIN, (*Cycl.*) is ſometimes uſed to denote the chief altar of a church, when inſulate, and covered with a canopy ſupported by columns. *Davil.* Archit. p. 407.

BALDACHIN, or BALDAKIN, or BALDEKIN, popularly BAUDEKIN, in middle age writers, denotes a rich kind of cloth, made of gold warp and ſilk woof, variouſly figured. It took the denomination from its being formerly brought into theſe countries from *Baldacio*, or Babylon. *Du Cange*, Gloſſ. Lat. T. 1. p. 443. *Spelm.* Gloſſ. p. 56, ſeq.

BALDACHIN is alſo frequently uſed for a canopy or umbrello, becauſe uſually made or covered with the cloth of that name.

BALDMONIE, an old Engliſh name for gentian, the root of which is uſed in medicine; ſome alſo have called the *meum* or ſpignal by this name. *Ger* Emac. Ind. 2.

BALDNESS, (*Cycl.*) a defect of hair, chiefly on the ſinciput. It differs from *alopecia*, *area*, *ophiaſis* and *tinea*, as theſe all ariſe from ſome vice in the nutritious humour; *baldneſs*, from the defect of it. But the diſtinction is not always obſerved by modern phyſicians. *Caſtel.* Lex. Med. p. 126.

When the eye-lids ſhed their hair, it is called a *ptiloſis*.

Among the cauſes of *baldneſs*, immoderate venery is reputed one of the chief: old-age uſually brings it on of courſe [a]. Some will have the proximate cauſe of *baldneſs* to be the dryneſs of the brain, and its ſhrinking from the cranium; it having been obſerved, that in *bald* perſons there is always a vacuity or empty ſpace between the ſkull and the brain [b].—[[a] V. *Barthol.* Anat. l. 3. c. 1. *Lang.* Epiſt. 2. l. 7. [b] *Ray*, Wiſd. of God. P. 2. p. 248.]

Calvus, *bald-pate*, was a frequent term of reproach among the Romans; among whom this defect was in great diſcredit.

Hence divers arts to conceal it, as falſe hair, a *galericulus* contrived on purpoſe. *Pitiſc.* Lex. Antiq. T. 1. p. 332

The later Romans however, ſeem to have been reconciled to baldneſs; for we find among them a kind of officers, or ſervants, called *glabratores*, or *glabrarii*, whoſe buſineſs was to take off the hair from all parts, even from the head. In an antient inſcription, there is mention of one Diophantus. TI. CÆSARIS ORNATOR GLABR. that is, *ornator Glabrarius*. V. *Pitiſc.* Lex. Antiq. T. 2. p. 868. b.

BALE, (*Cycl.*) — To ſell goods in the *bale*, is to ſell them in the lump, on ſhewing a ſpecimen, without unpacking, or taking off the cordage. Thus it is the Eaſt India company ſell their *bale* goods. *Savar.* Dict. Comm. T. 1. p. 226. in voc. *Bale.*

BALE *goods*, in the Eaſt India trade, the bulky goods, as ſaltpetre, pepper, red-earth, tea, &c. Plan, Engl. Comm. c. 1. p. 4.

The *bale* goods ſtand oppoſed to piece goods.

BALES *of camelet*, at Smyrna, are called *tables*, on account of their flat ſquare figure. *Savar.* Supp p. 1235.

BALE *of paper*, denotes a certain number of reams packed together in a bundle.

There are *bales* of more and fewer reams. Thoſe ſent from Marſeilles to Conſtantinople uſually contain 24 reams. *Savar.* Dict. Comm. T. 1. p. 228. in voc *Ballon.*

A *bale* or ballon of crown paper, manufactured in ſome parts of Provence, conſiſts of 14 reams, and is ſold in the Levant for Venice paper. Id. p. 228.

BALE *of dice*, denotes a little packet, or paper containing ſome dozens of dice for playing with. Id. p. 227.

BALE-DOCK, a noiſom filthy hole, into which priſoners for contempt of the court, at their trials at the Old Baily, were ſometimes caſt, by way of chaſtiſement.

Penn and Mead, for their ſtout defence at their trial, were dragged into the *bale-dock*; and the recorder proceeded to charge the jury during their detention there; urging for an excuſe, that they were ſtill within hearing of the court. V. Trial of Penn and Mead in Phenix, T. 1. p. 312.

BALENGER, BALENGARIA, in middle-age writers, a kind of veſſel of war, but what in particular ſeems not well known. V. *Du Cange* Gloſſ. Lat. in voc. *Balengaria.*

Blount ſays, that by the Stat. 28. Hen. 6. c. 5. *Balenger* ſeems to be a kind of barge.

BALESTRA, in zoology, a name by which Salvian and ſome other authors have called the fiſh, more uſually known by the name of Capriſcus. *Willughby*'s Hiſt. Piſc. p. 152. See CAPRISCUS.

BALIVIS, in natural hiſtory, a name given by the people of the Philippine Iſlands, to the common duck of that part of the world: this is ſomewhat ſmaller than our wild-duck, and much more beautifully coloured.

BALIVO *amovendo*, a writ to remove a bailiff from his office, for want of ſufficient land in the bailiwick. *Reg.* Orig. 78.

If a ſheriff chuſe one to be a *bailiff* of a hundred; or if the lord of a liberty elect one to be bailiff of the liberty, who hath not land ſufficient in the county to anſwer the king and his people, according to the ſtatute of Weſt. 2. then this writ ſhall be ſent the ſheriff to diſcharge ſuch *bailiff*, and chooſe another in his place. *Blount*, *Cowel.*

BALKS, (*Cycl.*) among builders, large pieces of timber, brought from abroad in floats. *Neve*, Build. Dict.

BALKS, are a ſort of beams imported from 5 to 12 inches ſquare.

The greater *balks* are accounted timber, if above 8 inches ſquare. *Crouch*, Surv. Cuſt.

In ſome parts of England, *balk*, or *bawk*, denotes the ſummer-beam of a building.

BALKS or *bawks* alſo denote poles laid over a ſtable, or other building for the roof *Ray*, Coll. Loc. words, p. 40.

BALKERS, (*Cycl.*) in the fiſhery, perſons placed on rocks, and eminences at ſea, to ſpy the herring droves, and give notice to the fiſhermen by waving boughs, what way they go, and where they may be found. 1. Stat. Jac. 1 c. 23. *Skin.* Etym. in voc.

BALL, (*Cycl.*) — Moxon deſcribes the method of turning hollow ivory balls, one within another. Mechan Exerc. p. 219.

BALLS of ſilk-worms and ſpiders, are little caſes or cones woven of ſilk, wherein thoſe inſects depoſite their eggs [a]. Spiders are extremely tender of their *balls*, which they carry about with them, adhering to the papillæ about their anus [b]. Grew ſpeaks of *balls* or bags of a ſpecies of ſilk-worms in Virginia, as big as hens eggs, and containing each, four aurelias [c]. — [a Phil. Tranſ N°. 362. p. 1037. b Mem. Acad. Scienc. 1710. c Muſ Reg. Societ. p. 1. §. 7. c. 3]

Zoologiſts ſpeak of a ſort of *balls* of hair covered over with a ſmooth, ſhining coat, or ſhell, found in the ſtomachs of oxen, cows, calves, horſes, ſheep, and goats, particularly the chamois, or *rupicapra.*

They are called by Pliny [d], *tophi nigricantes*; by Ferrante Imperato [e], *tophi di giovenca*; by Wormius [f], *tophi juvenci*; by Cardan, *ova vaccina.* — [d Hiſt Nat. l. 11. c. 37. e Hiſt. Nat. l. 28. c. 1. f Muſ. l. 1. §. 2. c. 8.]

Thoſe in the ſtomachs of horſes, made of the ſlender ſtalks of ſmall engliſh matweed, are called by ſome authors, *ſpart balls*, or *pilæ manſæ*; thoſe in the chamois goat, by Velſchius, *Ægagropilæ*; by Bauhin, the german bezoard. See BEZOARD, *Cyl.*

Balls are not only found in the firſt, or ſecond ventricle; but ſometimes alſo in the inteſtines, from which they have frequently been caſt by ſiege [g]. The like inſtances have alſo been found in the human kind; of which we meet with divers accounts in the Philoſophical Tranſaction [h]. The ſubſtance of theſe *balls* is not always hairy, but ſometimes ſtony, furzy, gritty, &c. [i] — [g *Plott.* Nat. Hiſt. Staffordſh. c. 7. §. 72. h N°. 304. p. 2164. i Phil. Tranſ. N°. 291 p. 1595]

Some have alſo been found in the uterus, and ovaries of females [k]. Sir Hans Sloan gives the hiſtory of a *ball* found in the inteſtines of a man, much afflicted with the cholic, ſix inches in circumference, of a ſpungy ſubſtance, and which when viewed with a microſcope, appeared made up of ſmall tranſparent hairs or fibres, wrought together like the *tophus bovinus*: in the middle, was a common plumb ſtone, which made, as it were, the core or nucleus, around which the fibrous matter had gathered, *ſtratum ſuper ſtratum* [l]. — [k Phil. Tranſ. N°. 309 p. 2387. l *Sloan*, in Phil. Tranſ. N°. 282. p. 1283. ſeq.]

Others have been found with plumb-ſtones, and cherry-ſtones in the centers. Bezoars have uſually ſome ſeed for a nucleus.

The origin and formation of theſe *balls* is conteſted. Bartholin, and after him Dr. Plott, and others, attribute them to the creatures licking themſelves and ſwallowing the hair, which being elaborated in the *reticulum*, become compacted together, much after the manner that the wool of a hat is by the hand of the workman; and lying long in the ſtomach, have a thick tough coat, ſuperinduced by the plenty of ſlime it there meets with. *Plott*, l. c. §. 71.

After the like manner, thoſe found in ſheep, are ſuppoſed to be formed of the wool, which they eat from each other, when they paſs the winter on ſnowy mountains, where there is no graſs to be come at.

The royal academy of ſciences at Paris ſubſtitute another origin. In diſſecting a chamois, a *ball* was found in the third ventricle, which did not ſeem compoſed of hair but of woody fibres, as appeared from their inequality, which were neither uniform in figure, nor ſize, as hairs are. Add, that the like *balls* are found in horſes, which are not animals that lick themſelves, and where of conſequence they muſt be formed of ſomething elſe than hair. Hence the generality of naturaliſts, particularly Geſner and Camerarius, take theſe *balls* to be formed of the reſidue of the plants, which the animals have eaten, the harder fibres whereof remain undigeſted. Thoſe of the *rupicapra*, in particular, are ſuppoſed to be the fibres of the plant Doronicum, reputed by ſome a ſpecies of aconite. Nat. Hiſt. Anim. p. 143. ſeq. Phil. Tranſact. N°. 189. p. 373.

BALL, in the military and pyrotechnical arts, is a compoſition of divers ingredients, generally of the combuſtible kinds, ſerving to burn and deſtroy, give light, ſmoak, ſtench, or the like.

In this ſenſe we read of fire-*balls*, light-*balls*, ſmoak-*balls*, ſtink-*balls*, ſky-*balls*, water-*balls*, land-*balls*, &c.

Fire-BALLS, *globi incendiarii*, are bags of canvas filled with gunpowder, ſulphur, ſaltpetre, pitch, &c. [m] to be thrown by the ſoldiers, or out of mortars, in order to fire the houſes, incommoding trenches, advanced poſts, or the like [n]. — [m *Wolf.* Elem. Pyrotech. §. 38, and 55. n *Guill.* Gent. Dict. p. 2. in voc.]

The Greeks had divers kinds of *fire-balls*, or Πυροβολοι λιθοι, one kind called, more particularly, σκυλαλια, or σκυλαλιδες, made of wood, ſometimes a foot, or even a cubit long; their heads being armed with ſpikes of iron, beneath which were hemp, pitch, and other combuſtibles, which being ſet on fire, they were caſt among the enemy. *Pott.* Archæol. l. 3. c. 4. p. 50.

The preparations of *fire-balls*, among the moderns, conſiſts of ſeveral operations, viz. Making the bag, preparing the compoſition, tying, and laſtly dipping the *ball.*

The bags for this purpoſe are either oval or round. V. *Wolf.* l. c. §. 48.

The compoſition wherewith fire *balls* are filled, is various. To ten pounds of meal gun-powder, add two of ſaltpeter, one of ſulphur, and one of colophony: or, to ſix pounds of gunpowder, add four of ſaltpetre, four of ſulphur, one of powdered glaſs, half a pound of antimony, as much camphor, an ounce of ſal ammoniac, and four of common ſalt, all pulverized [o]. Sometimes they even fill fire *balls* with hand granados [p]. — [o *Wolf.* l. c. §. 51. p Id. ibid. §. 56.]

For tying the fire *balls*, they prepare two iron rings, one fitted around the aperture, where the *ball* is to be lighted, the other near its baſe. A cord is tied to theſe rings, in ſuch manner as that the ſeveral turns repreſent ſemicircles of the ſphere, cutting the globe through the poles: over the cords, extended according to the length of the *ball*, others are tied, cutting the former at right angles, and parallel to each other, making a knot at each interſection Laſtly, putting in a leaden bullet, the reſt of the ſpace is filled with tow or paper. Thus compleated, the fire *ball* remains to be dipped in a compoſition of melted pitch four pounds, colophony two, and linſeed-oil, or oil of turpentine,

pentine two; after dipping, they cover it round with tow, and dip again, till it be brought to the juſt diameter required. *Wolf.* §. 53.

Light BALLS, *globi lucentes*, are ſuch as diffuſe an intenſe light around; or they are *balls* which being caſt out of a mortar, or the hand, burn for ſome time, and illuminate the adjacent parts. Id. ibid. §. 73.

Luminous, or light BALLS, for the hand, are made of ground powder, ſaltpetre, brimſtone, camphor, and borax, all ſprinkled with oil, and mouldered into a maſs with ſuet, common and Greek pitch, to the ſize of an ordinary granado: this is wrapped up in tow, with a ſheet of ſtrong paper over it. To fire it, they make a hole into it with a bodkin, into which they put ſome priming, that will burn ſlow. Its uſe is to be caſt into any works they would diſcover in the night time. Milit. Dict. in voc. *Fire-ball.*

For the *larger light* BALLS, or thoſe to be thrown to a greater diſtance, they melt equal quantities of ſulphur, turpentine, and pitch; and herein dip an earthen, or ſtone *ball*, of a diameter much leſs than that of the mortar out of which the fire *ball* is to be caſt: then rolling it in gun-powder, and covering it round with gauſe, they dip it again, and repeat the reſt till it come to fit the cavity of the mortar: laſtly, they ſprinkle it around with gun-powder. This being once kindled, will ſtrongly illuminate all round the place where it is thrown, and give opportunity for examining the ſtate and condition thereof. *Wolf.* ibid §. 65.

Smoak, or dark BALLS, thoſe which fill the air with ſmoak, and thus darken a place, to prevent diſcoveries. To prepare a darkening *ball*, make an oval, or ſpherical bag; melt roſin over the coals, and add an equal part of ſaltpetre not purified, alſo of ſulphur, and a fifth part of charcoal. The whole being well incorporated, put in tow firſt ſhred, and fill the bag with this compoſition, and dip it after the ſame manner as a fire *ball*. *Wolf* ibid. §. 66.

Stink BALLS, *globi fœtentes*, thoſe which yield a great ſtench where fired to annoy the enemy. *Wolf.* ibid. §. 48. ſeq.

Their preparation is thus; melt ten pounds of pitch, ſix of roſin, twenty of ſaltpetre, eight of gun-powder, and four of colophony; to theſe add two of charcoal, ſix of horſe hoofs cut ſmall, three of aſſa fœtida, one of ſtinking ſaracen, and any other offenſive ingredients. The reſt as in the former. *Wolf.* ibid. §. 67.

Sky BALLS, *globi aerii*, thoſe caſt on high out of mortars, and which, when arrived at their height, burſting like rockets, afford a ſpectacle of decoration. *Sky balls* are made of a wooden ſhell, filled with various compoſitions, particularly that of the ſtars of rockets. *Wolf.* l. c. §. 70.

Theſe are ſometimes intermixed with crackers, and other combuſtibles, making rains of fire, &c.

Water BALLS, *globi aquatici*, thoſe which ſwim, and burn a conſiderable time in the water, and at length burſt therein. *Wolf* l. c. §. 95.

Theſe are made in a wooden ſhell, the cavity of which is filled with a compoſition of refined ſaltpetre, ſulphur, ſaw-duſt boiled in water of ſaltpetre, and dried; to which ſometimes other ingredients are added, as iron filings, Greek pitch, amber duſt, glaſs powdered, and camphor. The ingredients are to be ground and mixed up, and moiſtened with lintſeed-oil, nut-oil, olive-oil, hempſeed-oil, or petrol. At the bottom is placed an iron coffin, filled with whole gun-powder, that the *ball* may at laſt burſt with a great noiſe; and laſtly, the *ball* is, by the addition of lead, or otherwiſe, made of the ſame ſpecific gravity with water. *Wolf.* l. c. §. 95.

Land BALLS, *globi terreſtres*, thoſe which being thrown out of a mortar, fall to the ground, burn, and burſt there. The ingredients are much the ſame as in the water *balls*, only the ſpecific gravity is not attended to. *Wolf.* l. c. §. 96.

Hero's BALL, *pila Heronis*, is a kind of artificial fountain, wherein the water is made to ſpout out of a hollow *ball*, or globe. V. *Wolf.* Elem. Hydraul. §. 124. ſeq.

It takes the denomination from the inventor *Hero* of Alexandria, who has left the deſcription of it in his *ſpiritalia*. See FOUNTAIN, *Cycl.*

BALL *of a pendulum*, the weight at the bottom. In ſhorter pendulums, this is called the *bob*. *Derham*, Artif. Clock-mak. c. 1. p. 4.

BALL alſo gives the denomination to a ſpecies of game or ſport frequent among the ancients; among the Latins under the denomination *pila*; among the Greeks under that of σφαιρα, ſometimes of κορυκος: ſaid to have been firſt invented by Anagallis of Corcyra. V. *Salmuth.* ad Pancirol. P. 1. tit. 23. p. 75. *Fabric* Bibl. Græc. l. 5. c. 40. p. 974.

The Romans had four kinds of *Pilæ*, or *Balls*; the firſt called *trigon*, or *trigonalis*, by reaſon the three gameſters at it were placed in a triangle: theſe caught and toſſed the *ball*, taking great care not to let it fall to the ground.

The ſecond called *follis*, made of leather, blown up like our foot-balls: the largeſt ſort of theſe were ſtruck with the arm, the ſmaller with the fiſt: The former ſeem to have been diſtinguiſhed by the appellation *paganica*, as being much uſed in country villages. The fourth was the *harpaſta*, a kind of ſmall *ball*, ſo called becauſe the gameſters endeavoured to ſnatch it from each other. *Voſſ.* de Quat. Art. *Popul.* c. 3. §. 65.

Galen has an entire treatiſe on the exerciſe of the *leſſer ball*: *Caſtel.* Lex. See alſo *Fabric.* Bibl. Antiq. c. 22. §. 6.

Tennis BALL, is a little globe, made and covered with cloth, uſed in playing at the game of tennis. *Savar.* Dict. Com. T. 1. p. 227.

Billiard BALLS, are ivory *ball's* uſed in the game of billiards.

BALL, among printers, a kind of wooden tunnel ſtuffed with wool, contained in a leather cover, which is nailed to the wood; with which the ink is applied on the forms, to be wrought off. *Savar.* Dict. Comm. T. 1. p. 227.

The preſſman holding one of theſe balls in either hand, firſt daubs them on the ink-block, and afterwards on the forms, which retain the ink neceſſary to make an impreſſion.

BALL, *pila*, is alſo the denomination of a form of medicines. We meet with *balls* for the tooth-ach, *pilæ odontagliçæ*; ſpitting *balls*, *pilæ maſticatoriæ*, uſed to promote a diſcharge of ſaliva, &c.

Horſe BALLS, among farriers, a kind of cordial medicines, adminiſtred in form of *balls*, ſuppoſed of great virtue for feeding and ſtrengthening ſound, as well as healing and raiſing unſound horſes.

Markham's horſe BALLS, are a preparation of aniſeeds, carthamus, elicampane, and other ingredients, wrought into a ſtiff paſte, and thence formed into *balls*. They are cleanſing and emollient, efficacious in colds, ſurfeits, and hard labour, and eſpecially uſeful where any of the chief viſcera are decayed: nothing raiſes a lean jade ſo ſoon, being partly food, partly phyſic. Ruſt. Dict. in voc. Farr. Dict. p. 50. ſeq.

Treacle BALLS, ſometimes alſo called in a more eſpecial manner, *cordial balls*, are made of juniper-berries, beaten, boiled, preſſed, and ſtrained; then the liquor, boiled up a ſecond time to the conſiſtence of a broth, and mixed with the cordial powder known among farriers, made of aniſe, fennel, liquorice, &c. adding to the whole ſome of the grains of kermes powdered. The maſs being made into *balls*, is commended againſt diſorders of the ſtomach, breaſt, wind, &c. and is by ſome called the treacle of the Germans. Ruſt. Dict. in voc. *Cordial.*

Chewing BALLS, are theſe which the horſe is to keep champing, or maſticating in his mouth, a conſiderable time, without ſwallowing. Theſe are chiefly uſed for loſt appetite; a thing very incidental to horſes.

They are uſually made of aſſa fœtida, liver of antimony, juniper, bay wood, and pellitory of Spain, beaten and incorporated into a maſs with verjuice. The method of adminiſtration is to wrap one of the *balls* in a linnen cloth, and having a ſtring faſtened to it, make the horſe chew it two or three hours at a time. Dict. Ruſt. in voc. *Chewing.*

BALL *of the foot of a dog*, is the prominent part of the middle of the foot, called by Latin writers of the middle age, *pelota*, which is to be taken away in expeditation. *Du Cange*, Gloſs. Lat.

BALL is alſo uſed in Cornwall, &c. for a tin-mine.

In this ſenſe Godolphin's *ball* is ſaid to be the moſt famous of all the *balls* or mines in Cornwall, for quantity of metal. Phil. Tranſ. N°. 138. p. 951.

BALL is alſo uſed, in a well-known ſenſe, for an aſſembly of both ſexes, who dance to the ſound of inſtruments. *Richel.* T. 1. p. 168. a

The word in this ſenſe is formed from the barbarous Latin, *ballare*, to dance, of the Greek, βαλλιζω, I dance; whence alſo βαλλισμος [a], and *ballimathia*, promiſcuous and laſcivious dancing, cenſured by antient councils [b].— [[a] V. *Suicer.* Theſ. T. 1. p 214. *Du Cange*, Gloſs. Græc. T. 1. p. 171. Mem. Acad. Inſcrip. T. 2. p. 135. *Skinn.* in voc. [b] V. *Bingham*, Orig. Eccleſ. l 16. c. 11. §. 15.]

Cryſtalline BALLS, there are two ſorts of foſſil bodies, mentioned in authors by this name, and diſtinguiſhed into the echinated, and concave.

The firſt are roundiſh nodules of ſtrong matter, covered over with points of cryſtal; and the others, flints and other ſtones, having cavities in their middles, which are lined, or cruſted over with theſe cryſtals.

BALL *vein*, in mineralogy, a name given by the miners in Suſſex to a ſort of iron ore, common there, and wrought to conſiderable advantage. It yields not any great quantity of metal, but what it has runs freely in the fire; it is uſually found in looſe maſſes, not in form of ſtrata, and is often covered with one or more cruſts. It generally contains ſome ſparkling particles, and is uſually of a circular form, in the perfect maſſes; thickeſt in the middle, and gradually thinner as it approaches the ſides. The ores of Suſſex in general are poor, but they require very little trouble in the working; ſo that a conſiderable profit is annually made from them.

Glaſs BALLS. See GLASS *Balls.*

Hair BALLS. See HAIR.

Puff BALL. See LYCOPERDON.

Wool BALLS. See WOOL.

BALLAD, or BALLET, a popular ſong, containing the recital of ſome action, adventure, or intrigue.

The French confine their *ballade* to ſtricter terms. A *ballade*, according to Richelet, is a ſong conſiſting of three ſtrophes, or ſtanzas, of eight verſes each, beſides a half ſtrophe; the whole in rhime, of two, three, or four verſes, with a burthen repeated

repeated at the end of each ſtrophe, as well as of the half ſtrophe. *Ozan.* Dict. Mathem. p. 665. Dict. de Trev. T. 1. p. 823.

In the old Engliſh verſion of the bible, the book of Canticles is entitled the *ballet* of *ballets*; which has given ſcandal to ſome Romiſh writers, as countenancing the opinion of thoſe who hold that book a *ballet* of love, or a recital of the amours between Solomon and his concubine, as Caſtalio and ſome others have conceived it to be. Vid. *Martin.* Diſcov. of Corrupt. of Script. by Hæret. c. 22. *Fulk.* Def. of Engl. Tranſlat. Bible, c. 22. p. 508.

Some have ſuggeſted, that a collection of *ballads* is neceſſary to a miniſter, in order to learn the temper and inclinations of a people, which are here frequently uttered with great ſimplicity. The great Cecil, chief miniſter to queen Elizabeth, is ſaid to have made a moſt ample collection of *ballads*, on this account. Vid. *Freſn.* Meth. de l'etud. l'Hiſt. c. 14. §. 7.

BALLANCE, (*Cycl.*) in aſtronomy, one of the twelve ſigns of the zodiac. See LIBRA, *Cycl.*

BALLANCE *Fiſh*, in zoology, an Engliſh name for the fiſh called the *zygæna* by authors, and by ſome the *hammer-headed ſhark*, or *libella*. It is, according to the new Artedian ſyſtem, a ſpecies of the *ſqualus*, and is diſtinguiſhed, by that author, by the name of the *ſqualus*, with a very broad and tranſverſe head, reſembling a hammer. See SQUALUS and ZYGÆNA.

BALLANCERS, in natural hiſtory, are two ſmall oblong bodies, placed under the wings of the two-winged flies, and, in ſome meaſure, ſupplying the office of the two other wings, which thoſe of the four-winged claſs are poſſeſſed of.

Theſe, though very ſmall, are yet extremely eaſy to diſcover, in almoſt all the kinds; becauſe they ſtand prominent, and are not applied cloſe to the body. The four-winged flies never have theſe, and the two-winged never are without them. They are indeed very often the moſt ready diſtinction of theſe two great claſſes of the fly kingdom. For, frequently, the flies of the four-winged kind have their under-pair ſo very thin, and ſo cloſely applied to the outer, that it is not eaſy to ſeparate or diſtinguiſh them for what they are. This diſtinction, however, never fails or deceives; for if we perceive theſe *ballancers* wanting, we may always determine the creature to have four wings, though we only diſcover two of them at firſt ſight. Every one is acquainted with the ballances applied to divers machines, and made of an iron rod, with a plummet or ball of lead at each end. Under the wings of all the two-winged flies, there are two oblong bodies, one under each wing, which are of the ſhape of the half of this machine, and may be called half *ballancers*, with moſt propriety; though the ſhorter name of *ballancers* alone is ſufficiently expreſſive.

Each of theſe is a ſmall ſlender ſtalk, faſtened by one end to the corcelet of the fly, and terminated at the other by a head, which, in ſome ſpecies, is round, in others oblong, and, in ſome of the figure of a ladle, or hollowed deeply on one ſide. The head of theſe bodies is always large, in proportion to its ſtalk, and forms a ſort of mallet. Swammerdam has, for this reaſon, called theſe the mallets, and ſome others have named them the counterpoiſes; ſuppoſing them to be of the ſame uſe to the creature, that the counterpoiſe carried in the hand of the rope-dancer is to him, ſerving to keep the juſt equilibrium in all its motions.

The flies frequently carry theſe *ballancers* in the ſame direction with their wings, and are able to move them with great ſwiftneſs; but the ſmallneſs of their ſize, in proportion to its body, or to the ſize of its wings, ſeem to make them of but little uſe to the creature, in the offices they are ſuppoſed to ſerve for. Unqueſtionably they have their uſes; but it is better abſolutely to declare we know not what they are, than to appropriate to them any they ſeem ſo little adapted to.

The *ballancers* in the gnat kind are placed cloſe under the inſertion of their wings, and are extremely eaſily ſeen; thoſe of ſome other flies are more hid, and are not placed exactly in the ſame part of the corcelet. Several of the ſhort-bodied flies, as the great blue fleſh-fly, and others, have one *ballancer* on each ſide, placed near the extremity of the corcelet, where it joins the body.

Theſe are certainly to be looked upon as ſome ſort of ſupplements to the wings of the fly that have them. If the wing of a great blue fleſh-fly be cut off near its origin, theſe two ſmall bodies may eaſily be ſeen; they appear like mutilated, or young, and juſt growing wings. The lower of theſe is the larger; it is faſtened to the corcelet of the fly, very near the inſertion of the wing; its form is that of a ſmall ſhell, or the half of a ſmall bivalve; its concavity is turned toward the body of the fly, its convexity outward. Near its edge it has a kind of brown band, bordered with a ring of very fine hairs; the reſt of its ſubſtance is very tranſparent; it reſembles a kind of talc, and is wholly without fibres. A little above this ſmall body, or talcky ſhell, there is another ſmall piece of the ſame ſubſtance, but very ſhort; this is of the ſame form with the other, were it not that it is often rumpled, and folded almoſt equally in two. This, like the other, has an edge fringed with hairs, but is uſually black, as is alſo its fringe; whereas the edge of the other is of a deep brown, and its fringe white. Theſe two pieces have their ſeparate inſertions in the corcelet; but if they are traced through the whole extent, they will be found joined to one another, and are really but one body. Theſe may be properly enough called the baſtard wings, or double ſhells, of the claſs of the two-winged flies.

All the ſhort bodied two-winged flies afford theſe to our obſervation; but, in the different ſpecies, they vary a little in their ſhape and ſituation. In the green and gold fly, the upper ſhell is not folded, as it is in the great blue fly, and many others of that claſs. In many ſpecies, the lower and larger ſhell reaches to the firſt ring of the body, and covers the inſertion and part of the ſtalk of the *ballancer*; and, in the gnat kind, theſe are ſo ſmall as to ſeem wholly wanting. Vid. *Reaumur*, Hiſt. Inſect. Vol. iv. p. 252, ſeq.

BALLAST, (*Cycl.*)—That *ballaſt* is beſt which is heavieſt, lies cloſeſt and faſteſt, and drieſt, both for the ſhip bearing a ſail, ſtowing of goods, health of the company, and ſaving of caſks and other goods. If a ſhip have too much *ballaſt*, ſhe will draw too much water; if too little, ſhe will bear no ſail.

To trench the BALLAST, denotes, to divide the *ballaſt* into two ſeveral parts, or more, in the ſhip's hold; commonly done to find a leak in the bottom of the ſhip, or to undock her.

The BALLAST *ſhoots*, that is, runs over from the one ſide to the other. Hence it is, that corn, and all kinds of grain, is dangerous lading, for that it is apt to *ſhoot*. To prevent which, they make *poucles*, that is, bulk-heads of boards, to keep it up faſt, that it may not run from ſide to ſide, as the ſhip heels upon a tack. *Boteler*, Sea Dial. 4. p. 148. *Manw.* in voc.

BALLATOONS, large, heavy luggage boats, carrying goods by the river from Aſtracan and the Caſpian ſea to Moſcow. Plan, Engl. Comm. c. 1. p. 57, ſeq.

Theſe will carry from a hundred to two hundred tun; and have from a hundred to a hundred and ten, or twenty men employed to row, and tow them along.

BALLERUS, in zoology, a name given by ſome authors to a ſpecies of freſh water fiſh of the leather mouthed kind, which appears to be the ſame with the *carcaſſius*, or, as authors call it, the *carcaſſii tertium genus*. *Rondelet* de Piſc. See CARCASSIUS.

BALLERUS, in ichthyology, a name given by Ariſtotle to that ſpecies of cyprinus, called *blicca* and *pleyſta*, and *pallerus*, by the modern writers.

BALLET, or BALET, BALETTO, a kind of dramatick poem, repreſenting ſome fabulous action or ſubject, divided into ſeveral entries; wherein ſeveral perſons appear, and recite things under the name of ſome deity, or other illuſtrious character. *Richel.* Dict. T. 1. p. 170. b.

BALLET is more particularly uſed for a kind of comic dance, conſiſting of a ſeries of ſeveral airs of different kinds of movements, which together repreſent ſome ſubject or action. *Broſſ.* Dict. Muſ. p. 12.

They are performed chiefly by maſks repreſenting ſylvans, tritons, nymphs, ſhepherds, and the like; and conſiſt of three parts, the entry, figure, and the retreat. Vid. *Walther*. Lex. Muſ. p. 67.

The word is of Greek origin, formed from βαλλειν, *jacere*, to caſt, throw, toſs; whence alſo, in writers of the middle age, we find *ballationes* for *ſaltationes*, dancings, and *ballare* for *ſaltare*, to dance. *Paſch.* Invent. Nov. Antiq. c. 7. § 60.

F. Meneſtrier has a treatiſe expreſs on ancient and modern *ballets*, according to the rules of the ſtage; wherein he explains the nature of dancing according to Ariſtotle and the antients. Vid. Act. Erudit. Leipſ. 1683, p. 238, ſeq.

BALLET, in the Engliſh poetry, &c. See BALLAD.

BALLISTA, (*Cycl.*)—The generality of authors confound the *balliſta* with the *catapulta*, attributing to the one what belongs to the other; an error from which Lipſius, Father Daniel [a], and Perrault himſelf, is not free. The detecting of it we owe to M. de Follard; according to him, the *balliſta* had two arms, the *catapulta* but one.—[[a] Vid. P. *Daniel*, Hiſt. de la Milice Franc. T. 1. p. 59.]

The *balliſta* was chiefly uſed in caſting arrows, javelins, and even beams and planks of vaſt bulk, beſet with ſpikes twelve feet long. The office of the *catapulta* was that of throwing ſtones [a]. We ſometimes indeed meet with *balliſtæ lapidum* [b] in Cicero; which ſeems to ſhew that the *balliſta* was employed in caſting of ſtones; neither is this denied by M. Folard, who mentions expreſsly, that leaden bullets were alſo thrown by the *balliſtæ* [c].—[[a] Vid. *Folard* ſur Polyb. T. 2. p. 587, 593, & 614. *Fæſch.* Ingen. Lex. p. 63, a. *Cæſar* de Bell. Civil. l. 2. c. 2. [b] *Cic.* Tuſc. l. 2. c. 24. [c] *Folard*, l. c. p. 614.]

Iſidore ſays expreſsly, *Balliſta magna vi jacit aut haſtas aut ſaxa.* Some chooſe to diſtinguiſh two kinds of *balliſtæ*, the greater uſed for caſting ſtones, the leſſer for darts [d]. According to Vitruvius [e], the *balliſta* was made after divers manners, though all uſed to the ſame purpoſe: one ſort was framed with levers and bars; another with pullies; another with a crane; and others with a toothed wheel [f].—[[d] *Calv.* Lex. Jur. p. 108, a. [e] *Vitruv.* Arch. l. 10. c. 16. [f] *Dan.* Dict. Ant. in voc.]

The *balliſta* is ranked by the antients in the ſling kind, and its ſtructure and effect reduced to the principles of the ſling; whence it is called by Hero, and others, *funda* and *fundibulus*. Guntherus calls its *balearica machina*, as a ſling peculiar to the Balearick iſlands. Pliny [g] makes the Phœnicians inventors both of the *funda* and *balliſta*. Guntherus calls thoſe which threw leſſer ſtones, *fundæ*, and thoſe which threw greater, *balliſtæ*. The leſſer *balliſtæ* were alſo called *centenariæ*, as throwing ſtones of an hundred pound weight. Siſena, on a like account,

count, calls them *talentaria*, which imports a somewhat greater weight. The greater *ballistæ* could throw three talents. They could also throw a thousand large stones at a time, and were kept playing at sieges night and day [h].—[[g] *Plin.* Hist. Nat. l. 7. c. 56. [h] *Aquin.* Lex. Milit. T. 1. p. 108, seq.]

Perrault, in his notes on Vitruvius, gives a new contrivance of a like engine for throwing bombs without gunpowder. p. 337. Vid. *Wolf.* Lex. Math. p. 238.

BALLISTA, in practical geometry, the geometrical cross, called also *Jacob's staff*. *Wolf.* L. Math. p. 237. See CROSS *Staff*, *Cycl.*

BALLISTA, or *Os* BALLISTÆ, is a denomination given by some anatomists to the first bone of the tarsus, otherwise called *talus* and *astragalus*. *Drake*, Anthrop. l. 4. c. 8. p. 440. See ASTRAGAL, *Cycl.*

BALLISTARII, or BALLISTRARII, in antiquity, slingers in the antient armies, or soldiers who fought with the *ballistæ*. See BALLISTA.

There were two kinds of *ballistarii milites*; the former cast stones, and other missive weapons, with the hand, called *manuballistarii*; sometimes simply, *manuballistæ*. The latter, called *carroballistarii*, sometimes only *carroballistæ*, made use of a machine. Some speak of a third kind, called *arcuballistarii*; but these are better reduced to the second. *Aquin.* Lex. Milit. T. 1. p. 109.

The *ballistarii* are scarce heard of before the age of Constantine. *Pitisc.* Lex. Ant. T. 1. p. 245, b.

BALLISTARIUS is also used in middle age writers, for a cross-bowman, or *arbaletier*.

BALLISTES, in ichthyology, the name of a genus of the branchiostegous fishes; the characters of which are these: There is no branchiostege membrane; the belly-fin is single and simple, aculeated, situated perpendicularly and longitudinally, in the same manner as the *pinna ani*; there are two, three, or four very robust and sharp prickles on the back; the jaws contain very large teeth, which stand very close to one another, and are protruded forwards; the head and body are broad and compressed. The species of this genus are these; 1. The *ballistes*, with three prickles on the back, and with a forked tail. This is the *guaperva* of Marcgrave, and is called by the English in America the *old wife fish*. 2. The *ballistes*, with two spines on the back, and with a square tail. This is the *guaperva longa*. It has no spine on the belly. 3. The *ballistes*, with a forked tail, and with the back-fin spotted. This is the *guaperva lata* of Lister. The prickle of the back in this species resembles a horn, and is beset every way with tubercles or teeth. 4. The *ballistes*, with striated lines, and a forked tail. The teeth of this are extremely like the *dentes incisores* in man. 5. The *ballistes*, with five prickles on each side. This is the *guaperva hystrix* of authors. It has a remarkable hairiness about the tail. 6. The *ballistes*, with two spines in the place of belly-fins, and with one single spine below. This is the *scolopax* of authors, and the *trombetta* of the Italians; but it differs so little from the former, that it seems only a variety of it. *Artedi*, Gen. Pisc. 38.

BALLISTEUM, or BALLISTÆA, in antiquity, a military song or dance used on occasions of victory.

Vopiscus has preserved the *ballisteum* sung in honour of Aurelian, who, in the Sarmatian war, was said to have killed forty eight of the enemy in one day, with his own hand. *Mille, mille, mille, mille, mille, mille decollavimus: Unus homo mille, mille, mille, mille decollavimus; mille, mille, mille vivat, qui mille, mille occidit. Tantum vini habet nemo, quantum fudit sanguinis.* The same writer subjoins another popular song of the same kind: *Mille Francos, mille Sarmatas, semel occidimus; mille, mille, mille, mille, mille Persas quærimus. Vopisc.* in Aurel. It took the denomination *ballisteum* from the Greek βαλλω, *jacio*, or *jacto*, to cast or toss, on account of the motions used in this dance, which was attended with great elevations and swingings of the hands.

The *ballistea* were a kind of popular ballads, composed by poets of the lower class, without much regard to the laws of metre. *Aquin.* Lex. Mil.

BALLISTICA, BALLISTICS, is used for the art of throwing heavy bodies. F. Mersennus has published a treatise on the projection of bodies, under this title.

BALLOON, or BALLON, in building, (*Cycl.*)—This word is French, *Ballon*, or *Balon*, where it literally signifies a great ball; though we do not find that the French architects use it in the sense abovementioned, but, in lieu thereof, *boule d'amortissement*, which is applied to any spherical body, serving to terminate a decoration; as the ball on the top of a steeple, a lanthorn, dome, or the like.

A *balloon* is to be proportioned to the magnitude, and altitude of the body, to which it serves as an *acroter*, or crowning. See CROWN, *Cycl.*

That on the top of St. Peter's at Rome is of brass, sustained by an iron arming within; and, being at the height of sixty-seven fathoms, is above eight foot in diameter. *Daviler*, P. 2. p. 432.

BALLOON also denotes a kind of game something resembling tennis.

The *balloon* is played in the open field, with a great round ball of double leather blown up with wind, and thus driven to and fro with the strength of a man's arm, fortified with a brace of wood. School of Recr. p. 135.

BALLOON, or BALOEN, is more particularly used among voyagers, for the state barges of Siam.

The *balloons* are a kind of brigantine, managed with oars, of very odd figures, as serpents, sea-horses, &c. but, by their sharpness and number of oars, of incredible swiftness. *Tachart.* Voyage de Siam, ap. Phil. Trans. N° 185. p. 251.

The *balloons* are said to be made of a single piece of timber, of uncommon length; they are raised high, and much decorated with carving at head and stern: some are gilt over, and carry an hundred and twenty, or even an hundred and fifty rowers on each side. The oars are either plated over with silver, or gilt, or radiated with gold; and the dome or canopy in the middle, where the company is placed, is ornamented with some rich stuff, and furnished with a ballustrade of ivory, or other costly matter, enriched with gilding. The edges of the *balloon* just touch the water, but the extremities rise with a sweep to a great height. Some are adorned with variety of figures, made of pieces of mother of pearl inlaid: the richer sort, instead of a dome, carry a kind of steeple in the middle; so that considering the slenderness of the vessel, which is usually an hundred, or an hundred and twenty feet long, and scarce six broad, the height of the two ends, and of the steeple, with the load of decorations, it is a kind of miracle they are not overset. *Aubin.* Dict. Marin. p. 61, seq. *Savar.* Dict. Comm. T. 1. p. 217, seq.

BALLOTE, βαλλωτη, *stinking horehound*, in botany, the name of a genus of plants; the characters of which are these. The flower consists of one leaf, and is of the labiated kind; the upper lip is hollowed in the manner of a spoon, and the lower is divided into three segments; the middle one much larger than the others, and of a heart-fashioned shape; the pistill arises from the cup, and is fixed in the manner of a nail to the hinder part of the flower, and surrounded by four embryos, which afterwards become four oblong seeds, ripening in a tubular pentangular capsule, divided into five segments at the edge, which was the cup of the flower. The only species of *ballote* is the common stinking kind; with the white flowered one, no other way differing from it but in the colour of the flower. *Tourn.* Inst. p. 184.

BALLOTADE, in the manege, the leaps of a horse between the pillars, or upon a streight line; so that when his fore-feet are in the air, he shews nothing but the shoes of his hinder feet, without yerking out.

The *ballotade* differs from a capriole, for that in the latter the horse jerks or strikes out his hind-legs with all his force, keeping them near and even.

Ballotades also differ from *croupades*, in this, that in the former the horse shews his shoes, when he lifts or raises his croup; whereas, in the latter, he draws his feet under him. See CROUPADE, *Cycl.*

A horse naturally takes to *ballotades*, after putting him on caprioles; when the fire and mettle of the caprioles is over, he falls of course to *ballotades*, and then to croupades, unless a poinson in a hard hand make him yerk out, and continue the air of caprioles. *Guill.* Gent. Dict. P. 1.

BALLUSTER, or BALLISTER, a small kind of column or pillar, whereof ballustrades were formed. *Davil.* P. 2. p. 408. See the article BALLUSTRADE, *Cycl.*

The word is French, *balustre*, which signifies the same; formed from the Latin *balustrum*, or *balustrium*, a place among the antients where the baths were railed in. *Casseneuv.* in voc. *Menage*, p. 74, a.

*Balluster*s are of divers forms, as well as matters, according to the different occasions, and different orders of architecture wherein they are used. We meet with stone *balluster*s, iron *balluster*s, brass or silver *balluster*s, round *balluster*s, square *balluster*s, whole *balluster*s, half *balluster*s, &c [a]. Also Tuscan, Doric, Ionic, Corinthian, Composite *balluster*s; fluted and rustick *balluster*s; *balluster*s in form of urns, of vases, &c [b].—[[a] Vid. *Davil.* P. 1. p. 318. pl. 94. Idem, P. 2. *Le Clerc*, Traité d'Archit. p 168. [b] *Davil.* P. 1. p. 318. pl. 319.]

BALLUSTER of the Ionic capital, denotes the lateral part of the volute, answering to what Vitruvius calls *pulvinata*, on account of its resemblance to a pillow. *Corneille*, Dict. des Arts, T. 1. p. 85. a.

BALLUSTRADE, (*Cycl.*)—The modern *ballustrade* amounts to the same with what Vitruvius calls *podium*, sometimes *pulpitum*. *Davil.* p. 408.

BALM, in botany. The manner of propagating this plant is by parting the roots either in autumn, or in spring, and planting them at eight inches asunder.

When they are first planted, they must, if the season prove dry, be well watered, till they have taken root; after this, they will require no farther care, only that they ought to be transplanted every other year; for otherwise the roots increase so fast as to choak one another. *Mill.* Gard. Dict. voc. *Melissa.*

BALM, in medicine, a denomination sometimes given to what is more usually called *balsam*. See BALSAM, *Cycl.*

The word *balm* rarely occurs, except in Scripture; where we read of *balm of Gilead*, a precious kind of medicine produced in that country, of which the Ishmaelites made a considerable trade to Egypt.

What this *balm* was, does not appear; the Hebrew name *zori*, which our translators have rendered *balm*, being by the Rabbins interpreted

interpreted to denote any resinous kind of gum. Some have imagined it the same with our balsam of Mecca, which they hence also denominate *balm of Gilead*; but of this there is small probability. Dr. Prideaux takes the ancient *balm of Gilead* to have been only a better sort of turpentine than that commonly then in use for the cure of wounds, &c. Vid. Connect. Hist. Old and New Test. P. 2. l. 6. p. 619, seq.

BALNEARII *Servi*, in antiquity, servants or attendants belonging to the baths.

Some were appointed to heat them, called *fornacatores*; others were denominated *capsarii*, who kept the cloaths of those that went into them; others *aliptæ*, whose care it was to pull off the hair; others *unctuarii*, who anointed and perfumed the body. *Danet*, Dict. Ant. in voc.

BALNEARIUS *Fur*, in antiquity, a kind of thief who practised stealing the cloaths of persons in the baths; sometimes also called *fur balnearum*.

The crime of those thieves was a kind of sacrilege; for the hot baths were sacred: hence they were more severely punished than common thieves, who stole out of private houses. The latter were acquitted with paying double the value of the thing stolen; whereas the former were punished with death.

These *balnearii fures* are represented as infinitely adroit and subtle: to guard against them, there were a kind of servants called *capsarii*, who made it their business, for a small fee, to watch the cloaths of those who went to bathe. *Pitisc.* Lex. Ant. T. 1. p. 248.

BALNEUM, (*Cycl.*)—BALNEUM *Roris*, or *Roritum*, is a furnace whereon the cucurbit, or distilling vessel, is only suspended over the vapour of water, and not in contact with the water itself. *Le Mort.* Collect. Chym. Leid. Prol. 2. c. 2. *Ruland.* p. 99. *Boerh.* Chem. P. 2.

This is also denominated *Balneum vaporarium*, or a *vapor bath*.

BALNEUM *Ventris Equini*, or a horse-dung bath, is when a body is laid to digest in horse-dung, the heat whereof is managed by the affusion of hot water. *Boerh.* l. c.

BALNEUM *Fœni*, a hay bath, is when a body is laid to digest in moist hay, whose heat is likewise directed by the application of water. Id. ibid.

BALNEUM *Minerale*, or mineral bath, is used by some chemists for *aqua regia*. *Le Mort.* Collect. Chym. Leid. c. 64.

BALONICH, in the Materia Medica of the ancients, a name given by Avisenna, Averroes, and others, to a kind of camphor, which they describe as coarse, brown, and of less value than the other sorts. This is probably the same with our rough camphire, as brought over to us from the East Indies.

BALSAM, (*Cycl.*)— The true origin of this substance is, that the native oil of the bark of trees is at first liquid; but after it has been some time formed, it becomes gradually inspissated by the sun's heat, and appears in the form and thickness of a *balsam*. By a still longer continuance, and more intense heat, it grows yet thicker, and becomes a kind of semi-resin, and, after a longer time, a true resin; which, from this origin, being more exhausted of its acid spirit, will wholly burn away in the fire, will liquify in the same, dissolve and mix with oil, obstinately refuse to mix with water, harden in the cold, and then lay aside its tenacity, and become friable. *Boerh.* Chem. p. 145. Mem. Acad. Scienc. 1721.

Dr. Grew says, that *balsams* are properly the juices of the roots; for though they be also procurable from other parts of plants, it is the root that usually yields the purest, as well as the greatest quantity of *balsam*. Vid. *Grew*, Anat. Veget. l. 2. c. 3. §. 21. Natural *balsams* bear so near an affinity to turpentine, in their aromatic, cleansing, and detergent qualities, that some will have them only so many species of turpentines. Vid. *Quincy*, Dispens. P. 2. §. 495.

Balsams are of great service in medicine and surgery. To use them, they are usually liquified with spirit of wine, or oil, and sometimes mixed up with the yolk of an egg.

The misfortune is, there is no vehicle found to carry *balsams* effectually into the lungs; what is taken into the stomach, must first pass the heart; and as to what is anointed on the breast and stomach, it will be taken up by the veins, and absorbent vessels, and carried into the ordinary course of circulation. Mr. Leewenhoeck proposes a new method of application; which see under the article BALSAMICS. Phil. Trans. N° 279. p. 1144.

The True BALSAM, *Balsamum verum*, distills from a small tree or shrub, called by the antient Arabian physicians *balsam*, and by the Grecians βαλσαμον. This is also called by divers other denominations, as *balm of Gilead*, *of the Levant*, *of Mecca*, *balsamum Gileadense*, *Orientale*, *de Mecca*, *Arabicum*, *Judaicum*, *Ægyptiacum*, *Syriacum*, *Antiquorum*, &c. *Burggr.* Lex. Med. p. 1426, seq.

The plant from which it distills, is a shrub which grows not higher than two or three cubits. A foot from the ground, it spreads into a number of small branches, no bigger than a goose's quill. Incisions being made in these, in June, July, and August, the balm trickles out. The incisions are usually made with glass, a knife, or sharp stone. If made with iron, it has been said, that the tree presently dies; which only holds when the incisions are made too deep. Vid. *Ray*, Hist. Plant. l. 31. c. 23. *Prosp. Alpin.* de Plant. Ægypt. c. 14. p. 48. *Worm.* Mus. p. 223. *Slevogt.* Diss. de Opobals. c. 2. §. 7. *Wedel.* Diss. de Terebinth. c. 1. p. 9.

Pliny tells us, that the *balsam* tree was no where to be found but in Judea, and there only in two gardens [a]. But now Ægypt produces it, and Judea has lost it. Prosper Alpinus assures us, that neither Judea nor Egypt is the natural country of the *balsam* tree, but Arabia Felix, as it grows naturally here, but never in Egypt or Judea, but as it is cultivated in gardens [b]: and that, in Egypt, the best cultivation cannot keep it from decay; so that they are forced frequently to send for new plants from Arabia [c].—[[a] *Plin.* Hist. Nat. l. 12. c. 25. [b] Vid. *Salmas.* Exerc. ad Solin. T. 1. p. 579, & p. 591. *Salmuth.* ad Pancirol. P. 1. tit. 12. p. 32, seq. [c] *Prideaux*, Connect. P. 2. l. 6. p. 617, seq. *Burggr.* Lex. Med. 1434, seq. *Clus.* Exot. l. 10. c. 9. *Alpin.* de Plant. Egypt. c. 14. p. 49. Id. in Dial. de Balsam. c. 2. p. 8.]

When first gathered, it is thin and light, so as to swim in water; when old, it grows thick, hard, and heavy; so that if dropped into water or milk, it presently sinks.

It is said to relieve inward decays, bruises, and sores; open obstructions of the lungs; heal erosions from acrimony, and the worst kind of ulcerations; to be excellent in asthmas and pleurisies, and whatever requires expectoration. It is also applied externally as a detergent and incarnative. Vid. *Quincy*, Pharm. P. 2. §. 285.

The *balsam* brought to us, comes chiefly from Egypt; not that it is the produce of that country, the greater part being brought from Mecca to Alexandria, by the caravans of Mahometan pilgrims, who travel yearly, out of devotion, to the birth-place of their prophet. And from Alexandria it is brought hither, whence the denomination *balsamum è Mecca*, and *Ægyptiacum*. Of late, the East India Company have also imported it directly from Arabia, by the way of the Red sea.

For the appellation, *balm of Gilead*, it is given it on a supposition, that the balm mentioned in Scripture to come from Gilead, was the same with that of Mecca; of which, we have already observed, there is little probability. See BALM.

The adulterated is known by swimming on water like oil, and shooting out streaks like a star; it also leaves a stain in woollen, which the genuine does not, but washes clean away. *Alpin.* Dial. de Balsam. c. 3. p. 21. 24. Id. c. 5. p. 37.

Another mark of the purity of the *balsam* is, when a drop of it, let fall on red hot iron, gathers itself into a globule; whereas oil, or spurious *balsam*, runs and sheds all around. To mention no more, the genuine *balsam* feels viscid, and adhesive to the fingers, which the adulterated does not. If sophisticated with wax, it is discovered by the turbid colour, never to be clarified; if, with honey, the sweet taste betrays it; if with resins, dropping it on coals, it yields a blacker flame, and of a grosser substance, than the genuine.

The pure was sold in the country where it was produced, for double its weight in silver; at least this was the antient price in the days of Theophrastus [d] and Dioscorides [e].—[[d] Hist. Plant. l. 9. c. 6. [e] L. 1. c. 18.]

The scarcity of the true balm, and the frequent adulterations of it, have led some to rank it in the number of lost things; and others to hold, that, at least, it is no longer imported into these countries. Peter Martyr, and, after him, Cardan, assure us, that the *balsam* shrubs were all extinct. Vid. *Card.* de Subtil. l. 8. p. 249.

Others infer, from a passage in Pliny, *Sæviere Judæi in eam* (arbusculam) *sicut in vitam quoque suam, contra defendere Romani, & dimicatum pro frutice est* [f], that the Jews had destroyed all the *balsam* trees in Judea, and that thus the juice was lost. But Razivil [g], Scaliger [h], Clusius, and others, effectually refute these suggestions. The point was hotly disputed at Rome in 1639, on occasion of some druggists of that city, who had procured a quantity of the *balsam* to be used in making the theriaca; their pretension being called in question by others of the profession, pope Urban VIII. assisted by cardinal Barberini, Thad. Collicula, his first physician, and J. Ubaldini, chief physician of the city, took cognizance of this matter; and, after a full examination of what was alleged on either side, pronounced the *balsam* was true.—[[f] Hist. Nat. l. 12. c. 25. [g] Hierozol. Peragr. p. 177. [h] Exerc. 157. §. 1. *Burggr.* p. 1427, seq.]

Fr. Perla, a Roman physician, wrote the history of the controversy; and Volcamer has collected all the pieces written on either side the question, under the title of *Opobalsami orientalis in theriaces confectione Romæ vocati, doctiorumque calculis approbati sinceritas*. Norimb. 1644. 12°. an extract of it is given by *Burggr.* in Lex. Med. Univ. p. 1429, seq.

BALSAM *of Copaiba*, is an oily, resinous liquor, at first limpid, like distilled oil of turpentine, but afterwards growing thicker, and from a white colour turning yellowish, of a subacrid bitterish taste, a brisk resinous terebinthinous smell, gathered from a tree of the same name growing in Brazil. *Burggr.* Lex. Med. p. 1457.

It was at first called, by reason of its clearness, *oil of copaiba*; by the Americans, sometimes *colocai*; by the Portuguese, *camelo*; by the French, *copaif*, and *cambaif*; among us, usually *capivi*; among foreign writers, we also find it denominated *copaliba*, *copaliva*, *copaiva*, and *capayva*.

Many of the Americans call all odoriferous resins, and sweet scented

ſcented gums *copal*; and the word *iba*, or *iva*, is the name for a tree; by which the etymology of *copaiva* eaſily appears.

It was firſt imported into Europe towards the cloſe of the ſixteenth century. The Portugueſe learned its virtues from the practice of the natives, whom they ſaw anoint their wounds with it; or, as ſome ſay, from the beaſts, eſpecially bears, which, when wounded, by a natural inſtinct rub themſelves againſt the tree. *Burggr.* Lib. cit. p. 1459, ſeq.

It is a great cleanſer of the urinary paſſages; on which account it obtains much in gonorrhœas, and all obſtructions and ulcerations in thoſe parts. It is alſo reputed a powerful balſamic, and, as ſuch, uſed in many diſtempers of the breaſt. *Quincy*, Diſpenſ. P. 2. §. 284.

But its heat and acrimony render it hurtful in inflammatory caſes, phthiſes, diſorders of the kidneys, &c. Vid. *Junck.* Conſp. Therap. tab. 5. p. 188, ſeq.

The *balſam of copaiva* is frequently adulterated with oil of ſweet almonds, and oil of turpentine; the near reſemblance it bears to this laſt, has occaſioned them to be ſometimes confounded. They may be diſtinguiſhed by the conſiſtence as well as by colour; turpentine being thicker, and of a vitreous caſt, the *balſam* being whiter, and more inclining to a yellow: add, that it is more odorous, as well as ſharper and bitterer to the taſte. *Burggr.* Lib. cit. p 1459.

BALSAM *of Peru*, is an oily, reſinous liquor, of a pungent, bitteriſh taſte, and a ſweet, fragrant ſmell, collected from a tree called by the native Peruvians *hoitziloxilt*. *Burggr.* Lex. Med. p. 1465, ſeq.

This balſam is called by Piſo *cabureiba*, and by Marggravius *cabui-iba*; by us, commonly, from the country, *Peruvian balſam*. Its heat renders it hurtful in certain caſes, and apt to create an inflammation; particularly in phthiſes, aſthmas, ulcers of the kidneys, &c. Vid. *Junck.* Conſp. Therap. Tab. 5. p. 189.

Its genuineneſs is known by this, that, when poured into water, it ſinks to the bottom, turns of a whitiſh colour, but does not mix or diffuſe at all in the water.

The way to make an intimate mixture of this *balſam* with water, is by means of the yolk of an egg. Vid. *Junck.* Conſp. Chir. p. 255. 336.

If mixed with turpentine, or any other liquor, it preſently loſes its ſmell. It unites with diſſolved ſugar, but, upon the application of cold water, the *balſam* readily ſeparates again. If evaporated over the coals, a thick ſediment is left at the bottom of the veſſel, reſembling colophony. If melted with wax, it preſently ſubſides. And hence an uſeful pharmaceutical rule, *viz.* that *balſam of Peru* may be retained in cerats while cold, but that, if melted, it preſently ſeparates itſelf, and ſettles to the bottom. *Burggr.* Lex. Med. p. 1468, ſeq.

BALSAM *of Tolu*, is an oily, reſinous liquor, of a ruddy colour, tending to a yellow; of a middle conſiſtence, between a fluid and a ſolid; extremely glutinous, ſo that wherever laid it ſticks firmly; of a ſweet and grateful taſte. It does not, like other balſams, excite a nauſea; yielding a moſt excellent fragrance, not unlike that of lemons [i]. It is an excellent balſamic and reſtorative; and good in all decays, eſpecially of the lungs. It ſoftens and thickens the blood, and cures cattarrhs, and coughs, from tickling defluxions, &c. Its healing virtues extend even to the ſeminal parts, where it is good in old gleets, &c. There is a ſyrup of it in the ſhops; but the beſt form of adminiſtring it is in pills, or in a ſolution in ſome ſpirituous menſtruum [k].—[i *Burggr.* Lex. Med. p. 1474. k *Quinc.* Diſpenſ. P. 2. §. 207.]

The *balſam of Tolu* comes neareſt to the *true* or *eaſtern balſam*; and, in effect, exhibits moſt of the marks and characteriſtics of it: whence Bartholin makes it the beſt ſubſtitute, where the other cannot be had. *Barth.* Diſſ. 2. de Theriac. p. 2. §. 25. It takes its denomination from a place called *Tolu*, ſituated between Carthagena and Nombre de Dios.

Hungarian BALSAM, *Balſamum Carpathicum*, or *Hungaricum*, is a ſpecies of oil, or liquid reſin, oozing from a coniferous tree growing on the Carpathian mountains, to which the Hungarians attribute many virtues. Vid. Ephem. Acad. N. C. Cent. 7. Obſ. 2. p. 4.

This *balſam* bears a near reſemblance to oil of turpentine. It was diſcovered in 1650, by Chr. ab Hortis, a phyſician of the country, who was ennobled by the emperor Ferdinand II. for his diſcovery. The firſt diſtinct account we had of it in theſe parts, was from M. Breynius. Ephem. Acad. N. C. l c.

The *Carpathian balſam* is the produce both of a ſhrub and a tree; though the juice of the latter is preferred, both as more fragrant, and of greater virtue. Breynius will have the tree to be the *Pinaſter* of Bellonius, or *Pinus ſylveſtris montana tertia C. Bauhin.* Some have given it the denomination of *Libanum Carpathicum.*

There are two ways of gathering it; one by wounding the branches of the tree, and faſtening glaſs veſſels exactly thereto, ſo as to cloſe the orifices, and prevent the exhalation of the finer parts of the *balſam*; the juice trickling out in the ſpring-time, being received in theſe glaſſes, is the *balſam*. The ſecond is by expreſſion from the branches of the tree, firſt cut off for the purpoſe. But this kind is of inferior value to the former. The very wood, by diſtillation, yields a fragrant balſamic oil, which has all the virtues of the *balſam* itſelf. *Burggr.* Lex. Med. p. 1453.

The virtues of this *balſam*, internally taken, or externally applied, are ſaid to be very great, and not inferior to thoſe of the *oriental balſam*. But whether either deſerve the commendation beſtowed on them, and how far they excel the common turpentine, is a queſtion which muſt be left to impartial practitioners.

The biſhop of Cloyne aſſerts, that tar-water has all the virtues of theſe *balſams*, without their bad effects. See TAR-WATER.

BALSAM is alſo applied to a mineral ſubſtance, of a fragrant, healing quality; extracted from a kind of ſtones diſcovered in a mine near *Bergamo* in Italy. Vid. Phil. Tranſ. N° 79. p. 3059.

This is more peculiarly called, by way of diſtinction, the *mineral balſam.*

The diſcoverer was Sig. Caſtagna. Its chief uſe is in diſorders of the uterus; on which account it is in great eſteem among the Genoeſe, to reſtore women after labour [l]. Some have alſo found it of great benefit in the phthiſis [m].—[l Phil. Tranſ. N° 127. p. 674. m *Nenter.* Fund. Medic. T. 1. P. 2. p. 379.]

Artificial BALSAMS are, by ſome, divided into ſimple and compound: to the claſs of *ſimple*, belong the rectified oils of wax, turpentine, linſeed, hypericum, roſes, ſolanum, and trifolium odoratum; to which Boerhaave adds freſh butter. Vid. *Boerh.* De Mat. Med. p. 49.

Compound balſams are numerous; the diſpenſatory writers furniſh a great number of forms, as magiſterial, chalybeat, paralytic, nephritic, and polychreſt *balſams*; red, green, Spaniſh, and Samaritan *balſams*; *balſams* of arceus, of amber, of pitch, &c. Vid. *Boerh.* de Mat. Med. Pharm. Colleg. Lond. *Le Mort.* Collect. Chym. Leid. c. 82, ſeq.

Beſides theſe, chymiſts and alchymiſts ſpeak of *balſams of antimony, of life*, &c.

BALSAM *of Antimony*, a famous medicine deſcribed by Baſil Valentine in his *Currus antimonii triumphalis.* This author has related many incredible things in its praiſe; but Kerkring, in his commentaries on that work, declares, that all he has ſaid of it, is ſhort of its real praiſe; and that, in particular, cancers were to be cured by it; himſelf having, as he informs us, performed a perfect cure on a breaſt condemned to be cut off, by anointing it with this *balſam*, and giving the common internals.

BALSAM *of Life.* The firſt medicine known by this pompous name, was the preparation of antimony, ſo highly extolled by Baſil Valentine, and, after him, by Kerkring. Theſe gentlemen are very cautious of giving the proceſſes for this and the like medicines, in intelligible terms; but they acknowledge, that it contains all the virtues of antimony, and all that can be done by the ſpagyric art.

The famous Frederick Hofman ſpeaks of a *balſam of life*, of his own invention, to which he aſcribes great virtues; but we know not if ever he publiſhed the proceſs for making it. That given in the Straſburg and Ratiſbon Diſpenſatories, under the name of *Balſamum vitæ Hofmanni*, is taken from the notes on Poterius, and is not the ſame with that *balſam*, which the late learned Fred. Hofman prepared in his own houſe.

BALSAM is alſo applied to certain preparations of ſpirit of wine, with balſamic and aromatic ſpices, fragrant reſins, and the like. Theſe are otherwiſe called elixirs. Among theſe, the *elixir balſamicum Hofmanni*, otherwiſe called his *balſamum vitæ*, is famous; but its preparation ſeems not known. Vid. ſupra.

Odoriferous BALSAMS are a fragrant kind of unguents, generally of a thick conſiſtence, compoſed of ſome fatty, denſe juice, joined with ſome diſtilled oils of divers kinds. *Burggr.* Lex. Med. p. 1477.

Theſe are alſo called *ſweet-ſcented*, or *apoplectic balſams.*

The Italians are ſuppoſed to excell in the preparation of *apoplectic balſams.* But, perhaps, they may be as well prepared according to Boerhaave's method, which is this: Melt an ounce of fine pomatum, in a china veſſel, over a ſmall and perfectly clear fire; then gradually add a dram of white wax, ſhaved into thin pieces. After theſe are perfectly blended together, remove the veſſel from the fire; and, when the matter begins to thicken in cooling, drop in, by ſlow degrees, a dram of any of the fragrant eſſential oils; keep the whole continually ſtirring all the the time the oil is dropping in, that it may perfectly mix. After which, ſet the veſſel in cold water, that the whole matter, immediately condenſing by the cold, may keep in the oil and ſpirit. When the *balſam* is thoroughly cold, put it immediately up in veſſels of lead or pewter; and, if theſe are cloſe covered, it will keep perfect a great many years.

Inſtead of pomatum and wax, the expreſſed oil of nutmeg may be uſed in this proceſs, after it has been waſhed in water, till perfectly inſipid, white, and inodorous.

If theſe *balſams* are required to be of any colour, it may be eaſily given at pleaſure. A ſcruple of cochineal, in fine powder, will tinge the *balſam* to a fine purple; or the ſame quantity of the inſpiſſated juice of buckthorn berries, to a fine green; a little native cinnabar will turn it ſcarlet; turmerick, yellow; and ſmalt, to a beautiful blue. Any of theſe may be uſed at pleaſure, provided that they have no ill ſmell, or hurtful properties.

Theſe *balſams* are prepared as rich perfumes, to raiſe the languid ſpirits; and the nobleſt and richeſt of the eſſential oils ſhould therefore be uſed in them. The oils principally direc-

ted by Boerhaave to this purpoſe, are thoſe of balm, calamus aromaticus, cinnamon, cedar, citron, cloves, jaſmin, lavender, white lillies, marjoram, mace, nutmeg, origanum, oranges, both thoſe of China and Sevil, roſes, rhodium, and yellow ſaunders; to which may be added, the natural balſams of Peru and Gilead; theſe two being ſpontaneouſly fragrant without diſtillation. Vid. *Boerh.* Chem. P. 2.

Diſtilled BALSAMS, are only etherial oils diſſolved in ſpirit of wine. *Burggr.* Lex. Med. p. 1478.

Unguentareous BALSAMS, are, properly, unguents compoſed of divers reſins, gums, and oils, fuſed into one maſs with ſpirit of wine, oil of turpentine, or the like; intended to cleanſe, preſerve from putrefaction, heal, mitigate, reſolve, *&c.* *Burggr.* Lex. Med. p. 1479.

BALSAM is alſo uſed, in pharmacy, as the name of one of the forms of medicines; of a conſiſtence ſomewhat greater than that of an oil, but leſs than that of an unguent. *Junck.* Conſp. Formul. Medic. tab. 16. p. 101. *Quinc.* Diſpenſ. P. 3. p. 443. Ejuſd. Lect. Pharm. 1. p. 8.

BALSAMUM *Samech*, of Paracelſus, is a ſalt of tartar dulcified, by diſtilling ſpirit of wine from it, till the ſalt be ſufficiently ſaturated with its ſulphur, and till it ſuffer the liquor to be drawn off, as ſtrong as when it was poured on. *Boyle*, Phil. Work. abr. T. 3. p. 286. Vid. *Le Mort.* Collect. Chym. Leid, p. 436.

BALSAM, among alchymiſts, is alſo appropriated to expreſs a ſubſtance, proper to preſerve bodies from putrefaction. *Ruland*, p. 95.

Hence the art of embalming is denominated *balſamation*.

The adepts in the faculty ſpeak of an *internal* as well as *external balſam*. The firſt is deſcribed as, I know not what occult principle in human bodies, neither bitter nor ſweet, but acerb, *&c.* called alſo *gluten naturæ*. The latter, according to Paracelſus, is no other than turpentine, which has not born the violence of the fire, yet digeſted. Vid. *Caſtel.* Lex. p. 99. a.

BALSAMUM *de Mumiis*, is a kind of balſam which they ſpeak of, drawn from fleſh.

Dead BALSAM, *Balſamum mortuum*, a liquor prepared of myrrh and aloes, diſſolved in ſpirit of wine, chiefly uſed for drying and abſorbing the humours of dead bodies. *Caſt.* Lex. p. 98. b. Vid. *Le Mort.* Collect. Chym. Leid. c. 100. p. 113.

We are alſo told of a *Balſamum elementorum*, and *Balſamum corporis hermetici*; but the definitions they give of them are much too ſubtile for our comprehenſion. Vid. *Caſtel.* Lex. p. 99. a.

BALSAM *of the Philoſophers*, *Balſamum Philoſophorum*, is one of thoſe enigmatical terms whereby they expreſs *aurum potabile*. Vid. Theat. Chym. T. 4. p. 328.

BALSAM is alſo ſometimes uſed, in eccleſiaſtical writers, for the ſacred chryſm.

This is otherwiſe denominated *balſamelæum*. *Du Cange*, Gloſſ. Græc. T. 1. p. 171.

BALSAMUM *Traumaticum*, *vulnerary Balſam*, a form of medicine preſcribed in the London Diſpenſatory, intended to ſupply the place of the tincture, commonly called the Friers *balſam*, ſo famous for curing freſh wounds. It is made thus: Take of benjamin three ounces, ſtrained ſtorax two ounces, balſam of Tolu one ounce, ſuccotrine aloes half an ounce, rectified ſpirit of wine a quart; digeſt them together, till as much as may be of the gums are diſſolved, and then ſtrain off the ſpirit. *Pemberton*'s Lond. Diſpenſ. p. 282.

BALSAMATION, *Balſamatio*, is uſed, by ſome writers, for the art or act of embalming dead bodies. See the article EMBALMING.

Dr. Hook ſpeaks of an univerſal *balſamation*, or method of preſerving all kinds of bodies from corruption, invented by Dr. Elſhot. See the article PRESERVATION.

BALSAMELÆON, in the Materia Medica, a name given by ſome authors to the balm of Gilead, or true balſamum Judaicum. *Dale*, Pharm. p. 282.

BALSAMIC (*Cycl.*) is often applied to things healing or vulnerary.

In this ſenſe, phyſicians ſpeak of the *balſamic* virtues of iron [a]: hence alſo the denomination, *balſamic ſtyptic*, given to Dr. Eaton's liquor [b].—[[a] Mem. Acad. Scienc. 1713. p. 247. [b] Phil. Tranſ. N° 283. p. 110.]

BALSAMICS are medicines endowed with a balſamic, that is, a reſtoring, healing, and cleanſing power.

The chief remedies in the claſs of *balſamics*, are the native balſams, which give the denomination to all the reſt.

BALSAMICS are divided into emollients, reſtoratives, vulneraries, and detergents.

BALSAMICS, again, are either internal or external; hot and acrid, or mild and temperate. The acrimonious kind are dangerous internally, and not to be given without the greateſt caution, where there is any diſpoſition to inflammation or fever; as in phthiſes [c], vomicas [d], gonorrhœas [e], urinous diſorders [f], ſtone [g], cephalæa [h], *&c.*—[[c] *Boerh.* de Mat. Med. p. 142. *Nent.* Fund. Med. T. 2. P. 2. p. 325. [d] *Junck.* Conſp. Med. p. 176. [e] Id. ibid. p. 480, ſeq. [f] Id. ibid. p. 42. [g] Id. ibid. p. 231. [h] *Nent.* l. c. T. 1. P. 114.]

BALSAMICS labour under this defect, that they muſt make a vaſt progreſs in moſt inſtances, ere they can arrive at the intended ſcene of action; by which means they not only come ſlowly, and in ſmall quantities, but much altered, and variouſly modified, by the action of the blood-veſſels, and the intermixture of its humours.

In the intentions where *balſamics* are chiefly given, the ſeat of the diſorder is generally in the viſcera; where a medicine can only arrive by the common conveyance of the blood: and how long, from its being taken into the ſtomach, muſt ſuch a medicine be, and how many alterations muſt it undergo in the divers parts of the body it paſſes through, ere it comes to the place deſired? Though the lungs are, by their ſituation, ſo near the ſtomach, a medicine cannot arrive there, till it has taken its courſe through the lacteals, paſſed all the meanders of the meſentery, gone up with the chyle into the ſubclavian vein, and there entered the blood: and, after all, it has only the chance of coming to the part in ſuch a quantity, as, with regard to the whole medicine which entered the blood, bears the ſame proportion, as the blood in the pulmonary artery bears to all the blood in the other arteries.

Hence nothing is to be expected from *balſamics*, in a ſhort time, or a few days: they muſt be repeated, and followed, till the animal juices are ſufficiently charged therewith, to afford a continual ſupply. *Quinc.* Diſpenſ. P. 2. §. 4. p. 103.

Add, that *balſamics* generally load, and clog the ſtomach; and, hence, have often bad effects. This conſideration leads the biſhop of Cloyne to prefer tar-water to all other *balſamics*. See TAR-WATER.

M. Leewenhoeck has propoſed a new method of adminiſtring balſams, free from the inconveniencies above-mentioned. His method is, to take a little piece of ſilver or copper, the bigneſs of a ſhilling, and, making a ſmall hole in it, fill the cavity with a little balſam proper for the occaſion, and place it on the tongue; then, ſtopping the noſtrils, let no air be admitted into the lungs, but through the mouth. By this means, the ſubtile or ſpirituous particles of the balſam will exhale, and deſcend into the veſſels of the lungs. But we do not find, that experience has confirmed this notion of Leewenhoeck. Phil. Tranſ. N° 279. p. 1144.

BALSAMINA, *Balſamine*, in botany, the name of a genus of plants; the characters of which are theſe: The flower is of the polypetalous, anomalous kind, and is, in ſome ſpecies, four-leaved, and, in others, ſix-leaved. In the four-leaved flowers, the upper leaf is arched, and the lower hollowed, and terminated by a tail, and the two ſide-leaves are aurited, and large.

In the ſix-leaved flowers of this genus, the lower leaf has no tail.

In both, the piſtil, which is furniſhed with two leaves, occupies the middle part of the flower, and, finally, becomes a fruit; ſometimes turbinated at one end, or both, and ſometimes emulating the ſhape of a pod, conſiſting of ſeveral muſcles, as it were, and endued with an elaſtic force, and flying open with great violence. The ſeeds it contains, are fixed to an axis, or placenta. See the figure repreſented in Tab. 1: of Botany, claſs 11.

The ſpecies of *balſamine* enumerated by Mr. Tournefort, are theſe: 1. The common female *balſam*. 2. The common female *balſam*, with white flowers. 3. The common female *balſam*, with flowers partly white, partly red. 4. The *balſam*, with a large beautiful flower. 5. The *balſam*, with a very large white flower. 6. The *balſam*, with narrow and elegantly crenated leaves, and with ſmall white flowers. 7. The Indian *balſam*, with flowers beautifully variegated with pale red, and white. 8. The Indian *balſam*, with double red flowers. 9. The narrow-leaved Indian *balſam*, with a ſmall, but very elegant, red flower. 10. The yellow *balſam*, called *noli me tangere*. 11. The paler flowered *balſam*, or *noli me tangere*. 12. The purple flowered *noli me tangere*. 13. The great Virginian *noli me tangere*, with deep yellow flowers, variegated with purple ſpots. *Tourn.* Inſt. p. 418.

The many varieties of this plant, kept in the gardens, are all raiſed from ſeeds ſown on hot-beds in the ſpring, and afterwards planted out into pots and borders; though there are two or three of the hardier kinds, as the common white, red, and purple kinds, which will come up in common ground, without any artificial heat, and will be ſtronger, and flower better ſo, than if raiſed on hot-beds. But the fine double large kind, or immortal eagle-flower, as it is called, requires to be ſet on a freſh hot-bed, after it has been raiſed on one, in order to bring it forward; elſe it does not get into flower till late in the year, and will not ripen its ſeeds. There are two kinds of this beautiful ſpecies; one brought from the Weſt Indies, by the name of the *cock's ſpur*: this produces large and ſtrong plants, but flowers very late. The other is from China, and is what is moſt commonly called the *immortal eagle-flower*, and is one of the fineſt annual plants we have, producing very large double flowers, and continuing a long time in flower, if ſheltered from violent winds and rain. This produces ſeeds very well with us; but theſe are apt to degenerate, after a few years, into ſingle flowers.

When the young plants are raiſed in a hot-bed, and are to be planted out into pots, ſuch are always to be preferred as have ſtalks finely ſpotted with red; for theſe always produce red and double flowers. *Miller*'s Gard. Dict.

BALTAGI, among the Turks, porters, and hewers of wood, in the court of the grand ſignior; who alſo mount on horſeback, when the emperor rides out. Part of them alſo, who, for that purpoſe, muſt be caſtrated, keep watch at the gates of the firſt and ſecond courts of the ſeraglio. Theſe laſt are called *capigi*, and their commander *capigi paſcha*. *Fæſch.* Ing. Lex. p. 64. a.

BALTHEUS *Orionis*, *Belt of Orion*, in aſtronomy, a part of the conſtellation of Orion, conſiſting of three bright ſtars of the ſecond magnitude, placed nearly in a right line in Orion's girdle. See ORION, *Cycl.*

BAMBELE, in zoology, a name given by many to a ſmall freſh-water fiſh, called by authors *phaxinus*, and, vulgarly, the *pink*. *Geſner*, de Aquat. p. 844. See PHAXINUS.

BAMBO, in matters of commerce, denotes an Eaſt Indian meaſure of capacity, containing five Engliſh pints. Lex. Mercat. p. 385.

BAMBO, or BAMBOU, or BAMBU, is more frequently uſed for a large Indian cane, ſometimes growing nine or ten yards high, and eight or nine inches in diameter, and hollow throughout, except that, at each joint, it is cloſed with a traverſe plate, to give it ſtrength and firmneſs proportionable to ſo great a height. Phil. Tranſ. N° 212.

BAMBO, in this ſenſe, is a corrupt name given to this reed by the Portugueſe: botaniſts uſually denominate it, *Ily*; ſome, *arundo Indica arborea cortice ſpinoſo*: the natives call it *nuayhas*, i. e. the ague-tree, from its effect on thoſe who waſh in the waters wherein the leaves have fallen. Phil. Tranſ. N° 145.

It grows in Malabar, eſpecially about Coromandel, near the ſea ſide. In the cavities of it is found a curdled juice, whereof the natives make a ſort of ſugar. *Grew*, Muſ. Reg. Societ. P. 2. §. 2. c. 2. p. 223, ſeq.

The large *bambous* ſerve to make poles, whereon the ſlaves carry that ſort of chair, or rather litter, called the *palanquin*; they alſo make ciſterns of them, wherein water will keep very cool. *Savar.* Dict. Comm. p. 229.

A decoction is made of the leaves, of uſe for diſperſing coagulated blood; and, of the pithy part in the middle, they alſo make a medicine againſt the ſtrangury. Vid. *Lemery*, Traité des Drogues, p. 111, ſeq.

BANANA, a name uſed by many authors for the *muſa*, or plantain tree, of the common kind; but more frequently, with us, underſtood to mean another ſpecies of the ſame genus, which the Portugueſe call *pacoeira*, and we, particularly, the *banana* tree. *Piſo*, p. 75.

The difference between the two is this; the *muſa* has a green ſtalk, and a long, crooked, angular fruit, reſembling a crooked cucumber; the *banana*, a ſpotted ſtalk, and a round fruit. *Dale*, Pharm. p. 273.

BAND, in matters of artillery, denotes a hoop of iron uſed about the carriage of a gun. *Guillet*, Gent. Dict. P. 2. in voc.

Such are the nave *bands*, which are iron hoops binding the nave at both ends.

BANDS *of a Saddle*, denote two flat narrow pieces of iron, nailed on each ſide the bows of the ſaddle, to retain thoſe bows in the ſituation which makes the form of a ſaddle.

To put a bow in the BAND, is to nail down the two ends of each *band* to each ſide of the bow.

Beſides the two great *bands*, the fore-bow has a ſmall one, called the *wither-band*, and the hinder-bow another to ſtrengthen it. *Guillet*, Gent. Dict. P. 1. in voc.

BAND, *Bandum*, is alſo uſed, in middle age writers, for a flag or banner. Vid. *Du Cange*, Gloſſ. Gr. T. 1. p. 173. *Aquin* T. 1. p. 112.

BANDS, in a military ſenſe, formerly denoted bodies of foot.

Thus the French, formerly, called all their infantry, *Bandes Françoiſes*, or *French bands*; but now the term is out of uſe. Milit. Dict.

Hence alſo the terms, *Prætorian bands*, *Trained bands*, &c.

BAND *of Penſioners*, is ſtill retained, to denote a company of gentlemen, who receive a yearly allowance of 100 *l.* for attending the king on ſolemn occaſions. *Guillet*, Gent. Dict. P. 1.

BANDS *of Columns*, properly denote a kind of emboſſments ſurrounding the ſhafts of ruſtic columns, at certain diſtances, by way of decoration.

Theſe are ſometimes plain, ſometimes picked or vermiculated, and ſometimes carved with decorations of low relievo, which are different in every different *band*. Vid *Davil.* Courſ. d'Archit. P. 1. p. 302. Id. P. 2. p. 409, ſeq.

Columns enriched with theſe *bands*, are ſometimes called *banded columns*.

BANDAGE (*Cycl.*) — *Bandages* are a very neceſſary part of the *apparatus* in dreſſing and binding up of wounds. They are not only of greater ſervice than compreſſes and plaſters, in ſecuring the other dreſſings, but are alſo of excellent uſe in reſtraining dangerous hæmorrhages, and in joining fractured, or diſlocated bones.

Almoſt all *bandages*, uſed in dreſſing of wounds, ulcers, or fractured or diſlocated bones, ſhould be made of clean linnen cloth, ſoftened by wearing, but ſtrong.

They are to be made of a proper length and breadth for the occaſion; and, that they may be ſtrong, examine the courſe of the threads, and tear the cloth lengthways. Darns, ſeams, and large hems in the cloth, are, as much as poſſible, to be avoided, that no inconvenience may be brought on by the roughneſs and irregularity of the roller.

There are different ſorts of *bandages*, for different uſes. Some are common; others are proper. Theſe laſt are only to be applied to particular parts; the others may be applied to any.

Bandages may be diſtinguiſhed alſo into *ſimple* and *compound*; the *ſimple* are thoſe which are formed of one entire piece of linnen; the *compound*, of ſeveral pieces, ſewed together in different manners.

The moſt ſimple of all *bandages*, is that uſually not rolled up, but left looſe, and uſed in phlebotomy.

The next to this, is that called the *ſingle-headed bandage*, which is rolled up at one end only. Next to that, the *double-headed bandage*, or that rolled up at both ends.

After theſe come thoſe *bandages*, which are made out of one piece of linnen, but are divided at both ends, almoſt as far as the middle; theſe are uſually called, by the ſurgeons, *four-headed bandages*.

Another ſort is ſomewhat ſhorter, and narrower, than the laſt deſcribed, and is divided at one end, and perforated at the other. It is uſually employed in dreſſings to the penis, or to one of the fingers.

Another kind is, from its uſe, called the *uniting bandage*; it is a double-headed *bandage*, divided about the middle, and ſerves to unite wounds that are made lengthways, without calling for the ſuture.

There is alſo another *bandage*, provided with an opening in the middle, through which the head may eaſily paſs; the extreme parts of the *bandage* hanging, one over the breaſt, the other over the back. The chief uſe of this *bandage* conſiſts in this, that, in dreſſing wounds of the thorax or abdomen, it is capable of ſupporting another *bandage*, ſomething wider, made of a cloth four or ſix times doubled, and bound round the breaſt or belly.

There remains ſtill to be conſidered, a compound *bandage*, made of two pieces of cloth, almoſt in form of the letter T. The upper part of this is to be brought round the belly, and faſtened by a knot; but the lower part paſſes under the body, between the thighs, and, being brought up again, is faſtened to the upper part upon the back. This *bandage* plainly appears to be deſigned for the ſecurity of ſuch dreſſings, as ſhall be thought proper to be applied to the anus, or parts of generation. Some, from the inventor, call this *Heliodorus*'s *bandage*. Others, from its ſhape, denominate it the T *bandage*; and, from the diviſion that is frequently made in the lower part of it, it is ſometimes called the *double* T.

As to *bandages* for the head, notwithſtanding that ſurgeons have formerly invented different kinds of them, for every wound that could be inflicted on that part, yet there is but one form that ſeems neceſſary; and this alone will anſwer all the ends that can be propoſed from this kind of application. It is made in the following manner: Take a handkerchief, napkin, or any ſquare piece of linnen; double it up in a triangular form, and apply it as we frequently do in hot weather, when we lay aſide the uſual coverings of the head, to avoid the exceſſive heat of the ſun.

The *bandage*, which is ſo much in uſe with the modern ſurgeons, and is called by the French the *grand couvrechef*, differs very little from this, and is commonly made of a napkin, or ſome piece of ſoft linnen, in a ſquare form. It is doubled in ſuch a manner, that the lower part is about four fingers breadth wider than the upper. The middle part of this cloth is placed ſo upon the head, that the fore-part may reach almoſt as far as the eyes; the four extremities, or corners of it, hanging over the cheeks. The two corners of the upper, or narrower part, are to be tied under the chin, at the ſame time that the two corners of the lower, or wider part, are to be brought under the back part of the head, and tied together, or faſtened with a needle and thread. This kind of *bandage*, when it is neatly made, ſticks cloſe to the head, and is an excellent contrivance to preſerve it from the injuries it might receive from cold air. The fore-part of it, that was extended toward the eyes, is, when the ends are faſtened, to be turned back as far as the crown of the head; and the two parts that hang over the neck, are to be turned back alſo, and faſtened behind the ears with a needle and thread.

The different names of ſimple *bandages*, which they aſſume according to the different windings that they form, in the manner of applying them, are not to be forgotten.

If a *ſimple bandage*, with one head, ſurrounds an injured part, in one direct courſe, it is called *annular*, *orbicular*, or *circular*; on the contrary, if the windings of the *bandage* aſcend, or deſcend, eſpecially if it be in a ſpiral manner, they are called *obtuſe*, or *ſpiral*. This frequently happens in fractures, and other kinds of diſorders, and is of eminent ſervice. But when the limbs, that are to be bound in this manner, are of different thickneſſes in the different parts of them, which is the caſe of the *tibiæ*, it requires a good deal of art to prevent the *bandages* from hanging looſe. The *bandage*, in this caſe, is to be applied to the *tarſus*, and to be brought upwards, ſo as to croſs the *malleoli*, rolling it round the *tibiæ*, in a ſpiral manner. But when you are come up to the calves of the legs, each round of the roller muſt be turned in a particular manner, and tightened, according as the caſe requires.

From

From what has been ſaid, the reaſon will be eaſily conceived, why the windings of the *bandage*, we have been deſcribing, are generally ſaid to be *inverted*, or *reverſed*, and, by the *French*, called *renverſees*. Theſe *bandages* are ſo managed, that the windings of the roller are contiguous to one another.

But there is another method of *bandage* in uſe, where the windings of the roller are not ſo frequent; and are therefore called *creeping bandages*, and, in the French ſchools, *rampants*. Theſe creeping, or, as we ſometimes call them, *ſerpentine bandages*, are uſed to ſecure cataplaſms, or compreſſes, upon a diſeaſed part.

The place of beginning and ending theſe *bandages* is alſo to be determined. When the arm is to be dreſſed, the beginning is formed by two or three circular windings on the wriſt, aſcending, by looſe ſpires, up to the cubit, or ſhoulder, as the nature of the caſe ſhall require. But when the beginning is to be on the foot, it is to be formed by three or four circular windings of the *bandage* round the *tarſus*, and *metatarſus*; then proceeding, in a ſerpentine courſe, up to the knee; or, if the caſe requires it, up to the head of the thigh; and then, as it ſometimes happens, deſcending again.

We ſhould not omit to mention, that the beginning of the *bandage* is ſometimes applied to the diſeaſed part, as in ſeveral kinds of fractures; ſometimes near it, above it, or below it; and ſometimes at a great diſtance from it, according to the diſpoſition of the wound. On the contrary, the extremity of the *bandage* is ſcarce ever faſtened on the diſeaſed part, but rather on a ſound one, to avoid giving pain. *Heiſt.* Surg. p. 19.

Beſides the double and four-headed *bandages*, ſurgeons ſometimes make uſe of the *eighteen-headed bandage*. Its figure may be learnt from Heiſter's Surgery, Tab. IX. fig. 4.

Knotted BANDAGE, a *bandage* for the head, called *knotted*, from its many croſſings on the temples, and *ſtellar*, or *ſolar*, from its direction *in radii*. It is a very uſeful *bandage*, when the temporal artery is divided, either in arteriotomy, or by an accidental wound, and hardly ever failing of ſucceſs in ſuppreſſing the hæmorrhage. For the application, vid. *Heiſt.* Surg. P. 3. c. 2. §. 7.

Stellar BANDAGE. See *Knotted* BANDAGE, ſupra.

Solar BANDAGE. See *Knotted* BANDAGE, ſupra.

Incarnative BANDAGE, is the ſame as the *uniting bandage*. Vid. ſupra, & *Heiſter*. Surgery, P. 3. c. 2. §. 5.

Depart-BANDAGE, the ſame as *diſcrimen*. See DISCRIMEN.

Expulſive BANDAGES, or ſuch as are uſed to reduce, and prevent the enlargement of tumors. They are frequently applied, with this intention, to ſwelled legs, and alſo to diſcharge the offenſive matter in fiſtulæ and ſinuous ulcers. Vid. *Heiſter*. Surgery, P. 3. c. 1. §. 9.

Retentive BANDAGE, is proper for the neck, as it ſerves to keep on the dreſſings, and topical remedies, applied to the neck after bleeding, *&c.* This *bandage* is generally compoſed of two ſimple bands, one of which is about a Paris ell, and the other an ell and an half in length; the firſt being of a thumb's breadth, and the laſt of three fingers. As to the application, vid. *Heiſter*. Surgery, P. 3. c. 3. §. 2.

BANDAGE *for Tracheotomy*. Vid. *Heiſter*. Surgery, P. 3. c. 3. §. 3.

Arnaud's BANDAGE, is a *bandage* contrived by Mr. Arnaud of Paris, for fiſtulæ and abſceſſes of the anus, and is, by Garengeot, highly commended. But Heiſter thinks, that the common T *bandage* has the ſame advantages, provided the ſcapulary be made ſtrong. Vid. *Heiſter*. Surgery, P. 3. c. 5. §. 6.

Few of the common *bandages* are capable of reſtraining a profuſe hæmorrhage, after cutting for the fiſtula of the anus, or for the ſtone. What Heiſter has contrived for this purpoſe, may be ſeen in his Surgery, P. 3. c. 5. § 7.

Beſides Heiſter, there are many other writers on *bandages*. That author, in his Introduction, §. 28. mentions Galen, tranſlated by Vido Vidius, with figures; Verduc on *bandages*, in French; and Solingen: but he thinks the beſt writers of all, are Le Clerc, in his *Apparoil Commode*, and Baſſius, in High Dutch.

For other *bandages*, as the *ſpica*, *ſcapulary*, &c. ſee them in their alphabetical places.

BANGELET (*Cycl.*) is ſometimes uſed for the three parts which compoſe the architrave, called, by Vitruvius, *faſciæ*; and which are ſometimes alſo denominated *bands*, or *platbands*. *Ozanam*, Dict. Math. p. 579.

BANDERET, the name appropriated to the commanders of the militia of the canton of Bern. Dict. de Trev. T. 1. p. 838.

BANDITTI, perſons proſcribed, or, as we call it, outlawed; ſometimes denominated *banniti*, or *foris-banniti*. *Spelm.* Gloſſ. p. 69. b. *Skinn.* Etym. in voc.

BANDITI, or BANDITTI, is alſo a denomination given to highwaymen, or robbers, who infeſt the roads in troops, eſpecially in Italy and France.

The term is alſo applied to a ſort of freebooters, who pillage in the iſlands of the archipelago. Vid. *Tournef.* Voyag. Lett. 6. T. 1. p. 96.

BANGUE, a ſpecies of opiate, in great uſe throughout the Eaſt, for drowning cares, and inſpiring joy.

This, by the Perſians, is called *beng*; by the Arabs, *eſrar*, corruptly *aſſeral*, and *aſſarth*; by the Turks, *bengitic*, and vulgarly *maſtack*; by the European naturaliſts, *bangue*, or *bange*.

Bangue is the leaf of a kind of wild hemp, *cannabis erratica*, growing in the countries of the Levant: it differs little either as to leaf, or ſeed, from our hemp, except as to ſize. Some have miſtaken it for a ſpecies of althæa. *Sloan*, in *Ray*. Phil. Lett. p. 174. *Pluken.* ap. eund.

There are divers manners of preparing it, in different countries. Olearius deſcribes the method uſed in Perſia. Mr. Sale tells us, that, among the Arabs, the leaf is made into pills, or conſerves [a]. But the moſt diſtinct account is that given by Alex. Maurocordato, counſellor and phyſician of the Ottoman Port, in a letter to Wedelius [b]. According to this author, *bangue* is made of the leaves of wild hemp, dried in the ſhade, then ground to powder; put into a pot wherein butter has been kept; ſet in an oven till it begin to torrify; then taken out, and pulverized again; thus to be uſed occaſionally, as much at a time as will ly on the point of a knife. Such is the Turkiſh *bangue*.—[[a] Prelim. Diſc. to Koran, §. 5. p. 124. [b] Ext. apud *Wedel.* Exerc. Medic. Philol. Dec. 5. init.]

The effects of this drug are, to confound the underſtanding, ſet the imagination looſe, induce a kind of folly, and forgetfulneſs, wherein all cares are left, and joy and gayety take place thereof.

Bangue, in reality, is a ſuccedaneum to wine, and obtains in thoſe countries where mahometaniſm is eſtabliſhed; which prohibiting the uſe of that liquor abſolutely, the poor muſſelmen are forced to have recourſe to ſuccedanea, to rouſe their ſpirits. The principal are *opium*, and this *bangue*.

Some alſo ſpeak of *bangue* as an aphrodiſiac, and tending to excite venery [c]; on which ſuppoſition, others have been puzzled to think how it could be a ſpecies of hemp, which, according to the generality of naturaliſts, has an antaphrodiſiac quality, and tends to emaſculate and render impotent. But this tendency of the *cannabis* is dubious. Galen [d], and other antients, aſſure, that hemp diſturbs the head, excites turbulent dreams, and even cauſes deliriums. Plukenet [e], who had ſome of the ſeed of the *bangue*, tells us, that it certainly cauſes a *dementia*, or frantic and ludicrous ſort of madneſs, which runs the body into all the idle geſticulations and poſtures of the moſt laſcivious; yet without any luſtful deſires. He adds, that, on a very liberal doſe, the effects have continued almoſt a week; and that, if carried too high, it will even kill.—[[c] *Sloan*, l. c. [d] De Aliment. Facult. l. 1. c. 41. [e] *Pluken.* l. c.]

As to the opinion among Europeans, that the Turks prepare themſelves for battle by a doſe of *bangue*, which rouſes their courage, and drives them, with eagerneſs, to certain death; Dr. Maurocordato aſſures us, that it is a popular error: the Turks think they are then going aſſuredly to receive the crown of martyrdom; and would not, for any conſideration, loſe the merit of it, which they would do, by eating the *bangue*, as being held unlawful by their apoſtle, among other things which intoxicate. *Sale*, l. c. *Maurocord.* ubi ſupra.

BANIAN (*Cycl.*)—The name of *banian* is uſed with ſome diverſity, which has occaſioned much confuſion, and many miſtakes. Sometimes it is taken in a leſs proper ſenſe, and extended to all the idolaters of India, as contradiſtinguiſhed from the Mahometans.

In which ſenſe, *banians* include the bramins and other caſts.

In this ſenſe it is Della Valle [f] uſes the word; and it is in the ſame ſenſe that Hen. Lord calls his book a diſcovery of the *Banian* religion; which, in reality, is an account of the religion of the idolatrous Indians in general. But as it was chiefly the merchants this author had to deal withal, being chaplain in the Engliſh factory at Surat, he took his title from them; with as much propriety as an Indian, who ſhould write an account of the religion of England, ſhould call it a diſcovery of the religion of the merchants of England; as if the merchants had a religion peculiar to themſelves. Yet it was from the bramins he received his informations; the *banians* not being learned enough in the myſteries of their faith. He aſſures us, he fetched his materials out of their manuſcripts, and by renewed acceſs, with the help of interpreters, made his collections out of a book of theirs called the *Shaſter*, which is to them as their bible [g].—[[f] *Della Valle*, Viagg. T. 1. P. 1. Lett. 3. p. 92. [g] *Lord*, Diſcov. Relig. Banian. Introd.]

Yet it is certain, the bramins, who are the depoſitaries of the Indian faith, are extremely reſerved as to communications of this kind. P. Bouchot, after many years reſidence in the country, as a miſſionary, complains he could never get a ſight of their Scripture. Their contempt for Europeans, whom they denominate *prangius*, that is, unclean, will not permit them to have any intercourſe with them.

BANIANS, in a more proper ſenſe, is reſtrained to a peculiar caſt, or tribe, of Indians, whoſe office or profeſſion is trade and merchandize

In which ſenſe, *banians* ſtand contradiſtinguiſhed from *bramins*, *cuttery*, and *wyſe*, the three other caſts into which the Indians are divided.

The four caſts are abſolutely ſeparate as to occupation, relation, marriage, *&c* though all of the ſame religion; which is more properly denominated the religion of the bramins, who make the eccleſiaſtical tribe, than of the *banians*, who make the mercantile.

The proper *banians* are called, in the *ſhaſter*, or book of their law,

law, by the name of *ſhuddery*, under which are comprehended all who live after the manner of merchants, or that deal and tranſact for others, as brokers; excluſive of the mechanics, or artificers, who make another caſt, called *wyſe*. Theſe *banians* have no peculiar ſect or religion, unleſs it be, that two of the eight general precepts given by their legiſlator, Bremaw, to the Indian nation, are, on account of the profeſſion of the *banians*, ſuppoſed more immediately to relate to them, *viz.* thoſe which enjoin veracity in their words and dealings, and avoiding all practices of circumvention in buying and ſelling. *Lord*, ubi ſupra, c. 12.

Some of the *banians*, quitting their profeſſion, and retiring from the world, commence religious, aſſume a peculiar habit, and devote themſelves more immediately to God, under the denomination of *vertea*. Theſe, though they do not hereby change their caſt, are commonly reckoned as bramins of a more devout kind, much as monks in the Romiſh church, though frequently not in orders, are reputed as a more ſacred order than the regular clergy. *Lord*, c. 10. p. 74.

The name *banian* imports as much in the bramin language, wherein their law is written, as a people innocent and harmleſs, void of all guile, and ſo gentle, that they cannot endure to ſee even a fly or worm injured; and who, when ſtruck, will patiently bear it, without reſiſting or returning the blow.

Their mein and appearance is deſcribed by Lord, in terms a little preciſe, but very ſignificant: "A people preſented themſelves to my eyes, cloathed in linnen garments, ſomewhat low deſcending, of a geſture and garb, as I may ſay, maidenly and well nigh effeminate, of a countenance ſhy and ſomewhat eſtranged." *Lord*, in Introduct.

Gemelli Careri [h] divides the *banians* into twenty-two tribes, all diſtinct, and not allowed to marry with each other: Lord [i] aſſures us they are divided into eighty-two caſts or tribes, correſpondent to the caſts or diviſions of the bramins or prieſts, under whoſe diſcipline they are, as to religious matters; tho' the generality of the *banians* chooſe to be under the direction of the two bramin tribes, the *Viſalnagranaugers* and *Vulnagranaugers*.—[h Voyag. T. 3. p. 264. i *Lord*, c. 12. p. 83.]

La Martiniere [k] miſrepreſents our countryman, when he ſays, that, according to the Sieur Lord, the *banians* are of the ſame tribe with the bramins; and that the different tribes marry with each other: theſe miſtakes he might probably fall into, by reading Lord in a French tranſlation [l].—[k *La Martin.* Dict. Geogr. T. 2. p. 76. b. l In Cerem. & Cout. Relig. de tout les Peuples du Mond. T. 1. P. 2.]

The *banians* are the great factors, by whom moſt of the trade of India is managed: in this reſpect, comparable to the Jews and Armenians, and not behind either, in point of ſkill and experience, in whatever relates to commerce [m]. Nothing is bought, but by their mediation. They ſeem to claim a kind of *jus divinum* to the adminiſtration of the traffic of the nation, grounded on their ſacred books, as the bramins do to that of religion. They are diſperſed, for this purpoſe, through all parts of Aſia, and abound in Perſia, particularly at Iſpahan and Bender-Abbaſſis, where many of them are extremely rich, yet not above acting as brokers, where a penny is to be got. The chief agents of the Engliſh, Dutch, and French Eaſt India companies, are of this nation: they are very faithful, and are generally truſted with the caſh of thoſe companies in their keeping [n]. They act alſo as bankers, and can give bills of exchange for moſt cities in the Eaſt Indies. Their form of contract in buying and ſelling, is remarkable; being done without words, in the profoundeſt ſilence, only by touching each other's fingers: the buyer looſening his *pamerin*, or girdle, ſpreads it on his knee, and both he and the ſeller having their hands underneath, by the intercourſe of the fingers, mark the price of pounds, ſhillings, *&c.* demanded, offered, and at length agreed on [o]. When the ſeller takes the buyer's whole hand, it denotes a thouſand, and, as many times as he ſqueezes it, as many thouſand pagods, or roupies, according to the ſpecies in queſtion, are demanded: when he only takes the five fingers, it denotes five hundred, and when only one, one hundred: taking only half a finger, to the ſecond joint, denotes fifty; the ſmall end of the finger, to the firſt joint, ſtands for ten [p].—[m Vid. *Tavern.* Voyag. des Ind. c. 32. p. 161. *Martiniere*, l. c. n *Savar.* Supp. p. 58. o *Lord*, c. 12. p. 84. p *Tavern.* Voyag. des Ind. l. 2. c. 15.]

BANILLIA, in the materia medica, a name uſed by ſome for the vanillia, or vanilloes, uſed in making the ſcented chocolate. *Dale*, Pharm. p. 340.

BANK, (*Cycl.*)—In Savari's Dictionary of Commerce, from whence [a] this article of the *Cyclopædia* is taken, we have alſo [b] an account of the *banks* of Amſterdam, Hamburg, and of the royal *bank* of France; to which we refer the curious, as the detail of ſuch particular objects do not properly come within our deſign.—[a Art. *Banco*. b Art. *Banque*.]

We have ſeveral accounts of the *bank* of England; among others, the Lex Mercatoria, the New View of London, and Maitland's Hiſtory of London, may be conſulted. But we do not know, whether any ſufficiently accurate detail of the method of tranſacting all the buſineſs of the *bank*, be any where publiſhed.

For the two *banks* of Scotland, ſee the Preſent State of Britain.

The general political queſtions relating to *banks*, might properly find their place here, could we find any thing accurate or determinate on the ſubject: but as moſt authors we have met with on this topic, have had ſome biaſs of their own, from party, or private intereſt, not to mention, that few have ſufficient experience of buſineſs, or habits of analyſing and reaſoning upon ſuch complex objects, we can do little more than wiſh to ſee this ſubject fully treated of by ſome maſterly hand. In ſuch a work, many important queſtions would occur; ſuch as,

The nature of paper credit in general? its advantages? diſadvantages? Whether it be limited? how thoſe limits, if any, are to be diſcerned? The nature of *banks*, and other monied corporations? their advantages and diſadvantages to the public? Whether there ought to be any public *bank* in a ſtate, other than the public treaſury? Whether great monied corporations, though inſtituted under a pretence to ſerve, and the pretended ſervants of the adminiſtration, be not, in reality, its maſters? Again, what is the beſt form of a *bank?* whether what a late French author [c] ſays be true, that the beſt *bank* is that which does not pay, like that of Amſterdam? or whether the form of the *bank* of England, and current notes, be beſt, *&c.?*—[c Eſſ. Polit. ſur le Comm. p. 253. Edit. 1.]

The diſcerning reader will eaſily perceive, that theſe, and the like queſtions, have been either very partially, or ſuperficially, treated of, in books and pamphlets of the times; and that a farther diſquiſition is neceſſary.

BANK is alſo applied, in a more particular manner, to ſocieties inſtituted for lending money on pledges. Of theſe there are ſeveral in Holland, particularly at Amſterdam, where it is called the *bank van leening*, or *bank of loan*. Private perſons are here furniſhed with money, on the depoſit of effects as a ſecurity, and on payment of a certain intereſt regulated by the burger-maſters. This *bank* is otherwiſe called the *Lombard huis*, or *Lombard houſe*, or, ſimply, *Lombard*; which is the name it is moſt commonly known by, in moſt of the towns in Holland. *Savar.* Dict. Comm. Suppl. p. 43.

BANK, in natural hiſtory, denotes an elevation of the ground, or bottom of the ſea, ſo as ſometimes to ſurmount the ſurface of the water, or, at leaſt, to leave the water ſo ſhallow, as uſually not to allow a veſſel to remain afloat over it.

In this ſenſe, *bank* amounts to much the ſame with flat, ſhoal, *&c.*

There are *banks* of ſand, and others of ſtone, called alſo ſhelves, or rocks. In the north ſea, they alſo ſpeak of *banks* of ice, which are large pieces of that matter floating. *Aubin.* Dict. Marin.

A long narrow *bank* is ſometimes called a *rib*.

The *bank* abſolutely ſo called, or the *main bank*, or *great bank*, denotes that of Newfoundland, the ſcene of the cod-fiſhery.

It is called the *great bank*, not only by reaſon of its vaſt extent, being, according to the Engliſh computation, two hundred miles long, and, according to the French, one hundred leagues, or three hundred miles; but alſo on account of ſeveral leſſer *banks* near it, where cod are alſo caught. Theſe laſt the French call *banquezeaux*. *Savar.* Supp. p. 862.

The *great bank* affords ſo vaſt a crop of cod, as to furniſh one of the chief articles of European commerce.

This is one of thoſe *banks* which have water enough to float a ſhip, and which, on this account, are not dangerous.

Banks are uſually diſtinguiſhed by a buoy, poſt, or the like. On charts, ſand *banks* are uſually marked by little dots, and *banks* of ſtone, by croſſes. The colours of the buoys are alſo varied accordingly; ſand *banks* being denoted by light-coloured buoys, and rocks by black ones.

In large rivers, as the Elbe, *&c.* ſand *banks*, by high tides and inundations, are liable to change places; care is therefore taken to ſhift the buoys from time to time, to ſhew the true channel of the river.

An exact knowledge of the *banks*, their extent, and the depth of water on them, makes the moſt eſſential part of the ſcience of a pilot, and a maſter of a ſhip: if the veſſel be large, and draw much water, great attention will be neceſſary to keep clear of the *banks*; on the contrary, if it be ſmall, the ſame *banks* afford a ſure aſylum, where it may brave the largeſt and ſtouteſt veſſels, which dare not follow it here. By means of this barrier, many ſmall craft has eſcaped its enemy.

BANK, in veſſels which go with oars, is uſed for the bench where the rowers are ſeated; popularly called, by our ſeamen, the *thaught*. *Manwayring*, Seam. Dict. p. 107.

In this ſenſe, we read of *banks* of gallies, of galeaſſes, of galliottes, of brigantines, and the like.

The Venetian gondolas have no *banks*; for the watermen row ſtanding.

The common gallies have twenty-five *banks*, that is, twenty-five on each ſide, in all fifty *banks*, with one oar to each *bank*, and four or five men to each oar. The galeaſſes have thirty-two *banks* on a ſide, and ſix or ſeven rowers to a *bank*. *Aubin*, Dict. Marin. p. 62.

BANK alſo denotes an elevation of earth, ſtones, ſtakes, or other materials, in form of a wall, or cauſeway, to ſtop the waters, and prevent inundations. Vid. *Ozanam*, Dict. Mathemat. p. 357.

Theſe, on other occaſions, are denominated *dams*, and *ſea-walls*,

walls, &c. and by the antients, *aggeres*: thoſe on the coaſts of Holland are more particularly denominated *dykes*. *Niewent.* Relig. Phil. p. 276. *Petty*, Dupl. Proport. p. 111.

BANK is alſo uſed, in ſeveral games, for the ſtock or fund of him who undertakes the game.

BANK *at Baſſet*, a ſum of money laid down by the *tailleur*, before the gameſters, to anſwer all the winning cards that ſhall turn up in his courſe of dealing. Compl. Gameſt. p. 31.

BANKER, (*Cycl.*)—The *bankers* were very antient at Lyons; De Rubis [a] traces their origin from the Guelphs and Gibbelins, in the thirteenth century; who, not daring to return to their own country, purchaſed of the king of France a power to ſet up their banks at Lyons, and in other parts of France. F. Meneſtrier [b] ſeems to fix their epocha higher; ſhewing, that there were rich *bankers* at Lyons, as early as the year 1209.—[a Hiſt. de Lyon. l. 3. p. 289. b Hiſt. Conſul. de Lyon. p. 392.]

The antient *bankers* were called *argentarii*, and *nummularii*; by the Greeks, τραπεζίται, κολλυβισται, and αργυραμοιβοι [c]. Their chief buſineſs was to put out the money of private perſons to intereſt: they had their boards and benches, for this purpoſe, in all the markets and public places, where they took in the money from ſome, to lend it to others [d].—[c Vid. *Hoſt.* Hiſt. Rei Nummar. T. 1. l. 1. c. 9. §. 13, ſeq. d *Pitiſc.* Lex. Antiq. T. 1. p. 168. *Calv.* Lex Jur. p. 87, b.]

BANKERS, among us, are goldſmiths, and others, in whoſe hands money is depoſited, to be drawn out again as the owners find occaſion. The monied goldſmiths firſt got the name *bankers*, about the time of K. Charles II. witneſs the following clauſe of an act of parliament under that prince: "Whereas ſeveral "perſons being goldſmiths, and others, by taking up or bor- "rowing great ſums of money, and lending out the ſame again "for extraordinary hire and profit, have gained, and acquired "to themſelves, the reputation and name of *bankers*, &c." Ann. 22, 23. Car. II.

BANKERS *in the Court of Rome*, are perſons authorized, excluſive of all others, to ſollicit and procure, by their correſpondents at Rome, all bulls, diſpenſations, and other acts diſpatched at the papal datary, or in the legateſhip of Avignon: they are diſperſed in all the cities of France, where there is a parliament, or a preſidial; and were erected into a regular, and hereditary office, by an edict in 1673.

They owe their origin to the Guelphs, who took ſhelter at Avignon, and in other cities within the obedience of the pope, in the time of the civil wars of Italy. The favour they were in with the pontiffs, for having eſpouſed the papal cauſe, occaſioned their being employed in procuring expeditions of the court of Rome. But the heavy extortions they practiſed towards their clients, ſoon rendered them odious, and occaſioned ſeveral denominations of reproach, as, *Coarcini*, *Caturcini*, *Caurſini*, *Corſini*, &c. from the city *Cahors*, the native place of pope John XXII. in whoſe pontificate they were in their higheſt power. *Corneille*, Dict. des Arts, T. 1. p. 88. a. Dict. de Trev. T. 1. p. 849.

BANKER *at Baſſet*, is, more properly, called *tailleur*, or *tallier*.

The *tailleur* has the firſt and laſt card at his own diſpoſal, with other advantages in the dealing ſo conſiderable, that, by a public edict of the king of France, the full privilege of a *tailleur* was allowed to none but cadets, or younger ſons of noble families: all others, for fear of ruining private families, were confined to a twelve-penny bank. Compl. Gameſt. p. 30.

Yet it is to be obſerved, that the *bankers* gain *per cent.* of all the money adventured at pharo, is greater than at baſſet; it being two pounds nineteen ſhillings and tenpence *per cent.* in the firſt, and but fifteen ſhillings and threepence in the ſecond. V. *De Moiv.* Doctr. Chanc. p. 93.

BANKER, in bricklaying, a piece of timber whereon they cut the bricks.

The *banker* is ſix feet long, or more, according to the number of men to work at it, and nine or ten inches ſquare: it is to be laid on two peers of timber, three feet high from the floor they ſtand on. *Moxon*, Mech. Exerc. p. 246.

BANKING, the making of *banks* to oppoſe the force of the ſea, rivers, or the like, and ſecure the land from being of overflowed thereby.

With reſpect to the water which is to be kept out, this is called *banking*; with reſpect to the land, which is hereby to be defended, *imbanking*.

BANKING, in a ſalt-work, the raiſing a fence againſt the ſea, whereby its waters may be kept out, excepting ſo much as is neceſſary for the preparation of the ſalt.

BANKING is alſo applied to the keeping a bank, or the employment of a banker. See BANK, and BANKER, *Cycl.* and *Suppl.*

Baking, in this ſenſe, ſignifies the trading in money, or remitting it from place to place, by means of bills of exchange. Plan, Engl. Comm. p. 2.

This anſwers to what the French call *faire la banque*.

In France, every body is allowed to *bank*, whether merchant or not; even foreigners are indulged in this kind of traffic. In Italy, *banking* does not derogate from nobility, eſpecially in the republic ſtates; whence it is, that moſt of the younger ſons of great families engage in it. In reality, it was the nobility of Venice and Genoa, that, for a long time, were the chief *bankers* in the other countries of Europe. *Savar.* Dict. Comm. p. 235.

BANKING is more particularly uſed for the act of exchanging monies, or coins, of different qualities and values. Plan, Engl. Comm. c. 1. p. 2.

BANKRUPT, (*Cycl.*)—In ſome places *bankrupts* are condemned to wear the green cap; at Lucca, an orange cap. Dict. de Trev. T. 1. p. 848.

Fraudulent BANKRUPT, he who deſignedly ſecretes or makes away his effects, conceals them under borrowed or feigned names, or by pretended ſales or aſſignments. *Savar.* Dict. Comm. p. 264, ſeq.

By an ordinance of Henry IV. in 1609, and another of Louis XIV. in 1673, fraudulent *bankrupts* are ordered to be proſecuted capitally, and puniſhed with death; which has frequently been practiſed accordingly. Though the ordinary puniſhment in France, be only the pillory. In England, *bankrupts* fraudulently concealing their effects, are guilty of felony, without benefit of clergy. See Stat. 5 Geo. II.

BANLEUGA, or BANNILEUGA, or BANLIEUE, in middle age writers, the territory within which the juriſdiction of municipal magiſtrates, or ordinary judges of a city, town, or the like, are confined. Vid. *Spelm.* p. 61. a. *Menag.* Orig. p. 74. *Du Cange*, T. 1. p. 465.

It is thus called, becauſe within this tract, they may make their proclamations, prohibitions, and other acts of juſtice and policy, compriſed under the name of *ban*, or *bannum*. See BANN.

In this ſenſe, we meet within *banleuga de Arundel*, uſed for all that is comprehended within that limits, or lands adjoining, and ſo belonging to the caſtle, or town. *Selden*, Hiſt. of Tithes, p. 75.

The *banlieu*, in France, ordinarily extends about a league around the place [a]. Its boundaries are commonly marked by a croſs, or a ſtone erected for the purpoſe [b].—[a *Ozanam.* Dict. Math. p. 376. b *Aubert*, ap. Richel. T. 1. p. 175. b.]

In ſome cuſtoms of France, *banlieue* is alſo uſed to denote the ſpace within which the inhabitants are obliged to carry their corn to be ground in the lord's mill. *Caſeneuve*, in voc.

BANN, (*Cycl.*)—M. d'Herbelot will have the word *bann* to be Sclavonic, where it is ſtill uſed, as well as among the Turks, for the commander of the forces, or troops, in the provinces belonging to the kingdom of Hungary. Bibl. Orient. p. 183. See alſo *Aquin.* Lex. Milit. T. 1. p. 112. b.

Others will have it the ſame with what, in Heſychius, is written βαγας, and which, according to him, ſignifies king, or great prince. Vid. *Seld.* Tit. of Hon. P. 2. c. 2. §. 5. Trev. Dict. Univ. T. 1. p. 831.

BANN is more particularly uſed, for a ſolemn convocation of the nobility of a province, to attend the king in his army, conformably to their ſeveral tenures.

Bann, in this ſenſe, differs from *rear-bann*; as the former reſpects thoſe who hold mediately of him. But the words are now confounded; and *bann*, and *rear-bann*, denote a ſummons to all the feudal tenants, mediate and immediate, to go to war in the king's ſervice.

BANN alſo denotes the aſſembly, or body of nobility and gentry thus convocated.

In this ſenſe, they ſay, the *bann* and *rear-bann* is long in getting into the field; the *bann* and *rear-bann* was aſſembled, &c.

The French nobility appear to have ſerved the king, in the way of *bann* and *rear-bann*, from the beginning of the monarchy; though the uſage was not regularly ſettled, till the time of the inveſtiture of feuds. From that time, the lay lords rendered preſent ſervice in the armies; and even the eccleſiaſtics, who held lands, were obliged likewiſe to appear with their vaſſals. It was this gave occaſion to the introduction of *vidames* and *advoues*, or *advocates*, to command the vaſſals of biſhopricks, and abbies, in lieu of their own prelates. But, during the wars againſt the Engliſh, as well as in the holy land, many of the gentry, engaged in thoſe expeditions, wanting money to ſupport the expence, procured leave of the king to ſell feuds to *roturiers*, or perſons not noble, and corporations. By this means, a conſiderable part of the fiefs of France, falling into the hands of perſons unfit for war, the *bann* and *rear-bann* came to be but thinly furniſhed with able ſoldiers. This occaſioned a tax to be laid on theſe *roturies*, in order to pay ſoldiers; and, beſides the tax, they were ſtill obliged to perſonal ſervice: which eſtabliſhment ſtill continues. Dict. de Trev. T. 1. p. 830.

BANN is more particularly uſed to denote proſcription, or baniſhment, for a crime proved [a]; becauſe antiently publiſhed by ſound of trumpet; or, as Voſſius thinks, becauſe thoſe who did not appear at the abovementioned ſummons, were puniſhed by proſcription [a].—[a Vid. *Spelm.* Gloſſ. p. 62. a. b *Menag.* Orig. p. 74. b.

Hence, *to put a prince under the* bann *of the Empire*, is to declare him diveſted of all his dignities. *Richel.* Dict. T. 1. p. 172.

The ſentence only denotes an interdict of all intercourſe, and offices of humanity, with the offender; the form of which ſeems taken from that of the Romans, who baniſhed perſons, by forbidding them the uſe of fire and water. *Calv.* Lex. Jur. p. 109.

Sometimes alſo cities are put under the imperial *bann*; that is, ſtripped of their rights and privileges.

BANN alſo denotes a pecuniary mulct, or penalty, laid on a delinquent for offending againſt a *bann*. *Du Cange*, Gloſſ. Lat. T. 1. p. 461.

BANN is alſo uſed for the ordinances and injunctions of eccleſiaſtical prelates. *Magri*, Voc. *Eccleſ.* p. 28. b.

The uſe of matrimonial *banns* is ſaid to have been firſt introduced in the Gallican church, though ſomething like it obtained even in the primitive times; and it is this Tertullian is ſuppoſed to mean by *trinundina promulgatio*. The council of Lateran firſt extended, and made the uſage general. By the ordonnance of Blois, no perſon could validly contract marriage, without a preceding proclamation of three *banns*: nor could any perſon whatever be diſpenſed with, except for the two laſt. But the French themſelves have abated much of this ſeverity; and only minors are now under an abſolute neceſſity of ſubmitting to the formality of *banns*. For majors, or thoſe of age, after publication of the firſt *banns*, the two latter are eaſily bought off. Dict. de Trev. T. 1. p. 830.

BANNUS, or BANUS, a title antiently given to the governor or viceroy of Croatia, Dalmatia, and Sclavonia. *Fæſch.* Ing. Lex. p. 66. See alſo *Aquin.* T. 1. p. 112. b. Dict. de Trev. T. 1. p. 849. *Du Cange*, Gloſſ. Lat. T. 1. p. 467.

BANNUS *Epiſcopalis*, was a mulct paid to the biſhop by thoſe guilty of ſacrilege, and other crimes. *Du Cange*, Gloſſ. Lat. T. 1. p. 462.

BANNUM *Capitis*, was a mulct paid in cattle. *Du Cange*, ibid. p. 463.

BANN is alſo uſed for a ſolemn anathema, or excommunication, attended with curſes, *&c.* Vid. *Tribechov.* de Doct. Scholaſt. c. 3. p. 97.

In this ſenſe, we read of *papal banns*, &c.

BANN *of God*, *Bannus Dei*, or the judgment of God. Spelman takes it for excommunication. *Spelman*, Gloſſ. p. 62. a.

BANN is alſo uſed for a prohibition.

In which ſenſe, the *bann* of harveſt, of vintage, *&c.* in the French cuſtoms, imports a prohibition to reap, or gather the grapes, without leave of the lord.

The former is now taken away, and the peaſant may reap his corn when he pleaſes; but the latter ſtill remains, perſons not being allowed to open the vintage, till publication is made by the officers of the place for that purpoſe. *Aubert.* ap. Richel. T. 1. p. 172. a.

BANN-*Vin*, in the French cuſtoms, a privilege enjoyed by lords, of ſelling the wine of their own growth, during a certain time, excluſive of all other perſons within the compaſs of their fees or lordſhips. *Savar.* Dict. Comm. p. 265. *Du Cange*, Gloſſ. Lat. T. 1. p. 458. Dict. de Trev. T. 1. p. 850.

The ſame right, in ſome places, extends alſo to other liquors; and even to hogs, cows, and other animals.

BANNALIS *Mola*, or *Bannal-Mill*, a kind of feudal ſervice, whereby the tenants of a certain diſtrict are obliged to carry their corn to be ground at a certain mill, and to be baked at a certain oven, for the benefit of the lord. *Calv.* Lex. Jurid. p. 109. a.

This amounts to the ſame with what obtains among the French, under the denomination of *bannalité*; which is a right belonging to the lord, to keep a mill, an oven, a wine-preſs, and a bull, and oblige his tenants to bring their corn to grind, their bread to bake, *&c.* at the ſame time.

The *bannalité* is an odious ſervice, unknown in the antient law, and of which no traces are to be ſeen before the tenth century. The violence of the lords, and the poverty of the people, ſeem to have occaſioned its riſe; and the manumiſſion of villains afterwards confirmed it. Fulbert, biſhop of Chartres, in a letter to Richard duke of Normandy, in the tenth century, complains that there were *bannal-mills* five leagues diſtance from the habitations of the vaſſals; and that they were nevertheleſs obliged to carry their corn thither to be ground. But, in after-time, this diſtance was reſtrained to the limits of one league. *De la Mare*, Traité de la Polic. ap. Dict. de Trev. T. 1. p. 840, ſeq.

BANNER, properly denotes a ſquare flag, faſtened like a cornet to a lance. Dict. de Trev. T. 1. p. 544.

Menage derives the word from the Latin *bandum*, a band, or flag; and ſuppoſes *banniere* to have been firſt written for *bandiere*; which is confirmed by this, that we meet with the word *banderia*, uſed, in the ſame ſenſe, by Latin writers of the barbarous age. *Menage*, Orig. in voc. See alſo *Spelm.* Gloſſ. p. 59. b.

Paſquier chooſes to deduce it from the old word *bann*, the publication made to call the vaſſals to war; others derive it from the German *ban*, a field or tenement, becauſe only lords of fees were allowed to bear a *banner*; others, again, ſuppoſe the word to have been formed, by corruption, from *panniere*, of *pannus*, cloth, becauſe it was originally made of cloth; whence alſo the denominations, *penons*, *panoneſeaux*, &c. Dict. de Trev. T. 1. p. 845.

A *banner* differed from a *pennon*, or *guidon*, which had a long tail, or train; the cutting off which, in the ceremony of creating a banneret, converted it into a *banner*. See BANNERET, *Cycl. & Suppl.*

Moſt of the antient lords are repreſented, on their ſeals, with *banners* in their hand; in which guiſe they entered the liſts in tournaments.

Arms BANNER-*wiſe*, or *en banniere*, are thoſe born ſquare; ſtill uſed in Bretagne, to denote families deſcended from bannerets. Favyn ſuppoſes the uſage to have been brought thither from England. Hiſt. de Navarre, l. 11. p. 620, ſeq.

It was reputed more honourable for a perſon to bear his arms in a *banner*, than in an *eſcutcheon*.

BANNER is alſo uſed to denote the flag under which all the tenants of the ſame fief were to muſter themſelves, when their ſervice was required in the army. Dict. de Trev. T. 1. p. 444.

BANNER is alſo uſed for the chief flag, or ſtandard of a prince, lord, baron, or the like. *Spelm.* Gloſſ. p. 59. b.

The BANNER *of France*, was the largeſt and richeſt of all the flags born by the antient kings, in their great military expeditions. St. Martin's cap was in uſe ſix hundred years, as the *banner* of France: it was made of taffety, painted with the image of that ſaint, and laid one or two days on his tomb, to prepare it for uſe [a]. This was ſucceeded by the famous *aurifiamma*, or *oriflamma*. (See AURIFLAMMA.) Though ſome make a difference between the *banner* of France and the *oriflamme*; making it the diſtinguiſhing character of the former, to be hung out at the window, where-ever the king was; whereas the latter was only uſed in extraordinary wars [b].—[a Dict. de Trev. T. 1. p. 845. *Le Gendre*, Mœurs & Cout. de France. b *Richel.* Dict. T. 1. p. 174. c.]

About the year 1100, came in a more pompous apparatus; the mode of which was borrowed from Italy; the *banner* royal was faſtened to the top of a maſt, or ſome tall tree planted on a ſcaffold, born on a chariot drawn by oxen, covered with velvet houſings, decorated with devices or, cyphers, of the prince reigning. At the foot of the tree was a prieſt, who ſaid maſs early every morning. Ten knights mounted guard on the ſcaffold, night and day, and as many trumpets, at the foot of the tree, never ceaſed flouriſhing, to animate the troops. This cumberſome machine, the mode of which was brought from Italy, continued in uſe about an hundred and thirty years. Its poſt was in the center of the army. And here it was the chief feats were performed, to carry off and defend the royal *banner*: for there was no victory without it; nor was an army reputed vanquiſhed, till they had loſt this *banner*. *Le Gendre*, Mœurs & Cout. des Franc. p. 105, ſeq.

BANNER is alſo uſed, in middle age writers, for any flag or enſign. *Spelm.* Gloſſ. p. 59. b.

But the word is out of uſe in this ſenſe, except in ſpeaking of former times, or foreign nations. In the Levant, they ſtill ſay, the Engliſh *banner*, the Venetian *banner*, &c. *Aubin.* Dict. Mar. p. 64.

The French alſo retain the denomination *banner*, in ſpeaking of eccleſiaſtical proceſſions; where the people, having each a croſs on, march under a *banner*, repreſenting the church militant; to denote themſelves ſoldiers of the church. *Richel.* l. c.

BANNERS *of the Romans*. See SIGNA.

BANNERET, (*Cycl.*) — There ſeems to have been *bannerets* created, either in a different manner, or by others, than the ſovereign; ſince King James, in the patent of baronets, gives them precedency to all knights *bannerets*, except ſuch as are created by the king himſelf in the field; which implies, either that there are ſome of this order created out of the field, or by inferior perſons. Vid. *Spelm.* Gloſſ. p. 75, a.

BANNERET is alſo the name of an officer, or magiſtrate of Rome, towards the cloſe of the fourteenth century.

The people of that city, and throughout the territory of the church, during the diſputes of the antipopes, had formed a kind of republican government; where the whole power was lodged in the hands of a magiſtrate, called ſenator, and twelve heads of quarters, called *bannerets*, by reaſon of the banners which each raiſed in his diſtrict. *Daniel*, Hiſt. de Franc. T. 2. p. 107. Dict. de Trev. T. 1. p. 838.

BANNISTERIA, in botany, the name given by Linnæus to a genus of plants, firſt deſcribed by Plumier under the name of *clematis ſpecies*. The characters are theſe; the perianthium is very ſmall and permanent, and is rigid and rough underneath, with tubercles; and there are ſmall melliferous glands placed under every jag, or ſegment of the cup, except one. Theſe glands are eight in number, and the ſegments of the cup are nine. The flower conſiſts of five very large petals, of an orbicular figure; they ſtand wide expanded, and have long and ſtrait ungues, and are crenated at the edges. The ſtamina are ten extremely ſmall filaments; the antheræ are ſimple; the germina of the piſtils are three; they are alated, and grow together; the ſtyles are three, and are of a ſimple ſtructure; the ſtigmata are obtuſe. There are are three fruits ſucceeding every flower; they are long, and run out into an ala of conſiderable length; they each contain one ſeed, and do not ſplit. The ſeeds are ſingle, and have their ſides indented. It is evident, from the flower, and glandules of the cup, that this genus has an affinity with the malpighia. *Linnæi*, Gen. Plant p. 194. *Plumier*, Ran. 92. See MALPIGHIA.

BANNOCK, in food, is an oat-cake kneaded only with water, and baked in the embers. Theſe are common in Lancaſhire, and ſome other counties. *Ray*'s Engl. Words, p. 5.

BANOY, the name given, by the people of the Philippine iſlands,

to

to a kind of hawk, ſomewhat larger than our ſparrow-hawk, and of a yellowiſh colour on the back and wings, and white under the belly. It is the moſt common of all the kinds of hawk in that part of the world, and is a very voracious animal.

BANQUET, in the manege, denotes that ſmall part of the branch of a bridle under the eye; which, being rounded like a ſmall rod, gathers and joins the extremities of the bit to the branch, in ſuch a manner, that the *banquet* is not ſeen, but covered by the cap, or that part of the bit next the branch.

BANQUET-*Line*, is an imaginary line drawn by the bit-makers along the *banquet*, in forging a bit, and prolonged upwards and downwards, to adjuſt the deſigned force or weakneſs of the branch, in order to make it ſtiff, or eaſy. For the branch will be hard and ſtrong, if the ſevil-hole be on the outſide of the *banquet*, with reſpect to the neck; and it will be weak, and eaſy, if the ſevil-hole be on the inſide of the line, taking the center from the neck. *Guillet*, Gent. Dict. in voc.

BANQUETTING-*Room*, or *Houſe*. See XENIA, SALOON, *&c.* The antient Romans ſupped in the atrium, or veſtibule, of their houſes; but, in after-times, magnificent ſaloons, or *banqueting-rooms*, were built, for the more commodious and ſplendid entertainment of their gueſts. Lucullus had ſeveral of theſe, each diſtinguiſhed by the name of ſome god; and there was a particular rate of expence appropriated to each. Plutarch relates with what magnificence he entertained Cicero and Pompey, who went with deſign to ſurprize him, by telling only a ſlave who waited, that the cloth ſhould be laid in the Apollo. The emperor Claudius, among others, had a ſplendid *banqueting-room*, named Mercury. But every thing of this kind was outdone by the luſtre of that celebrated *banqueting-houſe* of Nero, called *domus aurea*; which, by the circular motion of its partitions, and ceilings, imitated the revolution of the heavens, and repreſented the different ſeaſons of the year, which changed at every ſervice, and ſhowered down flowers, eſſences, and perfumes, on the gueſts [a]. Heliogabulus, nevertheleſs, is ſaid to have improved as much upon Nero, as the latter had done on Lucullus [b]. — [[a] *Senec.* Epiſt. 90. [b] Vid. l'Abbé *Couture*, in Mem. Acad. Inſcript. T. 2. p 427, ſeq.]

BANSTICKLE, in ichthyology, a name given by us to the *gaſteroſteus*. See GASTEROSTEUS.

The BANSTICKLE is otherwiſe called *prickle-bag*, or *prickle-back*.

BANTAM-*Work*, a kind of Indian painting, and carving on wood, reſembling Japan-work, only more gay, and decorated with a great variety of gaudy colours. Vid. *Park.* Treat. of Japann. p. 7.

Bantam-work is of leſs value among connoiſſeurs, though ſometimes preferred, by the unſkilful, to the true Japan-work. Formerly it was in more uſe, and eſteem, than at preſent, and the imitation of it much practiſed by our japanners.

There are two ſorts of *Bantam*, as well as of Japan work; as, in the latter, ſome are flat, lying even with the black, and others high or emboſſed, ſo, in *Bantam-work*, ſome is flat, and others in-cut, or carved into the wood, as we find in many large ſcreens; with this difference, that the Japan artiſts work chiefly in gold and other metals, and the *Bantam* generally in colours, with a ſmall ſprinkling of gold here and there.

For the flat *Bantam-work*, it is done in colours, mixed with gum-water, proper for the thing deſigned to be imitated. For the carved, or in-cut kind, the method of performing it is thus deſcribed by an ingenious artiſt. 1. The wood is to be primed with whiting and ſize, ſo often till the primer lie near a quarter of an inch thick; then it is to be water-plained, *i. e.* rubbed with a fine wet cloth, and, ſome time after, bruſhed very ſmooth, the blacks laid on, varniſhed up with a good body, and poliſhed well, though with a gentle hand. This done, the deſign is to be traced out with vermilion, and gum-water, exactly in the manner wherein it is intended to be cut; the figures, trees, buildings, *&c.* in their due proportions. Then the graver is applied, with other tools of proper ſhapes, differing according to the workman's fancy. With theſe he cuts deep or ſhallow, as is found convenient, but never deeper than the whiting lies; the wood being never to feel the edge of the inſtrument. Lines, or parts of the black, are ſtill to be left, for the draperies and other out-lines, and for the diſtinction of one thing from another; the rule being to cut where the white is, and leave the black untouched. The carving being finiſhed, they take to the pencil, with which the colours are laid into the cut-work. After this, the gold is to be laid in theſe places which the deſign requires; for which purpoſe, a ſtrong, thick gum-arabic water is taken, and laid with a pencil on the work; and, while this remains wet, leaf gold is cut with a ſharp ſmooth-edged knife, in little pieces, ſhaped to the bigneſs and figure of the places where they are to be laid. Theſe being taken up with a little cotton, they dab them with the ſame cloſe to the gum-water, which affords a rich luſtre. The work thus finiſhed, they clear up the black with oil, taking care not to touch the colours. The European workmen, in lieu of leaf-gold, ordinarily uſe braſs-duſt, which is leſs bright and beautiful. *Park.* ibid. c. 13. p. 37, ſeq.

BAOBAB, in natural hiſtory, the name of an African fruit deſcribed by Proſper Alpinus. It is of the ſize of a lemon, but it reſembles a gourd, and contains ſeveral black ſeeds, whoſe extremities are a little crooked. Its ſubſtance alſo much reſembles that of the gourd; and, when firſt pulled off, is moiſt, red, and of a grateful acid taſte. The people of Æthiopia, where it is plentiful, are very fond of it, in the ſcorching heats of ſummer; and the richer ſort add ſugar to it, to correct its acidity. It is a great cooler, and very agreeably quenches thirſt; and has alſo ſome medicinal uſe, as it is good in contagious and peſtilential fevers. The tree much reſembles the orange in ſize, and in the ſhape of its leaves. The people of Cairo, where the freſh fruit is not to be had, uſe its pulp dried and powdered. *Proſp. Alpin.* de Plant. Ægypt.

BAPHE, in the writings of the antients, a word uſed to expreſs that fine red colour, with which they uſed to illuminate the capital letters in manuſcripts, at the beginning of chapters. It is alſo called, by ſome, *encauſtum ſacrum*, and, by others, *coccus* and *cinnabaris*. It was a very elegant colour, and is ſaid to have been prepared of the purple colour taken from the murex, and ſome other ingredients. It was called *encauſtum*, from its reſembling very much the fine bright red uſed in enamels.

BAPTÆ, in antiquity, an effeminate, voluptuous kind of prieſts at Athens, belonging to the goddeſs Cotyttus; thus called, from their ſtated dippings and waſhings, by way of purification. It ſeems, they were to be made very clean and pure, that they might wallow, and defile themſelves, with the leſs reſerve; for their rites were performed in the night, and conſiſted chiefly of laſcivious dances, and other abominations. Eupolis having compoſed a comedy to expoſe them, entitled Βαπται, they threw him into the ſea, to be revenged; and the ſame fate is alſo ſaid to have befallen Cratinus, another Athenian poet, who had written a comedy againſt the *Baptæ*, under the ſame title. *Scalig.* Poet. l. 1. c. 7. p. 28.

Others deduce the denomination *Baptæ*, from the practice of dying and painting their bodies, eſpecially their eye-brows, and officiating at the ſervice of their deity, with the parade and demureneſs of women. *Fabr.* Theſ. p. 334.

Juvenal deſcribes them in this light:

Talia ſecreta coluerunt Orgia tædâ
Cecropiam ſoliti Baptæ laſſare Cotyton,
Ille ſupercilium madidâ fuligine tactum,
Obliquâ producit acu, pingitque trementes
Attollens oculos, vitrio bibit ille Priapo. Sat. 2. v. 91, ſeq.

BAPTES, in natural hiſtory, a name given by the antients to a foſſile ſubſtance uſed in medicine; they have left us but very ſhort deſcriptions of it: Pliny only tells us, that it was ſoft, and of an agreeable ſmell. Hence Agricola judges, that it was probably one of the bitumens.

BAPTISÆCULA, in botany, a name given, by ſome authors, to the blue corn-flower, called the *cyanus*, or blue-bottle. *Ger.* Emac. Ind. 2.

BAPTISM, (*Cycl.*) — *Baptiſm* is known, in eccleſiaſtical writers, by divers other names and titles; ſometimes it is called *indulgence*, or *abſolution*, by reaſon of its effects in remitting ſins [a]; ſometimes *palingeneſia*, or laver of regeneration [b]; ſometimes *ſalus*, or life and ſalvation [c]; ſometimes σφραγις, *ſignaculum Domini*, and *ſignaculum fidei*, or the ſeal of faith [d]; ſometimes abſolutely *myſterium*, and *ſacramentum* [e]; ſometimes the ſacrament of faith [f]; ſometimes *ſacraments*, in the plural, becauſe the euchariſt, confirmation, and exorciſm, were annexed to it [g]; ſometimes *viaticum*, from its uſe to departing perſons [h]; ſometimes *ſacerdotium laici* [i], or the lay prieſthood, becauſe allowed, in caſes of neceſſity, to be conferred by laymen; ſometimes it is called the *great circumciſion*, by reaſon it ſucceeds in the room of circumciſion, and is the ſeal of the chriſtian covenant, as that was the ſeal of the covenant made with Abraham; ſo, in regard that *baptiſm* had Chriſt for its author, and not man, it was antiently known by the name of Δωρον and χαρισμα Κυριε, *the gift of the Lord*; ſometimes it was ſimply called δωρον, without any other addition, by way of eminence, becauſe it was both a gratuitous and ſingular gift of Chriſt: in reference to the making men compleat members of Chriſt's body, the church, it had the name of Τελειωσις, and Τελειη, the *conſecration*, and *conſummation*; becauſe it gave men the perfection of chriſtians, and a right to partake of the Το Τελειον, which was the Lord's ſupper; it had alſo the name of μυησις and μυσαγωγια, the *initiation*, becauſe it was the admittance of men to all the ſacred rites and myſteries of the Chriſtian religion: and as the euchariſt, from its repreſenting the death of Chriſt, by the outward elements of bread and wine, was called the *ſacred ſymbols*, ſo *baptiſm*, ſometimes, had the ſame name [k]. — [[a] *Bingh.* Orig. Eccleſ. l. 11. c. 1. §. 2. Idem, l. 19. c. 1. §. 2. [b] Idem, ib. l. 11. c. 1. §. 3. [c] Id. ibid. c. 1. §. 5. [d] Id. ibid. §. 6. [e] Id. ibid. §. 8. [f] Id. ibid. [g] *Johnſ.* Eccleſ. Law, an. 740. §. 41. [h] *Bingh.* l. c. §. 10. [i] Id. ibid. §. 3. [k] Id. ibid. §. 10.]

BAPTISM had its origin from the Jewiſh church, where it was the practice, long before Chriſt's time, to baptize proſelytes or converts to their faith, as part of the ceremony of their admiſſion: a practice which obtains among them to this day; a perſon turning Jew, is firſt circumciſed, and, when healed, is bathed, or baptized in water, in preſence of their rabbins; after which he is reputed a good Jew. Vid. *Leo de Moden.* Cerem. & Cout. des Juifs, P. 5. c. 3. Dict. de Trev. T. 1. p. 850.

Chauvin, and ſome others, have pretended to derive *baptiſm* from the luſtrations and ablutions practiſed by the heathen prieſts; others will have *baptiſm* of Chriſtian origin, and to

have been first instituted by Christ himself, in that command to his disciples, *Go teach all nations, baptizing them*, &c. But Luther, Cave, Alting, Van Dale, and others, shew, that the Jews are rather to be owned the instituters of *baptism*. Vid. *Pfaff.* Introd. Hist. Theol. T. 2. p. 361. *Van Dale*, Hist. Baptism. p. 379. *Reimman*, Catal. Bibl. Theol. p. 25.

The design of the Jewish *baptism* is supposed to be, to import a regeneration, whereby the proselyte is rendered a new man, and of a slave become free. The effect of it is, to cancel all former relations; so that those, who were before akin to the person, after the ceremony cease to be so. It is to this ceremony Christ is supposed to have alluded, in his expression to Nicodemus, that it was necessary he should be born again, in order to become his disciple. *John*, iii. 10. Vid. *Calm.* Dict. Bibl. T. 1 p. 246.

The necessity of *baptism* to salvation, is grounded on those two sayings of our Saviour: *He that believeth, and is baptized, shall be saved*; and, *Except a man be born of water and of the spirit, he cannot enter into the kingdom of God.*

The antients did not generally think the mere want of *baptism*, where the procuring it was impracticable, to be such a crime, as to exclude men absolutely from the benefit of church-communion, or the hopes of eternal salvation. Some few of them, indeed, are pretty severe upon infants dying without *baptism*; and some others seem also, in general terms, to deny eternal life to adult persons dying without it: but when they interpret themselves, and speak more distinctly, they make some allowances, and except several cases, in which the want of *baptism* may be supplied with other means.

Such are, martyrdom, which commonly goes by the name of second *baptism* in mens own blood, in the writings of the antients; because of the power and efficacy it was thought to have, to save men by the invisible *baptism* of the spirit, without the external element of water.

Faith, and repentance, were also esteemed a supplement to the want of *baptism*, in such catechumens as died, while they were piously preparing themselves for *baptism*. *Bingh.* Orig. Eccles. l. 10. c. 2. §. 21.

Constantly communicating with the church, was thought to supply the want of baptism, in persons who had been admitted to communion, on a presumption of their being duly baptized, though the contrary afterwards appeared. Idem, ibid.

For infants dying without *baptism*, the case was thought more dangerous; as, here, no personal faith, repentance, or the like, could be pleaded, to supply the defect, and wash away original sin: on this account, they who spoke most favourably of them, as Greg. Nazianzen, and Severus bishop of Antioch, only assigned them a middle state, neither in heaven nor hell. But the Latins, as St. Augustin, Fulgentius, Marius Mercator, &c. who never received the opinion of a middle state, concluded, as they could not be received into heaven, they must go to hell. Pelagius, and his followers, who denied original sin, asserted, that they might be admitted to eternal life and salvation, tho' not to the kingdom of heaven; between which they distinguished. Where the fault was not on the side of the child, nor his parents, but of the minister, or where any unavoidable accident rendered *baptism* absolutely impossible, Hincmar, and others, make an exception, in holding the child saved without *baptism*. Idem, ibid. §. 24.

The receiving *baptism* is not limited to any time, or age of life. Some contend for its being administred like circumcision, precisely on the eight day, as Greg. Nazianzen; and others would have it deferred till the child is three years of age, and able to hear the mystic words, and make answer thereto, though they do not understand them [l]. In the canon law we find divers injunctions against deferring the *baptism* of infants beyond the 37th day [m], thirtieth day [n], and the ninth day [o]; some of them under pecuniary forfeitures.——[l *Bingh.* l. 11. c. 4. §. 13. [m] *Johns.* Eccles. Law, an. 960. §. 15. [n] Id. ibid. an. 950. §. 10. [o] Idem, ibid.]

Salmasius, and Suicerus from him, deliver it as authentic history, that, for the two first ages, no one received *baptism*, who was not first instructed in the faith and doctrine of Christ, so as to be able to answer for himself, that he believed; because of those words, *He that believeth, and is baptized:* which, in effect, is to say, that no infant, for the first two ages, was ever admitted to christian *baptism*. But, afterwards, they own, that pædo-baptism came in, upon the opinion that *baptism* was necessary to salvation. But Vossius, Dr. Forbes, Dr. Hammond, Mr. Walker, and especially Mr. Wall, who has exactly considered the testimony and authority of almost every antient writer that has said any thing upon this subject, endeavour to evince, that infants were baptized even in the apostolical age. It is certain, Tertullian pleads strongly against giving *baptism* to infants; which shews, at least, that there was some such practice in his age, though he disapproved of it [p]. After all, it must be owned, that it is from topical and scholastical, rather than historical arguments, that the advocates for infant-*baptism* prove their point. Some think it were better to omit the question *de facto*, whether infants are commanded to be baptized, or whether they actually were so in the apostles age, and insist only on the question *de jure*, that the church has a right or power to enjoin *baptism* on infants [q].—[p De Baptism. c. 18. [q] Vid. *Thomas.* Cautel. T. 2. c. 11. §. 7, seq.]

It is certain, the ordinary subjects of this sacrament, in the first ages, were converts from judaism and gentilism, who, before they could be admitted to *baptism*, were obliged to spend some time in the state of catechumens, to qualify them to make their professions of faith, and a christian life, in their own persons: for, without such personal professions, there was ordinarily no admission of them to the privilege of *baptism*. *Bingh.* lib. cit. l. 11. c. 5. §. 1.

Those baptized in their sick-beds, were called *clinici*, and held in some reproach, as not being reputed true christians [r]. Hence several censures, in councils and ecclesiastical writers, of *clinic baptism*. This *clinic baptism* was not sufficient to qualify the person, in case of recovery, for ordination [s]. —[r Vid. *Bos.* Exerc. de Clinic. Vet. c. 2, & 3. [s] *Bingh.* l. 4. c. 3. §. 11.]

Some had their *baptism* put off by way of punishment, when they fell into gross and scandalous crimes, which were to be expiated by a longer course of discipline, and repentance. This was sometimes five, ten, twenty years, or more; even all their lives, to the hour of death, when their crimes were very flagrant. *Bingh.* l. c. c. 6. §. 1.

In the earliest ages of the church, there was no stated time or place for the reception of *baptism* [t]. Afterwards, Easter, Whitsuntide, and Epiphany, became solemn seasons, out of which *baptism* was not administred, except in cases of necessity [u]. The catechumens, who were to receive it at these times, were called *competentes*; and to these it is that St. Cyril addresses his *Catecheses* [w].—[t *Bingh.* l. 11. c. 6. §. 9. [u] Idem, ibid. §. 7. See also *Johns.* Eccles. Law, an. 601. §. 8. an. 785. §. 2. an. 740. §. 10. an. 1071. §. 7. an. 1268. §. 1. an. 1237. §. 3. an. 1279. §. 4. [w] Vid. *Fabric.* Bibl. Græc. l. 5. c. 14. p. 544.

In the apostolical age, and some time after, before churches and baptisteries were generally erected, they baptized in any place where they had convenience; as John baptized in Jordan, and Philip baptized the Eunuch in the wilderness, and Paul the jaylor in his own house. *Bingh.* lib. cit. c. 6. §. 11.

But, in after-ages, baptisteries were built adjoining to the church; and then rules were made, that *baptism* should ordinarily be administred no where but in these buildings. Justinian, in one of his novels, refers to antient laws, appointing that none of the sacred mysteries of the church should be celebrated in private houses. Men might have private oratories for prayer in their own houses, but they were not to administer *baptism*, or the eucharist in them, unless by a particular licence from the bishop of the place. Such *baptisms* are frequently condemned in the antient councils, under the name παραβαπτισματα, *baptisms* in private conventicles. Idem, ibid. §. 12.

The antients observed the way of baptizing all persons naked, and by a total immersion under water; except in some particular cases of great exigency, wherein they allowed of sprinkling; as in the case of *clinic baptism*, or where there was scarcity of water. And this practice of baptizing naked was so general, that we find no exceptions made in respect either to the tenderness of infants, or the bashfulness of the other sex, unless in case of sickness or other disability [x]. But, to prevent any indecency, men and women were baptized apart. To which end, either the baptisteries were divided into two apartments, one for the men, the other for the women, as Bingham has observed [y]; or the men were baptized at one time, and the women at another, as is shewn by Vossius, from the *Ordo Romanus*, Gregory's *Sacramentarium*, &c. Add, that there was anciently an order of deaconesses, one part of whose business was to assist at the *baptism* of women.—[x *Bingh.* l. 11. c. 11. §. 2. [y] Idem, ibid. §. 6.] See BAPTISTERY.

The ordinary ministers, who had the right of administering this sacrament, that is, of applying the water to the body, and pronouncing the formula, were presbyters, anciently bishops; though, on extraordinary occasions, laymen were admitted to perform the same; and even women sometimes discharged this office.

Hobbes gives the king, as head of the church, a power of conferring *baptism*. Leviath. c. 42. p. 257.

In the primitive church, Bingham has shewn [z], that bishops, as the apostles successors, were the persons chiefly entrusted with this power; that they granted power to presbyters to baptize in ordinary cases; to deacons, sometimes in ordinary, and sometimes only in extraordinary cases; to laymen, only in extraordinary cases of extreme necessity; that the usurped *baptism* of laymen was allowed to be valid, so far as not to need repeating, though given irregularly; that the *baptism* of women was wholly prohibited; that the *baptism* of Jews and infidels was never allowed, though now accepted in the church of Rome; that the *baptism* of heretics, and schismatics, was disannulled by the Cyprianists, and some few others, who required a true faith, as well as a true form, to make a compleat *baptism*; but that this opinion was rejected by the great body of the catholic church, who thought the defects of heretical *baptism* might be supplied by imposition of hands, without rebaptizing. The church did not think fit to cancel, or wholly disannul the *baptisms* given by usurpation, and without any authority of the priesthood, so long as it appeared they were given in due form, in name of Father, Son, and Holy Ghost [a]. [z In Scholast. Hist. of Lay-Baptism, 1st and 2d Part, 1712,

and 1714. [a] Vid. *Bing.* Orig. Eccleſ. l. 4. c. 3. §. 12. l. 17. c. 5. §. 3. l. 11. c. 4. §. 1. See alſo l. 2. c. 3. §. 20. and l. 2. c. 20. §. 9. *Johnſ.* Eccleſ. Law, an. 734. §. 5.]

In the conſtitutions of archbiſhop Langton, made in the 13th century, we find lay-baptiſm allowed, and authorized, and particular directions given concerning the manner of conferring it, the diſpoſition of the water and veſſel wherein it was to be performed, *&c.* Vid. *Johnſ.* Eccleſ. Law, an. 1223. §. 1. and an. 1236. §. 10.

The Remonſtrants and Socinians reduce *baptiſm* to a mere ſign of divine grace [b]. The Romaniſts, on the contrary, exalt its power; holding, that all ſin is entirely taken away by it; that it abſolutely confers the grace of juſtification, and conſequently grace *ex opere operato*. Some alſo ſpeak of an indelible character impreſſed on the ſoul by it, called *character dominicus*, and *character regius* [c]; but this is held, by others, a mere ſpectre; for that the ſpiritual character, conferred in regeneration, may eaſily be effaced by mortal ſins.—[b *Pfaff.* Inſtit. Theol. p. 680, ſeq. c *Bingh.* l. 11. c. 1. §. 7.]

Dodwell maintained, that it is by *baptiſm* the ſoul is made immortal; ſo that thoſe who die without it, will not riſe again. It muſt be added, he reſtrains this effect to epiſcopal *baptiſm* alone.

From the effects ordinarily aſcribed to *baptiſm*, even by antient writers, it ſhould ſeem, that the ceremony is as much of heathen, as Jewiſh origin; ſince chriſtians do not reſtrain the uſe of it, like the Jews, to the admiſſion of new members into the church, but hold, with the heathens, a virtue in it for remitting and waſhing away ſins. Vid. *Bingh.* Orig. l. 11. c. 3. §. 11. Item, l. 4. c. 3. §. 10. See alſo *King*, Hiſt. Apoſt. Creed, c. 7. p. 362, & 379.

The bramins are ſtill ſaid to *baptize* with this latter view, at certain ſeaſons, in the river Ganges; to the waters whereof they have annexed a cleanſing, or ſanctifying quality. And hence it is, they flock from all parts, even of Tartary, driven by the expectation of their being eaſed of their load of ſins. But, in this point, many chriſtians ſeem to have gone beyond the folly of the heathens. It was only the ſmaller ſins of infirmity, which theſe latter held to be expiable by waſhing; for crimes of a blacker dye, they allowed no water could efface them, no purgation could diſcharge them. See ABLUTION.

The chriſtian doctrine of a total remiſſion of ſins by *baptiſm*, could not fail, therefore, to ſcandalize many among the heathens, and furniſhed Julian an occaſion of ſatyrizing chriſtianity itſelf: Whoever, ſays he, is guilty of rapes, murders, ſacrilege, or any abominable crime, let him be waſhed with water, and he will become pure and holy. Phileleuth. Lipſienſ. Rem. on Diſc. of Freethink. P. 2. §. 43.

The hiſtorian Zozimus ſeems to attribute Conſtantine's being *baptized*, to no other motive: he was too deeply tinged with guilt, and crimes, to admit of any abſolution, except from the chriſtian *baptiſm*.

In the antient church, *baptiſm* was frequently conferred on Jews by violence: but the church itſelf never ſeems to have allowed of force on this occaſion. By a canon of the fourth council of Toledo, it is expreſsly forbid to *baptize* any againſt their wills. That which looks moſt like force, in this caſe, allowed by law, were two orders of Juſtinian; one of which appoints the heathens, and the other, Samaritans, to be *baptized*, with their wives and children, and ſervants, under pain of confiſcation. *Bingh.* Orig. Eccleſ. l. 11. c. 5. §. 5.

By the antient laws, *baptiſm* was not to be conferred on image-makers, ſtage-players, gladiators, *aurigæ* or public drivers, magicians, or even ſtrolling beggars, till they quitted ſuch profeſſions [d]. Slaves were not allowed the privilege of *baptiſm*, without the teſtimony and conſent of their maſters [e]; excepting the ſlaves of Jews, heathens, and heretics, who were not only admitted to *baptiſm*, but, in conſequence thereof, had their freedom [f].—[d *Bingh.* l. 11. c. 5. §. 6, ſeq. e Idem, ibid. §. 4. f Idem, ibid. l. 8. c. 11. §. 17.]

It has been diſputed, whether *baptiſm* is to be conferred on monſtrous and preternatural births, hermaphrodites, moles, *&c.* Vid. *Teichmey.* Inſt. Med. Leg. c. 12. qu. 5. p. 84. Idem, c. 13. qu. 2, & 5. p. 86, 95. Idem, c. 14. qu. 11. p. 108. Voſſius has a learned and elaborate work, *De Baptiſmo*, wherein he accurately diſcuſſes all the queſtions concerning *baptiſm*, according to the doctrine of the antients. *Bingh.* Orig. Eccleſ. l. 11. c. 1. §. 1.

BAPTISM *by Fire*, ſpoken of by St. John the Baptiſt [g], has occaſioned much conjecture. The generality of the fathers held, that believers, ere they enter paradiſe, are to paſs through a certain fire, which is to purify them from all pollutions remaining on them unexpiated. Others, with St. Baſil, underſtand it of the fire of hell; others, of that of tribulation and temptation; others, with St. Chryſoſtom, will have it denote an abundance of graces; others ſuppoſe it to mean the deſcent of the Holy Ghoſt on the apoſtles, in form of fiery tongues; laſtly, others maintain, that the word *fire*, here, is an interpolation, and that we are only to read the text, *He that ſhall come after me, will baptize you with the Holy Ghoſt.* In reality, it is not found in divers manuſcript copies of St. Matthew.—[g *Matth.* iii. 11.]

The antient Seleucians and Hermians, underſtanding the paſſage literally, maintained, that material fire was neceſſary in the adminiſtration of *baptiſm*. But we do not find how, or to what part of the body, they applied it, or whether they were ſatisfied with obliging the perſon baptized, to paſs through the fire. Valentinus rebaptized all who had received water *baptiſm*, and conferred on them the *baptiſm of fire*.

Eis docuit tingi, traductoque corpore flamma.
Tertull. Carm. contr. Marc. l. 1.

Heracleon, cited by Clemens Alexandrinus, ſays, that ſome applied a red-hot iron to the ears of the perſon baptized, as if to impreſs ſome mark upon him. It has been commonly ſaid, that the Ethiopians, to this day, make prints, with a hot iron, on their newly baptized children, in three places, *viz.* the noſe, eyes, and temples. But Ludolph, and Renaudot, maintain this to be a fable. *Calmet*, Dict. Bibl. T. 1. p. 247, ſeq.

Water-BAPTISM was wholly rejected by the Valentinians, Manichees, Paulicians, and many other ſects. Vid. *Bingh.* l. 10. c. 2. §. 1, ſeq.

It is alſo rejected by the modern Quakers. See QUAKERS, *Cycl.*

The Abyſſinians are baptized afreſh every year, at the feaſt of Epiphany, in honour of the *baptiſm* of Chriſt. Certain ditches are dug for this purpoſe, and the people, flocking in crouds, deſcend naked into the water, where the prieſt, laying hands on them, dips them three times under water, with the cuſtomary formula, *I baptize thee in the name of the Father*, &c. *Fabric.* Lux Evang. c. 45. p. 720, ſeq.

St. Ambroſe, and Urſinus a monk of Africa, maintained, that *baptiſm* in the name of Chriſt alone, without mention of the other perſons, was valid; as, under this name, the whole Trinity was included.

The Tritheiſts, and Priſcillianiſts, baptized in the name of three unbegotten principles. *Bingh.* Orig. Eccleſ. l. 11. c. 3. §. 4.

Menander baptized in his own name, in virtue whereof he promiſed his followers incorruptibility, and an immediate reſurrection. Idem, ibid. §. 5.

The Elceſians conferred *baptiſm* in the name of the elements of letters. Idem, ibid. §. 6.

The Montaniſts baptized in the names of Priſcilla and Maximilla, their pretended propheteſſes. Idem, ibid. §. 7.

The Sabellians ſeem to have baptized in the name of the one, or ſupreme God. Ibid.

The Marcoſians, in the name of the unknown Father. Idem, ibid. §. 8.

The Eunomians uſed the form, *I baptize thee into the death of Chriſt.* Idem, ibid. §. 10.

The Marcionites refuſed *baptiſm* to all married perſons, admitting none but either virgins, widows, batchelors, or perſons divorced. Idem, ibid. c. 5. § 12.

BAPTISM *of the Dead*, a cuſtom which antiently prevailed among ſome people in Africa, of giving *baptiſm to the dead*. The third council of Carthage ſpeaks of it, as a thing that ignorant chriſtians were fond of. Gregory Nazianzen alſo takes notice of the ſame ſuperſtitious opinion prevailing among ſome who delayed to be baptized. In his addreſs to this kind of men, he aſks, whether they ſtaid to be baptized after death? Philaſtrius alſo notes it as the general error of the Montaniſts or Cataphrygians, that they baptized men after death.

The practice ſeems to be grounded on a vain opinion, that when men had neglected to receive *baptiſm* in their life-time, ſome compenſation might be made for this default, by receiving it after death. *Bingh.* Orig. Eccleſ. l. 11. c. 4. §. 3.

BAPTISM *of the Dead*, was alſo a ſort of vicarious *baptiſm*, formerly in uſe, where a perſon dying without *baptiſm*, another was baptized in his ſtead.

St. Chryſoſtom tells us, this was practiſed among the Marcionites with a great deal of ridiculous ceremony; which he thus deſcribes: After any catechumen was dead, they hid a living man under the bed of the deceaſed; then coming to the dead man, they aſked him, whether he would receive *baptiſm?* And he making no anſwer, the other anſwered for him, and ſaid, he would be baptized in his ſtead: and ſo they baptized the living for the dead.

Epiphanius aſſures us, the like was alſo practiſed among the Corinthians [h]. This practice they pretended to found on the apoſtle's authority; alleging that text of St. Paul for it, *If the dead riſe not at all, what ſhall they do who are baptized for the dead* [i]? A text which has given occaſion to a great variety of different ſyſtems and explications. Boſius enumerates no leſs than nine different opinions, among learned divines, concerning the ſenſe of the phraſe, *being baptized for the dead* [k].—[h Vid. *Suic.* Theſ. Eccleſ. T. 1. p. 64. *Calm.* Dict. Bibl. T. 1. p. 250. i 1 *Cor.* xv. 29. k V. Exerc. Hiſt. de Clinic. Veter. Eccleſ. c. 2.]

St. Ambroſe, and Walafred Strabo [l], ſeem clearly of opinion, that the apoſtle had reſpect to ſuch a cuſtom then in being; and ſeveral moderns have given into the ſame opinion, as Baronius [m], Joſ. Scaliger [n], Juſtellus [o], and Grotius [p]. —[l De Reb. Eccleſ. c. 26. m *Baron.* Annal. T. 1. ad an. 56. n. 166. n *Scal.* Epiſt. 236, ſeq. o *Juſtell.* in Not. ad Can. 57. p *Grot.* Annot. ad Conſult. Caſſand. Theol. l. 11. c. 11.]

Several among the Roman catholics, as Bellarmin [q], Salmeron [r], Menochius [s], and a number of ſchoolmen, underſtand

ſtand it of the *baptiſm* of tears, and pennance, and prayers, which the living undergo for the dead; and thus allege it as a proof of the belief of purgatory in St. Paul's days.—[q *Bellarmin*, l. 1. de Purgat. r *Salmer*. T. 14. Comm. Diſp. 24. s *Menoch*. Annot. ad Bellarm. l. c.]

Others underſtand it otherwiſe: the curious may conſult *Heinſ.* Exerc. ad Nov. Teſtam. l. 7. c. 13. Vid. Act. Erud. Lipſ. 1687. p. 304. *Wendel.* in Prodr. Biblioth. Biblic. p. 229, ſeq. *Spanheim.* Exercit. de Baptiſm. propt. Mort. in Opp. T. 3. p. 578.

Hypothetical BAPTISM, that formerly adminiſtred in certain doubtful caſes, with this formula; *If thou art baptized, I do not rebaptize; if thou art not, I baptize thee in the name of the Father*, &c. Vid. *Peckh.* Conſtit. Lamb. ap. *Johnſ.* Eccleſ. Law, an. 1200. §. 3. Idem, an. 1281. §. 3.

This ſort of *baptiſm*, enjoined by ſome antient conſtitutions of the Engliſh church, is now fallen into diſuſe.

Solemn BAPTISM, that conferred at ſtated ſeaſons; ſuch, in the antient church, were the *Paſchal baptiſm*, and that at *Whitſuntide*. This is ſometimes alſo called *general baptiſm*. *Du Cange*, Gloſſ. Lat. T. 1. p. 467.

BAPTISM *in deſire*, *Baptiſmus in voto*, or *Votum baptiſmi*, is a fervent deſire, or even a reſolution, to receive *baptiſm*. Cajetan aſſerts, that ſuch a deſire in a parent, together with ſomewhat of a benediction, or oblation of the infant to God, joined with an invocation of the Holy Trinity, may ſupply the want of actual *baptiſm* to an infant in the mother's womb. But this is refuted by ſeveral, particularly Alphonſus de Caſtro. Adverſ. Hæreſ. l. 3. Hær. 9. Dict. de Trev. p. 853.

To loſe one's BAPTISM, *Baptiſmum perdere*, is to forfeit the grace conferred by that ſacrament.

BAPTISM *of the Croſs*, *Baptiſmus crucis*, as practiſed among the Armenians, is deſcribed by Willebrand Abhouldenborg, in his Itinerary. *Du Cange*, Gloſſ. Lat. T. 1. p. 468.

Lay BAPTISM ſeems to have been allowed in the rubric of the Engliſh liturgy, till the time of King James I. Though there were great diſputes among the biſhops at the Hampton-court conference, whether the words of the liturgy imported ſuch allowance or not. The biſhop of Worceſter allowed them to be doubtful; but that the contrary practice of the church, which cenſured women for conferring *baptiſm*, ſhewed, that the compilers of the book did not intend them as a permiſſion: they had indeed propounded them ambiguouſly, becauſe otherwiſe, perhaps, the book would not have paſſed the parliament. The archbiſhop of Canterbury inſiſted, that the adminiſtration of private *baptiſm* by women and laymen, was not allowed in the practice of the church, but, on the contrary, inquired of, and cenſured by the biſhops in their viſitations. He even added, that the words of the liturgy do not infer any ſuch meaning. To which king James excepted; urging, and preſſing the words of the book, that they could not but intend a permiſſion of women, and private perſons, to baptize.

The biſhop of London anſwered, that the authors of the liturgy intended not, by ambiguous terms, to deceive any; but really meant a permiſſion of private perſons to baptize, in caſe of neceſſity, of which their own letters were witneſſes; ſome parts of which he then read; affirming withal, that it was agreeable to the practice of the antient church; and, to that purpoſe, urging the text of *Acts* ii. with the teſtimonies of Tertullian and St. Ambroſe, expreſs to the purpoſe. He was anſwered by king James, but defended by the biſhop of Wincheſter, who ſhewed, that, to deny private perſons to baptize in caſe of neceſſity, is to run counter to all antiquity. The iſſue was a conſultation, whether, into the rubric of private *baptiſm*, which leaves it indifferently for laymen or clerks to baptize, the words *curate*, or *lawful miniſter*, might not be inſerted? which was not ſo much ſtuck at by the biſhops. *Bart.* Account of Hampt. Court Confer. ap. Phœnix. T. 1. p. 146, ſeq.

At preſent, the Engliſh divines condemn it as invalid; and the biſhop of Sarum was ſeverely handled by ſome of them, for aſſerting, that faith in the Trinity gives every man a right to baptize. *Collins*, Diſc. of Freethink. p. 72, ſeq.

BAPTISM is alſo applied, abuſively, to certain ceremonies uſed in giving names to things inanimate.

The antients knew nothing of the cuſtom of giving *baptiſm* to inanimate things, as bells, ſhips, and the like, by a ſuperſtitious conſecration of them. The firſt notice we have of this, is in the Capitulars of Charles the Great, where it is only mentioned to be cenſured: but, afterwards, it crept into the Roman offices by degrees. Baronius carries its antiquity no higher than the year 968, when the great bell of the church of Lateran was chriſtened by pope John III. At laſt it grew to that ſuperſtitious height, as to be thought proper to be complained of, in the *Centum gravamina* of the German nation, drawn up in the public diet of the empire, held at Norimberg, *anno* 1518; where (after having deſcribed the ceremony of baptizing a bell, with god-fathers, who make reſponſes as in *baptiſm*, and give it a name, and cloath it with a new garment, as chriſtians were uſed to be cloathed, and all this to make it capable of driving away tempeſts and devils) they conclude againſt it, as not only a ſuperſtitious practice, but contrary to the chriſtian religion, and a mere ſeduction of the ſimple people. *Bingh.* Orig. Eccleſ. l. 8. c. 7. §. 15. & l. 11. c. 4. §. 2.

BAPTISMAL *Font* (*Cycl.*) is the mark of a parochial church.

BAPTISMAL *Vow*, or *Covenant*, a profeſſion of obedience to the laws of Chriſt, which perſons, in the ancient church, made before baptiſm. It was an indiſpenſable part of the obligation on catechumens, before they were admitted to the ceremony of regeneration. *Bingh.* Orig. Eccleſ. l. 11. c. 7. §. 6.

It was made by turning to the Eaſt, for what myſtical reaſons is not well agreed on. Idem, ibid. §. 7.

BAPTISMAL *Preſents* are in uſe in Germany, made by the ſponſors to the infant, conſiſting of money, plate, or even ſometimes fiefs of lands; which, by the laws of the country, are to be kept for the child till of age, the parents having only the truſt, not the right of diſpoſing of them.

An anonymous author has publiſhed a diſcourſe expreſs on this occaſion, entitled, *De pecunia luſtrica*. Dict. de Trev. T. 1. p. 854.

BAPTIST (*Cycl.*)—Some take thoſe chriſtians of St. John, ſtill ſubſiſting in Aſſyria, to be the ſect, or followers, of John the *Baptiſt*, or the deſcendants of thoſe whom the præcurſor baptized in Jordan. *Fabric.* Lux Evang. c. 5. §. 5. p. 119.

The chriſtians of St. John the *Baptiſt* hold, that John was not conceived after the ordinary manner, but by a mere embrace of his parents. The ſame aſſert, that the mother of Chriſt conceived by a draught of water, which, by command of God, ſhe drank out of a certain ſpring, that her virginity might remain untouched.

BAPTISTERY, Βαπτιστηριον, (*Cycl.*) in profane antiquity, a large baſon, or pool, belonging to the public baths, wherein perſons might not only bath, but ſwim. This was alſo called Κολυμβηθρα, and, by the Latins, *piſcina* and *natatio*. Vid. *Buret.* in Hiſt. Acad. Inſcrip. T. 1. p. 122. *Pitiſc.* Lex. Ant.

There were alſo *baptiſteria* in ſome private baths, as we find, particularly thoſe of Cicero and Pliny.

BAPTISTERY, in eccleſiaſtical writers, differs from *font*; as the former, properly ſpeaking, was the whole houſe, or building, in which the font ſtood, and where all the ceremonies of baptiſm were performed; whereas the font was only the fountain, or pool of water, wherein perſons were immerſed, or baptized.

The antient *baptiſteries* were commonly called φωτιστηρια, *photiſteria*, q. d. places of illumination; an appellation ſometimes given to baptiſm. Or, they might have the name for another reaſon, becauſe they were the places of an illumination, or inſtruction, preceding baptiſm: for here the catechumens ſeem to have been trained up, and inſtructed in the firſt rudiments of the chriſtian faith. Some moderns have miſtakenly placed the *baptiſtery*, like our font, in the *Narthex*; whereas the *baptiſteries* were buildings without the walls of the church, as appears from Euſebius, who calls the *baptiſtery* the chief of the *Exedræ*, as well as from other paſſages of antient writers. *Bingh.* Orig. Eccleſ. l. 8. c. 7. §. 1.

In the time of Juſtin Martyr, and Tertullian, we are not certain, that the church had any *baptiſteries*; but this is paſt doubt, that the place of baptiſm was not in the church, but ſomewhere diſtinct from it. After this manner *baptiſteries* continued to the ſixth age, as appears from what Durant obſerves out of Gregory of Tours, that he ſpeaks of *baptiſteries* ſtill without the walls of the church; though ſome now began to be taken into the church porch. *Bingh.* l. c.

Thoſe *baptiſteries* were antiently very capacious; becauſe, as Dr. Cave obſerves, the ſtated times of baptiſm returning but ſeldom, there were uſually great multitudes to be baptized at the ſame time. And then the manner of baptizing, by immerſion, or dipping under water, made it neceſſary to have a large font likewiſe. In *Venantius Fortunatus*, it is called *aula baptiſmatis*, the large hall of baptiſm; which was indeed ſo capacious, that we ſometimes read of councils meeting and ſitting therein. Idem, ibid. §. 2.

This hall, or chapel, was always kept ſhut during Lent, and the door ſealed up with the biſhop's ſeal, not to be opened till Maunday-Thurſday. Dict. de Trev. T. 1. p. 855.

The *baptiſtery* was always reputed a ſacred place: In the Roman order, we find the ceremonies uſed in the conſecration of the *baptiſteries:* they were to be built of a round figure, and diſtinguiſhed with the image of St John the Baptiſt; over the baſon, or font, was a figure of a dove in gold or ſilver, to repreſent the Holy Ghoſt.

The name *baptiſtery* is ſometimes alſo given to a kind of chapel in a large church, which ſerved for the ſame office.

BAPTISTERY is alſo uſed for a baptiſmal or parochial church. *Du Cange*, Gloſſ. Lat. T. 1. p. 469.

BAPTISTERY is alſo uſed, by the Armenians, for the feaſt of Epiphany, when the anniverſary of Chriſt's baptiſm is celebrated. *Du Cange*, ibid. p. 470.

BAPTISTERY is alſo uſed for a church-book, wherein the prayers and ceremonies of baptiſm were particularly deſcribed. Some take the *baptiſterium* to have contained the order of all the ſacraments, except the euchariſt. *Du Cange*, ibid. p. 470. *Johnſ.* Eccleſ. Law, an. 957. §. 21.

BAR, (*Cycl.*) in architecture, a long ſlender piece of wood or iron, uſed to keep things cloſe and faſt together.

In this ſenſe, we ſpeak of *bars* of windows, of doors, and the like. *Daviler*, Archit. p. 412.

BAR, among printers, denotes a piece of iron with a wooden handle,

handle, whereby the ſcrew of the preſs is turned in printing. See PRINTING, and PRESS, *Cycl.*

BARS *of Iron* are made of the metal of the ſows and pigs, as they come from the furnaces.

Theſe paſs through two forges, called the *finery* and the *chaufery*; where, undergoing five ſeveral heats, they are formed into *bars*. Vid. Phil. Tranſ. N° 138. p. 934. *Hought.* Collect. N° 273. T. 2. p. 224, ſeq. See IRON, and FORGE, *Cycl.*

BAR, in heraldry, is conſidered by ſome as a diminutive of the feſs. The ſpace the former poſſeſſes in the field, is one fifth, or ſixth; that of the latter, one third, horizontally. *Nisb.* Eſſ. of Arm. in fine.

The *bar* itſelf has its diminutives, which are the *cloſet* and *berrulet*.

The *bar* of legitimate cadets proceeds from right to left; that of baſtards, from left to right. *Aubert.* ap. Richel. T. 1. p. 180. a.

BAR-*Gemel*, denotes a double *bar*, or where the *bars* are placed in couples, at a ſmall diſtance, and more than two in the field, in even number. Cart. p. 129.

BAR, *or* BARRIER *of a Port*, is a long beam wherewith the entrance of a port is cloſed; more frequently called a *boom*. *Aubin.* Dict. Marin. p. 72.

BAR is alſo uſed for a heap of ſand or mud, or a chain of rocks, which block up the mouth of a river, or port, ſo that there is no entrance except at high-water.

The *bar* of Siam is a bank of mud, gathered at the mouth of the river, which allows not above thirteen feet water, when the tide is higheſt. *Aubin.* ibid. Vid. Phil. Tranſ. N° 162. p. 685.

BAR-*Maſter*, in mining, he who keeps the gage, or diſh, to meaſure all miners ore; he, or his ſervant, being preſent when meaſured. Vid. *Houghton*'s Compleat Miner, in the Explanation of the Terms of Art.

BARANGI (*Cycl.*) — Codinus [a], and Curopalata, obſerve, that the name is Engliſh, formed from *bar*, to ſhut; and that the *Barangi* were Engliſhmen, by country; Anglo-Danes, who, being driven out of England, were received into the ſervice of the emperor of Conſtantinople, and made guards or protectors of his perſon [b]. Whence they are called in Latin, by Cujaccius, *Protectores*; by others, *Securigeri*, as being armed with a battle-ax, *ſecuris*. Codinus adds, that they ſtill ſpoke the Engliſh tongue. Anna Comnena ſays, the *Barangi* came from the iſland *Thule*; by which is, doubtleſs, meant our iſland. Yet Nicetas makes them Germans; a miſtake eaſy to be made at that diſtance, conſidering the relation the Anglo-Saxons bore to Germany [c].—[[a] De Offic. Conſtant. c. 5. n. 45. [b] *Du Cange*, Gloſſ. Græc. T. 1. p. 175. [c] Vid. Trev. Dict. Univ. T. 1. p. 857.]

There were *Barangi* as early as the emperor Michael Paphlagonius, in the year 1035, as appears from Cedrenus; but they were then only common ſoldiers, not a life-guard.

Their commander was called Ακολουθος, as importing a perſon who always followed the emperor.

BARATHRUM, Βαραθρον, among the ancient Athenians, a deep pit into which condemned criminals were caſt headlong.

The *barathrum* was a dark noiſome hole, having ſharp ſpikes at the top, to prevent any eſcape; and others, at the bottom, to pierce and lacerate the offender. V. *Pott.* Archæol. Græc. l. 1. c. 25.

From its depth and capaciouſneſs, the name came to be uſed proverbially for a miſer, or a glutton, always craving.

In which ſenſe, the word *barathro* is uſed among the Latin poets. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 250. *Fabric.* Theſ. T. 1. p. 324.

BARATHRUM is alſo uſed, in phyſiology, to denote certain baleful caverns, inacceſſible on account of their fetid, or poiſonous fumes.

Theſe amount to the ſame with what others call *Foſſæ Charoniæ*. *Caſt.* Lex. Med. p. 165. a.

BARB, or BARBE, in the manege, a horſe brought from Barbary. See BARBE, *Cycl.*

Theſe horſes are uſually very beautiful; they are of a ſlender make, and have very fine limbs, and fine turned bodies.

The Spaniſh and Engliſh horſes have much fuller bodies, and larger legs.

The *barb* is little inferior to the Arabian or Turkiſh horſe; but he is eſteemed, by our dealers, too tender and delicate to breed upon. The Turkiſh and the Spaniſh horſe are therefore uſually kept, for this purpoſe, by the nicer judges.

The *barb* is very lazy and negligent in all its motions; he will ſtumble in walking upon the ſmootheſt ground; his trot is like that of a cow, and his gallop very low, and very eaſy to himſelf: this ſort of horſe is, however, for the moſt part ſinewy, nervous, and excellently winded; he is therefore good for a courſe, if not over-weighted.

The *mountain barbs* are accounted the beſt, becauſe they are the largeſt and ſtrongeſt: they belong to the Allarbes, who value themſelves much upon them, and are as fond of them as other nations are; for which reaſon it is not eaſy to get at any of them. The common *barbs* are not uncommon among our people of faſhion. They may uſually be bought in Provence and Languedoc in France, at a moderate price, and many of the Engliſh have them from thence.

Barbs, among us, fall ſhort of that ſwiftneſs, attributed to them in their native country. This may be accounted for, partly from the ſmallneſs and lightneſs of their riders, and partly from their not being loaded with heavy ſaddles and bridles, as in Europe, nor even with ſhoes. An Arab ſaddle is only a cloth girt round, with a pair of light ſtirrups, and a ſort of pummel to ſuſtain them. *Corn.* Dict. des Arts, T. 1. p. 89. a.

Baſtard BARBS, deſcending from the beſt Engliſh mares, covered by *barb* ſtallions, are, by experience, conſtantly found both better ſhaped and fitter for the ſaddle, and ſtronger for ſervice than their ſires. Phil. Tranſ. N° 105. p. 53.

BARB is alſo uſed for the *Barbary pigeon*, called alſo by Moore the *columba Numidica*.

This is but a ſmall pigeon, and has a very ſhort beak like a bullfinch, with a ſmall water, and a naked circle of tuberoſe red fleſh round the eyes; the iris of the eye is of a pearl colour, and the broader and reder this circle round them is, the more the pigeon is valued; but this is always narrow while they are young, and does not arrive at its full breadth till they are four years old. Some of this ſpecies have a tuft of feathers behind their head, and others not. The red circle round their eyes grows pale and whitiſh, if they become ſick; but always recovers its redneſs as they grow well: their proper colour is black, or dun. There are likewiſe pyed ones; but they are of a mixed breed, and not ſo valuable. *Moore*'s Columbar. p. 50.

BARBA *Aron*, in botany, a name given by ſome authors to the common great houſeleek. *Ger.* Emac. Ind. 2.

BARBA *Capræ*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form; the cup is made only of one leaf, and from it ariſes a piſtil, which finally becomes a fruit, compoſed of ſeveral ſmall capſules, collected into a ſort of head; each capſule containing only one ſeed, and that uſually of an oblong figure.

Of this genus Mr. Tournefort allows only one ſpecies, the common *barba capræ*, or, as it is called by ſome, *drymopogon*. *Tourn.* Inſt. p. 265.

BARBA *Jovis*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the papilionaceous kind, and its piſtil, which ariſes from the cup, finally becomes a ſhort, and uſually an oval pod, containing a roundiſh ſhaped ſeed.

The ſpecies of *Barba Jovis*, enumerated by Mr. Tournefort, are theſe: 1. The beautiful ſhining *Barba Jovis*. 2. The dwarf hairy *Barba Jovis*, with globular purple flowers. 3. The ſhrubby, haresfoot-like, Cretic *Barba Jovis*, with hoary leaves, and large purple flowers, in ſpikes. 4. The yellow flowered, hoary ſpiked *Barba Jovis*. 5. The Eaſt Indian *Barba Jovis*, with conjugated leaves, hoary underneath. 6. The ſmall Portugal *Barba Jovis*, with little variegated flowers. *Tourn.* Inſt. p. 651.

BARBARICARII, in antiquity, a kind of artiſts, who, with threads of divers colours, expreſſed the figures of men, animals, and other things [a]; or, as others deſcribe them, thoſe whoſe buſineſs was to gild, and to decorate ſhields and helmets with gold and ſilver [b].—[[a] *Donat.* ad 11 Æn. v. 777. [b] *Du Cange*, Gloſſ. Lat. T. 1. p. 474.]

The *Barbaricarii* were ſo called, becauſe they learned this kind of painting from the Phrygians [c], who were particularly denominated *Barbarians*, in regard of their oppoſition to the Greeks [d]; though the name is ſometimes alſo written *Branbaricarii*.—[[c] *Briſſ.* de Verb. Signif. p. 77. *Pitiſc.* Lex. Ant. T. 1. p. 261. b. [d] *Fabr.* Theſ. p. 337. See alſo *Voſſ.* Etym. p. 63. b.]

BARBARICARII ſeem alſo to have been uſed for ſoldiers or officers, who wore masks and vizzards, thus adorned with gold and ſilver. Trev. Dict. Univ. T. 1. p. 860.

BARBARICUM, in antient writers, is uſed for a military ſhout, raiſed by the ſoldiers on point of engagement. *Feſt.*

This is called *barbaricum* from the barbarians, in whoſe armies this method of ſhouting much obtained.

The ſame appellation was given to a war, or expedition, undertaken againſt the barbarians.—*Quouſque ad ipſum tempus quo barbaricum exortum eſt inter nos & vos.* *Aquin.* Lex. Milit. T. 1. p. 114. *Du Cange*, loc. cit.

BARBARICUM was alſo uſed for an armoury, or magazine, wherein the Greek emperors kept the ſpoils, and donaries, taken from the barbarians in time of war or peace.

BARBARICUM is alſo an appellation given by the modern Greeks to rhubarb.

It is thus called from the *Sinus Barbaricus*, by the way of which this root was firſt brought to them. *Friend*, Hiſt. of Phyſ. P. 1. p. 115.

BARBARISM (*Cycl.*)—Authors differ in aſſigning the particular racters and limits of a *barbariſm*. Cicero, or whoever is author of the books to Herennius [a], defines it, a vicious pronunciation of a word. Suidas [b], and others, a word uſed contrary to the cuſtom of approved writers. Others, more generally, a word either written or pronounced, contrary to the genius or laws of the language.—[[a] Rhetor. ad Heren. l. 4. c. 12. [b] *Suid.* Lex. T. 1. p. 415.]

In this laſt ſenſe, it is diſtinguiſhed by ſome from ſoleciſm, as the latter conſiſts in a phraſe or compoſition of ſeveral words, the former in a ſingle word. But Vaugelas, and other modern writers, ſet aſide this diſtinction, and extend *barbariſms* to phraſes, as well as words.

Others make *barbariſm* to be properly an offence againſt ſyntax, and only to differ from ſoleciſm in degree; when the offence is grievous, it is denominated a *ſoleciſm*, when ſlighter, a *barbariſm*. *Buffier*, Gram. Franc. §. 174.

In general, under *barbariſms* are comprehended things written, ſpoken, declined, or conjugated wrong; or uſed in a wrong quantity, or in an unuſual ſenſe; as when a word is uſed which is foreign to the language, and not received by the better and purer ſort of writers therein. Such are *liper* for *liber*, *ſyllāba* for *ſyllăba*, *patri* for *patris*, *lexi* for *legi*, *bannus* for *proſcriptio*, &c. *Hederic.* Schul. Lex. p. 517. *Quinct.* Inſt. Orat. l. 1. c. 5.

Barbariſm is often charged, with great juſtice, on modern writers in the learned languages. The Latin books of late ages are full of Angliciſms, Galliciſms, Germaniciſms, &c. according to the country of the author. But what ſhall we ſay to Caſp. Scioppius, who accuſes Cicero himſelf of *barbariſm* in his own language? *Paſch.* Invent. Nov. Ant. c. 2. §. 20. p. 70.

There are great diſputes among critics concerning *barbariſms* in the New Teſtament. Arnobius, St. Auguſtin, Gataker, Vitringa, and others, pretend to find *Hebraiſms*, *Ciliciſms*, *Latiniſms*, and even *Arabiſms* therein [c]. H. Stephens, Schmidius, Blackwel, and others, have defended the ſacred writers from the imputation of *barbariſms*. Van den Honert allows of *Hebraiſms*, but denies any *barbariſms*, in the New Teſtament [d]; which ſeems to imply a contradiction.—[c Philoſ. Script. Interp. c. 3. p. 18, ſeq. d V. *Budd.* Iſag. ad Theol. l. 2. c. 8. p. 1498.]

Divers pious perſons are ſtartled at the apprehenſion of any thing like a *barbariſm* in the inſpired books, as ſuppoſing it an objection to the divinity thereof; yet this does not hinder but many of the Jews, after Abarbanel and others, ſtill maintain *barbariſms* in the Old Teſtament; in which they are ſeconded by M. Simon, Le Clerc, and others. Divers of the prophets are ſaid to have been unacquainted with the language they wrote in, particularly Jeremiah. V. *Rambach.* Inſt. Hermen. Sacr. l. 3. c. 1. § 8.

BARBARISM, *Barbaries*, is alſo uſed for that rudeneſs of mind, wherein the underſtanding is neither furniſhed with uſeful notices, nor the will with good morals. *Gentzken.* Syſt. Phil.

BARBARISM is alſo uſed for one of the grand ſects or hereſies in religion, from which all the reſt took their riſe.

Barbariſm is that ſtate of religion, which obtained among mankind before they were formed into ſociety, or compoſed a church. Thus it is, Damaſcenus ſays, *barbariſm* reigned from Adam to Noah. In which view, thoſe who acknowledged the true God, as well as thoſe engaged in idolatry, are equally included under *barbariſm*, it being properly the independency and entire liberty they were left under, that is intimated by the appellation *barbariſm*.

Others will have it, that *barbariſm*, which they alſo call *ſcythiſm*, denotes *atheiſm*, or the errors of thoſe, who, according to the Pſalmiſt, ſay in their heart, there is no God: ſome ancients, according to St. Epiphanius, held that *barbariſm* reigned till the deluge, and ſcythiſm from the deluge to Sarug, when heatheniſm commenced; but that diviſion ſeems without foundation. V. Dict. de Trev. T. 1. p. 862.

BARBAROUS, in a general ſenſe, ſomething that partakes of the quality of barbariſm. See BARBARISM.

In this ſenſe we ſay a *barbarous* nation, age, writer, word, or the like.

BARBAROUS *Words* are thoſe uſed contrary to the cuſtom of the beſt ages of a language. *Thom. Erot.* Rhet. c. 20. § 2, ſeq.

Under *barbarous words* or terms are included obſolete and antiquated, as well as novel and foreign, or unadopted words.

Words are either *barbarous* by foreign origin, or uſe: thoſe *barbarous* by uſe are various, as the *barbariſm* is either a Hebraiſm, Greciſm, or Latiniſm, &c.

There are alſo *barbarous* phraſes, where all the words they conſiſt of are pure, but the compoſition or application unuſual or foreign.

Barbarous Latin words are innumerable; the ſchoolmen are full of them: the chemiſts, phyſicians, lawyers, can ſcarce write intelligibly without them [e]. Du Cange has given two large volumes in folio of *barbarous* Latin words, and as many of *barbarous* Greek words [f].—[e V. *Tribbech.* de Doct. Scholaſt. f *Walch.* Hiſt. Crit. Ling. Lat. c. 2. §. 13.]

The modern or vulgar Greek is ſometimes called *barbarous* Greek, *barbaro-greca*, or *Greco-barbara lingua*. Langius has publiſhed *Philologia barbaro-greca*, *Gramatica barbaro-greca*, or *Gloſſarium barbaro-grecum*. V. *Budd.* Iſag. ad Theol. l. 2. c. 11. §. 5.

BARBARY-*Cow*, in zoology. See VACCA *Barbarica*.

BARBATUS *Piſcis*, in ichthyology, a name given by Salvian, and ſome others, to the *ſilurus*, called in Engliſh, the *ſheat-fiſh*; the *glanus* of Pliny and the ancients. This is characterized by Artedi by the name of the *ſilurus* with four *cirri*, or beards, at the mouth. By this it is diſtinguiſhed from the fiſh called the *lake*, or *alkuſſa*, which, tho' a genuine ſpecies of *ſilurus*, has only one beard.

BARBED, in heraldry, is underſtood of a cock, when his comb and wattles are of a different colour from the reſt of the body. In which caſe, he is ſaid to be *barbed and creſted*. *Coats*, Her. Dict. p. 26.

A Croſs BARBED, *Croix barbee*, is that whoſe extremities are faſhioned like the barb of iron ſpears or inſtruments uſed for ſtriking fiſh, &c. *Coats*, Ibid.

BARBEL, in ichthyology. See BARBUS.

BARBELICOTÆ, an ancient ſect of gnoſtics, ſpoke of by Theodoret. The doctrine of the *Barbelicotæ* was, that one of the Æons, poſſeſſed of immortality, had commerce with a virgin ſpirit named *Barbeloth*, who demanded of him, firſt preſcience, then incorruptibility, and laſtly eternal life; all which were granted to her: that being one day in a gayer humour than ordinary, ſhe conceived, and afterwards brought forth, light, which being perfected by the unction of the ſpirit, was called *Chriſt*: the child Chriſt deſired to have underſtanding, νου, and obtained it: after which, underſtanding, reaſon, incorruptibility, and Chriſt, united together; and from their union aroſe Autogenes, Αυτογενης. To theſe fables they add divers others. Their ceremonies were ſo full of abominations, that they became alſo denominated *Barboriani*. Vid. Dict. de Trev. T. 1. p. 867.

BARBERRY-TREE, *Berberis*, is very eaſily and plentifully propagated from the ſuckers taken from the roots of the old plants, which may be planted either in October or February, and ſucceed beſt in a ſtrong loamy ſoil. They may be either produced from ſeeds, or by laying down the branches; but the ſuckers are commonly ſo plentiful, as to make it unneceſſary. *Miller's* Gard. Dict.

This medicinal ſhrub is uſed both in the berry and bark, tho' with oppoſite intentions.

The berry is of an agreeable, cooling, aſtringent taſte, uſed chiefly in conſerve to quench thirſt, and ſtrengthen the ſtomach: yet the bark is, by experience, found an aperient and detergent. That which grows neareſt the tree is moſt eſteemed. It is rarely found in diſpenſatory compoſitions, but much in extemporaneous preſcription, againſt the jaundice, and other diſorders from foulneſs and obſtructions of the viſcera. *Quinc.* Diſpenſ.

BARBET, in natural hiſtory, a name given by M. Reaumur, and other of the French writers, to a peculiar ſpecies of the worms which feed on the pucerons.

This worm is more particularly called *barbet blanc*, as alſo *heriſſon blanc*, or white hedgehog, from its being covered with oblong white tufts of filaments, which ſtand in the manner of the quills of a hedgehog or porcupine. M. Reaumur calls theſe tufts of filaments, ſpines, not to ſignify that they are capable of pricking, for they have no ſuch power; but to expreſs their manner of arrangement on the body of the animal. There is, indeed, no proper name to call them by among all thoſe uſed for the parts of other animals, ſince there is nothing in the animal world at all like this ſubſtance, except the down on ſome of the pucerons.

This creature is of the ſize of a ſmall fly without its wings; but this tufted covering ſo much encreaſes the bigneſs, that it appears of the ſize of a fly of the largeſt kind.

The ſpines of this animal have neither the hardneſs of ſpines, nor the conſiſtence of hairs; their ſurface is rough, not poliſhed and gloſſy, like that of hairs; but they reſemble, in their ſpungy texture, a filament of cotton. All theſe ſpines or tufts of cotton are arranged in ſix lines, as evenly parallel to one another, as the ſhape of the animal's body will permit. Each of theſe lines reaches over the whole upper part of the body, following the courſe of one of the rings. The ſeveral ſpines, which compoſe each line, almoſt touch one another at their baſes; but as they all ſtand perpendicular, and are placed on a convex ſurface, they are conſiderably diſtant from one another at the points. In ſome places, they are nearly of the ſame diameter all the way up; and in others, they gradually taper from a broad baſe to a roundiſh blunt point, reſembling a cane in ſhape. The tufts on different inſects of this ſpecies are of different lengths. In the common kinds, they are ſhort, and ſtand perfectly erect; but in ſome they are ſo long, as not to be able to ſupport their own weight, but bend into hooks. The points of theſe have very different directions; thoſe of each ſide bending upwards; thoſe near the tail towards the tail; and thoſe near the head towards the head. In ſome other ſpecies they have directions very different even from theſe; and in all the ſpecies, every ſingle tuft has its irregularities, and is ſeen to be compoſed of ſeveral cottony filaments of unequal lengths, which are knotty and rough in ſeveral places; and when touched, they feel ſoft like cotton. It is alſo very remarkable, that on being touched, they always adhere to the fingers, and are ſo looſly connected with the body of the animal, that on rubbing the finger over it ever ſo lightly, they all come off, and leave it naked. The creature then appears green, and of a very different figure from what it had before; and the tufts loſe their figure, and appear only a congeries of round grains of a cottony matter. The ſudden change in ſize and appearance in the creature, makes it look as if it had undergone a transformation.

It is evident from obſervation, that the matter of which the tufts, which cover the body of this animal, are made, is of a very

very different nature and formation from the ſilky filaments which caterpillars, and other inſects, ſpin out of their entrails. They have all peculiar organs for the ſpinning it, and all draw it out to any length they pleaſe; but this matter, on the contrary, has a determinate length, which it cannot exceed, and is only formed of the matter perſpired through certain parts of the body of the creature, which hardens as it remains in the air.

As it is ſo eaſy to diveſt theſe creatures of their downy covering, it is eaſy to conceive, that nature muſt have made its reparation to the animal very eaſy; and this is indeed the caſe: for if the animal be wholly made naked, by drawing the finger three or four times over it, it loſes its fine green colour in half an hour afterwards, appearing as if duſted over with flour; and, in fine, within the ſpace of twelve hours, is furniſhed with tufts as long, and every way as large, as thoſe it loſt. Theſe tufts, as they grow upon the animal, appear much more even and regular in ſhape than they are afterwards: they have baſes, each compoſed of four arches, ſuited to the convex figure of the body; and their whole figure reſembles a quadrilateral pyramid inverted. In this ſtate they do not touch at their baſes; but have a green ſpot, that is a part of the naked ſurface of the body of the animal between. As they grow to their full ſize, they loſe the regularity of their figure, and meet at their baſes. The probable cauſe of their loſing their angular figure is, that they rub againſt one another, or againſt other ſubſtances, and their angles being the parts moſt likely to touch, are eaſily broke off: and as to thoſe which are crooked, it ſeems to be wholly owing to their being of ſo great a length in proportion to their thickneſs, that they are not able to ſuſtain their weight erect.

When the tufts have been rubbed off from one of theſe animals, and its body is left naked, if it be then examined by a microſcope, there will be found a number of ſmall hollows or depreſſions in the ſkin, exactly anſwering in place and number to the cottony tufts that are to ſucceed the loſt ones. It is to be conceived, that, within each of theſe hollows, there are a great number of fine apertures, through which the matter is to paſs, which is to form the new tufts; but theſe are not diſtinguiſhable by the moſt powerful glaſſes: if the tufts, however, be examined while forming, they will be found to conſiſt of a vaſt number of regular filaments, placed cloſe by one another, and each running diſtinctly the whole length of the tuft: this appearance is, however, wholly loſt afterwards, the fine threads ſticking to, and intermingling with, one another, and many of them breaking in ſeveral places; ſo that the whole tuft reſembles a coarſe and ſingle filament.

Theſe *barbets* are found in great plenty on the leaves of the plum-tree in the months of June and July. The puceron of this tree ſeems more to their taſte than any other kind; and they are often found in numbers on every leaf of the tree where theſe little animals are.

The matter of their tufts ſeems anologous to the downy covering of ſome of the pucerons, and to no other ſubſtance in the animal world. The puceron of the beech-tree has this downy matter running into much longer filaments even than this animal; and, in the ſeveral other ſpecies, it is found growing to the different lengths from this to a mere downy powder.

The *barbet* lives about a fortnight in that form, and then becomes a chryſalis; from which, after a month, there comes out a ſmall beettle, of the ſize of our cowlady, but of a flatter figure, and, in general, of a duſky brown colour. *Reaumur*, Hiſt. Inſect. Vol. 6. p. 157, ſeq.

BARBICANAGE, *Barticanagium*, in our old writers, money given for the maintenance of a *barbican*, or watch-tower; or a tribute towards repairing or building a bulwark. *Blount.*

BARBILLONS, in the natural hiſtory of inſects, are certain bodies, uſually two in number, placed under the creature's head, and moveable at pleaſure, ſomewhat reſembling hands or fingers placed on a ſhort or broken arm.

The word is a diminutive of the French *barbe*, beard.

Theſe are always covered with hairs: the creature is able to throw them out, and take them in, at pleaſure, and when they are out, can move them backward and forward with an incredible ſwiftneſs; by which means, a current of water is made about its head, and in that probably great numbers of ſmall animals are brought, which ſerve for food to the creature; and this is probably the way nature has taken to provide for many both of the larger and ſmaller of the inſect claſs. *Reaumur*, Hiſt. Inſ. Vol. 4. p. 312.

BARBITOS, or BARBITON, an ancient inſtrument of muſic, mounted with three, others ſay, ſeven ſtrings, much uſed by Sappho and Alcæus; whence it is alſo denominated *Leſboum*.

The *barbitos* is ſaid to have differed from the lyre and cithara; but wherein the preciſe difference lay, does not appear. Strabo makes it the ſame with the *ſambuca*. It is repreſented as yielding a grave, deep ſound, and, on that account, peculiarly fitted for Doric compoſitions. Anacreon is ſaid to be the inventor of the *barbiton*. V. *Suid.* Lex. T. 1. p. 416. *Scal.* Poet. l. 1. c. 48. *Athen.* l. 4. *Rhodig.* Lect. Ant. l. 5. c. 23.

BARBLE, or BARBEL, in ichthyology, the Engliſh name for the fiſh called by the generality of authors *barbus*, and *barbulus*; by ſome, *muſtus fluviatilis*. It is, according to the new ſyſtem of Artedi, a Species of *cyprinus*. See BARBUS.

BARBLES, in the manege, knots of ſuperfluous fleſh growing in the channels of a horſe's mouth; that is, in the intervals, which ſeparate the bars, and obſtruct his eating. *Guill.* Gent. Dict. P. 1. in voc.

Theſe are alſo called *barbes*; and obtain in black cattle as well as horſes.

For the cure, they caſt the beaſt, take out his tongue, and clip off the *barbes* with a pair of ſciſſars, or cut them with a ſharp knife; others chuſe to burn them off with a hot iron. Dict. Ruſt. in voc.

BARBONI, in zoology, a name given by many to the *mullus barbatus*, a fiſh greatly eſteemed at table, and caught in the Mediterranean, and ſome other ſeas. *Willughby*, Hiſt. Piſc. p. 285. See the article MULLUS *Barbatus*.

BARBUS, in zoology, the fiſh called in Engliſh the *barbel*, and by ſome writers in natural hiſtory, *muſtus fluviatilis*. It grows to a foot, or ſomewhat more, in length: its back is of a duſky, browniſh, olive colour; but with a paleneſs not common in other fiſh: its belly is of a ſilvery white: its back and ſides are ſpotted with black ſpots: the figure of its body is long and rounded; and its back riſes into a prominent and ſharp ridge: its ſcales are of a moderate ſize; and its ſide lines dotted: its mouth is large, but toothleſs; and its upper jaw hangs out a great way beyond the lower: it has four beards, two at the angles of the mouth, and two near the edge of the jaws; and in the middle of theſe there runs a ſlender red vein: it has only one fin on the back; and its tail is forked. Its fleſh is lax and ſoft; and there is an opinion that its ſpawn is poiſonous. It is caught in many of our rivers, and in thoſe of other parts of the world. *Ray*'s Ichthyog. p. 259. *Geſner*, de Piſc. p. 123.

The *barbel* is a fiſh commonly known, and ſo called, on account of the barb or beard under its noſe, or chaps. It is of the leather-mouthed kind.

This is but a moderately well-taſted fiſh. The male is eſteemed better than the female; but neither of them is very much valued. The worſt ſeaſon for them is April. They uſually ſwim together in great ſhoals, and love to be among weeds, where there is a hard, gravelly bottom. In ſummer they frequent the ſtrongeſt and ſwifteſt currents of the water; as deep bridges, weirs, and the like places, and are apt to get in among the piles, weeds, and other ſhelter; but in winter, they retire into the deepeſt and ſtilleſt waters.

The time for taking this fiſh is very early in the morning, or late in the evening: the place ſhould be baited with chopped worms ſome time before; and no bait is ſo good for the hook as the ſpawn of the ſalmon, or ſome other fiſh: in defect of theſe, lob-worms will do; but they muſt be very clean and nice, and the hook carefully covered, otherwiſe he will not touch them. Old cheeſe ſteeped in honey is alſo a very fine bait.

The rod and line for fiſhing for this fiſh ought to be very ſtrong: the line ſhould have a running plummet, that is, a bullet with a hole through it; and a piece of lead muſt be placed a foot or more above the hook, to keep the plummet from falling upon it: the worm, or other bait, will, by this means, always be at the bottom; and the plummet will lie, and not choak the fiſh: the bending of the rod will ſhew when he bites; and indeed it will be felt in the hand by the twitch he gives; but, if not carefully managed, he will often break the tackle, for he is a very ſtrong fiſh. The beſt ſeaſon for fiſhing for this fiſh is from May to Auguſt. Sportſm. Dict. in voc.

BARBYLA, in botany, a name by which Theocritus, and other of the early writers, have called the common damask prune. *Jonſ.* Dend. p. 77.

BARCALON, an appellation given the chief miniſter of the emperor of Siam, to whom belongs the care of trade both within the kingdom and out of it, the ſuperintendency of the royal magazines, the receipt of the revenues, and the management of foreign affairs. Dict. de Trev. T. 1. p. 870.

BARCES, or BERCHES, were formerly a kind of ſhip guns, not unlike ſakers, only ſhorter, thicker in metal, and wider bored. *Fæſch.* Ing. Lex. p. 67. b.

BARCONE, a ſhort broad veſſel, of a middle ſize, uſed in the Mediterranean ſea for the carriage of corn, wood, ſalt, and other proviſions, from one place to another. *Fæſch.* p. 68. a.

BARD, *Barda*, in middle age writers, is uſed for the armour and accoutrements of a war horſe, or ſtate horſe. *Caſeneuv.* Orig. p. 20. b.

Hence alſo the barbarous Latin *bardatus*, a horſe thus accoutred.

Menage derives the word from *cooperta*; whence, by corruption, *cooparta*, *parta*, and *barda*. *Menag.* Orig. Franc. p. 78. b.

BARD is alſo uſed, in the culinary art, for a broad ſlice of bacon uſed to cover fowls before they are roaſted, baked, or otherwiſe dreſſed. Dict. Ruſt. T. 1. in voc.

BARDARIOTÆ, in antiquity, was a kind of antient guard attending the Greek emperors, armed with rods, wherewith they kept off the people from crouding too near the prince, when on horſeback. *Aquin.* Lex. Milit. T. 1. p. 115. a. *Du Cange*, Gloſſ. Gr. T. 1. p. 176.

Their captain or commander was denominated *primivergius*.

The word was probably formed from the *bardæ* or houſings on their horſes. See BARD.

BARDANA,

BARDANA, *Burdock*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the floſculous kind, being compoſed of ſeveral floſcules, jagged at the ends, placed upon the embryo ſeeds, and contained in one general cup, which is of a ſquammoſe ſtructure; each of the hooks of the whole being ſo bent back, as to lay hold of any thing which touches it. The embryos finally ripen into ſeeds, winged with a ſhort down.

The ſpecies of *bardana* enumerated by Mr. Tournefort, are theſe: 1. The common *burdock*. 2. The great *burdock*, with white flowers. 4. The great woolly headed mountain *burdock*. 4. The great mountain *burdock*, with ſmall, roundiſh, and more woolly heads. 5. The great American *burdock*, with prickly heads. *Tourn.* Inſt. p. 450.

The root of the common *burdock* is a very powerful diuretic and diaphoretic. It is given with great ſucceſs, in decoction, in obſtructions of the ſpleen, and in dropſies. It is alſo recommended by ſome in all diſeaſes of the breaſt and lungs, in aſthmas, in the ſtone, and in the ſciatica. The ſeed of it is eſteemed by many to be one of the greateſt lithontriptics known; and, by the inſtances that have been produced of its doing ſervice in nephritic complaints, it ſeems to merit a fair trial. The freſh leaves are by ſome recommended as a dreſſing for old ulcers, and for burns and luxations. They are alſo applied by the good women to the ſoles of the feet, as a remedy in hyſteric complaints.

The ſection of a *burdock* root, viewed with a microſcope, has the appearance repreſented in Tab. of Microſcopical objects, Claſs 3.

BARDED, in heraldry, is uſed in ſpeaking of a horſe that is capariſoned. *Corn.* Dict. des Arts. T. 1. p. 96. a. See BARD. He bears ſable, a cavalier d'or, the horſe *barded*, argent.

BARDELLE, in the manege, denotes a ſaddle made in form of a great ſaddle, but only of cloth ſtuffed with ſtraw, and tied tight down with packthread, without either leather, wood, or iron.

BARDELLES are not uſed in France; but in Italy they trot their colts with ſuch ſaddles; and thoſe who ride them are called *cavalcadours*, or *ſcozone*. *Guill.* P. 1. in voc.

BARDS (*Cycl.*) — Cambden makes this word of Britiſh etymon. Rowland admits it; but gives a different explication, deducing the word *bard* from the Welſh *beirrd* of *paradd*, to divide or diſtinguiſh; an extraction ſuitable enough to theſe people, as they were a peculiar claſs or order of druids, diſtinguiſhed from the reſt by their extraordinary talent of memory, which fitted them for recording, and reciting on occaſions, the various poſitions and explications of the whole druid ſyſtem of philoſophy. *Rowl.* Mona. Antiq. P. 1. §. 8. p. 61. See alſo *Skinn.* Etym. in voc. *Voſſ.* Etym. p. 64. a.

The abbreviator of Feſtus was miſtaken, when he ſaid, *Bardus a gente Bardorum, de quibus Lucanus*; ſince Lucan ſpoke of the *bards* as poets, and not as a nation. Meurſius, with all his learning, fell not into a leſs miſtake, Βαρδος, *via*, i. e. a road, ſays he; whence *bardocucullus*, a kind of cloak worn by travellers on the road. He cites Heſychius for his warrant, Βαρδοι οι οδοι παρα Γαλαταις, a paſſage corrupted, where, inſtead of οδοι, roads, it ought to be read ωδοι, ſingers. *Aubert.*. ap. *Richel.* Dict. T. 1. p. 178. c.

Valeſius takes the antient *bards* to have been much the ſame with the minſtrels, mimi, buffoons, morrice-dancers, &c. of later ages. *Valeſ.* ad Ammian. Marcel. l. 15. *Aquin.* Lex. Milit. T. 1. p. 1156.

Others rather compare them to the rhapſodiſts among the Greeks. (See RHAPSODI, *Cycl.*) But they differed much from them all, at leaſt in their regular diſcipline and manner of life. The *bards* made a particular order in the druidical hierarchy, and lived in a kind of community, having their conventual ſeat. Rowland obſerves, there is a townſhip in the iſland of Angleſey, ſtill denominated from them *Tre'r Beirrd*, q. d. *Habitaculum Bardorum*, the ſeat and habitation of the *bards*. *Rowl.* Mon. Antiq. P. 2. p. 245, ſeq.

If this be not concluſive, it is certain, at leaſt, the antient Scots and Iriſh had their *bards*. Dr. Nicholſon [a] aſſures us, there are *bards* ſtill in being in the Highlands. Rowland alſo ſpeaks of a later order of *beirdd* or *prydyddion* in Angleſey, diſtinguiſhed into certain claſſes and orders, as *priv veirdd*, *poſt-veirdd*, *arwydd-veirdd*, &c. ſhaddowing ſomething of the antient inſtitution, and having their reſpective diſciplines, directed by the *talaith*, or province they belong to; but they never lived in ſociety, but diſperſedly here and there [b]. — [[a] Scot. Hiſt. Libr. c. 2. p. 61. *Rowl.* Mon. Antiq. P. 2. p. 250.]

Among the Iriſh they are called *filadha*, which are deſcribed as the ſame with the *ſcalds* or *ſcaldi* of Iceland, and the *bards* of Gaul and Britain.

The genealogical ſonnets of the Iriſh *bards* are ſtill the chief foundations of the antient hiſtory of Ireland. Mr. Flaherty had three of theſe; one written by G. Caeman, whoſe canto begins at the firſt peopling the iſland; the ſecond and third by G. Modude and Conan o Mulconar, who continue Caeman's piece, the one from 428 to 1022, the other to 1014. Vid. *Nicholſon*, Iriſh Hiſt. Libr. Pref. p. 17 & 23.

The *bards* were not only the poets, but the genealogiſts, biographers, and hiſtorians, of thoſe countries and ages. Hence the remains of their ſongs are ſtill to be conſulted by antiquaries and hiſtorians. In theſe, according to a learned biographer, we have exact genealogies of all the Britiſh kings and princes up to Brute, and from thence to Adam. Almoſt all hiſtory, Celtic and Chaldæan, as well as Greek and Roman, had its foundation in poetry. Whether we ſhall find the rules of their proſody to agree with thoſe laid down by captain Middleton in his *bardometh*, or art of Welch poetry, we know not: but how methodically they ordered their *tybwyths* or tribes, Sylas, Taylor, and Rowland have at large informed us. Nor were they content to preſerve the pedigree of their own princes and great men, but were alſo ſo good-natured as to do the like ſervices for the Saxons. Thus we are told, that S. Penlanius, who is ſometimes quoted by the name of Samuel Britannus, and lived about the year 600, was a curious inquirer into the genealogies of many Engliſh families; ſome whereof he carried as high as the flood.

It was cuſtomary to ſing theſe compoſitions in the preſence of their nobles, and at their chief feſtivals and ſolemnities. *Nicholſ.* Engl. Hiſt. Libr. P. 1. c. 3. p. 31.

Among the antient Britiſh *bards*, the moſt celebrated is the great Merlyn, whoſe true name, according to Lhuyd, is *Merdhyn*. He was ſo mighty a man in his time, that our writers have thought it convenient to ſplit him into three: the firſt of theſe they call *Merlinus Ambroſius*, or *Merdhyn Emrys*, who lived about the year 480, and wrote ſeveral prophetical odes, turned into Latin proſe by *Geoffry of Monmouth*: the next is *Merlinus Caledonius*, who lived A. D. 570, wrote upon the ſame ſubject with the former, and had the ſame tranſlator: the third is ſurnamed *Avalonius*, who lived under king Malgocunus. But all this is ſtuff, and he is manifeſtly the ſame man, or nothing.

BARE, (*Cycl.*) in a general ſenſe, ſignifies not covered. Hence we ſay bareheaded, barefooted, &c.

The Roman women, in times of public diſtreſs and mourning, went *bareheaded*, with their hair looſe. *Struv.* Synt. Antiq. Rom. c. 2. p. 200 & 203.

Among both Greeks, Romans, and Barbarians, we find a feaſt called *nudipedalia*, at which perſons were to attend barefooted. *Pitiſc.* L. Ant. T. 2. p. 282. a. in voc. *Nudipedalia*.

The Abyſſinians never enter their churches but *bare-footed*; not on account of Moſes, who was commanded to put off his ſhoes on mount Sinai, but in reverence of the place; as is alſo done by them in entering the palaces of kings and great men. *Fabric.* Lux. Evang. c. 45. p. 731.

Sagittarius has a diſſertation expreſs on thoſe who went barefooted among the antients, *de nudepedalibus veterum*; wherein he treats of ſuch as went barefooted in journies or otherwiſe, either out of choice, or neceſſity: alſo of barefooted religious, of mourners and penitents, who went barefooted; and laſt of the leviri. Vid. *Fabric.* Bibl. Antiq. c. 18. §. 10. p. 559.

BARE, in reſpect of manufacture. A cloth is ſaid to be *bare* or naked, when the nap is too ſhort, as having been ſhorn too near, or not being ſufficiently covered with wool by the teazel. *Savar.* Dict. Com. p. 1683.

BARE is alſo uſed for a ſort of bowling ground, not covered with green ſwarth.

BARE-*foot Carmelites*, and *Auguſtines*, are religious of the order of St. Carmel and St. Auſtin, who live under a ſtrict obſervance, and go without ſhoes, like the capuchins.

There are alſo *barefoot* fathers of mercy. Formerly there were *barefoot* dominicans, and even *barefoot* nuns of the order of St. Auguſtin. Dict. de Trev. T. 2. p. 685.

BARGAIN, a contract either for the ſale, purchaſe, or exchange of a thing. See CONTRACT.

The word is formed from the French *barguigner*, to barter, or haggle. *Caſeneuv.* Orig. p. 20. in voc. *barguigner*. *Du Cange*, Gloſſ. Lat. T. 1. p. 479. *Skin.* Etym. in voc.

He that ſells is the *bargainor*, and he that buys the *bargainee*.

BARGAIN *and Sale*, in law, is properly a contract made of manors, lands, and other things, transferring the property thereof from the bargainor to the bargainee, for a conſideration in money.

It is a good contract for land, and the fee paſſes, tho' it be not ſaid in the deed, to have and to hold to him and his heirs, and tho' there be no livery and ſeiſin given by the vendor, ſo it be by deed indented, ſealed, and inrolled, either in the county where the land lies, or in one of the king's courts of record at Weſtminſter, within ſix months after the date of the deed. *Blount.*

This manner of conveying lands was created and eſtabliſhed by the 27 Hen. VIII. cap. 10. which executes all uſes raiſed; and as this introduced a more ſecret way of conveying than was known to the policy of the common law, therefore the inrolment of the deed of *bargain* and ſale was made neceſſary by the 16th chapter of that ſtatute. See the New Abridgment of the Law, Tit. *Bargain and Sale*.

BARGAINS, *in Commerce*, are of divers kinds: — *verbal*, thoſe made only by word of mouth, and giving earneſt; — *written*, thoſe where the terms are entered in form on paper, &c.

At Amſterdam they diſtinguiſh three kinds of *bargains*.

Conditional BARGAINS, for goods which the ſeller has not yet in his poſſeſſion; but which he knows have been bought for him by his correſpondents abroad, and which he obliges himſelf to deliver to the buyer, on their arrival, at the price and the conditions agreed on.

Firm BARGAIN, that wherein the ſeller obliges himſelf to deliver the buyer a certain quantity of goods, at the price and in the time agreed on.

BARGAINS *at Option*, thoſe wherein a dealer obliges himſelf, in conſideration of a premium received in hand, either to deliver or take a certain quantity of goods at a fixed price, and within a time limited; but with a liberty, nevertheleſs, of not delivering, or not receiving them, if they think proper, upon forfeiture of their premium. *Ricard*, Traité du Negoce, p. 54. *Savar.* Dict. Com. T. 2. p 660, ſeq. in voc. *Marché.*

Forehand BARGAINS, are thoſe wherein goods are bought or ſold, in order to be delivered at a certain time afterwards, ſome part of the price being advanced. *Malc.* Treat. of Book-keep. p. 47.

BARGE (*Cycl.*)—A *barge* differs from a bark, as being ſmaller, and only uſed on rivers; whereas the latter goes out to ſea.

There are alſo *barges* belonging to men of war, ſerving to carry generals, admirals, and chief commanders.

Theſe are generally finely built, and decorated with various ornaments, having bales and tilts, and ſeats furniſhed with cuſhions, and carpets, *&c.* and banks for many oars.

The name *barge* is alſo given to great flat-bottomed veſſels, employed in navigable rivers in carrying of goods. *Guill.* Gent. Dict P. 3. in voc.

BARGE-*Courſe* is uſed by workmen, to ſignify a part of the tiling, which projects over the principal rafters in all theſe buildings, where there is either a *gable*, or a *kirkenhead.* Dict. Ruſt.

BARGE, in zoology, a name uſed by ſome authors for the godwit, or, as it is called in ſome places, the ſtone-plover, the ægocephalus of authors. See ÆGOCEPHALUS.

BARGH, is uſed in ſome places of England for a ſteep horſe way up a hill. *Ray*'s Engl. Words, p. 5.

It ſeems to come from the German *bargh*, a hill.

BARGH-MASTER, BARMER, or BAR-MASTER, in the royal mines, the ſteward or judge of the barmote. *Pett.* Fodin. Regal. in fine. See BARGHMOTE.

The word is formed of the German *berg-meiſter*, q. d. maſter of the mines.

The *barmaſter* is to keep two great courts of barmote yearly, and every week a ſmall one, as occaſion requires. *Pett.* l. c. p. 98.

BARGHMOTE, or BARMOTE, a court which takes cognizance of cauſes and diſputes between miners. *Pett.* Fodin. Regal. in fine.

Some ſuppoſe it thus called from a *bar*, at which the ſuitors appear; others, with more probability, derive the word from the German *berg*, a mine. *Skinn.* Etym. in voc. *Forens.*

By the cuſtom of the mines, no perſon is to ſue any miner for ore-debt, or for ore, or for any ground in variance, but only in the court of *barmote*, on penalty of forfeiting the debt, and paying the charges at law. *Pett.* l. c. p. 97.

BARILLARIUS, an antient officer in monaſteries and great houſholds, who had the care of the casks and veſſels of wine, *&c.* in the cellars. *Du Cange*, Gloſſ. Lat. T. 1. p. 484.

BARILLIA, in the glaſs trade, a ſort of potaſhes imported from Spain, inferior in goodneſs to that of the Levant, called *polverine* when looſe, ſmall, and in powder, and *rochetta* when in hard, rocky lumps. *Neri*, Art of Glaſs, p. 27.

The fritt made of theſe makes fine and clear cryſtal glaſs, eſpecially that from the rochetta, or the polverine in lumps; but the *barillia* of Spain, tho' it be uſually fatter, yet makes not a glaſs ſo white, but uſually inclining a little to a bluiſh colour.

BARING *of Trees*, in agriculture, the taking away ſome of the earth over the roots, that the winter rain and ſnow-water may penetrate farther into the roots. Dict. Ruſt. in voc.

This amounts to the ſame with what among the antient writers on husbandry is denominated *ablaqueation.* See ABLAQUEATION, *Cycl.* and *Suppl.*

BARK (*Cycl.*)—The *bark* of plants is twofold, the outer, *liber*; and the inner, *alburnus.* The outer *bark* is dry, and in ſome trees rough. The inner is probably a ſuperadded new coat of that year's growth, between the woody and barky nature. *Tong.* in Philoſ. Tranſ. N° 43. p. 857.

The *bark* of the trunk conſiſts of a skin, a cortical body or parenchyma, and ſome fibres of the woody part intermixed. The skin is the production of the cuticle in the ſeed, and the cortical body, an augmentation of the parenchyma of the plume. *Grew*, Anat of Plants, B. 1. c. 3. §. 2, ſeq.

The skin is originally compoſed of ſmall veſicles or bladders cluſtered together, which, as the plant grows, dry up, and diſappear. The body of the *bark* conſiſts of parenchyma and veſſels; the former compoſed, like the skin, of cluſters of bladders: the veſſels are of divers kinds, roriferous, lymphæducts, and reſiniferous. *Grew*, lib. cit. B. 3. c. 2. §. 2.

The *bark* of roots is ſometimes yellow, as in dock; ſometimes red, as in biſtort; but oftenеſt white. It is derived from the ſeed itſelf, being only the extenſion of the parenchyma of the radicle. It is variouſly ſized, being ſometimes very thin, as in the Jeruſalem artichoke, and in moſt trees. Sometimes it is thicker, and makes the greater part of the ſubſtance of the root, as in aſparagus and dandelion. In beet-root, the *bark* ſcarce exceeds a good thick skin; whereas in a carrot, it is half the ſemidiameter of the root, being in ſome places above an inch over. This too is found common to the generality of roots, that their *barks* are proportionably thicker at bottom than at top. Vid. *Grew*, B. 1. c. 2. p. 11. Item, B. 2. c. 3. §. 1, ſeq.

The inner part of the *bark*, we have obſerved, annually lignifies, or turns to wood: the *bark* of a tree is found each year to divide and diſtribute itſelf two contrary ways: the outer part gives towards the skin, till it become skin itſelf, and at length falls off, like the ſcales or dandriff of our body, or the exuviæ of ſerpents; while the inmoſt portion is yearly diſtributed and added to the wood. *Grew*, lib. cit. B. 3. c. 3. §. 11.

The *bark* is found truly continuous to the body of a tree, as the skin of our body is to the fleſh; contrary to the common opinion, which imports, that the *bark* only ſurrounds the tree, as a ſcabbard does a ſword, or a glove the hand; which ſeems confirmed by the eaſy ſlipping of the *bark* of willow, and moſt other trees, when full of ſap, from the wood. Their continuity is effected by means of the parenchyma, which is one entire body, running from the *bark* into the wood, and thus uniting both together. The reaſon why the *bark* ſlips ſo eaſily from the wood, is, that moſt of the parenchymous parts are young veſſels, formed every year ſucceſſively between the wood and the *bark*, and are much in the condition of the tender veſſels or fibres of the embryos in a womb, or egg; a thouſand of which are broke with the ſmalleſt force. *Grew*, lib. cit. B. 3. c. 3. §. 1, ſeq.

That trees only live by the aſcent of the ſap in or between the *bark* and the wood, and that if a circle be drawn round any tree (except, perhaps, aſh) by inciſion to the timber, how thin ſoever the knife be, provided no part of the thickneſs of the *bark* remain uncut, the tree will die from that part upwards, has been the ſtanding doctrine of naturaliſts of all ages, and is delivered for fact by Pliny [a], and others [b]. Dr. Plott aſſerts this to be a popular error, from the inſtance of a large old elm in Magdalene College grove, quite diſbarked around, at moſt places two feet, at ſome four feet, from the ground, which yet grew and flouriſhed many years, as well as any tree in the grove. What is more, it was without all pith, being hollow within as a drum: and the ſame is confirmed from the hiſtory of the elm in the Thuilleries, related by M. Parent, which lived, and put out leaves, tho' entirely ſtripped of *bark* from top to bottom [c]. Add, that the plane and cork-trees diveſt themſelves yearly of all their old *bark*, and acquire a new one, as ſnakes do their skins: and in the change from one to the other, it is evidently not by the *bark* that they are nouriſhed. Some infer from hence, that the *bark* never feeds the wood. Dr. Plott is more reſerved in his concluſion, arguing only, that hence it ſeems to follow, that there muſt be other veſſels, beſides the ſap-veſſels of the *bark*, capable of the office of conveying ſap. It is probable, when the ordinary conveyance fails, ſome of the woody part, which had all once been ſap-veſſels, reſumes its antient office; or, as the author laſt-mentioned conjectures, they ſtill ſo far retain their office of conveying ſap, as to keep a tree alive, tho' not augment it; which may, perhaps, be one different uſe of thoſe ſap-veſſels in the wood from thoſe in the *bark*, the former being ſufficient for the continuation of a tree, and the latter ſerving only for its augmentation [d].—[[a] Hiſt. Nat. l. 17. c. 24. *Calv.* Lex. Jur. p. 182. a. [a] *Tong.* in Philoſ. Tranſ. N°. 43. p. 859. *Reneaume*, in Hiſt. Acad. Scienc. ann. 1707. p. 564. It. ann. 1711. p. 57, ſeq. [c] Vid. Hiſt. Acad Scienc. ann. 1709. p. 63. It. ann. 1711. p. 55, ſeq. [d] *Plott*, Nat. Hiſt. Oxford. c. 6. §. 65, ſeq.

Mr. Brotherton has given ſome new experiments, which ſeem to decide the controverſy, and ſhew, that the *bark* is not the vehicle of vegetation: he hacked a crab-tree round with a hatchet, ſo as, beſides cutting off the *bark*, to cut pretty deep into the wood, about four inches width; yet the ſame year it was obſerved to increaſe very conſiderably in thickneſs above the ſaid hacking, and to ſhoot in length of wood about one foot: the next year it alſo grew conſiderably, and ſhot in length five inches: the third year it died to the very root. The like was found in another tree, part of whoſe *bark* was eat off by the canker: the lower part ſtood without increaſe, and by degrees the wood rotted: the upper part increaſed to the third year, and then died alſo. Phil. Tranſ. N°. 187. p. 307.

The ſame author found, that, in the branches of Scotch fir, the joints above the rings *barked*, would grow much bigger in three years, than in five if the rings were not cut off. A ring of *bark* three inches broad being cut off a Scotch fir, near the bottom of the ſtem, below the uppermoſt knot or joint, was found to grow and ſhoot out at its top half a yard, and all the parts about the ring to increaſe in thickneſs the ſame year, much more than they would have done, had not the ſection been made; but all the part of the ſtem between the ring and the next knot below it, grew not at all: the part below the ring next under that, increaſed ſomewhat, tho' leſs than it would have done, if the *bark* had not been cut off. The ſecond year the increaſe was alſo conſiderable; but the third it died. Philoſ. Tranſ. ibid. p. 307, ſeq.

M. Magnol mentions an olive-tree, from which a circular ring of *bark* being cut away, the tree that year bore, above the place of inciſion, double the quantity of flowers and fruit which it uſed to bear. Mr. Reneaume relates a fact near akin

to

to this. In the country about Aix and Marſeilles, when an olive-tree grows old, and almoſt ready for felling, they have a method of making it firſt yield all the fruit which it is capable of producing, by cutting a circular ring of *bark*, an inch broad, from one of its young branches, and in its place putting an equal ring of *bark* taken from the branch of a young bearing olive-tree; the effect of this engraftment is, that the branches of the old tree bear plentifully the enſuing year, and thoſe of the young one die away. Hiſt. Acad. Scienc. ann. 1711. p. 60.

From the whole, Mr. Brotherton concludes, that the ſap, moſt of it, if not all, aſcends in the veſſels of the woody part, and not by the *bark*, nor between the *bark* and the wood. Philoſ. Tranſ. N°. 187. p. 312.

M. Leuwenhoek, on the other hand, has given ſeveral experiments and obſervations with the microſcope to ſhew, that the *bark* of trees is produced from the wood, not the wood from the *bark*. In reality, if the origin and nouriſhment of the *bark* came from the root, it would ſeem to follow, that the parts of the *bark* near the roots ſhould be found larger, and ramified into ſmaller and ſmaller, as they run higher, as the arteries and nerves are the farther they go from the heart and brain; whereas there is no difference between the *bark* of the root and trunk. Beſides, the veſſels of the *bark* of ſeveral trees, as the birch, cherry, peach, &c. run not upwards as they do in the aſh, oak, elm, nut, apple, pear, &c. but circularly round the ſuperficies of the tree; and all *bark*, whoſe veſſels run upwards, grows thicker as the tree increaſes, the outſide cracking, grows dead, and ſticks to the young *bark* underneath, which is the only living part of the *bark*. The contrary is evident in thoſe *barks*, the veſſels of which run round the tree; for as the tree increaſes, the veſſels not being able to ſtretch or ſeparate from each other, muſt neceſſarily break aſunder; ſo that the old *bark* is eaſily ſeparated and falls off from the new. Hence it is, that ſuch trees have always a very thin *bark*, as is moſt evident in the birch-tree. Phil. Tranſ. N°. 202. p. 840, ſeq.

Yet M. de Reneaume defended the antient ſyſtem of the uſe of the *bark*, and ſhews, that moſt of the inſtances above alleged, are conſiſtent therewith. The parts of a tree ſeparated from their whole, he obſerves, may carry with them a ſtock of nutritious juice, whereby they vegetate: thus the branches of elder, willow, &c. being cut off, do nevertheleſs produce leaves and young branches, even without ſetting them in the ground; and pieces of ſeemingly dry wood have been ſometimes known to do the like. How much more then may branches, which ſtill grow on the tree, and which of conſequence can never be ſo entirely defrauded of new ſap, continue to vegetate? For tho' none be ſuppoſed to riſe by the *bark*, which is entirely cut away, and which was the part that before furniſhed the greateſt quantity, they may ſtill receive ſome by the woody part, and more eſpecially by the *alburnum*, or inner rind, which is the ſofteſt part, as well as the neweſt, and that likeſt *bark*. Thus we may ſuppoſe it to have been, that the elm in the Thuilleries continued to grow without *bark* a whole ſummer, by virtue of the ſtock of juice it had already imbibed. For the olive-tree mentioned by M. Magnol, it was the better enabled to ſubſiſt without *bark*, as it is of an oily nature, and that even its wood is ſaturated with that juice, which, it is known, will keep long, and ſpends itſelf ſlowly. The reaſon of its increaſed fertility ſeems to be, that the canals of the young *bark* grafted on it, being more free and patent than thoſe of old ones, perform their filtrations better. As to the elm of Luxembourg, cited by the ſame M. Parent, whoſe upper parts appeared ſtripped of all their *bark* almoſt to the ground; upon a nearer examination, it was found to have fibres of the inner *bark* or *liber* ſtill remaining, which had a communication with the *bark* which communicated with the branches; and 'tis probable, by theſe fibres, that the upper branches of the tree were ſtill fed: theſe fibres, by length of time, and the plenty of juices they had tranſmitted, were hardened, and began to form a new ligneous ſubſtance. Other younger fibres of the ſame *liber*, and which had probably been formed ſince the baring of the tree, began to conſtitute a new *alburnum*, which began likewiſe to be covered with a new *bark* or skin. From this inſtance, M. Reneaume concludes, that it is of the *bark* the *alburnum* is formed; and as the *alburnum* is the wood laſt formed, the whole wood is, of conſequence, formed of the *bark* or *liber*. The manner of this converſion is deſcribed by him. While the *alburnum* retains any degree of its ſoftneſs, and ſtill partakes of its *barky* nature, it may preſerve the vegetation for ſome time; but when it is become abſolutely wood, it can no longer contribute thereto. The growth of the young branches is moſt quick, and the only that reaches to the flowers and the fruit, as being little other than *bark* itſelf. Hiſt. Acad. Scienc. ann. 1711. p. 57, ſeq.

It ſeems now certain, from the experiments of M. Buſon, that trees ſtripped of their *bark* the whole length of their ſtems, die in about three or four years.

But it is very remarkable, that trees thus ſtripped in the time of the ſap, and ſuffered to die, afford timber heavier, more uniformly denſe, ſtronger, and fitter for ſervice, than if the tree had been cut down in its healthy ſtate. Something of a like nature has been obſerved by Vitruvius and Evelyn. Vid. Mem. Acad. Scienc. 1738.

The *bark* of trees is ſaid never to be found petrified; but ſomething has been found about petrified wood, anſwering to *bark*. Vid. Phil. Tranſ. N°. 481. p. 309.

As animals are furniſhed with a panniculus adipoſus, uſually replete with fat, which inveſts and covers all the fleſhy parts, and ſcreens them from external cold; plants are encompaſſed with a *bark* replete with fatty juices, by means whereof the cold is kept out, and, in winter time, the ſpiculæ of ice prevented from fixing and freezing the juices in the veſſels: whence it is, that ſome ſort of trees remain ever-green the year round; by reaſon their *barks* contain more oil than can be ſpent and exhaled by the ſun, &c. Vid. *Ray*, Wiſd. of God, P. 1. p. 103.

Boerhaave mentions eight different ſpecies of juices lodged in the *bark*, viz, the watry ſap or chyle, an oil, balm, pitch, reſin, colophony, gum, and gummous roſin. *Boerh.* New Meth. Chem. P. 2. p. 159, ſeq.

The *bark* has its peculiar diſeaſes, and is infected with inſects peculiar to it [e]. Moſs is a diſeaſe of the *bark* [f]. Wounds of the *bark* often prove mortal [g].—[[e] Vid. Phil. Tranſ. N°. 296. p. 1859. *Bradl.* New Exper. Garden. P. 3. p. 59. [f] Vid. Hiſt. Acad. Scienc. ann. 1716. p. 38. [g] Mem. Acad. Scienc. ann. 1707 p. 367.]

Of the *bark* of willows and linden-trees is ordinarily made a kind of ropes. In reality, flax and hemp, with all their toughneſs, are only the ſap-veſſels, or ligneous fibres of the *bark* of thoſe plants. *Grew*, Anat. Veget. l. 3. c. 7. §. 12. See alſo *Plott*. Nat. Hiſt. Oxfordſh. c. 9. §. 119. p. 67.

The Siameſe having no hemp, make their cordage of the *bark* or rind of the coco-tree; and moſt of the Aſiatic, as well as African and Armenian nations are ſaid to do the ſame [h]. In the Caribbees, others make uſe of the *mahot*, which yields either ropes or packthread equal to hemp [i].—[[h] *Aubin.* Dict. Marin. p. 127. [i] *Savar.* Dict. Comm. Supp. p. 1249.]

BARK alſo makes a good manure, eſpecially that of oak, which is rich in ſalt; but the better ſort is reſerved for tanning. Ruſt. Dict. in voc.

Some ſpeak of *ſhining barks* of certain trees growing in Jamaica. *Ray*, Phil. Let. p. 210.

Naturaliſts ſpeak of a ſea-plant, which is a *bark* or rind, and nothing elſe, ordinarily faſtened to *lithophyta*, which have loſt their natural *bark*, either in whole or in part. It only covers naked parts: ſometimes alſo it is found to inveſt ſtones. It is of the ſubſtance of a muſhroom; its colour a lively red; its ſurface beſet with a number of bliſters full of a glutinous juice, and ſurrounded with tubules of an aurora-colour: the inner ſurface is quite ſmooth, and fits itſelf to the form of the body it grows on. It is a kind of ſea *paraſite*, but more wonderful than any of thoſe found on land plants. *Marſigli*, in Hiſt. Acad. Scienc. 1710. p. 95.

BARK is frequently uſed ſimply and abſolutely for *quinaquina*, *quinquina*, or the *cortex peruvianus*, called alſo *Jeſuits bark*. See QUINQUINA, *Cycl.* and PERUVIAN *bark*, *Suppl.*

Indian BARK, *Thuris cortex*, a medicinal *bark* brought from the Eaſt, rolled up like cinnamon, of a ruſty colour, a warm aromatic, bitter taſte, and pleaſant ſmell; ſometimes uſed in fumigation againſt fits of the mother. *Alleyn*, Diſpenſ. p. 136.

BARK, in ſhip-building. Aubin ſays, this is a veſſel with one deck and three maſts. The largeſt ſcarce exceeds 100 ton. *Aubin*, Dict. Marin. p. 67.

The Spaniards have a kind of *bark* almoſt peculiar to themſelves, which carries a huge ſail, and for that reaſon requires a heavy ballaſt—It is a fine ſailer; but requires great attention and dexterity to manage it. See its figure and deſcription in *Aubin*, Dict. Marin. p. 67.

Long BARK, is a ſmall veſſel without deck, longer and lower than the common *barks*, being ſharp afore, and commonly going both with ſails and oars. It is built after the manner of a ſloop, and in many places is called a double ſloop. *Aubin*, Dict. Mar. p. 67, ſeq.

Armed BARK, a kind of fire-ſhip filled with ſoldiers, uſed both for making ſallies, and to attack galleries, and bar the paſſage over them. *Fæſch.* Ingen. Lex. p. 69. a.

Water BARKS, are little veſſels uſed in Holland for the carriage of freſh-water to places where it is wanting, as well as for the fetching ſea-water to make ſalt of. They have a deck, and are filled with water up to the deck. *Aubin*, Dict. Marin. p. 68.

BARKARY denotes a tan-houſe, or place to keep *bark* in, eſpecially for tanners. Dict. Ruſt.

It is otherwiſe called a *heath-houſe* in old writers. *Cowel.*

BARKING *of trees* (*Cycl.*)—By the French laws, all dealers are forbid to *bark* their wood while growing, on the penalty of 500 livres. *Savari*, Dict. Comm. p. 1847. in voc. *Eſcorcer*.

This law was the reſult of ignorance; it being now found, that *barking* of trees, and letting them die, increaſes the force of timber. Vid. ſupra, in the article BARK.

BARKING is alſo a name given to the cry of dogs and foxes. Gent. Recr. P. 1. p. 10.

The term is alſo applied to certain quaint noiſes made by ſick perſons in ſome diſeaſes.

In cynic ſpaſms, and epileptic fits, the patient ſometimes ſnarls, howls, and *barks*, in all the notes of a dog [k]. But it

is in the hydrophobia that *barking* has been oftenest obſerved: perſons ſeized with this, are apt to rave, bite, ſnarl, and make a harſh noiſe in their throats, which is called *barking* [1].—[[k] V. Phil. Tranſ. N°. 280. p. 1173. [1] Vid. Phil. Tranſ. N°. 323. p. 436. It. N°. 207. p. 25. It. N°. 242. p. 247.]

BARLAAMITES, in church hiſtory, the followers of a Calabrian monk, afterwards biſhop of Emont, the great opponent of Greg. Palama and the Heſychaſtæ. Vid. *Fabric.* Bibl. Græc. l. 5. c. 43. §. 22.

The *Barlaamites* are the ſame with thoſe otherwiſe denominated *Acindynites*.

BARLERIA, in botany, the name of a genus of plants, the characters of which are theſe: The perianthium conſiſts of one leaf divided into five ſegments, and remains after the flower is fallen: the flower is one-leaved, and of the labiated kind: its tube is of the length of the cup; its mouth oblong, and inflated: the upper lip erect, emarginated, and obtuſe: the lower lip is divided into three ſegments, the middle one of which is of the length and figure of the upper lip, and the two ſide ones are ſmaller, and obtuſe. The ſtamina are four ſlender filaments, which are lodged under the upper lip of the flower, and are of the ſame ſhape with it: the antheræ are erect: the germen of the piſtil is ſmall, and oval: the ſtyle is ſimple and ſhort; and the ſtigma obtuſe. The fruit is an oval capſule, formed of two valves, containing two cells, and opening at the bottom, when ripe. The ſeeds are oval, and ſingle. *Linnæi* Gen. Pl. p. 289. *Plumier*, Gen. 31.

BARLEY, in botany, a gramineous, frumentaceous herb, whoſe ſeeds are of the larger ſort, being covered with a huſk, growing in a ſpike, and the grains bearded.

Barley, through neglect and poverty, is ſaid to degenerate into oats and darnel. Dr. Plott ſpeaks of *barley* and rye growing in the ſame ear alternately. *Plott*, Nat. Hiſt. Stafford. c. 9. §. 34.

Iſis is ſaid to have firſt diſcovered the culture and uſe of *barley* in Egypt. *Diod. Sic.* l. 1. p. 13. *Reimm.* Id. Antiq. Egypt. §. 25. p. 54.

The Greeks had a ſpecies of magic, or incantation, performed with *barley*, called κριθαριζειν, or κριθοφορειν. *Du Cange*, Gloſſ. Græc. T. 1. p. 724, ſeq.

The principal uſe of *barley* among us is for making beer, in order to which it is firſt malted.

The Spaniards, among whom malt liquors are little known, feed their horſes with their *barley*, as we do with oats. Trev. Dict. Univ. T. 1. p. 353.

Barley has alſo its medicinal virtues, in which it reſembles oats. *Junck.* Conſp. Therap. tab. 9. p. 276.

Pearl BARLEY, and *French* BARLEY, are both of the ſame kind, tho' differing ſomewhat in whiteneſs and ſize of the grain, and are thoſe chiefly uſed in phyſic.

Plott ſpeaks of ratheripe *barley*, *hordeum diſtichum præcox*, produced in Wiltſhire and Cornwall, which is ſometimes ſown and returned again to the barn in two months time. *Plott*, Nat. Hiſt. Oxford. c. 6. §. 29. *Hought.* Collect. N. 296. T. 2. p. 274, ſeq.

Whole BARLEY is that where the grain ſtill remains covered with its huſk.

Hulled BARLEY, called by the Greeks γυμνοκριθον, by the Latins *hordeum mundatum*, is that where the huſk is ſtripped off, to be uſed in the making of ptiſans; in order to which it is boiled a due time in water, then ſtrained, and ſuggar added.—Some call this *cremor ptiſanæ*. Trev. Dict. Univ. T. 4. p. 353.

The antients ſpeak of a bare *barley*, γυμνοκριθον, or *hordeum nudum*, growing naturally in Cappadocia [a]. Some take it for the ſame with our *hulled barley*, or *hordeum mundatum* [b], but without neceſſity: ſince modern naturaliſts are not without inſtances of natural *barley* without huſks. Plott mentions one in Staffordſhire, called there *French barley*, from the reſemblance of its ear to the *barley* of that denomination; but it grew like wheat, uncovered by any huſk. Botaniſts conſider it as a kind of medium between *barley* and wheat, and call it *tritico ſpeltum*, or *zeopyrum*. It makes indifferently either bread or beer [c].—[[a] *Oribaſ.* Collect. Med. l. 1. c. 1. [b] *Caſt.* Lex. Med. p. 376. a. *Plott*, Nat. Hiſt. Stafford. c. 6. §. 14.]

BARLEY *Water* is a decoction of either of theſe, reputed ſoft and lubricating, of frequent uſe in phyſic.

This well-known decoction is a very uſeful drink in many diſorders; and is recommended, with nitre, by ſome authors of reputation, in ſlow fevers.

There is a diſſertation of Hoffman's *de cura avenacea*.

BARLEY *Corn* is uſed to denote a long meaſure, containing in length the third part of an inch, and in breadth the eighth. *Holder.* Diſc. of Time, c. 1. p. 7.

The French carpenters alſo uſe *barley corn*, *grain d'orge*, as equivalent to the line, or the twelfth part of an inch. *Aubert*, apud *Richel.* Dict. T. 1. p. 777. in voc. *Grain d'orge*.

BARLEY *Corn*, *grain d'orge*, is alſo uſed, in building, for a little cavity between the mouldings of joiners work, ſerving to ſeparate or keep them aſunder; thus called becauſe made with a kind of plane of the ſame name. *Daviler*, Archit. P. 2. p. 630.

BARMINE, denotes ſuch mine or ore, as is adjudged at a court of barmote. See BARMOTE.

BARNACLE (*Cycl.*)— *Barnacle* is alſo a name given to a kind of ſhell-fiſh, which is found cleaving to the bottoms and ſides of ſhips in certain ſeas; ſometimes alſo to the fins and tails of whales, and the like.

In this ſenſe, *barnacle* is the ſame with what is called by ſailors *clam*; by naturaliſts, *concha anatifera*.

There are divers ſpecies of ſhell-fiſhes included under the denomination *barnacles*: ſome reduce them to two, *viz.* the *balanus* and *pinna marina*. Hiſt. Acad. Scienc. ann. 1724.

BARNACLES, in farriery, are alſo called *horſe twichers*, or *brakes*.

Barnacles differ from pinchers, as the latter have handles whereby to hold them; whereas the former are faſtened to the noſe with a lace or cord.

There is another meaner ſort of *barnacles*, uſed in defect of the former, called *roller barnacles*, or *wood twitchers*, which are only two rollers of wood bound together, with the horſe's noſe between them. Dict. Ruſt. in voc.

BARNFIARD, in zoology, the name of a bird uſually ſeen at ſea, and looked on as a foreteller of bad weather. It is about the ſize of a ſparrow: its neck and back are black, and its breaſt and belly grey; its feet are red, and its bill black, and ſomewhat broad. It ſkims very nimbly along the ſurface of the water. *Ray*'s Ornithol. p. 306.

BAROMETRICAL *Obſervations* make a branch or ſpecies of theſe called meteorological obſervations.

Modern philoſophers ſpeak much of the uſefulneſs, the advantages of *barometrical* obſervations. Dr. Wallis, Dr. Beal, Cruquius, de la Hire, and others, have publiſhed collections of *barometrical* obſervations, made at Oxford, Leyden, Delft, Paris, Zurich, in China, &c. Vid. Phil. Tranſ. N°. 55. p. 1113. It. N°. 249. p. 45. It. N°. 256. p. 323. It. N° 381. p. 4. Hiſt. Acad. Scienc. ann. 1699. p. 22. and in the ſubſequent volumes yearly. Mem. ann. 1705. p. 288, 322, 296, 300. Id. ann. 1724. p. 5.

Dr. Jurin has publiſhed an invitatory paper for making *barometrical* obſervations by joint conſent. Phil. Tranſ. N°. 379. p. 423.

BAROPTIS, or BAROPTINUS LAPIS, a name given by the antient naturaliſts to a ſpecies of ſtone, ſuppoſed to have wonderful virtues againſt venomous bites, externally applied. Pliny has left us but a very ſhort deſcription of it: he ſays, it was black in colour, but variegated with large ſpots of red and white.

BARQUETTE, or BARCHETTA, in the Mediterranean, denotes a leſſer ſort of barks, uſed for the ſervice of gallies, much as boats and ſhallops are for other ſhips, as to fetch proviſions, water, carry perſons aſhore, and the like. *Fæſch.* Ing. Lex. p. 68. a.

BARR, BARRA, or BARRO, in commerce, denotes a Portugueſe long meaſure, uſed in the menſuration of cloths, ſtuffs, and the like, ſix whereof are equivalent to ten *cavidos* or *cabidos*; each cavido equal to $\frac{4}{7}$ of a Paris ell.

The Spaniſh BARRA is the ſame with the yard of Seville.

BARR *of Valentia* is equal to $\frac{10}{13}$ of the Paris ell.

BARR *of Caſtile* is equal to $\frac{5}{7}$ of the Paris ell.

BARR *of Arragon* is equal $\frac{2}{3}$ of the Paris ell. *Savar.* Dict. Com. p. 273.

BARR is alſo uſed by the Portugueſe in the Eaſt Indies for a weight, more frequently called *bahar*. *Savar.* ib. p. 274. See BAHAR.

BARR-*Dice*, a ſpecies of falſe dice, ſo formed, as that they will not eaſily lie on certain ſides, or turn up certain points.

Barr-dice ſtand oppoſed to flat dice, which come up on certain points oftner than they ſhould do. Myſt. of Mod. Gam. p. 32.

BARRACOL, in ichthyology, a name given by Artedi, from the Venetians, to expreſs the ſpecies of ray-fiſh, called by Bellonius and Geſner *miraletus*, and by others *Raya oculata lævis*. The ſpecific name of Artedi carries in it a much better character of the fiſh; he call it the *ray*, with ſmooth back and belly, and with the eyes ſurrounded with a ſeries of ſpines, and three other rows of them on the tail.

BARRAGAN, or BARRACAN, in commerce, a kind of ſtuff belonging to the claſs of camblets, only of a grain much coarſer than the reſt, manufactured in divers parts of France and Flanders, chiefly at Abeville, Amiens, Rouen, and Liſle, and now in England.

The word is barbarous Latin, formed, as ſome ſuppoſe, from *barra*, q. d. *barrarum formam referens*. *Du Cange*, Gloſſ. Lat. T. 1. p. 497.

The chief uſe of *barragans*, called alſo by the French *bouracans*, is for ſurtouts, or upper garments againſt the rain, being, when good, of ſo cloſe a grain, that the water will not ſoke thro', but only run upon them.

For the woof, its thread is ſingle, twiſted, and fine ſpun; that of the warp is double or triple, *i. e.* compoſed of two or three threads twiſted well together. The uſual matter it is made of, is wool; tho' there are ſome made at Rouen, where the warp is hemp, and the woof wool. Some *barragans*, again, are made of wool, dyed before it comes to the loom; others are woven white, and dyed afterwards, red, black, blue, brown, &c. They are not fulled, but only boiled two or three times in fair water, when they come from the loom; then calendared

dared to make them ſmooth and even; and laſtly made into rolls, called pieces of *barragan*. *Savar.* Dict. Comm. T. 1. p. 442, ſeq. in voc. *Bouracan.*

BARRATI, *barred*, an appellation given to the Carmelites, after they were obliged to lay aſide the white cap, and wear cowls ſtripped black and white. *Schmid.* Lex. p. 88. *Aubert*, apud *Richel.* p. 181. b.

BARRATRY (*Cycl.*) — *Barratry* of mariners is ſo epidemical on ſhip-board, that it is rare if the maſter, be his induſtry ever ſo great, can prevent it, by reaſon of the encouragement one knaviſh ſailor gives another; yet the law, in ſuch caſes, imputes the offences of the mariners to the negligence of the maſter, and from him the merchant is to ſeek for remedy for all goods or merchandize loſt, embezzled, or otherwiſe damnified. *Molloy*, de Jure Maritim. l. 2. c. 3. §. 13, ſeq.

By the French ordonnances, inſurers are not obliged to make good the loſs or damage accruing to a veſſel, or its lading, by the fault of the maſter or crew, unleſs, by the forms of the policy, they be made accountable for the *barratry* of the patron. A maſter who, without neceſſity, takes up money on the body, proviſion or tackling of a ſhip, or ſells the effects on board, or, in his account of average, ſets down fictitious expences, ſhall pay the value, be declared unworthy of being maſter, and baniſhed the port where he ordinarily reſided. In ſome caſes, he is alſo ſubject to corporal puniſhment, and even to death, where it appears he willingly threw away the ſhip. *Savar.* Dict. Comm. p. 267, ſeq.

BARRATRY is alſo uſed for bribery or corruption in a judge, giving a falſe ſentence for money. *Skene & Cowel*, in voc.

BARRATRY is alſo uſed, in middle-age writers, for fraud or deceit in making of contracts, ſales, or the like. *Du Cange*, Gloſſ. Lat. T. 1. p. 471.

BARREL (*Cycl.*) — *Barrels* are of divers uſes in artillery, as for powder, ſmall-ſhot, flint, ſulphur, ſaltpetre, roſin, pitch, quick-match, and many other things.

Barrels filled with earth, ſerve to make parapets to cover the men, like gabions end canvaſs bags. Milit. Dict.

Fire BARRELS are casks of divers capacities, filled with bombs, grenados, fire-pots, mixed with great quantities of tow ſoaked in petrol, turpentine, pitch, &c. uſed by the beſieged to defend breaches. Theſe are ſometimes alſo called *thundering barrels*, being to be rolled down on the enemy on their entering the breach. *Ozanam*, Dict. Math. p. 538.

BARREL *of a pump* is the wooden tube, which makes the body of the engine, and wherein the piſton moves. *Ozan.* Dict. Math. p. 548.

BARREL *of a muſket*, firelock, piſtol, or the like, is that part wherein the charge or load is put.

BARREL *of a clock* is a cylindrical part, about which the ſtring is wound, anſwering to what in watches is properly called the *fuſy*. *Derham*, Artif. Clock-mak. c. 1. p. 2.

BARREL *of a jack* is the cylindrical part whereon the line is wound. *Moxon*, Mech. Exerc. p. 39.

BARRELLING, the art of putting up certain commodities in casks or barrels.

Gun-powder for the land-ſervice is often *barrelled* double, the barrel it is put in being incloſed in another barrel, partly to prevent the powder catching moiſture in the ſubterraneous places it is kept in, and partly to enable it the better to bear the motion and jolting of carriages, when it is to be conveyed to another place. *Savar.* Supp. p. 782.

BARRELLING *of herring* imports the cutting off their heads, as they are thrown into the buſs, and afterwards pulling out the guts, ſalting them, and putting them up in barrels. *Aubin*, Dict. Marin. p. 170. See alſo *Collins*, Salt and Fiſh. p. 107.

There are two ſorts of *barrelled herring*; one wherein they are laid orderly, layer over layer, called by ſome *packed herring*; — the other wherein they are thrown at random, called herring *in wrack*.

The difference ariſes thus; as faſt as the fiſhermen catch the herrings, they throw them on the deck of the veſſel, where having gutted and ſalted them, they throw them tumultuouſly into the barrel, to be carried home: this is the herring *in wrack*.

When arrived aſhore, they take the fiſh out of theſe barrels, caſt them into a tub, and ſalting them anew, range them handſomely in their barrels again, laying ſalt over them, to preſerve them: this is the *packed herrings*. And in this ſtate it is they are uſually ſold. *Savar.* Dict. Comm. T. 2. p. 974.

BARREN *Ground*, that which being ſowed, produces no crop, or, at moſt, ſo ſlender a crop, that it will not defray the charge of its tillage. Vid. *Ridl.* View of Civ. Law, P. 3. c. 4. §. 4. p. 200.

BARREN *money* is uſed, in the civil law, for that which is not put out to intereſt.

BARRING *a Vein*, an operation performed by farriers on the veins of horſes legs, and of other parts, in order to ſtop the courſe, and leſſen the quantity, of the malignant humours which prevail there.

It is done by opening the ſkin above the part, and, after diſengaging it, and tying it both above and below, ſtriking between the two ligatures.

When horſes have got traverſe mules, or kibed heels, and rat tails, or arreſts in the hinder legs, it is common to *barr a vein*. Farr. Dict. p. 52.

BARRITUS, in antiquity, a military ſhout, raiſed by the Roman ſoldiers at the firſt charge on the enemy. *Kenn.* Rom. Ant Not. P. 2. l. 4. c. 11. *Pitiſc.* Lex Ant. *Voſſ.* Etym. p. 65. a.

BARROW, in the Engliſh topography, denotes a large hillock or mount of earth raiſed or caſt up by art; ſuppoſed to have been one of the Roman *tumuli*, or ſepulchres.

Dr. Plott takes notice of two ſorts of *barrows* in Oxfordſhire; one placed on the military ways, the other in the fields, meadows, woods, &c.

The former were doubtleſs of Roman erection; the latter more probably erected by the Britons or Danes.

Some of theſe *barrows* appear rude and tumultuary, erected only of earth; others are more regular, trenched round; ſome with two or three circumvallations, and ſurmounted with monumental ſtones. *Plott*, Nat. Hiſt. Oxford. c. 10. §. 48, ſeq.

Barrows are conical hillocks, generally ſituated on places of eminence, on, or near the ſummit of downs, and often near the great roads. They are to be met with in ſeveral parts of England: thoſe in Wiltſhire are well known. We have an examination of the *barrows* in Cornwall by Dr. Williams, in the Phil. Tranſ. N°. 458. from whoſe obſervations we find, that theſe *barrows* are compoſed of foreign or adventitious earth, that is, ſuch as does not riſe on the place, but is fetched from ſome diſtance. On digging into the *barrows*, flat ſtones, carefully laid, have been found to cover others underneath, which were found irregularly mixed; and underneath theſe again were found a large number of ſtones artfully placed and contrived, ſo as to form the ſhape of a cone, with their points uppermoſt, and their largeſt parts downwards. Under this heap was found a circle of two feet in diameter, even with the natural ſurface of the country, and paved with ſmall ſtones laid edge-ways, their ſharp point downwards. Theſe ſtones being taken up, a cylindrical pit of two feet broad, and two and an half deep, cut out of the natural ſoil, was obſerved: the ſides of this pit were carefully lined round with flat ſtones; but none were found at the bottom. The ſtones of the heap lying over the pit, ſeemed to have been brought from places at a conſiderable diſtance.

It has been thought, that theſe *barrows* were erected for ſepulchres; and this conjecture ſeems well confirmed by the urn found in one of them. This urn is made of burnt or calcined earth, very hard, and very black in the inſide: it has four ſmall handles, and in it were found ſeven quarts of burnt bones and aſhes.

That it was the antient practice to burn the dead, is well known; and from theſe *barrows* it appears, how the nations, that practiſed this way of burial, expreſſed their regard for the dead. It was by erecting over their aſhes theſe *barrows*, or *tumuli*, compoſed of earth and ſtone brought from diſtant places; and the *barrow* was generally in proportion to the greatneſs, rank, and power of the deceaſed perſon. Each ſoldier or friend might bring ſome of the earth or ſtones from diſtant places where they lived, and thus compoſe the *tumulus*. Many paſſages might be quoted from antient authors to this purpoſe. See Phil. Tranſ. loc. cit.

BARROWS, in the ſalt-works, are caſes made with flat cleft wickers, in the ſhape almoſt of a ſugar-loaf, with the bottom uppermoſt, wherein the ſalt is put, as it corns, and ſet to drain. Vid. Phil. Tranſ. N°. 53. p. 1065. *Hought.* Collect. N°. 211. p. 81.

BARSANIANI, in church hiſtory, a ſect of antient heretics, who held all the errors of the Severians and Theodoſians.

Diviſions ariſing among the Eutichians, or thoſe who rejected the council of Chalcedon, they broke into parties; which took denominations from their leaders: the *Gajanites* from Gajanus; the *Severians* from Severus; the *Theodoſians* and *Themiſtians* from Theodoſius and Themiſtius; from whom ſoon after ſprung the Jacobites and Barſanians.

The *Barſanians* are called by M. Fleury, *Barſanuphiani*. Dict. de Trev. T. 1. p. 888.

BARSE, in ichthyology, an Engliſh name for the common pearch, a well known freſh-water fiſh. It is alſo the name now in uſe for the ſame fiſh in the Saxon language, and is one of the many Saxon words we have yet retained. *Ray*, Ichthyograph. p. 292. See PERCA.

BARTSIA, in botany, the name of a genus of plants, which ſeems of a middle nature between the *euphraſia*, *pedicularis* and *rhinanthus*. The characters are theſe: The perianthium conſiſts of one leaf, and is tubular and permanent: it is bifid at the extremity, and the ſegments are emarginated, and are coloured at the points. The flower conſiſts of one petal, and is of the ringent kind: the upper lip is erect, narrow, undivided, and longer than the cup: the ſtamina are four ſetaceous filaments of the length of the upper lip of the flower; but two of them are ſhorter than the others: the antheræ are oblong, and ſtand cloſe together, under the top of the upper lip of the flower: the germen of the piſtil is oval; the ſtyle is capillary, and longer than the ſtamina; and the ſtigma is obtuſe and nutant: the fruit is an oval capſule, of a compreſſed ſhape, and pointed: it is compoſed of two valves, and divided by a membrane into two cells within: the ſeeds are numerous, and ſmall. *Linnæi* Gener. Plant. p. 283.

BARYPICNI, Βαρυπυκνοι, in the antient muſic, was a name given to ſuch chords, as formed the graveſt notes of the ſeveral

ſyſſa.

ſpiſſa. There were five *barypicni* in the ſcale. See PYCNI and SPISSUM.

BARYTONUM, in the Greek grammar, denotes a verb, which having no accent marked on the laſt ſyllable, a grave accent is to be underſtood. Vid. Nouv. Meth. Græc. l. 2.

In the Italian muſic, *barytono* anſwers to our common pitch of baſs. *Broſs* Dict. Muſ p. 12.

BASALTES (*Cycl.*)—The *baſaltes* is a peculiar ſpecies of black marble, differing from the other kinds, in not being found in ſtrata, but in form of regular columns. It was ſometimes called by the antients *lapis lydius*. They called the ſame ſtone, when found in its beautiful columnar form, *baſaltes*; and when found in broken pieces in the beds of rivers, not diſtinguiſhing that theſe were only fragments of the columnar ſpecies, they called them by the name of *lydius lapis*. Authors have alſo called it the *baſanites*, *coticula*, and *lapis heraclius*; and ſome *paragone*.

It is a very regular and beautiful marble, of a perfectly fine, ſmooth, and equal texture, remarkably hard and heavy, and of a remarkably deep and naturally gloſſy black, mixed with no other colour, nor fouled by any extraneous mixture.

Its moſt remarkable quality, however, is, its arranging itſelf into columns, and ſeries of them. Wherever it has been yet found, either by the antients or moderns, it has been always ſeen ſtanding up in the form of regularly angular columns, compoſed of a number of joints, and thoſe nicely placed on, and fitted into one another, and a number of theſe columns nicely and exactly placed together, and ſo joined, that the prominent angles of the one pillar fit, and exactly fall into the hollows left between the others, and the plain ſides exactly anſwer to one another, the whole appearing as if formed by the hands of the niceſt workman. A number of theſe columns, thus joined, make one large pillar; and there are generally found ſeveral of theſe pillars at ſmall diſtances one from another. The ſingle columns, tho' all angular, are far from being all alike, ſome of them being of ſeven, ſome of ſix, and ſome of five ſides; ſome alſo are only of four, but theſe are the moſt rare. See Tab. of Foſſils, Claſs 5.

This is the account not only of the antients, but of every one who ever ſaw *baſaltes* in its native ſtate in any part of the world; and when we conſider this, is it not amazing, that when the noble and ſurpriſing quantity of it, called the *giants cauſeway* in Ireland, was taken notice of, it ſhould be doubted, whether it were not a work of art, and the name of the *baſaltes*, which alone accounts for it, never be thought of?

The deſcriptions the antients have agreed to give of the *baſaltes*, as carefully collected by De Boet, give us a very juſt and accurate deſcription of the Giants cauſeway, tho' that author had never ſeen or heard of it, the appearance of this marble in all parts of the world being the ſame, and theſe accounts plainly evincing, that the immenſe pile of the *baſaltes* in Ireland is no miracle, nor work of art, but, perhaps, the nobleſt collection of that body, which the world has to ſhew.

The origin and formation of this marble has much puzzled the world; but we may conſider, that many of the known foſſil bodies have a property, like ſalts, of arranging themſelves into different figures at the time of their firſt coaleſcence into a maſs. This is from the ſame laws in nature with that of ſalts; and we are well aſſured by daily experience, that cryſtal and ſpar, according to this natural determination, ever form regularly angular figures, when all the proper accidents have concurred to their concretion. The moſt common figures of cryſtals are the hexangular columns; and thoſe of ſpar, either trigonal columns or parallellopipeds. The combinations and mixtures of theſe, in different degrees, may naturally produce mixt figures, according to theſe degrees; and a third ſubſtance, tho' in itſelf not diſpoſed by nature to aſſume or arrange itſelf into any particular figure, if mixed with theſe, may be able to ſpread, extend, and inlarge the figures they concrete into, or otherwiſe alter them.

A mixture of three bodies is therefore capable of producing a fourth, of a figure different from any one of the three above; and we find alſo, by many parallel inſtances, that the quicker or ſlower paſſing off of the fluid from whence bodies are concreted, is capable of altering their figures.

The marble of the Giants cauſeway, or any other columns of *baſaltes*, analyſed by acids, is found to be compoſed of an admixture of cryſtal, ſpar, and earth. The ſpar is abſolutely diſſolved by the acid, may be precipitated out of it, and procured in its own form; and the remaining maſs, after the ſeparation of the ſpar, is found to be pure cryſtal, and an earth of the clay kind, ſeeming the ſame with the black pipe-clay of Northamptonſhire, and ſome other places, only much blacker. We know very well what would be the figures of theſe bodies concreted alone, and may thence deduce what may be the poſſible conſequences of their union, and the different accidents attending their concretions.

The *baſaltes* was found by the antients in columns in Ethiopia, and in fragments in the river Tmolus, and ſome other places. We now have it frequently both in columns and in ſmall pieces in Spain, Germany, and Ruſſia. In Denmark alſo there is much of it; and about Dreſden a great deal, in fine columns: but the nobleſt ſtore of it ſeems to be that in the county of Antrim in Ireland, ſo well known by the name of the Giants cauſeway. *Hill*'s Hiſt. of Foſſ. p. 467, 468. See GIANTS *cauſeway*.

The *baſaltes* makes a fine touchſtone, and is uſeful on many other occaſions.

BASANITES, in natural hiſtory, a name given by many authors to the touchſtone uſed for trying gold, *&c.* See LYDIUS *lapis*, and TOUCHSTONE.

Pliny ſpeaks of a *baſanites*, which yielded a bloody juice, and was good againſt diſeaſes of the liver. Hiſt. Nat. l. 36. c. 20.

BASANUS, in natural hiſtory, the touchſtone. *Suid.* T. 1. p. 418. See the article TOUCHSTONE, *Cycl.* and *Suppl.*

BASANUS *Hybernicus*. See *Iriſh* TOUCHSTONE.

BASCANIA, in antiquity, ridiculous or groteſque figures hung by the antient ſmiths before their furnaces, to divert envy. *Pollux*. Onomaſt. l. 7. c. 24. *Jun.* Paint. Anc. l. 2. c. 8. p. 160.

BASE (*Cycl.*)—BASE-*Knights*, *Bas-chevaliers*, denote the inferior order of knights, as diſtinguiſhed from barons and bannerets, who were the chief or ſuperior knights.

Hence ſome think, we now call *baſe-knights*, inferior to baronets, knights batchelors, *q. d. bas-chevalier*. *Kenn.* Gloſſ. ad Antiq. Paroch. in voc.

BASELS, *Baſelli*, in our old writers, a kind of coin aboliſhed by King Henry II. 1158. *Hollenſhed*'s Chron. p. 67. ap. *Blount*.

BASELLA, in botany, the name of a plant, in all things agreeing with the *cuſcuta*, or dodder; but that the ſeed is ſingle, only one ſucceeding each flower, which is incloſed in a ſucculent cup reſembling a berry. Hort. Malab. Vol. 7 p. 24.

BASEMENT, in architecture, a continued baſe, extended a conſiderable length, as around a houſe, a room, or other piece of building.

This is alſo called, by antient architects, *ſtereobata*; by the French, *embaſement*, or *ſoubaſement*; ſometimes *ſocle continu*, when it is without either baſe or corniſh. *Davilar*, Archit. P. 2. p. 562. & 858.

BASHARIANS, a ſect of Mahometans, being a branch or ſubdiviſion of the *Motazalites*.

The *Baſharians* are thoſe who maintain the tenets of Baſhar Ebn Motamer, a principal man among the *Motazalites*, who varied, in ſome points, from the general tenets, of the ſect, as carrying man's free agency to a great length, and even to the making him independent. He aſſerted, that God is not always obliged to do that which is beſt; for that, if he pleaſed, he could make all men true believers. Accordingly he taught, that God might doom an infant to eternal puniſhment; but taught at the ſame time, that he would be unjuſt in ſo doing. Vid. *Sale*, Prelim. Diſc. to Koran.

BASHAW (*Cycl.*)—The Turks, it is to be obſerved, pronounce indifferently *paſcha*, or *baſcha*; yet, according to d'Herbelot, *paſcha* is the title moſt frequently given to the great officers of the Porte, and *baſcha* to the lower officers of the army, ſometimes even to the common janizaries. Others pretend, that *baſcha* is the Arabic, and *paſcha*, the true, or Turkiſh pronunciation. Trev. Dict. Univ. T. 1. p. 784.

A *baſhaw* is made with the ſolemnity of carrying a flag or banner before him, accompanied with muſic and ſongs, by the Mirialem, an officer on purpoſe for the inveſtiture of *baſhaws*. *Rycaut*. Preſ. Stat. of the Ottom. Emp. l. 1. c 12. p. 51.

Baſhaw, uſed abſolutely, denotes the prime vizier; the reſt of the denomination being diſtinguiſhed by the addition of the province, city, or the like, which they have the command of; as the *baſhaw* of Egypt, of Paleſtine, *&c.*

The *baſhaws* are the emperor's ſpunges. We find loud complaints among Chriſtians of their avarice and extortions. As they buy their governments, every thing is venal with them. *Aquin.* Lex. Milit. T. 1. p. 118. b.

When glutted with wealth, the emperor frequently makes them a preſent of a bow-ſtring, and becomes heir to all their ſpoil. Vid. *Tournef.* Voyag. T. 1. let. 1. p. 17. a. It. T. 2. p. 22, 26.

There are alſo *ſub-baſhaws*, or deputy-governors under the firſt. Vid. Phil. Tranſ. N°. 218. p. 148.

BASIATRAHAGI, in botany, a name uſed by ſome for the common *polygonum*, or knot-graſs. *Ger.* Emar Ind. 2.

BASIL (*Cycl.*)—The order of St. *Baſil* ſtill continues in Greece. The habit of the monks is black, and plain, conſiſting of a long caſſock, and a great gown with large ſleeves: on their head they wear a hood, which reaches to the ſhoulders: they wear no linnen; ſleep without ſheets, in the ſtraw; eat no fleſh; faſt often; and till the ground with their own hands. *D'Emillian*, Hiſt. Monaſt. Ord. p. 19.

This order was introduced in the Weſt in 1057, and was reformed in 1569, by pope Gregory XIII. who united the religious of this order in Italy, Spain, and Sicily, into one congregation [a]; of which the monaſtery of St. Saviour at Meſſina is the chief, and enjoys preheminence over the reſt. Each community has its particular rule, beſides the rule of St. *Baſil*, which is very general, and preſcribes little more than the common duties of a Chriſtian life [b].—[[a] *Corn.* Dict. des Arts, T. 1. p. 94. b. *D'Emillian*, Hiſt. Monaſt. Ord. p. 20.]

BASIL, in botany. See OCYMUM.

BASILARE *Os*, (*Cycl.*) in anatomy, a barbarous denomination given to the *os ſphenoides*, on account of it being ſituated at the bottom

tom or baſis of the ſkull [a]; or becauſe a great part of the brain reſts hereon, as on its baſis [b].—[[a] *Drake*, Anthrop. l. 4. c. 2. p. 582. [b] *Blaſ.* ad Veſling. c. 13. p. 195.]—See SPHENOIDES, *Cycl.*

BASILEUS, Βασιλευς, a title aſſumed by the emperors of Conſtantinople, excluſive of all other princes, to whom they gave the title Ρηξ, *rex*, king. *Suic.* Theſ. T. 1. p. 669. *Du Cange*, Gloſſ. Gr. T. 1. p. 179, ſeq. *Ejuſd.* Gloſſ. Lat. T. 1. p. 499.

The ſame quality was afterwards given by them to the kings of Bulgaria, and to Charlemaign, from the ſucceſſors of which laſt they endeavoured to wreſt it back again.

The title *baſileus* has been ſince aſſumed by other kings, particularly the kings of England, *Ego Edgar totius Angliæ baſileus confirmavi. Du Cange*, Gloſſ. Lat.

Hence alſo the queen of England was intitled *Baſilla* and *Baſiliſſa. Du Cange*, Gloſſ. Lat. in voc. *Baſiliſſa.*

BASILEUS, in zoology, a name by which ſeveral of the old authors called the *regulus criſtatus*, or golden crowned wren.

The word is derived of the Greek βασιλευς, a king; and this, and the other names of royalty given to this little bird, are, on account of the golden crown on its head. *Ray*, Ornitholog. p. 163.

BASILICS, *Baſilica*, in literary hiſtory, (*Cycl.*) a name ſuppoſed to have been given by the emperor Leo to a collection of laws, in honour of his father Baſilius Macedo, who began it in the year 867, and in the execution chiefly made uſe of Sabbathius Protoſpatharius, who carried the work as far as 40 books. Leo added 20 books more, and publiſhed the work in 880.—The whole, thirty years after, was corrected and improved by Conſtantin Porphyrogenitus, ſon of Leo; whence many have held him the author of the *baſilica.*

Six books of the *baſilica* were tranſlated into Latin in 1557, by Gentian Hervetus. An edition of the Greek *baſilics*, with a Latin verſion, has been ſince publiſhed at Paris, in 1647, by Annib. Fabrottus, in 7 volumes. There ſtill want 19 books, which are ſuppoſed to be loſt. Fabrottus has endeavoured to ſupply, in ſome meaſure, the defect from the ſynopſis of the *baſilica*, and the gloſſes; of which ſeveral had been made under the ſucceeding emperors, and contained the whole Juſtinian law, excepting the ſuperfluities, in a new and more conſiſtent order, together with the later conſtitutions of the emperors poſterior to Juſtinian. Vid. *Strav.* Bibl. Jur. c. 4. §. 2, ſeq. *Hartung.* Exerc. Jur. Civ. l. 1. c. 6. p. 18, ſeq. *Menage*, Anti-Baill. T. 1. p. 137, ſeq. *Morhof.* Polyhiſt. T. 3. l. 6. c. 14. §. 11. *Fabric.* Bibl. Græc. l. 6. c. 6. Tom. 2. p. 425.

BASILICS, *baſilicæ*, in church hiſtory (*Cycl.*)—Thereis ſome diſpute concerning the origin and occaſion of this appellation, as well as the extent of it.

Some will have the antient churches to have been called *baſilicæ*, becauſe generally built in the faſhion of the Roman halls, called by that name: others, becauſe divers churches were formed of thoſe halls. In reality, on the converſion of Conſtantine, many of the antient *baſilicæ* were given to the church, and turned to another uſe, *viz.* for Chriſtian aſſemblies to meet in, as may be collected from that paſſage in Auſonius, where ſpeaking to the emperor Gratian, he tells him, the *baſilicæ*, which heretofore were wont to be filled with men of buſineſs, were now thronged with votaries praying for his ſafety. By which he muſt needs mean, that the Roman halls or courts were turned into Chriſtian churches: and hence, we conceive, the name *baſilicæ* came to be a general name for churches in after-ages. Baronius, Durantus, and Bona, give other reaſons for the appellation; as that it was becauſe churches were places where ſacrifice was offered to God, the king of all the earth; or becauſe they were only the more ſtately and magnificent churches which had the title, ſuch as, by their grandeur, either ſurpaſſed other churches, as the palaces of princes do private houſes. But this is not true in fact; for ever ſince the word came firſt into uſe, it appears to have been the common name of all public churches, as contradiſtinguiſhed from the private churches of monaſteries, *&c.* [a]. It has been diſputed between meſſieurs Launoi and Valois, whether the church of St. Vincent, built by king Childebert, were originally a monaſtery, or a *baſilic* [b].—[[a] *Bingh.* Orig. Eccleſ. l. 8. c. 1. §. 5. Vid. Giorn. de Lett. d'Ital. T. 1. p. 78. [b] Vid. Jour. des Sav. T. 20. p. 505.]

BASILIC is chiefly applied, in modern times, to churches of royal foundation; as thoſe of St. John de Lateran, and St. Peter of the Vatican at Rome, founded by the emperor Conſtantine. *Daviler*, Archit. p. 414.

Golden BASILIC, *baſilica aurea*, is an appellation given the church of the Lateran, on account of its richneſs and furniture.

BASILIC appears alſo to have been given in later ages to churches before conſecration. Vid. *Johnſ.* Eccleſ. Laws, ann. 1237. §. 1.

BASILICS were alſo little chapels built by the antient Franks over the tombs of their great men, ſo called, as reſembling the figure of the ſacred *baſilicæ*, or churches, *Du Cange*, Gloſſ. Lat. T. 1. p. 500.

Perſons of inferior condition had only *tumbæ*, or *porticuli* erected over them. By an article in the ſalic law, he that robbed a *tumba* or *porticu us*, was to be fined 15 ſolidi; but he that robbed a *baſilica* 30 ſolidi. Leg. Salic. tit. 58. §. 3, ſeq.

BASILICS, *baſilicæ*, among the Romans, were ſpacious and beautiful edifices, deſigned chiefly for the *centumviri*, or the judges to ſit in and hear cauſes, and for the counſellors to receive clients. The bankers too had one part of the *baſilicæ* allotted for their reſidence [c]. The ſcholars alſo went thither to make their declamations, according to the teſtimony of Quinctilian [d].—[[c] *Roſin.* Ant. l. 9. c. 7. [d] *Quinctil.* l. 12. c. 5.]

The Roman *baſilicæ* were covered, by which they were diſtinguiſhed from the *fora*, which were public places, open to the air.

Some have obſerved, that the *baſilicæ* were to be built adjoining to the forum [e]. But this will by no means hold in reſpect of all. At the end of each was a large, lofty hall, called *chalcidica*, furniſhed with galleries, wherein the ſpectators were placed during the adminiſtration of juſtice [f].—[[e] *Calv.* Lex. Jur. p. 111. b. [f] Vid. *Vitruv.* Archit. l. 5. c. 6. *Perrault*, Abreg. P. 2. c. 1. art. 3.]

Voſſius [g] has obſerved, that thoſe *baſilicæ* were built in the ſhape of our churches, that is oblong, which was the reaſon, that, upon the ruin of many of the *baſilicæ*, Chriſtian churches were raiſed on the old foundation; and often alſo a whole *baſilica* was converted to ſuch a pious uſe [h].—[[g] *Voſſ.* Etym. p. 65, ſeq. [h] *Kenn.* Rom. Antiq. P. 2. l. 1. c. 5. p. 48.]

The firſt *baſilica* was built at Rome by Cato the elder; whence it was called *Porcia*; the ſecond was called *Opimia*; the third was that of *Paulus*, built at a great expence, and with much magnificence, whence it was called by ſome *regia Pauli*; another was built by Julius Cæſar, called *baſilica Julia*; of which Vitruvius tells us he had the direction. Vid. *Liv.* l. 26. c. 27. There were others alſo, to the number of eighteen or twenty.

The *baſilica Julia* not only ſerved for the hearing of cauſes, but for the reception and audience of foreign ambaſſadors. It was ſupported by an hundred marble pillars in four rows, and inriched with decorations of gold and precious ſtones. In it were thirteen tribunals, or judgment-ſeats, where the prætors ſat to diſpatch cauſes. *Plin.* Epiſt. l. 2. Ep. 14. ap. *Heder.* Schul. Lex. p. 522.

BASILIDIANS (*Cycl.*)—In general, the *Baſilidians* held much the ſame opinions with the Valentinians, another branch of the gnoſtic family. (See GNOSTICS, *Cycl.*) They aſſerted, that all the actions of men are neceſſary; that faith is a natural gift, to which men are forcibly determined, and ſhould therefore be ſaved, though their lives were ever ſo irregular. Irenæus and others aſſure us, they acted conſiſtently with their principle, committing all manner of villainies and impurities, in confidence of their natural election. Vid. *King*, Hiſt. Apoſt. Creed, c. 5. p. 302.

They had a particular hierarchy of divine perſons, or *Æons*. See ÆONS, *Cycl.*

Under the name *Abraxas*, they are ſaid to have worſhipped the ſupreme God, from whom, as a principle, all other things proceeded.

There are ſeveral gems ſtill ſubſiſting inſcribed with the name Abraxas, which were uſed by the *Baſilidians* as amulets againſt diſeaſes and evil ſpirits. Vid. *Montfauc.* Palæogr. l. 2. c. 8. p. 177, ſeq. See ABRAXAS, *Cycl.* and *Suppl.*

BASILISCUS, in zoology, a name given by ſome of the old authors to the *regulus criſtatus*, or golden crowned wren. This name is a diminutive of the word *baſileus*, king, another of its names, given it becauſe of its golden crown. *Ray*, Ornithol. p. 163.

BASILISCUS, *baſiliſc*, or *baſiliſk*, is alſo uſed to denote a very dangerous ſort of ſerpent, which kills, as it is ſaid, by its breath or ſight only. This was alſo called *regulus*, which anſwers to the name of *baſiliſcus*, or little king, becauſe it has a kind of crown upon its head, and is the moſt dangerous of all ſerpents. Galen ſays, that it is of a colour inclining to yellow; that it has three little eminences upon its head, ſpeckled with whitiſh ſpots, which have the appearance of a ſort of crown. Ælian ſays, that its poiſon is ſo penetrating, as to kill the largeſt ſepents with its vapour only; and that if it but bite the end of any man's ſtick, it kills him. It drives away all other ſerpents with the noiſe of its hiſſing. Pliny ſays, it kills thoſe who look upon it.

The generation of the *baſiliſk* is not leſs marvellous, being ſaid to be produced from a cock's egg, brooded on by a ſerpent. Theſe, and other things equally ridiculous, are related by Matthiolus, Galen, Dioſcorides, Pliny, and Eraſiſtratus. Kirchmayer and Vander Wiel have given the hiſtory of the *baſiliſk*, and detected the folly and impoſture of the traditions concerning it. Vid. *Vater.* Phyſ. Exper. §. 8. c. 6. p. 831.

In ſome apothecaries ſhops there are little dead ſerpents ſhewn, which are ſaid to be *baſiliſcs.* But theſe ſeem rather to be a kind of ſmall bird, almoſt like a cock, but without feathers: its head is lofty; its wings are almoſt like a bat's; its eyes large, and its neck very ſhort.

The moſt eminent phyſicians, and modern philoſophers, look upon all that is ſaid of the *baſiliſc* as fabulous, and mere invention: they ſay that no one ever ſaw any real *baſiliſcs*; that thoſe which are ſhewn and ſold at Venice, and in other places, are nothing but little thornbacks artificially put into a form like that of a young cock, by ſtretching out their fins, and contriving them with a little head, and hollow eyes: and this, Calmet ſays, he has, in reality, obſerved in a ſuppoſed

baſiliſc, at an apothecary's ſhop at Paris, and in another at the jeſuits of Pont-a-Mouſſon.

We find the *baſiliſc* mentioned in the Bible; but the Hebrew word *pethen*, which is tranſlated *baſiliſc*, ſignifies an *aſp*, as the beſt interpreters agree. *Calm.* Dict. Bibl. in voc.

BASILISC is alſo myſtically uſed by the alchymiſts, to denote the ſublimate mercury of the philoſophers.

Lully applies the name to a certain ſtone, which kills mercury, and fixes it into perfect ſilver, without fire.

Others, by the word *baſiliſc*, expreſs the philoſophers ſtone itſelf, and with leſs impropriety, if, as ſome have held, this ſtone is made of the powder of the *baſiliſc*.

Paracelſus gives the appellation *baſiliſc* to the venereal diſeaſe.

BASILISC alſo denotes a great piece of ordnance; thus denominated from its reſemblance to the ſuppoſed ſerpent of that name.

The *baſiliſc* throws an iron ball of 200 pound weight. It was much talked of in the time of Solyman emperor of the Turks, in the wars in Hungary; but ſeems now out of uſe [h]. Paulus Jovius [i] relates the terrible ſlaughter made by a ſingle ball from one of theſe *baſiliſcs* in a Spaniſh ſhip; after penetrating the boards and planks in the ſhip's head, it killed above thirty men [k]. Maffeus [l] ſpeaks of *baſiliſcs* made of braſs, which were drawn eachby 100 yoke of oxen.—[[h] Trev. Dict. Univ. T. 1. p. 897. [i] Hiſt. T. 2. P. 1. [k] *Aquin.* Lex. Milit. T. 1. p. 118. a. [l] Hiſt. Ind l. 2.]

Modern writers alſo give the name *baſiliſc* to a much ſmaller and ſizeable piece of ordnance, which the Dutch make fifteen feet long, and the French only ten. It carries forty-eight pound. *Wolf.* Lex. Math. p. 245.

BASIOGLOSSUM (*Cycl.*)—The *Par baſiogloſſum* is otherwiſe denominated, from its figure, *par hypſiloideum*. Vid. *Barthol.* Anat l. 3. c. 13. p. 550. ap. *Caſt.* Lex. p. 100.

Some have denied the exiſtence of the *par baſiogloſſum*, particularly Fallopius and Mr. Cowper; tho' this laſt, on further inquiry, found ſome fibres, which, by their contrary order to thoſe of the *geniogloſſum*, induced him to allow the *baſiogloſſum* [a]. Heiſter only makes the *baſiogloſſum* a part of the ceratogloſſum [b].—[[a] *Drake*, Anthrop. l. 3. c. 15. p. 355. [b] Comp. Anat. §. 323.]

The *baſiogloſſum*, with the geniogloſſum, ceratogloſſum, and ſtyloglosſum, form the body of the tongue. See TONGUE.

BASIS (*Cycl.*)—The *Baſis of a medicine* denotes the principal part, or that directly levelled at the indication. Vid. *Junk.* Conſp. Form. Medic. tab. 1. p. 1.

BASIS, in the antient muſic and poetry, denotes the equability of ſounds proceeding in the ſame tenor. *Scalig.* Poet. l. 1. c. 19.

In which ſenſe, *baſis* ſtands contradiſtinguiſhed from *arſis*, or elevation, as well as from *theſis*, or depreſſion.

BASIS, in oratory, denotes the fourth member of a complete exordium, being that which ſucceeds the apodoſis, and prepares the way for the propoſition. *Heder.* Schul. Lex. p. 522.

BASIUM. Chemiſts uſe the word *baſium*, which literally in Latin ſignifies a kiſs, for an extemporaneous tincture of iron and copper, invented by Cloſſæus. *Schrod.* Pharm. l. 3. c. 11. *Caſt.* Lex. p. 100.

BASKET, a kind of veſſel made of oſier, wicker, ruſhes, or the like, of different figures and ſizes, according to the uſe it is intended for. See OZIER.

Baskets have their uſes not only in the œconomical, but military affairs: at ſieges, they make uſe of a ſmall *basket* filled with earth, and ranged on the top of the parapet.

They are about a foot and an half high, as much in diameter at top, and eight or ten inches at bottom; ſo that being ſet together, they leave a ſort of embraſeures at their bottom, through which the ſoldiers fire, without expoſing themſelves. *Guill.* Gent. Dict. P. 2. in voc.

BASKET alſo imports a kind of meaſure or quantity of certain commodities: a *basket* of *medlars* contains two buſhels; of *aſſafœtida* from twenty to fifty pound weight. Ruſt Dict. T. 1. in voc.

BASKET, *corbeille*, in architecture, a kind of vaſe, or figure-piece of ſculpture, in form of a *basket* filled with flowers or fruits, ſerving to terminate ſome decoration. *Daviler.* Archit. P. 2. p. 519.

BASKET *fiſh*, in natural hiſtory, a name given by the Engliſh in North America to a very remarkable fiſh, ſometimes caught in the ſeas thereabout, tho' not frequent any where.

Mr. Hooke, to whom it was referred by the Royal Society to name it, has called it, *Piſcis echinoſtellaris viſciformis*, the body of it reſembling an egg-fiſh, or *echinus marinus*, and the arms a ſtar-fiſh, and finally, the dividing of the branches being more like that of the branches of miſletoe than any other natural production we are acquainted with.

This fiſh ſpreads itſelf from a pentagonal mouth-piece, or root, in the centre of which the mouth is placed, into five main limbs or branches; and each of theſe, at its firſt iſſuing out of the body, is divided into two: this makes ten. Each of theſe ten again divides into two, which makes twenty, and ſo on, each dividing to the fourteenth time; at which place they make more than fourſcore thouſand limbs. Theſe are too ſmall to be traced farther by the eye, or preſerved in carriage; but it is very probable, that even theſe were again divided, perhaps, ſeveral times.

The branches between the joints are not all equally of a length, tho', for the moſt part, they are pretty nearly ſo; but thoſe branches, which were on that ſide of the fiſh on which the preceding joint was placed, are always about a fourth or a fifth part longer than thoſe on the other ſide. Every one of theſe branches, from the mouth to the very extremity, has a double range or chain of pores running regularly along it; and the body of the fiſh much reſembles the *echini* kind, being protuberant, and divided into five parts, each ſupported by its bony ridge. The arms or branches are never very ſtrong; but, when they are dry, they are greatly more brittle than before, the leaſt force imaginable deſtroying them.

The ſhoals of Nantuket, an iſland on the coaſt of New England, at times furniſh the fiſhermen with this creature; but it is remarkable, that they are never ſeen there, unleſs when taken by hooks in fiſhing for other fiſh. They claſp the hook-bait faſt, and encircle it with all their arms, coming up, when drawn by it, in form of a wicker basket; whence the name: but, when they have been ſome time out of the water, they become flat.

The uſe of the numerous arms of this fiſh is plainly to catch its prey. It probably extends them to their full length while under the water, and then claſps hold of any thing fit for food that chances to ſwim over them. The fiſhermen have ſometimes found the arms containing ſmall mackrel, or pieces of larger. Vid. Phil. Tranſ. N° 57, & 74.

Mr. Winthorp ſays, this fiſh might alſo be called *net-fiſh*, or *purſe-net-fiſh*. Phil. Tranſ. N° 74.

It is evident from the deſcription, that this fiſh is of the *ſtella arboreſcens*, or branched ſtar-fiſh kind; but whether the ſame with the commonly known kind called the *caput meduſæ*, is not evident from this deſcription. The body of this fiſh, by what is related of its protuberance, and reſemblance to the *echini marini*, may probably be the *aſteropodium* in its foſſil ſtate.

BASKET *ſalt*. This is a brime ſalt, made from the water of our ſalt ſprings in Cheſhire and elſewhere, differing from the common brime ſalt in the fineneſs of the grain, and in its whiteneſs and purity.

In the preparing this kind of ſalt, ſome uſe reſin, and other additions, to break the grain, and make it ſmall: others effect this by keeping up a very briſk fire under it, and ſtirring it all the while; but the moſt approved method is only to take out for this kind the third draught of every pan that is working for the common brime ſalt, and to do this before the granules or cryſtals are perfectly formed. By this means, the ſalt is very fine, and when it has been had hard preſſed down into ſmall wicker baskets, it is dried at the ſtove in them, and ſo kept for ſale.

BASON (*Cycl.*)—*Sale by the* BASON, at Amſterdam, is uſed for the public ſales made under the direction of the Ven du Meeſter; thus called, by reaſon that, before adjudging the lot or commodity to the laſt bidder, they uſually ſtrike a braſs *baſon*, to give notice of it. *Savar.* Dict. Comm. Supp. p. 53.

BASON, in water-works, a cavity dug in the ground, of a round, oval, ſquare, or other figure, lined or laid with ſtone, flint, or flags, bound with cement or lead, and bordered with turf, marble, or the like, ſerving to receive the water of a jet d'eau, or to ſupply water for the occaſions of the garden. *Daviler.* Archit. P. 2. p. 414.

There are divers ſpecies and denominations of *baſons*, *viz.*

Figured BASON, that whoſe plan or circumference makes ſeveral turns and returns, either ſtreight, circular, or the like. Such are moſt of the *baſons* of fountains at Rome.

BASON *with a baluſtrade*, that whoſe cavity is ſurrounded with a balluſtrade of ſtone, marble, braſs, or the like.

BASON *with a trench*, or *baſſin a rigole*, that whoſe border being of marble, or other ſtone, has a trench cut in it, from whence, at certain diſtances, ſprings out a thread of water, which lines the trench, and forms a kind of nape or gargle around the baluſtrade. Such is that of the fountain of the rock of the Bell-videre at Rome. *Daviler*, ib. p. 415.

BASON *en coquille*, that ſhaped like a ſhell.

BASON *of diſcharge*, *Baſſin de decharge*, that made in the loweſt part of a garden, for the water of the ſeveral fountains, after it has ſerved it purpoſe, to empty itſelf into; from thence to be conveyed by ſome trench or canal into the next river.

BASON *of a port* denotes the place where the ſhips ſtand. *Aubin*, Dict. Marin. p. 75.

The word is alſo uſed for a ſmall private port contrived in a large one, for the refitting of veſſels, more frequently called a dock.

Baſons, in gardening, are either for ornament or uſe. When there is a jet d'eau in the middle, the *baſon* muſt always be ſo proportioned to the height it throws the water, as to be capable of receiving it when blown about by winds, and not ſuffer it to be thrown on the walks.

The depth of *baſons* is uſually from two to three feet, this being ſufficient to ſecure the bottom of the *baſons* from froſt, and to dip the watering pots for the garden in; but, if they are intended to hold fiſh, they muſt be four or five feet deep. Deeper than this is dangerous, and unneceſſary.

Baſons are made either with clay, cement, or lead; but they are moſt uſually made with clay. In the making them this way, the diameter muſt be made four feet longer on each ſide than the *baſon* is to be. This will be taken up by the walls and clay. For the ſame reaſon, it muſt be dug two feet deeper than the intended depth of the water; becauſe it is to be laid over eighteen inches thick with clay, and ſix inches with gravel and paving. The wall is to be made with ſhards, rubbiſh, or flints, with the natural earth for mortar; and the clay muſt be well worked, and trod firmly down with the naked feet.

The way of making them with cement is, to allow one foot nine inches every way for the work; then cut the banks perpendicularly, and raiſe a wall of maſonry a foot thick, made of pebble-ſtones, or the like, laid in mortar of lime and ſand: the bottom is then to be covered to the ſame thickneſs; and then the ſolid lining of the cement is to be backed up againſt the walls, and over the bottom. This is to be made of ſmall flints in beds of mortar made of lime and cement. When this ſolid is eight inches thick, it muſt be plaſtered over the whole ſurface with cement well ſifted before it be mixed with the lime; and with this it is to be wrought over ſmooth with a trowel. The proportion of this cement ſhould be two-thirds of the cement or powdered tile to one-third of lime; and this cement has the property of hardening ſo under water, that it will become like ſtone or marble, and will not be ſubject to decay of a long time.

After the finiſhing, the *baſon* ſhould, for four five days, be anointed over very often with oil, or bullocks blood, to keep it from flawing or cracking in the drying; and after this, the water ſhould be let in as ſoon as may be.

The leaded *baſons* are made with walls a foot thick, and a bottom of half a foot. Theſe muſt be of rubble-ſtones cemented with plaſter; for the lime would injure and eat the lead. The ſheets of lead are to be ſpread over theſe walls and bottom, and ſeamed with ſolder. Theſe *baſons*, however, are but little in uſe now, from the expence of making them, and the danger of the lead's being ſtolen.

The waſte-pipes of fountains ought always to be made large enough, for fear of choaking. When the waſte water is to be carried off into common ſewers, it may be carried away in drains, or earthen pipes; but, when it is to ſerve for *baſons* that lie below it, it is to be conveyed in leaden ones. Vid. *Miller*'s Gard. Dict.

BASON *of the Sea.* See the article SEA.

BASSAD, or BESD, an Arabian name for the purple fucus of the Greeks, uſed by the women to paint their cheeks, and by the dyers about cloaths. It has been ſo far miſunderſtood by late authors as to be interpreted by the word coral; but the error of this is evident, ſince coral has none of theſe properties. See the article MARGINA.

BASSE, in ichthyology, the Engliſh name of the *ſea-wolf*, the *lupus piſcis* of authors. The Greeks have called this *labrax*; and ſome of the later writers, as Paulus Jovius, and others, *ſpigola*. It is properly a ſpecies of pearch, and is diſtinguiſhed by Artedi by the name of the pearch with thirteen rays in the ſecond fin of the back, and fourteen in the pinna auri. See the articles PERCA and LUPUS *Marinus*.

BASSE-*Cour*, in building, a court ſeparated from the principal one, and deſtined for the ſtables, coach-houſes, and livery-ſervants. *Daviler*, Archit. P. 2. p. 414.

BASSE-*Cour* of a country-ſeat, is the yard, or place where the cattle, fowls, &c. are kept.

That where ſtrange creatures of divers ſorts are kept for curioſity, is called by the French *menagerie*. The Romans gave the name *vivarium* to that place, where beaſts were kept for the public ſhews.

BASSE, in the middle-age writers, denotes a collar for cart-horſes, made of flags.

Hence alſo the round, matted cuſhion of flags, uſed for kneeling in churches, is called *baſſe*; in Kent, a *truſh*. *Kenn.* Gloſſ. Paroch. Antiq. in voc.

BASSET, or BASSETTE, a game with cards.

The perſons concerned in *baſſet*, are, 1°. The *tailleur*, *banker*, or *dealer*, who keeps the bank.

2°. The *croupier*, who is his aſſiſtant, and ſtands by to ſuperviſe the loſing cards.

3°. The *punter*, *ponte*, or *ſetter*, that is, any one who plays againſt the banker.

Beſides theſe, there are other terms uſed in this game, as,

4°. The *faſſe*, or *face*, which is the firſt card turned up by the tailleur belonging to the pack; by which he gains half the value of the money laid down on every card of that ſort by the punters.

5°. The *couch*, or firſt money which every punter puts on each card; each perſon that plays, having a book of thirteen ſeveral cards before him, on which he may lay his money, more or leſs, at diſcretion.

6°. The *paroli*, which is, when a punter having won the firſt ſtake, and having a mind to purſue his good fortune, crooks the corner of his card, and lets his prize lie, aiming at a *ſept et le va*.

7°. The *maſſe*, when having won the firſt ſtake, the punter is willing to venture more money on the ſame card.

8°. The *pay*, when the punter having won the firſt ſtake, be it a ſhilling, half-crown, guinea, or whatever he laid down on his card, and not caring to hazard the paroli, leaves off, or *goes the pay*; in which caſe, if the card turn up wrong, he loſes nothing, having won the couch before; whereas if it turn right, he, by this adventure, wons double the money ſtaked.

9°. The *alpiew*, much the ſame with paroli, and uſed when a couch is won by turning up, or crooking the corner of the winning card.

10°. *Sept et le va*, the firſt great chance or prize, when the punter having won the couch, makes a paroli, and goes on to a ſecond chance; ſo that if his winning card turns up again, it comes to *ſept et le va*, which is ſeven times as much as he laid down on his card.

11°. *Quinze et le va* is the next higher prize, when the punter having won the former, is reſolved to puſh his fortune, and lay his money a ſecond time on the ſame card, by crooking another corner; in which caſe, if it come up, he wins fifteen times the money he laid down.

12°. *Trent et le va* is the next higher prize, when the punter crooking the fourth corner of his winning card, if it turn up, he wins thirty-three times the money he firſt ſtaked.

13°. *Soixant et le va* is the higheſt prize, and entitles the winner to ſixty-ſeven times his firſt money, which, if it were conſiderable, ſtands a chance to break the bank: but the bank ſtands many chances firſt of breaking the punter. This cannot be won, but by the tailleur's dealing the cards over again.

The rules of the game of *baſſet* are as follow:

The banker holds a pack of fifty-two cards, and having ſhuffled them, he turns the whole pack at once, ſo as to diſcover the laſt card; after which he lays down all the cards by couples.

The punter has his book of thirteen cards in his hand, from the king to the ace; out of theſe he takes one card, or more, at pleaſure, upon which he lays a ſtake.

The punter may, at his choice, either lay down his ſtake before the pack is turned, or immediately after it is turned, or after any number of couples are down.

Suppoſing the punter to lay down his ſtake after the pack is turned, and calling 1, 2, 3, 4, 5, &c. the places of thoſe cards which follow the card in view, either immediately after the pack is turned, or after any number of couples are drawn. Then,

If the card, upon which the punter has laid a ſtake, comes out in any odd place, except the firſt, he wins a ſtake equal to his own.

If the card, upon which the punter has laid a ſtake, comes out in any even place, except the ſecond, he loſes his ſtake.

If the card of the punter comes out in the firſt place, he neither wins nor loſes; but takes his own ſtake again.

If the card of the punter comes out in the ſecond place, he does not loſe his whole ſtake, but only one half; and this is the caſe in which the punter is ſaid to be *faced*.

When the punter chooſes to come in after any number of couples are down, if his card happens to be but once in the pack, and is the laſt of all, there is an exception from the general rule; for tho' it comes out in an odd place, which ſhould entitle him to win a ſtake equal to his own, yet he neither wins nor loſes from that circumſtance, but takes back his own ſtake.

This game has been the object of mathematical calculations. Mr. De Moivre ſolves this problem: To eſtimate at *baſſet* the loſs of the punter under any circumſtance of cards remaining in the ſtock when he lays his ſtake, and of any number of times that his card is repeated in the ſtock. From his ſolution he has formed a table, ſhewing the ſeveral loſſes of the punter in whatſoever circumſtances he may happen to be. See Doctr. of Chances, p. 63.

From this table it appears, 1. That the fewer cards are in the ſtock, the greater is the loſs of the punter. 2. That the leaſt loſs of the punter, under the ſame circumſtances of cards remaining in the ſtock, is when his card is but twice in it; the next greater when but three times; ſtill greater when four times: and the greateſt when but once.

The gain of the banker, upon all the money adventured at at *baſſet*, is 15 s. 3 d. *per cent.* *De Moivre*, Doctr. of Chances, p. 93.

The game of *baſſet* is ſaid to have been invented by a noble Venetian, who, on account thereof, was baniſhed Venice.

It was firſt introduced into France by ſignior Juſtiniani, ambaſſador of that republic in 1674. Severe laws were made againſt it under Louis XIV. [a]; to elude which, they diſguiſed *baſſet* under the name of *pour & contre*, that is, for and againſt, which occaſioned new arrets and prohibitions of parliament [b]. —[a] Dict. de Trev. T. 1. p. 903. [b] Vid. *De Marre*, Traité de Police, l. 3. T. 4. c. 6.

BASSETING, in the coal mines, denotes the riſe of the vein of coal towards the ſurface of the earth, till it come within two or three feet of the ſurface itſelf. *Plott*, Nat. Hiſt. Stafford. c. 3. § 36.

This is alſo called by the workmen *croping*, and ſtands oppoſed to *dipping*, which is the deſcent of the vein to ſuch a depth, that it is rarely, if ever, followed to the end.

BASSO *Relievo* (*Cycl.*) make part of the furniture of antiquaries. Thoſe of the Trajan and Antonine columns have been copied

copied by Bartoli, and explained by Bellori, &c. Thoſe of the arch of Severus by Suareſius. Vid. *Fabric.* Bibl. Ant. c. 5. §. 6. p. 125.

Some have alſo made maps and proſpects of countries in *baſſo relievo.* Vid. Phil. Tranſ. N° 6. p. 99.

BASTAGARII, in antiquity, a college or company at Rome, who carried the fiſcal ſpecies out of the provinces to Rome or Conſtantinople. *Hartung.*Curſ. Jur.Civ.Exerc. 3. c. 15. §. 55.

The directors of theſe were called *præpoſiti baſtagarum.*

The word is derived from *baſtaga*, which properly imports the office of carriage or conveyance, απο τε βαστάζειν, *portare.*

Tho' ſome will have them called *baſtangarii*, q. d. *beſtiæ angariæ, eò quòd ruſticos angariabant, ad quintam beſtiam præſtandam. Du Cange*, Gloſſ Lat. T. 1. p. 502.

The denomination *baſtagarii* has alſo been given to thoſe who carry the images of ſaints at proceſſions. *Du Cange*, Gloſſ. Græc. T. 1 p. 182.

BASTARD (*Cycl.*) does not appear to have antiently imported any reproach. William the Conqueror makes no ſcruple of aſſuming that appellation. His epiſtle to Alan count of Bretagne begins, *Ego Willielmus cognomento Baſtardus. Du Cange*, Gloſſ. Lat. T. p. 502.

If a *baſtard* be got under the umbrage of a certain oak in Knollwood in Staffordſhire, belonging to the manor of Terley-Caſtle, no puniſhment can be inflicted; nor can the lord, nor the biſhop, take cognizance of it. *Plott*, Nat. Hiſt. Stafford. c. 8. §. 23. p. 279.

BASTARD, in the ſea language, is uſed for a large ſail of a galley, which will make way with a ſlack wind.

BASTARD is alſo uſed adjectively, or in compoſition with divers other words, to denote things of inferior or diminutive value.

In this ſenſe we meet with *baſtard* coral, *baſtard* alabaſter, *baſtard* amianthus, &c.

BASTARD *ſaffron* is the ſame with what is otherwiſe called *ſaf-flower*, ſometimes *ſcarlet-flower*, as being uſed in dying ſcarlets. *Plott*, Nat. Hiſt. Oxfordſh. c. 6. §. 35. p. 155. *Hought.* Collect. T. 4. N. 6. p. 361.

BASTARD *ſcarlet* is a name given to red dyed with bale madder, as coming neareſt the Bow dye, or new ſcarlet. *Hought.* Collect. N. 337. Vol. 2. p. 370, ſeq.

BASTARD, in reſpect of artillery, is applied to thoſe pieces, which are of an unuſual or illigitimate make or proportion.

Theſe are of two kinds, long and ſhort, according as the defect is on the redundant or defective ſide.

The long *baſtards*, again, are either common or uncommon. To the common kind belong the double culverin extraordinary, half culverin extraordinary, quarter culverin extraordinary, falcon extraordinary, &c. *Fæſch.* Ing. Lex. p. 72.

The ordinary *baſtard* culverin carries a ball of eight pounds. *Wolf.* Elem. Pyrat. §. 99.

BASTARDS are alſo an appellation given to a kind of faction or troop of banditti, who roſe in Guyenne, about the beginning of the fourteenth century, and joining with ſome Engliſh parties, ravaged the country, and ſet fire to the city of Xaintes. *Mezer.* ap. Dict. de Trev. T. 1. p. 908.

Mezeray ſuppoſes them to have conſiſted of the natural ſons of the nobility of Guyenne, who being excluded the right of inheriting from their fathers, put themſelves at the head of robbers and plunderers to maintain themſelves.

BASTARDY is a defect of birth objected to one born out of wedlock.

Euſtathius will have baſtards among the Greeks to have been in equal favour with ligitimate children, as low as the Trojan war; but the courſe of antiquity ſeems againſt him. Potter and others ſhew, that there never was a time when *baſtardy* was not in diſgrace. *Pott.* Archæol. l. 4. c. 15. p. 337, ſeq. *Lakemak.* Antiq. Græc. Sacr. P. 1. c. 6. §. 12.

Right of BASTARDY, *Droit de batardiſe*, in the French laws, is a right, in virtue whereof the effects of baſtards dying inteſtate, devolve to the king, or the lord. Dict. de Trev. T. 1. p. 900.

BASTONADO, *Baſtonade*, the puniſhment of beating or drubbing a crimin l with a ſtick.

The word is formed of the French *baſton*, a ſtick or ſtaff.

The *baſtonade* is a puniſhment uſed both among the antient Greeks, Romans, and Jews, and ſtill obtains among the Turks.

The Romans called it *fuſtigatio*, *fuſtium admonitio*, or *fuſtibus cædi*, which differed from the *flagellatio*, as the former was done with a ſtick, the latter with a rod, or ſcourge. The fuſtigation was a lighter puniſhment, and inflicted on freemen; the flagellation a ſeverer, and reſerved for ſlaves. It was alſo called *tympanum*, becauſe the patient here was beat with ſticks, like a drum. Vid. *Calv.* Lex. Jur. p. 394. a.

The penalty is much in uſe in the Eaſt to this day. The method there practiſed is thus: the criminal being laid on his belly, his feet are raiſed, and tied to a ſtake, held faſt by officers for the purpoſe; in which poſture he is beaten by a cudgel on the ſoles of his feet, back, chin, &c. to the number of one or more hundred blows. *Calm.* Dict. Bibl. T. 1. p. 260.

BASTONIER, or BÂTONIER, in the French law, an antient advocate, elected yearly according to ſeniority, to be the head or maſter of the community of advocates and attornies. He is preſident of the board held for maintenance of the order, and diſcipline of the palais. To him alſo belongs the commiſſion of the inferior judges, when put under interdict, ſo long as the interdiction laſts. *Corneil.* Dict. des Arts, T. 1. p. 97.

BASTONIER is alſo uſed for him who keeps the ſtaff of a community, and carries or follows it in proceſſions. *Corn.* Dict. des Arts, ibid.

BAT, in phyſiology, a mongrel or amphibious ſort of animal, partaking both of the mouſe and the bird, and flying, but without feathers.

The *bat*, called alſo by us *lapwing*, and *flittermouſe*, by the Latins, *veſpertilio*, ſeems a medium between the quadruped and the feathered kinds; but it partakes moſt of the former tribe, agreeing only with the birds in the ſternum, and the poſition of its liver; and with the quadrupeds in the kidneys, bladder, teeth, penis, teſticles, diaphragm, and lungs [a]. In reality, it only appears to be a bird by its flying. They lay themſelves up in winter in the drieſt apartments of caves; where planting their talons to the roof, they cover their bodies with their wings, and ſo hanging perpendicularly in great numbers, but ſo as not to touch each other, they ſleep for ſome months [b]. —[[a] *Willugh.* in *Ray*, Phil. Lett. p. 353. See alſo *Boyle*, Phil. Works Abr. T. 2. p. 186, ſeq. *Vater.* Phyſ. Exper. §. 8. c. 3. p. 811. *Lhuyd*, in *Ray*, l c. p. 301. [b] *Lhuyd*, in *Ray*, Phil. Lett. p. 301.]

Travellers ſpeak of a ſort of *bats* in Golconda bigger than hens. Vid. *Boyle*, loc. cit. p. 166.

In Braſil there is a large ſpecies of this animal, which, if men lie aſleep with their legs naked, will, it is ſaid, make a wound in them ſo gently, as not to wake them, but ſo deep, that they will ſuck the blood at it, and leave the perſon in ſome danger of bleeding to death. *Piſo*, Hiſt. Braſ. p. 69.

BAT, in commerce, a ſmall baſe ſilver coin, current in divers parts of Germany and Switzerland at different prices.

The *bat*, or *fladermouſe*, at Nurenberg, is equal to four criotzers; at Zurich, to $\frac{1}{28}$ of the French crown; at Baſil, Schaffhauſen, &c. to $\frac{1}{27}$; and at Bern and Friburg to $\frac{1}{30}$ of the ſame crown. Theſe laſt are callet *ſhort bats*. *Savar.* Dict. Comm. T. 1. p. 298.

BATABLE *Ground*. See BATTABLE *Ground*, *Cycl.*

BATARDIERE, a place in a garden, prepared for the planting of fruit-trees in, which being tranſplanted thither from the nurſery, are to be placed in eſpaliers, or elſewhere, to ſupply the place of dead trees. *Chomel*, Dict. OEcom. in voc.

BATCHELORS, or BACHELORS, (*Cycl.*) in the livery companies in London, are thoſe not yet admitted to the livery. *Cowel*, Interpr. in voc.

Every company of the twelve conſiſts of a maſter, two wardens, the livery, and the *batchelors*, who are yet but in expectation of dignity in the company, and have their function only in attendance on the maſter and wardens. *Cowel*, loc. cit.

BATCHELORS is alſo a name given in the ſix companies of merchants at Paris to the elders, and ſuch as having ſerved the offices, have a right to be called by the maſter and wardens to be preſent with them, and aſſiſt them in ſome of their functions, particularly in what relates to the *chef-d' oeuvres*, or maſter-pieces of ſuch as are candidates for being admitted maſters. *Savar.* Dict. Comm. T. 1. p. 207. in voc. *Bachelier.*

BATCHELOR is alſo particularly uſed for a man not married, or who is yet in a ſtate of a celibacy.

The Roman cenſors frequently impoſed fines on old *batchelors*. Dion Hallicarnaſſeus mentions an old conſtitution, by which all perſons of full age were obliged to marry. But the moſt celebrated law of this kind was that made under Auguſtus, called the *lex Julia de maritandis ordinibus*; by which *batchelors* were made incapable of legacies or inheritances by will, unleſs from their near relations. This brought many to marry, according to Plutarch's obſervation [a], not ſo much for the ſake of raiſing heirs to their own eſtates, as to make themſelves capable of inheriting thoſe of other men [b].—[[a] περὶ φιλοστοργ. [b] Vid. *Lipſ.* Excurſ. ad Tacit. Annal. l. 3. Tit. C. *Sueton.* in *Octav.* c. 34.]

The rabbins maintain, that, by the laws of Moſes, every body, except ſome few particulars, are obliged in conſcience to marry at twenty years of age: this makes one of their 613 precepts. Hence thoſe maxims ſo frequent among their caſuiſts, that he who does not take the neceſſary meaſures to leave heirs behind him, is not a man, but ought to be reputed a homicide. Lycurgus was not more favourable: by his laws, *batchelors* are branded with infamy, excluded from all offices civil and military, and even from the ſhews and public ſports. At certain feaſts they were forced to appear, to be expoſed to the public deriſion, and led naked round the market-place. At one of their feaſts, the women led them in this condition to the altars, where they obliged them to make *amende honorable* to nature, accompanied with a number of blows, and laſhes with a rod at diſcretion. To complete the affront, they forced them to ſing certain ſongs compoſed in their own deriſion. Mem. Acad. Inſcr. T. 5. p. 409, ſeq.

The Chriſtian religion is more indulgent to the *batchelor* ſtate: the antient church recommended it as preferable to, and more perfect than, the matrimonial ſtate. *Joſeph.* Hypomn. l. 5. c. 115.

In the canon law, we find injunctions on *batchelors*, when

arrived

arrived at puberty, either to marry, or turn monks, and profeſs chaſtity in earneſt. *Johnſ.* Eccleſ. Law, An. 748. §. 113.

BATENITES, a ſect of apoſtates from Mahometaniſm diſperſed through the Eaſt, who profeſſed the ſame abominable practices with the Iſmaelians and Karmatians. *Sale*, Prel. Diſc. to Koran, §. 8. p. 186.

The word properly ſignifies eſoteric, or people of inward or hidden light.

BATEN-KETOS, or BATA-KAITOS, in aſtronomy, a fixed ſtar of the third magnitude in the whale's belly; whence it is alſo denominated *venter ceti*. *Wolf.* Lex. Math. p. 252. *Vital.* Lex. Math. p. 84.

BATH (*Cycl.*)—Some authors ſpeak of *bloody baths*, *balnea ſanguinolenta*, prepared eſpecially of the blood of infants, antiently ſuppoſed to be a kind of ſpecific for the leproſy. *Bacon*, Opp. T. 2. p. 172.

Metaline BATHS, thoſe made of water, impregnated with the ſcoriæ of metals. The moſt common and uſeful of this kind are thoſe prepared with the ſcoria of iron, which abounds with earthy, ſaline, and ſulphureous ſubſtance of the metal; and theſe are of excellent ſervice for ſtrengthening and bracing up the parts, and recovering weak and decayed limbs; ſtopping various kinds of bleeding; and reſtoring the menſtrual and hæmorrhoidal flux, where obſtructed; inſomuch that they may well be ſubſtituted for the natural iron baths.

Adjacent to the ſmelting huts where metals are run from their ore, are to be found large quantities of the ſlag of copper, antimony, and cobalt, which abounding with ſulphur, vitrialic ſalt, and an earthy principle, make ſerviceable *baths* for ſtrengthening the loſt tone of the fibres, and relaxing them when they are too ſtiff. Theſe *baths* have likewiſe a deterſive and cleanſing virtue; ſo that, with prudence, and due regard to circumſtances, they may be uſed on many occaſions. The way of making theſe artificial *baths* is, either to take the ſlags as they come hot from the furnace, or elſe to heat them afreſh, and throw them into hot water; which is afterwards to be uſed either in the way of *bath*, or fomentation, occaſionally.

There are other artificial *baths*, prepared of allum and quicklime, by boiling them together in fine rain-water. Such *baths* are highly ſerviceable in paralytic diſorders, and weakneſs of the limbs. *Hoffm.* Exper. on Min. Wat. p. 203.

BATH, in chemiſtry, See BALNEUM, *Cycl.* and *Suppl.*

Tournefort mentions a *bath* at Smyrna ſo hot, that it will boil an egg ſoft in ten minutes, and hard in twenty minutes. *Tournef.* Voyag. Let. 21. p. 189. b.

There is a near affinity between hot *baths* and acidulæ, both as to their principles and effects. In reality, they appear only to differ in point of heat: where the pyrites are diſſolved more forcibly and haſtily, a heat is produced, which makes our thermæ; where the ſame pyrites are diſſolved more ſucceſſively and ſlowly, no heat ariſes, and we have acidulæ.

Hoffman has a diſſertation expreſs *de convenientia acidularum & thermarum quoad principia & uſum.* *Teichm.* Elem. Phil. Nat. P. 2. c. 8. p. 237.

The pepper *bath*, or *pfeffer-waſſer* on the Alps, is one of the moſt celebrated in Europe, and has been the ſubject of treatiſes expreſs, beſides what has been ſaid of it occaſionally by Scheuchzer, and others. It was firſt diſcovered in the year 1240, and is of the periodical kind. The water breaks forth in a dreadful place, ſcarce acceſſible to the ſun-beams, or indeed to men, unleſs of the greateſt boldneſs, and ſuch as are not in the leaſt ſubject to dizzineſs. Theſe *baths* have this ſingularity above all others, that they commonly break forth in May, and that with a ſort of impetuouſneſs, bringing with them beech-leaves, crabs, or other wood-fruit, and that their courſe deſiſts in September or October.

Scheuchzer profeſſes himſelf of opinion, that theſe waters are not impregnated with any minerals, or, if they do contain any, that their virtues in curing diſtempers, and preſerving health, do not proceed from them. They are exceeding clear, deſtitute of colour, taſte, or ſmell. Phil. Tranſ. N° 316. p. 151, ſeq.

According to Dion, Mæcenas was the firſt who made a *bath* at Rome: yet there are inſtances of public *baths* prior to this; but they were of cold water, ſmall, and poorly decorated.

Agrippa, in his ædilate, built one hundred and ſixty places for bathing, where the citizens might be accommodated, either with hot or cold, gratis [a]. After his example, Nero, Veſpaſian, Titus, Domitian, Severus, Gordian, Aurelian, Maximian, Dioclesian, and moſt of the emperors who ſtudied to gain the affections of the people, erected *baths* laid with the richeſt marble, and wrought according to the rules of the moſt delicate architecture [b]. — [a *Plin.* Hiſt. Nat. l. 35. c. 13. b Vid. L'Abbé *Couture* in Mem. Acad. R. Inſc. T. 2. p. 417.]

The rich had *baths* at home, and frequently very magnificent ones, eſpecially after the time that the practice of pillaging the provinces had begun; but they only uſed them on extraordinary occaſions. The great men, and even emperors themſelves, ſometimes bathed in public with the reſt of the people. Alexander Severus was the firſt who allowed the public *baths* to be open in the night-time during the heats of ſummer. Id. ibid. p. 419.

The Greek *baths* were uſually annexed to *Paleſtræ* or *Gymnaſia*, of which they were conſidered as a part [c]. Theſe *baths* conſiſted of ſeven different apartments, uſually ſeparated from each other, and intermixed with other buildings belonging to the other ſorts of exerciſes. Theſe were firſt the cold *bath*, *frigida lavatio*, in Greek λουτρον; ſecondly, the *elæotheſium*, or room where they were anointed with oil; thirdly, the *frigidarium*, or cooling room; fourthly, the *propnigeum*, or entrance of the *hypocauſtum*, or ſtove; fifthly, the vaulted room for ſweating in, or vapour *bath*, called *concamerata ſudatio*, or *tepidarium*; ſixthly, the *laconicum*, or dry ſtove; ſeventhly, the hot *baths*, called *callida lavatio* [d]—[c Vid. *Voſſ.* de Quat. Art. Popul. c. 3. §. 13. p. 14. d *Burette*, in Hiſt. Acad. Inſcrip. T. 1. p. 120. See alſo *Potter*, Archæol. Græc. l. 4. c. 19. p. 372.]

For the *baths* ſeparate from the paleſtræ, they appear to have been uſually double, one for men, the other for women; but ſo near, that the ſame furnace heated both. The middle part was poſſeſſed by a large baſon, which received water by ſeveral pipes, and into which they went down by ſteps, being ſurrounded by a baluſtrade, behind which was a kind of corrydor, called *ſchola*, which formed a pretty large area, to hold thoſe who were waiting, till there ſhould be room for them in the *bath*. They were vaulted over, and only received light from the top.

In the Roman *baths*, the firſt part that appeared was a large baſon, called κολυμβηθρα or βαπτιστηριον in Greek, and by the Latins *natatio* and *piſcina*. The middle was poſſeſſed by the *hypocauſtum*, which had a ſtring of four apartments on each ſide, correſpondent, called *balnearia*, ſo contrived, that one might eaſily go out of one into the other. Theſe were the ſtove, the *bath*, cold *bath*, and *tepidarium*. *Burette*, lib. cit. p. 122, ſeq. The two ſtoves, called *laconicum* and *tepidarium*, were joined together, and built circular. Their floor was hollow, and ſuſpended, to receive the heat of the hypocauſtum, which was a large furnace underneath, ſupplied with wood, the heat of which was communicated to the ſtoves, by means of the vacuity left under their floors. The ſame furnace alſo heated another room called *vaſarium*, ſituate near the ſtoves, wherein were placed three large brazen veſſels called *milliaria*, by reaſon of their capacity; one for hot water, another for warm water, and the third for cold; being ſo contrived, that the water might paſs out of one veſſel into another, by means of ſeveral ſyphons, and be diſtributed, by pipes and cocks, into the neighbouring *bath*, according to the occaſions of the bathers.

The deſcription is given by Vitruvius, and after him by Mr. *Burette*, in the Hiſt. Acad. Inſcr. Tom. 1.

At three in the afternoon, which is what Pliny calls *hora octava & nona*, the Romans all repaired to the *baths*, either the public or the private ones: this was called the *bath* hour *hora balnei*, which in winter was at nine, in ſummer at eight. The public *baths* were all opened by the ſound of a bell, and always at the ſame hour. *Plin.* Epiſt. i. l. 3.

Thoſe who came too late, ſtood a chance for bathing in cold water.

They began with hot water, after which, as the pores were now opened, and might give room for too plentiful a perſpiration, they thought it neceſſary, for their health, to cloſe them again, either with the cold *bath*, or at leaſt with a ſprinkling of cold water. During the *bath*, the body was ſcraped with a kind of knives, or ſmall ſtrigils, ſuch as are ſtill found in the cabinets of the curious. After bathing, ſucceeded unction and perfuming, from which they went freſh to ſupper. Vid. L'Abbé *Couture*, in Mem. Acad. Inſcr. T. 2. 414, ſeq.

The Romans, when they found their ſtomachs overcharged with meat, went to the *bath*, as we learn from Juvenal, who inveighs againſt thoſe, who having gorged themſelves with eating, were forced to go into the *baths*, to give themſelves relief. They found alſo that a *bath* was good to refreſh themſelves after ſome conſiderable fatigue or travel, as Celſus the phyſician tells us; which makes Plautus ſay, that all the *baths* in this world were not ſufficient to remove the wearineſs he felt.

After Pompey's time, the humour of bathing was carried to great exceſs, by which many were ruined, ſeveral having brought themſelves to ſuch a pitch, that they could not bear food without bathing firſt. The emperor Titus is ſaid to have loſt his life hereby [e]. Hence Pliny inveighs ſeverely againſt thoſe phyſicians, who held, that hot *baths* digeſted the food [f]. The emperor Hadrian firſt laid a reſtraint on the immoderate humor of bathing, by a public edict, prohibiting all perſons to bathe before the eighth hour [g].—[e *Plut.* de Tuend Valet. f Hiſt. Nat. l. 29. c. 1. g *Spartian.* in Vit. Hadrian.]

The BATHS *of Agrippa*, *thermæ Agrippinæ*, were built of brick, but painted in enamel: thoſe of Nero, *thermæ Neronianæ*, were not only furniſhed with freſh water, but even had the ſea brought into them: thoſe of Caracalla were adorned with two hundred marble columns, and furniſhed with ſixteen hundred ſeats of the ſame matter. Lipſius aſſures us they were ſo large, that eighteen hundred perſons might conveniently bathe in them at the ſame time. But the *baths* of Dioclesian, *thermæ Dioclesianæ*, ſurpaſſed all the reſt in magnificence. One hundred and forty thouſand men were employed many years in building them [h]. Great part of theſe, as well as thoſe of Caracalla, are ſtill ſtanding; and, with the vaſt high arches,

the beautiful and ſtately pillars, the extraordinary plenty of foreign marble, the curious vaulting of the roofs, the prodigious number of ſpacious apartments, and a thouſand other ornaments, make one of the greateſt curioſities of modern Rome [i].—[[h] *Salmuth.* ad Pancir. P. 1. Tit. 27. [i] Vid. *Kenn.* Rom. Ant. P. 2. l. 1. c. 7. p. 57. See alſo *Schott.* Itiner. Ital. p. 132. & *Pitiſc.* Lex. Antiq. T. 2. p. 951, ſeq.]

It has been thought by many, that the practice of drinking our *Bath* waters in Somerſetſhire is not very antient, and that their antient uſe was in bathing; but Dr. Friend endeavours to ſhew the internal uſe of thoſe waters to have been very early. Dr. Guidot, in whoſe time this uſage revived, and who has given us the beſt hiſtorical narrative of theſe waters, goes no higher for their internal uſe than the latter end of the ſixteenth century. But they appear to have been in uſe in the thirteenth century: Gilbert ſurnamed Anglicus, who, according to Bayle, lived in 1210, in the reign of king John, or more probably in that of Edward I. mentions a perſon cured of a leucophlegmacy, attended with a ſwelling, *&c.* by the ſulphureous *baths*; which Dr. Friend underſtands of the *Bath* waters; and that the cure was wrought by drinking, not bathing, which had been improper in ſuch a caſe. *Friend.* Hiſt. Phyſ. P. 2. p. 271, ſeq.

See the uſes of *Bath* waters, and their difference from thoſe of Briſtol, under the head *Briſtol* WATER.

Dry BATH.—The antients had divers ways of ſweating by a dry heat; as by the means of hot ſand, ſtove-rooms, or artificial bagnios, and certain natural hot ſteams of the earth, received under a proper arch, or hot houſe, as we learn from Celſus [k]. They alſo had another kind of *bath* by inſolation, where the body was expoſed to the ſun for ſome time, in order to draw forth the ſuperfluous moiſture from the inward parts; and to this day it is a practice in ſome nations to cover the body over with horſe-dung, eſpecially in chronical diſeaſes, to digeſt and breath out the humour that cauſes the diſtemper [l]. In New England they make a kind of ſtoves of turf, wherein the ſick are ſhut up to bathe or ſweat [m].—[[k] L. 2. c. 17. [l] *Hoffm.* Exper. on Min. Wat. p. 178. [m] Phil. Tranſ. N° 384. p. 130.]

BATH, in Jewiſh antiquity, is alſo the name of a liquid meaſure, containing the tenth part of an omer. *Chamberl.* of Jew. Meaſ. p. 137. *Godw.* Moſes and Aaron, l. 6. c. 9. p. 528.

The *bath*, called alſo *bathus*, was the tenth part of the omer in liquid things, as the *epha* was in dry; ſo that the *bath* and epha were of the ſame dimenſions. *Ezek.* c. 45. ver. 11. *Arbuth.* Tab. p. 99.

Some diſtinguiſh five kinds of *baths*; the firſt called the *greater bath*, of the ſame quantity with the *epha*, equal to the Roman *amphora*, and conſequently containing eighty pounds of water. Joſephus [n] indeed gives its dimenſion otherwiſe, making the *bath* to contain 12 ſextaries; on which footing the *bath* will be equivalent to the Attic *metretes* [o], and contain 1440 Roman ounces, inſtead of 960 given by the former account. Joſephus is followed by Eiſenſchmidt. Beverinus, and after him Lami, adhere to the other and ſmaller proportion [p].—[[n] *Joſeph.* Antiq. l. 8. c. 2. [o] Vid. *Holſt.* Hiſt. Rei Numm. T. 2. l. 1. §. 1. [p] Vid. *Paul.* ad Beverin. p. 130, ſeq.]

The ſecond *bath* contained 100 ounces of water; and of this it is the ſcripture is ſuppoſed to ſpeak in deſcribing the brazen ſea, which was to contain 2000 *baths*. 1 Kings c. 7. v. 26.

The third *bath* contained 66 ounces two-thirds of water; and of theſe *baths* the brazen ſea contained 3000. This *bath* is ſuppoſed to have been in uſe at the time when the book of Chronicles was written.

The fourth *bath* was only a fourth part of the ſecond, and conſequently contained 25 ounces of water.

The fifth *bath* contained ſix ounces two-thirds of water. *Beverin.* Synt. de Menſur. P. 2. p. 127, ſeq.

Some have imagined a ſacred meaſure of this name different from the common one, and containing a *bath* and an half of the other; but without foundation. *Calmet*, Dict. Bibl. T. 1. p. 261.

BATH *metal* is a preparation of copper with zink, which gives a more beautiful colour than the calamine uſed in the preparation of the common braſs. *Stahl.* Phil. Princ. Chem. P. 2. ſec. 4. §. 112. See PRINCE'S *Metal.*

BATH-*Kol*, in Jewiſh antiquity, a ſpecies of revelation by a voice or echo from heaven. *Baſn.* Hiſt. Juif. T. 3. p. 126, ſeq. *Wolf.* Bibl. Hebr. T. 2. p. 133. *Godw.* Moſes and Aaron, l. 4. c. 8. p. 165.

The word ſignifies in the original, *daughter-voice* or *daughter of a voice*; for it may be interpreted both ways. It ſeems to have been thus called with reſpect to the oracular voice delivered from the mercy-ſeat, when God was conſulted by urim and thummim: this latter was the grand and primary voice of revelation: the former of ſecondary dignity, and inferior to it as the daughter to the mother. *Prideaux*, Connect. P. 2. l. 5. p. 462.

The Jewiſh writers ſpeak of three kinds of revelation among them; the firſt by urim and thummim, which obtained from the erecting of the tabernacle to the building of the temple; the ſecond by the ſpirit of propheſy, which prevailed from the beginning of the world to the death of Malachi; the third the *bath-kol*, or *filia vocis*, which took place when the ſpirit of prophecy was wholly ceaſed in Iſrael. Vid. *Lightfoot*, Works, T. 1. p. 485. Talmud. Bab. in Tract. Sanhedrin, p. 11.

Divines are much divided as to the nature and manner of this revelation. Dr. Prideaux maintains, that the *bath-kol* was no ſuch voice from heaven as the Jews pretend, but only a phantaſtical way of divination of their own invention, like the *ſortes Virgilianæ* among the heathens: for as with theſe latter, the words firſt dipped at in the book of that poet were the oracle, whereby they prognoſticated thoſe future events which they deſired to be informed of; ſo with the Jews, when they appealed to *bath-kol*, the next words which they ſhould hear from any one's mouth were the oracle itſelf. This they called a voice from heaven; becauſe thereby they thought the judgment of heaven to be declared as to any dubious points, which they deſired to be informed of, and the decrees of heaven to be revealed concerning the future ſucceſs of any matter, which they would be pre-informed of.

Some have given another reaſon for the name, *viz.* that it came out of thunder; that the thunder-clap always went firſt, and the *bath-kol* after it: ſo that the thunder was as the mother-voice, and the *bath-kol* the daughter coming out of it. But this cannot be true; for moſt of the inſtances, which the Jewiſh writers give us of their *bath-kol*, are without any ſuch thunder preceding. *Prid.* Connect. T. 3. P. 2. l. 5. p. 463, ſeq. n.

Huet maintains, that ſome books of ſcripture were written by *bath-kol*, particularly the books of Tobit and Judith. It may be added, that the generality of the Jewiſh traditions, cuſtoms, ceremonies, *&c.* are alledged to be founded on ſome *bath-kol.* Vid. *Wolf.* Bibl. Hebr. T. 1. p. 259.

Danzius has a diſſertation on the iniquity and impoſture of the *bath-kol*; *de filia vocis nefanda, divinæ æmula.* Vid. *Calm.* Dict. Bibl. T. 1. p. 261. a.

Some of the learned diſtinguiſh between urim and thummim and the holy ſpirit, and reckon four degrees of prophetic or divine inſtruction, which were indulged to the Jewiſh church: the firſt and moſt excellent was, the ſpirit of prophecy, properly ſo called, as it was given to Moſes and the ſucceeding prophets. 2. The holy ſpirit. 3. Urim and thummim. 4. *Bath-kol* [a], which, Grotius [b] ſays, was the ſole oracle which remained to them during the time of the ſecond temple.—[[a] *Druſ.* in Matt. iii. 17. [b] *Grot.* in Joh. xii. 28. ap. *Middleton's* Examinat. of the Biſhop of London's Diſcourſes, p. 50.]

BATHING, the act of uſing or applying a bath; that is, of immerging the body, or part of it, in water, or other fluid. See BATH.

Bathing, on a religious account, is more properly called ablution, or baptiſm. See ABLUTION, BAPTISM, *Cycl.* and *Suppl.*

Bathing is a practice of great antiquity. The Greeks, as early as the heroic age, are ſaid to have bathed themſelves in the ſea, in rivers, *&c.* We even find mention in Homer of hot baths in the Trojan times; but theſe ſeem to have been very rare, and only uſed on extraordinary occaſions. Athenæus ſpeaks of hot baths as unuſual even in his age. In reality, public baths appear to have been diſcouraged, and even prohibited, by the antient Greeks, who were contented to waſh themſelves at home in a ſort of *bathing* tubs. Vid. *Pott.* Archæol. T. 2. l. 4. c. 19. p. 371, ſeq.

The method of *bathing* among the antient Greeks was, by heating water in a large veſſel with three feet, and thence pouring it on the head and ſhoulders of the perſon, ſeated in a tub for that purpoſe, who, at coming out, was anointed with oil. *Burette*, in Hiſt. Acad. Inſcr. T. 1. p. 117.

The Romans were alſo long ere they came into the uſe of baths, the very name of which, *thermæ*, ſhews they borrowed it from the Greeks. As the antient Romans were chiefly employed in agriculture, their cuſtom was, every evening, after work, to waſh their arms and legs, that they might ſit down to ſupper with more decency: for it is to be obſerved, the uſe of linnen was then unknown, and the people of that age went with their arms and legs bare, and conſequently expoſed to duſt and filth [a]. But this was not all; for every ninth day, when they repaired to the city, either to the nundinæ, or to attend at the aſſemblies of the people, they bathed all over in the Tiber, or ſome other river which happened to be neareſt them [b]. This ſeems to have been all the *bathing* known till the time of Pompey, when the cuſtom began of *bathing* every day.—[[a] *Mercurial.* de Art. Gymnaſt. l. 1. c. 10. [b] L'Abbé *Couture*, in Mem. Acad. Inſcr. T. 2. p. 414.]

The Celtic nations were not without the uſe of *bathing*: the antient Germans bathed every day in winter in warm water, and in ſummer in cold. This is what Tacitus ſeems to ſuggeſt, *ſtatim e ſomno — lavantur, ſæpius calida, ut apud quos plurimum hiems occupat.* De Mor. Germ. c. 22.

In England, the famous bath in Somerſetſhire is by ſome aſſerted to have been in uſe 800 years before Chriſt [c]. Of this, it muſt be owned, we have but ſlender evidence: however, Dr. Muſgrave makes it probable it was a place of conſiderable reſort in Geta's time, there being ſtill the remains of a ſtatue erected to that general, in gratitude for ſome benefactions he had conferred on it [d].—[[c] Vid. Phil. Tranſ. N° 49. p. 978. [d] It. N° 346. p. 386.]

Bathing, among the antients, made a part of diet, and was uſed as familiarly as eating, or ſleep: on which footing it ſtill remains among the Turks, where there are public baths in every town, and even village [e]. But among us, it is become only a part of medicine, and rarely practiſed but under the direction of phyſicians [f]. Great diſtinction is now made between thoſe who are fit, and thoſe unfit, to undergo the operation, and many rules and preſcriptions given for the more ſucceſsful uſe thereof: the body is to be prepared beforehand, in ſome caſes by evacuants, in others by reſolvents, in ſome by venæſection, *&c.* During the courſe, it is to be kept open and ſoluble by gentle laxatives, eſpecially Epſom ſalt [g]. The beſt time for uſing the bath is in the morning, nature having then a tendency to excretion by ſweat. At coming out, the cold air is to be avoided, and the patient to be put to bed, in order to procure the evacuation by ſweat [h]. — [e *Tournef.* Voyag. Lett. 14. p. 496. [f] *Bacon*, Nat. Hiſt. Cent. 8. §. 740. [g] *Nent.* Fund. Med. T. 1. P. 1. p. 274. It. P. 2. p. 316. [h] *Nent.* lib. cit. p. 274.]

Bathing is either cold, or hot, or warm, ſimple, or mixed, according to the temperature and conditions of the fluids.

Bathing in waters too hot, heats and expands the blood and humors to exceſs; whence palpitations of the heart, pains in the head, faintneſs, *&c.* The miſchief is ſtill greater if the body be full of blood, or turged with ill juices. *Hoffm.* on Min. Wat. §. 27. p. 133.

The waters uſed for *bathing* are either pure and ſimple, or ſuch as abound with heterogeneous parts of different kinds. Thoſe fitteſt for medicinal purpoſes are, the pureſt, lighteſt, ſimpleſt, and free from all participation of mineral or metallic parts. Such a kind of water is that of rain, collected in the free and open air, remote from large towns; or that of rivers, eſpecially after the land floods come down into them; or that of ſome ſprings, which afford a very ſubtile, pure, and light water, extremely proper both for internal and external uſe.

But as ſuch ſoft and ſubtile waters are not every where to be found, nor rivers at hand in all places, a neceſſity frequently occurs of correcting and ſoftening the common waters, to fit them for medicinal uſe. This is moſt advantageouſly performed by a ſmall addition of fixed alkaline ſalt, or by the uſe of bran, common camomile, both the herb and its flowers, linſeed, peaſe-ſtraw, or oatmeal: all which have the power of taking off the hardneſs of waters, or rendering them ſoft and thin, ſo as to make them more eaſily enter the ſolid parts of the body. *Hoffm.* lib. cit. p. 179.

Bathing is not to be practiſed without great care and precaution in melancholic [i], oedematous [k], or paralytic caſes [l]. As to the phthiſis, authors are divided: ſome abſolutely reject the uſe of baths for them; others allow it, provided the water be only of a moderate degree of warmth, and the body be prepared beforehand by laxatives and venæſection [m]. With theſe precautions, it may even be allowed child-bearing women juſt before delivery [n]. — [i *Nent.* lib. cit. T. 2. P. 3. p. 796. [k] *Junck.* Conſp. Med. p. 411. *Nent.* lib. cit. p. 284. [l] Idem, ibid. p. 442. [m] *Junck.* lib. cit. p. 171. *Nent.* T. 1. P. 2. p. 382. [n] *Junck.* p. 713.]

Different *baths* have different effects, according to the ingredients of their waters: thoſe of the vitriolic kind are ſaid to fix the morbific matter in arthritic diſorders, and render them ſtill more obſtinate. They are alſo leſs proper where the body is foul, and the viſcera weak or obſtructed, being apt to render ſuch patients hydropic. *Nent.* lib. cit. p. 373.

Sulphureous and aluminous *baths* are commended againſt an incontinency of urine [o]; but prove hurtful to cachectic habits [p]. The hot *baths* at Wolkenſtein are ſaid to give the itch [q]. — [o *Nent.* lib. cit. T. 2. P. 3. p. 107. [p] *Junck.* p. 421. [q] Id. p. 458.]

The Caroline baths have this quality beyond other hot waters, that they do not ſoften the body, but rather, by reaſon of the copious earthy and aſtringent matter they contain, bind up the parts, ſtrengthen thoſe which are weak, block up the pores, and thus produce a contrary effect to other hot ſprings. *Hoffm.* on Min. Wat. ſect. 3. §. 25. p. 131.

Hence they are prejudicial to people of a tender and delicate habit, where the body is foul, or affected with ſpaſmodic, hypocondriac, or colic diſorders, and in many other caſes. They are of uſe where the limbs are to be ſtrengthened, the ligaments and tendons to be gently excited to motion, and the body to be dried. *Wedel.* Amæn. Mat. Med. l. 1. §. 3. c. 11.

The uſefulneſs and miſchievouſneſs of *bathing* makes a complicated conſideration, only to be decided by taking the nation, climate, habit, the time of the day, ſeaſon of the year, diſorder, *&c.* of the perſon, and the particular qualities and ingredients of the water into conſideration.

In general, hot or warm *bathing* tends to relax the ſkin, promote perſpiration, cleanſe the body, dilute the blood, and carry off cuticular foulneſſes by the pores. To conceive the manner of its operation, it is to be obſerved, that when the body is plunged in a pure, light, and ſimple warm water, it muſt neceſſarily undergo the following changes:

1°. The heat neceſſarily rarifies and expands the blood and all the juices, and thus dilates the whole ſyſtem of the veſſels; the conſequence of which is, that the pulſe, or contractive ſtroke of the arteries, increaſes; whence the blood circulates with greater force, and the external parts of the body become red, and begin to ſweat.

2°. By the gravity of the water, the body, plunged therein, is greatly altered; as its ſurface, in that caſe, ſuſtains a violent preſſure, which ſqueezes the blood forcibly in upon the viſcera. Thus, whilſt the veſſels are compreſſed from without, and dilated from within, the inteſtine motion of the conſtituent parts of the blood is increaſed, and conſequently the viſcid juices are thus diſſolved, obſtructions overcome, and the humors the better fitted to paſs through all the ſecretory and excretory ducts.

Thence, as by the water's gravity the parts are compreſſed from without, and the blood driven plentifully upon the heart, the lungs, the brain, and the larger veſſels, we ſee why, if the bath be too hot, it cauſes palpitations of the heart, oppreſſions in the viſcera, or ſometimes fainting; and again, why, when the body is foul, or full of bad juices, it produces continued fevers, or inveterate intermittents, if the firſt paſſages abound with crudities. Theſe ill effects are more frequently obſerved from the hot ſprings, which have alſo an aſtringent quality, as the violently hot Caroline ſpring evidently has.

3°. Another change enſues upon the body from the moiſture of the bath, which, aſſiſted with a temperate heat, procures a great ſuppleneſs to the ſkin and fibres; inſomuch that, upon coming out of the water, the whole habit of the body ſwells conſiderably, is looſened in its texture, and opened in its pores and veſſels; whilſt the blood and juices have a more free paſſage to the ſurface. Hence it is, that if a perſon go directly out of the warm bath to bed, he preſently begins to ſweat plentifully, which is the beſt effect that can proceed from *bathing*, and of great ſervice in the cure of diſeaſes.

It is queſtioned by ſome, whether warm *bathing* can be ſerviceable in diſorders of the internal and remote parts of the head, breaſt, and lower part of the belly. Hoffman aſſerts the affirmative, on the footing both of reaſon and experience; for as warm *bathing* of the feet is of great uſe in internal diſeaſes, ſuch as the head-ach, vertigo, convulſive aſthma, dry cough, hypochondriacal and hyſterical diſorders, palpitations of the heart, *&c.* it may reaſonably be expected, that *bathing* more parts of the body in pure warm water may be attended with greater ſucceſs; and, in fact, we find the greateſt uſe of warm *bathing* in thoſe diſtempers, where, by a violent contraction of the membranous parts, the blood is thrown upon others; and both the blood and juices are prevented from coming to the ſurface of the body, and driven back upon the viſcera, which is indicated when the extremities of the body are cold and ſhrunk, the belly coſtive, the skin dry, and inſenſible perſpiration and ſweat obſtructed; for in this caſe, the habit of the body being relaxed, its texture opened, and the finer veſſels expanded, the blood not only freely circulates on the ſurface of the body, but the perſpiration of the skin is reſtored, and a great quantity of impurities made to paſs through that widened ſtrainer: and hence there is ſcarce a more immediate and aſſured remedy for removing impurities, and cleanſing the juices, than warm *bathing* properly uſed, as it ſo ſucceſsfully carries off all corroſive matters, which being ſeated deep in the nervous and membranous parts of the body, occaſion pain, ſpaſms, or even exulcerations, and diſcharges them at the open pores, or fine net of the skin. *Hoffm.* Exper. on Min. Wat. §. 6. p. 178—183, ſeq.

Bathing is found more eſpecially beneficial to thoſe of a moiſt habit, and who have ſtore of humors in their veſſels and pores, as it colliquates the humors, and promotes their diſcharge. *Nent.* Fund. Med. p. 373.

In the ſummer it ſerves to cleanſe the skin from ſweat, and keep the pores open; in winter to promote perſpiration [r]. It is uſed with good effect in many chronic diſorders, in atrophies, the ſtone [s], *&c.* It is a good palliative in the coryza [t]; but uſeleſs in the jaundice [u], and hurtful in the aſcites [w] and ſciatica [x], and generally to all in a time of plague [y]. By its promoting perſpiration, it becomes noxious to perſons of a dry conſtitution, as it exſiccates too faſt; more eſpecially to perſons hectically inclined, as by means thereof the humors, already too prone to colliquation, are ſtill more reſolved [z]. — [r *Burggrave*, Lex. Med. p. 1424. [s] *Junck.* l. c. p. 544, 216 & 230. [t] Id. p. 503. [u] Id. p. 446. [w] *Nent.* Fund. Med. T. 2. P. 3. p. 256. *Junck.* p. 432. [x] *Nent.* T. 1. P. 2. p. 190. [y] *Teichmey.* Inſt. Med. Leg. c. 19. queſt. 5. p. 160. [z] *Nent.* Fund. Med. T. 1. Tab. 4. p. 373, ſeq.]

Cold *bathing* was in high eſteem among the antient phyſicians for the cure of diſeaſes, as appears from Strabo [a], Pliny [b], Hippocrates [c], and Oribaſius [d]. Whence frequent exhortations to waſhing in the ſea, and plunging into cold water. — [a In Geograph. l. 65. [b] *Plin.* Hiſt. Nat. l. 29. c. 1. [c] De Humidor. Uſu. [d] L. 6. c. 27.]

The cold bath was uſed with ſucceſs by Ant. Muſa, phyſician of the emperor Auguſtus, for the recovery of that prince; but fell into neglect after the death of Marcellus, which is ſaid to have been owing to the improper uſe hereof: but it was brought into requeſt again towards the cloſe of the empire of Nero, by means of a phyſician of Marſeilles, named Charmis. During the ignorance of the ſucceeding ages, the practice was again baniſhed a long time. *Burette*, Hiſt. Acad. Inſcr. T. 1. p. 122.

Hot *bathing* firſt, and then uſing the cold bath immediately afterwards, is ſaid to be good for the ſcurvy, at leaſt for that kind ſo common in cold countries. This is confirmed by the practice of the Ruſſians, and other northern nations. See SCURVY.

In violent pains, hot and cold *bathing* produce the ſame effects, and in the ſame way, in one reſpect, *viz.* aſſuaging the pain, by taking off the attention from it. When one is much pained, withdrawing the action of the nerves correſponding to the affected part, employing many nerves, or ſome of them violently, another way, will ſeldom fail of giving eaſe. One pain is often a cure for another. Applying garlic to a diſtant part, burning, and bliſtering, cure all in this way. Med. Eſſ. Abr. Vol. 1. p. 248.

The efficacy of hot and cold *bathing* is acknowledged in many caſes. How they act, ſeems a queſtion not yet fully decided in the writings of phyſicians.

Some, to account for the effects of cold *bathing*, have had recourſe to the additional preſſure on our bodies by the preſſure of the circumambient fluid. (See BATH, *Cycl.*) But conſidering that this preſſure is rarely $\frac{1}{13}$, and in many caſes of domeſtic *bathing* in a tub not $\frac{1}{30}$ of the preſſure of the atmoſphere, and conſidering alſo how little time people remain in a cold bath, the additional preſſure ſeems a cauſe very inadequate to its great effects. The contraction of the fibres cauſed by the ſtimulus of cold, ſeems a much more rational account of the matter.

It ſeems not very uncommon in medical writers to confound hot and warm *bathing* as one and the ſame intention, only differing in degree. But by ſome experiments, we have ſeen, in relaxations from old ſprains, the effects of warm and hot *bathing* ſeem diametrically oppoſite; the firſt relaxing, and increaſing the diſorder; the latter ſtrengthening, and ſometimes healing radically. By hot *bathing*, in this caſe, is to be underſtood water heated to a degree as to give pain. Nor is this difficult to be accounted for, if we conſider, that pain acting as a ſtimulus, ſtrongly contracts the parts; whereas water of an agreeable warmth relaxes, both by its warmth and moiſture.

It is therefore an inquiry worth making, what degrees of heat in baths are ſuited to different diſtempers and conſtitutions; for to preſcribe warm and hot *bathing* indiſcriminately, is like directing laxatives or aſtringents for one and the ſame caſe.

Warm *bathing*, by adding to the heat of the blood, raiſes a temporary fever, and by that means may have great efficacy in the cure of ſeveral diſorders, as well as by the increaſed perſpiration it occaſions. See PEDILUVIUM.

BATHING *a hawk or falcon* is, when being weaned from her ramage fooleries, and alſo hired, rewarded, and throughly reclaimed, ſhe is offered ſome water to bathe herſelf in, in a baſon, where ſhe may ſtand up to the thighs, chooſing a temperate clear day for that purpoſe. By the uſe of *bathing* ſhe gains ſtrength, with a ſharp appetite, and ſo grows bold. Vid. *Hought.* Collect. T. 3. p. 358. Dict. Ruſtic. T. 1. in voc.

BATHING, among the Copts and Ethiopians, denotes the day of Chriſt's baptiſm, reputed the 6th of January; when, from an opinion of an extraordinary ſanctity in the waters on that day, they not only, by antient cuſtom, baptized their catechumens, but themſelves are all baptized anew.

The water of this day they carry home to keep; and Chryſoſtom aſſures us, that it had often been known to remain ſweet, uncorrupted, for two or three years. Orat. 74. Vid. *Seld.* de Syned. P. 3. c. 15. *Schm.* p. 82, ſeq.

BATHING-*Tub*, in the Roman baths. There were two kinds of *bathing*-tubs, the one fixed, and the other moveable: among the latter, ſome were contrived on purpoſe to be ſuſpended in the air, whereby, to the pleaſure of *bathing*, was added that of being ſwung or rocked, by the motion given to the *bathing*-tub. *Burette*, in Hiſt. Acad. Inſcript. T. 1. p. 123.

BATHRUM, βαθρον, a name given by antient ſurgeons to a kind of ſtool or bench proper for the reduction of diſlocated bones.

This is alſo called βαθρον Ἱπποκρατειον, or the Hippocratic ſtool. *Galen*, 1. de Artic.

Its deſcription and uſe are repreſented at large by Scultetus. Armam. Chirurg. P. 1. tab. 23. fig. 5. & tab. 46, 47, & 50. *Caſt.* Lex. Med. p. 101. a.

BATHYCHRUS *Color*, in painting, a term uſed by the Greeks to expreſs what the Romans call *auſterus color*. Such a colour was coarſe and dull, and wanted the life of the florid colours. See the articles FLORID, EVANTHUS, and AUSTERUS.

BATILLUS, a muſical inſtrument made of metal, in the form of a ſtaff, furniſhed with metalline rings, which being ſtruck, yielded a kind of harmonical ſounds, uſed by the Armenians in their church ſervice. Vid. *Hoffm.* Lex. Univ. in voc.

BATIS, in botany, a name by which Pliny and ſome other authors call the ſea-plant, which we know by the name of ſamphire, and eat as a pickle. *Ger.* emac. Ind. 2.

BATIS, in ichthyology, a name given by ſome old writers to the female skaite, or flaire. They called the male *batos*. See the articles BATOS and RAIA.

BATISTE, in commerce, a fine white kind of linnen-cloth, manufactured in divers parts of the Spaniſh Netherlands.—There are three kinds of *batiſte*; the firſt very thin; the ſecond leſs thin; and the third much thicker, called holland *batiſte*, as coming very near the goodneſs of hollands.

The chief uſe of *batiſte* is for neck-cloths, head-cloths, ſurplices, &c. *Savar.* Dict. Comm. p. 302, ſeq.

BATMAN, a weight in Turky conſiſting of ſix okes. Forty of theſe *batmans* make a camel's load, and amount to about ſeven hundred and twenty pounds Engliſh weight. *Pocock*'s Egypt, p. 175.

Batman, or *Battemant*, is a weight uſed in Turky and Perſia. The Turkiſh *batman* is of two kinds; the larger containing ſix *okes*, or *ocquos*, at three pounds three quarters Paris weight the *ocquo*; ſo that the *batman* amounts to about twenty-two Paris pounds and an half; the ſmaller, compoſed likewiſe of ſix *ocquos*, at fifteen ounces the *ocquo*, amounting to five pounds ten ounces.

The Perſian *batman* is likewiſe of two kinds; one called the *king's weight*, *batman de chahi*, or *cheray*, uſed for weighing moſt of the neceſſaries of life, equivalent to about twelve pounds and an half Paris weight; the other called *batman of Tauris*, equal to ſix pounds four ounces Paris or Amſterdam weight. *Savar.* Dict. Comm. p. 303, ſeq.

Theſe, at leaſt, are the proportions given by Tavernier. Chardin rates the Perſian *batmans* ſomewhat lower, *viz.* the former at twelve pounds twelve ounces; and the latter at five pounds fourteen ounces.

BATON, in botany, a name by which ſome authors call the true turpentine-tree. *Ger.* emac. Ind. 2.

BATOONS *of St. Paul*, BASTONCINI *di San Paolo*, in natural hiſtory, a name given by ſome of the Italian writers, as Aguſtino, Scilla, and others, to the *lapides judaici*, or other ſpines of echini. Theſe are found in vaſt abundance in the iſland of Malta, and as every thing there is commemorated with ſome title, with St. Paul at the end of it, theſe are called *baculi Sti. Pauli*, or *St. Paul's batoons*.

BATOS, in ichthyology, the name given by Ariſtotle, and all the old writers, to the skaite, or flaire. They have generally called the male *batos*, and the female *batis*. It is a ſpecies of the *raja*, and is diſtinguiſhed by Artedi, by the name of the variegated ray, with the middle of the back ſmooth, and with one row of ſpines on the tail. Albertus calls it the *rayte*, and *rubus*. See the article RAIA.

BATRACHIAS *Lapis*, the *frog-ſtone*, a name applied by different writers to two very different ſubſtances; ſome underſtanding by it lumps of common flint, which have accidentally formed themſelves into this figure; and others thoſe pieces of amber, which contain either a whole frog, or any part of one. See BATRACHITES, *Cycl.* and *Suppl.*

BATRACHITES (*Cycl.*)—Pliny ſpeaks of three ſtones under this denomination; *unam ranæ ſimilem colore, alteram ebori*, (or rather, according to Hardouin's correction, *ebeni*) *tertiam rubentis e nigro.*

The *batrachites* differed from the modern bufonites, which does not appear to have been known to the antients. *Mercat.* Metalloth. arm. 8. c. 8. p. 185. See BUFONITES.

BATRACHOMYOMACHIA (*Cycl.*)—Suidas [a] and Plutarch aſcribe this poem to one Pigres, a brother of Artemiſia; and Proclus, Euſtathius, and the anonymous author of Homer's life, publiſhed by Allatius, leave the matter in doubt. Heinſius and others reject the piece as ſpurious, and unworthy of the prince of poets [b]: yet Geddi ſcruples not to aſſert, that the *batrachomyomachia* is preferable, and comes nearer to perfection, than either the Iliad or Odyſſey, excelling them both in judgment as well as genius [c].—[[a] *Suid.* Lex. T. 3. p. 112. [b] Vid. *Fabric.* Bibl. Græc. l. 2. c. 1. §. 1. [c] *Geddi*, de Script. non Eccleſ. p. 208.]

Several authors have compoſed pieces in imitation of the *batrachomyomachia*; ſuch is the Moſchæa by Merlin Cocæus of Mantua, written in elegiac Latin verſe, deſcribing the war of the flies and the ants: ſuch is alſo the galeomyomachia, or the battle of the cat and the mice, in Greek iambics, publiſhed in 1549, together with the *batrachomyomachia*; and the three books of Elyſias Calentinus on the war between the frogs and the mice [d]. Van der Hardt has publiſhed a work under the title of βαλραχομυομαχια, wherein he endeavours to ſhew, that Homer's poem is a ſymbolical deſcription of the war between the Trachinii and Myonenſes [e]. The ſeveral editions and verſions of the *batrachomyomachia* are recited by Fabricius [f].—[[d] *Fabric.* loc. cit. §. 2. [e] *Reim.* Catal. Bibl. Theol. p. 751. [f] *Fabric.* Bibl. Græc. l. 2. c 1. §. 3.]

BATRACHOSALIAS, in ichthyology, a name given by many of the Greek authors to the lophius, or rana piſcatrix, of authors. See the article LOPHIUS.

BATTALIA, an army ranged in order of battle, or ready for engagement. Vid. *Aquin.* Lex. Milit. T. 1. p. 119. Milit. Inſtr. for Cavalry, P. 1. c. 32.

The word ſeems formed from the Latin *batualia*, ſometimes alſo written *batalia*, denoting a ſort of military or gladiatorial exerciſe, as fighting with foils, or tilting at a poſt. Vid. *Piſc.* Lex. Ant. T. 1. p. 268. b.

In this ſenſe, we meet with the depth of a *battalia*; to march in *battalia*, with the bagagge in the middle; to break the *battalia*, &c. In the Roman *battalia*, the haſtati made the front. *Richel.* Dict. T. 1. p. 186. a. See HASTATI.

BATTALION (*Cycl.*)—M. de Folard decries the modern method of ranging *battalions* ſo ſhallow, which renders them weak, and unable to ſupport each other; ſo that they are eaſily penetrated or broken: an eſſential fault in the modern tactics. The real ſtrength of a corps, according to this author, conſiſts in its thickneſs, or the depth of its files, and their connection and cloſeneſs. This depth renders the flanks almoſt as ſtrong as the front. He adds, that it may be laid down as a maxim, that every *battalion* ranged deep, and with a ſmall front, will beat another ſtronger than itſelf, ranged according to the uſual method. *Folard*, Polyb. T. 1. p. 7. *Richel.* Dict. T. 1. p. 186. a.

But this opinion of Folard has not been adopted in modern practice; and his theory has been vigorouſly attacked by two French officers in the ſervice of the States General. They admit the ſuperior ſtrength of his column to that of a modern *battalion*, if the action were to be decided with pikes and ſwords; but where fire-arms muſt be uſed, Mr. Follard's column is ſo very ill diſpoſed for this purpoſe, that it muſt infallibly be deſtroyed.

Battalions, when they engage, are drawn up three deep only, and not ſix deep, as is ſaid in the *Cyclopædia*.

Square BATTALION is that, where the number of men in file is equal to the number of men in rank.

Mr. Folard ſhews at large, in his book *de la Colonne*, the weakneſs of the ſquare *battalion*. Both the full and the hollow ſquare, according to him, are equally bad. *Richel.* loc. cit.

Doubling a BATTALION is a motion of the ſoldiers, whereby two ranks, or two files, are put into one. *Ozan.* Dict. Math. p. 605.

BATTERY (*Cycl.*) is ſometimes uſed in ſpeaking of the fabric of metalline utenſils.

In this ſenſe, *battery* works include pots, ſaucepans, kettles, and the like veſſels, which, tho' caſt at firſt, are to be afterwards hammered or beaten into form. Compl. Engl. Trad. T. 2. p. 64.

Some make *battery* for the kitchin, *batterie de cuiſine*, comprehend all utenſils for the ſervice of the kitchin, whether of iron, braſs, copper, or other matters. Others take the term in a narrower ſenſe, and reſtrain it to utenſils of braſs or copper. *Savar.* Dict. Comm. T. 1. p. 306.

A ſociety for the mineral and *battery* work of England was incorporated by queen Elizabeth, to whom ſhe granted all mines, minerals, and ſubterraneous treaſures, except copperas and allum, in all parts of England not mentioned in the patent of the ſociety of the mines royal. This ſociety has a governor, court of aſſiſtants, and other officers, who are the ſame as thoſe for the mines royal, with whom they are now aſſociated. Vid. *Pettus*, Fodin. Regal. P. 1. c. 17. p. 21, ſeq.

BATTIFOLIUM, or BATTIFOLLUM, a kind of tower or defence, frequently mentioned by Latin hiſtorians of the middle age. It ſeems to have been of wood, and to have been erected on ſudden and haſty occaſions. *Aquin.* Lex. Milit. T. 1: p. 120. a.

BATTLE (*Cycl.*)—The word is alſo written *battel*, *battell*, and *battail* [a]. It is formed from the French *battaille*, of the Latin verb *battuere*, to fence, or exerciſe with arms: whence *batualia*, and *batalia*, which properly denoted the action or exerciſe of thoſe who learned to fence, and who were hence alſo denominated *batuatores* [b].—[[a] *Skin.* Etym. in voc. [b] *Caſeneuv.* Orig. p. 21. b. *Menag.* Orig. Franc. p. 84. a. *Fabric.* Theſ. p. 342.

Battle is alſo called by divers other names, as fight, and combat; by the Latins *prælium*, *pugna*, and *campus*; by the Italians *giornata*, and the French *journée*, q. d. day or day's work. Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 728.

Some diſtinguiſh a *battle* from a combat, as the former is premeditated, and done with preparation; the latter is frequently occaſional, or unforeſeen. *Aubert.* ap. *Richel.* Dict. T. 1. p. 185. c.

Battle differs from attack, as the Roman *pugna* differs from *prælium*, i. e. as a whole from a part, there being frequently many attacks or *prælia* in one *pugna* or *battle*. *Aquin.* Lex Milit. T. 2. p. 182. b. in voc. *Prælium*.

Battle differs from ſkirmiſh both in extent and duration; a *battle*, properly ſo called, laſting ſeveral hours, ſometimes days. Bonfinius ſpeaks of a *battle* between the Turks and Hungarians, under the command of Amurath and Corvinus, which laſted three days. The *battle* between the Goths under king Roderic, and the Moors under count Julian, is ſaid to have laſted eight days; but it appears that ſeven of them were rather ſpent in ſkirmiſhing. *Marian.* de Reb. Hiſp. l. 6. c. 23.

Drawing up an army for BATTLE is called *embattelling*; the rules and method for which are furniſhed by the ſcience called by the antients *tactics*.

Order of BATTLE, the diſpoſition of the ſquadrons and battalions of an army in one or more lines, according to the conditions of the ground. *Ozan.* Dict. Math. p. 604.

Field of BATTLE, the ground on which the two armies engage.

The Greeks notified the places of their *battles* and victories by adding the word NIKH; whence Nicomedia, Nicopolis, Theſſalonica, *&c.* The antient Britons did the like, by adding the word *Mais*; whence Maiſſeveth, Malmaiſbury, *&c.* The Engliſh by the word *field*.

The Romans had their particular days, called *prælliares dies*, wherein alone it was lawful to join *battle*; and others wherein it was unlawful, called *dies atri*.

The Athenians, by the antient laws of their country, were not to draw out their forces for *battle* till after the ſeventh day of the month. And Lucian relates of the Lacedæmonians, that, by the laws of Lycurgus, they were not to fight before full-moon. Among the Germans, it was reputed an impiety to fight in the wane of the moon; and Cæſar tell us, that Arioviſtus was beaten by him, becauſe, contrary to the laws of his country, he had fought when the moon was in her wane. The German ſoldiers were intimidated with the apprehenſion, and afforded Cæſar an eaſy victory; *acie commiſſa impeditos religione hoſtes vicit.* De bell. Gallic. l. 2.

It is well known that Jeruſalem was taken by Pompey in an attack on the ſabbath-day, when, by the Jewiſh ſuperſtitious notions, they were not allowed to fight, or even defend themſelves. *Dion.* l. 7.

The Romans did not carry their ſuperſtition ſo far; their *atri dies* were only obſerved in reſpect of attacking: no day was too holy for them to defend themſelves in. *Macrob.* Saturn. l. 1. c. 16. *Aquin.* Lex. Milit. T. 2. p. 182, ſeq.

Among the antients, we find frequent inſtances of *battles* in the night: it was by the moon-light that Pompey beat Mithridates, and Scipio, Aſdrubal and Syphax. *Flor.* l. 3. *Appian.* de Bell. Punic. *Aquin.* Lex. Milit. T. 2. p. 213, ſeq.

BATTLE *array* denotes the order in which an army is drawn up at a review, or for engagement; more frequently called *line of battle*. *Guill.* Gent. Dict. P. 2.

Pitched or ſet BATTLE, that wherein both armies have room and time to range themſelves in good order.

The firſt pitched *battle*, of which we have any diſtinct account, is that between Croeſus and Cyrus, deſcribed by Xenophon [a], concerning which we have a diſſertation expreſs by M. Freret [b], wherein ſeveral points of the antient tactics are well explained.—[[a] *Cyropæd.* l. 6 & 7. [b] Mem. Acad. Inſcrip. T. 9. p. 209.]

In the modern war, we find few pitched or ſet *battles*: the chief view of the great commanders of late days is rather to haraſs or ſtarve the enemy by frequent alarms, cutting off his proviſions, carrying off his baggage, ſeizing his poſts, *&c.* than to join iſſue with him, and put the whole on the event of one day; a *battle* generally deciding the fate of a campaign, ſometimes of a whole war. Hence it is a rule, never to venture a general *battle*, unleſs either you fight to advantage, or be forced to it. *Macchiav.* Art. de la Guer. l. 4. c. 5. p 214.

Joining or giving *battle* ſhould always be by deſign: a general ſhould never ſuffer himſelf to be forced to fight. All the meaſures, movements, encampments, he makes, are to lead to the execution of his great deſign, which is to fight to advantage, till, by ſome miſtake of the enemy, he at length find the favourable opportunity. 'Tis in this that a ſuperior genius will at length prevail over an inferior: in the courſe of a campaign, he will take a number of advantages over him, which, together, are equivalent to a *battle*, the event of which is ever doubtful. *Feuguires*, Mem. de la Guer. §. 58. p. 244, ſeq.

The antients never joined *battle* without much ceremony and preparation; as taking auguries, offering ſacrifices, haranguing the ſoldiers, giving the word, or a *teſſera*, &c. The ſignals of *battle* were ſounding the *claſſicum*, or general charge, and diſplaying a peculiar flag, called by Plutarch a purple robe [c]. To which may be added, ſinging pæans, raiſing military ſhouts, and the like [d].—[[c] Vid. *Pott.* Archæol. l. 3. c. 9. *Kenn.* Rom. Ant. p. 209. *Aquin.* Lex. Milit. T. 2. p. 211. in voc. *pugna*. *Cruſo*, Milit. Inſt. P. 4. c. 9. p. 50. [d] *Veget.* l. 3. c. 71.]

Reaſons for giving a *battle* are, ſuperiority in the number or quality of forces; neceſſity of putting a ſpeedy end to the war; different views or intereſts of the commanders of the enemies army; their negligence in encamping or marching; neceſſity of relieving a place beſieged; the diſpoſition of an army, which muſt be ruined, unleſs prevented by the ſucceſs of a *battle*; the certainty of ſuccours coming to the enemy, which will render him ſuperior; ſome preceding advantage, which, tho' not deciſive, has given the enemy a conſiderable check. For avoiding it are, having leſs to hope for from a victory, than to fear from a defeat; expecting further ſuccours, or the junction of a ſeparate corps; finding the enemy advantageouſly poſted, or a proſpect of diſſipating his army by temporizing and avoiding *battle*. Means for execution are, to form the order of *battle* ſuitable to the quantity and quality of the forces whereof the army is compoſed, and the ground wherein it is expected to find the enemy; diſtributing the poſts to the general officers; giving copies of the order of *battle* to all thoſe who have command in it; diſtributing a ſufficient number of charges to the men, and having freſh munition and arms ready behind thoſe who have a long fire to ſuſtain; letting the army have time to reſt and refreſh themſelves before the *battle*; being ſufficiently provided with medicines and ſurgeons; being abſolutely free from the incumbrance of the heavy baggage; inſpiring the army with the deſire of fighting, hopes of victory, and promiſes of plunder; and not neglecting the advantages of wind and ſun. The ſtratagem of the Arabs deſerves mention. They uſed to turn looſe a number of camels loaden with ſand and duſt-bags full of holes to the windward of the enemy, who

by this means are covered and ſuffocated with a cloud of duſt. Vid. Phil. Tranſ. N° 219. p. 137.

On the day of *battle*, taking the advantages of the ground, obſerving the order of *battle* before concerted, changing it where found neceſſary, and giving notice thereof to thoſe concerned; diſtributing the artillery in the line according to the ground; watching for all advantages to be taken, by opening and ſtrengthening the wings; giving the word before marching to the enemy; taking care to obſerve the right and left, and the diſtance between the lines. If the army march in front, to make frequent halts, to give time for the line to recover its order, and to the artillery to fire and load again; above all, forbidding the ſoldiers from firing, to receive the enemies fire, and not to charge till after drawing their fire from them, is a capital point, it being certain, that when troops, who have parted with their fire, ſee others advance, and going to pour in their fire upon them, they will immediately give way. But when both ſides purſue the ſame maxim, the beſt expedient ſeems to be, to march up cloſe to the enemy, ere they give their fire, and having fired, prevent the enemy from giving his, by falling upon them with the bayonets on the muzzle of the muſkets the inſtant you have fired, which may be done under cover of the ſmoke, before they can perceive it. *Bland*, Milit. Diſcipl. c. 9. art. 2. p. 133, ſeq.

If the army, by its march, cannot come at the enemy in front, it muſt approach in a ſufficient number of columns to be in order of *battle*, out of diſtance of being charged in columns. The general officers who command the columns, are carefully to obſerve each other, that at leaſt their head make a front, and that, when arrived on the ground where the army may open itſelf, this movement be made with care and expedition, and out of reach of being charged by the enemy before the whole army is in order. The general is to be poſted where he may beſt ſee the effect of the firſt charge, that he may give orders for ſuſtaining the troops who have beaten, as well as to replace thoſe who are beaten; in order to which, he is to make uſe of the troops poſted between the lines, or thoſe of the body of reſerve. The *battle* growing hot, and the ſucceſs divided, the general is to make his chief effort againſt that part, where the enemy makes the ſtrongeſt reſiſtance; in which caſe, he is to repair thither himſelf, to animate the men by his preſence. If he be equally ſucceſsful through the whole firſt line, and have defeated that of the enemy, the chief care of the general officers is, to keep the troops together, and prevent their ſeparating and following the fugitives, except by bodies detached on purpoſe, from the battalions and ſquadrons; to march on ſlowly with the whole firſt line to ſuſtain thoſe who are detached, and to charge in front, and in order of *battle*, the ſecond line.

The artillery is ſtill to accompany the firſt line in the order wherein it was firſt diſtributed, if the ground will allow, and the reſt of the army to follow this motion, ſtill obſerving the diſtance between the two lines as at firſt appointed, to prevent confuſion. If the victory continue to declare in his favour, and he has the good fortune to overthrow the ſecond line, more care ſtill is to be taken to prevent the troops from ſeparating, leſt they be charged and put in diſorder by the firſt line of the enemy, who may have rallied behind their ſecond line. The routed troops muſt ſtill be purſued in a body, and in lines. No battalion ought ever to advance before the line in purſuit, for fear of being flanked, till the diſorder be general: afterwards, the number of thoſe detached for the purſuit is to be increaſed, without ever ſuffering a man to quit his flag without being commanded. On this occaſion, the general is to make uſe of the reſerved body, and of freſh troops, who have not engaged, to purſue the enemy, to prevent their rallying, and to take priſoners, which the troops muſt never be ſuffered to meddle with during the *battle*, nor ſo much as look on the plunder of the field, till the victory be abſolutely aſſured, and the enemy ſo broken, and at ſuch a diſtance, that there is no danger of his turning back on the bodies detached to purſue them: after which, during the reſt of the day, the victorious troops may be ſuffered to reap the plunder of the field of *battle*. If the firſt line give way, or be put into diſorder by the enemy, the battalions are to retire through the intervals left between thoſe of the ſecond line, behind which they are to ſtop and rally. Great care is to be here taken by the officers, that, inſtead of retiring through the intervals, they do not run directly into the battalions, and either carry them off with them, or put them into ſuch confuſion, that the enemy be upon them ere they have time to repair the diſorder. *Bland*, ib. p. 140.

On the firſt line's giving way, the ſecond ſhould march up briſkly to their relief, and attack the enemy, ere they have time to repair the diſorder, which the action and the purſuit muſt of courſe have thrown them into; by doing which they may eaſily retrieve what is loſt, and defeat and render uſeleſs the enemy's firſt line, who had been conſiderably weakened and diſordered by the former attack. This is the more eaſy to be effected, as the enemy's firſt fire is ſpent, which is that which does moſt execution; the other, from the great hurry of loading, being of little conſequence, in compariſon with the firſt. The great miſchief is, that the ſecond line ſeeing the firſt give way, are uſually ſtruck with a panic, which magnifies the enemy; ſo that by the time they approach near, they either betake themſelves to flight, or make but a faint reſiſtance. *Bland*, ibid. art. 10. p. 142.

In caſe fortune declare on the enemy's ſide, the great buſineſs of the general is to prevent a total rout. His capacity and experience are to ſhew him the moment which precedes the loſs of a *battle*, that he may take the neceſſary precautions to diminiſh the diſorder of a flight, either by the vigorous effort of a body of troops unſhattered, in order to give time for the reſt to rally, and thus ſecure a retreat; or by ſeizing ſome poſt behind, whither he may retire with ſafety; or a defile, behind which he may rally and re-aſſemble his ſcattered troops. As the loſs of the field of *battle* frequently carries with it that of the baggage and artillery, he is to remain no longer in this firſt place than while he can re-aſſemble his army; after which he is to lead it into ſome ſecure camp, where he may recover his loſſes, ſend for freſh cannon, troops, *&c.* If the loſs be conſiderable enough to hazard ſome conſiderable town, he is to throw into it the beſt of his infantry left, and endeavour ſtill to keep the field with the cavalry, to haraſs the enemy, in caſe he attempts a ſiege; or to oblige him to keep the army together, and prevent his dividing into ſeveral bodies, if his deſign be only to penetrate farther, and ravage the country. Vid. *Bland*, ib. §. 75. p. 306, ſeq.

BATTLE was formerly uſed for a body of forces drawn up in order of *battle*.

This amounts to the ſame with what is otherwiſe called battalion. See BATTALION.

In this ſenſe, we meet with the length or depth of the *battle*, the front, rear, and flanks of the *battle*. *Elton*, Milit. Art. l. 1. c. 25.

Length of the BATTLE is the number of men in a rank, or the ſpace from the left flank to the right flank.

Depth of the BATTLE is the extent of a file, or the number of men from the front to the rear.

A Roman legion, ranged in order of *battle*, conſiſted of *haſtati*, placed in the front; of *principes*, who were all old experienced ſoldiers, placed behind the former; and of *triarii*, heavy-armed with large bucklers, behind the *principes*. The *haſtati* were ranked cloſe; the ranks of the *principes* were much opener, ſo that they could receive the *haſtati*; and thoſe of the *triarii* opener ſtill, inſomuch that they could receive both the *principes* and the *haſtati* within them, without any diſorder, and ſtill facing the enemy. When therefore the *haſtati* found themſelves unable to ſtand the enemy's charge, they retired gently within the *principes*, where joining with them, they renewed the combat. If theſe found themſelves too weak to ſuſtain the enemy, both retired among the *triarii*, where rallying, they formed a new corps, and charged with more vigour than ever. If theſe failed, the *battle* was loſt; the Romans had no further reſource. *Macchiav.* Art de Guer. l. 3. c. 1.

The moderns are unacquainted with this method of inſerting or embattling one company into another; without which the former cannot be well ſuccoured or defended, and their places taken by others; which was a thing the Romans practiſed with great exactneſs.

For the *velites*, and, in later times, the archers and ſlingers, they were not drawn up in this regular manner, but diſpoſed of either before the front of the haſtati, or ſcattered up and down among the void ſpaces of the haſtati, or ſometimes placed in two bodies in the wings. Theſe always began the combat, skirmiſhing in flying parties with the foremoſt troops of the enemy. If they were repulſed, which was uſually the caſe, they fell back to the flanks of the army, or retired again in the rear. When they retired, the haſtati advanced to the charge. *Kenn.* Rom. Ant. Not. P. 2. l. 4. c. 10.

As to the cavalry, it was poſted at the two corners of the army, like the wings on a body, and fought ſometimes on foot, ſometimes on horſeback. The auxiliary forces compoſed the two points of the *battle*, and covered the whole body of the Romans.

Other leſs uſual forms of *battle* among the Romans were, the *cuneus*, or wedge; *globus*, or round form; *forfex*, or pair of ſheers; *turris*, or an oblong ſquare figure; *ſerra*, or ſaw. Vid. *Kenn.* Rom. Ant. P. 2. l. 4. c. 10. p. 205, ſeq.

The Greeks were inferior to the Romans in marſhalling their armies for *battle*, as they drew up their whole army in a front, and truſted the ſucceſs of the day to a ſingle force. *Pott.* Archæol. l. 3. c. 9. p. 75.

They had three forms of *battle* for the horſe, *viz.* the ſquare, the wedge, and the rhombus, or diamond form. The firſt held beſt for the defenſive; the two latter for the offenſive: the wedge being preferred as bringing moſt hands to fight. *Ælian.* Tact. c. 18.

BATTLE, in middle-age writers, properly denotes a combat or duel decreed by order of a court of juſtice, for the deciſion of a cauſe, where otherwiſe ſufficient proof could not be had. *Caſeneuv.* Orig. p. 21. b. See JUDICIUM *Dei*, ORDEAL, and PURGATION, *Cycl.*

BATTLE, in a naval ſenſe, denotes an engagement between two fleets, ſquadrons, or even ſhips.

This is more frequently diſtinguiſhed by the name of ſea-fight.

Of

Of late times, fleets are ranged in line of *battle*, like land armies, and fight much after the same order; to the expediency of which some objections may be made. Vid. Pref. Cond. of Navy, p. 23.

The antients had divers forms of sea *battles*; as the half-moon, circle, and forceps. In all these, not only the ships engaged each other, and by their beaks and prows, and sometimes their sterns, endeavoured to dash in pieces, or overset and sink each other, but the soldiers also annoyed the enemy with darts and slings, and, on their nearer approach, with swords and spears, boarding each other by laying bridges between the ships. Vid. *Pott.* Archæol Græc. l. 3. c. 21. p. 154, seq.

By way of preparation, they took down their sails, and lowered their masts, and secured whatever might expose them to the wind, choosing rather to be governed by their oars. Idem, ibid.

BATTLE is also used in speaking of the combats of brutes.

In this sense, we speak of *battles* between dogs, *battles* of cocks, &c. Mouffet describes a furious *battle* between two armies of wasps; which Derham takes rather to have been a venereal combat. Vid. Phil. Trans. N° 382. p. 58.

BATTLE-*Royal*, in cock-fighting, denotes a fight between three, five, or seven cocks all together; so as that the cock which stands longest, gets the day. Dict. Rustic. T. 1.

BATTLE-*ax*. The *battle*-ax was originally called *securis Danica*, because first introduced into England by the Danes; but being adopted in these countries, we find it called in later writers *securis Angla*, and *securis Scotica*, the English and Scottish axes. The grandees wore them enriched with gold, and beset with pearls. They were of that kind called *bipennes*, and have since generally degenerated into halbards or partisans, tho' we find them still retained, under their old denomination, by the band of gentlemen pensioners. *Du Cange*, Gloss. Lat. T. 4. p. 777.

BATTORY, a name given by the hans towns to their magazines or factories abroad. *Savar.* Supp. p. 54.

The chief of these *battories* are those at Archangel, Novogrod, Berghem, Lisbon, Venice, and Antwerp

BATTUTA, in the Italian music, the motion of the hand or foot in keeping or beating time.

Among Italian musicians, we frequently find the words, *A battuta*, which import, *in measure*, or beating each time equally. This usually occurs after what they call *recitativo*, which is rather declaiming than singing, and in which little or no measure is observed. *A battuta*, then, denotes, that they are to begin again to mark or beat the time equally. *Bross.* Dict. Mus. p. 13.

BATUDA, a method of fishing mentioned in some middle-age writers, wherein the fish are driven by beating the water with poles, till flocking into one place, they are the quicker caught. *Du Cange*, Gloss. Lat. T. 1. p. 508.

BAUDEKIN, BALDICUM, and BALDAKINUM, in our old writers, is used for cloth of *baudekin*, or gold; or tissue, upon which figures in silk, &c. were embroidered. But some writers account it only cloth of silk. See *Du Cange*, Gloss. Lat. voc. *baldakinus*.

BAUHINIA, in botany, the name of a genus of plants, so called from the names of the two Bauhines, famous for their botanical writings. The characters are these: the perianthium is of an oblong figure, and opens longitudinally on its lower side, and is inclined one way: its base also is divided into five leaves, which unite again at the top. The flower is composed of five petals, which are undulated, and end in narrow and reflex points; the lower ones are somewhat larger than the others; and the ungues of all are of the length of the cup: the stamina are ten filaments; nine of these grow together, forming a kind of cylinder, which opens in the lower side; the tenth filament stands below these, and is very long: the antheræ are oval; the tenth filament always has its antheræ; the others more frequently want them: the germen of the pistil is oblong, and stands upon a pedicle: the style is capillary, and bends downwards: the stigma is capitated, and assurgent: the fruit is a long pod, of a cylindrical figure, and contains only one cell, in which are placed a number of roundish, but flatted, seeds in a row.

Linnæus observes, that this character is founded on the American species of *bauhinia*; and that, in a species from Malabar, he found the upper nine stamina not growing together into a cylinder; so that the species of different countries are to be examined, before that article of the character can be perfectly established. *Linnæi*, Gen. Plant. p. 178. *Plumier*, 13. Hart. Malab. Vol. 1. p. 32.

BAUM, *melissa*, in botany. See BALM and MELISSA.

How to prepare the ens primum of *baum*, of which we meet with high commendations in Mr. Boyle, see ENS *primum*, *Cycl.*

BAVOSA, in ichthyology, a name given by the Italians to a species of the ray-fish, called by the modern authors *leviraia*, and *raia oxyrynchus*, and by the earlier authors, *raja bos*, *bos marinus*, and *leioraia*. It is distinguished by Artedi by the name of the variegated ray, with ten prickly tubercles on the middle of the back. See *Willughby*, Hist. Pisc. p. 135. and the article PHOLIS.

BAURAC, an antient name for nitre, but in some places used in a restrained sense, as not signifying every thing that was called by that name, but only one of two different salts that were confusedly called nitre. The Babylonians, according to Encelius, divided the salt, called by others nitre in general, into two kinds; the one they termed the bitter and redish nitre: this was probably the salt we now know under the name of *natrum*, or the Smyrna soap-earth: the other, they say, was acrid, but not bitter, and was used in seasoning their meat: this last they in particular called *baurac*, and distinguished it from the other by that name; and many are of opinion, that the nitre of these times, or common saltpetre, was known to them, and was the thing which they called *baurac*; and that the other fixed alkaline salt was what they properly and distinctly called nitre. Phil. Trans. N° 159. See also *Mercat.* Metalloth. p. 45. in not.

BAWD, a person who keeps a place of prostitution, or makes a trade of debauching women, and procuring or conducting criminal intrigues.

Some think the word is derived from the old French *baude*, bold or impudent; tho' Verstegan has a conjecture which would carry it higher, *viz.* from *bathe*, antiently written *bade*. *Skinn.* Etym. in voc.

In which sense, *bawd* originally imported no more than bath-holder, as if bagnios had antiently been the chief scenes of such prostitution. *Versteg.* Restit. Decayed Intellig. c. 10. p. 260.

The Romans had their male as well as female *bawds*; the former denominated *lenones* and *proagogi*, among us panders; the latter *lenæ*.

Donatus, speaking of the habits of the antient characters in comedy, says, *Leno palliis varii coloris utitur*. But the antient lenones, it is to be observed, furnished boys as well as girls for venereal service. *Fabr.* Thes. p. 1378. in voc. *leno*

Another sort of these merchants, or dealers in human flesh, were called *mangones*, by the Greeks ανδροκαπηλοι, who sold eunuchs, slaves, &c.

By a law of Constantine, *bawds* were to be punished by pouring melted lead down their throats. Vid. *Pancir.* P. 2. tit. 2. p. 86.

By the common law of England, a person may be indicted for keeping a bawdy-house, and punished by fine and imprisonment: and haunters of bawdy-houses bound to their good behaviour. See *Coke*, 3 Inst. 205. *Hawkins*, Pleas of the Crown, B. 1. ch 61. §. 2.

But it does not appear that the offence of being a *bawd* is indictable; tho' that of keeping a bawdy-house is. See the article STEWS.

BAWLING, among hunters, is spoke of the dogs, when they are too busy before they find the scent good. Gent. Recr. P. 1. p. 15.

BAY, (*Cycl.*) among huntsmen, is when the dogs have earthed a vermine, or brought a deer, boar, or the like, to turn head against them. *Cox*, Gent. Recr. P. 1. p. 15.

In this case, not only the deer [a], but the dogs, are said to *bay*. It is dangerous going in to a hart at *bay*, especially at rutting time; for then they are fiercest [b].—[a] Id. ib. p. 17. [b] Id. p. 74, seq.

There are *bays* at land, and others in the water.

BAY *colour* denotes a sort of red inclining to chesnut, chiefly used in speaking of horses.

In this sense, the word *bay* is formed from the Latin *baius*, or *badius*, and that from the Greek βαιος, a palm-branch: so that *badius* or *bay* properly denotes *color phœniceus*. Hence also, among the antients, those now called *bay* horses, were denominated *equi palmati*. *Menag.* Orig. p. 86. a. *Voss.* Etym. p. 60. b. *Du Cange*, Gloss. Græc. T. 1. p. 166. *Calv.* Lex. Jur. p. 107. b. *Kenn.* Gloss. ad Paroch. Antiq. in voc. *baius*.

We have divers sorts and degrees of *bays*; as a light *bay*, a dappled *bay*, &c.

All *bay* horses are said to have black manes, which distinguishes them from sorrels, which have red or white manes. *Guill.* Gent. Dict. P. 1. in voc.

BAY-*salt*. See the article SALT.

BAY, in building, denotes any kind of opening in walls; as a door, window, or even chimney. *Davil.* Archit. p. 419.

BAY *a mirroir*, in the manege, the same as *dapple-bay*. See DAPPLE.

BAY-*tree*, in botany. See LAURUS.

BAY *windows*, are the same with what we otherwise call *bow windows*. *Skinn.* Etym. in voc.

BAYARD, or BAIARD, in some old writers, is an appellative for a horse. *Kenn.* Gloss. in voc. *baius*.

Hence the phrases, *blind bayard*, *bayard's watering*, *bayard's green*, &c.

BAYONET (*Cycl.*)—The origin of the word is unknown; probably it came from the city Bayonne, where this weapon is said to have been first employed; or perhaps from its being invented by some engineer of that place. *Aquin.* Lex. Milit. T. 2. p. 299. in voc. *fica fistularia*.

The *bayonet*, popularly called *bagonet*, serves instead of a pike, wherewith the foot receive the charge of horse

Formerly the *bayonet* was made with a round handle, fitted for the bore of a firelock, and to be fixed therein after the soldier

had fired; but it is now made with an iron handle and ring, to go over the muzzle of the piece, and be screwed fast thereon. Since this invention of *bayonets*, pikes are out of use. *Guill.* Gent. Dict. P. 2. in voc.

This use of the *bayonet* fastened on the muzzle of the firelock was a great improvement, first introduced by the French, and to which, according to M. Folard, they owed a great part of their victories in the last century [a]; and to the neglect of this in the next succeeding war, and trusting to their fire, the same author attributes most of the losses they sustained [b].—[[a] Observ. in *Polyb.* T. 2. p. 452. *Fæsch.* Lex. Milit. p. 61. [b] *Folard.* sur *Polyb.* T. 1. p. 116.]

But tho' this writer commends the use of the *bayonet* so much, he thinks it far inferior to the pike, or rather partisan, as he describes it, of 12 or 13 feet long; and he proposes, that one-fifth of a body of infantry should be armed with these partisans. But it does not seem probable that this proposal should take place, while the great point of view in military discipline is to multiply fire, both in cannon and small-arms.

At the siege of Malta, a weapon called *pila ignea* was contrived to oppose the *bayonets*, being in some measure the converse thereof; as the latter consists of a dagger added to a fire-arm, the former consisted of a fire-arm added to a pilum, or pike. *Aquin.* Lex. Milit. T. 2. p. 155. a. in voc. *pila ignea.*

BAZAR, or BASAR, a denomination among the Turks and Persians, given to a kind of exchanges, or places where their finest stuffs and other wares were sold.

These are also called *bezestins.*

The word *bazar* seems of Arabic origin, where it denotes *sale*, or exchange of goods.

Some of the Eastern *bazars* are open, like the market-places in Europe, and serve for the same uses, more particularly for the sale of the more bulky and less valuable commodities. Others are covered with lofty cielings, or even domes pierced to give light; and it is in these the jewellers, goldsmiths, and other dealers in the richer wares, have their shops. *Savar.* Dict. Comm. T. 1. p. 313, seq.

The *bazar* or *maidan* of Ispahan is one of the finest places in all Persia, and even surpasses all the exchanges in Europe; yet, notwithstanding its magnificence, it is excelled by the *bazar* of Tauris, which is the largest that is known, having several times held thirty thousand men ranged in order of battle. *Savar.* Supp. p. 56.

At Constantinople, there is the old and the new *bazar*, which are large, square buildings, covered with domes, and sustained by arches and pilasters; the former chiefly for arms, harnesses, and the like; the latter for goldsmiths, jewellers, furriers, and all sorts of manufacturers. *Tournef.* Voy. de Levant, T. 2. Lett. 12. p. 10.

BAZGENDGES, in natural history, the name of a substance used by the Turks, and other eastern nations, in their scarlet-dying: they mix it for this purpose with cochineal and tartar, the proportions being two ounces of the *bazgendges* to one ounce of cochineal.

These are generally esteemed a sort of fruit, and are produced on certain trees in Syria, and other places; and it is usually supposed, that the scarcity and dearness of them is the only thing that makes them not used in Europe. But Mr. Reaumur, who had some of the Turkish *bazgendges* sent over to him, is of opinion, that they might easily be had in Europe; for he found, that they were no other than a kind of leaf-galls, produced by the means of an insect, in the manner of the horn of the turpentine-tree, and the common bladder-galls of the pucerons with us. The turpentine horn is, however, the thing which most resembles these, as they are the product of a tree of that species, the *bazgendges* themselves smelling very strong of turpentine; and when the horns of the common turpentine are dried, and compared with them, there is no visible difference. Hence it is to be observed, that these insects are not always mischievous and useless, but sometimes greatly beneficial to the world; and Mr. Reaumur very justly observes, that as the turpentine-tree is very common in many parts of France, and usually is full of its horns every year, it might be easy to gather a sufficient quantity of them to make trials of; and if found to answer the same purpose in Europe as in the East, the trees might be raised in any quantities.

Upon the whole, the *bazgendges* seem to be no other than the horns of the turpentine-tree in the eastern parts of the world; and it is not only in Syria that they are found, but China also affords them. Many things of this kind were sent over to Mr. Geoffroy at Paris from China, as the substances used in the scarlet-dying of that country, and they all proved wholly the same with the Syrian and Turkish *bazgendges*, and with the common turpentine horns. The lentisk or mastic-tree is also frequently found producing many horns of a like kind with these, and of the same origin, all being owing to the pucerons, which make their way into the leaves, to breed their young there. *Reaumur*, Hist. Insect. Vol. 6. p. 37.

BAZOCHE, or BASOCHE, a royal kind of jurisdiction exercised among the clerks of the palais, or courts of justice at Paris. *Richel.* & *Aubert*, T. 1. p. 191. *Corn.* Dict. T. 1. p. 95. b.

It is administred in the name and by the authority of the king of *Bazocke*, *roy de la Bazoche*, by virtue of an antient grant of the kings of France. The elder among the clerks are the officers; and he who presides is the chancellor.

This court only takes cognizance of causes among the clerks, or between clerks and artificers for goods bought, or work done. The freedoms they took with private characters in their inquisitions and remonstrances, has occasioned several arrets to restrain their power, and prohibit their holding pleas without leave.

A collection of statutes, ordonnances, regulations, monuments, and prerogatives of the kingdom of *Basoche* were published at Paris in 1654, 8vo. Dict. de Trev. T. 1. p. 901.

BDELLIUM (*Cycl.*)—The rabbins will have this *bdellium* to denote pearl, in which they are strenuously supported by the learned Bochart; but opposed by Salmasius, who maintained, that the scripture *bedollach* imports a sort of gum produced in Judæa, as well as the fruit of a tree growing in Arabia. Vid. *Bochart*, Hierozoic. P. 2. l. 5. c. 5. *Salmas.* de Homon. Hyl. Iatr. c. 109. *Le Clerc.* Bibl. Univ. T. 14. p. 406, seq.

The gum of this name among the moderns is somewhat bitterish to the taste, looks transparent when broken, and if rubbed, seems a fattish substance.

It is thought to facilitate digestion, to discuss and promote perspiration, and to be good in coughs, and many disorders of the breast; but its chief use now in composition is in discutient plasters, cerats, and unguents; in which it is mightily commended for reducing of ruptures, and softening any indurations of the nervous parts. *Junck.* Consp. Therap. tab. 5. p. 183. Vid. *Lemery*, Dict. des Drog. p. 116.

The *pilulæ de bdellio majores*, described by Mesne, are used by some against the piles and excesses of the menses. Hermannus [a] also praises the oil of *bdellium* against obstructions of the womb. Fumigations of the same gum, *suffitus ex bdellio*, received by the anus, are also ordered by some to stop immoderate fluxes of the hæmorrhoids [b].—[[a] *Cynosur.* Mat. Med. p. 262. [b] *Burggr.* Lex. Med. p. 1522, seq.

BEAD, (*Cycl.*) in assaying, the small lump or mass of pure metal separated from the scoria, and seen distinct and pure in the middle of the coppel while in the fire.

Thus, in the separating silver from its ore by means of lead, the silver remains in form of a *bead*, when the lead, that had before affisted in the operation, is all reduced to scoria. In this process, the *bead* of silver must be taken out of the coppel as soon as it is seen pure and fine, lest growing cold, it should be conglutinated to the coppel or litharge. This *bead*, when rightly made, is always porous underneath. *Cramer*, Art of Assay. p. 216.

BEADS are more particularly used among us for a sort of glass necklace, made in imitation of the colour and figure of pearl.

The Romanists make great use of *beads* in rehearsing their *ave Maria's* and *pater-nostre's*; and the like usage is found among the dervices and other religious throughout the East, as well Mahometan as heathen. The antient druids appear also to have had their *beads*, many of which are still found; at least, if the conjecture of an ingenious author may be admitted, who takes those antique glass globules, having a snake painted round them, and called *adder-beads*, or *snake-buttons*, to have been the *beads* of our antient British druids. Phil. Transf. N° 337. p. 96.

BEADS are also used in speaking of those glass globules vended to the savages on the coasts of Africa; thus denominated, because they are strung together for the convenience of traffic. *Savar.* Dict. Comm. T. 1. p. 665.

BEAD is also used for a little, round, white froth formed on the surface of brandy, or spirit of wine, upon shaking the glass; and which is the proof of the goodness of the liquor. *Savar.* loc. cit.

Hence the method of trying brandy by the *bead*, or chapelets, is called the *bead-proof*; sometimes *bubble-proof*. *Shaw*, Ess. on Distillat. §. 5. p. 119, & 137. See BEAD-*proof*, infra.

BEAD-*makers*, called by the French *patenostriers*, are those employed in the making, stringing, and selling of *beads*.

At Paris there are three companies of *patenostriers*, or *bead*-makers; one who make them of glass or crystal; another in wood and horn; and the third in amber, coral, jet, &c.

BEAD-*proof*, a term used by our distillers, to express that sort of proof of the standard strength of spirituous liquors, which consists in their having, when shaken in a phial, or poured from on high into a glass, a crown of bubbles, which stand on the surface some time after. This is esteemed a proof that the spirit consists of equal parts of rectified spirits and phlegm. See PROOF.

This is a fallacious rule as to the degree of strength in the goods; because any thing that will increase the tenacity of the spirit, will give it this proof, tho' it be under the due strength. Our malt-distillers spoil the greater part of their goods, by leaving too much of the stinking oil of the malt in their spirit, in order to give it this proof, when somewhat under the standard strength. But this is a great deceit on the purchasers of malt spirits, as they have them by this means not only weaker than they ought to be, but stinking with an oil, that they are not easily cleared of afterwards.

On the other hand, the dealers in brandy, who usually have the art of sophisticating it to a great nicety, are in the right

when they buy it by the ſtrongeſt *bead*-proof, as the grand mark of the beſt; for being a proof of the brandy containing a large quantity of its oil, it is, at the ſame time, a token of its high flavour, and of its being capable of bearing a very large addition of the common ſpirits of our own produce, without betraying their flavour, or loſing its own.

We value the French brandy for the quantity of this eſſential oil of the grape which it contains, and that with good reaſon; as it is with us principally uſed for drinking as an agreeably flavoured cordial: but the French themſelves, when they want it for any curious purpoſes, are as careful in the rectifications of it, and take as much pains to clear it from this oil, as we do to free our malt ſpirit from that nauſeous and fœtid oil, which it originally contains.

No judgment can be formed of brandies by the *bead*-proof as to their mixed or adulterated, or their pure ſtate, further than that they are likely to be moſt pure, when they have the greateſt proportion of this oil, in regard to mixtures of other ſpirits. There are many occaſions where we want ſpirit, merely as ſpirit, and where any oil, whether ſweet or ſtinking, muſt be equally improper. *Shaw*, Eſſay on Diſtillery.

BEAGLES, a ſmall ſort of hounds or hunting dogs. *Cox*, Gent. Recr. P. 1. p. 16.

Beagles are of divers kinds; as the *ſouthern beagle*, ſomething leſs and ſhorter, but thicker than the deep-mouthed hound; the *fleet northern*, or *cat-beagle*, ſmaller, and of a finer ſhape than the ſouthern, and a harder runner. From the two, by croſſing the ſtrains, is bred a third ſort, held preferable to either.

To theſe may be added a ſtill ſmaller ſort of *beagles*, ſcarce bigger than lap-dogs, which make pretty diverſion in hunting the coney, or even ſmall hare in dry weather; but otherwiſe unſerviceable, by reaſon of their ſize.

BEAK, (*Cycl.*) *roſtrum*, properly denotes the nib or bill of a bird.

In falconry, *beak* is the upper part of the hawk's bill, or the part that is crooked. Ruſt. Dict. T. 1.

The word comes from the barbarous Latin *beccum*, or the old French *becco*, which ſignifies the ſame. *Du Cange*, T. 1. p. 514, ſeq.

Si habuerit accipitrem, perdat beccum & ungues pedum & caudam. Bract. Tract. 2. l. 3. c. 28. §. 1.

The *beak* of the rinoceros-bird is reputed an antidote againſt all poiſons. *Grew*, Muſ. Reg. Societ. P. 1. §. 4. c. 1. p. 59.

Falconers have an operation called in French *raſſurer le bec*, or reſtoring the *beak*, when a hawk has broken, disjointed, or otherwiſe demoliſhed his *beak*, it being then apt to rot, or fall away in flakes through the negligence of his feeder. Dict. Trev. T. 4. p. 1027.

BEAK, called by the Greeks εμβολον, by the Latins *roſtrum*, was an important part in the antient ſhips of war, which were hence denominated *naves roſtratæ*. The *beak* was made of wood; but fortified with braſs [a], and faſtened to the prow, ſerving to annoy the enemy's veſſels. Its invention is attributed to Piſæus an Italian. The firſt *beaks* were made long and high; but afterwards a Corinthian, named Ariſto, contrived to make them ſhort and ſtrong, and placed ſo low, as to pierce the enemy's veſſels under water. By the help of theſe great havock was made by the Syracuſians in the Athenian fleet [b]—[a *Pitiſc.* Lex. Antiq. T. 1. p. 711. b *Pott.* Archæol. l. 3. c. 17. p. 135, ſeq.]

BEAK was alſo uſed for one of the antient battalias, or forms of ranging an army for battle, particularly uſed by the Macedonians. *Aquin.* Lex. Milit. T. 2. p. 249.

BEAK is alſo applied to the ſlender crooked prominences of divers bodies bearing ſome analogy or reſemblance to the *beaks* of birds.

In this ſenſe we meet with *beaks* of ſhoes, *roſtra calceorum*, for long peaked toes, in uſe of old. *Du Cange*, Gloſſ. Lat. T. 4. p. 630.

Among farriers, *beak* denotes a little horſe-ſhoe, turned up, and faſtened in upon the forepart of the hoof. Farr. Dict. p. 57.

Its uſe is to keep the ſhoes faſt, and not liable to be ſtruck off by the horſe, when by reaſon of any itch, or being much diſturbed with the flies in hot weather, he ſtamps his feet violently on the ground.

BEAKED, *Becqué*, in heraldry, is uſed when the beak or bill of a fowl is of a different tincture from the body.

In this caſe, they ſay *beaked* and membered of ſuch a tincture. *Coats*, Herald. Dict. p. 45.

BEAKING, in cock-fighting, expreſſes the fighting of theſe birds with their bills, or holding with the bill, and ſtriking with the heels. Ruſt. Dict. T. 1.

BEAM (*Cycl.*)—BEAM *of a Plough*, a name given by our farmers to the great timber of the plough, into which all the other parts of the plough-tail are infixed.

This is uſually made of aſh, and is ſtrait, and eight feet long in the common plough; but, in the four-coultered plough, it is ten feet long, and its upper part arched. The head of this *beam* lies on the pillow of the plough, and is raiſed higher, or ſunk lower, as that pillow is elevated or depreſſed by being ſlipped along the crowſtaves. Near the middle, it has an iron collar, which receives the tow-chain from the box, and the bridle-chain from the ſtake or gallows of the plough is fixed into it a little below the collar. Some inches below this, there is a hole, which lets through the coulter; and below that there are two other ſmall ones, through which the heads of the retches paſs. Theſe are the irons which ſupport the ſheat, and with it the ſhare. Farther backward ſtill is a large perforation, through which the body of the ſheat paſſes; and behind that, very near the extremity, is another hole, through which the piece called the hinder ſheat paſſes. *Tull*, Husb. See PLOUGH.

BEAN, *Faba*, in botany, the name of a genus of plants; the characters of which are theſe: the flower is of the papilionaceous kind, and from its cup there ariſes a piſtil, which finally becomes a large pod, containing large, flatted, and in ſome degree kidney-ſhaped ſeeds. To this it is to be added, that the ſtalks are firm and erect, and the leaves ſtand by pairs on a middle rib, which is terminated by an odd one.

The ſpecies of *bean* enumerated by Mr. Tournefort are theſe: 1. The *bean* with white flowers, marked with black ſpots. 2. The *bean* with blackiſh purple flowers. 3. The *bean* with very long and thick pods, with the ſeeds protuberating in the middle. 4. The *bean* with a middle-ſized pod, and ſeed flatted and ridged on both top and bottom. 5. The *bean* with very ſhort pods, and with very large and thick ſeeds. 6. The ſmaller, oblong, cylindric podded *bean*, or the white horſe-*bean*. 7. The ſmaller oblong, cylindric podded *bean*, or the black horſe *bean*. 8. The little, oblong, cylindric podded *bean*, with five or ſix pods on every ſtalk. *Tourn.* Inſt. p. 391.

We have four ſorts of *beans* commonly ſowed in our gardens. 1. The ſmall Liſbon. 2. The Spaniſh. 3. The Sandwich. And, 4. The Windſor *beans*.

The firſt and ſecond ſorts are to be planted in October and November, under warm walls and hedges, where if they ſtand through the winter, they produce *beans* early in the ſpring. They may alſo be raiſed very cloſe in beds, and covered with hoops and mats in the winter, and in ſpring planted out; but there is ſome hazard in the tranſplanting, and they will be a fortnight or more later than thoſe, which have ſtood the winter abroad.

The Lisbon *bean* is preferred to the Spaniſh; and the curious ought to have freſh ſeed every two years from abroad, for they are apt to degenerate, tho' not in goodneſs, yet in their earlineſs.

The Spaniſh and Windſor *beans* are not to be planted till Chriſtmas; but eſpecially the Windſor, which are ſubject, more than any other kind, to be hurt by the cold. Theſe *beans* ſhould have an open ground, and be planted at the diſtance of two feet and an half row from row, and four inches from one another in the rows; but if the place is cloſly ſurrounded with hedges or walls, the diſtance muſt be greater, elſe the ſtalks will run high, but they will bear very little fruit.

The Sandwich *beans* are hardier than the Windſor, and may be planted to come in between the early crops and them; and tho' not much regarded at preſent, they are a very good *bean*.

The firſt plantation of Windſor *beans* ſhould be made in the middle of January; and after that, a new plantation ſhould be made every three weeks till the middle of May, that there may be a ſucceſſion of crops. *Miller*, Gard. Dict.

There is ſcarce any plant, whoſe ſeed ſo well ſerves the purpoſe of the inquirer into the nature and ſtructure of ſeeds in general, as the *bean*.

In this ſeed, beſide the two coats, there are three conſtituent parts within. The main body is divided into two lobes, and two other parts: theſe are appendant to the baſe of the *bean*. One of theſe is called by Grew, and others ſince his time, the *radicle*, and the other the *plume*. The radicle is what afterwards becomes the root of the plant; and the plume becomes its trunk, bearing leaves and flowers. This plume is, at its end, divided into ſeveral pieces, which are finely and nicely laid together, and are ſo many leaves already formed, but not yet explicated. Theſe are to be the real leaves of the plant in its growing ſtate, and are in the ſeed folded up in the ſame plicature in which they are to appear out of the earth at the firſt ſhooting up from the ſeed.

Theſe organical parts of the *bean* are diſtinguiſhed from the reſt of the *bean*, and are compoſed of theſe ſimilar matters.

1°. The cuticle, extending itſelf over the whole *bean*, and herein diſtinguiſhed from the coats, that whereas theſe, on the planting of the *bean* in the earth, do only adminiſter the firſt ſap, and then die, thoſe, on the other hand, are inlarged, and the cuticle nouriſhed and co-extended with the *bean*.

2°. The parenchyma itſelf, having ſome reſemblance to the pith, while ſoft and pappy, in the trunks of plants, common to, and the ſame in the lobes, the radicle, the plume, and the *bean*.

3°. The inner body diſtributed throughout the parenchyma, but withal eſſentially different from it, called by the author, the ſeminal root, and diſtinguiſhed from the radicle, in that the former is the original root within its ſeed, the latter is the plant-root, which the radicle becomes in its growth; the parenchyma of the ſeed being in ſome ſort, that at firſt to the ſeminal root, which the mould is afterwards to the plant-root; and the ſeminal root being that to the plant-root, which the plant root is to the trunk.

The root of the grown plant is as evidently and ſubſtantially the ſame with that in the ſeed, called the radicle, as the arms and legs of a grown perſon are with thoſe of the fœtus. The root conſiſts of the skin, the cortical part, and the ligneous part. Within the root, in many caſes, there is a pith; this pith is a ſubſtance ordained for the perfecting the ſap, and its quicker and higher fermentation, begun in the cortical part, inſerted through the ligneous part, by which the ſap, like the blood of the diſſeminations of the arteries, is conveyed to its intimate parts. *Grew*, Anat. of Plants, c. 1. p. 4, ſeq.

The medicinal and dietetic qualities of *beans* are ſaid to be nutritive, but flatulent: the pods yield a water held good againſt the gripes in children [a]. Some have uſed the horſe-*bean* as a ſuccedaneum to coffee, which in principles it much reſembles; only that it contains but half the quantity of oil [b]. Mr. Boyle has ſeveral experiments of *beans* treated pneumatically, to ſhew the great plenty of air they afford, on which their flatulency depends [c].—[[a] *Alleyn*, lib. cit. [b] *Hought.* Coll. T. 3. p. 128. [c] *Boyle*, Phil. Work. abridged, T. 2. p. 615—621, &c.]

The expanſion of *beans* in growing, the ſame author found ſo conſiderable, that it would raiſe a plug clogged with above an hundred pound weight. Id. ib. T. 1. p. 285, ſeq.

Beans, with proper management, make one of the fineſt of all baits for fiſh. The method of preparing them for this purpoſe is this: Take a new earthen pot, glazed on the inſide; boil ſome *beans* in it, ſuppoſe a quarter of a peck: they muſt be boiled in river-water, and ſhould be beforehand ſteeped in ſome warm water for ſix or ſeven hours. When they are about half-boiled, put in three or four ounces of honey, and two or three grains of muſk: let them boil a little on, then take them off the fire, and uſe them in this manner: ſeek out a clean place, where there are no weeds, that the fiſh may ſee and take the *beans* at the bottom of the water. Throw in ſome *beans* at five or ſix in the morning, and in the evening, for ſome days. This will draw them together, and they may be taken in a caſting-net vaſt numbers together.

BEAN-*flower*, called by the Romans *lomentum*, was of ſome repute among the antient ladies as a coſmetic, wherewith to ſmooth the skin, and take away wrinkles. *Pitiſc.* Lex. Ant. T. 2. p. 102. voc. *lomentum*.

The antients made uſe of *beans* in gathering the votes of the people, and for the election of magiſtrates. A *white bean* ſignified abſolution, and a *black* one condemnation. *Danet.* Dict. in voc. *faba*.

Beans had a myſterious uſe in the *lemuralia* and *parentalia*; where the maſter of the family, after waſhing, was to throw a ſort of *black beans* over his head, ſtill repeating the words, I redeem myſelf and family by theſe *beans* [a]. Ovid [b] gives a lively deſcription of the whole ceremony in verſe.—[[a] Mem. Acad. Inſcr. T. 2. p. 46. [b] Faſt. l. 5. v. 435, &c.]

Abſtinence from *beans* was enjoined by Pythagoras, one of whoſe ſymbols is, κυαμων απεχεσθαι, *abſtine a fabis*.

The Egyptian prieſts held it a crime to look at *beans*, judging the very ſight unclean. The flamen dealis was not permitted even to mention the name [c]. Lucian introduces the ſame philoſopher in hell, ſaying, that to eat *beans*, and to eat our father's head, were equal crimes [d].—[[c] *Pitiſc.* Lex. Ant. p. 751. [d] *Voſſ.* de Sect. Philoſ. c. 6. §. 38, ſeq.]

This precept has been variouſly interpreted: ſome underſtand it of forbearing to meddle in trials and verdicts, which were then by throwing *beans* into an urn: others, building on the equivoque of the word κυαμος, which equally ſignifies a *bean* and a human *teſticle*, explain it by abſtaining from venery [e]. Lucian introduces Pythagoras himſelf explaining it; after ſaying, that he eats nothing which has life, but all other things, except *beans*, he is asked for what reaſon? He anſwers, becauſe they have ſomething that is divine: firſt, they reſemble the privy parts. 2°. Being boiled, and expoſed to the moon a certain number of nights, they turn into blood. But, 3°. what is moſt conſiderable, they make uſe of them at Athens in the election of magiſtrates [f].—[[e] *Voſſ.* loc. cit. [f] *Danet.* in voc. *Voſſ.* loc. cit.]

Clemens Alexandrinus grounds the abſtinence from *beans* on this, that they render women barren; which is confirmed by Theophraſtus, who extends the effect even to plants.

Cicero ſuggeſts another reaſon for this abſtinence, *viz.* that *beans* are great enemies to tranquillity of mind. For a reaſon of this kind it is, that Amphiaraus is ſaid to have abſtained from *beans*, even before Pythagoras, that he might enjoy a clearer divination by dreams. It may be added, that the compariſon aſcribed to Pythagoras of eating *beans*, with eating one's parent's head, is by Didymus aſcribed to Orpheus, who was conſiderably prior to the ſage of Samos. *Cic.* de Divinat. l. 1. c. 30.

After all, both the genuineneſs of the precept, and the reality of any ſuch abſtinence among the antient Pythagoreans, have been diſputed. Some attribute the precept to Empedocles, a diſciple of Pythagoras. Ariſtoxenus, an antient writer cited by A. Gellius, introduces Pythagoras ſaying, that he eat more frequently of *beans* than of any other pulſe, on account of their gently looſening the belly. *A. Gell.* Noct. Att. l. 4. c. 11.

BEAN, is alſo uſed by ſome anatomiſts to denote the *glans of the penis*, on account of its figure and reſemblance to that pulſe. *Rolfinck*, Tract. Meth. Part. Gener. Dicat. P. 1. c. 52. *Caſt.* Lex. p. 330. b.

BEAN is alſo improperly uſed for a weight, containing the third part of a ſcruple. *Ruland.*

Such appellations are of little uſe, by reaſon of the great variety of *beans*; the *Egyptian bean*, for inſtance, being much larger and heavier than the vulgar, or our *bean*.

Scribonius Largus, notwithſtanding, ſometimes deſcribes the doſes of medicines by the magnitude of a *bean*; where we are ſometimes to underſtand the greater *bean*, containing the weight of a drahm, and ſometimes the *lupine ſeed*, equivalent to four grains. *Caſtel.* Lex. p. 330. b.

Kidney-BEAN. See PHASEOLUS.

Horſe-BEAN. See HORSE-*bean*.

Molucca BEAN. See MOLUCCA *bean*.

BEAN-*fly*, in natural hiſtory, the name given by authors to a very beautiful fly, of a pale purple colour, frequently found on *bean*-flowers. It is produced from the worm or maggot called by authors *mida*.

BEAN-*ſtalks*. The aſhes of *bean*-ſtalks make good and clear glaſs. *Boyle*, Works abridg. Vol. 1. p. 131.

BEAR, (*Cycl.*) *Urſus*, in phyſiology, denotes a well-known quadruped of the cat kind, of ſome uſe in medicine; but more in commerce and ſport.

This creature differs, in many reſpects, from all the other beaſts of prey. Its head is much larger than theirs: its skin on the back is extremely hard, tough, and ſtrong; under the belly it is more tender: its hairs are longer, ſofter, and leſs rigid than in any other wild beaſt of prey, and reſemble wooll in ſome degree: its skull is much thinner than that of the lion; but its brain more than twice as much in quantity: its eyes are very ſmall, and, what is very remarkable, have a nictitating membrane to cover them on occaſion. Its feet have all five toes, as well the hinder as the fore ones; and what is remarkable is, that the large toe, which anſwers to the thumb with us, is in the place of the little finger. It is a very common creature in Germany, Poland, Lithuania, and many other places. *Ray*, Syn. Quad. p. 169.

Bear, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of animals of the *fera* kind, the characters of which are, that the paps are two, and placed in the groin: the feet are formed either for climbing or walking; and the great toe placed outward. Under this genus, the author takes in the creature called the coati mundi, under the name of *urſus cauda elongata*, or the long-tailed *bear*. *Linnæus*, Syſt. Naturæ, p. 35. See Tab. of Quadrupeds and Serpents, N° 3.

The *bear* is obſerved to bear ſome analogy to man; as having hair on both eye-lids, which no other brute has [a]. His ſtructure and anatomy are deſcribed by the French academiſts [b].—[[a] *Grew*, Muſ. Reg. Societ. P. 1. §. 2. c. 1. p. 11. [b] *Du Hamel*, Hiſt. Reg. Acad. Scient. l. 1. §. 11. c. 3. p. 129.]

Some diſtinguiſh two kinds of *bears*, *terreſtrial* and *marine*; the former of which keep to the mountains; whereas the latter come out on the ice as far as the middle of the North-ſea. Some of this kind are found in Nova Zembla of an incredible ſize.

BEAR-*leading*, to ſhew tricks, is an antient practice, which we find prohibited in the canons of the church. *Du Cange*, Gloſſ. Lat. T. 4. p. 1371.

BEAR-*wards*, *urſarii*, were a kind of ſervants in great families among the Romans, who had the care of breeding and feeding thoſe animals. *Pitiſc.* Lex. Ant. T. 2. p. 1119.

Order of the BEAR was a military order in Switzerland, erected by the emperor Frederic II. in 1213, by way of acknowledgment for the ſervice the Swiſs had done him, and in favour of the abbey of St. Gal. To the collar of the order hung a medal, on which was repreſented a *bear* raiſed on an eminence of earth. Dict. Trev. T. 4. p. 403.

BEAR's-*breech*, *acanthus*, in botany. See ACANTHUS.

The farina of *bear's-breech*, microſcopically examined, has the appearance repreſented in Tab. of microſcopical Objects, Claſs 2.

BEAR's-*fleſh* was much eſteemed by the antients: even at this day, the paw of a *bear* ſalted and ſmoaked, is ſerved up at the table of princes. *Savar.* Dict. Comm. T. 2. p. 937.

BEAR's *greaſe* is eſteemed by ſome a ſovereign remedy againſt cold diſorders, eſpecially rheumatiſms. Some have alſo employed it with ſucceſs in the gout, and againſt tumors and ulcers. Vid. *Sext.* Placit. de Medic. ex Animal. c. 6. *Fabric.* Bibl. Græc. T. 13. p. 402. *Alleyn*, Diſpenſ. p. 152.

To be good, it muſt be newly melted, grayiſh, glutinous, of a ſtrong diſagreeable ſmell, and a moderate conſiſtence. That which is too white, is adulterated with common tallow. *Savar.* Dict. Comm. T. 2. p. 937.

BEAR's-*ſkin* makes a fur in great eſteem, and on which depends a conſiderable article of commerce, being uſed in houſings, on coach-boxes, &c. In ſome countries, cloaths are made of it, more eſpecially bags wherein to keep the feet warm in ſevere colds. Of the skins of *bears* cubs are made gloves, muffs, and the like. *Savar.* Dict. Comm. T. 2. p. 937.

BEAR-*garden*, a place where *bears* and other beaſts are expoſed as a public ſpectacle to be baited.

BEARD (*Cycl.*)—Cutting the *beard* has, as it is ſaid, in many caſes, been the occaſion of diſeaſes. Bartholin [a] ſpeaks of a Benedictin monk, who loſt his ſight by being ſhaven, according to the rule of his order, and recovered it again by ſuffering his

his *beard* to grow, and this for ſeveral times ſucceſſively, till at length he was diſpenſed by his ſuperiors from the obſervance of this rule. Another, grievouſly haraſſed by an obſtinate tooth-ach while he uſed to ſhave every week, found a cure, by accidentally letting his *beard* grow for three weeks together. Upon ſhaving again, his pains returned, and were removed again by letting his *beard* have its ſcope [b].—[[a] Epiſt. Cent. 3. Ep. 67. p. 275. [b] *Hotting.* in Ephem. N. C. dec. 3. an. 9 & 10. Obſ. 229.]

Shaving the BEARD, *barbæ raſio*, was the greateſt affront among the Franks, that could be offered any perſon. Taking away a ſingle hair was an injury ſcarce to be forgiven. *Du Cange*, Gloſſ. Lat.

Among the Turks, it is more infamous for any one to have his *beard* cut off, than among us to be publicly whipt, or branded with a hot iron. There are abundance in that country, who would prefer death to this kind of puniſhment. *Calm.* Dict. Bibl.

Conſecration of the BEARD was a ceremony among the Roman youth, who, when they were ſhaved the firſt time, kept a day of rejoicing, and were particularly careful to put the hair of their *beard* into a ſilver or gold box, and make an offering of it to ſome god, particularly to Jupiter Capitolinus, as was done by Nero, according to Suetonius. Vid. *Pitiſc.* T. 1. p. 251.

The monks were alſo ſaid to conſecrate their *beards*, when they laid them down upon their admiſſion to the monaſtic ſtate. *Du Cange*, Gloſſ. Lat. T. 1. p. 472.

Benediction of the BEARD, *barbæ benedictio*, was a ceremony uſed in the antient Latin church upon the ordaining of a prieſt, who, in conſequence of the canons, was to be ſhaven. *Du Cange*, Gloſſ. Lat. T. 1. p. 472.

Touching the BEARD was an action antiently made uſe of by ſupplicants, and thoſe who made vows. *Pitiſc.* Lex. Ant. T. 1. p. 252.

Kiſſing the BEARD. The Turkiſh wives kiſs their husbands *beards*, and children their fathers, as often as they come to ſalute them. The men kiſs one anothers *beards* reciprocally on both ſides, when they ſalute one another in the ſtreets, or come off from any journey. *Calm.* Dict. Bibl.

Touching the BEARD, *barbam tangere*, was alſo a cuſtom in the middle age of cutting the firſt down by the ſponſor or god-father of a perſon initiated. *Du Cange*, Diſſ. ad Toinvill 22. p. 279. It. in Gloſſ. Lat. T. 1. p. 471.

The faſhion of the BEARD has varied in different ages and countries; ſome cultivating and entertaining one part of it, ſome another. Thus the Hebrews wear a *beard* on their chin; but not on the upper-lip or cheeks. Moſes forbids them to cut off entirely the angle or extremity of their *beard*; that is, to manage it after the Egyptian faſhion, who left only a little tuft of *beard* at the extremity of their chin; whereas the Jews to this day ſuffer a little fillet of hair to grow from the lower end of their ears to their chins, where, as well as on their lower-lips, their *beards* are in a pretty long bunch. *Calm.* Dict. Bibl. T. 1. p. 267.

In the apoſtolic conſtitutions, the clergy are expreſly forbid to ſhave their *beards*. L. 1. c. 3. *Epiph.* Hæreſ. 50. *Fabric.* Bibl. Ant.

The Arabs make the preſervation of their *beards* a capital point of religion, becauſe Mahomet never cut his. Hence the razor is never drawn over the grand ſignior's face. The Perſians, who clip them, and ſhave above the jaw, are reputed heretics. It is likewiſe a mark of authority and liberty among them, as well as among the Turks. They who ſerve in the ſeraglio, have their *beards* ſhaved, as a ſign of their ſervitude. They do not ſuffer it to grow till the ſultan has ſet them at liberty, which is beſtowed as a reward upon them, and is always accompanied with ſome employment. *Calm.* Dict. Bibl.

The Jews, in time of mourning, neglected to trim their *beards*, that is, to cut off what grew ſuperfluous on the upper-lips and cheeks. In time of grief and affliction, they alſo plucked off the hair of their *beards*. *Calm.* T. 1. p. 267.

The Romans, on the like occaſion, choſe a contrary method of expreſſing ſorrow and mourning, *viz.* by letting their *beards* grow. *Pitiſc.* Lex. Ant. T. 1. p. 251.

Anointing the BEARD with unguents is an antient practice both among the Jews and Romans, and ſtill continues in uſe among the Turks; where one of the principal ceremonies obſerved in ſerious viſits is to throw ſweet-ſcented water on the *beards* of the viſitant, and to perfume it afterwards with aloes-wood, which ſticks to this moiſture, and gives it an agreeable ſmell, *&c.* *Pitiſc.* Lex. Antiq. T. 1. p. 252.

In middle-age writers we meet with *adlentare barbam*, uſed for ſtroking and combing it, to render it ſoft and flexible. *Du Cange*, Gloſſ. Lat. T. 1. p. 61.

The Turks, when they comb their *beards*, hold a handkerchief on their knees, and gather very carefully the hairs that fall; and when they have got together a certain quantity, they fold them up in paper, and carry them to the place where they bury the dead.

Plucking the BEARD was practiſed to Cynics by way of contempt.

Some authors alſo ſpeak of *mortgaging the beard*, *barbam hypothecare*. *Will. Tyr.* l. 11. c. 11. *Du Cange*, Gloſſ. Lat.

Falſe BEARD, *barba falſa*, was an artificial one. In a general court of Catalonia held in 1351, it is expreſly injoined, *Ne quis barbam falſam ſeu fictam audeat deferre vel fabricare.* *Du Cange*, Gloſſ. Lat. T. 1. p. 472.

Hottoman has given an elegant dialogue *de barba*, firſt printed by Plantin in 1586, which being ſcarce, is reprinted by Pitiſcus in Lex. Ant. Rom. T. 1. p. 252, ſeq.

BEARD *of a muſcle*, oyſters, or the like, denotes an aſſemblage of threads or hairs, by which thoſe animals faſten themſelves to ſtones, *&c.*

The hairs of this *beard* terminate in a flat ſpungy ſubſtance, which being applied to the ſurface of a ſtone, ſticks thereto, like the wet leather uſed by boys. Phil. Tranſ. N° 284. p. 1360.

BEARDS, in the hiſtory of inſects, are two ſmall, oblong, fleſhy bodies, placed juſt above the trunk, as in the gnats, and in the moths and butterflies. Vid. *Reaumur.* Hiſt. Inſect. Vol. 4. p. 580.

BEARD, or *under-beard*, called alſo *chuck*, of a horſe, is that part under the lower mandible on the outſide, and above the chin, which bears the curb of the bridle. *Guill.* Gent. Dict. P. 1.

BEARDED, *barbatus*, denotes a perſon or thing with a *beard*, or ſome reſemblance thereof. See BEARD.

In middle-age writers, this is ſometimes expreſſed by *malibarbis*, q. d. barba in malis ſeu genis. *Du Cange*, Gloſſ. Lat. T. 3. p. 368.

Naturaliſts ſpeak of *bearded* whales, ſometimes denominated Grand Bay whales [a]; *bearded* loaches, *gobites barbatulæ* [b]; *bearded* moſſes, *muſci barbati* [c], &c.—[[a] *Hought.* Collect. T. 3. p. 275. [b] *Grew*, Muſ. Reg. Societ. P. 1. §. 5. c. 3. p. 117. [c] Id. ibid. P. 2. §. 4. p. 236 & 249.]

The faces on antient Greek and Roman medals are generally *bearded*. Some are denominated *pogonati*, as having long beards, *e. gr.* the Parthian kings. Others have only a *lanugo* about the chin, as the Seleucid family [d]. Adrian was the firſt of the Roman emperors who nouriſhed his beard: hence all imperial medals before him are beardleſs; after him *bearded* [e].—[[d] *Evel.* on Medal. c. 2. p. 27. [e] *Pitiſc.* T. 1. p. 251.]

The Romans paid their worſhip to a *bearded* Venus, *Veneri barbatæ*, ſuppoſed to have been of both ſexes; a ſtatue of whom was alſo found in the iſle of Cyprus. *Serv.* ad Æn. l. 2. p. 632.

The reaſon of repreſenting the goddeſs of beauty with a beard is variouſly gueſſed at by the learned. *Boxhorn.* Quæſt. Rom. 13 & 27. *Gyrald.* Synt. Dar. p. 394, ſeq. *Pitiſc.* Lex. Ant. T. 2. p. 1049.

BEARDED *women* have been all obſerved to want the menſtrual diſcharge; and ſeveral inſtances are given by Hippocrates [f], and other phyſicians, of grown women, eſpecially widows, in whom the menſes coming to ſtop, beards appeared. Euſebius Nierembergius [g] mentions a woman, who had a beard reaching to her navel. Bartholin ſpeaks of a *bearded* woman [h] at Copenhagen, who, partly in virtue thereof, paſſed for an hermaphrodite.—[[f] Epidem. l. 6. §. 8. in fine. [g] De Miracul. Natur. l. 2. c. 35. [h] Epiſt. Cent. 3. Ep. 94. p. 406, ſeq.]

BEARDED *brothers*, *fratres barbati*, are more particularly uſed in eccleſiaſtical writers for thoſe otherwiſe called *fratres converſi* in the orders of Grammont and the Ciſterians. *Du Cange*, Gloſſ. Lat. T. 1. p. 477. Trev. Dict. Univ. T. 1. p. 870.

They took this denomination, becauſe allowed to wear their beards, contrary to the rule of the profeſſed monks.

BEARDED *husk*, among floriſts, a husk which is hairy on the edges, as is that of the roſe, *&c.* Dict. Ruſt. in voc.

BEARDLESS, *imberbis*, ſtands oppoſed to bearded. See BEARD and BEARDED.

The medals of gods, and heroes in vigorous youth, repreſent them *beardleſs*, except Jupiter, and a few others. *Evel.* on Medals, p. 47.

The bald and *beardleſs* portrait engraven on many precious ſtones in the king of France's cabinet, and elſewhere, with the name of *Solon*, do not repreſent the famous lawgiver of Athens; at leaſt, do not repreſent him right, ſince, in his time, the Greeks were all bearded. Hiſt. Acad. Inſc. T. 2. p. 407.

BEARER, (*Cycl.*)—BEARERS, *geſtantes*, in middle-age writers, are ſometimes uſed for a child's goſſips, by reaſon they hold the infant in their arms, and preſent him to the prieſt, in the ceremony of baptiſm. *Du Cange*, Gloſſ. Lat. T. 2. p. 618.

BEARERS are more peculiarly uſed among us for thoſe who bear dead corpſes to their graves.

In a ſenſe ſomewhat different from this, we alſo ſay *pall-bearers*, &c.

The antients had peculiar orders or officers of *bearers*, called by the Greeks κοπιάται; by the Romans *lecticarii* [a]. The *veſpillones*, or *bajuli*, were a lower ſort of *bearers*, appointed for perſons of inferior or vulgar rank [b].—[[a] *Arnd.* Lex. Ant. p. 423. [b] *Calv.* Lex. Jur. p. 951. *Pitiſc.* Lex. Antiq. T. 2. p. 244.

BEARERS, in agriculture, denote the fruit branches, or ſuch as bear fruit.

The *bearers*, or bearing branches of an apple-tree, and the like, are found to be rougher, and fuller of aſperities in their bark, than the other branches. Phil. Tranſ. N° 237. p. 54.

BEARING, (*Cycl.*) *geſtatio*, in the antient gymnaſtic phyſic, was a ſpecies of exerciſe uſed by weak perſons in tedious diſeaſes. *Pitiſc.* Lex. Ant. T. 1. p. 867.

BEARING *of an organ pipe*, denotes an error or variation from the juſt ſound it ought to yield. *Wallis*, in Phil. Tranſ. N° 10. p. 253. See TEMPERATURE.

BEARING *of an arch*, or *vault*, denotes the effort which the ſtones make to burſt open the piers, or *piedroits*.

This amounts to the ſame with what the French call *pouſsée*. Mem. Acad. Scienc. 1712. p. 91.

BEARING *down of the matrix*, a diſorder in pregnant women, being a ſenſation of a weight at the bottom of the abdomen, or preſſure on the neck of the womb, ſo as to hinder the perſon from walking without pain; and ſometimes alſo occaſioning difficulty of urine, numbneſs of the hips, uneaſineſs in going to ſtool, and in the end abortion. Vid. *Shaw*, New Pract. Phyſ. p. 464, ſeq.

BEARING *branches* in agriculture and gardening. See BEARERS.

BEARING *claws*, among cock-fighters, denote the foremoſt toes, on which the bird goes; which if they be hurt or gravelled, he cannot fight. Ruſt. Dict. T. 1.

Armorial BEARING is ſometimes uſed to expreſs what we more ſimply call *arms*. See BEARINGS *in heraldry*, infra.

Armorial bearings, in the tenth and eleventh centuries, were ſingle and plain, conſiſting only of few figures. Charges, differences, quarterings, &c. are the inventions of later times. *Niſb.* of Armory, c. 3. p. 31.

BEARING *of a ſtag* is uſed in reſpect of the ſtate of his head, or the croches which he bears on his horns.

If you be asked what a ſtag bears, you are only to reckon the croches, and never to expreſs an odd number; as if he have four croches on his near horn, and five on his far, you muſt ſay he bears ten; a falſe right on his near horn: if but four on the near horn, and ſix on the far horn, you muſt ſay he bears twelve; a double falſe right on the near horn. *Cox*, Gent. Rec. P. 1. p. 12.

To BEAR *ſail well* is ſaid of a ſhip, when ſhe is a ſtiff-guided ſhip, and will not couch down on a ſide with a great deal of ſail. *Manw.* Sea Dict. p. 6.

When a ſhip is ſaid *to bear out her ordnance*, it is meant, that her ordnance lie ſo high, and ſhe will go ſo upright, that, in reaſonable fighting weather, ſhe will be able to keep out her lower tire, and not be forced to ſhut in her ports. Id. ibid.

A ſhip is ſaid *to overbear another*, when it is able, in a great gale of wind, to carry out more ſails, *viz.* a top-ſail more, or the like. Id. ibid.

BEARING *off* is when a ſhip would not come near a land, or another ſhip; but goes more roomer than her courſe lies. *Manw.* Sea Dict. p. 7.

BEARING *off* is alſo uſed by ſeamen, generally in buſineſs belonging to ſhipping, for *thruſt off*. *Manw.* Sea Dict. p. 7.

Thus, in hoiſting any thing into the ſhip, if it hath hold by any part of the ſhip or ordnance, or the like, they ſay, *bear it off from the ſhip's ſide.*—So, if they would have the breech or mouth of a piece of ordnance, or the like, put from one, they ſay, *bear off*, or *bear about* the breech.

BEARINGS, in heraldry, a term uſed to expreſs a coat of arms, or the figures of armories, by which the nobility and gentry are diſtinguiſhed from the vulgar, and from one another. Theſe ſigns of nobility with us, are evidently a copy of the ſtatues and images among the antient Romans, which they uſed to expoſe before their houſes on public days, and carried before the body at a funeral of a great perſon. Theſe ſtatues among them were the reſemblances of their noble anceſtors. (See *Imaginum Jus.*) And as our coats of arms evidently were brought up in the place of them, it ſeems very natural to date the riſe and origin of heraldry in England, as now practiſed, from the time of the ſubverſion of the Roman empire by the Goths and Vandals; who, as they deſtroyed many liberal arts, ſo they ſeem, in return, to have given birth to this of heraldry. The original cuſtom with us ſeems to have come from the practice of theſe northern fierce people of painting on their ſhields, and other parts of their armour, the figures of ſome furious beaſt, to repreſent their own fierce diſpoſition. Thus, wolves, lions, bears, and the like, became common military diſtinctions; and when the perſon who firſt wore them became ſignalized in battle, they were continued down to his poſterity, as marks of the glory he had won. Theſe were called *teſſeræ gentilitiæ*, or *inſignia gentilitia*. They were after this called by ſome *arma*, and the title *gentilitia* added to it; and hence our word *arms*, tho' we have dropped the epithet.

Theſe warlike nations, having ſubdued the mighty Roman empire, and raiſed their glory by military ſervice, became very fond of the atchievements of their anceſtors and great men, and derived their enſigns and titles of honour from what concerned a ſoldier. They firſt, therefore, diſtinguiſhed the whole community into three ranks, which they named, according to the different orders of military men, *miles*, *eques*, and *ſcutifer*; and their poſterity, willing to commemorate their honours, reſerved to themſelves their ſeveral military enſigns; and theſe became what we call *bearings*, or arms, the marks of gentility, or of houſes, ſome one of which had once deſerved an elevation above the common rank of men. While the direct deſcendent of this honourable perſon carried his enſigns of honour for his diſtinction, the callateral branches alſo were ambitious of preſerving the memory of their having belonged to ſuch an honourable houſe; and therefore aſſumed the ſame figures, but with ſome difference, to diſtinguiſh the diſtance from the original claim. In proceſs of time, other families, who had deſerved as well of their prince and country, whether in civil or military affairs, became deſirous of the ſame ſort of diſtinction, by way of eternal memorial of their ſervices; and upon this occaſion many other devices were formed into arms, and continued down to poſterity in the ſeveral families. *Budæus*, Pandect. *Niſb.* Heraldry, p. 5.

BEARN-*Stone*. See PHOSPHORUS.

BEAST (*Cycl.*)—Authors make this difference between *beaſts of the foreſts* and *of chaſe*, that the firſt are *ſilveſtres tantum*, the latter *campeſtres tantum*. *Beaſts* of the foreſt make their abode all the day time in the great coverts and ſecret places of the woods; and in the night ſeaſon, they repair into the lawns, meadows, paſtures, and pleaſant feeding-places: whence their denomination *ſilveſtres*, q. d. *beaſts of the wood*.

Beaſts of the chaſe reſide all the day-time in the fields, and on the mountains afar off, to prevent ſurprize; but, on night's approach, they feed as the reſt in meadows, &c. whence their appellation *campeſtres*, q. d. *beaſts of the field*. *Cox*, Gent. Recr. P. 1. p. 5.

No other, according to Manwood, are accounted *beaſts* or fowls of warren, than hares, coneys, pheaſants, and partridges. The lord Coke is of another opinion [a], diſtinguiſhing *beaſts* of the warren from fowls of the warren. Under the former, he includes hares, coneys, and roes: the latter he divides into *ſilveſtres*, *campeſtres*, and *aquatiles*. To the firſt belong the pheaſant, woodcock, &c. to the ſecond the partridge, quail, rail, &c. to the third the mallard, hern, &c [b].—[[a] Com. on *Littlet.* p. 233. [b] *Cox*, loc. cit.]

BEAST *of burthen* is underſtood of all quadrupeds employed in carrying goods on their backs. The chief of theſe are the elephant, dromedary, camel, horſe, mule, and aſs: to which may be added the ſheep in Mexico and Peru. On ſome parts of the coaſts of Africa they uſe oxen, and in Flanders large dogs, for the ſame purpoſe. *Savar.* Dict. Comm. T. 1. p. 323, ſeq.

BEAST *at ombre* is, where the player, or perſon that undertakes the game, loſes it to the other two; the penalty of which is a forfeiture equal to the ſtake played for. Vid. Comp. Gameſt. p. 24.

The player is *beaſted*, unleſs he win five of the nine tricks, or at leaſt four; with this further circumſtance, that the other five be ſo divided between the two other gameſters, that one makes three tricks, the other two.

If the player win no more tricks than one of the other gameſters, it is called *repueſto*. If one of the gameſters win more tricks than the player, the latter is not ſimply ſaid to be *beaſted*, but to loſe *codille*. Dict. Trev. T. 1. p. 1003.

BEAST, *la bête*, is alſo the name of a French game at cards. V. Compl. Gameſt. p. 97.

BEAT, or UNDULATION, in muſic. See UNDULATION.

Beat is applied to the muſic of the drum, where it anſwers to what in other inſtruments is called the tune, air, or ſong.

The chief *beats* or beatings on the drum are, the general, the aſſembly, the march, the reveille, the retreat, &c.

BEAT, in fencing, denotes a blow or ſtroke given with the ſword. See BEATING.

There are two kinds of *beats*; the firſt performed with the foible of a man's ſword on the foible of his adverſary's, which in the ſchools is commonly called *baterie*, from the French *batre*, and is chiefly uſed in a purſuit, to make an open upon the adverſary. The ſecond and beſt kind of *beat* is performed with the fort of a man's ſword upon the foible of his adverſary's, not with a ſpring, as in binding, but with a jerk, or dry *beat*; and is therefore moſt proper for the parades without or within the ſword, becauſe of the rebound a man's ſword has thereby from his adverſary's, whereby he procures to himſelf the better and ſurer opportunity of riſpoſting. *Hope*, New Meth. Fenc. c. 4. p. 116.

BEAT in the manege. A horſe is ſaid *to beat the duſt*, when, at each ſtroke or motion, he does not take in ground or way enough with his fore-legs.

He is more particularly ſaid to *beat* the duſt at *terra a terra*, when he does not take in ground enough with his ſhoulders, making his ſtrokes or motions too ſhort, as if he made them all in one place.

He *beats the duſt* at curvets, when he does them too precipitantly, and too low.

He *beats upon a walk*, when he walks too ſhort, and thus rids but little ground, whether it be in ſtreight lines, rounds, or paſſings. *Guill.* Gent. Dict. P. 1.

BEAT *upon the hand*, in the manege. See CHACK.

BEATER is applied, in matters of commerce, to divers ſorts of workmen, whoſe buſineſs is to hammer or flatten certain matters, metals, or the like.

In this ſenſe we meet with *plaſter-beater*, *cement-beater*, *mortar-beater*, &c.

Gold-BEATERS are artiſans who, by beating gold and ſilver with a hammer on a marble, in moulds of vellum and bullocks guts, reduce them to thin leaves fit for gilding, or ſilver-

ing

ing of copper, iron, ſteel, wood, &c. *Savar.* Dict. Comm. T. 1. p. 307.

Gold-beaters differ from *flatters* of gold or ſilver, as the former bring their metal into leaves by the hammer; whereas the latter only flatten it by preſſing it through a mill.

There are alſo *Tin*-BEATERS employed in the looking-glaſs trade, whoſe buſineſs is to beat tin on large blocks of marble till it be reduced to thin leaves, fit to be applied with quick-ſilver behind looking glaſſes. *Savar.* Dict. Comm. T. 1. p. 307. See LOOKING-*glaſs*, FOLIATING, &c. *Cycl.*

BEATER is alſo uſed for an inſtrument wherewith to gravel walks and alleys in gardens even.

It is a piece of wood half a yard long, ſix inches thick, and eight or nine broad, having a handle in the middle. Dict. Ruſt. in voc.

BEATIFIC *Viſion*, (*Cycl.*) among divines, the preſence of God in glory, which the bleſſed enjoy in paradiſe to all eternity.

The time when the *beatific* viſion commences, was towards the middle of the fourteenth century, hotly diſputed. The queſtion was, whether the ſouls of the juſt ſhould ſee God face to face before the day of judgment? Pope John XXII. held the affirmative; friar Thomas Waleys, a dominican, ſupported by Dr. Thomas Poney, abbot of St. Auſtin's, Canterbury, the negative. The negative ſide proved triumphant; and the pope, with all his infallibility, was afterwards obliged to retract. *Steph.* App. to Dugd. Monaſt. T. 2. p. 329.

BEATIFICATION (*Cycl.*) is conſidered as an inferior and leſs ſpecies of canonization; the effects of which are, that an anniverſary honour is done the perſon as a ſaint, at his tomb, either by burning lights, hanging up gifts, or any other method. See Acta Sanctorum, T. 1. Junii, p. 371. F. & *Baillet*'s Diſſertation before his Lives of the Saints, publiſhed in French, p. 197, ſeq.

Beatification is alſo conſidered as a proviſional *canonization*, being generally premiſed, till the Roman ſee, after the ſpace of fifty, or more or fewer years, has determined a ſolemn canonization. Thus Mary Magdalen di Pazzis, a Florentine, who died in 1607, was *beatified* by Urban VIII. in 1626; but canonized by Clement IX. in 1669. Vid. Acta Sanctorum, T. 6. Maii, p. 315. 326.

It is remarkable, that particular orders of monks aſſume to themſelves the power of *beatification*.

Thus Octavia Melchiorica was *beatified* with extraordinary ceremonies by the Dominicans, for a legacy of 7000 dollars left the order. Vid. *Fabric.* Bibl. Antiq. c. 8. p. 274.

BEATING, (*Cycl.*) among ſportſmen, denotes the noiſe which hares make in the rutting-time. See RUTT.

The hare is ſaid to *beat*, the hart to *bell*, &c. *Cox*, Gent. Recr. P. 1. p. 10.

BEATING, in fencing. See the article BEAT.

Beating differs from *binding*, as the latter is performed with a kind of ſpring, and that, in performing it, a man keeps by, and engages more his adverſary's ſword, than when he *beats*; for which reaſon *binding* is chiefly proper when a man intends to become the purſuer; whereas *beating*, being performed by a kind of jerk, or dry ſtroke, is chiefly deſigned for the defenſive part, or parade, that a man may hereby return the quicker riſpoſte from it; ſeeing his ſword, if the *beat* be rightly performed, will, in ſome meaſure, rebound from his adverſary's ſword, and ſo aſſiſt him to make the quicker riſpoſte. Add, that the jerk or dry *beat* upon the parade forces the adverſary's ſword conſiderably out of the ſtreight line, which makes the riſpoſte ſtill the more certain, and which cannot be done with near that certainty nor ſtrength with the ordinary French parade, within and without the ſword from the quarte guard. *Hope*, New Meth. of Fenc. c. 4. p. 116.

BEATING is alſo uſed in ſpeaking of the agitation and noiſe of the death-watch, or *pediculus pulſatorius*.

Mr. Stackhouſe has deſcribed the manner of *beating* of the *pediculus pulſatorius*. Vid. Phil. Tranſ. N° 385. p. 159.

BEATING *flax*, or hemp, is an operation in the dreſſing of theſe matters, contrived to render them more ſoft and pliant. *Hought.* Collect. T. 2. p. 396.

When hemp has been ſwingled a ſecond time, and the hurds laid by, they take the ſtrikes, and dividing them into dozens, and half dozens, make them up into large thick rolls, which being broached on long ſticks, are ſet in the chimney corner to dry; after which they lay them in a round trough made for the purpoſe, and there with beetles beat them ſoundly, till they handle, both without and within, as pliant as poſſible, without any hardneſs or roughneſs to be felt: that done, they take them from the trough, open and divide the ſtrikes as before, and if any be found not ſufficiently beaten, they roll them up, and beat them over as before. Dict. Ruſt.

BEATING *the wind*, *verberare contra ventum*, was a practice in uſe in the antient method of trial by combat. If either of the combatants did not appear in the field at the time appointed, the other was to *beat the wind*, or make ſo many flouriſhes with his weapon; by which he was intitled to all the advantages of a conqueror. *Du Cange*, Gloſſ. Lat. T. 4. p. 1280.

BEATING *the hands or feet*, by way of praiſe or approbation. See the article APPLAUSE.

BEATING, *among book-binders*, denotes the knocking a book in quires on a block with a hammer, after folding, and before binding or ſtitching it. See BOOK-BINDING, *Cycl.*

BEATING, in the paper-works, ſignifies the *beating* of paper on a ſtone with a heavy hammer with a large, ſmooth head, and ſhort handle, in order to render it more ſmooth, and uniform, and fit for writing. *Savar.* Dict. Comm. T. 1. p. 308.

BEATING *time*, in muſic, a method of meaſuring and marking the time for performers in concert, by a motion of the hand or foot up and down ſucceſſively, and in equal times [a]. Knowing the true time of a crotchet, and ſuppoſing the meaſure actually ſubdivided into four crotchets, and the half meaſure into two, the hand or foot being up, if we put it down with the very beginning of the firſt note or crotchet, and then raiſe it with the third, and then down with the beginning of the next meaſure; this is called *beating* the time; and by practice, a habit is acquired of making this motion very equal [b]. Each down and up is ſometimes called a time, or meaſure [c].—[[a] *Sympſon*, Compl. Muſ. §. 7. p. 14. [b] *Malcolm.* Muſ. c. 12. §. 2. p. 399. [c] *Sympſ.* loc. cit.]

The general rule is, to contrive the diviſion of the meaſure ſo, that every down and up of the *beating* ſhall end with a particular note, on which very much depends the diſtinctneſs, and, as it were, the ſenſe of the melody. Hence the beginning of every time, or *beating* in the meaſure, is reckoned the accented part thereof. *Malcolm.* loc. cit.

Beating time is denoted, in the Italian muſic, by the term *a battuta*, which is uſually put after what they call *recitativo*, where little or no time is obſerved, to denote, that here they are to begin again to mark or beat the time exactly. *Broſſard*, Dict. Muſ. p. 12, ſeq.

The Romans aimed at ſomewhat of harmony in the ſtrokes of their oars, and had an officer called *portiſculus* in each galley, whoſe buſineſs was to *beat* time to the rowers; ſometimes by a pole or mallet, and ſometimes by his voice alone. *Pitiſc.* Lex. Ant. T. 2. p. 490.

The antients marked the rhythm in their muſical compoſitions; but, to make it more obſervable in the practice, they *beat* the meaſure or time, and this in different manners. The moſt uſual conſiſted in a motion of the foot, which was raiſed from, and ſtruck alternately againſt the ground, according to the modern method. Doing this was commonly the province of the maſter of the muſic, who was thence called μεσοχορος and κορυφαιος, becauſe placed in the middle of the choir of muſicians, and in an elevated ſituation, to be ſeen and heard more eaſily by the whole company. Theſe beaters of meaſure were alſo called by the Greeks ποδοκτυποι and ποδοψοφοι, becauſe of the noiſe of their feet; συνοναριοι, becauſe of the uniformity or monotony of the rhythm. The Latins denominated them *pedarii*, *podarii*, and *pedicularii*. *Burette*, in Mem. Acad. Inſcr. T. 7. p. 247. *Pitiſc.* Lex. Ant. T. 2. p. 399.

To make the beats or ſtrokes more audible, their feet were generally ſhod with a ſort of ſandals either of wood or iron, called by the Greeks κρουπεζια, κρουπαλα, κρουπεδα, and by the Latins *pedicula*, *ſcabella*, or *ſcabilla*, becauſe like to little ſtools, or foot-ſtools. Sometimes they beat upon ſonorous foot-ſtools, with the foot ſhod with a wooden or iron ſole.

They beat the meaſure not only with the foot, but alſo with the right-hand, all the fingers whereof they joined together, to ſtrike into the hollow of the left. He who thus marked the rhythm, was called *manuductor*. The antients alſo beat time or meaſure with ſhells, as oyſter-ſhells, and bones of animals, which they ſtruck againſt one another, much as the moderns now uſe caſtanets, and the like inſtruments. This the Greeks called κρεμβαλιαζειν, as is noted by Heſychius. The ſcholiaſt on Ariſtophanes ſpeaks much to the ſame purpoſe. Other noiſy inſtruments, as drums, cymbals, citterns, &c. were alſo uſed on the ſame occaſion.

They beat the meaſure generally in two equal or unequal times; at leaſt, this holds of the uſual rhythm of a piece of muſic, marked either by the noiſe of ſandals, or the flapping of the hands. But the other rhythmic inſtruments laſt-mentioned, and which were uſed principally to excite and animate the dancers, marked the cadence after another manner; that is, the number of their percuſſions equalled, or even ſometimes ſurpaſſed, that of the different ſounds which compoſed the air or ſong played. *Burette*, lib. cit. T. 7. p. 243, ſeq.

BEATING, *drubbing*, or *ſtripes*, make one of the moſt antient, as well as univerſal ſpecies of puniſhment. Among the Romans it obtained, under the denomination of *verberare*, *fuſtigare*, *flagellare*, *pulſare*, &c [d]. In later ages it was diſtinguiſhed by thoſe of *homicidium* [e], *homiplegium* [f], *plagare* [g], &c. In the Eaſt it ſtill prevails, under the name of *baſtonade*. It is inflicted with a cudgel, which, for its great virtue and efficacy in reforming mankind, is feigned by the Arabs to have come down from heaven [h].—[[d] Vid. *Kenn.* Rom. Ant. Not. P. 2. l. 3. c. 20. p. 143. *Pitiſc.* Lex. Ant. T. 2. p. 1050, ſeq. voc. *verbera*. *Du Cange*, Gloſſ. Lat. T. 2. p. 458. [e] Id. T. 2. p. 752. [f] Id. ibid. 753. [g] Id. T. 4. p. 299. [h] *Sale*, Prelim. Diſc. to Koran, §. 6. p. 141.] See BASTONADO.

Some diſtinguiſh between *pulſation* and *verberation*, as if the latter imported a *beating* with pain, the former without; but the diſtinction is not always kept to. *Calv.* p. 769.

BEATING, in the Engliſh laws. See BATTERY, *Cycl.*

Rolfinck ſpeaks of an empiric, who cured melancholic and maniacal patients by only whipping and *beating* them, *ſolis flagris & verberibus*. *Rolfinck*, in Ord. & Meth. Med. Sp. l. 14. §. 3. c. 17. *Caſt.* Lex. Med. p. 741: b.

BEATING *of the heart*. Divers ſyſtems have been framed to account for the *beating* of the heart. Some have doubted whether it be mechanical, that is, deducible from any known laws or powers of nature. Vid. *Ray*, Wiſd. of God. P. 1. p. 45.

The French philoſophers give an inſtance of an extraordinary *beating* of the heart, ſo ſtrong and loud, that it might be heard to the diſtance of ten paces [i]. The arteries have their pulſations correſpondent to thoſe of the heart, by which they are diſtinguiſhed from the veins, which have no pulſe; tho' there are inſtances alſo of *beatings* of the veins [k], like thoſe of the arteries.—[[i] Mem. Acad. Scienc. 1704. p. 30. [k] Mem. Acad. Scienc. 1704. p. 218.]

BEATING *in the flanks*, a diſtemper to which black cattle are ſubject, and is an indication of a great inflammation in the bowels. Ruſt. Dict.

BEATITUDE imports the ſupreme good, or the higheſt degree of happineſs human nature is ſuſceptible of; or the moſt perfect ſtate of a rational being, wherein the ſoul has attained to the utmoſt excellency and dignity it is framed for. *Micræl.* Lex. Philoſoph. p. 209.

In which ſenſe, it amounts to the ſame with what we otherwiſe call *bleſſedneſs* and *ſovereign felicity*; by the Greeks εὐδαιμονια; and by the Latins *ſummum bonum*, *beatitudo*, and *beatitas*. *Quinctil.* Inſt. Orat. l. 8. c. 3. Jour des Scav. T. 67. p. 235.

BEATITUDE, among divines, denotes the beatific viſion, or the fruition of God in a future life to all eternity.

BEATITUDE is alſo uſed in ſpeaking of the theſes contained in Chriſt's ſermon on the mount, whereby he pronounces bleſſed the poor in ſpirit, thoſe that mourn, the meek, &c. *Matth.* c. 5. ver. 2, ſeq.

BEATITUDE was alſo a title antiently given to all biſhops; but of later days reſtrained to the pope. *Schmid.* Lex. p. 89.

It appears to have been ſometimes alſo given to laymen. *Briſſ.* de Formul. p. 362. *Schmid.* loc. cit.

BEAVER, (*Cycl.*) in zoology. See FIBER.

BECAH or BEKAH, a Jewiſh coin, being half a ſhekel. *Cumberl.* Ant. Jewiſh Weight. c. 4. p. 138. See the article SHEKEL, *Cycl.*

In Dr. Arbuthnot's table of reductions, the *bekah* amounts to $13\frac{11}{16}$ *d.* in Dr. Prideaux's computation to 1 *s.* 6 *d.*

Every Iſraelite paid an hundred *bekahs* a head every year for the ſupport of the temple. *Calm.* Dict. Bibl. in voc.

BECALMING, in the ſea-language, is when any thing keeps the wind off or away from a veſſel. *Botel.* Sea Dial. 4. p. 187. Thus one ſhip is ſaid to *becalm* another, when ſhe comes up with her on the weather-ſide: the like is ſaid of the ſhore, when it keeps the wind away.

BECASSE, in natural hiſtory, the woodcock. The French writers have alſo made this the name of a kind of ſhell-fiſh, of the genus of the purpura. They call this the woodcock-ſhell, from the length of its beak. There are two ſpecies of this, a prickly and a ſmooth one.

The prickly kind is an extremely beautiful and elegant ſhell. It is of a yellowiſh colour; and its tail or beak (for the hinder extremity of the ſhell, which runs out into an immoderate length, is ſometimes called by the one, ſometimes by the other of theſe names) is furniſhed with four rows of large and very long ſpines: between the rows of theſe, there are alſo rows of ſmall and ſhort ſpines. The body of the ſhell is furrowed very deep, with a number of tranſverſe circular lines; and both this and the clavicle are beſet with ſeveral rows of long ſpines.

The ſmooth *becaſſe*, or woodcock-ſhell, is a very elegant ſpecies, but much leſs ſo than the other. It is of a yellowiſh colour, radiated with black and grey lines. It is all over deeply furrowed, and the ridges are beſet with tubercles, the clavicle is elevated, and the tail is extremely long, and hollowed into a ſort of tube. The mouth of this, as well as of the other, is ſmall and roundiſh, and in this ſpecies is of a light fleſh-colour.

BECASSINE, in zoology, a name given by many to the *tringa minor*, or, as we commonly call it, the *ſand-piper*. See the article SAND-*piper*.

BECCA, in the materia medica of the antients, a name given to a fine kind of reſin, collected from the turpentine and maſtic-trees of Greece and Syria, and mixed together for uſe. It was much eſteemed formerly, and not only uſed in the country where it was produced, but carried in great quantities to Mecca, and other parts of the Turkiſh dominions, where it was valued at a very great rate. Dioſcorides, however, tells us, that this reſin ſuffered in the admixture; for that the reſin collected pure from the turpentine-tree alone, was greatly preferable to this mixt kind; and in enumerating in another place the various reſins, he ſtill gives the ſame preheminence to that of the turpentine-tree, ſaying, that it is the firſt of all reſins, and that the maſtic is ſecond to it. The Greeks called the turpentine and the maſtic trees both by the ſame name, *ſura*; and the Arabians formed out of that word their name *dura*, or *daru*, which they, in like manner, uſed to expreſs both the turpentine and maſtic-trees; and thence the trees being ſuppoſed the ſame, it is no wonder that their reſins were mixed together in the collecting; and the *becca* or mixt reſin reſulting from this mixture could not but be eſteemed the beſt of all reſins by thoſe, who had never ſeen the finer part of the mixture pure and alone.

BECCIFAGO, in zoology, the name of a ſmall bird, ſcarce ſo large as the common linnet, and with a very remarkable ſhort body. Its head, neck, back, wings, and tail, are of a greeniſh grey, and in ſome of the birds of a greeniſh brown. This may, perhaps, be owing to the difference of ſex. Its long wing-feathers are of a mixt colour of black and green; and the under feathers of the wings are yellowiſh: the tail is two fingers breadth long, and not forked, and of a plain brown colour. It feeds on vegetables, berries, &c. and is common in the north of England, where it is called the *pettychaps*. *Ray*, Ornithol. p. 158.

BECK, a little river or brook, called alſo rivulet, or rill. Dict. Ruſt. in voc.

According to Verſtegan, the original word is *beke*, which properly imports a ſmall ſtream of water iſſuing from ſome bourn or ſpring. *Verſt.* Reſtit. Dec. Intell. c. 9. p. 222.

Hence *hell-becks*, little brooks in the rough and wild mountains about Richmond near Lancaſhire, ſo called on account of their ghaſtlineſs and depth. Ruſt. Dict. in voc.

Beck is chiefly uſed among us in the compoſition of names of places originally ſituate on rivulets; hence Welbeck, Bournbeck, &c.

The Germans uſe *back* in the ſame manner. *Martiniere*, Dict. Geogr. T. 2. p. 180.

BECTASSE, an order or ſect of religious among the Turks, denominated from their founder *Bectaſh*, preacher to ſultan Amurath.

All the Janizaries belonging to the Porte are of the religion of *bectaſſe*, being even ſaid to have derived their origin from the founder of this ſect.

The habit of the *bectaſſe* is white: on their heads they wear white caps of ſeveral pieces, with turbans of wool, twiſted rope-faſhion. They obſerve conſtantly the hour of prayer, which they perform in their own aſſemblies, and make frequent declarations of the unity of God. *Rycaut.* State Ottom. Emp. c. 19. p. 148.

BED (*Cycl.*)—BED *of juſtice*, *lit de juſtice*, in the French laws, denotes a throne whereon the king is ſeated in parliament. Vid. *Tillet.* ſur le Lit de Juſtice, P. 1. p. 255, ſeq. & P. 2. p. 67, ſeq. Trev. T. 3. p. 1495. voc. *Lit de juſtice*.

In this ſenſe, the king is ſaid to hold his *lit de juſtice*, when he goes to the parliament of Paris, and holds a ſolemn ſeſſion, under a high canopy erected for the purpoſe.

The *bed of juſtice* is only held on affairs relating to the ſtate; on which occaſion, all the officers of the parliament appear in red robes; at other times they wear black ones. Several authors have treated expreſly on the ceremonies of the *bed of juſtice*. *Le Long*, Bibl. Hiſt. §. 10825, ſeq. p. 563.

BED *of a gun* is a piece of plank laid within the cheeks of the carriage, on the middle tranſum, for the breech of the gun to reſt on. *Guillet*, Gent. Dict. P. 2.

BED or *ſtool of a mortar* is a ſolid piece of oak, in form of a parallelopiped, bigger or leſs, according to the dimenſions of the mortar, hollowed a little in the middle to receive the breech, and half the trunions.

On the ſides of the *bed* are fixed the cheeks or brackets by four bolts of iron. *Guillet*, ibid.

In ſhips, when the decks lie too low from the ports, ſo that the carriages of the pieces, with the trucks, cannot mount the ordnance ſufficiently, but that they lie too near the gun-wale; the method is to make a falſe deck for ſo much as the piece will require for her traverſing to raiſe it higher; and this they call a *bed*. *Manw.* Seam. Dict. p. 7.

Dining BED, *lectus triclinaris*, or *diſcubitorius*, that whereon the antients lay at meals.

The dining or *diſcubitory beds* were four or five feet high. Three of theſe *beds* were ordinarily ranged by a ſquare table (whence both the table, and the room where they eat, were called *triclinium*) in ſuch manner, that one of the ſides of the table remained open, and acceſſible to the waiters. Each *bed* would hold three or four, rarely five perſons. Mem. Acad. Inſcr. T. 2. p. 428, ſeq. *Pitiſc.* Lex. Ant. T. 2. p. 448.

Theſe *beds* were unknown before the ſecond Punic war: the Romans, till then, ſat down to eat on plain wooden benches, in imitation of the heroes of Homer, or, as Varro expreſſes it, after the manner of the Lacedæmonians and Cretans. Scipio Africanus firſt made an innovation: he had brought from Carthage ſome of theſe little *beds* called *punicani*, or *archaici* [a], being of a wood common enough, very low, ſtuffed only with ſtraw or hay, and covered with goats or ſheeps ſkins, *hædinis pellibus ſtrati*. In reality, there was no great difference, as to delicacy, between theſe new *beds* and the antient benches; but the cuſtom of frequent bathing, which began then to obtain, by ſoftening and relaxing the body, put men on trying to reſt themſelves more commodiouſly by lying along, than by ſitting down. For the ladies, it did not ſeem at firſt conſiſtent with their modeſty to adopt the mode of lying; accordingly they kept to the old cuſtom all the time of the commonwealth; but, from the firſt Cæſars, they eat on their *beds*. For the

youth,

youth, who had not yet put on the *toga virilis*, they were long kept to the antient diſcipline. When they were admitted to table, they only ſat on the edge of the *beds* of their neareſt relations. Never, ſays Suetonius, did the young Cæſars, Caius and Lucius, eat at the table of Auguſtus; but they were ſet *in imo loco*, or, as Tacitus expreſſes it, *ad lecti fulcra*. From the greateſt ſimplicity, the Romans, by degrees, carried their dining *beds* to the moſt ſurpriſing magnificence. Pliny [b] aſſures us, it was no new thing to ſee them covered over with plates of ſilver, adorned with the ſofteſt mats, and the richeſt counterpanes.—[[a] Vid. *Hor.* Ep. 5. l. 1. & *Galland*, in Mem. Acad. Inſcr. 1702. p. 220. [b] *Plin.* Hiſt. Nat. l. 33. c. 11.

Lampridius, ſpeaking of Heliogabalus, ſays, he had *beds* of ſolid ſilver, *ſolido argento habuit lectos, & tricliniares, & cubiculares* [c]. We may add, that Pompey, in his third triumph, brought in beds of gold [d].—[[c] *Lamprid.* in Heliogab. c. 20. [d] *Plin.* Hiſt. Nat. l. 37. c. 2.]

Seneca and the poets have many things on the matter and form of theſe *beds*, the choice of the purple, and exquiſiteneſs of the embroidery [e]. Ciacconius has treated this ſubject at large in his diſſertation *de triclinio*. The contraſt is well expreſſed in that paſſage of Ovid; the *beds* of our fathers were adorned with graſs and leaves; the rich themſelves could only afford to cover them with ſkins [f]; *qui poterat pelles addere, dives erat.* —[[e] *Abbé Couture*, Diſſ. de la Vie Privée des Rom. §. 4. in Mem. Acad. Inſcr. T. 2. p. 429, ſeq. [f] *Potter.* Archæol. l. 4. c. 20. p. 376, ſeq.]

BEDS, in gardening, for raiſing melons, muſhrooms, and the like, are commonly denominated *ridges*.

Muſhrooms raiſed on *beds* are not ſo good as thoſe which grow at large in the natural ſoil. Vid. *Bradl.* New Exper. on Gard. P. 2. p. 135.

Hot BEDS are enriched with extraordinary plenty of manure, and ſheltered from the cold air by ſtraw coverings, frames, and the like, ſerving to help forward the growth of plants, and force a vegetation, where either the ſeaſon or the climate of itſelf is not warm enough. *Bradl.* New Exper. on Gard. P. 3. c. 1. p. 101. See HOT-*bed*.

To make a hot-*bed* in February, or earlier, for the raiſing of colliflowers, cucumbers, melons, radiſhes, or other tender plants or flowers, they provide a warm place, defended from all winds, by being incloſed with a pale or hedge made of reed or ſtraw, and laid with freſh horſe-dung ſix or eight days old, trodden down hard, and level on the top; over which they lay rich earth three or four inches thick. When the extreme heat of the *bed* is over, which may be perceived by thruſting in the finger, they plant their ſeeds. This done, they ſet up forks four or five inches above the *bed*, to ſupport a frame made of ſticks, and covered with ſtraw or baſs-mat, to ſecure the ſeedlings from the weather. As the plants ſhoot in height, they earth them up; and when able to bear the cold, tranſplant them into natural *beds*. *Bradl.* loc. cit. Ruſt. Dict. in voc.

BEDS, in ſpeaking of hops, denotes the floor whereon they are ſpread to dry. *Hought.* Collect. T. 2. p. 451.

BED *of corn* is a heap, flat a-top, three or four feet high, otherwiſe called a *couch*.

Corn, in grannaries, keeps beſt in *beds* or couches. Mem. Acad. Scienc. 1708. p. 90.

BED-*algenſe*, a name given by the Arab aſtronomers to a fixed ſtar of the firſt magnitude in the right ſhoulder of Orion. *Vital.* Lex. Math. p. 84. *Wolf.* p. 255. See ORION, *Cycl.*

Bed-algenſe is of a ruddy colour, by which it is eaſily diſtinguiſhed. Its longitude, according to Hevelius, for the year 1700, was 24° 35′ 5″, and its latitude ſouthward 16° 3′ 52″. *Hevel.* Prodrom. Aſtron. p. 295. *Wolf.* loc. cit.

BEDALACH, in the materia medica, a name given by ſome writers to the gum bdellium; but particularly to that kind of it which was brought from Arabia, and was of a yellowiſh colour, like wax. It is to this bdellium that the manna, on which the children of Iſrael fed in the deſert, is compared, which, according to the account of that miraculous food, was not unlike it. The other coarſe, blackiſh, and foul bdellium comes from other countries.

BEDAUDE, in natural hiſtory, a name given by the French authors to a ſort of prickly caterpillar found on the elm. See CATERPILLAR.

BEDDING, *lectoria*, in reſpect of horſes and other cattle, denotes ſtraw or litter ſpread under them to lie on. Vid. *Du Cange*, T. 3. p. 237.

Bedding, in ſpeaking of a roe, is uſed by ſportſmen for the lodging of that beaſt. *Cox*, Gent. Recr. P. 1. p. 10.

A roe is ſaid to *bed*; a hart to *harbour*; a fox to *kennel*.

BEDENGIAN, in botany, a name given by Aviſenna and Serapion to the *poma amoris*, or love-apples, a ſort of fruit uſed in food by the Italians, and ſome other nations, and ſeeming to be the third kind of the *ſtrychnos* or *ſolanum* mentioned by Theophraſtus. That author firſt deſcribes two kinds of this plant, the one of which occaſioned ſleepy diſorders, and the other threw people who eat of it into madneſs. After theſe, which he properly accounts poiſonous kinds, he mentions a third, which was cultivated in gardens, for the ſake of the fruit, which, he ſays, is large, and eſculent. This is certainly the ſame with the *bedengian*, or *poma amoris*. See *Theophraſt.* and *Aviſenn.*

BEDEREP. See BEDRIP.

BEDOARA, in botany, a name uſed by the Arabians, and ſome other authors, for the white thorn. *Ger.* Emac. Ind. 2.

BEDOUIS, a ſet of the Arabs, inhabitants of Egypt. Theſe live in tents, and ſubſiſt moſtly by the cattle they graze, which are camels and goats that feed on ſmall ſhrubs. They live on each ſide the Delta, and are much about Mecca. *Pocock*'s Egypt, p. 177.

BEDRIP, or BEDREPE, or BEDERAPE, the cuſtomary ſervice which inferior tenants antiently paid their lord, by cutting down his corn, or doing other work in the field. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

The word is formed from the Saxon *biddon*, to pray, and *repe*, to reap or cut corn.

In this ſenſe, *bedrip* amounts to the ſame with what is otherwiſe called in Latin writers *precaria*.

Bedrip is uſed, in ſpeaking of the days of work in harveſt; as ſome yet are bound to give them one, two, or three days work, called in ſome places *boon-days*. *Blount*'s Law Dict. in voc. *bederep*.

BEE, in phyſiology and husbandry, a naked, winged, faviſicous inſect, bred from maggots or worms, that are *apoda*, or without feet; remarkable for their skill and induſtry in gathering of honey and wax from flowers, and on that account frequently preſerved in gardens. *Hought.* Collect. T. 3. p. 257.

Beſides the common honey-*bee*, which we raiſe in hives, and have at all times under our care, there are nine other ſpecies, which we have wild about our fields. Theſe are, 1. The wild *bee*, of the ſize and colour of the common *bee*, but having very long and ſtreight antennæ. This is leſs hairy than the common *bee*. 2. The wild, black, wall *bee*. This is all over black: its body is ſhort, and its legs are of an orange colour. This has a ſting like that of the common *bee*. It builds in old walls. 3. The long-bodied wild *bee*, with a yellow body and black tail. This alſo builds in old walls. 4. The ſmall, long-bodied, wall *bee*, with white ſpots on its body and legs. This is alſo frequently found about old walls. 5. The ſmalleſt wild *bee*, with long reddiſh hair on the breaſt, and whitiſh on the ſides. 6. The earth *bee*. This ſpecies is ſo named from its making a hole in the earth for the reception of its young. This is ſmaller and weaker than the common *bee*, and is uſually met with in large ſwarms, all living in one large ſubterraneous apartment. 7. The great wild *bee*, reſembling the humble *bee* in its colours and hairineſs, and having a black rim round the wings. 8. The tree *bee*. This is ſo called from its always building in hollow trees. It is ſomewhat larger than the common *bee*, and is more hairy. *Ray*, Hiſt. Inſ. p. 244.

To the ſpecies of hive *bees* belong the common or honey *bee*; the male *bee*, or drone; and the king, or rather queen-*bee*.

The queen is ſomewhat bigger, conſiderably longer, and of a brighter red than the others. Her office is to direct and lead the ſwarms, and to raiſe a new breed, by depoſiting eggs, which turn to maggots in the cells, and are afterwards metamorphoſed into *bees*. Her fertility is ſo great, that ſhe brings forth ten or twenty thouſand young in a year; ſo that ſhe may be literally ſaid to be the mother of all her people.

Generally there is but one queen-*bee*, ſometimes two, or at moſt three in a hive of eight or ten thouſand *bees*. *Maraldi*, ap. Hiſt. Acad. Scienc. ann. 1712. p. 7, ſeq. & Mem. Acad. Scienc. ann. 1712. p. 394.

The drones are uſually ſuppoſed to be the males; but this is only conjecture: they are produced, like the reſt, by the queen; only the eggs for them are depoſited in a larger ſort of cells for the purpoſe. They have no ſtings, are of a darker colour, and generally larger, eſpecially longer, than the honey *bee*. Some hives have more of them, others fewer, and ſome at certain ſeaſons none. Their office is ſaid to be, to ſerve as ſervants and nurſes to the young fry, and as ſtallions for the pleaſure of the queen. Hiſt Acad. Scienc. loc. cit. *Hought.* ubi ſupra.

We have a ſort of *bees*, which breed up their young not in hives or combs, but in caſes made of leaves. They are not nice as to what tree they ſhall uſe the leaves of, but fix indifferently on almoſt any. The ſyringa, or lilac, however, is one of the moſt common. One leaf contains many caſes; and as theſe lie one behind another, and the hindermoſt is finiſhed, and the egg depoſited in it, firſt, it might appear, that the *bee* hatched there muſt come to maturity firſt, and eat its way thro' all the reſt to get out; but it is more probable, that all the eggs in the body of the parent being at the ſame ſtate of maturity when the neſt is begun, the firſt laid is the laſt hatched, the others having the advantage of being ſome time longer in the parent's body, which muſt bring them forward more than while in the caſe. By this means, the laſt laid will be firſt hatched, and ſo the anterior cells will be all uſeleſs and empty, as the animals in the poſterior ones become ready for their going out.

Bees, which breed in caſes made of willow-leaves, and lodged in the rotten wood of the ſame tree, are the moſt remarkable of this kind. Theſe creatures, in their maggot or worm-ſtate, either eat a hole deep enough for their reception, or finding one ready bored, take poſſeſſion of it. When they are to lie-

by

by for their change, each wraps its body round with twelve or fourteen leaves, making a hard and firm caſe, faſtened up at each end with as many pieces of leaves bitten off, and fixed carefully on.

The caſes are about an inch long, and lie one at the end of another, ſo as to fill up the whole hole. The holes in the wood are not alway ſtreight, but ſometimes burrowed, like thoſe of rabbits.

Mites are very great enemies to theſe creatures; and knowing that a helpleſs animal is contained there, they uſually eat their way thro' the caſe, and devour the animal in its reſiſtleſs ſtate of the nymph. When the *bees* eſcape this, and come to their proper maturity, they are in all reſpects like the common *bee*; except that they have a yellow ſtreak acroſs their belly, ſo bright, that it gives them the look of the waſp: but the body is too ſhort for that animal, and they are in reality true *bees*, having a ſting, and all the other parts of a regular *bee*. Phil. Tranſ. N° 64.

There is, in ſome parts of America, a very different ſpecies of *bees* from ours; and the manner of erecting their combs, and lodging their honey, is not leſs different than their form. Their combs are compoſed of a ſeries of ſmall bottles or bladders of wax, of a dusky brown or blackiſh colour; and each of theſe is much of the ſize and ſhape of a Spaniſh olive. They hang together in cluſters, almoſt like a bunch of grapes, and are ſo contrived, that each of them has its aperture while the *bees* are at work upon it; but as ſoon as it is filled with honey, this aperture is cloſed, and the *bees* leave it, and go to work upon another veſſel.

Their lodgings are uſually taken up in the hollow of an old tree, or in ſome cavity of a rock by the ſea-ſide. They are very cunning in chooſing the propereſt places of this kind, becauſe their honey is ſo delicious a bait, that they are hunted after by many ſorts of animals; and they have no power of defending themſelves, having no ſtings, as our *bees* have.

When the combs are removed, they muſt be very gently taken out of their place, and carried to where they are to be emptied in their exact natural poſition, otherwiſe they do not hold, but the greater part of the honey will be ſpilt, or mixed with the wax by the way.

The honey is clear and liquid as rock-water, and is hardly to be diſtinguiſhed from pure water by the ſight; and the manner of getting it clean out is, to prick the bottom of every bladder ſeparately with a thorn, or a pin. It is better indeed to give the puncture a little above the very baſe, becauſe there is often a ſmall ſediment of thicker matter juſt there, which would prevent the reſt from running out. It is uſed by the natives rather as drink with their food, than as honey. They uſe it alſo in medicine as a purge, drinking half a pint of it in a morning faſting. It is of an extremely agreeable flavour, and in ſome parts of America it is very plentiful. Phil. Tranſ. N° 172. p. 1030.

Naturaliſts relate wonders of the oeconomy, policy, ſagacity, and induſtry of *bees*. The diſtribution they make of their labour is no leſs celebrated; for while ſome are employed in gathering of honey or wax, others repair rotten hives; others carry out the dead; others cleanſe the filth; others keep guard, placing themſelves in five or ſix files, eight or ten deep, upon the floor of the hives, ſo that all the *bees* at entrance muſt paſs between them; ſome are even ſaid to ſerve for bridges and ladders for others to paſs on. *Maraldi*, ubi ſupra. See alſo *Boyle*, Work. abridg. T. 2. p. 181, ſeq.

In effect, no inſect, and indeed ſcarce any animal, makes ſuch a figure in the writings of naturaliſts as the *bee*; but when we come to examine ſtrictly into what is related of this inſect, we ſhall find, however, a great deal of falſity in the marvellous things recounted of it; but we ſhall find at the ſame time, by nice inquiry into their works, many things not leſs to their credit, which have been paſſed over in ſilence; and the place of imaginary wonders, exploded by ſuch a ſcrutiny, will be amply filled up by real wonders unknown before.

Ariſtotle, Pliny, and the reſt of the antients, have recorded, that the *bees*, in caſes of ſtormy weather, take up a ſmall ſtone in their legs, in order to their being of ſome weight, and not liable to be carried away by every blaſt of wind. This is one of the falſe wonders attributed to theſe inſects; and the falſity is eaſily detected, by only obſerving the numbers that fly to a hive in a ſtorm, it will not be ſeen, that any one of them has any ſuch contrivance; and indeed if they had, the fact would eaſily be known, by their leaving their ſtones either at the mouth of the hive, or within it, ſince a ſtone capable of adding any thing conſiderable to their weight, muſt be of ſome ſize, and ſo many thouſands of theſe as muſt be depoſited by the multitudes of *bees* driven home by every ſtorm, could not but be ſeen.

The antients had this foundation for their account: there is a ſort of two-winged fly, of the ſize and colour of a *bee*, and ſo like it as not to be diſtinguiſhed, except by its having only two wings inſtead of four, and its having no ſting. This fly builds its neſt with pieces of coarſe and large ſand, and to this end is frequently found carrying thoſe little ſtones thro' the air. This creature had been miſtaken by ſome obſervers for a *bee*, and the intent of its labour in carrying theſe ſtones miſtaken; and hence the account of the *bees* carrying them by way of ballaſt introduced into the world.

The moral virtues have been all, at one time or other, attributed to the *bees*. We have been told of their burying their dead with all the ſolemnity and ceremony of a regular funeral, and that with great labour. The thing which gave riſe to this was, the obſerving a ſingle *bee* often labouring to carry out of the hive another *bee*, which was dead: this, with the utmoſt difficulty, he at length flies away with, and depoſits at ſome diſtance from the hive. This, however, is not out of care for the dead, but for the living: theſe creatures hate to have any thing incumber them in the hive; and it is as common to ſee them carry out as great a load of any other offenſive or unneceſſary matter. We ſhall alſo throw off all our opinion of their charity in theſe operations, if we conſider, that, at certain times, when they think their ſtores will fall ſhort, they make no ſcruple to throw out of the hives their own offſpring, the nymphs, and young *bees* ſcarce extricated from that covering, often being carried away, and left to periſh in great numbers together. *Reaumur*, Hiſt. Inſect. Vol. 9. p. 268.

It is pretended by ſeveral authors, that the *bees* know how to diſtinguiſh virtuous from vicious men; and that being themſelves a chaſte and virtuous people, they love ſuch men as are ſo, and hate and injure others: they ſay, that a chaſte and virtuous man may go to their hives, and ſtand by them as long as he pleaſes, without hurt; but that a vitious perſon will certainly be ſtung, if he attempts it.

It is true, that many perſons have ſtood a long while near hives without hurt; and that others have been deſperately ſtung only in paſſing by them: but this is from far different cauſes. In general, thoſe *bees*, whoſe hives are ſituated near houſes, are uſed to ſee men every day, and therefore are not alarmed at them, and finding no danger from them, are not apt to ſuſpect any; ſo that they do them no injury: but, on the contrary, *bees* whoſe hives are in places leſs frequented, not being accuſtomed to the ſight of a man, will take him for an enemy whenever he appears. There is alſo another rule to be obſerved, in order to avoid being ſtung by them, which is, not to hurt or injure them. If a perſon will bear the humming noiſe of them about his ears, and not diſturb them, even when near his face, he may obſerve them many hours without danger; but if he moleſts or beats them away, he uſually ſuffers for it. Theſe are the reaſons why ſome people are ſtung by *bees*, and others not; and people not attending to theſe, have ſuppoſed many other imaginary and idle cauſes.

Bees have alſo been celebrated for their nice ſmell; and it is affirmed by many, that they love ſweets, and hate ſtinks in ſuch a manner, that they will fly to the one out of love, and will ſting the perſon who carries the other about him, by way of hatred. But there is ſo little ground for this, that Mr. Reaumur tried them, and found no difference when he carried ſweet or diſagreeable things about him: and it is to be obſerved, that we are not to judge for them in regard to what are ſweets and what are ſtinks, ſince they often frequent places where urine is voided, and lies to corrupt, which to us is a very ill ſmell.

The *bees* have frequent battles about the mouths of their hives; but it is but ſeldom that they proceed ſo far as to be mortal: ſometimes, however, many are left dead upon the ſpot, and the conquerors march in, in great triumph.

It is certain that the *bees* foreſee rain, and it being very detrimental to them, they always haſten to their hives to avoid it. Whether they ſee the clouds gathering for it, as ſome imagine, or whether (as is much more probable) they feel ſome other effects of it upon their bodies, is not yet determined; but it is certain, that no *bee* is ever caught even in what we call a ſudden ſhower, unleſs it have been at a very great diſtance from the hive, or have been before injured by ſome accident, or be ſickly, and unable to fly ſo faſt as the reſt.

All theſe things are to be ſeen on the outſide of a hive; but when we look within it, the wonder is greatly increaſed. The obſerving ſo many thouſands of little creatures all ſo actively at work, and with ſuch admirable regularity, making combs and cells for the reception of their winter's ſtores, and other neceſſary uſes, is a ſight of infinite amazement: nor is there leſs wonder in obſerving the cluſters of them at thoſe times when they are in a humour to take ſome reſt, that they may go jointly to work again with freſh ſpirits. Their method of reſting is, by getting together, and hanging one to another in vaſt numbers. When theſe cluſters of them are very large, they are only ſhapeleſs heaps; but when they are of fewer numbers, they make a ſort of chains, of which each link is a living animal. Theſe are often the beginnings of other cluſters, and theſe frequently hang from branches of trees in the form of feſtoons or garlands, each end being held to the branch, and the middle drooping from it.

The manner in which the *bees* hang together to form theſe ſmaller, as well as the larger cluſters, is this; each *bee*, with its two fore-legs, lays hold of the two hinder-legs of the *bee* that is next above it, or only by one of its fore-legs to one of the hinder-legs of the other. In this manner is formed a chain, by the ſucceſſive application of the *bees* one behind another; and thus the firſt *bee* ſupports the weight of all the reſt down

to the bottom of the chain. The largeſt cluſters are only a multiplicity of theſe chains, of which there are ſometimes many hundreds together. The *bees* never lay hold of any part of one another, except the legs, thoſe being the moſt proper for faſtening to one another by. *Reaumur*, Hiſt. Inſect. Vol. 9. p. 273.

The ſtructure and anatomy of the *bee* are deſcribed by divers naturaliſts. The parts chiefly uſed in their labours are, two ſcrapers wherewith they gather wax; two arms wherewith they work in making combs; and another part, called by Leuwenhoeck a wiper, wherewith he ſuppoſed them to wipe the honey from off the flowers [a]. But this laſt part Dr. Garden chooſes to denominate the ſucker, or proboſcis, as being hollow, and compoſed of circular fibres, and ſerving to imbibe or ſuck up the honey from plants [b].—[[a] *Leuwenh.* in Phil. Tranſ. N° 94. p. 6038. [b] *Garden*, ap. Phil. Tranſ. N° 175. p. 1158. See alſo *Maraldi*, in Mem. Acad. Scienc. 1712. p. 395.]

The ſting of the *bee* is a very curious weapon, and when examined by the microſcope, appears of a very ſurpriſing ſtructure. It has a horny ſheath or ſcabbard, which includes two bearded darts. This ſheath ends in a ſharp point, near the extremity of which a ſlit opens, through which, at the time of ſtinging, the two bearded darts are protruded beyond the end of the ſheath: one of theſe is a little longer than the other, and fixes its beard firſt, and the other inſtantly following, they penetrate alternately deeper and deeper, taking hold of the fleſh with their beards or hooks, till the whole ſting is buried in the fleſh; and then a venomous juice is injected through the ſame ſheath, from a little bag at the root of the ſting, which occaſions an acute pain, and a ſwelling of the part, which ſometimes continues ſeveral days. But this is beſt prevented by inlarging the wound directly, to give it ſome diſcharge. Mr. Derham counted on the ſting of a waſp eight beards on the ſide of each dart, ſomewhat like the beards of fiſh-hooks; and the ſame number are to be counted on the darts of the *bee*'s ſting.

When theſe beards are ſtruck deep in the fleſh, if the wounded perſon ſtarts, or diſcompoſes the *bee* before it can diſengage them, the ſting is left behind ſticking in the wound; but if he have patience to ſtand quiet, the creature brings the hooks down cloſe to the ſides of the darts, and withdraws the weapon; in which caſe, the wound is always much leſs painful. A waſp is not ſo liable to leave its ſting in the wound as a *bee*, the beards of it being ſhorter, and the creature more vigorous and nimble in its motions.

To view the ſting of a *bee* by the microſcope, the end of the tail is to be cut off, and then, touching it with a pin or needle, it will thruſt out the ſting and darts, which may be cut off with a nice pair of ſciſſars, and kept for obſervation: or, if a *bee* be caught in a leather-glove, its ſting will be left in the glove, the creature being unable to diſengage it from the leather. The bag containing the poiſonous juice may eaſily be found at the bottom of the ſting, and examined, it being commonly pulled out with it; and if a living *bee* be provoked to ſtrike with its ſting againſt a plate of glaſs, enough of the liquor will be left on the glaſs for examination; and the ſalts of it may be ſeen forming themſelves into cryſtals. *Baker*'s Microſcope, p. 310.

For the manner wherein the honey and waxy humors are ſecreted from the juices of the plant, authors are divided. Some ſuppoſe it done by coagulating the vegetable juices; others by only ſeparating the caſeous parts thereof already coagulated. Phil Tranſ. N° 274. p. 368. See alſo *Maraldi*, ubi ſupra, p. 391 & 438. See HONEY, WAX, *&c.*

By the accurate obſervations of meſſieurs Maraldi and de Reaumur, it has been found, that the baſes of the cells of *bees* are of that pyramidical figure, which requires the leaſt wax for containing the ſame quantity of honey.

Theſe baſes are formed from three equal rhombuſes, the obtuſe angles of which are found to be double of the angle, whoſe tangent is to the radius, as the diagonal is to the ſide of a ſquare. Phil. Tranſ. N° 471. §. 1.

Monſieur Maraldi [c] found them by menſuration to be nearly 110°; and obſerved, that if the three obtuſe angles, forming the ſolid angles of the baſe of the cell, were ſuppoſed equal to each other, they muſt be of 109° 28'. And Mr. Konig, by the method of infiniteſimals, found, that the angle in queſtion ought to be 109° 26'. But Mr. Maclaurin has lately demonſtrated, from the elements of geometry, that the moſt advantageous angle is the ſame which reſults from the ſuppoſed equality of the three plane angles forming the ſolid angle; and that the tangent of half of this angle is to the radius, as $\sqrt{2}$ to 1, or as 14142135 to 10000000; and conſequently the half angle is 54° 44'08", and the whole 109° 28' 16" [d].—[[c] Mem. Acad. Scienc. 1712. [d] Phil. Tranſ. ibid. p. 569.]

By this conſtruction, the inſects ſave a good deal of their labour and wax. How they arrive at this inſtinct is a queſtion of a higher nature; but it is remarkable, that their cells, by being hexagonal, are the moſt capacious, in proportion to their ſurface, of any regular figures that leave no interſtices between them, and at the ſame time admit of the moſt perfect baſes, and ſuch, that their conſtruction could not have been better contrived from the greateſt knowledge of geometry. See ALVEOLUS.

Mr. Dudly ſpeaks of a method of hunting of *bees*, or finding of *bees*-neſts, practiſed of late years in the woods in New England. It conſiſts in catching a *bee*, then letting it fly, and obſerving the way it ſteers: this ſhews the hunter the courſe or bearing of the neſt. To find the diſtance, he takes an offſet of an hundred perches, and lets fly another *bee*; the angle or point wherein theſe two courſes interſect, is the place of the neſt. Phil. Tranſ. N° 367. p. 148.

Writers on huſbandry and country affairs give many directions concerning the taking, removing, feeding, breeding, hiving, *&c.* of *bees*, on which their thriving much depends. Vid. Dict. Ruſt. in voc.

Bees ſwarm ordinarily about the middle of May: a ſwarm early in March is reckoned very extraordinary. Vid. Phil. Tranſ. N° 70. p. 2128.

Divers attempts have been made to get the young brood into new hives, without endangering their going forth in ſwarms to ſeek a new reſidence. Vid. Dict. Ruſt. in voc. Phil. Tranſ. N° 96. p. 6076. See HIVING and SWARMS.

Many authors have written on *bees*. Among the antients, Ariſtomachus is ſaid to have ſtudied them ſixty years; Philliſcus retired into a deſert wood, that he might have the opportunity of obſerving them to better advantage; Ariſtotle made a great number of curious obſervations on this inſect, which Virgil has put into Latin Verſe: they have been inlarged and confirmed by Pliny and others. Theophraſtus has a fragment ſtill extant περὶ μελιττῶν, concerning *bees*; or, as intitled in Laertius, περὶ μέλιτος, of honey. *Fabric.* Bibl. Græc. l. 3. c. 9. §. 12.

Among the moderns, prince Frederic Ceſi, inſtitutor of the Roman academy of ſciences, wrote expreſly on *bees*; but it is not known what became of the MS. no more than of that promiſed by Swammerdam on the anatomy of the *bee*, the want of which has been much regretted [e] among the French [f]. Among the Engliſh, Butler, Gurnay, Levets, Southern, Remnant, Hartlib, Ruſden, Warder, and others, have diſcourſes expreſs on *bees*.—[[e] Vid. Phil. Tranſ. N° 257. p. 365. [f] Vid. Mem. Acad. Scienc. 1712. p. 391, ſeq.]

BEE is alſo uſed figuratively to denote ſweetneſs, induſtry, *&c.* Thus Xenophon is called the Attic *bee*, on account of the great ſweetneſs of his ſtyle [g]. Antonius got the denomination *meliſſa*, or *bee*, on account of his collection of common-places [h]. —[[g] Mem. Acad. Inſcr. T. 9. p. 1. [h] Vid. *Fabric.* Bibl. Græc. l. 5. c. 30. T. 8. p. 821.]

Leo Allatius gave the appellation *apes urbanæ* to the illuſtrious men at Rome from the year 1630 to the year 1632. *Bail.* Jugem. des Scav. T. 5. P. 1. p. 187.

BEES *bread*. See PAIN *d'abeiles*.

BEE-*eater*, in zoology. See APIVORUS *luteus*.

BEE-*fly*. See DRONE-*fly*.

BEE-*hive*. See HIVE.

BEECH, *Fagus*, (*Cycl.*) in botany, a tree of the maſt-bearing kind, conſiderably uſed in its wood, fruit, oil, leaves, and water. See FAGUS.

Beech-wood is whitiſh, hard, and dry. It crackles in the fire, and is uſed in building and furniture; alſo to make utenſils, as ſhovels, ladles, bellows, ſtools, ſhoes, diſhes, trays, trenchers, dreſſer-boards, fillies of carts, *&c.*

If *beech*-timber be kept altogether under water, it is little inferior to elm; but if kept dry, or partly wet, partly dry, it is liable to the worm.

That of the mountain *beech* is whiteſt, and moſt fit for the turner's uſe; that of the field *beech* is blacker, but more durable.

In turning *beech*, it yields a well-ſcented effluvia, not unlike roſes. *Boyle*, Phil. Work. abridg. T. 1. p. 545.

The ſcale of *beech*-wood ſerves to make ſcabbards and band-boxes. The bark is uſed as floats for fiſhers nets, inſtead of cork. Its ſhavings are of uſe for fining wine.

Its aſhes, according to Creſcentius, with proper mixtures, are excellent to make glaſs.

Its leaves, gathered about the fall, before they are much froſt-bitten, afford the beſt matreſſes to lay under quilts, inſtead of ſtraw, as being very ſoft, and continuing ſweet for ſeven years. When chewed, they are held good for the gums and teeth.

The ſtagnant water gathered on the hollow of the *beech*-tree, is ſaid to cure tetter-ſcabs and ſcurfs in man and beaſt, by fomentation. Ruſt. Dict. T. 1.

BEECH-*galls*, in natural hiſtory, the name of a ſpecies of galls or protuberances found on the *beech*-tree, and ſerving for the lodgment of inſects. See GALLS.

Theſe galls are found on the leaves of the *beech*, and are ſometimes only one upon a leaf, ſometimes more; tho' ſeldom more than three or four are found upon the ſame leaf, and theſe always growing from the ſame point, owing, no doubt, to the fly's having laid ſo many eggs in the ſame ſpot.

Theſe galls are of an oblong figure, and ſomewhat flatted. They reſemble the ſtone of a plum in ſhape, and are ſo hard, that they are not to be broken between the fingers: their ſubſtance ſeems of the ſame nature with that of a nut-ſhell. In each gall there is only one cavity, which is inhabited by a white worm, which, in time, paſſes through the nymph ſtate into that of the fly, to which it owed its origin.

BEECH-*maſt*, the fruit of the *beech*-tree. It fattens hogs and deer, and has ſometimes ſupplied men inſtead of bread. Chios is ſaid to have endured a memorable ſiege by means of it.

BEELE, in mining, an inſtrument uſed by the workmen to break and pick out the ore from the rocks in which it lies. This inſtrument is called by the tin-men in Cornwall a *tubber*. It is an iron inſtrument of eight or ten pound weight, made ſharp, and ſteeled at both ends, and having a hole in the middle, where the handle is fixed in. When the ore lies in hard rocks, this inſtrument wears out ſo faſt, that it muſt have new points made to it every fortnight. The miners, who dig up the ore in the mines, are, from the uſe of this inſtrument, called *beele*-men; and thoſe who attend them, and whoſe buſineſs it is to take up the matter the others looſen or break up, are, from their inſtrument, which is a broad and hollow iron ſhovel, or a wooden one, with a very ſtrong iron lip, called the *ſhovellers*. In Cornwall, when the ore lies in a hard bed, they allow two ſhovellers to three *beele*-men; and when it lies in a ſoft or earthy matter, two *beele*-men and three ſhovellers is the proportion. Phil. Tranſ. N° 69. p. 2104.

BEEMEN, or SHEEMEN, in aſtronomy, ſeven ſtars of the fourth magnitude, following each other, in the fourth flexure of the conſtellation Eridanus. See ERIDANUS, *Cycl.*

BEER (*Cycl.*)—In New England they make *beer* from maize, or even the bread made thereof [a]. Some phyſicians recommend *beer* made of oats and birch-water, as preferable, in nephritic caſes, to that made of barley [b].—[a Phil. Tranſ. N° 138. p. 1068. b *Bartholin.* Act. Med. T. 1. obſ. 19. p. 49: Phil. Tranſ. N° 97. p. 6135.]

Foreigners have framed divers conjectures to account for the excellency of Engliſh *beer*, and its ſuperiority to that of all other countries, even of Bremen, Mons, and Roſtoch. It has been pretended, our brewers throw dead dogs flead into their wort, and boil them till the fleſh is all conſumed. Others, more equitable, attribute the excellency of our *beer* to the quality of our malt and water, and the ſkill of our brewers in preparing it. *Savar.* Dict. Comm. T. 1. p 333.

Some have endeavoured to compute the quantity of *beer* conſumed in England from the number of houſes where it is ſold, which amounts to two hundred thouſand; others from the quantity of malt that is yearly made, which amounts to three millions and three hundred thouſand quarters, of which three millions are employed in making *beer* and ale. Allowing therefore a quarter of malt to three barrels of ſtrong *beer*, we ſhall have nine millions of barrels. Vid. Compl. Engl. Trad. T. 2. p. 87, ſeq. See ALE.

Sour or decayed *beer* may be reſtored divers ways; as by ſalt made of the aſhes of barley-ſtraw, put into the veſſel, and ſtirred; or by three or four handfuls of beech-aſhes thrown into the veſſel, and ſtirred; or, where the liquor is not very ſour, by a little put in a bag, without ſtirring: chalk calcined, oiſter-ſhells, egg-ſhells burnt, ſea-ſhells, crabs eyes, alcalized coral, *&c.* do the ſame, as they imbibe the acidity, and unite with it into a ſweetneſs. Ruſt. Dict. T. 2. in voc. *reſtoring.*

Beer, it is ſaid, may be kept from turning ſour in ſummer, by hanging into the veſſel a bag containing a new-laid egg, prickt full of little pin-holes, ſome laurel berries, and a few barley-grains; or by a new-laid egg and walnut-tree leaves. Laurel-berries alone, their ſkin being peeled off, will keep *beer* from deadneſs [c]. Glauber commends his ſal mirabile and fixed nitre, put in a linnen bag, and hung on the top of the caſk, ſo as to reach the liquor, not only for recovering ſour *beer*, but preſerving and ſtrengthening it [d].—[c Phil. Tranſ. N° 111. p. 241. d Ruſt. Dict. loc. cit.]

Beer taſting of the caſk, may be freed from it, by putting a handful of wheat in a bag, and hanging it in the veſſel. Phil. Tranſ. loc. cit.

BEESTINGS, or BREASTINGS, denote the firſt milk taken from a cow after calving. Dict. Ruſt. T. 1. in voc.

The *beeſtings* are of a thick conſiſtence, and yellow colour, ſeeming impregnated with ſulphur. Dr. Morgan imagines them peculiarly fitted and intended by nature to cleanſe the young animal from the recrements gathered in its ſtomach and inteſtines during its long habitation *in utero*. The like quality and virtue he ſuppoſes in womens firſt milk after delivery; and hence infers the neceſſity of the mother's ſuckling her own child, rather than committing it to a nurſe whoſe firſt milk is gone. Vid. *Morgan*, Mechan. Pract. of Phyſ.

BEET, *Beta*, in botany, the name of a genus of plants; the characters of which are theſe: the flower is of the ſtaminous kind, conſiſting of ſtamina ariſing from a five-leaved cup. Great numbers of theſe flowers are uſually collected into a ſort of head; and the cups finally become capſules nearly of a globular figure, in which are contained the ſeeds.

The ſpecies of *beet*, enumerated by Mr. Tournefort, are theſe: 1. The white or pale *beet*, called *cicla*. 2. The common red *beet*. 3. The turnep-rooted red *beet*. 4. The broad ſtalked *beet*. 5. The wild ſea *beet*. 6. The great pale-green *beet*. 7. The great red *beet*. 8. The great yellow *beet*. 9. The yellow ribbed *beet*, with a great turnep-ſhaped root. 10. The *beet* with yellow leaves and ſtalks. *Tourn.* Inſt. p. 501.

All the ſpecies of this plant are propagated by ſowing their ſeeds in February or March in a looſe, deep ſoil, not over dunged. When they are come up, they muſt be howed out ſo as to leave them ten or twelve inches aſunder; for, if they have not room, the roots ſeldom grow large. It is a cuſtom with the gardners about London to ſow carrots on the ſame ground with their *beets*. The carrots are drawn off in the ſummer-time, and the *beets* have then ſufficient time to grow to their ſize. *Miller*, Gard. Dict.

Hares BEET, *beta leporina*, a name given by ſome of the old Latin writers to a ſmall green plant of an acrid taſte. Neophytus tells us, that the arum, or, as he calls it, the ſmall dracontias, is the plant meant by this name; but it is not eaſy to conceive, with what meaning the authors, who firſt uſed the word, could apply it to a plant ſo hot as the common arum is. There is indeed, in ſome parts of the world, an arum with eſculent roots. This was known to the antients, even ſo early as in the days of Theophraſtus, who has deſcribed it under the name of *arum edominon*; and the root of this may be food for hares in the countries where it is plentiful, and the name well enough given to it.

BEET-*fly*, a very ſmall fly, found always among the flowers of the *beet*.

BEET-*gall-inſect*. See GALL-*inſect*.

BEETLE, in zoology. See the article SCARABÆUS.

BEETLE, in a mechanical ſenſe, denotes a large wooden inſtrument, formed after the manner of the mallet, and uſed for driving piles, ſtakes, paliſades, wedges, and the like.

In this ſenſe, the word is alſo corruptly written in ſome places *boytle*. Skinner derives it from the Engliſh *beating*. Ruſt. Dict. in voc.

For the military uſe, *beetles*, called alſo *ſtampers*, are thick round pieces of wood, a foot and a half long, and eight or ten inches in diameter, having a handle of about four feet long. Their uſe is for beating or ſettling the earth of a parapet, or about paliſades; which is done by lifting up the *beetle* a foot or two, and letting it fall with its own weight. *Guill.* Gent. Dict. P. 2.

The name *beetle* is alſo given to the paviour's rammer, or inſtrument wherewith the ſtones are beaten down, and faſtened.

BEG, or BEY, is a Turkiſh title, properly ſignifying lord.

The word is alſo written *begh*, or *beig*, ſometimes *bec*, or *bek*, or *bech*; but pronounced *bey*. See BEY, *Cycl.*

BEG is more particularly applied to the lord of a banner, called alſo in the ſame language *ſangiak-beg*. *Martiniere*, Dict. Geogr. T. 2. p. 189.

A *beg* has the command of a certain number of the ſpahis, or horſe, maintained by the province under the denomination of timariots.

All the *begs* of a province obey one governor-general, called *begler-beg*, or *beyler-beg*, q. d. lord of lords, or of the beys of the province.

BEGS, or BEGHS, of Egypt, denote twelve generals, who have the command of the militia, or ſtanding forces of the kingdom, and are to ſecure the country from the inſults of Arabs, as well as to protect the pilgrims in their annual expeditions to Mecca. *Rycaut.* Preſ. Stat. Ottom. Emp. l. 3. c. 5. p. 182.

The *begs*, ſeveral of whom are deſcended from the antient race of the Mamalukes, are very rich and powerful, maintaining each 500 fighting men for their own guard, and the ſervice of their court. On diſcontents, they have frequently riſen in rebellion. They are often at variance with the baſhaw, whom they have more than once plundered and impriſoned.

BEGLERBEG (*Cycl.*)—The next to the vizier *azem*, or the firſt vizier, are the *beglerbegs* in Turky, which, according to Rycaut, may be compared to archdukes in ſome other countries, being the next miniſters below the prime vizier, and having under their juriſdiction many ſangiacks or provinces, and their *begs*, *aga's*, *&c.*

To every *beglerbeg* the grand ſignior gives three enſigns or ſtaves, trimmed with a horſe-tail, to diſtinguiſh them from the baſhaws, who have but two, and from ſimple begs, or ſangiac begs, who have but one. *Rycaut.* Preſ. Stat. Ottom. Emp. l. 1. c. 12. p. 51.

The province or government of *beglerbeg* is called *beglerbeglik*, or *beglierbeglik*. Theſe are of two ſorts; the firſt called *haſile beglerbeglik*, which have a certain rent aſſigned out of the cities, countries, and ſigniories allotted to the principality; the ſecond called *ſalianæ beglerbeglik*, for maintenance of which is annexed a certain ſalary or rent, collected by the grand ſignior's officers with the treaſure of the empire. *Rycaut*, loc. cit.

The *beglerbegs* of the firſt ſort are in number twenty-two, *viz.* thoſe of Anatolia, Caramania, Diarbekir, Damaſcus, Aleppo, Tripoli, Trebizond, Buda, Temiſwar, *&c.*

The *beglerbegs* of the ſecond ſort are in number ſix, *viz.* thoſe of Cairo, Babylon, *&c.*

Five of the *beglerbegs* have the title of viziers, *viz.* thoſe of Anatolia, Babylon, Cairo, Romania, and Buda.

The *beglerbegs* appear with great ſtate, and a large retinue, eſpecially in the camp, being obliged to bring a ſoldier for every five thouſand aſpers rent which they enjoy.

The *beglerbegs* of Romania brought 10,000 effective men into the field.

BEGLERBEG is alſo a title given to the chief governors of provinces in the Perſian empire, having the command over all kans, ſultans, *&c.* in their reſpective diſtricts. *Kempf.* Amœn. Exot. faſc. 1. relat. 10. p. 153.

BEGONIA, in botany, the name of a genus of plants; the characters of which are theſe: the flowers are of two kinds; the one kind is the barren, or male flower; this is compos'd

of

of four leaves, ſome broader, and others narrower; the other kind, which produces the embryo fruit, is of the roſaceous ſort, and is compos'd of ſeveral petals, arrang'd in a circular form, and plac'd on a foliated cup, which finally becomes a trigonal alated fruit, divided into three cells, and containing ſmall ſeeds.

The ſpecies of *begonia* enumerated by M. Tournefort, are theſe. 1. The great purple *begonia*, with auriculated leaves. 2. The ſmall ſmooth *begonia*, with auriculated leaves, and roſe-colour'd flowers. 3. The ſmall hairy *begonia*, with auriculated leaves, and roſe-colour'd flowers. 4. The *begonia*, with roſe-colour'd flowers, and with ſharp-pointed auriculated and ſerrated leaves. 5. The round-leav'd *begonia*, with roſe-colour'd flowers. 6. The great *begonia*, with auriculated leaves, and ſnow-white flowers. *Tourn.* Inſt. Bot. p. 660.

BEGUINAGE ſignifies a houſe, or convent of beguins, living in community. See BEGUINS, *Cycl.*

There were formerly magnificent *beguinages* at Amiens, and other cities of the low countries, as well as in Picardy, and at Paris; but moſt of them are gone to ruin, and their effects fallen into other hands. The moſt noted of theſe remaining is the *beguinage* of Mechlin, which is as large as a little town; and ſaid to contain 15 or 16 hundred of theſe beguins, beſides three times the number of boarders. *Trev.* Dict. Univ. T. 1. p. 901.

The beguins pretend to derive their origin from St. Begha, or Begga, dutcheſs of Brabant; but the pretenſion ſeems only founded on the reſemblance of name: Tho. Van Hoſtum has a treatiſe expreſs to ſupport it [a]. Others derive the appellation *beguin* from that of the veil wore on the head, called *begga*; but this ſeems more probable to have been denominated from them.—Others deduce the word from *beghinen*, to begin, as being the firſt beginning or ſtep towards a monaſtic life: others from a prieſt, called Lambert *le Begue*, the real founder of the inſtitute [b].—[[a] *Le Long*, Bibl. Hiſt. l. 2. c. 9. Art. 7. p. 284. [b] *Du Cange*, Gloſſ. Lat. T. 1. p. 519. *Caſenen.* Orig. p. 27.]

BEHEADING, a capital puniſhment, wherein the head is ſevered from the body by the ſtroke of an ax, ſword, or other cutting inſtrument.

Beheading was a military puniſhment among the Romans, known by the names of *decollare*, *decollatio* [a]. Among them the head was laid on a *cippus* or block, placed in a pit dug for the purpoſe; in the army, without the vallum; in the city, without the walls, at a place near the *porta decumana*. Preparatory to the ſtroke, the criminal was tied to a ſtake, and whipped with rods: In the early ages the blow was given with an ax; but in after-times with a ſword, which was thought the more reputable manner of dying. The execution was but clumſily performed in the firſt times; but afterwards they grew more expert, and took the head off clean, with one circular ſtroke [b].—[[a] *Calv.* Lex Jur. p. 263. [b] *Aquin.* Lex. Milit. T. 2. p. 286. *Pitiſc.* Lex. Ant. T. 1. p. 637.]

In England and France, *beheading* is the puniſhment of nobles; being reputed not to derogate from nobility, as hanging does. *Trev.* Dict. Univ. T. 2. p. 529.

In Scotland they do not behead with an ax, as in England; nor a ſword, as in Holland and France; but with an edged inſtrument called a *maid*, a piece of ſteel a foot ſquare, ſharp on the lower ſide, and loaden above with a heavy weight of lead, ſcarce to be lifted, which is let fall, or ſlide down between the two cheeks, or mouldings of a frame, ten foot high, on the criminal's neck. *Chamberl.* Preſent State Brit. P. 2. l. 3. c. 7. p. 447.

BEHEM, in the materia medica, the name given by the Arabians to the root call'd afterwards *behen*; and thence, by corruption and abbreviation, *been* and *ben*; and, in conſequence of that, confounded with the ben nut, or *glans unguentaria*; and by ſome with the hermodactyl, call'd alſo *behen* by ſome authors. The modern Greeks have call'd this *pechem*; and divided, according to the cuſtom of the Arabians, into white and red, and gave it the ſame virtues.

BEHMISTS, BOHMENISTS, or BOHMISTS, a kind of myſtic philoſophers and followers of Jacob Behmen, commonly called the teutonic philoſopher.

The *bohmeniſts* are attached to that motley ſpecies of philoſophy firſt introduced by Paracelſus, under the name of Theoſophia. *Schmid.* Supp. ad Sagit. §. 1. p. 671.

Behmen, or Bohmen, from whom the ſect takes its denomination, was born in 1575 near Gorlitz, and bred up to country labour, having juſt learning enough to read and write a little, which he acquired at ten years of age.

In 1600 he was ſeized with a ſpiritual rapture, and ten years after began to compoſe a book on the light he there received, entitled *aurora*, being a mixture of aſtrology, philoſophy, chemiſtry and divinity, written in a quaint obſcure ſtyle; ſeven years after he wrote divers others on the ſame model; the chief is the *myſterium magnum*. He died in 1624. All his works have been publiſhed together at Amſterdam in 1682, 8vo. His tenets are, that there is a great darkneſs among the ſtars, where the devil holds his principality; that all arts and ſciences flow from the ſiderial ſpirit of this world; that the ſeven liberal arts proceeded from ſeven ſpirits of nature; that all human things are compoſed of the four firſt properties, bitter, ſour, heat, and pain, (Angore.) *Gentzk.* Hiſt. Philoſ. p. 252.

Quirinus, Kuhlman, and Abr. a Franckenberg, are the moſt diſtinguiſhed among the *behmeniſts*. Gilbert Iſcheſchius, and Antagnoſius, were great oppoſers of behmeniſm. *Sagittar.* Introd. Hiſt. Eccleſ. c. 39. §. 19.

Dr. Henry More has alſo a piece expreſs againſt behmeniſm, Cenſura Philoſophiæ Teutonicæ, printed in his works, p. 520.

BEHEMOTH, a huge animal mentioned in ſcripture, concerning which interpreters are much divided. Job, c. 40, v. 5, 15.

Franzius, Junius, Calvin, and others, take it for the elephant; Bochart for the hippopotamus, or ſea-horſe; others for the ox; the fathers for the devil. *Grew*, Muſ. P. 1. §. 2. c. 1. p. 14. Phil. Tranſ. N° 326. p. 57.

The word is Hebrew, where it literally ſignifies beaſt in general, particularly the larger kind, fit for ſervice. *Calm.* Dict. Bibl. T. 1. p. 274.

BEHEN, (*Cycl.*) in the materia medica, the name of a root kept in the ſhops in ſome places, but little uſed any where; there are two kinds of it, the white and the red; the red is the root of a ſpecies of limonium or ſea lavender, and the white of a ſort of ſaw-wort, the *ſerratulæ affinis capitulo ſquammoſo luteo, ut et flore* of Caſpar Bauhine. *Pomet's* Hiſt. of Drugs, p. 50.

BEIBENIÆ *Stellæ*, a name given by ſome aſtronomers to the principal fixed ſtars in each conſtellation. *Vital.* Lex. Math. p. 84. Wolf. Lex. Math. p. 255, ſeq.

The appellation is more particularly given to the ſtars of the firſt magnitude, otherwiſe called the hearts, *corda*, of the ſeveral conſtellations; tho' ſome would diſtinguiſh between *corda*, and *beibeniæ ſtellæ*, reſtraining the former to ſtars only of the firſt magnitude, and extending the latter to ſeveral of the ſecond, or even third. *Vital.* l. c.

Hermes has a treatiſe expreſs *de ſtellis beibeniis*, publiſhed by Junctinus, in his *ſpeculum aſtrologicum*, and alſo in his commentaries upon Jo. de Sacroboſco's book *de ſphæra*. Id. ibid.

BEIDELSAR, in botany, a name by which ſome authors call the Syrian dogs bane, or *apocynum ſyriacum*, a poiſonous plant. *Alpinus*, Ægypt. p. 85.

BEISSKER, in ichthyology, a name given by Geſner and others to the fiſh commonly called *muſtela foſſilis*: This is a ſpecies of the *cobitis*, diſtinguiſhed by Artedi by the name of the blueiſh *cobitis*, with fine black longitudinal lines on each ſide. Schonefeldt calls this the *pœcilia*, and Jonſton the *piſcis foſſilis*. See COBITIS.

BEIZA or BEIZATH, in Jewiſh antiquity, a certain meaſure in uſe among the Jews; they ſay that the *beiza* contains the ſixth part of a log.

The *beiza* is alſo a ſort of gold coin common among the Perſians; it weighs forty *drachma's*, and from this word, not from the city *Byzantium*, the *bezam* was formed. A *bezam* is worth two *dinars*, and every dinar twenty or five and twenty drachma's. *Calm.* Dict. Bibl. in voc.

BEKKERANISM, or *Bekkerianiſm*, the ſyſtem or ſentiments of Balth. Bekker, who denied that ſpirits can act or operate on bodies. *Pfaff.* Inſt. Theol. p. 190.

The author of this ſyſtem was a Dutch divine, towards the cloſe of the 17th century, ſtrongly impreſſed with the Carteſian principle, that the eſſence of ſpirit conſiſts in thinking; hence he was led to conclude, that ſpirits cannot act, either on bodies, or on other ſpirits; he aſſerted, that it has not been proved, nor can it be proved by reaſon, that any other ſpirits exiſt beſide the human mind: but he allows it may be proved from ſcripture; and it being from this alone we learn the exiſtence of ſuch ſpirits, 'tis from the ſame we are to form our notions concerning their nature, and the meaſure of their powers: that what the ſcripture delivers concerning the operations both of good and evil ſpirits, is generally wrong underſtood, being not to be taken literally, but in a metaphorical ſenſe; for that which God himſelf does, either immediately, or by natural cauſes, is in ſcripture attributed to angels; and this partly in order to accommodate himſelf to human conception, and partly to raiſe and magnify our ideas of the divine majeſty among men. Hence all the paſſages in ſcripture concerning the guardianſhip of angels, and their intercourſes with men, he interprets ſo, as that by angels are underſtood other men, or other creatures, whoſe agency God makes uſe of to avert miſchiefs, or procure good to men: more particularly, that when God is ſaid to have notified, or revealed any thing to men by angels, it was effected only by making ſome change in the matter, or manner of human viſion; particularly, that by the angels which appeared to Abraham, are to be underſtood men; by thoſe ſaid to have attended God, when he gave the law to the Jews, are to be underſtood thunder, lightening, and other natural phænomena; that by the angel, who went before the Iſraelites in the wilderneſs, is to be underſtood a cloud. That by devils are ſometimes meant wicked men, enemies to us, who either by open force or cunning endeavour to ruin us; at other times our own corrupt deſires, which ſpur us on to the commiſſion of divers crimes. On theſe principles he accounts for what is

ſaid of the fall of our firſt parents; where by the devil's tempting them, we are only to underſtand, that they ſinned after the ſame manner as the devil had done, by following their own luſts. Hence alſo he accounts for the temptation of our Saviour, where it was not the devil meddled with him, but that Chriſt repreſented to himſelf a ſeries of corrupt deſires, as if he was tempted by them. By the combat of Michael with Satan, recited by Jude, he underſtands a diſpute between two doctors of the church; one of whom ſtrove to have the body of Moſes produced, that it might be the object of worſhip, which the other oppoſed; or perhaps one contended for the obſervance of the moſaic law, and the other for its rejection.

As to witches and conjurors, he aſſerts, that by thoſe in ſcripture are not to be meant men who, in conſequence of a compact with the devil, were aſſiſted by him to perform wonders, but philoſophers ſkilled in the ſecrets of nature; and, in virtue thereof, enabled to do things, which paſſed the vulgar comprehenſion; and who only feigned to have a commerce with ſpirits to conceal their art, and conciliate more admiration.

For the ſtories of perſons poſſeſſed, if there be any thing more in them than fiction, that they ariſe from melancholic diſeaſes, and other latent powers of nature; that as to diſeaſes, ſeveral are called in ſcripture by the name of devils, from whom theſe were ſaid to be freed, who were reſtored to health: laſtly, he attributes all either to impoſture, or to the errors of our external, or internal ſenſes; and accumulates inſtances, to ſhew that men have often thought they ſaw or heard, what they did not ſee or hear. Vid. *Budd.* Elem. Phil. Theor. P. 5. c. 2. §. 1—12.

BEL, in botany, the name of a plant called by ſome the *cucumis capparis*, or caper cucumber. This plant is very imperfectly deſcribed to us; and we find among the *Arabian* writers, that the fruit was called by this name as well as the whole plant. Aviſenna, who gives the fulleſt account we have of it, ſays that it was an Indian plant, reſembling in growth the common cucumber plant, but bearing a fruit like the caper; he tells us that this fruit was the only part of the plant uſed in medicine, and that it was very hot and bitter, being ſomewhat like ginger in the fiery heat of the taſte, and in qualities hot and dry in the ſecond degree, as they expreſs'd it; or, according to Dioſcorides in the third. Serapio tells us, that it was brought from the Indies; and ſeems to make it of the ſame kind with the plant *fel*, treating in the ſame chapter of the three plants *bel*, *fel*, and *ſel*, as three things of much the ſame kind; he ſays they were all hot and drying, and all brought from the Eaſt-Indies.

Raſes tells us that the *fel* was a fruit with a thick rind or covering on it, like a hazel nut; and that within this ſhell there was contain'd a kernel of an oleaginous and fat nature, and reſembling the *nux pini*, or pine kernels. Aviſenna tells us, that the fruit *bel* reſembles the capers; and it is plain, that what they meant by the name *capparis* was not unlike in ſhape to the hazel-nut, to which the fruit *fel* is compar'd; for Theophraſtus ſpeaking of the ben-nut, compares it to the caper-fruit, and Dioſcorides to the hazel-nut. Theſe authors both knew the fruit they deſcribe very well, as well as thoſe things to which they liken it; and it is certain, that they would not have compar'd it to two things that were unlike one to the other. This caſual obſervation is not unneceſſary, as it gives force to the deſcription of Aviſenna, who is ſuppos'd to have meant ſomething elſe by the word capers. It is certain, that his deſcription is a very odd one, as it ſtands in the common interpretation, where he is made to call the *bel* an Indian cucumber, with a fruit like the capers; but all that he means is, that it is a climbing plant, reſembling the cucumber in leaves. See FEL.

BELEMNITES, or BELENITES, in natural hiſtory, a kind of figured ſtone, uſually hollow, and a little tranſparent, ſhaped ſomewhat like an arrow, formed of ſmall ſtriæ or threads, radiating from the axis to the ſurface of the ſtone; and which when burnt, or rubbed againſt one another, or ſcraped with a knife, yields an odour like raſped horn. See its figure repreſented in Tab. of Foſſils, Claſſ. 10. Vid. *Plot*, Nat. Hiſt. Oxford. c. 5. §. 39. p. 94. *Vater.* Phyſ. Exper. P. 2. §. 5. c. 8. p. 499. *Caſt.* Lex. Med. p. 101.

The word is formed from the Greek, βελεμνον, arrow.

The *belemnites* is otherwiſe denominated *dactylus*, or *dactylus idæus*, on account of its bearing a reſemblance to the figure of a finger; by the antients, *lyncurius lapis*, or *lapis lyncis*, as being ſuppoſed to be generated of the urine of the lynx. *Mercat.* Metalloth. arm. 9. loc. 25. c. 30. p. 280. *Vater.* Phyſ. Eper. P. 2. §. 5. c. 8. p. 419.

Among us, popularly, the thunderbolt [a], or thunder-ſtone [b], as having been ſuppoſed to fall in time of thunder.—[[a] Phil. Tranſ. N° 314. p. 78. [b] *Woodw.* Catal. foreign Foſſ p. 8.] Dr. Plot will not allow the appellation *lyncurius* to have been given it on account of this ſuppoſed origin from the urine of that beaſt, but from the unpleaſant ſmell it has when burned or bruiſed, like the urine of cats, or ſuch like rammiſh creatures, whereof the lynx perhaps may be one [c]. But he is miſtaken; Ovid has a paſſage, which ſhews apparently the ſenſe of the antients on the urine of the lynx [d].—[[c] *Plot*, lib. cit. §. 42. p. 95. [d] *Ovid.* Met. l. 15.

Quicquid veſica remiſit
Vertitur in lapides, et congelet aere tacto.

Dr. Woodward, and a great many other authors, ſuppoſe the *belemnites* to be a native foſſil in its own proper figure; but it is more probably ſuppoſed by others to owe its preſent form to ſome animal body; and to be, like the other form'd ſtones, the *echinitæ*, &c. a ſubſtance caſt in a ſhell.

The *belemnites*, according to Klein, is one of the *tubuli marini*, never found with us in its recent ſtate, but very frequent foſſile, compos'd of a matter approaching to the nature of ſpars, of a cylindroid figure, and compos'd of ſeveral plates, each made up of a number of parallel *ſtriæ*, having a ſlit in the manner of ſome of the *tubuli marini*, running along its whole length, and a pervious cavity in the middle, in the larger end, frequently containing a concamerated ſhell, altogether reſembling the *tubuli concamerati* in ſtructure, of a ſhelly texture, and having a ſiphunculus, or pipe of communication between its ſeveral cells, in the manner of the *Nautilus Græcorum*, and other camerated ſhells.

The long and narrow cavities in the center of the lower part of the *belemnitæ*, are judg'd by this author to be no other than continuations of the ſiphunculus, or tubular proceſſes of the concamerated ſhell, found in the larger end of the *belemnite*; and he imagines, not without ſhew of reaſon, that the funiculus of the fiſh that inhabits the cameræ of the ſhell, is continued thro' this cavity to the end of the body, as in the *nautili*. Vid. *Klein*, de Tub. Marin. p. 15.

The general diſtribution of the *belemnitæ* is into three kinds, the cylindric, conic, and fuſiform. The cylindric do not taper to a point at the lower end, the conic are terminated by a point, and the fuſiform are thicker in ſome intermediate part than at either of the ends. Theſe are the moſt rare of all the kinds.

The *belemnitæ* are of ſeveral ſhapes, ſizes, and figures, but all of the ſame determinate internal ſtructure; and many of the figures in which we find this foſſile, and which are ſuppos'd eſſential to it, ſeem rather the effect of external accidents and injuries; and its general natural figure ſeems to be conic.

The *belemnitæ* are all form'd of ſeveral thin coats or cruſts incircling one another, and all of a ſtriated texture; they have uſually a hollow in, or near the middle; this is of a conic ſhape, and is ſometimes empty, but more frequently fill'd with earthy or ſtony matter; and often with a marine ſhell of the camerated kind, call'd by authors its *alveolus*. This ſhell however is not found only in the *belemnites*, but likewiſe looſe, and frequently of a much larger ſize than we could expect to find *belemnitæ* to be matrixes for. The inſide of the cavity of the *belemnites* is alſo frequently found mark'd with parallel circles, a ridg'd one and a furrow'd one, all adapted to the ſhape of the concamerated ſhell, which ſo frequently makes its alveolus. The *belemnitæ* have uſually a ſingle rima or chink, running down longitudinally in form of a ſtrait crack, the whole length of the body, or nearly ſo; ſometimes they have two or three of theſe cracks, but the additional ones uſually begin at the apex of the ſtone, and run up but a little way. There are alſo ſome of the *belemnitæ*, which have no obſervable crack at all.

Beſide the conic *belemnitæ*, there are ſome cylindrick, or nearly ſo, and ſome are thickeſt near the middle, or near one of the ends, and taper off to a ſort of point at both. Some alſo are of intermediate figures between conic and cylindric, and ſome are nearly orbicular; ſome alſo taper off very gradually, others more abruptly, and ſome have no obſervable cavity. There are beſide theſe many other figures, in which the *belemnitæ* are ſometimes found, and theſe are by ſome call'd ſo many ſpecies of the body; but, till we are perfectly inform'd to what animal they have originally belong'd, it is impoſſible to ſay which of all theſe are natural, and which accidental figures; tho' it is plain, that many are of the latter kind, being owing to the breaking, or wearing down of the more known figures.

Of the conic *belemnitæ*, ſome are nearly rounded; but more uſually they are flatted on one ſide, ſometimes on two oppoſite ſides, and ſometimes they are plainly cruſh'd and crack'd by accidents, as other of the animal formed foſſils ſo frequently are.

The *belemnitæ* are of various ſizes, from a quarter of an inch to eight inches in length; and, tho' always of the ſame matter and ſtructure, they are of various degrees of colour; ſome being of a fine amber colour, others blackiſh, others blueiſh, and ſome grey; others are of different degrees, of a darker or paler brown; and they have all a very remarkable and diſagreeable ſmell, when ſcrap'd to powder.

They are found in all ſorts of ſtrata, ſometimes in clay, ſometimes looſe among gravel, and often immers'd in beds of ſtone; not unfrequently alſo they are bedded among looſe flints; and ſometimes they are cover'd with a cruſt of ſparry matter, ſeeming to have been form'd in the manner of many other of the foſſils of the extraneous kind, in the place of the ſhell, which receiv'd and gave form to the *belemnites*. Sometimes alſo *tubuli marini*, and ſmall *fungitæ* or *mycetitæ*, with other marine productions, both of the animal and vegetable kind, are found adhering to them, as they are to the common marine bodies: but this in theſe is rare. The chop or chink in theſe bodies, in ſome ſeems ſlight and ſuperficial, but in others

it

it may be traced to the very axis; and the ſeveral cruſts the body is compoſed of, ſeem ſo many ſeparate *belemnitæ* incloſing one another.

The matter contained in the cavities of the *belemnitæ* is perfectly uncertain in its kind, being a part of ſuch bodies, whatever they be, as the *belemnites* has happened to be depoſited among. Frequently it is the matter of the common pyrites; often it is a coarſer, ſometimes a finer ſpar; and the ſubſtance called the *alveolus*, when found looſe, is uſually compoſed of one or other of theſe foſſils. Thoſe *belemnitæ*, which terminate in a point at each end, are more rare than the others, and uſually ſeem injured, or imperfect. In moſt of theſe alſo, the longitudinal crack is ſo fine and ſmall, as to be ſcarce perceptible.

The moſt probable opinion, as to the origin of theſe bodies, is, that they have been formed in ſhells of the *tubulus marinus* kind, and thoſe, perhaps, of ſeveral different ſpecies. *Hill*, Hiſt. of Foſſil. p. 652.

The *belemnites* is found in many parts of the countries of Pruſſia, Pomerania, Sileſia, and England, as appears from Dr. Woodward's enumeration. *Woodw.* Catal. Engl. Foſſ. p. 105, ſeq. and Catal. Foreign Foſſ. p. 8.

The *belemnitæ* are all of an alcalious nature, making a ſtrong efferveſcence with acids. Hence alſo they become abſorbent and reſolvent, and, on theſe accounts, ranked by phyſicians among antinephritic medicines. *Grew*, Muſ. Reg. Soc. P. 3. §. 1. c. 5. p. 302.

The German writers ſpeak much of the virtues of this foſſil, and it is kept in their ſhops, and ſometimes enters extemporaneous preſcription. They give it in caſes of the gravel, and all nephritic complaints; and ſay, that it has great virtues againſt the night-mare. With us it is not uſed at all, except among farriers; but, in all probability, it will anſwer the purpoſe of ſpar in any other form; and ſpar has at all times been celebrated for its virtues as a lithontriptic, whether given under the form of the *lapis judaicus*, or that of the *oſtracites*, or, finally, as diſſolved in the water of certain ſprings, which form incruſtations on things that fall into them. *Geoffrey*, Mat. Med. Vol. 1. p. 82. See OSTRACITES and JUDAICUS *lapis*.

BELENNUS, in zoology, the name of a ſmall anguilliform fiſh, called by others *blennis*. It is a ſea-fiſh, and very ſcarce. It approaches much in figure to the Engliſh bull-head, or miller's thumb, the *cottus* of authors. Its head is large, its noſe ſharp, and its mouth but ſmall. It has a ſmall, black fin upon its neck, like the *uranoſcopus*, or ſtargazer, which the bull-head has not. It has two other fins placed lower than this, and near the mouth. It has no ſcales. Its belly is white, and the reſt of its body brown. *Willugh.* Hiſt. Piſc. p. 138.

BELFRY, *belfredus*, is uſed by military writers of the middle age for a ſort of tower, erected by beſiegers to overlook and command the place beſieged. *Aquin.* Lex. Milit. T. 1. p. 120. b.

They were alſo called *berfredi*, *berefredi*, *verfredi*, and *belfragia*. Their ſtructure and uſe are deſcribed in verſe by a poet of thoſe days. Vid. *Vill. Brito.* Philipp. l. 2. ap. *Aquin.* loc. cit. *Belfry* originally denoted a high tower, whereon centinels were placed to watch the avenues of a place, and prevent ſurprize from parties of the enemies, or to give notice of fires, by ringing a bell. *Du Cange*, Gloſſ. Lat. T. 1. p. 519, ſeq. *Aquin.* Lex. Milit. T. 1. p. 120.

In the cities of Flanders, where there is no *belfry* on purpoſe, the tower of the chief church ſerves the ſame end. *Martiniere*, Dict. Geogr. T. 2. p. 188. b.

The word *belfry* is compounded of the Teutonic *bell* and *freid*, peace, becauſe the bells were rung here for preſerving the peace. *Du Cange*, loc. cit.

BELFRY is alſo uſed for that part of a ſteeple wherein the bells are hung. *Somner*, Antiq. Canterb. p. 160.

This is ſometimes called by middle-age writers *campanile*, *clocaria*, and *triſtegum*. *Somner*, ibid. p. 190. *Du Cange*, T. 4. p. 1200.

BELFRY is more particularly uſed for the timber-work, which ſuſtains the bells in a ſteeple; or that wooden ſtructure, to which the bells in church-ſteeples are faſtened.

BELIDES, in antiquity. See DANAIDES, *Cycl.*

BELINGELA, in botany, a name given by ſome authors to the *mala inſana*, or mad-apples. See MELONGENA.

BELL (*Cycl.*)—The uſe of *bells* is very antient, as well as extenſive. We find them among Jews, Greeks, Romans, Chriſtians, and Heathens, variouſly applied, as on the necks of men, beaſts, birds, horſes, ſheep; but chiefly hung in buildings, either religious, as in churches, temples, and monaſteries; or civil, as in houſes, markets, baths; or military, as in camps and frontier towns.

In the antient monaſteries, we find ſix kinds of *bells* enumerated by Durandus, *viz.*

Squilla, rung in the refectory; *cymbalum*, in the cloiſter; *nola*, in the choir; *nolula* or *dupla*, in the clock; *campana*, in the ſteeple; and *ſignum*, in the tower. *Durand.* Rational. l. 1. c. 14. *Spelm.* Gloſſ. p. 99. 515. 522. *Du Cange*, Gloſſ. Lat. T. 4. p. 862.

Belethus [a] has much the ſame; only that for *ſquilla* he puts *tintinabulum*, and places the *campana* in the tower, and *campanella* in the cloiſter. Others place the *tintinabulum* or *tinniolum* in the refectory or dormitory [b]; and add another *bell* called *corrigiuncula*, rung at the time of giving diſcipline, to call the monks to be flogged [c]. The *cymbalum* is ſometimes alſo ſaid to have been rung in the cloiſter, to call the monks to meat [d]. —[a *Beleth.* Divinor. Officior. c. 86. b *Du Cange*, Gloſſ. Lat. T. 4. 1130 & 1131. c Id. T. 2. p. 1232. d Id. T. 1. p. 1332.]

Among the Greeks, thoſe who went the nightly rounds in camps or gariſons, carried with them a little *bell*, which they rung at each centry-box, to ſee that the ſoldiers on watch were awake. *Suid.* ap. *Aquin.* Lex. Milit. T. 2. p. 366. *Pitiſc.* Lex. Ant. T. 2. p. 966.

A *codonophorus*, or *bell*-man, alſo walked in funeral proceſſions, at a diſtance before the corps, not only to keep off the croud, but to advertiſe the *flamen dialis* to keep out of the way, for fear of being polluted by the ſight, or by the funerary muſic. *Pitiſc.* T. 1. p. 480. voc. *codonophorus*.

The prieſt of Proſerpine at Athens, called *hierophantus*, rung a bell, to call the people to ſacrifice. *Danet.* in voc. *campana*.

There were alſo *bells* in the houſes of great men, to call up the ſervants in a morning [e]. Zonaras aſſures us, that *bells* were hung with whips on the triumphal chariots of their victorious generals, to put them in mind, that they were ſtill liable to the public juſtice [f].—[e *Pitiſc.* Lex. Ant. T. 2. p. 966. f *Zonar.* II. p. 32. ap. *Pitiſc.* loc. cit.]

Bells were put on the necks of criminals going to execution, that perſons might be warned by the noiſe to get out of the way of ſo ill an omen as the ſight of the hangman, or the condemned criminal, who was devoted, and juſt going to be ſacrificed to the *dii manes*. *Pitiſc.* Lex. Ant. T. 2. p. 966.

For *bells* on the necks of brutes, expreſs mention is made of them in Phædrus,

——— *Celſa cervice eminens*,
Clarumque collo jactans tintinnabulum. *Phædr.* II. 8. 4.

Taking theſe *bells* away was conſtrued by the civil law theft; and if the beaſt was loſt by this means, the perſon who took away the *bells* was to make ſatisfaction. *Pitiſc.* Lex. Antiq. T. 2. p. 966.

Among the Jews, we find mention in ſcripture of *bells* made uſe of in the temple. Their figure is not known; but they were made of copper, and their ſound was ſharp, and heard to a great diſtance. *Calmet*, Dict. Bibl. T. 1. p. 276.

The high-prieſt had a great number of little golden *bells* hung to the border of his garment, to give notice when he entered into, and when he came out of, the ſanctuary, and ſave him the trouble of knocking at the door. *Danet*, Dict. Ant. *Calmet*, loc. cit.

The prophet Zachary ſpeaks of *bells* hung to the bridles of war-horſes, that thereby they might be accuſtomed to noiſe. *Calm.* ib. T. 1. p. 275.

There are diſputes about the number of *bells* which were intermixed with pomegranates on Aaron's garment. Some will have it only twelve, others fifty, others raiſe it to ſixty-ſix, others to ſeventy-two, and ſome to eighty. The kings of Perſia are ſaid to have had the like habit. We may add, that the Arabian ladies, who are about the prince's perſon, to ſerve and divert him, have little gold *bells* faſtened to their legs, neck, and elbows, the motion of which, when they dance, makes an agreeable ſort of harmony. The princeſſes of this country are alſo ſaid to wear large, hollow gold rings, filled with little flints, which ſound like *bells* when they walk. Sometimes alſo large circles, with little rings hung round them, produce the ſame effect. Sometimes they wear a number of flat bobs fixed to the ends of their hair, which is matted, and hangs long behind, ſerving to make a noiſe as often as they ſtir, and give notice of the miſtreſs's paſſing by, that the ſervants may behave reſpectfully, and ſtrangers retire, to avoid ſeeing the perſon who paſſes. *Calmet*, loc. cit.

There is a curious obſervation in a paper of Mr. Reaumur's in the memoirs of the Paris academy, relating to the ſhape moſt proper for *bells*, to give them the loudeſt and cleareſt ſound. He obſerves, that as pots, and other veſſels more immediately neceſſary to the ſervice of life, were doubtleſs made before *bells*, it probably happened, that the obſerving theſe veſſels to have a ſound when ſtruck, gave occaſion to making *bells*, intended only for ſound, in that form; but that it does not appear that this is the moſt eligible figure; for lead, a metal which is, in its common ſtate, not at all ſonorous, yet becomes greatly ſo on its being caſt into a particular form, and that very different from the common ſhape of *bells*. In melting lead for the common occaſions of caſting in ſmall quantities, it is uſually done in an iron ladle; and as the whole is ſeldom poured out, the remainder, which falls to the bottom of the ladle, cools into a maſs of the ſhape of that bottom. This is conſequently a ſegment of a ſphere, thickeſt in the middle, and thinner towards the edges: nor is the ladle any neceſſary part of the operation, ſince if a maſs of lead be caſt in that form in a mould of earth or ſand, in any of theſe caſes it is found to be very ſonorous. Now, if this ſhape alone can give ſound to a metal which in other forms is perfectly mute, how much more muſt it neceſſarily give it to other metals naturally ſonorous in whatever form. It ſhould ſeem, that *bells* would much better perform their office in this than in any other form, and that

it must particularly be a thing of great advantage to the small *bells* of common house-clocks, which are required to have a shrill note, and yet are not allowed any great size. Mr. Reaumur very judiciously observes, that had our forefathers had opportunities of being acquainted with the sound of metals in this shape, we should probably have had all our *bells* at present of this form. Vid. Mem. Acad. Par. 1726.

BELL, in chemistry, denotes a glass vessel placed over some matter in a state of exhalation, either to collect the vapour, or gather the flowers.

Chemical *bells* are a sort of receptacles chiefly used in preparing the oil or spirit of sulphur, for gathering and condensing the fumes thereof into a liquor. *Castel.* Lex. Med. p. 127. b.

BELL, in building, is used to denote the body of the Corinthian and Composite capital, by reason of the resemblance hereof to the figure of a *bell* inverted. *Felibien*, Archit. &c. p. 365. *Davil.* Archit. p. 444.

In this sense, *bell* is the same with what is otherwise called *vase* and *tambour*, sometimes also *corbeil*.

The naked of the *bell* is always to be even and perpendicular with the bottom of the flutings of the column. *Felib.* p. 366.

BELL-*metal* is a composition of tin and copper melted together in due proportion; which has this property, that it is more sonorous than any of the ingredients taken apart. *Boyle*, Phil. Work. abridg. T. 3. p. 425.

Some also speak of a native mineral under the denomination *bell-metal*, or *helmettel* [a], from which Becher [b] affirms he had procured zaffer and smalt.—[a *Junck.* Consp. Chem. tab. 30. p. 663. b *Becher*, in Morosoph. p. 36.]

Law BELL. See LAW *bell.*

BELL *animal*, a name given by the writers on microscopical discoveries to a very small animal found at the roots of the common duckweed. The bodies of these animals are shaped like *bells*, and they have very long and slender tails, by which they fasten themselves to the roots of these little plants. They are usually found in great numbers together, in a sort of clusters or bunches; and all of the same bunch have always the same motion, very frequently contracting themselves, and afterwards expanding all together to the full length of their tails. They usually contract instantaneously; but are more slow in the expanding themselves again. *Baker*, Microscop. p. 90.

BELL *muschus*, in botany, a name given by some authors to the plant called *hamia moschata*, and mosch-seed. *Chabraus*, p. 302.

BELL-*polype*, in zoology, a particular species of polype, the extremities of whose branches resemble *bells*. See Tab. of Microscopical Objects, Class 1. See also the article POLYPE.

BELL-*weed*, an English name used by some authors for the *jacea nigra*, or common knap-weed, called also in many English writers *matfellon*. *Ger.* Emac, Ind. 4.

BELLADONNA, in botany, the name of a genus of plants; the characters of which are, that the flower is composed of one leaf, shaped like a bell, and divided into several segments at the end: this is inclosed in a cup, from the centre of which there rises a pistil, which is fixed, like a nail, into the hinder part of the flower, and finally grows to be a sort of round and soft fruit, divided by an intermediate septum into two cells, and filled with seeds affixed to the placenta. See Tab. 1. of Botany, Class. 1.

The species of this genus are, 1. One with large leaves and flowers. 2. One with small leaves and flowers. 3. A round-leaved, shrubby kind. 4. A tobacco-leaved shrubby kind, with white flowers. *Tourn.* Inst. p. 77.

BELLATRIX, in astronomy, a ruddy, glittering star of the second magnitude, in the left shoulder of Orion. *Vital.* Lex. Math. p. 14. *Wolf.* Lex. Math. p. 255.

It takes its name from *bellum*, as being antiently supposed to have a great influence in kindling wars, and forming warriors. *Vital.* loc. cit.

Its longitude, according to Hevelius, for the year 1700, was 16° 47′ 20″; and its latitude southward 16° 52′ 11″. *Hevel.* Prodrom. Astrom. p. 295. *Wolf.* loc. cit.

BELLICA *Columna*, in antiquity, a *column* near the temple of Bellona, from which the consuls or feciales cast javelins towards the enemy's country, by way of declaration of war. *Danet.* Dict. in voc.

BELLICULI, or BELLIRICI *Marini*, among naturalists, denotes a species of sea-shells of an umbilical figure, sometimes of a white colour, spotted with yellow, and sometimes of a yellow, streaked with black lines, after the snail-fashion. *Chiocc.* Mus. Calc. §. 1. p. 57. ap. *Cast.* Lex. Med. p. 102.

BELLING *of Hops* denotes their opening and expanding to their customary shape, supposed to bear some relation to that of a bell. *Hought.* Collect. T. 2. p. 448.

Hops blow towards the end of July, and *bell* the latter end of August, or beginning of September.

BELLIS, *the Daisy*, in botany, the name of a genus of plants; the characters of which are these: the flower is of the radiated kind: its disk is composed of floscules, and its outer circle of semi-floscules, standing on the embryo seeds, and contained in a common simple cup, divided into many segments at the end. The embryos finally become seeds, affixed to the thalamus, which is usually of a pyramidal figure.

The species of *daisy*, enumerated by Mr. Tournefort, are: 1. The common wild *daisy*. 2. The common, little, wild *daisy*. 3. The common, little, wild *daisy*, with red and white flowers, 4. The common, little, wild *daisy*, with blue flowers. 5. The little wild *daisy*, with red double flowers. 6. The large kind of the small wild *daisy*, with stalks two feet high, and large broad leaves, and red and white flowers. 7. The alpine little *daisy*, with small leaves and white flowers. 8. The smallest annual *daisy*. 9. The sun-dew-leaved little *daisy*. 10. The garden *daisy*, with large, double, white flowers. 11. The garden *daisy*, with large, double, flesh-coloured flowers. 12. The garden *daisy*, with large, double, bright-red flowers. 13. The garden *daisy*, with large, double, variegated flowers. 14. The garden *daisy*, with small, double, white flowers. 15. The garden *daisy*, with small, double, red flowers. 16. The proliferous garden *daisy*. 17. The new Dutch umbellated *daisy*, with bright-red flowers. 18. The green flowered garden *daisy*. 19. The garden *daisy*, with large, double, fistulous, red flowers. 20. The garden *daisy*, with white, bullated flowers. *Tourn.* Inst. p. 490.

The common little *daisy* has the reputation of being a very eminent medicine of the tribe of vulneraries. The roots and leaves are prescribed, fresh-gathered, both externally and internally in bruises, and in wounds. They make a sort of cataplasm of the whole plant bruised in some parts of the kingdom, which they apply to the part, and give the juice internally at the same time. The ladies have an opinion also, that the roots of this plant have a power of stopping the growth of animals, and with this intent give a decoction of them in milk to the puppies of their favourite breed, to keep them small.

The two species of *bellis* used in medicine are, the *bellis major*, called also *leucanthemum vulgare*, in English *ox-eye daisy*; and the

Bellis minor, called also *consolida minima*, or *symphytum minus*, of most repute for physical virtues, being esteemed a good attenuant, resolvent, healer, cooler, and astringent, efficacious against intumescences of the blood, hæmorrhages, &c. Vid. *Lemery*, Dict. des Drog. p. 119. *Burggr.* Lex. Med. p. 1535. *Junck.* Consp. Therap. tab. 5. p. 174.

Foreign dispensatory-writers describe a water, syrup, conserve, essence, tincture, extract, and fixed salt, prepared from this plant. Vid. *Burggr.* loc. cit.

BELLONARII, in antiquity, priests of Bellona, the goddess of war and battles.

The *bellonarii* cut and mangled their bodies with knives and daggers in a cruel manner, to pacify the deity. In this they are singular, that they offered their own blood, not that of other creatures, in sacrifice. In the fury and enthusiasm wherewith they were seized on these occasions, they ran about raging, uttering prophecies, and foretelling blood and slaughter, devastations of cities, revolutions of states, and the like: whence Martial calls them *turba entheata Bellonæ*. *Lactant.* Inst. l. 1. c. 21. *Lucan.* l. 1. ver. 565. *Tertull.* Apol. c. 9. *Minut. Felix*, p. 298. *Lamprid.* in Commod. c. 9. *Casaub.* ad Lamprid. loc. cit. *Pitisc.* Lex. Antiq. T. 1. p. 270. *Aquin.* Lex. Milit. T. 1. p. 121.

In after-times, they seem to have abated much of their zeal and transport, and to have turned the whole into a kind of farce, contenting themselves with making signs and appearances of cutting and wounds. Lampridius tells us, the emperor Commodus, out of a spirit of cruelty, turned the farce again into a tragedy, obliging them to cut and mangle their bodies really. *Lamprid.* loc. cit.

BELLOWING, among sportsmen, is used for the noise which roes make in rutting-time. Gent. Rec. P. 1. p. 10.

BELLOWS *(Cycl.)*—Anacharsis the Scythian is recorded as the inventor of *bellows*. *Strab.* l. 7. p. 209. *Pitisc.* Lex. Ant. T. 1. p. 79.

The action of *bellows* bears a near affinity to that of the lungs; and what we call blowing in the latter, affords a good illustration of what is called respiring in the former. Vid. *Niewent.* Relig Philos. cent. 7. §. 7. p. 47.

Animal life itself may, on some occasions, be subsisted by blowing into the lungs with a pair of *bellows*. Dr. Hook's experiment to this effect is famous: having laid the thorax of a dog bare, by cutting away the ribs and diaphragm, pericardium, &c. and having cut off the aspera arteria below the epiglottis, and bound it on the nose of a *bellows*, he found, that as he blowed, the dog recovered, and as he ceased, fell convulsive. And thus was the animal kept alternately alive and dead above the space of an hour. Vid. Phil. Transf. N° 28. p. 539.

There are *bellows* made wholly of wood, without any leather about them; one of which is preserved in the repository of the Royal Society [a]; and Dr. Plott describes another used in the copper-works at Ellaston in Staffordshire [b].—[a Vid. *Grew*, Mus. Reg. Societ. P. 4. §. 3. p. 369. b Vid. *Plott.* Nat. Hist. Staffordsh. c. 4. §. 28.

Ant. della Fruta contrived a substitute for *bellows*, to spare the expence thereof in the fusion of metals.

This is called by Kircher *camera æolia*, and in England commonly the *water-bellows*; where water falling through a funnel into a close vessel, sends from it so much air continually as blows the fire. If it have the space of another vessel to expatiate in by the way, it there lets fall its humidity, which else might hinder the work. *Hook* in Phil. Transf. N° 3. p. 80.

Mr.

Mr. Stirling has given the deſcriptipn of a *water-bellows*, or machine to blow fire by the fall of water. Vid. Phil. Tranſ. N° 475. §. 19.

We are alſo told of a new ſort of *bellows* to work in vacuo [c]. Some have even pretended to effect a perpetual motion by a new-contrived *bellows* [d].—[[c] *Boyle*, Phil. Work. abridg. T. 2. p. 503. [d] Phil. Tranſ. N° 182. p. 138.]

Smiths and founders *bellows*, whether ſingle or double, are wrought by means of a rocker, with a ſtring or chain faſtened thereto, which the workman pulls. The *bellows* pipe is fitted into that of the tewel. One of the boards is fixed, ſo as not to play at all. By drawing down the handle of the rocker, the moveable board riſes, and, by means of a weight on the top of the upper board, ſinks again. Vid. *Moxon*, Mechan. Exerc. Smither. p. 2.

The *bellows* of forges and furnaces of mines uſually receive their motion from the wheels of a water-mill. Others, as the *bellows* of enamellers, are wrought by means of one or more ſteps or treddles under the workman's feet. Vid. *Hought.* Collect. T. 2. p. 223.

Laſtly, the *bellows* of organs are wrought by a man called the blower; and in ſmall organs by the foot of the player.

Butchers have alſo a kind of blaſt or *bellows* of a peculiar make, by which they bloat or blow up their meat when killed, in order to piecing or parting it the better. *Savar.* Dict. Comm. T. 2. p. 1570.

Bone-BELLOWS, φυσιλῆρες οστεινοι, occur in Herodotus for thoſe applied by the Scythians to the genitals of mares, in order to diſtend the uterus, and, by this compreſſion, make them yield a greater quantity of milk. Vid. *Charlt.* OEcon. Anim. ex. 3. §. 9. *Caſtel.* Lex. Med. p. 588. b.

Acoſta ſays, that the metal of the Peruvian mines of Porco is eaſily refined with *bellows*; but that of the mines of Potoſi cannot be fuſed with them, but only by the breath of their ſmall furnaces built upon the ſides of mountains, and directed where the wind lies. Vid. *Boyle*'s Works abridg. Vol. 1. p. 170.

BELLUGA-*ſtone*, in natural hiſtory, the name of a calculus or ſtone found in the *belluga*, a large fiſh, accounted a ſpecies of ſturgeon, and called by Artedi *accipenſer tuberculis carens*.

This ſtone is of various ſhapes and ſizes; but its moſt uſual figure is either globular or oval, often ſomewhat flatted, and marked with ſeveral depreſſions. It is of a yellowiſh white colour, and of a ſmooth and naturally poliſhed ſurface; and it is found from the ſize of a pigeon's egg to that of a gooſe. They are uſually compact, ponderous, and ſolid, not friable, but requiring a ſtrong blow to break them. They yield eaſily to the ſaw; but this defaces their internal texture, which is naturally very elegant and regular. The ſtones conſiſt of ſeveral concentric coats, firmly adhering to one another, formed about a nucleus, which generally appears to be ſome heterogeneous ſubſtance.

But another very obvious circumſtance there is in its ſtructure, which makes it greatly different from all other ſtones of this kind, that is, its radiated ſtructure, it being compoſed of a number of regular and even ſtriæ running from the centre to the circumference, repreſenting, both in colour and form, the flakes of the *terra foliata tartari*, or the ſtriated ſpiculæ of antimony.

The fiſh is much like the ſturgeon in ſhape; but its ſnout is ſhorter and thicker. The skin upon the back is light-grey, and on the belly white, and without ſcales. Its fleſh is whiter than veal, and more delicious than ſturgeon. Of its row or ſpawn is made cavear; and ſome of them are ſo large as to yield two hundred weight of it. The fiſh is very common and very large in the Volga, near the city of Aſtracan. It has been caught there thirty-ſix feet long, and eighteen thick. It is alſo found in the Don, and other rivers, and in the Baltic and Caſpian ſeas. See ACCIPENSER.

It is not certainly known in what part of this fiſh the ſtone is found. Stralenberg ſays it is in the head and ſtomach; ſome authors ſay in the air-bladder; others in a particular bag near the anus; and others in other places. It is found in both ſexes, but moſt frequently in the male; and is found in fiſh of all ages and ſizes. It is far from being common, however; for in a thouſand fiſhes, there ſometimes is not found one ſtone.

It is hence evident, that theſe ſtones are no natural part of the fiſh; but are mere morbid concretions, like the bezoar-ſtones in the animal which produces them, or like the ſtones in human bladders. The ſituation of the parts in which it is found, and other circumſtances, may allot it its particular appearances.

If the ſtone be ſcraped to powder, and ſprinkled upon a hot iron, it gives a faint, urinous ſmell, and calcines into a light, inſipid, grayiſh earth.

The people about the Volga eſteem it greatly, and account it to have great virtues: they ſay it promotes delivery; and give it conſtantly in caſes of the ſtone, and diſorders of the urinary parts. Its doſe is from ten grains to a dram. Phil. Tranſ. N° 483.

BELLULA-*boſ*, in ichthyology, a name given by Paulus Jovius to that ſpecies of the ray-fiſh, which was called by the old Greek and Latin writers *bos marinus*, and by the later authors *raja oxyrynchus*. It is diſtinguiſhed by Artedi by the name of the variegated ray, with ten prickly tubercles on the middle of the back.

BELLY, in a general ſenſe, denotes the whole abdomen, or that region of the body contained between the ſeptum tranſverſum, the hypochondria, and pubes. *Caſt.* Lex. Med. p. 358. See ABDOMEN, *Cycl.* and *Suppl.*

Phyſicians recite inſtances of women with enormous *bellies*, commonly miſtaken for pregnancies.—A French nun, during eighteen years, had a *belly* ſo enormous, that when ſhe walked, ſhe was forced to have two other religious going behind to bear it up. On opening her, there was found a vaſt cyſtis or bag, full of divers matters, extended from her navel to her knees. Mem. Acad. Scienc. 1710. p. 50.

The big-*bellied* woman at Haman in Shropſhire got her living thirty years by making a ſhow of her *belly*. It reached up to her chin. When ſhe ſat, ſhe ſupported its weight on a ſtool placed before her. The reſt of her body was emaciated in proportion to the tumidity of this. On opening her, there were thirteen gallons of water taken out of the duplicatures of the peritonæum. Phil. Tranſ. N° 348. p. 452.

BELLY is alſo uſed, in a more confined ſenſe, for the inteſtines alone, as containing the fæces. *Caſt.* Lex. p. 740. a.

In this ſenſe it is we ſpeak of the looſeneſs or coſtiveneſs of the *belly*, &c.

BELLY is alſo uſed ſometimes for a pregnant woman. *Calv.* Lex. Jurid. p. 934.

In this ſenſe we are to underſtand the phraſe among civil lawyers, to put the *belly* in poſſeſſion of an eſtate.

BELLY is alſo uſed in ſpeaking of the bodies of beaſts. Thus, we ſay a light *belly*, meaning a ſlender or lank one: a cow *belly*, that where the ribs being unable to hold the viſcera, they preſs downwards, and bulge diſagreeably.

Feeding horſes with graſs, or much hay, and few oats, makes them grow cow-bellied [a]. It is a maxim, that horſes which are light-bellied, and firey, ſoon deſtroy themſelves [b]. —[[a] Farr. Dict. p. 60. [b] Id. ibid. p. 59.]

The *belly* of a horſe ſhould be of an ordinary bigneſs, except in draught horſes, where the larger the better, provided it be round, and well incloſed within the ribs; rather extending upon the ſides than downwards. Thoſe horſes are apt to be cow-bellied, which having ſtreight ribs, are great feeders. Ruſt. Dict. T. 1. in voc.

The *belly* is ſometimes alſo denominated the body, cheſt, gut, or flank.

A horſe is ſaid to be thick-bellied, well bodied or flanked, when he has large, long, and well-made ribs, neither too narrow, nor too flat. A horſe again is ſaid to have no *belly*, or body, or to be thin-flanked, when his ribs are too narrow or ſhort, and the flank turns up; ſo that his body looks flankleſs, like a greyhound. Such horſes are called by the French *eſtracs*, and generally prove fine and tender, not fit for travelling or fatigue, unleſs they feed very heartily. Coach-horſes are rejected when they are not well-bellied, or well-bodied, but narrow or thin-gutted, ſeeming to have the ſkin of their flanks ſtitched on their ribs. But a hunter is not the worſe liked for being light-bellied. Horſes pained, or weak in their hind-quarters, are commonly light-bellied. Such as have painful ſcratches in their hind-legs, are found to loſe their *bellies* extremely.

BELLY *of a muſcle*, in anatomy, denotes the body thereof; as contradiſtinguiſhed from the two extremities, or tendons. *Heiſter*, Comp. Anat. §. 305. See MUSCLE.

From the conditions of this, muſcles are divided into monogaſtric, or ſingle bellied, and digaſtric, or double bellied. Phil. Tranſ. N° 258. p. 378.

Lower [c] will have all the muſcles to be digaſtric, or double bellied; in which he is ſeconded by Hoffman [d], and others. —[[c] *Lower*, de Corde, c. 1. [d] *Hoffm.* in Diſſ. an. ad Horn. Microc. p. 252.]

Dragon's BELLY, *venter draconis*, is uſed by ſome aſtronomers to denote the point in a planet's orbit, wherein it has its greateſt latitude, or is fartheſt diſtant from the ecliptic; more frequently called its limits. *Vital.* Lex. Math. p. 519. *Wolf.* Lex. p. 1451. *Ozan.* Dict. Math. p. 408.

BELOAR, a name given by ſome to a ſtone, otherwiſe called *widuris*. See WIDURIS.

BELONE, in zoology, a name by which ſome of the old naturaliſts have called the *acus Oppiani*, called in Engliſh the horn-fiſh, or gar-fiſh. *Willugh.* Hiſt. Piſc. p. 281. See ACUS.

BELT, *Baltheus*, properly denotes a kind of military girdle, uſually of leather, wherewith the ſword or other weapons are ſuſtained. *Aquin.* Lex. Milit. T. 2. p. 110, ſeq. *Belts* are known among the antient and middle-age writers by divers names, as ζωνη, ζωμα, *zona*, *cingulum*, *reminiculum*, *rinca*, or *ringa*, and *baldrellus*. *Pott.* Archæol. Græc. l. 3. c. 4. T. 2. p. 28. *Pitiſc.* Lex. Antiq. T. 1. p. 248 & T. 2. p. 1132. *Du Cange*, T. 4. p. 857, 612. & T. 1. p. 444.

The *belt* was an eſſential piece of the antient armour; inſomuch that we ſometimes find it uſed to denote the whole armour. *Pott.* loc. cit. See ARMS, *Cycl.*

In later ages, the *belt* was given a perſon when he was raiſed to knighthood: whence it has alſo been uſed as a badge or mark of the knightly order. *Calv.* Lex. Jurid. p. 109.

The denomination *belt* is alſo applied to a ſort of bandages in uſe among ſurgeons, &c. See BANDAGE.

Thus we meet with quick-silver *belts*, used for the itch. A late writer describes a *belt* for keeping the belly light, and discharging the water in the operation of tapping. Medic. Eff. Edinb. T. 1. p. 218.

BELTS, (*Cycl.*) in astronomy. Dark spots have been frequently observed on Jupiter's *belts*. Cassini has also discovered a permanent one in the most northern part of the most southern *belt*: by this he has determined the length of Jupiter's day; that is, the time of his revolution on his axis, which is finished in 9 hours, 56 minutes. Phil. Trans. N° 10.

Some astronomers take the *belts* to be seas, which alternately cover, and leave bare large countries of the jovial world: The spots are by these writers conjectured to be gulphs in those seas, perhaps as big as our ocean, and sometimes full, sometimes dry [a]. M. Auzout rather imagined the spots to be protuberances of the *belts* [b].—[a Hist. Acad. Scien. an. 1708. p. 112. It. an. 1692. p. 4. b Phil. Trans. N° 4. p. 71.]

But the generality of astronomers take the spots, we mean the transparent and moveable ones, for the shadows of Jupiter's satellites. Phil. Trans. N° 15. p. 246. Item, N° 1. p. 3.

The *belts* of Jupiter were first observed, and described by Huygens, in syst. Saturnin. p. 7.

Cassini also speaks of *belts* of Saturn; being three dark, straight, parallel bands or fasciæ on the disk of that planet.

Saturn's *belts* do not appear to be inherent on his globe, as those of Jupiter are; but rather to be large dark rings at a distance from the planet, and surrounding his body. Some imagine them to be clouds in his atmosphere. The middlemost seems to be the shadow of Saturn's ring. Vid. Hist. Acad. Scienc. 1715. p. 55. seq.

BELT, or BELTIS, in ecclesiastical writers of the middle age, denotes a sort of string of beads.

In an antient council, we meet with *septem beltidum paternoster*, speaking of a pater-noster to be repeated seven times: Spelman interprets it a rosary, which was not then invented. Vid. *Spelm.* Gloss. p. 79. *Du Cange*, Gloss. Lat. T. 1. p. 522. *Schmid.* Lex Eccles. p. 91.

Johnson, with more probability, describes it as a certain number of studs fastened on a *belt*, serving the same purpose as the chaplets of later days. *Johns.* Eccles. Laws, an. 816. §. 10.

BELTS, in navigation, denote certain streights near the sound, thro' which ships must pass going between the Baltic and the German ocean.

The *belts* belong to the king of Denmark, who exacts a toll of all ships which pass them, excepting the Swedes, who are exempted from it. Vid. Theat. of Domin. and Laws of sea, p. 494, and 497.

BELT is also a frequent disease in sheep, cured by cutting their tails off, and laying the sore bare; then casting mould on it, and applying tar and goose-grease.

BELVIDERE, an Italian term, denoting a fine prospect. The name is more peculiarly given to a pavilion on the top of a building, or an eminence in manner of a platform in a garden, sustained by a terrace wall, or a massive of turf, contrived for the sake of commanding a large or beautiful prospect. *Davil.* Archit. p. 420.

BELULCUM, βελλκον, a chirurgical instrument of various figures, contrived for extracting darts, arrows, or the like, from wounds. *Paré*, Chirug. l. 10. c. 18. & seq. *Aquapend.* de Oper. Chir. p 150. *Cast.* Lex. Med. p. 102.

Hence also the denomination *belulcum*; *quasi* το βελος ελκων.

BEMA, βημα, in antiquity, denotes a step or pace.

The *bema* made a kind of itinerary measure among the Greeks, whose length was equivalent to one cubit, and two thirds, or to ten palms. *Montfauc.* Palæogr. l. 5. c. 4. p. 365. seq.

Whence also the term *lematizein*, βηματιζειν, to measure a road. *Polyb.* l. 3. c. 39. *Strab.* l. 7. p. 322. *Martin*, T. 2. p. 214. *Suic.* Thes. T. 1. p. 683.

BEMA, in ecclesiastical writers, denotes the altar part, or sanctuary in the antient churches. *Bingh.* Orig. Eccles. l. 8. c. 6. §. 10. *Suic.* Thes. T. 1. p. 523.

In which sense, *bema* made the third, or innermost part of the church, answering to the chancel among us. *Fabric.* Bibl. Ant. c. 9. §. 23.

BEMA was also used for the bishop's chair, seat, or throne placed in the sanctuary. It was called *bema* from the steps by which it was to be ascended. *Bingh.* loc. cit. §. 1.

BEMA was also used for the reader's desk. *Schmid.* Lex Eccles. p. 91.

This in the Greek church was denominated βημα γνοσων, in the Latin church *ambo*. See AMBO.

BEMA is more peculiarly used for the manichees altar, which was in a different place from that of the catholics.

BEMA was also a denomination given by this sect to the anniversary of the day when Manes was killed, which with them was a solemn feast, and day of rejoicing.

One of the chief ceremonies of the feast consisted in setting out and adorning their *bema*, or altar, with great magnificence.

BEMETRE, in zoology, a name by which the Portuguese in the Brasils call'd a greenish black-bird of the starling kind, common there, and more usually known by its Brasilian name *Pitangua-guacu*. See PITANGUA-GUACU.

BEN, (*Cycl.*) in pharmacy, the name of an exotic purgative fruit, of the size and figure of a nut; whence it is also called the *ben-nut*, sometimes *balanus myrepsica*, or *glans unguentaria*.

Naturalists distinguish two kinds of *bens*; viz. the great, *ben magnum*, which resembles the filbird, and is by some call'd *avellana purgatrix*, brought from America; and the small, *ben parvum*, brought from Ethiopia, from which last it is the Italians express that fragrant sort of oil, called oil of *ben*, or *oleum balaninum*, of some use among perfumers, but little known in medicine. Vid. *Grew*, Mus. Soc. P. 2. §. 2. c. 1. p. 217. *Lemery*, Dict. des Drog. p. 119.

BEN *of Judea* is a name given by some to the gum benzoin, or benjamin. *Savar.* Dict. Comm. T. 1. p. 319.

BEN is also sometimes used for the *behem*, or *been*. See BEEN, *Cycl.* and BEHEM, *Suppl.*

BENÆ *lapis*, in the natural history of the antients, the name given by the earliest writers to that fossil body, afterwards call'd *lapis thracius*. See THRACIUS *lapis*.

BENDIDIA, βενδιδεια, in antiquity, solemn feasts held by the Athenians on the twenty-first day of the month Tragelion, in honour of the goddess Diana. *Trev.* Dict. Univ. T. 1. p. 973.

The word is formed of βενδις, a denomination of Diana, according to Strabo, or of the moon according to Suidas, which amounts to the same.

The *bendidia* were held in the piræus, and bore some resemblance to the *Bacchanalia*. See BACCHANALIA, *Cycl.* and *Suppl.*

BENDING (*Cycl.*)—M. Bernouilli has a discourse on the *bending* of springs, or elastic bodies [a]. M. Amontons gives several experiments concerning the *bending* of ropes [b]. The friction of a rope *bent*, or wound round an immoveable cylinder, is sufficient with a very small power to sustain very great weights [c]. [a Mem. Acad. Scienc. 1705. p. 230. Hist. p. 164. b Mem. ejusd. Acad. 1699. p. 257. Hist. p. 135. c V. Mem. Acad. 1703. p. 367.]

Divers methods have been contrived for *bending* timber, in order to supply crooked planks, and pieces for building ships: M. Dalesme ingeniously enough proposed to have the young trees bent, while growing in the forest [d]. The method of *bending* planks by a sand heat, now used in the king's yards at Deptford, was invented by captain Cumberland [e]—[d Mem. Acad. Scienc. 1705. p. 172. e Phil. Trans. N° 371. p. 75.]

The *bending* of boards, and other pieces of timber for curved works in joinery, is effected by holding them to the fire, then giving them the figure required, and keeping them in this figure by tools for the purpose. *Davil.* Archit. p. 443.

BENDY, (*Cycl.*) in heraldry, denotes the field's being divided into four, six, or more parts, bendwise, *i. e.* diagonally, and varying in metal or colour.

In England the number is always made even, in other countries this is not regarded.

They say, *bendy* of four, *bendy* of six, *&c.* *Coats*'s Herald. p. 48.

BENEAPED, in the sea language, is said of a ship, when the water does not flow high enough to bring her off the ground, out of the dock, or over the bar. *Guill.* Gent. Dict. p. 3. in voc.

BENEDICITE is a name given to the hymn, or song of the three children, in the fiery furnace; by reason of its beginning with the words *benedicite omnia opera Dominum*. *Du Cange*, Gloss. Lat. T. 1. p. 528.

The use of the *benedicite* is very antient; it appearing to have been sung in all the christian churches, as early as St. Chrysostom's time. *Bingh.* Orig. Eccles. l. 14. c. 2. §. 6.

BENEDICTINS, (*Cycl.*)—For 600 years after the erection of the *benedictin* order, most of the European monks were followers of this rule; whatever other names they went by, Carthusians, Cistercians, Grandimontenses, Premonstratenses, Cluniacks, &c. they were but different branches of the *benedictins*, till about the year 1220, when the Dominicans and Franciscans took new rules.

Hospinian reckons no less than twenty-three religious orders that sprang from this one.

According to the *benedictin* computation, there have been of this order, 24 popes, 200 cardinals, 7000 archbishops, 15000 bishops, 15700 abbots, 4000 saints, 40,000 confessors, above 3000 martyrs and apostles, who have converted 30 provinces to the Christian faith, besides emperors, kings, *&c.* *Bingh.* Orig. Eccles. l. 7. c. 2. §. 12. *Work.* T. 1. p. 251.

The number of *benedictin* monasteries is computed at 37000. Vid. *Tabellam rerum illustrium ordinis sanct. Benedict. Salamanc.* 1569. ap. *Steph.* Suppl. p. 165.

F. Mabillon has published the acts of the *benedictin* saints, in ten volumes folio [a], and the annals of the order in four volumes more [b].—[a Acta sanctorum ordinis sancti benedicti. b Hist. Acad. Inscript. T. 7. p. 442.]

Some will have the appellation *black* given the *benedictins*, by way of distinction from the Cistercians; others pretend, that the English *benedictins* were more particularly called *black monks*, in contradistinction from the Scottish and Irish *benedictins*,

dictins, who were cloathed in white. Vid. *Steph.* Supp. to Dugd. Monaſt. T. 2. p. 169, and 184.

The origin and hiſtory of the *benedictins*, are in a great meaſure the origin and hiſtory of regular monachiſm, at leaſt in the Weſt. The religious before them, as of St. Columban, St. Patrick, St. Baſil, *&c.* not being ſtrictly regulars.

St. Benedict, founder of the order, made his firſt ſettlement in a deſart, in the dioceſe of Tibur, 40 miles from Rome; where he hid himſelf in a ſmall, low cave, formed by nature in a rock; now called the *holy grotto*. But the fame of his ſanctity drawing to him a great number of followers, he erected 12 monaſteries, of 12 monks each, in his wilderneſs; one of which in after ages grew ſo great, that it had 14 villages under its juriſdiction. From hence he removed to mount Caſſin, where he erected another monaſtery; from whence he ſent his miſſionaries, and propagated his order into other countries with great ſucceſs: Into Sicily by St. Placidius, in 534; into France by St. Maur, in 543. The ſame was brought into England in 596, by St. Auſtin, afterwards archbiſhop of Canterbury: the time of its introduction into Spain is conteſted. *Steph.* Supp. to Dugd. Monaſt. T. 2. p. 161, ſeq

The *benedictins*, tho' but one order, are divided into ſeveral congregations, which have their peculiar cuſtoms and obſervances, different from the reſt.

Each of thoſe are ſubdivided into provinces, which have their general chapters.

The Engliſh congregation, which had ſubſiſted from the time of the miſſion of St. Auſtin, was deſtroyed under Henry VIII. and by degrees reduced to one ſingle man; father Buckley, who in 1607, procured a re-eſtabliſhment of the congregation, at Doway, in the Netherlands, where it ſtill ſubſiſts in a kind of dependency on that of St. Valladolid in Spain. *Steph.* l. c. p. 169 and 181.

At the general chapters they chooſe provincials, with their aſſiſtants, for each of the provinces of Canterbury and York, who have juriſdiction over the miſſionaries employed therein. They are governed by a preſident-general, and three diffinitors, choſen every three years.

At their admiſſion they make a 4th vow, *viz.* that they will go to the miſſion in England, and return, when their ſuperiors think fit.

Some ſpeak of four congregations antiently in England; *viz.* Thoſe of St. Auguſtin, St. Benedict, St. Dunſtan, and St. Lanfrac; but theſe were not ſo properly different congregations, as different ages, or ſtates of this order under thoſe different perſons, who were all eminent reformers of the order. *Steph.* l. c. p. 169.

The antiquity of the Engliſh *benedictins* has been diſputed; the general tradition dates it from St. Auguſtin and pope Gregory, who are both ſuppoſed to have been of this order. F. Barnes, tho' a brother, wrote with zeal againſt this opinion, aſſerting that St. Auguſtin, and the monks who came with him, were not of the *benedictin*, but an older order of St. Equitius. He has been refuted with great force, chiefly by help of the MSS. in the Cotton library by F. Clement Reynal, who ſeems to have proved, that from the reign of Edgar to the conqueſt, there was no monaſtery in England, but what followed this rule. *Nicholſ.* Engl. Hiſt. Libr. P. 2. p. 146.

BENEDICTIN *nuns*, are religious women who embrace the rule of St. Benedict.

The origin of female *benedictins* is unknown; ſome will have them to have commenced in the time of St. Benedict, grounded chiefly on certain paſſages in his life, which ſpeak of his correſpondencies with women. Others, with more probability, make them of much later riſe. F. Mabillon takes St. Scholaſtica, about the year 620, for the mother of the *benedictin* nuns.

Their habit antiently was different, in different monaſteries; of late it has been a black gown, with a ſcapular of the ſame, and a tunic of wool, white, or not dyed. Over all, on ſolemn occaſions, and in the choir, a black cowl like that of the monks. *Steph.* Suppl. to Dugd. T. 2. p. 168.

BENEDICTION, in a general ſenſe, the act of bleſſing, or giving praiſe to God, or returning thanks for his favours.

Hence alſo *benediction* is ſtill applied to the act of ſaying grace, before or after meals.

Neither the antient Jews, nor Chriſtians, ever eat without a ſhort prayer. Dict. Trev. T. 1. p. 983. See alſo *Fabric.* Bibl. Ant. c. 19. §. 9. p. 573.

The Jews are obliged to rehearſe an hundred *benedictions* per day; of which, eighty are to be ſpoken in the morning. *Vitring.* de Synagog. vet. l. 3. p. 1033. *Wolf.* Bibl. Hæbr. T. 2. l. 8. p. 1467.

The firſt treatiſe of the firſt order in the Talmud, entitled *ſeraim*, contains the form and order of the daily *benedictions*. *Wolf.* l. c. T. 2. p. 704, and T. 3. p. 1194.

It was uſual to give *benediction* to travellers on their taking leave; a practice which is ſtill preſerved among the monks. Mem. Acad. Inſcr. T. 2. p. 23.

Benedictions were likewiſe given among the antient Jews, as well as Chriſtians, by impoſition of hands. And when at length the primitive ſimplicity of the Chriſtian worſhip began to give way to ceremony, they added the ſign of the croſs, which was made with the ſame hand, as before, only elevated, or extended. *Du Cange*, T. 1. p. 523. *Schmid.* Lex. in voc.

Hence *benediction*, in the modern Romiſh church, is uſed in a more particular manner, to denote the ſign of the croſs made by a biſhop, or prelate, as conferring ſome grace on the people.

The cuſtom of receiving *benediction*, by bowing the head before the biſhops, is very antient, and was ſo univerſal, that emperors themſelves did not decline this mark of ſubmiſſion. *Theod.* Hiſt. Eccleſ. l. 4. c. 5. *Evagr.* l. 4. c. 34. ap. *Bingh.* Orig. Eccleſ. l. 2. c. 9. §. 1.

Camerarius has given a collection of the ſeveral forms of *benediction* mentioned in ſcripture. *Fabric.* Bibl. Græc. l. 6. c. 9. p. 496.

Rabbi Nehemiah Baruch, in 1688, publiſhed a diſcourſe on the manner wherein the ſacerdotal *benediction* is to be pronounced. In the ſynagogue of Ferrara it is rather ſung than ſpoken. *Wolf.* Bibl. Hebr. T. 3. p. 827. See alſo *Fabric.* Bibl. Ant. c. 11. §. 14. p. 370.

BENEDICTION is alſo uſed for a preſent made to a prieſt, of ſomething firſt ſanctified by a ſort of *benediction*. *Du Cange*, T. 1. p. 527.

In this ſenſe, *benedictions* amount to the ſame with what are otherwiſe called *eulogia*.

Under the name *benediction*, the Hebrews alſo frequently underſtand the preſents which friends make to one another, in all probability becauſe they are generally attended with bleſſings and compliments, both from thoſe who give, and thoſe who receive them. *Calmet*, Dict. Bibl. in voc.

BENEDICTIONS are alſo uſed to denote an extraordinary ſort of repaſts given to monks on certain ſolemn days, called alſo *caritates*. *Du Cange*, T. 1. p. 528.

Nuptial BENEDICTION, the external ceremony performed by the prieſt in the office of matrimony. *Hartung.* Exerc. Jur. Civ. 6. p. 31. *Pfaff.* Inſt. Theol. app 2. p. 743.

This is alſo called ſacerdotal, and matrimonial *benediction*, by the Greeks ἱερολογια and ἱερολειτουργια. *Arnd.* Lex. Ant. p. 655.

The *nuptial benediction* is not eſſential to, but the confirmation of a marriage in the civil law. *Calv.* Lex Jur. p. 114.

Beatic BENEDICTION, *benedictio beatica*, is the viaticum given to dying perſons.

The pope begins all his bulls with this form. *Salutem & apoſtolicam benedictionem.* Dict. Trev. p. 975.

Regular BENEDICTION, that conferred by abbots on their monks, or by a ſenior monk on a junior.

BENEDICTIONE *privari*, to be deprived of benediction, was a kind of puniſhment inflicted on monks, whereby when the reſt received the abbot's bleſſing, the offenders were diſmiſſed without it. *Schmid.* Lex. Eccleſ. p. 92.

BENEDICTION is alſo uſed for an eccleſiaſtical ceremony, whereby a thing is rendred ſacred, or venerable.

In this ſenſe *benediction* differs from conſecration, as in the latter unction is applied, which is not in the former: Thus the chalice is conſecrated, and the pix bleſſed, as the former, not the latter, is anointed: Tho' in the common uſage theſe two words are applied promiſcuouſly.

The ſpirit of piety, or rather of ſuperſtition, has introduced into the Romiſh church *benedictions* for almoſt every thing.— We read of forms of *benediction* for wax-candles, for boughs, for aſhes, for church-veſſels, and ornaments; for flags or enſigns, arms, firſt fruits, houſes, ſhips, paſcal eggs, cilicium, or the hair-cloth of penitents, church-yards, *&c.* *Arnd.* Lex. Eccleſ. p. 816.

In general theſe *benedictions* are performed by aſperſions of holy water, ſigns of the croſs, and prayers ſuitable to the nature of the ceremony.

The forms of theſe *benedictions* are found in the Roman pontifical, in the Roman miſſal, in the book of eccleſiaſtical ceremonies, printed in pope Leo the 10th's time, and in the rituals and ceremonies of the different churches, which are found collected in father Martene's work, on the rites and diſcipline of the church.

BENEDICTION *of judgment*, *benedictio judiciorum*, denotes the office or ceremonies preparatory to the canonical purgations. *Du Cange*, Gloſſ. Lat. T. 1. p. 524.

BENEDICTION *of arms* was a ſort of public conſecration of the weapons, and enſigns, before the entring on a war, by a formula of words, and ceremonies appointed for that purpoſe. *Aquin.* Lex Mil. T. 1. p. 126. b.

BENEDICTIONALIS *liber*, an antient church book, containing the forms of the divers ſorts of *benedictions* given by biſhops, prieſts, *&c.* *Du Cange*, T. 1. p. 528. *Schmid.* Lex. Eccleſ. p. 93.

Such was the *benedictionalis liber* of Gregory the great, deſcribed by Lambecius.

BENEDICTUM, an epithet formerly given to lenient, or gently operating medicines; more eſpecially rhubarb. *Caſt.* Lex Med. p. 102.

In this ſenſe we find in ſome diſpenſatory writers, *benedictum laxativum*, uſed for lenitive electuary. Tho' in others, *benedicta laxativa*, or the bleſſed laxative, denotes another eaſy

purge, made up of turbith, diagrydium, ſpurges, hermodactyls, anis-ſeeds, fennel-ſeeds, ſal gemmæ, and honey. *Alleyn*, Diſpenſ. p. 272.

Schroder alſo gives the appellation *aqua benedicta* to his emetic; and Mynſicht does the ſame to his *aqua ſerpylli*, or water of wild thyme.

Some have called the philoſopher's ſtone *lapis benedictus*. *Caſtel.* Lex. ubi ſupra.

Vinum BENEDICTUM. See VINUM.

BENEFICE (*Cycl.*)—*Conſiſtorial* BENEFICES, in the French cuſtoms, are thoſe of royal foundation, which were elective before the concordat, and are now nominated by the king of France. *Fevret.* Tr. de l'Abus. l. 1. c. 8.

They are called conſiſtorial, by reaſon, on the king's nomination, they are to be propoſed in the papal conſiſtory, that is, in the congregation of cardinals, where the pope preſides.

To this claſs belong archbiſhopricks, biſhopricks, and abbies.

Theſe *benefices* were formerly elective; but by the concordat, which aboliſhed all elections, they are to be conferred by the pope, on the king's nomination. Annates are to be paid, and the pope's bulls obtained, for conſiſtorial *benefices*. Dict. Trev. T. 1. p. 976.

Non-conſiſtorial BENEFICES are either elective, or collative, or in patronage.

Elective BENEFICES are thoſe which are to be filled or ſupplied in the way of election; only this election to be confirmed by the proper ſuperior.

Collative BENEFICES are thoſe in the free diſpoſal of the collator, and which need no confirmation; provided the party have the qualifications required.

BENEFICES *in patronage* are thoſe which the collator is obliged to confer upon thoſe preſented by the patron.

BENEFICES *vacant in curia* are thoſe, whoſe incumbents or beneficiaries die *in curia*, that is, within ten leagues round Rome.

The pope confers all *benefices vacant in curia*, by virtue of a reſervation firſt introduced by pope Clement IV. Trev. Dict. ibid. p. 978.

The king of France gives no *benefices* to thoſe of other countries, but on condition of their obtaining from the pope a brief *de non vacando in curia*; after which, whether the perſon obtains or does not obtain ſuch brief, the *benefice* he is poſſeſſed of cannot be *vacant in curia*. In reality, the pope very rarely grants briefs *de non vacando*, except in behalf of cardinals, princes, &c.

Manual BENEFICE is that depending on an abby, and ſerved by a religious ſent thither, who is removeable at pleaſure by the ſuperior. *Corn.* Dict. des Arts, p. 105. Trev. ib. p. 977.

We alſo meet with *manual benefices*, *beneficia manualia*, uſed for thoſe, where the daily allowances of proviſions were only diſtributed to the reſidents. *Du Cange*, Gloſſ. Lat. p. 534.

Theſe are alſo denominated *victual benefices*, *beneficia victualia*.

BENEFICE is alſo uſed, in middle-age writers, for a fee, ſometimes denominated more peculiarly *beneficium militare*. *Calv.* Lex. Jur. p. 114. *Du Cange*, Gloſſ. Lat. T. 1. p. 1529.

In this ſenſe, *benefice* was an eſtate in land, at firſt granted for life only; ſo called, becauſe it was held *ex mero beneficio* of the donor; and the tenants were bound to ſwear fealty to the lord, and to ſerve him in the wars.

In after-times, as theſe tenures became perpetual and hereditary, they left their name of *beneficia* to the livings of the clergy; and retained to themſelves the name of *feuds*.

BENEFICIARII, in Roman antiquity, denote ſoldiers who attended the chief officers of the army, being exempted from other duty. *Horſl.* Britan. Rom. l. 2. c. 3. §. 80. p. 234.

Beneficiarii were alſo ſoldiers diſcharged from the military ſervice or duty, and provided with *beneficia* to ſubſiſt on. *Feſt.* de Verb. Signif. in voc. *Cæſ.* Bell. Civil. l. 4. c. 88. *Pitiſc.* Lex. Antiq. T. 1. p. 270. a.

Theſe were probably the ſame with the former, and both might be compriſed in the ſame definition. They were old, experienced ſoldiers, who having ſerved out their legal time, or received a diſcharge as a particular mark of honour, were invited again to the ſervice, where they were held in great eſteem, exempted from all military drudgery, and appointed to guard the ſtandard, &c. *Kenn.* Rom. Ant. P. 2. l. 4. c. 4. p. 189.

Theſe, when thus recalled to ſervice, were alſo denominated *evocati*; before their recal *emeriti*.

BENEFICIARII was alſo uſed for thoſe raiſed to a higher rank by the favour of the tribunes [a], or other magiſtrates [b].—[[a] *Veget.* l. 2. c. 7. [b] *Pitiſc.* Lex.]

The word *beneficiarius* frequently occurs in the Roman inſcriptions found in Britain, where *conſulis* is always joined with it; but beſides *beneficiarius conſulis*, we find in Gruter *beneficiarius tribuni*, *prætorii*, *legati*, *præfecti*, *proconſulis*, &c. *Ward.* ap. *Horſl.* ubi ſupra, p. 353.

BENEFICIARY, in a general ſenſe, ſomething that relates to benefices. See BENEFICE.

Rebuffe has collected ſix volumes on *beneficiary* matters. F. Paul has alſo a treatiſe on *beneficiary* matters.

BENEFICIARY, *beneficiarius*, is more particularly uſed for a beneficed perſon, or him who receives and enjoys one or more benefices.

Rowland gives a liſt of the *beneficiaries*, or beneficed clergy in the churches of Angleſey, from the time of Henry VIII. *Rowland*, Mona Antiq. p. 359.

A *beneficiary* is not the proprietor of the revenues of his church; he has only the adminiſtration of them, tho' unaccountable for the ſame to any, but God. Trev. Dict. p 980.

BENEFICIARY is more particularly uſed, among Roman writers, for a perſon exempt from public offices. *Calv.* Lex. Jur. p. 114.

In which ſenſe, *beneficiarii* ſtand contradiſtinguiſhed from *municipes*. See BENEFICIARII, ſupra.

BENEFICIARY is alſo uſed, in middle-age writers, for a feudatory or vaſſal.

BENEFICIARY is alſo uſed for a clerk or officer, who kept the account of the beneficia, and made the writings neceſſary thereto. *Pitiſc.* Lex. Ant. in voc.

The ſame denomination was alſo given to the officers who collected the rents and duties belonging to the fiſcus. *Pitiſc.* Lex. Ant. in voc.

BENEFICIUM, in military matters among the Romans, denoted a promotion to a higher rank, by the favour of ſome perſon in authority.

In this ſenſe alſo there was a *liber beneficiorum* in the times of the republic, wherein the governors of provinces, at their return to Rome, entered the tribunes, centurions, and other officers, whom they had preferred. *Pitiſc.* Lex. Ant. T. 1. p. 271.

The entry or report was called *ad ærrarium in beneficiis*.

BENEFIT is uſed for a privilege granted to ſome perſon, as of an immunity, or the like. *Pancirol.* Notit. Dign. c. 89. *Pitiſc.* Lex. Ant. *Calv.* Lex. p. 114. a.

BENEFIT *of ceſſion*, in the French law, is when a debtor is admitted to ſurrender all his effects to his creditors, and in conſequence thereof ſet at liberty. *Corneil.* Dict. T. 1. p. 105.

BENEFIT *of age*, in France, is when a minor obtains the king's letters, whereby he is emancipated, and impowered to manage his own income from eighteen years to his full majority.

BENENAIM, BENENATH, BENENASCH, or BENENAT, in aſtronomy, the outermoſt ſtar, of the ſecond magnitude, in the tail of the Great Bear. *Wolf.* Lex. Math. p. 216. Id. p. 32. See URSA *major*, *Cycl.*

This is ſometimes alſo called *Alalioth*.

Its longitude, according to Hevelius, for the year 1700, was 22° 39′ 24″, and it latitude 54° 25′ 7″ north. *Hevel.* Prodrom. Aſtrom. p. 306.

BENISH-*Days*, among the Egyptians, a term for three days of the week, which are days of leſs ceremony in religion than the other four, and have their name from the *beniſh*, a garment of common uſe, not of ceremony. In Cairo, on Sundays, Tueſdays, and Thurſdays, they go to the paſha's divan; and theſe are the general days of buſineſs. Fridays they ſtay at home, and go to their moſques at noon; but, tho' this is their day of devotion, they never abſtain from buſineſs. The three other days of the week are the *beniſh*-days, in which they throw off all buſineſs and ceremony, and go to their little ſummer-houſes in the country. *Pocock*'s Egypt.

BENLOJA, in ichthyology, the name by which the Swedes call that ſpecies of *cyprinus*, which we call the *bleak*. It is the *alburnus* of authors. See ALBURNUS and CYPRINUS.

BENOCTE, in botany, a name by which the French call the *caryophyllata*, or avens; called alſo by us *herb-bennet*. See CARYOPHYLLATA.

BENZOIN, or BENJAMIN (*Cycl.*)—Some recommend *benzoin* diſſolved in ſpirit of wine as a cephalic. It makes a tincture, commended for taking away freckles. It alſo enters the compoſition of ſome plaſters, as a diſcutient and ſtrengthener. *Quinc.* Diſp. P. 2. §. 4. n. 209. p. 111.

Pharmaceutic writers ſpeak of a water and tincture of *benzoin* drawn with the ſpirit of wine, ſaid to be good againſt aſthmas, &c. Flowers of *benzoin*, procured by ſublimation, are eſteemed a powerful pectoral. Spirit of *benzoin* is uſed as a diuretic; and oil of *benzoin* is accounted a good vulnerary. *Boerh.* New Meth. Chem. P. 3. p. 138. *Morl.* Collect. Chem. Leid. c. 92. p. 106, ſeq. *Quinc.* lib. cit. P. 2. p. 294, ſeq.

If two or three pounds of *benjamin* be diſtilled dry in a retort, with a mixture of a little ſand, there will ariſe ſpirit, oil, and flowers. This ſpirit being ſeparated from the reſt by filtration, and mixed with ſpirit of ſal armoniac, two parts of the ſpirit of *benjamin* to one part of the other, tho' both are ſeparately clear and colourleſs, the mixture will become red. Phil. Tranſ. N° 225.

BER, in botany, a name uſed by ſome authors for the Indian jujube; that ſpecies of the jujube-tree, on which the gum lacca of the ſhops is uſually found. *J. Bauhin*, Vol. 1. p. 44.

BERBENGINE, a name given by the Arabian phyſicians to the *pomum amoris*, or love-apple, a kind of eſculent nightſhade; and by ſome to a tree producing the nut *metel*, becauſe of its likeneſs to the plant which produces the *melongena* in the ſhape of its leaves.

BERBERII, in medicine. See PALSY.

BERBERIS, the *barberry-buſh*, in botany, the name of a genus of trees; the characters of which are theſe: the flower is of the roſaceous kind, being compoſed of ſeveral petals diſpoſed in a circular form: from the centre of the flower there ariſes a piſtil,

piſtil, which finally becomes a cylindric fruit, ſoft, full of juice, and containing one or two ſeeds.

The ſpecies of *barberry*, enumerated by Mr. Tournefort, are theſe:

1. The common *barberry*. 2. The *barberry* with no ſeeds in the fruit. And, 3. The Canada *barberry*, with very broad leaves. *Tourn.* Inſt. p. 614.

The propagation of this tree is deſcribed under the article *barberry*. See BARBERRY.

The *berberis* is a ſhrub, whoſe berries, as well as bark, are of medicinal uſe; known alſo by the name of *oxyacantha Galeni*.

Its berry is red, and oblong, of an agreeable, cooling, aſtringent taſte, chiefly uſed in the way of conſerve; where it quenches thirſt, ſtrengthens the ſtomach, and is good againſt diarrhæas and dyſenteries. We alſo read of a ſyrup, eſſential ſalt, and lozenges, made of the juice of the *barberry*. *Junck.* Conſp. Therap. tab. 13. p. 368. *Lemer.* Dict. des Drog. p. 121. *Burggr.* Lex. Med. p. 1543, ſeq.

The bark, on the contrary, is opening and deterſive; and, though rarely found in diſpenſatory compoſitions, is much uſed in common preſcriptions, as well as in medicated ales, againſt the jaundice, and other diſtempers from obſtructions and foulneſſes of the viſcera. *Quinc.* Diſp. P. 2. §. 4. n. 291. p. 130. See BARBERRY.

BERCARIA, BERQUERIA, or BERKERIA, in middle age writers, denotes a ſheep-fold, ſheep-cote, ſheep-pen, or other incloſure, for the ſafe-keeping a flock of ſheep. *Kennet*, Gloſſ. ad Paroch. Antiq. in voc. *Du Cange*, Gloſſ. Lat. T. 1. p. 537. *Spelm.* Gloſſ. p. 79.

The word is abbreviated from *berbicaria*, of *berbex*, detorted from *vervex*. Hence alſo a ſhepherd was denominated *berbicarius*, and *berquarius*.

BERDIN, in natural hiſtory, a name given to the *patella*, or limpet, in Normandy, and other places. In ſome it is ſpoke *berlin*. See PATELLA.

BERENGARIANISM, a name given by eccleſiaſtical writers to the opinion of thoſe, who deny the truth and reality of the body and blood of Chriſt in the euchariſt. *Sagittar.* Introd. Hiſt. Eccleſ. c. 31. §. 16.

The denomination took its riſe from Berengarius, archdeacon and ſcholiaſticus of the church of St. Mary at Anjou about the year 1035, who maintained, that the bread and wine, even after conſecration, do not become the true body and blood of our Lord, but only a figure and ſign thereof. *Tribbech.* de Doctor. Scolaſt. c. 1. p. 20. 33.

Berengarianiſm was ſtrenuouſly oppoſed by Lanfranc, Guitmond, Adelmannus, Albericus, *&c.* Divers ſynods were held, wherein the author was condemned at Rome, Verſailles, Florence, Tours, *&c.* He retracted, and returned again more than once, ſigned three ſeveral catholic confeſſions of faith; the firſt in the ſecond council of Rome; the ſecond in the third; and the third in the fourth council of the ſame city. But he ſtill relapſed to his former opinion when the ſtorm was over; tho' Mabillon maintains he ſoon recovered from his fourth fall, and died an orthodox catholic in 1088. Hen. Muller, profeſſor of Roſtoc, has given the hiſtory of *berengarianiſm* antient and modern, printed at Roſtoc, 1674. *Schmid.* Supp. ad Sagittar. §. 1. c. 31. p. 670.

Mabillon has a diſſertation expreſs on the manifold condemnation of Berengarius, his retractions, relapſes, and repentance. Ext. ap. Veter. Analat. T. 2. p. 268, ſeq. & ap. *Vogt.* Bibl. Hiſt. Hæreſ. p. 99, ſeq. *Le Long.* Bibl. Hiſt. l. 2. c. 5. art. 1. p. 74.

BEREWICHA, or BEREWICA, in our old writers, denotes a village or hamlet belonging to ſome town or manor, ſituate at a diſtance therefrom. *Spelm.* Gloſſ. p. 79.

The word frequently occurs in doomſday-book: *Iſtæ ſunt berewichæ ejuſdem manerii.*

BERFISCH, in ichthyology, a name given by the Germans to the common pearch.

BERG-*gruen*, in natural hiſtory, the name of an earth uſed in painting, and properly called *green ockre*, though not known among the colourmen under that name. It is found in many parts of Germany, Italy, and England, commonly in the neighbourhood of copper-mines, from particles of which metal it receives its colour. In many parts of Germany, they have a purer kind of this, diſtinguiſhed by no peculiar name, but ſeparated by art from the waters draining from the copper-mines, and differing no otherwiſe from this native ſubſtance, than as the waſhed ockres of Oxfordſhire, *&c.* do from theſe ſent us in their natural condition. The characters by which the native kind is known from other green earths, are theſe: it is a denſe, compact ſubſtance, conſiderably heavy, and of a pale, but not diſagreeable green; of a rough and uneven, but not duſty ſurface, and ſomewhat unctuous to the touch. It adheres firmly to the tongue; does not break eaſily between the fingers; nor at all ſtain the hands. It is of a brackiſh diſagreeable taſte, and does not ferment with acids. *Hill*, Hiſt. of Foſſils, p. 65.

BERGANDER, in zoology, a name by which ſome have called the ſhell-drake, or burrough-duck, a very beautiful ſpecies of duck, common on the coaſts of Lancaſhire; but not much eſteemed for eantig, called *tadoma*. *Aldrovand.* de Avib. See the article TADOMA.

BERIBERI, the name of a diſeaſe among the Indians, being a ſpecies of palſy. See PALSY.

BERICARIA, BERCARIA, or BERQUARIA, a ſheep down, or ground whereon to feed ſheep. *Alfred.* Leg. c. 9. *Dugd.* Monaſt. T. 1. p. 308. *Du Cange*, Gloſſ. Lat. T. 1. p. 536. See BERCARIA.

BERITH, a ſimple mentioned in ſcripture, uſed for cleanſing or taking out ſpots. *Jerem.* c. 2. v. 22.

Critics are divided concerning the *berith*: ſome will have it the *kali*, or ſalt wort, of whoſe aſhes ſoap is made; whence, in our verſion, it is rendered by ſoap. *Calmet*, Comm. ad Jerem. loc. cit. Ejuſd. Dict. Bibl. T. 1. p. 322.

Others, after Rudbeck, make the *berith* to be the dye of the purple-fiſh. *Rudbeck*, in Act. Suec. T. 1. p. 303 & 335. It. Mem. de Trev. Jan. 1734. p. 151.

Michaelis, Rudbeck, and Langius, have written expreſly on the *berith*.

BERLIN, in natural hiſtory, a name given to the *patella*, or limpet, in Normandy, and ſome other places. Some alſo ſpeak it *berdin*. See PATELLA.

BERLUCCIO, in zoology, the name of a ſmall bird of the *hortulanus* kind, and much reſembling the *yellow-hammer*; but ſomething ſmaller, and longer bodied. The tubercle on the beak is much ſmaller than in the *yellow-hammer*. Its throat and breaſt are grey; its belly of a rediſh brown; its rump rediſh; and its head greyiſh, with an admixture of browniſh black, and of greeniſh. In the male, the rump is greeniſh. It is common in Italy. *Ray*, Ornithol. p. 197.

BERMUDIANA, in botany, the name of a genus of plants; the characters of which are theſe: the flower is of the liliaceous kind, and is compoſed of ſix petals; and its cup finally becomes a fruit of the trigonal form, divided into three cells, and containing a number of roundiſh ſeeds.

The ſpecies of *bermudiana*, enumerated by Mr. Tournefort, are theſe:

1. The *bermudiana* with iris-leaves, and a fibroſe root. 2. The *bermudiana* with palm-like leaves, and a bulbous root. Theſe plants were, when firſt known in Europe, improperly called *ſiſyrinchiums*. *Tourn.* Inſt. p. 387.

BERNHARDIA, in botany, a name given by Houſton to a genus of plants, characterized by Linnæus under the name of *croton*. See CROTON.

BERNICLA, the *barnacle*, in zoology, the name of a ſpecies of gooſe, frequent on the coaſt of Lancaſhire in the winter-ſeaſon, and of about half the bigneſs of the common gooſe. The beak is black, and much ſhorter than in the common gooſe. The neck is all over black; the breaſt and belly of a greyiſh white; and the lower feathers of the thighs black; and the back is motled with black and grey. See BARNACLE, *Cycl.*

It has been ſuppoſed by many, that the *barnacle* and brent-gooſe were the ſame ſpecies of bird, only the one the male, and the other the female. But this appears to be by no means the caſe; and it is very improper to uſe the two words as ſynonymous terms. There has been an old opinion, that theſe birds were produced out of ſhells found on old trees lying in the ſea; and very grave authors, as Gerard, and the reſt, have avouched the truth of it from their own eye-ſight; but this is too idle and fabulous to need refutation. *Ray*, Ornithol. p 273.

BERNICLE, in natural hiſtory, the name of a ſpecies of ſhell-fiſh, called by authors *concha anatifera*. See ANATIFERA.

This is compoſed of five ſhells or valves, and agrees, according to Liſter, with the *pholas*, as well in the diſpoſition as in the number of theſe valves. There are two large ones: to each of theſe is affixed one ſmaller; and there is a fifth, which is a ſingle, narrow valve, crooked, and very long, ſo formed, as to cover the ſpace left between the four others, when they cloſe, and wholly hide the joining. The ſhape of the ſhell is triangular, and flat; and its colour is a mixture of whitiſh red, and a bluiſh tinge. It is radiated longitudinally. Its pedicle or trunk is formed like the proboſcis of ſome inſects, and has ſeveral folds, by means of which it may be lengthened or contracted at pleaſure by the animal. This is the organ by which the fiſh takes in its nouriſhment, and, by means of this, it affixes itſelf to any thing it pleaſes. This trunk is of a brown colour, and in ſome degree tranſparent, and repreſents an inteſtine of ſome animal. It is hollow, and uſually filled with a mucous liquor of an inſipid taſte. This trunk is compoſed of two membranes; one an external one, of a rough ſurface and cartilaginous texture; this is what ſerves to affix the animal to the bottoms of ſhips, or whatever elſe it adheres to; and the other, or internal one, is very thin and fine. It is of a yellowiſh red colour, and forms at the end a bag, which receives or covers the whole body of the fiſh. When the body is opened, the nervous junctures, by means of which the large pieces of the ſhell are joined, and can open or ſhut at pleaſure, as in the bivalves, are eaſily ſeen. The parts of generation are alſo very obvious: they are ſituated near the mouth. There are fourteen arms, which iſſue out of the ſhell at pleaſure; and in the midſt of theſe is the mouth: theſe are each divided into two, and are of a brown colour, and plumoſe, or having a reſemblance of feathers. *Liſt.* Hiſt. Nat. p. 360.

BERNICLE is also a name given by the people of many parts of France to the *patella*, or limpet. See PATELLA.

BERRY (*Cycl.*)—Some define *berries* as a fruit smaller than apples, growing in bunches, but not so thick or close as grapes [a]. Others a soft, fleshy, succulent fruit, having stones or kernels within them [b].—[[a] *Cast.* Lex. Med. p. 97. a. [b] Trev. Dict. Univ. T. 1. p. 936.]

Such are the fruits of laurels, olives, currants, and the like.

French BERRY, *graine d'Avignon*, or *graine jaune*, is the fruit of a shrub called by the antients *lycium* and *pizacanta*, frequent about Avignon, and in the south parts of France; of considerable use among dyers and illuminers for a yellow colour. See LYCIUM.

The shrub grows in a rough, stony soil. Its branches are beset with prickles two or three feet long: its bark is blackish; its leaf small and thick, like that of box; but disposed like that of myrtle: its root yellow and woody: its *berry* is green, bordering on yellow, of the size of a grain of wheat, bitter and astringent to the taste. *Savar.* Dict. Comm. T. 2. p. 260, seq.

For the true *French berry* is frequently substituted another sort, called *berries of Noirprun*, or *Nerprun*, produced also about Avignon; which being steeped in water while green, yield a tolerable yellow colour. Id. ibid. p. 872.

Fishing BERRIES, *baccæ piscatoriæ*, a denomination given to the *cocculæ indicæ*, made by poachers into a paste, and crumbled small, like *berries*, wherewith they intoxicate fish; so that they may be taken with the hand. *Quinc.* Dispens. P. 2. §. 10. p. 492.

BERS, in antient medicine, an electuary used by the Egyptians to excite deliriums: the description whereof is given by Prosper Alpinus, de Medic. Egypt. l. 4. c. 122. a. *Cast.* Lex. Med. p. 102. b.

BERSARII, in writers of the middle age, a kind of hunters or sportsmen, who pursued wild beasts in forests and chaces. *Du Cange*, Gloss. Lat. T. 1. p. 541.

The word seems derived from the barbarous Latin *berfare*, to shoot with a bow [a]. On which principle, it should properly denote archers only, or bowmen. Or it might be derived from *berfa*, the fence or pales of a park [b]. In which view, it should primarily import those who hunt or poach in parks or forests.—[[a] *Menage*, p. 95. voc. *berfer*. [b] *Spelm.* Gloss. p. 80. *Du Cange*, lib. cit. voc. *berfa*.]

Hincmar speaks of a kind of inferior officers in the court of Charlemaign, under the denomination of *berfarii*, *veltrarii*, and *beverarii* [c]. Spelman takes the first to denote those who hunted the wolf; the second those who had the superintendency of the hounds for that use; and the third those who hunted the beaver [d].—[[c] *Hincm.* Epist. 3. c. 17. [d] *Spelm.* Gloss. p. 80.]

BERSE, in botany, the name given by the French writers to the *sphondylium*, or cow-parsnep, a species of umbelliferous plants common in our meadows, and known by its large rough leaves and remarkable height. See SPHONDYLIUM.

BERTH, in the sea-language, denotes a convenient distance or room to moor a ship in. *Manw.* Dict. p. 8. *Skinn.* in voc.

To take a good BERTH, signifies to go a pretty distance off to sea-board off any point, rock, or other thing they would go clear of. Id. ibid.

BERTHING, in the sea-language, denotes the raising or bringing up of ship-sides. Thus they say, a clincher hath her sides *berthed* up before any beam is put into her. *Manw.* Sea Dict. p. 8.

BERTONA, BERTONIA, BERTHONA, BERTON, or BARTON, properly denotes that part of a country farm, where the barns and other inferior offices stand, and wherein the cattle are foddered, and other business is managed. See Claus. 32. Ed. 1. m. 17. *Spelm.* p. 80.

BARTON is also used to signify a farm, as distinct from a manor. *Du Cange*, T. 1. p. 542.

In some parts of the west of England, they call a great farm a *berton*; and a small one a *living*. *Jac.* Law Dict. in voc.

Hence also *bertonarii* was antiently used for those we now call farmers, or tenants of *bartons*.

BERULA, in botany, a name given by some authors to the common upright water-parsnep, or *sium erectum umbellatum*. *Dale*, Pharmac. p. 125.

BERY, BERIA, or BERIE, in middle-age writers, denote a flat, wide campaign. *Du Cange*, T. 1. p. 538. *Spelm.* Gloss. p. 80.

In which sense, the word differs from *bury* or *borough*, a town, tho' usually confounded therewith by glossographers.

Hence *Beria S. Edmundi*, mentioned by Matt. Paris under the year 1174, is not to be understood of the town, but the adjoining plain.—And hence the denomination *bery-field*, and *bery-meadow*, is still retained to divers flat and wide meads, and open grounds. Hence also *berras assartare* is to dry or plow up heaths or downs. And hence our warrens are called *coney-berries*. *Kenn.* Gloss. ad Paroch. Antiq. in voc.

Bery is either used separately, or in composition with the names of divers places; as *Mixbery*, *Acornbery*, &c.

BERYL, (*Cycl.*) in natural history, the name of a fine pellucid gem, of a sea-green or bluish green. This is very plainly the same stone that the antients called the *beryl*; and the more accurate later writers have called it by that name, tho' our jewellers have learned of the Italians to call it the *aqua marina*. The antients, however, according to Pliny, took in several other of the gems, when of pale, diluted colours. The later writers have more accurately kept up to the characters of the gem, and taken in no other kind under the name. But our lapidaries, however, are more than even with the antients; for they call by this name not only a peculiar kind of crystal, described under the name of *beryl* crystal, but the purer and brighter oriental cornelian.

The *beryl*, or *aqua marina*, when pure and perfect, is a very beautiful gem; but it is at present not greatly esteemed. It is found in various shapes and sizes; but seems never to be found so very small as many other of the gems: the size of a hemp-seed is the smallest commonly met with; and the third of an inch may be esteemed the common size of the larger. It is sometimes found in form of a small and very irregularly shaped pebble, somewhat approaching to a rounded or oblong figure; but full of small, flat faces irregularly disposed: but its more usual appearance is the form of crystal, being found in hexangular columns, terminated by hexangular pyramids standing in clusters on the surfaces of rocks, or in the fissures of the strata of stone. It is ever of a bright and naturally-polished surface, and is of a mixed colour of blue and green, making together what we call a sea-water colour. It has this colour in all degrees, from a very deep and dusky hue to the paleness of water; but never has the least tinge of any other colour. The stones described by authors under the names of *chrysoberylli*, as having a mixture of yellow in their tinge, are properly another gem of the *prasius* kind, they not having the least tinge of blue among the green, nor at all resembling the sea-water in colour.

The *beryl*, in its finest state, approaches to the hardness of the garnet; but it is often much softer, and consequently of the less value. There is, however, a common error which gives our jewellers an idea of this, and other of our gems, being much softer than they really are, which is, the mistaking the common tinged crystals, frequent in mines, and called by authors *pseudoberyllus*, &c. for the genuine gems of those names. It is easy to conceive these cannot be any harder, and it is natural enough to suspect they cannot be so hard as crystal in its common colourless state.

The *beryl* parts with its colour in a very small fire; but is, when colourless, greatly inferior to the amethyst or sapphire. It is found in great abundance in the island of Ceylon, and in many other parts of the East Indies, as also in America: many of them are found also in Silesia, and some other parts of Europe; but in this, as in all other gems, the oriental are vastly superior to those of any other part of the world in hardness, as well as in lustre, and the beauty of their colour. *Hill*'s Hist. Fossil. p. 595.

Gorræus gives a list of eight sort of *beryls*, distinguished only by the diversity of their colour. *Cast.* Lex. Med.

Mr. Boyle also speaks of a white kind of *beryl*. Phil. Work. abridg. T. 3. p. 108.

The vulgate and the septuagint call the eighth stone belonging to the high-priest's pectoral, *beryl*; but the Hebrew, *jaspbe*. *Calmet.* Dict. Bibl. T. 1. p. 283.

BERYL is also a name given by several of our jewellers to a species of brown sprig crystal, with a remarkably long pyramid, called by Mr. Hill *ellipomacrostylum lucidum fuscum*, *pyramide longissima*, *maxime irregulari*.

This is the brightest of all the brown crystals, and is essentially different from the species commonly known by that name. It is found in Italy, and some parts of Germany. The Italians call it, by way of eminence, the *beryl crystal*; but our jewellers drop the word crystal, and call it simply the *beryl*. Hence it had, a few years ago, generally prevailed in London, that this was the *beryl*, or proper gem of that name; and every jeweller, being willing not to be without the *beryl*, and this species of crystal not being very common, any other tolerably clear brown crystal was cut, to supply its place; and good brown crystal was generally accounted the *beryl* of the antients. Nor was the error confined to London alone: for De Boot accuses his countrymen of ignorance on the same occasion. *Hill*, Hist. of Foss. p. 178.

BERYL, *berillus*, is also a name given to a kind of crystal looking-glass, superstitiously consecrated to the purposes of conjuring and divination.

Hence also the term *berillystica*, used for the mysterious art of seeing future or distant events in such glasses. *Ruland.* Lex. Alch. in voc. *berillus*.

BERYTIUM, βηρύτιον, in the antient physic, an opthalmic medicine or collyrium, invented by Berytius against the severest epiphoras. See its description in *Galen*, l. 4. de Compos. Medic. c. 7.

The same denomination is also given to a sort of pastil, of use in dysenteries. Vid. *Gal.* l. 9. c. 5. *Gorr.* Med. Defin. p. 74.

BES (*Cycl.*)—The *bes* originally weighed two asses; whence the origin of the word *quasi binus as*. Though Scaliger conjectures it to have been formed from *dues*; as *bellum* from *duellum*, or *bonum* from *duonum*. *Beverin.* Synt. de Ponder. p. 37.

BES was also used in the mensuration of lands, to denote $\frac{8}{12}$ of a *jugerum*, or acre. *Columel.* l. 5. c. 1. *Fab.* Thes. p. 349.

BESAILE, in the common law, a writ that lies where the great-grandfather was ſeiſed the day that he died of any lands or tenements in fee-ſimple; and after his death, a ſtranger entered the ſame upon him, and keeps out the heir. F. N. B. 222. *Terms of Law. Blount.*

The word is French, *beſaile*, or *biſayeul*, a great-grandfather.

BESANT (*Cycl.*)—Some repreſent the *beſant* as equivalent to the *ſolidus aureus* of Conſtantinople Ragueau makes it equal to fifty French ſols; though, in ſeveral feudal inſtruments, it is only rated at twenty ſols. *Paul. Mantiſſ.* ad Beverin. p. 231, ſeq.

The ranſom of St. Louis, according to Joinville, was two hundred thouſand *beſants*, which amounted to five hundred thouſand livres.

Thirteen *beſants*, or *beſantins*, are preſented at the maſs at the coronation of the kings of France. Henry II. had that number coined on purpoſe. *Corn.* Dict. des Arts, p. 107. Trev. Dict. Univ. T. 1. p. 998.

Divers conjectures have been formed by antiquaries concerning the reaſon of a foreign coin's being uſed by kings of France on ſuch occaſions: ſome ſuppoſe, that this uſage was introduced at the time when no gold coin was ſtruck in theſe parts; but this will ſcarce hold, in regard we find mention of ſeveral gold coins from the time of Hugh Capet. Le Blanc rather imagines, that the name *beſant* was antiently given to all gold coin, as that of *florin* was afterwards given to all ſpecies of gold, though not ſtruck at Florence. What ſeems to confirm this ſentiment is, that the Saracens called their gold money *beſant*, though not coined at Conſtantinople. Trev. Dict. Univ. loc. cit.

BESANTS, or BEZANTS, in heraldry, are repreſentations of round, flat pieces of money or bullion, without ſtamp or impreſs, introduced into coat-armour by thoſe who were at the holy war.

Beſants are ever of metal, and when blazoned, ſhould be expreſly ſaid to be of *or*, or *argent*. The Engliſh heraldry knows only the gold; but foreigners have alſo the ſilver kind.

When a field or charge contains above eight *bezants*, ſo placed as to fill the ſame equally on all ſides, and repreſenting a promiſcuous ſtrewing of pieces over the whole. Some blazon the field or charge *bezanted*, *bezantée*: but if there be ten, twelve, fifteen, or more, confined to any particular form or poſition, the number and form muſt be particularly mentioned. *Coats*, Herald. Dict. p. 49, ſeq.

Croſs BESANTED, *bezantée*, denotes a croſs made up of *beſants*, or pieces of money. *Coats*, ibid. p. 50.

This amounts to the ſame with what Upton calls a *croſs talented*, *crux talentata*, or made up of talents.

BESBASE, in the materia medica, a name given by the Arabian writers Serapio and Aviſenna to mace; but as the names *macis* and *macir* are very much alike in ſound, though different in ſenſe, they have confounded theſe two things under the ſame term *besbaſe*; the one meaning the covering of the nutmeg, and the other the bark of a tree uſed as an aſtringent; ſo that this word *beſbaſe* is to be underſtood as meaning the one or the other of theſe, according to the virtues aſcribed to it.

BESD, a term often uſed by Arabian writers for the plant called *margina*. See MARGINA.

BESLERIA, in botany, the name given by Plumier, and afterwards Linnæus, to a genus of plants; the characters of which are theſe: the perianthium is erect, and lax, and conſiſts of one leaf, divided into five ſharp ſegments: the flower conſiſts of one petal, and is of the ringent kind: the tube is cylindric, and of the length of the cup; and its verge is divided into five unequal ſegments, the loweſt being the largeſt, and the others all larger than the upper two: the ſtamina are four filaments, two of which are ſomewhat longer than the other two; and they are all placed within the tube of the flower: the antheræ are ſmall: the germen of the piſtil is oval: the ſtyle is ſubulated, and very ſmall: the ſtigma is acute: the fruit is a globoſe berry, having only one cell, in which is contained a great number of roundiſh and very ſmall ſeeds. *Linnæi*, Gen. Plant p. 296. *Plumier*, p. 5.

BESSIS (*Cycl.*)—BESSIS *centeſimæ*, denotes two-thirds of centeſimal intereſt, or uſury at eight *per cent*. *Bingh.* Orig. Eccleſ. l. 6. c. 2. §. 1. 6.

BESTARCHA, a dignity in the courts of the emperors of Conſtantinople, ſuppoſed to anſwer to that of maſter of the wardrobe among us. *Aquin.* Lex. Milit. T. 1. p. 128.

The word *beſtarcha* ſeems to have been formed from *veſtarcha*, by a change of the *v* into *b*.

BETA, the *beet*, in botany. See BEET.

BETEL, in botany, an Indian plant, in great uſe and eſteem throughout the Eaſt, where it makes a conſiderable article of commerce.

The *betel* bears ſome reſemblance to the pepper tree. Its leaves are like thoſe of ivy, only ſofter, and full of a red juice, which, among the Orientals, is reputed of wonderful virtue for fortifying the teeth, and rendering the breath ſweet. The Indians are continually chewing theſe leaves, which renders their lips ſo red, and teeth black, a colour by them vaſtly preferred to the whiteneſs affected by the Europeans.

The conſumption of *betel* leaves is incredible, no body, rich or poor, being without their box of *betel*, which they preſent to each other by way of civility, as we do ſnuff. *Savar.* Dict. Comm. T. 1. p. 324. See BETLE.

BETH, in literary hiſtory, makes the title of a multitude of books in the Hebrew language; *e. gr. beth avoth*, or the houſe of the fathers; *beth Elohim*, or the houſe of God; *beth Iſrael*, or the houſe of Iſrael, &c. *Wolf*, Bibl. Hebr. T. 2. l. 8. p. 1268.

BETHLEHEMITES, or BETHLEMITES, in church hiſtory, a ſort of monks antiently in England, habited like the dominicans, except that, on their breaſt, they wore a ſtar with five rays, in memory of the ſtar or comet which appeared over Bethlehem at the nativity of our Saviour. *Matth. Par.* ann. 1257. *Du Cange*, Gloſſ. Lat. T. 1. p. 543.

There is alſo an order of *bethlehemites* ſtill ſubſiſting in Peru, who have convents at Lima; one called of the incurables, the other of our lady of mount Carmel.

Theſe *bethlehemites* came originally from the city of Guatimala in Mexico, where they were inſtituted by the venerable Peter Joſeph of Betaneur for the ſervice of the poor. Innocent XI. in 1697, approved the inſtitute. They have already nine convents in Peru.

The *bethlemites*, though outwardly of great ſimplicity, paſs for the moſt refined politicians; inſomuch as to be called the quinteſſence of the carmelites and jeſuits. They are all friars. For their almoner they chuſe a ſecular prieſt, whom they hire, and who has no vote in the chapter. They are cloathed like the capuchins, except that, under the chin, they wear a bib point-wiſe, a quarter of an ell in length. Their founder is ſaid to have been accompanied eleven years by our Saviour, bearing his croſs viſibly. The other apparitions and revelations they aſcribe to him are of the ſame importance. *Fabric.* Lux. Evangel. c. 49. p. 780.

BETLE, in botany, a plant of the ſcandent kind, much celebrated in the Eaſt Indies. The leaves are the part in uſe, and are eſteemed beſt when full-grown, and of a yelloviſh colour. In the Molucca iſlands, the *betle* bears a kind of fruit wreathed like a lizard's tail; and this is eaten by the inhabitants, and is of a very agreeable taſte. The natives plant it as we do vines, and place props and ſupports for it to run and climb upon; and it is a common practice to plant it againſt the tree which bears the areca-nut. It grows naturally wild on all the ſea-coaſts of the Eaſt Indies; but is not found in the inland places, unleſs it has been planted there. Some authors have confounded the *betle* with the *malabathrum*, but they are extremely different, the malabathrum being the leaf of a tall and large tree. *Garcias*, Hiſt. Ind.

Betle is chewed by all the people of the Eaſt Indies, as tobacco is by many in Europe; but it is not uſed alone, but mixed with calcined ſhells, lime, the Indian-nut, and other cheap ingredients, by the meaner ſort, and by the rich with camphire, aloes-wood, musk, and ambergreaſe. Thus prepared, it is of an agreeable taſte, and gives a ſweetneſs to the breath. *Bont.* Med. Ind.

In many places they chew the areca nut, either alone or mixt with the *betle* leaf and lime, and the leaves of this plant are ſometimes chewed alone; but they are too ſharp, and uſually injure the teeth, and it is not uncommon to find men of twenty-five wholly toothleſs in this part of the world, merely from their having chewed this plant to an exceſſive degree. The prepared *betle* is a very common preſent among the poorer ſort; and, on taking leave of a friend, it is always the cuſtom to make him a preſent of a purſe of the leaves prepared for uſe. When the poorer ſort are to appear before the rich, they always chew a large quantity of *betle*, to give them a ſweet breath; and the women, on certain occaſions, never fail to take largely of it as a provocative. On all viſits, the company is regaled with prepared *betle*. The principal time of uſing it is after dinner, at which time, they ſay, it prevents ſickneſs of the ſtomach; and they never abſtain from it, except on the ſolemn occaſions of the funerals of their relations, and their days of faſting.

Moderately uſed, it ſtrengthens the gums, corroborates the heart and ſtomach, diſcuſſes flatulencies, and purges both the ſtomach and brain. If chewed after breakfaſt, it makes the breath ſweet for the whole day. The Portugueſe women are as fond of the *betle* as the Indians themſelves, and cannot live a day without it. *Ray*, Hiſt. Plant.

BETONY, *betonica*, in botany, the name of a genus of plants; the characters of which are theſe: the flower conſiſts of one leaf, and is of the labiated kind: the upper lip is erect, imbricated, and bifid; and the lower is divided into three ſegments, the middle one being larger than the reſt, and bifid: the piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower: this is ſurrounded by four embryos, which afterwards become as many ſeeds, of an oblong form, to which the flower-cup ſerves as a capſule. The flowers of *betony* uſually grow verticillately in ſhort ſpikes on the tops of the ſtalks.

The ſpecies of *betony*, enumerated by Mr. Tournefort, are theſe:

1. The common purple flower'd *betony*. 2. The beautiful red-flower'd *betony*. 3. The white-flower'd *betony*. 4. The great Daniſh *betony*. 5. The ſmall mountain *betony* of Helvetia. 6. The yellow-flower'd, great, broad-leav'd, hairy, alpine *betony*. 7. The annual field *betony*, with yelloviſh white flowers,

flowers, call'd by many the ſmooth field *ſideritis*; and, 8. The pale, yellow-flower'd ſea-*betony*, call'd alſo by many a ſpecies of *ſideritis*.

Pliny tells us, that *betonica* was only the name given by the Gauls to the plant call'd in Italy *ſerrata*; which, by all deſcriptions left us of it, appears to have been the ſame with our *ſerratula*, or ſaw-wort, having deeply ſinuated leaves indented about the edges. Some authors have indeed attributed to it leaves like thoſe of the dock; but this ariſes from the ſtrange error of confounding it with the *britannica* of the antients, which was no other than our great water-dock. The commentator on the ſynonymous words of Dioſcorides has given *betonica* and *britannica*, as meaning the ſame plant, tho' their whole deſcription is different in that author, and their virtues wholly different, and nothing at all alike in them but the ſound of their names. Dioſcorides ſays, that the *betonica*, or *ceſtrum*, as he calls it, has leaves ſinuated and notch'd, and that the *britannica* has leaves like the great docks; yet authors have contriv'd ſince to apply theſe two characters to the ſame plant, and Neophytus has made a long Greek deſcription for his *bętonice*, containing all that this author has ſaid of this plant, and all that ſeveral others have ſaid, either of the *britannica* or *betonica*; for he ſets out with the error of ſuppoſing them the ſame, and has on the whole given an account more unintelligible, by reaſon of its length, than the generality of the accounts we have from the Greeks are, by reaſon of their ſhortneſs.

Betony is a medicinal plant, eſteemed a good cephalic, vulnerary, cardiac, diuretic, and dryer. Some alſo make *betony* a good ſplenetic, hepatic, thoracic, uterine, and what not.

The Italians, when they would praiſe any body, ſay, *tu hai piu di virtu che non ha betonica*; that is, you have more virtues than *betony*; and proverbially deſire, *vende la tunica & compra la betonica*; that is, ſell your coat and buy *betony*. *Ray*, Syn. Stirp Brit p. 127. *Mathiol.* ad *Dioſcor.* l. 4. c. 1.

Ant. Muſa, phyſician of the emperor Auguſtus, wrote a treatiſe expreſs, *de betonica*, ſtill extant [a]. Wherein he commends it greatly as a vulnerary, eſpecially in wounds of the head, and enumerates its uſes in the cure of no leſs than forty-ſeven diſeaſes [b].—[[a] It was printed with other writers de re medica, at Baſil, 1528. and again, with Apulæi Herbarium, Tigur. 1537. [b] Vid. *Fabric.* Bibl. Lat. T. 2. l. 3. c. 2. p. 25. *Burggr.* Lex Med. T. 1. p. 1554. ſeq.]

Betony is chiefly adminiſtred in the way of decoction, ſometimes of ſmoak, ſometimes as an ingredient of a cerat or plaiſter, hence called *emplaſtrum de betonica*. Some alſo give its juice boiled to the conſiſtence of honey, mixed with a little balſam of Peru, as a pectoral healer. *Quinc.* Diſpenſ. P. 2. §. 1. n. 1. p. 70.

Foreign diſpenſaries alſo give the preparations of a *betony* water, a ſyrup, conſerve, and extract of *betony*. Vid. *Junck.* Conſp. Therap. tab. 6. p. 238. and *Burrg.* p. 1553.

BETONICA *Pauli*, in botany, a name given by many to ſome of the ſpecies of the *veronica*, or ſpeedwell. See the article VERONICA.

BETROTHMENT, a mutual promiſe or compact between two parties, for a future marriage. Vid. *Walc.* Introd. Phil. l. 2. c. 6. §. 90.

The word imports as much as giving one's troth; that is, true faith, or promiſe. Vid. *Skin.* Etym. in voc.

Betrothment amounts to the ſame with what is called by civilians and canoniſts *ſponſalia*, or *eſpouſals*; ſometimes *deſponſation*; and, by the French, *fiançailles*. *Trev.* Dict. Univ. T. 2. p. 1780.

Betrothment is either ſolemn, made in the face of the church, or private, made before witneſſes out of the church. Trev. Dict. Univ. ubi ſupr.

To betroth by giving arrhæ, or earneſt, is called in middle-age writers *ſubbarrare*. *Du Cange*, T. 4. p. 982.

The nuns of the annunciada, hold an annual feaſt, in honour of the deſponſation, or *betrothment* of the holy virgin to Joſeph. Trev. Dict. Univ. T. 2. p. 704.

BETULA, the *birch-tree*, in botany. See BIRCH.

BEVEL (*Cycl.*)—The *bevel* anſwers, in good meaſure, to the French *fauſſe equerre*, *ſauterelle*, and *angle* [a]. Divers forms of which are deſcribed by Bion [b].—[[a] Vid. *Ozan.* Dict. Math. p. 29. [b] Trait. des Inſtrum. Mathemat. l. 4. c. 3. *Wolf.* Lex. Math. p. 620.]

Bricklayers have alſo a *bevel*, by which they cut the under ſides of the bricks of arches ſtreight or circular, to ſuch oblique angles as the arches require, and alſo for other uſes. *Moxon.* Mechan. Exerc. p. 245.

Graduated BEVEL is that which has about the center of one of its arms a ſemicircle graven, and divided into 180 degrees, whoſe diameter ſtands ſquare with the ſides of the ſame arm; ſo that the end of the other arm, being divided at right angles, almoſt to the centre, ſhews by its motion the number of degrees contained in the angle to be meaſured. *Davil.* Archit. p. 849.

This is alſo called *recipiangle*, and *pantametre*.

BEVERAGE, in a general ſenſe, ſignifies a drink. Hence nectar is ſaid to be the *beverage* of the Gods. In writers of the middle age, *beverage*, *beveragium*, or *biberagium*, denotes money given to an artificer, or other perſon, to drink, over and above his hire or wages. *Du Cange*, T. 1. p. 545.

BEUPLEURUM, in botany. See HARE'S *ears*.

BEWITS, in falconry, denote pieces of leather, to which a hawk's bells are faſtened, and buttoned to his legs. Ruſh. Dict. in voc.

BEXUQUILLO, in the materia medica, a name given to the white ipecacuanha, which the Spaniards bring from Peru, as the Portugueſe do the brown from Braſil.

BEZANTLER, among ſportſmen, that branch of a deer's horn next below the brow antler. Skin. Etym. in voc.

BEZOAR (*Cycl.*)—This is the ſame with what is otherwiſe called *bezaar*, or *bezehard*; by the Perſians *pazar*; by the Indians *bezar*, or *bazar*; by the Arabs *Hager*; by the Jews *belzuar*. *Salmuth.* ad Pancirol. P. 2. tit 3 p. 116. ſeq.

The firſt mention made of *bezoar* is in Avenzour, an Arab phyſician of the 10th century, who gives a very romantic account of its origin. The firſt genuine account we owe to Garcias ab Horto, phyſician to the Portugueſe vice-roy of the Indies [a]. Kempfer has given a further deſcription, with ſome more particulars [b].—[[a] *Garc. ab Hort.* de Aromat. & Simpl. Medic. ap. Indos, l. 1. [b] *Kempf.* Amœn. Exot. Faſc. 2. Rel. 9. §. 8. p. 398. ſeq.]

Nic. de Monardis, Caſp. Bauhin, and M. Geoffroy, have pieces expreſs on *bezoard*. Avenzour deſcribes it, as generated of the tears, or gum of the eyes of ſtags; who, after eating ſerpents, uſed to run into the water up to the noſe, where they ſtood till their eyes began to ooze a humour, which, collecting under the eye-lids, gradually thickned and coagulated, till being grown hard, it was thrown off by the animal in rubbing frequently. *Friend*, Hiſt. Phyſ. P. 2. p. 106. ſeq. *Lang.* Epiſt. Medic. 24. l. 2. *Pancirol.* de Reb. Memor. P. 2. tit. 3. *Salmuth* ad loc.

Other opinions no leſs fabulous obtain'd till the time of Garcias ab Horto, as that *bezoar* was found in the head of an animal, in the gall-bladder of a porcupine, *&c.* *Burgr.* Lex. Med. p. 1563. b.

There is generally, if not always, ſome foreign body in the center of the *bezoar*, around which, as a nucleus, the bezoartic coats, or ſtrata, are ranged [a]; as ſtraws, hair, marcaſites, pebbles, talc, ſand, *&c.* and ſtones like cherry-ſtones; but the common nucleus is the pod of a fruit much like that of the *Acacia vera Ægyptiaca*; though at firſt ſight it reſembles a caſſia, or tamarind ſtone. This fruit being taken into the ſtomach, cauſes, by its aſtringency, a condenſation of the liquors it there meets with, from which in time ariſes the *Bezoard* [b].—[[a] Mem. Acad. Scienc. 1712. p. 263, ſeq. [b] Phil. Tranſ. N° 282. p. 1284. Mem. Acad. Scienc. 1710. p. 264. ſeq.]

The ſtones produced by each animal may be felt and numbred on the out-ſide, by which in trade the price of the animal is regulated.

Pomet pretends, that one animal never produces above one ſtone, which is incloſed in a tunic, appropriated to that uſe: all which has been found a miſtake. *Geoffr.* ap. Mem. Acad. 1710. p. 266. ſeq.

Dr. Slare endeavoured to prove both the oriental and occidental *bezoards* factitious, which M. Geoffroy has refuted, by the conſideration of a foreign body being conſtantly found in the middle. Counterfeits would hardly tie themſelves down to ſuch an obſervance. We are, however, told of artificial *bezoars* in the iſle of Ormus, made ſo dexterouſly, as to be indiſcernable from the natural, unleſs they be firſt broken [a]. *Bezoar* is ſaid to be adulterated among us with powders, roſin, and mucilage [b]. Le Mort deſcribes a factitious *bezoar*, reſembling the native one, and ſhews how it may be prepared, from the magiſtery of alexipharmic herbs [c]. [[a] *Burgr.* Lex. Med. T. 1. p. 1569. [b] *Hought.* Coll. T. 2. p. 68. [c] In Chym. Med. Phyſ. c. 15. p. 198. *Caſt.* Lex. Med. p. 103. b.]

BEZOAR, in a more extenſive ſenſe, includes all animal ſubſtances form'd *ſtratum ſuper ſtratum*, in the ſtomachs or inteſtines of animals. *Geoffr.* in Mem. Acad. Scienc. 1712. p. 268. In which ſenſe pearls, the ſtones found in caſtoreum, *&c.* belong to the claſs of *bezoars*. *Fonten.* Hiſt. Acad. Scienc. 1717. p. 32.

Human *bezoars* are ſtony ſubſtances found in the inteſtines of ſeveral perſons, form'd from the ſtones of plumbs, or other fruits, retained in the cæcum, or other guts, and growing coated over; of which we have an inſtance given by Dr. Cole. Phil. Tranſ. N° 235. p. 30.

To this kind alſo belongs the *hippolithos*, or *bezoar equinum*, a ſort of ſtone ſometimes voided by theſe creatures by ſiege. *Plott*, Nat. Hiſt. Stafford. c. 7. §. 72. Phil. Tranſ. N° 250. p. 99.

To this alſo belongs *bezoar Germanicum*, or German *bezoar*, a kind of ſtony ſubſtance found in mountain deer, or goats, eſpecially on the Alps. *Caſt.* Lex. p. 103. b.

Though in ſtrictneſs this is not a ſtone, but rather a ball of hair or herbs, or perhaps roots compacted in the ſtomach of the animal, and call'd more properly by late writers *Ægagropilæ*, or *Ægagropilæ*. See ÆGAGROPILA.

Bezoar is alſo applied to other ſtony ſubſtances found in divers animals, diſpoſed *ſtratum ſuper ſtratum*. Mem. Acad. Scienc. an. 1710. p. 315. ſeq.

Such are the *cayman bezoar*; hog and deer *bezoar*, brought from Sumatra; the monkey *bezoar*; cow *bezoar*, and elephant *bezoar*,

zoar, from Zanguabar. Vid. Phil. Tranſ. N° 23. p. 432 Item, N° 250, p. 99. Item, p. N° 305, p. 2201. Atlas Marin. p. 218. See alſo the Cyclopœdia.

The cow *bezoar*, in the Chineſe cabinet, in the repoſitory of the royal ſociety, though compoſed of laminæ or coats, is apparently factitious, by reaſon it melts, when applied to the candle. *Sloan*, in Phil. Tranſ. N° 250, p. 70.

The forms in which *bezoar* appears, when genuine, are very different; the moſt frequent figure is round, but many are oblong; ſome of the ſhape of a kidney, and ſome perfectly irregular; they are of a greeniſh, or olive colour, and are ſpotted with pale, or whitiſh ſpots in different places; when try'd by burning, they are found to be eaſily inflammable, and to contain a volatile ſalt, and an oil; and the reſiduum much reſembles the *caput mortuum* left in the retort, after the diſtillation of different animal ſubſtances; a gentle heat will often make the ſeveral beds or *laminæ*, of which a *bezoar* is compos'd, ſeparate from one another. If *bezoar* ſtones are put to infuſe in ſpirit of wine, or in common water, both liquors will thoroughly penetrate their ſubſtance, but neither will receive any change from them. The matters, which ſerve as a nucleus to the *bezoar* ſtone, are very different in different animals, and often in the ſame individual, according to the indigeſtible matter, which it happens to have in its ſtomach, at the time of the ſtone's beginning to form itſelf. Sometimes a ſtraw, ſometimes a few hairs, ſometimes a pebble, and not unfrequently a piece of marcaſite is found in the center of the concretion. Small particles of matter of a ſtony kind, cemented together into a ſort of ſtone, are ſometimes found, as alſo pieces of talc, fragments of wood, and the ſtones of fruit, or a part only of ſuch a ſtone; and, in ſome, a ſeed of caſſia, or of ſome plant of the phaſeolus kind, has been found, its outer ſkin ſhrunk up and wrinkled, with manifeſt appearance of its having been before inflated and diſtended, and cover'd nicely over with an extreamly thin coat, of the ſubſtance of the *bezoar*, conforming itſelf to all its irregularities. In ſome of the ſtones alſo found on this nucleus, the outer membrane of the bean having periſh'd, and the bean ſhrunk in drying, there remains a vacuity between it, and the next coat of the *bezoar*; ſo that it rattles within it, when ſhaken in the manner of an ætites.

The formation of the *bezoar* ſeems to be this, that the undigeſted matter, be it what it will, remaining in the ſtomach of the animal, irritates the glands, and makes them diſcharge their contents, which, mixing with the juices of the ſtomach, impregnated with the virtues of the aromatick plant on which the animal feeds; theſe may together collect, and harden by degrees about this ſubſtance. In fine, their coats ſurrounding one another; the conſequence of which muſt be, that the whole *bezoar* muſt be of the ſhape of the accidental matter, on which it was form'd. If it be a ſtraw, the *bezoar* will be long; if a ſmall pebble, the *bezoar* will exactly be of its ſhape, however irregular that be; and, if a kidney-bean, there will be ſeen on the *bezoar* the ſeveral lineaments of that fruit. Mem. Acad. Par. 1711.

The true oriental *bezoars* were, about eighty years ago, ſo common in Cononor, that thoſe of the bigneſs of a pigeon's egg were frequently brought to market at ſix or ſeven reals a piece, and thoſe of the bigneſs of a hen's egg at twelve reals.

The method of trying the genuineneſs of the *bezoar* by water, was firſt brought into uſe in that place: thoſe who bought them, uſed to weigh them carefully, and after that to put them into water, letting them lie in it all night. If they, in the weighing the next morning, were found to have retained the ſame weight, they were judged to be good; if the weight were much altered, otherwiſe.

BEZOARD is alſo applied to a kind of foſſil figured ſtone found in divers countries, formed like the animal *bezoard* of ſeveral coats, or ſtrata, ranged round ſome extraneous body, which forms a nucleus, and ſuppoſed to have the ſame virtues. Mem. Acad. Scienc. 1710, p. 316.

It is found in Italy, eſpecially Sicily; and in France, eſpecially Languedoc. We have alſo inſtances of it in England. *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 2. p. 9.

The foſſil, or mineral *bezoar*, is a cruſtated ferugenous body.

The Sicilian *bezoar* [a], or *bezoar minerale Siculum*, is by ſome, with Boccone [b], taken for a ſpecies of geodes, which Dr. Woodward [c] diſtinguiſhes it from, as well as from the enhydros and ætites, in that it has properly no cavity with matter in it, as thoſe bodies have.—[a Phil. Tranſ. N° 311, p. 2406. b *Boccon.* Muſeo di Phyſ. obſ. 8. Phil. Tranſ. N° 249, p. 54. c *Woodw.* ub. ſupr. T. 1.. p 234.]

Boccone mentions nuclei of different matters, as flints, gravel, wood, metal, coal, &c. M. Geoffrey even found rock chryſtal in the middle of a mineral of this ſpecies, call'd *priapolites*.

BEZOAR *mineral*, among chemiſts, appears to have been the invention of Baſil Valentine, tho' later chemiſts have given other proceſſes for preparing it [a]. It is much adulterated, by adding to it half, or two thirds the quantity of ſal ammoniac [b].—[a Vid. Pharmac. Coll. Reg. Lond. p. 11. *Barchuyſ.* Pharm. Synopſ. p. 39. *Teichm.* Inſtit. Chem. P. 2. c. 10. p. 150. *Boyl.* Phil. Work. Abr. T. 1. p. 384. b *Alleyn*, Diſpenſ. p. 366.]

Sylvius firſt ventured to introduce it into medicine, and frequently gave it with very bad ſucceſs: Yet many are to this day perſuaded with him, that it is poſſeſſed of wonderful antidotal virtues, as being obtained innocent and harmleſs from that violent poiſon, butter of antimony; whence they conclude, it muſt needs have a magnetical power of attracting to itſelf, like the *bezoar* ſtone, all the poiſon in the body.

Boerhaave, however, conteſts all its virtues, chiefly from the manner of preparing it: The acid of the antimony, he argues, being driven away by the violence of the fire, nothing remains but the ſluggiſh and calcined metalline part, which, tho' dignified with the name of *mineral bezoar*, is deſtitute of all medicinal virtues, and only ſerves to oppreſs the body by its gravity, being perfectly indigeſtible therein. *Boerhaave*, Meth. Chym. P. 3. p. 318.

From the *bezoar mineral*, mixed with other metals various ways, with or without detonation, ariſe other compound *bezoardics*, as the *bezoardicum Solare*, *Lunale*, *Martiale*, *Joviale*. Vid. the Cyclopædia, and *Stahl.* Phil. Princ. Chem. §. 2. p. 353, ſeq. See BEZOARTICUM.

BEZOARDIC, or BEZOARTIC, ſomething that belongs to, or partakes of the nature of the true *bezoar*. See BEZOAR.

In this ſenſe we ſay, a *bezoardic* animal, or *bezoardic* ſtone. Boccone deſcribes a *bezoardic* earth, or ſort of *terra lemnia*, to which he gives that denomination, and aſcribes conſiderable virtues. Phil. Tranſ. N° 249. p. 55.

BEZOARDIC is more peculiarly applied to certain medicinal powders, ſtones, &c. wherein *bezoar* is an ingredient.

To the claſs of *bezoardic powders* belong the Gaſcoyn's, and counteſs of Kent's powders, and others formed thereof. Among *bezoardic* ſtones is found the *lapis de Goa*, or Goa ſtone. We alſo meet with *bezoardic* tinctures given in fevers, &c. *Junck.* Conſp. Med. p. 270.

BEZOARDIC is more generally applied to all medicines endowed with a powerful alexiterial virtue, uſed for expelling poiſons, and other malignities.

In this ſenſe, *bezoardics* are either ſimple or compound, and fetched either from the vegetable or animal kingdoms.

The chief in the vegetable kind is the root of anthora, or contrayerva; and in the animal kingdom hartſhorn, or, according to ſome, the unicorn's horn.

Among the compound kind, the *tinctura bezoardica michaelis* is in much repute, at leaſt abroad. Salt of hartſhorn is by ſome called the *northern bezoar*, *bezoar ſeptentrionalis*. Willius has a poem on the uſe and abuſe of the *northern bezoar*. *Barthol.* Act. Med. T. 4. p. 200.

The chemiſts have alſo their mineral *bezoardics* of divers kinds, as ſolar, lunar, jovial, martial, and the like, to which great virtues are aſcribed; though concerning their uſe, and whether they deſerve to be ranked with the native, vegetable, or animal *bezoardics*, divers ſcruples have been raiſed. *Caſt.* Lex. Med. p. 103. See BEZOAR.

Mineral bezoardics are uſually prepared of the butter of antimony, brought into a fluid ſtate by repeated diſtillations; this being gradually and ſlowly mixed with ſpirit of nitre, ſo as to avoid that intenſe heat and ebullition, which would enſue upon putting them haſtily together; and they are thus both driven over in a retort, by a moderate degree of heat in ſand, till nothing but a dry powder remains behind, and ſpirit of nitre is again poured upon and abſtracted from the powder, and this at laſt is edulcorated; it becomes a diaphoretic, under the name of *bezoar mineral*. *Stahl.* philoſoph. Princ. Chemiſt. P. 2. §. 4. p. 351. See BEZOARTICUM.

BEZOARTICA *terra*, a name uſed by ſome authors for a medicinal earth dug in the pope's territories, and more frequently called *terra noceriana*. *Boccone*, Muſ. de Fiſic. p. 61. See NOCERIANA.

BEZOARTICUM *lunare*, *bezoard* of ſilver, a name given by the chymiſts to a preparation of ſilver. It is made from ſilver diſſolved in ſpirit of nitre, and butter of antimony. It is eſteemed a ſpecifick in epilepſies, convulſions, and apoplexies; and is ſaid to be anodyne and ſudorific, and of great uſe againſt the eryſipilas. The doſe is from ſix to ten grains.

BEZOARTICUM *ſaturni*, *bezoar* of lead, the name given by the chymiſts to a preparation of lead; it is made by extracting a tincture from glaſs of lead, prepared from red lead and flints, and mixing this with unrectified butter of antimony, and fixing it by means of ſpirit of nitre. It is eſteemed an antihyſterick, and is ſaid to be good in diſorders of the ſpleen; the doſe is ſix grains.

BEZOARTICUM *ſolare*, a name given by the chymiſts to a preparation of gold. It is to be made by diſſolving plates of gold in the *ſpiritus nitri bezoarticus*, and fixing it by pouring it on butter of antimony. It is ſaid to be a great ſudorifick, and of great uſe in the pox, the plague, the gout, the dropſy, fevers, and obſtructions of the ſpleen. Its doſe is from three to eight grains.

BEZOARTICUM *veneris*, *bezoar* of copper, a name given by the chymiſts to a preparation of copper, made by extracting a tincture from the filings of copper with rectified butter of antimony, and fixing it according to art with ſpirit of nitre. It is given by ſome in leproſies, and diſeaſes of the head and brain. Its doſe is ſix grains. Externally it is of uſe in old ulcers, fiſtulas, and impetigoes. *Bates*'s Diſpenſ.

BEZOLA, in zoology, the name of a truttaceous fiſh of the albula kind, and called by Geſner the *albula cærulea*. It reſembles the herring in ſhape, and is of a duſky blueiſh colour.

Its belly is broad and prominent; its head ſmall, and its noſe ſharp. It feeds principally on the ſpawn of other fiſhes, and is a very delicate and fine taſted fiſh. *Rondelet*, de Piſc. See the article ALBULA.

The *bezola* is the ſame with that ſpecies of *coregonius* diſtinguiſhed by having the upper jaw longeſt and flat, and fourteen rays on the back-fin. It does not eſſentially differ from the *lavaretus*. See LAVARETUS.

BIA, a name given by the Siameſe to a ſort of little white ſhells brought from the Maldivee iſlands, and uſed throughout moſt part of the Eaſt Indies for ſmall money. *Savar.* Dict. Comm. T. 1. p. 331, ſeq.

Theſe are otherwiſe called *coris*.

BIÆUM, βιαιον, in rhetoric, denotes a kind of counter-argument, whereby ſomething alledged for the adverſary is retorted againſt him, and made to conclude a different way; for inſtance, *occidiſti, quia adſtitiſti interfecto.*—βιαιον, *Immo quia adſtiti interfecto, non occidi; nam ſi id eſſet, in fugam me conjeciſſem.* You killed the perſon, becauſe you were found ſtanding by his body. *Biæum*, Rather I did not kill him becauſe I was found ſtanding by his body; ſince, in the other caſe, I ſhould have fled away. *Heder. Schul.* Lex. p. 549.

BIÆUM, in the Grecian laws, was an action brought againſt thoſe who raviſhed women, or uſed violence to any man's perſon. *Potter*, Archæol. l. 1. c. 24. p. 126. *Suid.* in voc.

BIÆUM alſo denotes a kind of ſaline or ſea-wine, uſed by the antient Greeks in various diſorders. It was made of grapes gathered a little before ripe, and dried in the ſun; then preſſed, the juice put up in caſks, and mixed with a large proportion of ſea-water; though Dioſcorides ſeems to deſcribe it as made of grapes ſteeped in ſea-water, and then preſſed. *Gorr.* Def. Med. p 75. in voc.

BIAFORA, in the cuſtoms of the middle age, a form of cry, or alarm to arms; on the hearing whereof, the inhabitants of towns or villages were to iſſue forth, and attend their prince.

The word ſeems originally from Gaſcony; and the Italians even now, on a ſudden inſurrection of the people, commonly cry, *Via-fora*, by an uſual change of the letter B into V. Vid. *Aquin.* Lex. Milit. T. 1. p. 128.

BIARCHUS, βιαρχος, an officer in the court of the emperors of Conſtantinople, intruſted with the care and inſpection of the proviſions of the ſoldiery. *Aquin.* Lex. Milit. T. 1. p. 128. *Briſſ.* de Verb. Signif. p. 79. *Suic.* Theſ. T. 1. p. 685. *Du Cange*, Gloſſ. Græc T. 1. p. 202. It. in Gloſſ. Lat. T. 1. p. 606. *Fab.* Theſ. p. 350. *Schoettg.* Lex. Ant. p. 218.

The word is formed from βιος, *annona*, victuals, and αρχη, chief or head.

The *biarchus* was the ſame with what the Latins call *præfectus annonæ*. His function was called *biarchia*; by the Latins, *præfectura rei cibariæ*. He belonged to the *ſcholia agentium in rebus*. See AGENTES.

BIARUM, in botany, a name by which the people of Egypt at this time call the root of the *nilufar*, or *faba Ægyptia*, growing on the Nile. See NILUFAR.

BIAS, or BIASS, the tendency or propenſity of a thing towards one ſide more than the other; particularly the deviation of a body, or a plain, from its rectilinear courſe, or its level. *Davil.* p. 422. in voc. *biais*. See INCLINATION, *Cycl.*

The word is French, *biais*, which ſignifies the ſame. Menage deduces this further from the Italian *biaco*; and that again from the Latin *obliquus*. *Menage*, Orig. Franc. p. 98.

BIAS *of a bowl* is a piece of lead put into one ſide, to load and make it incline towards that ſide.

BIBIO, the *Wine-fly*, in the hiſtory of inſects, a very ſmall fly, found frequently among empty wine casks. It is produced from a ſmall, oblong, red worm, very common in the ſediments of wine It is ſomething ſurprizing to find the worms of this fly in the ſediments of wine while yet in the hogſhead, into which there ſeems no acceſs for any living creature. The antients, from this obſervation, have ſuppoſed this littly fly, tho' it has no trunk or other viſible inſtrument for boring, yet capable of piercing through the ſides of a cask, though an inch thick.

BIBITORIUS *muſculus*, in anatomy, a name given by Molinet to one of the *quatuor recti muſculi oculi*; the *adductor* of authors. See ADDUCTOR.

It ſeems to draw the eye inwards, or towards the noſe; and takes the denomination *bibitorius* from the Latin *bibere*, to drink, by reaſon of its action in viewing the liquor in the glaſs while a man drinks. *Heiſt.* Comp. Anat. §. 316. p. 258. *Veſling.* Synt. Anat. c. 15. p. 237. *Drake*, Anthrop. T. 2. p. 323.

BIBLE (*Cycl.*)—The word *bible* comes from the Greek βιβλια, or βιβλιον, uſed to denote any book; but, by way of eminence, applied to the book of ſcripture. Βιβλιον again comes from βιβλος, the Egyptian reed, from which the antient paper was procured. Vid. *Voſſ.* Etym. p. 70. See BIBLUS.

The *bible* is known by various other appellations, as the *ſacred books*, the *inſpired writings*, *holy writ*, *ſacred text*, &c. By the Jews it is called *mikra*, that is, lecture, or reading; by the Chriſtians uſually *ſcripture*, q. d. *writing*; ſometimes alſo the *book of God*, the *canon*, *rule of faith*, &c. See other denominations in *Carpzov.* Introd. ad Libr. Bibl. c. 1. §. 1. p. 2. *Suic.* Theſ. Eccleſ. T. 1. p. 687. voc. βιβλιον.

The liſt of the books contained in the *bible* is called the *canon* of ſcripture. See CANON, *Cycl.*

The books of the *bible* are ſaid to be *canonical*, by way of contradiſtinction from others called *deutero-canonical*, *apocryphal*, *pſeudo-apocryphal*, &c. Vid. *Wolf.* Bibl. Heb. T. 2. ſect. 3. ſubſ. 2. §. 12 p. 210. See CANONICAL, &c.

The books of the Old Teſtament appear to have been written originally in Hebrew, in the character now called the Samaritan; from which it was tranſlated by Eſdras, after the Babyloniſh captivity, into the Chaldee character, which was then better underſtood by the Jews than their own. By degrees, the Jews adopting Chaldee words and phraſes, altered their language, and made a kind of jargon or mixture of both, which was the vulgar Hebrew in our Saviour's time. By this means, the antient, or *bible* Hebrew, became in great meaſure forgot; and though the ſcripture continued ſtill to be read in the ſynagogues in this language, they were forced to explain it in Chaldee; which ſeems to have given occaſion to the Chaldee paraphraſes ſtill extant. *Du Pin*, Diſſert. Prelim. §. 3. p. 57.

The preſent Samaritan and Jewiſh copies of the *bible* differ in many reſpects, chiefly in the chronology of the patriarchs, where the Samaritan comes nearer to the ſeptuagint. Other variations may be reſolved into the errors of tranſcribers, interpolations for explication's ſake, and, perhaps, the deſigned corruption of the Samaritan, to give countenance to the ſect. *Prideaux*, Connect. P. 1. l. 5. p. 601.

The original language of the Old Teſtament was doubtleſs the old Hebrew, at leaſt the greater part; for all the books do not appear to have been written in the ſame. Some chapters of Eſdras and Daniel are judged to have been compoſed in Chaldaic; and other chapters of this latter writer, as alſo the apocryphal books of Maccabees, of Wiſdom, &c. in Greek; Tobit and Eccleſiaſtes either in Greek or Syriac. *Du Pin.* Diſſert. Prelim. §. 3. p. 61. *Calmet*, Dict. Bibl. T. 1. p. 293.

For the New Teſtament, it was written in Greek, except St. Matthew, which ſeems to have been compoſed in the later Hebrew, that is, the Syriac. Some will have St. Mark to have been written in Latin; and the epiſtle to the Hebrews in Hebrew. *Calmet*, lib. cit. p. 294.

A warm diſpute has been on foot for many ages, whether the original character, in which the *bible* was firſt penned by Moſes and the inſpired writers, were the Samaritan, or the modern Hebrew? Among the antients, Origen, St. Jerom, and the antient rabbins; and among the moderns Joſ. Scaliger, Simon, Du Pin, Montfaucon, and others, contend for the former: the modern rabbins, followed by Buxtorf, and ſome others, for the latter. Vid. *Montfauc.* Palæogr. Græc. l. 2. c. 1. p. 119, ſeq.

For the authors of the *bible*, the names of moſt of them are prefixed to the books ſuppoſed to be written by them; as the pentateuch by Moſes, Joſhua by the general of that name, &c. though many objections have been made to divers of them.

Aben Ezra, followed by Hobbs, Pereyra, Spinoſa, and ſome others, deny the five firſt books to have been written by Moſes [a]. F. Simon [b] in particular aſſerts, that the books, as we now have them, are not the originals written by the inſpired pen-men, but abridgments of them made in after-times by a kind of college or order of public actuaries or ſcribes appointed for that end.—[[a] *Du Pin.* Diſſ. Prelim. ſur les Auteurs des Livres de la Bibl. §. 1. prefixed to his Nouv. Bibl. des Aut. Eccleſ. T. 1. p. 21, ſeq. [b] *Simon*, Hiſt. Crit. du Vieux Teſtam. l. 1. c. 1. p. 3. It. c. 2. p. 17. It. c. 7. p. 50. refuted by *Du Pin*, lib. cit. §. 1. p. 28, ſeq.]

In the time of Joſiah, through the impiety of the two preceding reigns of Manaſſeh and Ammon, the book of the law was ſo totally loſt, that, beſides a copy of it found by Hilkiah in the temple, none other appears to have been known; at leaſt, the ſurprize which Hilkiah ſhewed at the finding it, and the grief which Joſiah expreſſed at the hearing it read, ſhew, that neither of them had ever ſeen it before. 2 King. c. 22. ver. 22. 2 Chron. c. 34.

Copies were now made and diſperſed; yet, within a few years after, the authentic copy, preſerved in the temple, was burnt, with the temple, by the Babylonians. It was reſtored again after the return of the Jews from the Babylonian captivity by Nehemiah, or rather by Ezra; ſome ſay by divine inſpiration, others, with more probability, by collecting the fragments and copies which were ſtill remaining, comparing them together, and, out of them all, framing one compleat copy, where the readings were adjuſted, and the ſeveral books ranged in their proper order. *Prideaux*, Connect. P. 1. l. 5. p. 473—477. *Du Pin.* Diſſ. Prelim. §. 3. p. 61. not.

Irenæus [c], Tertullian [d], Clemens Alexandrinus [e], Baſil [f], Auguſtin [g], Jerom [h], Chryſoſtom [i], and others, hold, that the *bible* was totally loſt and deſtroyed during the captivity in Babylon, and reſtored by immediate revelation; but the only foundation for this opinion ſeems to have been the fabulous relation in the apocryphal book of Eſdras [k], where it is alledged that God inſpired Eſdras for the new work by a draught of a miraculous liquor; after taking of which he retired into a ſolitude, and, in the compaſs of forty days, diſgorged every tittle of the *bible* juſt as it had been before [l]. Some think it more probable, that all the copies had not been deſtroyed; at leaſt, Daniel appears to have had one in the Babyloniſh captivity; for he ſeveral times quotes it, and makes mention of the pro-

phecies

phecies of Jeremiah [m].—[[c] *Iren.* adv. Hæref. l. 3. c. 25. [d] *Tertull.* de Habit. Mulier. [e] *Clem. Alex.* ſtrom. 1. [f] *Baſil,* Epiſt. ad Chilon. 2. [g] *Hieron,* contr. Helvid. [h] *Auguſtin,* de Mirac. Sacr. Script. l. 2. [i] *Chryſoſt.* Homil. 8. in Epiſt. ad Hebr. [k] *Eſdr.* l. 2. c. 14. [l] *Gundling.* Hiſt. Philoſ. Moral. c. 7. p. 80. [m] *Prideaux,* lib. cit. p. 474.]

Ezra made additions in ſeveral parts of the book, where any thing appeared neceſſary for illuſtrating, connecting, or compleating the work; in which he is ſuppoſed to have been aſſiſted by the ſame ſpirit whereby they were firſt written. Among ſuch additions is to be reckoned the laſt chapter of Deuteronomy, wherein Moſes ſeems to give an account of his own death and burial, and of the ſucceſſion of Joſhua after him. To the ſame cauſe are to be attributed many other interpolations in the *bible*, which created difficulties and objections to the authenticity of the ſacred text, no ways to be ſolved without allowing them. *Prideaux*, lib. cit. p. 491.

He changed the old names of ſeveral places which were grown obſolete, and inſtead of them put their new names, by which they were then called, in the text. Thus it is that Abraham is ſaid to have purſued the kings who carried Lot away captive as far as *Dan*; whereas that place, in Moſes's time, was called *Laiſh*; the name *Dan* being unknown, till the Danites, long after the death of Moſes, poſſeſſed themſelves of it. Gen. c. 14. v. 14.

Laſtly, Ezra wrote out the whole in the Chaldee character, which was now alone in uſe among the Jews ſince the captivity, the old Hebrew being changed for it, which, ſince that time, has only been retained by the Samaritans, where it is uſed to this day.

Whether Ezra, in this review, added the *keri-cetib*, or various readings, and the vowel points, or whether they be the addition of later days, are queſtions which have been much agitated.

The books of the *bible* are divided by the Jews into three claſſes, *viz.* the law, the prophets, and the hagiographers; a diviſion which they are ſuppoſed to borrow from Ezra himſelf. Each book is ſubdivided into ſections, or *paraſches*; which ſome will have to have been as old as Moſes, though others, with more probability, aſcribe it to the ſame Ezra. Theſe were ſubdivided into verſes, *peſuchim*, marked in the Hebrew *bible* by two great points, called *ſoph paſuch*, at the end of each. For the diviſion of the *bible* into chapters, as we now have it, it is of much later date. *Prideaux*, Connect. P. 1. l. 5. T. 2. p. 479, ſeq.

Divers of the antient *bible*-books appear to be irrecoverably loſt, whether it be that the copies of them periſhed, or that Eſdras threw them out of his canon. Hence it is, that, in the books ſtill extant, we find divers citations of, and references to others, which are now no more; as the book of Jaſher [n], the book of the wars of the Lord [o], annals of the kings of Judah and Iſrael [p], part of Solomon's three thouſand proverbs, and his thouſand and five ſongs, beſides his books on plants, animals, fiſhes, inſects, &c [q]. To which may be added a book of Jeremiah, wherein he enjoined the captives who went to Babylon to take the ſacred fire and conceal it; alſo the precepts which that prophet gave the Jews to preſerve themſelves from idolatry [r], and his lamentations on the death of king Joſiah [s].—[[n] Cited Joſ. c. 10. v. 13. [o] Cited Numb. c. 21. v. 14. [p] Frequently cited in the books of Kings and Chronicles. [q] 1 King. c. 4. v. 32, ſeq. [r] 2 Maccab. c. 2. v. 1. [s] *Wolf.* Bibl. Hebr. T. 2. ſec. 4. §. 1. p. 211, ſeq. It. T. 4. ſec. 4. p. 47. *Calmet*, Dict. Bibl. T. 1. p. 292.]

The Jewiſh canon of ſcripture then was ſettled by Ezra; yet not ſo but that ſeveral variations have been ſince made in it: Malachi, for inſtance, could not be put in the *bible* by him, ſince that prophet is allowed to have liyed after Ezra; nor could Nehemiah be there, ſince mention is made in that book of Jaddua as high-prieſt, and of Darius Codomannus as king of Perſia, who were, at leaſt, an hundred years later than Ezra. It may be added, that, in the firſt book of Chronicles, the genealogy of the ſons of Zerubbabel is carried down for ſo many generations, as muſt neceſſarily bring it to the time of Alexander; and conſequently this book could not be in the canon in Ezra's days. It is probable the two books of Chronicles, Ezra, Nehemiah, Eſther, and Malachi, were adopted into the *bible* in the time of Simon the Juſt, the laſt of the men of the great ſynagogue. *Prideaux*, Connect. P. 1. l. 5. T. 2. p. 477, ſeq. It. l. 8. p. 816, ſeq.

The Jews, at firſt, were very reſerved in communicating their ſcriptures to ſtrangers [t]: deſpiſing and ſhunning the Gentiles, they would not diſcloſe to them any of the treaſures concealed in the *bible*. We may add, that the people bordering on the Jews, as the Egyptians, Phœnicians, Arabs, &c. were not very curious to know the laws or hiſtory of a people, whom in their turn they hated and deſpiſed. Their firſt acquaintance with theſe books was not till after the ſeveral captivities of the Jews, when the ſingularity of the Hebrew laws and ceremonies induced ſeveral to deſire a more particular knowledge of them. Joſephus ſeems ſurprized to find ſuch ſlight footſteps of the ſcripture-hiſtory interſperſed in the Egyptian, Chaldean, Phœnician, and Grecian hiſtory; and accounts for it hence, that the ſacred books were not as yet tranſlated into Greek or other languages, and conſequently not known to the writers of thoſe nations [u].—[[t] *Joſeph.* contra Appion. p. 1038. ap. *Calmet*, Dict. Bibl. T. 1. p. 294. [u] *Joſeph.* ap. *Calmet*, loc. cit.]

The firſt verſion of the *bible* was that of the ſeptuagint into Greek, in the time of Ptolemy Philadelphus, or rather much later; though the whole ſeems not to have been then tranſlated, but only the pentateuch; between which and the other books in the verſion called of the ſeventy, the critics find a great diverſity in point of ſtyle and expreſſion, as well as of accuracy. Vid. *Fabric.* Bibl. Græc. l. 3. c. 12. T. 2. p. 315. *Du Pin*, Diſſert. Prelim. ſur la *Bible*, l. 1. c. 6. §. 1. p. 171, ſeq. *Simon*, Hiſt. Crit. du Vieux Teſtam. l. 2. c. 2. See SEPTUAGINT, *Cycl.*

Ariſteas indeed ſpeaks of a tranſlation, though an imperfect one, of the Jewiſh ſcriptures before the time of Ptolemy; but his account is not ſupported by any appearance of probability. Vid. *Calmet*, lib. cit. p. 294. *Du Pin*, loc. cit.

Divers kinds of books have been compoſed on the *bible*, either to explain the ſenſe, or make its doctrine more obvious and acceſſible, or facilitate the remembrance of it; as introductions, apparatuſes, ſummaries, manuals, hiſtories, expoſitions, commentaries, harmonies, &c. Vid. *Wolf.* Bibl. Hebr. T. 2. §. 5. p. 262. It. T. 4. §. 4. p. 48, ſeq.

Saxon BIBLES.—The whole ſcripture is ſaid by ſome to have been tranſlated into the Anglo-Saxon by Bede, about the year 701; though others contend he only tranſlated the goſpels.

We have certain books or parts of the *bible* by ſeveral other tranſlators; as, 1°. The Pſalms by Adelm biſhop of Shireborn, cotemporary with Bede; though by others this verſion is attributed to king Alfred, who lived two hundred years after. Another verſion of the Pſalms in Anglo-Saxon was publiſhed by Spelman in 1640 [w]. 2°. The evangeliſts, ſtill extant, done from the antient vulgate, before it was reviſed by St. Jerom, by an author unknown, and publiſhed by Matth. Parker in 1571. An old Saxon verſion of ſeveral books of the *bible*, made by Elfric abbot of Malmeſbury, ſeveral fragments of which were publiſhed by Will. Lilly in 1638, the genuine copy by Edm. Thwaites in 1699, at Oxford [x].—[[w] Bibl. Litr. N° 4. p. 1—23. *Calmet*, Dict. Bibl. T. 1. p. 306, ſeq. [x] *Calmet*, loc. cit.]

Engliſh BIBLES.—The firſt Engliſh *bible* we read of was that tranſlated by J. Wickliffe about the year 1360; but never printed, tho' there are MS copies of it in ſeveral of the public libraries. J. de Treviſa, who died about the year 1398, is alſo ſaid to have tranſlated the whole *bible*; but whether any copies of it are remaining, does not appear.

Tindal's BIBLE.—The firſt printed *bible* in our language was that tranſlated by Will. Tindal, aſſiſted by Joy and Conſtantine, printed abroad in 1526; but moſt of the copies were bought up and burnt by biſhop Tunſtal and Sir Thomas More. It only contained the New Teſtament, and was reviſed and republiſhed by the ſame perſon in 1530. The prologues and prefaces added to it, reflecting on the biſhops and clergy, this edition was alſo ſuppreſſed, and the copies burnt.

In 1532, Tindal and his aſſociates finiſhed the whole *bible*, except the apocrypha, and printed it abroad: but while he was afterwards preparing for a ſecond edition, he was taken up, and burnt for hereſy in Flanders.

Matthew's BIBLE.—On Tindal's death, his work was carried on by John Rogers, ſuperintendant of an Engliſh church in Germany, and the firſt martyr in the reign of queen Mary, who tranſlated the apocrypha, and reviſed Tindal's tranſlation, comparing it with the Hebrew, Greek, Latin, and German, and adding prefaces and notes from Luther's *bible*. He dedicated the whole to Henry VIII. under the borrowed name of Thomas Matthews; whence this has been uſually called *Matthews's bible*. It was printed at Hamburgh, and licence obtained for publiſhing it in England by the favour of archbiſhop Cranmer, and the biſhops Latimer and Shaxton.

Cranmer's BIBLE.—The firſt *bibles* printed by authority in England, and publicly ſet up in churches, was the ſame Tindal's verſion, reviſed, compared with the Hebrew, and in many places amended, by Miles Coverdale, afterwards biſhop of Exeter; and examined after him by archbiſhop Cranmer, who added a preface to it: whence this was called *Cranmer's bible*. It was printed by Grafton, of the largeſt volume, and publiſhed in 1540; and, by a royal proclamation, every pariſh was obliged to ſet one of the copies in their church, under the penalty of forty ſhillings a month; yet two years after, the popiſh biſhops obtained its ſuppreſſion of the king. It was reſtored under Edward VI. ſuppreſſed again under queen Mary, and reſtored again in the firſt year of queen Elizabeth; and a new edition of it given in 1562.

Geneva BIBLE.—Some Engliſh exiles at Geneva in queen Mary's reign, Coverdale, Goodman, Gilbie, Sampſon, Cole, Whittingham, and Knox, made a new tranſlation, printed there in 1560; hence called the *Geneva bible*, containing the variations of readings, marginal annotations, &c. on account of which it was much valued by the puritan party in that and the following reigns.

Biſhop's BIBLE.—Archbiſhop Parker reſolved on a new tranſlation for the public uſe of the church, and engaged the biſhops and other learned men to take each a ſhare or portion. Theſe being

being afterwards joined together, and printed, with ſhort annotations, in 1598, in a large folio, made what was afterwards called the *Great Engliſh bible*, and commonly the *biſhop's bible*. The following year it was alſo publiſhed in 8°, in a ſmall but fine black letter: and here the chapters were divided into verſes; but without any breaks for them, in which the method of the Geneva *bible* was followed, which was the firſt Engliſh *bible* where any diſtinction of verſes was made. It was printed in large folio, with corrections, and ſeveral prolegomena, in 1572. The initial letters of each tranſlator's name were put at the end of his part, *e. gr.* at the end of the pentateuch W. E. for William Exon; that is, William biſhop of Exeter, whoſe allotment ended there; at the end of Samuel R. M. for Richard Menevenſis, or biſhop of St. David's, to whom the ſecond allotment fell: and the like of the reſt. The archbiſhop overſaw, directed, examined, and finiſhed the whole. This tranſlation was uſed in the churches for forty years, tho' the *Geneva bible* was more read in private houſes, being printed above thirty times in as many years. King James bore it a mortal hatred on account of the notes, which, at the Hampton-court conference, he charged as partial, untrue, ſeditious, *&c.* The *biſhops bible* too had its faults; the king frankly owned he had yet ſeen no good tranſlation of the *bible* in Engliſh; but he thought that of Geneva the worſt of all.

Rhemiſh BIBLE.—After the tranſlation of the *bible* by the biſhops, two other private verſions had been made of the New Teſtament; the firſt by Laur. Thomſon, made from Beza's Latin edition, together with the notes of Beza, publiſhed in 1583 in 4to, and afterwards in 1589, varying very little from the *Geneva bible*; the ſecond by the papiſts at Rheims in 1584, called the *Rhemiſh bible*, or *Rhemiſh tranſlation*. Theſe finding it impoſſible to keep the people from having the ſcriptures in the vulgar tongue, reſolved to give a verſion of their own, as favourable to their cauſe as might be. It was printed on a large paper, with a fair letter and margin. One complaint againſt it was its retaining a multitude of Hebrew and Greek words untranſlated, for want, as the editors expreſs it, of proper and adequate terms in the Engliſh to render them by; as the words *azymes*, *tunike*, *rational*, *holocauſt*, *præpuce*, *paſche*, &c. However, many of the copies were ſeized by the queen's ſearchers, and confiſcated; and Th. Cartwright was ſollicited by ſecretary Walſingham to refute it; but, after a good progreſs made therein, archbiſhop Whitgift prohibited his further proceeding therein, as judging it improper the doctrine of the church of England ſhould be committed to the defence of a puritan, and appointed Dr. Fulke in his place, who refuted the Rhemiſts with great ſpirit and learning. Cartwright's refutation was alſo afterwards publiſhed in 1618, under archbiſhop Abbot. About thirty years after their New Teſtament, the Roman catholics publiſhed a tranſlation of the Old at Doway 1609 and 1610, from the vulgate, with annotations; ſo that the Engliſh Roman catholics have now the whole *bible* in their mother-tongue; though, it is to be obſerved, they are forbidden to read it without a licence from their ſuperiors. Vid. Bibl. Liter. N° 4. p. 15, ſeq. *Calmet*, T. 1. p. 307.

King James's bible.—The laſt Engliſh *bible* was that which proceeded from the Hampton-court conference in 1603, where many exceptions being made to the biſhop's *bible*, king James gave order for a new one; not, as the preface expreſſes it, for a tranſlation altogether new, nor yet to make of a bad one a good one, but to make a good one better, or of many good ones one beſt. Fifty-four learned perſons were appointed for this office by the king, as appears by his letter to the archbiſhop, dated in 1604; which being three years before the tranſlation was entered upon, it is probable ſeven of them were either dead, or had declined the taſk, ſince Fuller's liſt of the tranſlators makes but forty-ſeven; who being ranged under ſix diviſions, entered on their province in 1607. It was publiſhed in 1610, with a dedication to king James, and a learned preface, and is commonly called *King James's bible*. After this, all the other verſions dropped, and fell into diſuſe, except the epiſtles and goſpels in the common prayer book, which were ſtill continued, according to the biſhops tranſlation, till the alteration of the liturgy in 1661, and the pſalms and hymns, which are to this day continued as in the old verſion.

BIBLIA, or BIBLIA *petraria*, in a military ſenſe, denotes a machine uſed by the antients for throwing ſtones or darts. Vid. *Aquin.* Lex. Milit. T. 1. p. 128. *Du Cange*, Gloſſ. Lat. T. 1. p. 547.

It was probably ſo called from *Biblus*, a city in Phœnicia, where it might be invented; though this is little more than conjecture; nor is the form of this machine known.

BIBLIOGRAPHIA, a branch of *archæographia*, employed in the judging and peruſing of antient manuſcripts, whether written in books, paper, or parchment. *Spon.* in Præf. ad Miſcell. Erud. Antiq. *Fabric.* Bibl. Antiq. c. 5. §. 2. p. 125. See ARCHÆOGRAPHIA.

All the great critics have been eminent cultivators of *bibliography*, as Scaliger, Sirmond, Salmaſius, Caſaubon, Labbe, Lambecius, *&c.*

BIBLIOGRAPHIA is alſo uſed for a notitia or deſcription of printed books, either in the order of the alphabet, of the times when printed, or of the ſubject-matters.

In which ſenſe, *bibliographia* amounts to much the ſame with what is otherwiſe called *bibliotheca*. See BIBLIOTHECA.

Literary journals afford alſo a kind of *bibliographia*.

Naude, Corn. Beughem, Boeclerus, and Fabricius, have publiſhed *bibliographias*. Bartels has a like work, under the title of *biblionomia*. V. *Naude*, Bibliogr. Politica. Ital. Magd. 1712. 8vo. *Ejuſd.* Bibliogr. Militaris. Jen. 1635. 12mo. *Fabric.* Bibl. Antiq. c. 17. §. 1. p. 532.

BIBLIOMANCY, βιβλιομαντεια, a kind of divination performed by means of the bible.

This amounts to much the ſame with what is otherwiſe called *ſortes biblicæ*, or *ſortes ſanctorum*.

It conſiſted in taking paſſages of ſcripture at hazard, and drawing indications thence concerning things future; as in Auguſtin's *tolle & lege*. It was much uſed at the conſecration of biſhops. Vid. *Prideaux*, Connect. P. 2. l. 5. p. 464.

F. J. Davidius, a jeſuit, has publiſhed a *bibliomancy*, under the borrowed name of *veridicus Chriſtianus*.

BIBLIOMANIA, an extravagant paſſion for books, to a degree of madneſs; or a deſire of accumulating them beyond all reaſon and neceſſity.

BIBLIOTHECA properly ſignifies a library or repoſitory of books. See LIBRARY, *Cycl.*

BIBLIOTHECA is alſo uſed for a compilation of all that has been written on a certain ſubject; or a digeſt of all the authors who have treated of it.

In this ſenſe, we have hiſtorical *bibliothecas*, as that of Diodorus Siculus; mythological *bibliothecas*, as that of Apollodorus; theological and ſacred *bibliothecas*, as thoſe of Ravanellus, *&c.*

The firſt model of a *bibliotheca* of this kind was given by Apollodorus of Athens, who lived in the time of Ptolemy Evergetes, 240 years before Chriſt. The *bibliotheca* of the origin of the gods by that celebrated grammarian, has met with imitators in almoſt every branch of literature. Apollodorus's *bibliotheca* conſiſts of three books, which contain the Greek ſtories and traditions concerning the genealogies of the gods and heroes till the Trojan times. It has been diſputed whether the work we now have be the original, or an abridgment of it made by Euphorion or Sopater [a]. Du Pin has given an extract of it [b].—[[a] Vid. *Fabric.* Bibl. Græc. l. 3. c. 27. T. 2. p. 660. and *Boecler*, Bibliogr. Crit. c. 5. p. 171. [b] *Du Pin*, Bibl. Univ. des Hiſtor. l. 1. §. 8. p. 27, ſeq.]

The hiſtorical *bibliotheca* of Diodorus Siculus is no other than a general hiſtory of all ages and countries known to the Greeks and Romans, brought down to the 180th olympiad.

It is full of fables and traditions; but the author has taken great pains to diſtinguiſh what is true from what is merely fabulous; on which account it ſeems to have been, that Pliny repreſents him as the firſt of the Greek hiſtorians who ceaſed to play the fool; *primus Græcorum deſiit nugari*. His work conſiſts of forty books, which were compoſed under the empire of Julius and Auguſtus. [c]. We have an extract of it in Du Pin [d].—[[c] *Fabric.* Bibl. Græc. l. 3. c. 31. p. 769. [d] Bibl. Univ. des Hiſtor. l. 1. §. 9. p. 57, ſeq]

BIBLIOTHECA *ſacra* is a title given by Ravanellus to his common-places or dictionary of the bible, containing all that he could find in theological books neceſſary for explaining ſcripture, digeſted in the order of the alphabet.

BIBLIOTHECA *ſtudii theologici* is a collection out of the works of St. Jerom, St. Auguſtin, and others, neceſſary for a ſtudent in divinity.

The *ſtromata* of Clemens Alexandrinus may be called a *bibliotheca* of the ſentiments and opinions of philoſophers; the hiſtory of Euſebius a *bibliotheca* of eccleſiaſtical writers; the Magdeburgh centuries are called by Spanheim a *bibliotheca* of eccleſiaſtical antiquity. *Fabric.* Bibl. Græc. l. 6. c. 4. T. 12. p. 161. See CENTURIATOR and CENTURY.

BIBLIOTHECA is alſo uſed for a book containing an enumeration of ſeveral authors, and the titles of their writings. *Du Pin*, Bibl. des Aut. Eccleſ. T. 1. Pref. p. 1. Jour. des Scav. T. 19. p. 671.

In this ſenſe, *bibliothecas* are either univerſal or particular, real or nominal, philoſophical, theological, eccleſiaſtical, or the like.

Univerſal BIBLIOTHECA is a book which treats indifferently of all kinds of authors and works, on however different ſubjects. Such are the *bibliothecas* of Photius, Geſner, Ciaconius, Poſſevin, Konig, and the epitomiſts and continuators of Geſner. *Conr. Geſneri* Bibliotheca Univerſalis Omnis Generis Authorum Nomina, cum Lucubrationibus Singulorum juxta Literarum Seriem propoſitum. Tigur. 1545. folio.

The *bibliotheca* of Photius is an account of what books the author read in his embaſſy in the ninth century to Syria [e]; and contains an abridgment of almoſt three hundred different authors, with the judgment of that patriarch on many of them. There are additions to it by Max. Planudes, only extant in manuſcript [f].—[[e] *Fabric.* Bibl. Græc. l. 5. c. 38. §. 6. T. 9. p. 369. *Boecl.* Bibl. Crit. c. 24. p. 397. [f] Vid. *Fabric.* lib. cit. l. 5. c. 45.]

The *bibliotheca ſelecta* of Poſſevin is judged the moſt complete of that kind, notwithſtanding the fooliſh partiality of that author, who, from principles of religion, has ſuppreſſed all the proteſtant writers. It was printed at Rome in 1598, and again at Cologn in 1607. folio.

Parti-

Particular BIBLIOTHECAS are those which are confined to some species or division of books and authors; as some science, country, age, order, or the like. Such are the *bibliothecas* restrained to sciences, as ecclesiastical and sacred *bibliothecas*. Of this kind we have ecclesiastical and theological *bibliothecas*; *bibliothecas* of chemists by Borelli and others; of the French law by Bouchel; of the conception of the virgin by Peter d'Alva and d'Astorga; of coins by Labbe; of manuscripts by Montfaucon. Vid. *Ph. Labbe*, Biblioth. Nummaria, printed at the end of his *Bibliotheca Bibliothecarum*. Rouen, 1678. 8vo. It contains the writers on the antient Hebrew, Greek, and Roman coins, medals, weights, and measures.

BIBLIOTHECA of ecclesiastical writers is a work treating of the authors who have written on matters of religion.

Such are the ecclesiastical *bibliothecas* of Miræus, Sixtus Siennensis, Du Pin, and Dom Cellier.

St. Jerom was the first who composed a work express on the writers of the Christian church, which was continued by Gennadius, Isiodore, and Ildefonsus, to their respective times. Honorius bishop of Autun made an abridgment of all four. Sigebert and Henry of Gant continued this work till the time of St. Bernard. Aub. de Miræus continued it to his own time, and published the whole under the title of *Bibliotheca Ecclesiastica*. M. Du Pin's *bibliotheque* of ecclesiastical writers contains the history of their lives, the catalogue, criticism, and chronology of their works, a summary of what is contained in them, a judgment on their style and doctrine, and a list of the several editions of their writings. *Du Pin*, Nouvelle Bibliotheque des Autheurs Ecclesiastiques, 3d edit. Paris, 1683. 4to. 20 tom.

To this kind also belong the *bibliotheca sacra's* of Le Long, and of Mabillon, annexed to his treatise of monastic studies. *Le Long*, Bibliotheca Sacra, five Syllabus omnium ferme Sacræ Scripturæ Editionum ac Versionum, improved and augmented by *Boernerus* professor of Leipsic.

F. Calmet, at the end of the later editions of his dictionary, gives an account of writers on the scriptures.

Philosophical BIBLIOTHECAS.—The first philosophical *bibliotheca* is that composed by Jo. Frisius, who not only took in the antient philosophers, but other antient writers, from the origin of learning to the sixteenth century, distinguishing them by the series of time when they lived, and rehearsing their several writings. *Jo. Jac. Frisii*, Bibliotheca Philosophorum classicorum Chronologica. Tigur. 1592. 4to. afterwards inserted into the Chronicon Chronicorum Ecclesiasticum of Jan. Gruter, Fran. 1614. 8vo.

He was followed by Israel Spachius, who, without any regard to the order of time, digested his work by the subjects. Draudius's *bibliotheca classica*, among the writers on other sciences, enumerates those on philosophy. But his work being composed chiefly from the catalogues of the Frankfort fairs, is not to be depended on.

Bolduanus's *bibliotheca philosophica* indicates the several writers according to their subject-matters; but is only a bare catalogue of titles. Lipenius's *bibliotheca realis philosophica* is digested under heads or topics, and has this advantage, that it contains the several writers on each point or matter. The misfortune is, that they are rehearsed without choice, and frequently the most trivial books mixed with the rest. What is worse, books are often produced under one head, which belong to another, the author having been deceived by the titles, as not looking into the books themselves. The last and most exact is the *bibliotheca philosophica* of Struvius, wherein the several authors are distributed under their respective classes. *Burch. Gotth. Struvii*, Biblioth. Philosophica in suas Classes distributa, several times published, but lastly with considerable additions by Jo. G. Lotterus, Jen. 1728. 8vo.

Real BIBLIOTHECA, that which is digested according to the order of things, or subjects of books; or it is an account of books digested or reduced under certain classes, according to their subject-matters. Such are the *bibliothecas* of Lipenius, Draudius, Boteluanus, and Struvius. Such likewise are the *bibliotheca academica*, *statistica*, *canonica* of Thurmannus; the *bibliotheca juris imperantium* of an anonymous author; the *bibliotheca numismatica* of Banduri and Struvius. Such also are the theological *bibliothecas* of Molanus; the ecclesiastical *bibliothecas* of Scultingius: the *bibliothecarius quadripartitus* of Hottinger; the historical *bibliothecas* of Le Long and Nicolson; the *bibliotheca studiosi theologiæ* of Gisb. Voetius; the *bibliotheca theologica contracta* of Meier; the *bibliotheca portatilis theologica* of Endterus.

BIBLIOTHECA is also used for a book rehearsing the writers of some particular language, place, order, or the like.

Such are Mart. Kempius's *bibliotheca Anglorum theologica*; Gazettus's *bibliotheca theologorum, aliorumque scriptorum, Belgii*, in French; Draudius's *bibliotheca Germanorum*, &c.

We have also *bibliothecas* of benedictine writers by Trithemius; of cistertians by de Visch; of canons regular by Gabriel Pennot; of augustins by Herrera and Elsius; of præmonstratenses by Le Page; of dominicans by Leander Alberti, Antony de Sienna, and Ambrose d'Alta Mura; of the franciscans by Luc. Wading, an Irish cordelier; of jesuits by Alegambe, Ribadeneira, Sotuel, and Labbe. Vid. Trev. Dict. Univ. T. 1. p. 1024.

National BIBLIOTHECAS are those reciting the writers and books of a certain place, people, or language. *Fabric.* Bibl. Græc. l. 6. c. 10. T. 13. p. 631.

Such are the Attic *bibliothecas* of Meursius; the Greek and Latin *bibliothecas* of Fabricius; the Spanish *bibliothecas* of Nic. Antonio and Scottus; the *bibliotheca* of Germany by Hertzius; the *bibliothecas* of France by La Croix du Maine, Manceau, and Du Verdier; and that of Naples by Nic. Toppi, commented on by Leon. Nicodemus. Dict. Trev. loc. cit.

The Latin and Greek *bibliothecas* of Fabricius are useful and excellent works in their kind, containing notitias of all the antient writers, non-ecclesiastical, in the order of ages when they lived, with an account of their writings, the several editions and translations of each; frequently their characters, subject matters, and the like. *Jo. Alb. Fabrici* BIBLIOTHECA *Latina*, five Notitia Auctorum Veterum Latinorum, quorumcumque scripta ad nos pervenerunt, first printed at Hamb. 1668, 8vo. but four or five times reprinted, with improvements, and succeeded, at different times, by two volumes of supplements; all which have been since incorporated in an edition at Venice, 1728, 2 vols. 4to. Ejusd. BIBLIOTHECA *Græca*, seu Notitia Scriptorum Veterum Græcorum quorumcumque Monumenta integra aut Fragmenta edita extant, tum plerorumque MSS ac deperditis. Ed. 2. 1708. In it we have an account of all the writers from Homer, to the taking of Constantinople by the Turks.

The same author has published a Latin *bibliotheca* of the middle and barbarous age, on the same plan with the former. *Bibliotheca Latina* mediæ & infimæ Latinitatis, Hamb. 1734—1736. 4 vols. 8vo. It is to be succeeded by several others, especially the historians; wherein he has endeavoured to furnish a supplement to Vossius, in alphabetical order, of the authors names.

The French *bibliotheca* of Sorel is a book, wherein he pretends to form a library, composed only of French books, which yet shall be sufficient for attaining the encyclopædia. Trev. Dict. Univ. T. 1. p. 1024.

Oriental BIBLIOTHECAS are those which enumerate the authors and books in the Hebrew, Syriac, Arabic, Turkish, Coptic, and Ethiopic languages. Such are those of Hottinger and d'Herbelot, divers Arabs, Turks, &c.

There are three kinds or methods of oriental *bibliothecas*. The first contains the lives of the writers, and a catalogue of their works: such are those of the Arabs. The second contains the names or titles of the books in alphabetical order: such is that of Buxtorf. The third digests or classes the books according to their subjects; such is that of Hottinger. *Hottinger*, Bibl. Orient. c. 2. p. 59.

The oriental *bibliotheque* of D'Herbelot not only contains the titles of Arabic, Persian, and Turkish books, but may serve as a kind of historical and geographical dictionary for those countries. Vid. *Struv.* Bibl. Philos. c. 3. p. 84. *Stoll.* Introd. ad Hist. Liter. P. 2. c. 1. §. 15. p. 427.

Rabbinical BIBLIOTHECA is a book containing a list of all the rabbin authors, with their writings, the editions of them, the times when the authors lived, &c. Trev. Dict. Univ. T. 1. p. 1024.

Several authors have attempted books of this kind, as Manassa Ben Israel, R. Bapt. Jonas, a converted Jew; but both left them unfinished at their deaths. R. Schabtai Ben Joseph has published one, intituled *siphte jeschenim*, or the lips of the sleepers, *labia dormientium*. We have another by Jul. Conr. Ottho, a converted Jew, under the title of *gali razia*, or explication of hidden things.

Among the Christians, Gesner, Sixtus Siennensis, Molderus, Theodore, Ebert, Possevin, Besodneus, De la Pause, Hottinger, Cæleſt. du Montmarsan, Heiddegger, and M. Simon, have given the like notitias of rabbinical books. Plantaritz, at the end of his *florilegium rabbinicum*, and the Buxtorfs, father and son, in their *bibliotheca rabbinica*, have done the same more professedly. But the most ample and best deserving the title of a *bibliotheca rabbinica*, is that of Bartolocci an Italian, abbot of the order of St. Bernard, continued by Imbonati, printed at Rome, in five volumes in folio, under the title of *bibliotheca magna rabbinica*. Trev. Dict. Univ. loc. cit.

It does not proceed according to the order of the titles of the books, like the former, but by that of the authors names, in the order of the Hebrew alphabet. The author dying, the work was finished by Jos. Imbonati, a monk of the same order, who added a mantissa of authors, omitted by Bartolocci; as also in 1694, a fifth volume, intituled, *bibliotheca Latina-Hebraica*, containing a list of all the writers in Latin against the Jews, their religion, antiquity, history, &c. *Wolf.* Bibl. Heb. p. 6.

The Hebrew *bibliotheca* of Wolfius contains a notitia both of the Hebrew writers of all ages, and of their books, whether written originally in Hebrew, or translated by them into that language, continued to the present times; being the substance of Bartolocci's great work, without the long dissertations and digressions, wherewith that is crouded; but supplied with a multitude of useful additions from other writers. *J. Chr. Wolfii*, Bibliotheca Hebræa, Lipsi. & Hamb. 4 Tomes, 1715.

BIBLIOTHECA is alſo uſed for a collection of the writings of ſeveral authors in the ſame kind. *Du Pin.* Bibl. des Aut. Eccleſ. T. 1. Pref. p. 3.

In this ſenſe, we have *bibliothecas* of the fathers, of aſcetics, preachers, chemiſts, *&c.* anatomical and pharmaceutical *bibliothecas*, &c.

The *bibliotheca* of chemical philoſophers contains ſeveral pieces and dialogues of Hermes, Mary, Calid, Morienus, Artephius, Geber, *&c.* Trev. Dict. Univ. T. 1. p. 1024.

The *bibliotheca anatomica* by meſſieurs Le Clerc and Manget, phyſicians of Geneva, contains a kind of body of anatomical writings.

BIBLIOTHECA *volante* is a collection of ſmall pieces or tracts, not exceeding ſix ſheets a-piece, made by Jo. Cinelli, an Italian academiſt of Florence, printed in 1677. M. Bayle calls theſe *pieces fugitives*, on account of their being apt to be neglected and loſt, by reaſon of their ſmallneſs: ſuch generally are eſſays, diſſertations, orations, eulogies, letters, and the like. *Fabric.* Conſpect. Theſ. Liter. Ital. p. 203. *Struv.* Introd. ad Notit. Rei Literar. c. 8. §. 21. p. 755.

BIBLIOTHECA *patrum*, or of the fathers, is a collection of the writings of ſeveral of the leſſer fathers, printed in one or more volumes. *Ittig.* de Bibl. & Cat. Patr. c. 1. §. 1. p. 1.

Combefiſius has given a *bibliotheca patrum concionatoria*; F. Chantelan, an aſcetic, a *bibliotheca patrum aſcetica*. *Fabric.* Bibl. Græc. l. 6. c. 10. §. 33. T. 13. p. 756. It. §. 38. p. 791. & §. 39. p. 794.

In this ſenſe, we have a great number of *bibliothecas* of the fathers, printed at divers places, and under various titles; as *orthodoxographia*, *hæreſiologia*, μικροπρεσβυτικον, *ſcripta veterum*, *theſaurus*, *analecta*, *ſpecilegium*, *muſæum*, *miſcellanea*, *acta ſanctorum*, *catenæ*, *antiquæ lectiones*, *varia ſacra collectanea*, &c.

The firſt collection of this kind was made by J. Tichardus in 1528, printed at Baſil, under the title of *antidotum contra diverſas omnium fere ſeculorum hæreſes*. He was followed at the ſame place by Hen. Petri, Jo Heroldus, Jac. Grynæus, G. Fabricius. Simler and Geſner did ſomething of the ſame kind at Zuric. Theſe were followed by De la Bigne and others at Paris, Cologne, Lyons, Leyden, Antwerp, Rome, Venice, *&c.* where each uſually improved and inlarged on his predeceſſors. Thus, the firſt only took in twenty fathers, the ſecond thirty, the next came to ſeventy, the next to eighty-five; the Paris *bibliotheca* of Bigne above two hundred; that of Cologn three hundred; and that of Lyons four hundred.

The firſt work of this kind, under the denomination of *bibliotheca patrum*, was that of Marg. de la Bigne, doctor of the Sorbonne, publiſhed at Paris 1576, in 8 volumes in folio; inlarged, in a ſecond edition in 1589, to 9 volumes; and in a third, in 1609 and 1610, to 10 volumes.

This has proved the baſis of all the *bibliothecas* which have been publiſhed ſince, under the denomination of great *bibliothecas*, and greateſt *bibliothecas*; particularly the *magna bibliotheca veterum patrum*, printed at Paris 1654, in 17 volumes folio; that at Cologn in 1618, in 15 volumes; and the *maxima bibliotheca* at Lyons in 1677, in 27 volumes in folio.

BIBLIOTHECA *ſacra* is a title given by the Paris editors to their *bibliotheca* of the fathers, which was cenſured, and ordered in the *index expurgatorius* to be eraſed.

The great defect of the *bibliothecas* of fathers, begun by Bigne, and carried on by others, is, that the works of the Greek fathers are only given in Latin tranſlations.

Ittigius has a treatiſe expreſs on the *bibliothecas* of the fathers, wherein are rehearſed the ſeveral works of this kind under the ſeveral cities or places where they were printed; and all the authors and pieces contained in each collection are enumerated. *Th. Ittigius* de Bibliothecis & Catenis Patrum, variiſque veterum Scriptorum Eccleſiaſticarum Collectionibus, Lipſ. 1707, 8vo. Vid. *Fabric.* Bibl. Græc. l. 6. c. 10. T. 13. p. 849.

BIBLIOTHECA is alſo uſed for a catalogue of the books in a library: Such are the *bibliotheca Coiſliniana*, *bibliotheca Cordeſiana*, *bibliotheca Thuanæa*, *bibliotheca Bignoniana*, *bibliotheca du Boiſiana*, &c.

Labbe has publiſhed a *bibliotheca* of *bibliotheca's*, or a catalogue of the names of thoſe who have written *bibliothecas*, which has ſince been continued, and improved under another title by Teſſier, from 800 writers to the number of no leſs than 2500. Schrammius has alſo publiſhed a *programma* on the writers of theological *bibliothecas*.

Ph. Labbe's *bibliotheca bibliothecarum* was firſt publiſhed at the end of his ſpecimen *novæ bibliothecæ*, MSS. Paris, 1653, 4to. Afterwards by itſelf with additions, and again at Rouen in 1664 and 1678. Beſides the writers of *bibliothecas*, it contains an account of the encomiaſts and biographers of learned men; of the moſt celebrated printers and bookſellers throughout Europe; of thoſe who have publiſhed *muſæums*, or cabinets of curioſities, inſcriptions, monuments, *&c.*

Ant. Teſſier's *Catalogus Auctorum qui Librorum Catalogos, Indices, Bibliothecas, Virorum Literatorum Elogia, Vitas*, &c. *Scriptis conſignarunt*, was publiſhed at Genev. 1686. 4to. To which has been ſince added a volume of ſupplements, Ibid. 1705, 4to. Vid. Nouv. Rep. Lett. ann. 1686. p. 832. Jour. des Scav. T. 33. p. 956.

J. Con. Schrammii de Scriptoribus Bibliothecarum Theologicarum, Helmſt. 4to.

BIBLIOTHECA is alſo a name given to the books of the Old and New Teſtament, in reſpect of their excellency, and ſufficiency for the uſes of the Chriſtian life. *Durand.* ap. Trev. Dict. Univ. T. 1. p. 1023.

BIBLIOTHECA *divina* of St. Jerom, the title by which the benedictines of the congregation of St. Maur call the Latin tranſlation of the ſcriptures made by that father from the Hebrew, publiſhed at Paris 1693, and which by him was called *canon Hebræus*; but it is much doubted by M. Simon and others, whether this *bibliotheca divina* be the pure Hebrew canon of St. Jerom. *Kuſter*, Biblioth. Nov. Liter. T. 3. p. 266. *Baſnage*, Ouvres des Scav. Mars 1694. p. 361. Trev. Dict. Univ. T. 1. p. 1023.

BIBLIOTHECA, *bibliotheque*, is alſo a title given to divers journals, or periodical accounts in French of new books.

Such are the *bibliotheque choiſie* of Paul Colomies, printed in 1682; *bibliotheque univerſelle* by M. Le Clerc, begun in 1686, and ended in 1693; which was ſucceeded by the ſame author's *bibliotheque choiſie*; and that by his *bibliotheque ancienne & moderne*: ſuch alſo are the *bibliotheque Angloiſe*, begun by M. De la Roche, and continued by M. De la Chapelle; the *bibliotheque Francoiſe* by M. Camuſat; the *bibliotheca* novorum librorum by Kuſter and Sykes; and the *bibliotheca literaria* by an anonymous writer; alſo the *bibliotheque Germanique*, *bibliotheque Italique*, and *bibliotheque raiſonnee*. Vid. *Struv.* Introd. ad Hiſt. Liter. c. 6. p. 498—567.

BIBLIOTHECARIAN, a library-keeper, otherwiſe called librarian. See LIBRARY, *Cycl.*

BIBLIOTHECARIAN is alſo uſed for the author of a *bibliotheca*, or a catalogue of books. See BIBLIOTHECA.

In this ſenſe, P. L'Abbe has given a *bibliotheca*, or catalogue of *bibliothecarians*. Geſner, Lipenius, Struvius, Fabricius, *&c.* are celebrated *bibliothecarians*.

BIBLISTS, *bibliſtæ*, an appellation given by ſome Romiſh writers to thoſe who profeſs to adhere to ſcripture alone as the ſole rule of faith, excluſive of all tradition, and the ſuppoſed authority of the church. Trev. Dict. Univ. T. 1. p. 1025. See BIBLE, *Cycl.* and *Suppl.*

In which ſenſe, all proteſtants are, or ought to be, *bibliſts*.

Bibliſts, among Chriſtians, anſwer nearly to *caraites* or *textuaries* among the Jews. See CARAITES and TEXTUARIES, *Cycl.*

Prateolus makes the *bibliſts* a branch of heretics, who aſſert, that nothing is to be received, or read to the people in the church, or ſtudied in the ſchools by the youth, but the bare text of the bible alone; that all further inſtruction and interpretation is needleſs, for that we are all divinely inſpired, and taught by God himſelf; and finally, that all human arts and philoſophy are ſuperfluous and vain. Vid. *Prateol.* Elench. Hæreſ. l. 2. §. 23. p. 101.

BIBLUS, βιβλος, in botany, an aquatic plant in Egypt, called alſo *papyrus*; of the ſkin whereof the antient Egyptians made their paper. Vid. *Montfauc.* Paleogr. Græc. l. 1. c. 2. p. 14. *Reiman.* Antiq. Liter. Ægypt. p. 91. *Pitiſc.* Lex. Antiq. T. 2. p. 372. Mem. Acad. Inſcrip. T. 9. p. 306. See PAPYRUS and PAPER, *Cycl.*

Hence alſo the Greeks gave the denomination βιβλος, to books made hereof. Thus Lucan,

Nondum flumineas Memphis contexere biblos
Noverat——— *Lucan*, Pharſ. l. 3. ver. 222.

BICAUDA, in zoology, the name of a fiſh of the *xiphias* or ſword-fiſh kind. It is a large fiſh: its body is long, and cylindric: its head terminates in a ſnout, like a hog's, running out into a long bony ſubſtance, like a ſword: its tail is forked: the upper part of its ſword is much longer than the under; and the creature has the power of moving both: the gills are large: it has no teeth: it has two tubercles near the tail; and has ſix fins, two at the gills; and over-againſt theſe, on the belly, it has two long bony bodies, of a black colour, joined together at their inſertion, and having behind them a furrow, into which it can depreſs them at pleaſure, this cavity running along the belly almoſt to the tail: below theſe, it has, on its belly, a broad, triangular fin, ending in an acute angle towards the tail; and another of the ſame kind on the upper part of its body: the tail is placed at about a finger's diſtance from the end of theſe; but the largeſt of all its fins is that on the back: this begins juſt behind the head, and runs three feet down the back: it is made of a membrane reſembling parchment, and is ſupported by ſeveral fibres: this naturally ſtands up to a conſiderable height; but the creature can depreſs this alſo, at pleaſure, into a furrow, which there is along the back behind it. It is five feet long, or more than that, and a foot and half broad at the breaſt, tapering gradually towards the tail. It is covered with a thick and rough ſkin, and is brown on the back and ſides; and has there ſeveral ſhort bony prickles: its belly is white: its fins are all of a browniſh grey, and the back one has ſeveral beautiful black ſpots. It is a very well-taſted fiſh. *Willughby*, Hiſt. Piſc. p. 163.

BICAUDALIS, in anatomy, an appellation given by ſome to a muſcle of the external ear, on account of its having two tails; but which is ſubject to great variety, having ſometimes only one, and ſometimes three tails: in which caſes, it is called *intricalis* and *tricaudalis*. *Coſtel.* Lex. Med. p. 104.

BICE, or BISE, among painters, a blue colour, prepared from the *lapis Armenus*, formerly brought from Armenia, but now from the ſilver mines in Germany. *Waller*, in Phil. Tranſ. N° 179. p. 26. See ARMENUS *lapis*.

The word comes from the barbarous Latin *biſus*, or *biſius*; and that, perhaps, from the French *bis*, grey, *griſius*; whence *biſius panis*. Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 565. *Skin.* Etym. in voc.

Bice bears the beſt body of all bright blues uſed in common work; but it is the paleſt in colour. It works indifferently well; but inclines a little to be ſandy, and therefore requires good grinding on a very hard ſtone, and ſhould be waſhed before uſed. It lies beſt near the eye of any blue now in uſe, except ultramarine. *Smith*, Art of Paint. p. 21.

We have alſo a green *bice*, made of the blue, with the addition of orpiment. It is of a ſandy nature; and therefore when uſed, which is rarely, it muſt be waſhed before uſe. *Boyle*, Phil. Work. abridg. T. 2. p. 68. *Smith*, ubi ſupra. See the article COLOURS.

BICEPS, (*Cycl.*) in anatomy, is a double muſcle, made up of two long, fleſhy bodies, more or leſs round, lying by the ſide of each other on the middle anterior part, and a little towards the inſide of the arm. Theſe two bodies are ſeparated above, each of them ending in a ſmall tendon.

BICEPS *femoris*, a muſcle made up of two portions, one long, the other ſhort, and ending in one common tendon. Both portions are fleſhy, and conſiderably thick, and are ſituated on the back and outſide of the thigh, between the buttock and the ham. The great portion is fixed above by a ſtrong tendon, in the poſterior and lower part of the tuberoſity of the iſchium, under the inſertion of the inferior gemellus, and cloſe behind that of the ſeminervoſus: from thence it runs down towards the lower extremity of the thigh, where it meets the other portion, and joins with it, forming a common tendon. The ſmall portion is fixed by fleſhy fibres to the outſide of the linea aſpera, below its middle, and to the faſcia lata, where it forms a ſeptum between the triceps and vaſtus externus: from thence the fibres run down a little way, and then meeting the great portion, a common tendon is formed between them. This ſtrong tendon runs down to the outer and back part of the knee, and is inſerted in the lateral ligament of the joint, and in the head of the fibula, by two very ſhort tendinous branches. It ſometimes ſends off a tendinous expanſion, which is often unskilfully cut off with the fat. As they run down, they become contiguous, and afterwards cloſely united by one common broad tendon. The antients, who looked on the two ſuperior extremities as two heads, thence gave it the name of *biceps*; but it may be more properly called, from its inſertion, the *coraco radialis*. It is fixed by one of the ſuperior tendons to the apex of the coracoide apophyſis of the ſcapula on one ſide of the tendon of the coraco brachialis, which adheres very ſtrongly to it. This tendon of the *biceps* is broader and ſhorter, and is ſituated more internally than the other; and the fleſhy body belonging to this tendon is longeſt, and conſequently runs higheſt up. The other ſuperior tendon is ſmaller and longer than the former, and the fleſhy body belonging to it ſhorter, and more compounded. This tendon is lodged in the bony channel of the os humeri, being ſurrounded by a membranous vagina continued from the capſular ligament, and ending at the fleſhy body, where it is intirely cloſed. At the upper part of the groove, the tendon runs between the inſertions of the tendons of the ſupra ſpinatus and ſubſcapularis, paſſes immediately over the head of the bone within the capſular ligament, then leaving the joint between the two tendons juſt mentioned, is covered by another ſhort vagina, and is inſerted in the glenoide cavity, in the ſuperior impreſſion of the neck of the ſcapula, near the baſis, or the coracoide apophyſis. The two fleſhy bodies thus ſeparately fixed by their ſuperior tendons, approach by degrees, as they deſcend, and, before they reach the middle of the os humeri, they are cloſely united, and form afterwards a common tendon of a conſiderable breadth, which is inſerted laterally in the poſterior edge of the tuberoſity at the neck of the radius. This inferior or common tendon of the *biceps*, a little before its inſertion, ſends off towards the interior condyle an aponeuroſis, which encreaſing obliquely in breadth on the ſame ſide, covers the inner and back parts of almoſt the whole fore arm, eſpecially the muſcles which lie upon the ulna, where it is inſenſibly loſt. It likewiſe ſtrongly adheres to the pronator teres, and radialis internus, on the fore-ſide of the joint of the elbow.

Both the fleſhy bodies of the *biceps* contribute to the formation of the aponeuroſis, each of the two portions, of which the common tendon is made up of, furniſhing a ſeries of tendinous fibres, which covering the foreſide of the true tendon, unite near the internal condyle by a particular kind of intertexture, and thus form the aponeuroſis. *Winſlow*'s Anatomy, p. 106.

BICHET, a corn-meaſure, containing about a Paris *minot*, chiefly uſed in Burgundy and the Lyonois. Trev. Dict. Univ. T. 1. p. 1026.

BICINIUM, in church-muſic, the ſinging of two, either together or alternately. *Iſid.* Orig. l. 6. c. 19. *Durand.* Rational. l. 1. c. 1. p. 18. *Du Cange*, Gloſſ. Lat. T. 1. p. 550.

In which ſenſe, the word ſtands oppoſed to monody. See MONODY, *Cycl.*

BICKERN *of an anvil*, the pike or beak-iron. *Moxon*, Mechan. Exerc. P. 1. p. 3. See ANVIL, *Cycl.* and *Suppl.*

BICLINIUM, in antiquity, two beds about a table; or, as ſome ſay, rather a bed whereon two perſons lie to eat. *Pitiſc.* Lex. Antiq. T. 1. p. 277. See BED.

BICORNE *os*, or *two-horned bone*, in anatomy, the ſame with the *os hyoides*. *Gorr.* Med. Def. p. 479. in voc. *Drake*, Anthrop. l. 3. c. 15. p. 350. See HYOIDES.

BICORNIS, in anatomy, an extenſor muſcle of the arm, otherwiſe denominated *radiæus externus*, and *extenſor carpi radialis*. *Drake*, Anthrop l. 4. c. 6. p. 419. *Heiſt.* Comp. Anat. §. 335. p. 281. See RADIÆUS.

BICORNIS *pollicis manus* is the proper extenſor muſcle of the thumb; ſometimes alſo, from the number of its horns, called *tricornis*. *Heiſt.* Comp. Anat. §. 338. p. 283.

It takes its riſe from the poſterior and middle part of the radius and ulna, and is inſerted in the firſt, ſecond, and third phalanx.

BICORPOREA *ſigna*, thoſe ſigns of the zodaic which have two bodies, or conſiſt of two figures. *Wolf.* Lex Math. p. 256. *Vital.* Lex. Math. p. 85.

Such are *gemini*, or the twins; alſo *piſces*, and *ſagittarius*, conſiſting of a man and a horſe.

BIDAL, or BIDALE, in our antient cuſtoms, denotes the invitation of friends to drink ale at ſome poor man's houſe, who, in conſideration hereof, expects ſome contribution for his relief.

This cuſtom ſtill obtains in the weſt of England, and is mentioned in ſome of our antient ſtatutes. Vid. Stat. 26 Hen. 8. c. 6. *Skinn.* Etym. in voc.

BIDALDI, an antient kind of foot-ſoldiers mentioned by the French hiſtorians, armed with two darts. *Aquin.* Lex. Milit. T. 1. p. 128.

Hence the origin of the word, which ſeems to be a corruption for *bidardi* or a *binis dardis*. They are alſo called *bidarii*, *bidaus*, *bideaux*, *bidauts*, and *pitauts*. *Caſen.* Orig. p. 24. Trev. Dict. Univ. T. 1. p. 1027.

BIDDING is uſed for proclaiming or notifying.

In which ſenſe, we ſometimes meet with *bidding* the banns. See BANN, *Cycl.* and *Suppl.*

One part of the office of deacons, in the antient church, was to *bidd* the prayers by certain known forms of words; that is, to notify to the people when each part of the ſervice began. *Bingh.* Orig. Eccleſ. l. 2. c. 20. §. 10.

BIDDING-*prayers* alſo denote an indirect kind of prayers, antiently called ευχαι απο προσφωνησεως, wherein no petitions were immediately addreſſed to God; but the people, eſpecially the catechumens, energumeni, and competentes, were called on, or exhorted to pray, and inſtructed what to pray for. Idem, ibid. l. 15. c. 1. §. 2.

We have a form of theſe *bidding-prayers* in the apoſtolical conſtitutions, tranſcribed from thence by Bingham.

BIDDING alſo denotes the raiſing the price of a thing at a ſale or auction. See AUCTION, *Cycl.*

This anſwers to what the Romans called *licitari*; the French *encherir*. The antients uſed to *bid* by holding up the hand or finger. Vid. *Pitiſc.* Lex. Antiq. T. 2. p. 88. voc. *licitatio*. *Calv.* Lex. Jur. p. 535. voc. *licitari*. *Savar.* Dict. Comm. T. 1. p. 1813.

BIDDING *of the beads*, a charge or warning which the pariſh-prieſt gave to his pariſhioners at certain ſpecial times, to ſay ſo many *pater-noſters*, &c. on their beads. *Skinn.* & *Cowel.* in voc.

BIDENS, in botany, the name of a genus of plants; the characters of which are theſe: the flower is uſually of the regular floſculous kind, compoſed of a number of ſmall floſcules, divided into ſeveral ſegments at their ends, placed on the embryos, and contained in one common ſcaly cup. Sometimes there are alſo a number of ſemifloſcules in the flower; but this is leſs common. The embryos finally ripen into ſeeds, terminating in ſeveral prickly points. See Tab 1. of Botany, Claſſ. 12.

The ſpecies of *bidens*, enumerated by Mr. Tournefort, are theſe:

1. The common *bidens*, with leaves divided into three parts. 2. The *bidens*, with undivided leaves. 3. The broad-leaved Canada *bidens*, with gold-yellow flowers. 4. The whole leaved American *bidens*, with white flowers. 5. The ſmallage leaved American *bidens*. 6. The hawk-weed leaved Indian *bidens*, with alated ſtalks. 7. The trifoliate American *bidens*, with daiſy-like flowers. 8. The American *bidens*, with roundiſh bullated leaves. 9. The American *bidens*, with oblong, bullated, and ſinuous leaves. 10. The ilex leaved ſhrub American *bidens*, with yellow flowers. 11. The ſhrubby American *bidens*, with the leaves and appearance of the cow-parſnip. 12. The trifoliate angelica-leaved American *bidens*, with yellow radiated flowers. 13. The five leaved American *bidens*, with radiated flowers. *Tourn.* Inſt. p. 462.

Bidens is a tall, large, aquatic plant, recommended as good againſt poiſon and the bite of ſerpents. It is alſo eſteemed a detergent, and uſed in ſternutatories. The name *bidens* has been given it from the pointed figure of its ſeed, which reſemble a fork. Vid. *Lemer.* Dict. des Drog in voc.

BIDENTAL, in antiquity, a place ſtruck with a thunderbolt, and on that account conſecrated to the gods, and forbidden to be trod on. *Non. Marcell.* c. 1. p. 564. Scholiaſt. *Perſ.* ad ſat. 2. v. 27.

Bidental only differed from *puteal*, as in the latter the thunderbolt was ſuppoſed to be hidden, or buried with ceremony under the ground. *Kenn.* Rom. Antiq. P. 2. l. 5. c. 10. p. 336. *Struv.* Antiq. Rom. c. 6. p. 293.

The fall of lightning, or a thunderbolt, on any place, was judged by the Romans an indication that Jupiter demanded it for himſelf. Hence they ſurrounded it with a wall, rail, ſtakes, or even a rope; and expiated it, by the ſacrifice of a *bidens*, or ſheep of two years old. Vid. *Buling.* de Fulm. c. 11. *Lomeier*, de Luſtrat. c. 13.

Feſtus repreſents the *bidental* as a temple, where ſheep of two years old were offered in ſacrifice [a]. But by temple he here means no more than a place incloſed, and conſecrated to the gods [b].—[a *Feſt.* de verb. ſignif. in voc. *Bidental.* b *Pitiſc.* Lex. Ant. T. 1. p. 277. in voc.

BIDENTES, in middle-age-writers, denotes two yearlings, or ſheep of the ſecond year. *Kennet*, Gloſſ. ad Paroch. Antiq. in voc.

The wool of theſe *bidentes*, or two year old ſheep, being the firſt ſheering, was ſometime claimed as a heriot to the King, on the death of an abbot. *Kennet*, loc. cit.

Among the antient Romans, the word was extended further to any ſorts of beaſts uſed for victims, eſpecially thoſe of that age: whence we meet with *ſues bidentes*. See BIDENTAL. Vid. *A. Gell.* l. 16. c. 6. *Struv.* Ant. Rom. c. 10. p. 462. *Lang.* Epiſt. Medic. l. 1. Ep. 61. p. 297. *Voſſ.* Etym. p. 71.

BIDET, a nag, or little horſe, formerly allowed to each trooper, and dragoon, for his baggage, and other occaſions. *Cruſo*, Milit. Inſtr. for Cavalry, app.

Bidets are grown into diſuſe, on account of the expences thereof, and the diſorders frequently ariſing from thoſe who attended on them, *&c.*

BIDIÆI, βιδιαιοι, an order of magiſtrates at Sparta, five in number, whoſe buſineſs was to have an eye over the *ephebi*, and be preſent at their exerciſes, wreſtlings, *&c.* *Craig.* de Repub. Lacedæm. l. 2. c. 5. *Schottg.* Lex. Antiq. p. 219.

BIER, a kind of wooden carriage, in which the bodies of the dead are born to their grave. See BURIAL.

The word comes from the French *biere*, which ſignifies the ſame. It is called in Latin *feretrum*, *a ferendo*.

Among the Romans the common *bier*, whereon the poorer ſort were carried, was called *ſandapila*; that uſed for the richer ſort, *lectica*, *lectica funebris*, ſometimes *lectus*. The former was only a ſort of wooden cheſt, *vilis arca*, which was burnt with the body; the latter was enriched and gilded for pomp. It was carried bare, or uncovered, when the perſon died a natural and eaſy death; when he was much diſfigured or diſtorted, it was veiled or covered over. *Pitiſc.* L. Antiq. T. 1. p. 774. voc. *Feretrum.* It. T. 2. p. 26. voc. *Lectica.* Id. ibid. p. 689. voc. *Sandapila.* *Kenn.* Rom. Ant. Not. P. 2. l. 5. c. 10. p. 348. *Du Cange* Gloſſ. Lat. T. 3. p. 241. voc. *Lectus.*

BIER is more peculiarly uſed for that whereon the bodies of ſaints are placed in the church to reſt, and expoſed to the veneration of the devout.

This is alſo called in middle-age writers, *lectus*, *feretrum*, *lectica*, and *loculus*; and was uſually inriched with gold, ſilver, and precious ſtones, which was the cauſe that the *bier* of St. Benedict was pillaged, and all its ornaments carried off. In our Engliſh churches we read of gilt, and cryſtal *biers*. *Du Cange*, Gloſſ. Lat. T. 3. p. 241. voc. *Lectus.* It. p. 319. voc. *Loculus.* It. p. 237. voc. *Lectica.* *Dugd.* Monaſt. Abr. p. 304.

BIFFA, in middle-age writers, a machine for caſting ſtones and darts, having a moveable counterpoiſe, which turned round its yard. *Ægid.* Rom. de Regin. Princ. l. 3. c. 18. *Aquin.* Lex. Milit. T. 1. p. 128.

BIFRONS, a perſon double-fronted, or two-faced.

BIFRONS is more peculiarly an appellation of Janus, who was repreſented by the antients with two faces, as being ſuppoſed to look both backwards and forwards: though other reaſons for it are recited by Plutarch [a]. Sometimes he was painted with four faces, *quadrifrons*, as reſpecting the four ſeaſons [b]. —[a Vid. *Serv.* ad Æn. l. 12. v. 198. *Plut.* Quæſt Rom. N° 21. *Pitiſc.* Lex. Antiq. T. 1. p. 925. b *Crinit.* de Honeſt. Diſcipl. l. 4. c. 10.]

BIGA (*Cycl.*)—The invention of *bigæ* is attributed by Pliny [a] to the Phrygians; by Iſidore [b], to Cyreſtenes of Sicyon, who firſt yoaked two horſes together.—[a *Plin.* Hiſt. Nat l. 7. c. 56. b *Iſid.* Orig. l. 18. c. 35.]

Bigæ were the chariots firſt uſed in the Circenſian games; then *trigæ*, and afterwards *quadrigæ*. See CHARIOT, *Suppl.* and CIRCENSES *ludi*, Cycl.

The moon, night, and the morning, are by mythologiſts ſuppoſed to be carried in *bigæ*, the ſun in *quadrigæ*.

Statues in *bigæ* were at firſt only allowed to the gods, then to conquerors in the Grecian games; under the Roman emperors, the like ſtatues, with *bigæ*, were decreed and granted to great and well-deſerving men, as a kind of half triumph, being erected in moſt public places of the city. *Pitiſc.* Lex. Ant. T. 1. p. 278. See STATUE, *Cycl.*

Figures of *bigæ* were alſo ſtruck on their coins. *Beverin.* Synt. de Ponder. p. 8. See BIGATI.

The drivers of *bigæ* were called *bigarii*; a marble buſt of one Florus a *bigarius* is ſtill ſeen at Rome. *Pitiſc.* loc. cit.

BIGA, or BIGATA, in writers of the middle and barbarous age, a cart with two wheels, drawn often with one horſe. It was more frequently called *birota*. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

BIGAMY (*Cycl.*)—According to the law of Scotland, the crime in *bigamy* conſiſts in the perjury it implies, as being a manifeſt violation of the matrimonial oath; and it is puniſhed in the ſame manner as perjury, with confiſcation of moveables, impriſonment for a year and a day, or, longer, at the king's will, and infamy. This is by force of the act 19 Q. Mary. The crime is but ill defined in this ſtatute, but the meaning is plain enough, to ſhew that a man's marrying a ſecond wife, or a wife a ſecond huſband, during a ſtanding marriage with a former wife, or former huſband, is *bigamy*.

By a ſtanding marriage is meant one formally ſubſiſting at the time; for *bigamy* is committed, whether the former marriage is reducible for adultery, or ſubject to be declared null *ab initio*, for impotency or contingency of blood. But in this caſe, the caſe of the bigamiſt is held favourable; eſpecially if the former marriage be declared null, before the proceſs for the *bigamy* is commenced. *Mackenz.* Crim Law.

BIGATI, in antiquity, a kind of antient Roman ſilver coins, on one ſide whereof was repreſented a *biga*, or chariot drawn by two horſes. See BIGA, *Cycl.* and *Suppl.*

The *bigatus* was properly the Roman denarius, whoſe impreſſion during the times of the commonwealth, was a chariot driven by victory, and drawn either by two horſes, or four, according to which it was either denominated *bigatus*, or *quadrigatus*.

Bigati therefore were of different values, according to the ſpecies of denarii, *&c.* The *denarius bigatus* is rated by Beverinus at a Roman julio, the *quinarius* at half, and the *ſextarius* at a quarter of a julio. *Beverin.* Synt. de Ponder. p. 37, and 217.

Several of thoſe called conſular medals are alſo *bigati*.

In lieu of horſes, the chariot is repreſented on ſome *bigati*, as drawn by two deer, eſpecially in the medals of the family of Axſia; on thoſe of the family Crepereia, by two hippopotami, who draw, or rather bear Neptune on their tails. *Trev.* Dict. Univ. T. 1. 1036.

BIGGEL, in natural hiſtory, a quadruped much about the colour and bigneſs of a rein-deer; its head is ſaid to be like that of a horſe; its main like that of an aſs, with black cloven feet, and two black horns on his head.

This animal is found in the Eaſt-Indies, according to Mandelſloe, in Harris's collection of voyages, N° 52. p. 775.

A creature brought from Bengal, ſomething anſwering this deſcription, was ſhewn in London, an. 1745. We have a deſcription and figure of it by Dr. Parſons, in Phil. Tranſ. N° 476. §. 17.

BIGHT, in the ſea-language, denotes any part of a rope, as it is taken compaſſing, coiled up. When they cannot, or would not, take the end in hand, becauſe of the cables being coiled up; they ſay, give me the *bight*, or hold by the *bight*, *i. e.* by one of the fakes, which lies rolled up one over the other. *Manw.* Seam. Direct. p. 8. *Betel.* Sea. Dial. 4. p. 194.

BIGNONIA, in botany. See TRUMPET-*flower*.

BIGOT, (*Cycl.*) in Italian *bigontia*, is uſed to denote a Venetian liquid meaſure, containing the fourth part of the *amphora*, or half the *boot*. *Savar.* Dict. Comm. T. 1. p. 335.

BIGOURNEAU, in natural hiſtory, a name given by Bellonius to that genus of *cochleæ*, called the *ſemi-circular* mouthed, or *ſemi-lunar kind*, including the *neritæ*. See NERITA.

BIL, in ichthyography, a name given in ſome parts of England to a particular ſpecies of cod-fiſh, called by Willughby *aſellus luſcus*. It is but a ſmall kind, ſeldom exceeding twelve inches in length, and is not of the round bodied ſhape of moſt of the other ſpecies, but is broad and flatted at the ſides. Its colour on the back is a pale olive colour, or duſky yellow; its belly is white; its ſcales are more than twice as large as thoſe of the cod, and adhere very firmly to the ſkin. The mouth is of a moderate ſize, and under the chin, or in the angle of the lower jaw, there is a ſmall ſhort beard. The jaws are furniſhed with long, ſtrong, and ſharp teeth, which bend backward; but there is only one row of theſe in each jaw. The dotted lines running along the ſides, are curved to the end of the abdomen, deſcending gradually from the upper angle of the gills toward the bottom of the belly. It is diſtinguiſhed from the cod by its ſmallneſs, by its being ſhorter and broader in its ſhape, by the paleneſs of its colour, and largeneſs of its ſcales; tho' it agrees with it, in having a beard under the chin. *Willughby*'s Hiſt. Piſc. p. 169.

BILANCIIS *deferendis*, a writ directed to a corporation, for the carrying of weights to ſuch a haven, there to weigh the wool, that perſons by our antient laws were licenſed to tranſport. Reg. Orig. 270. *Blount. Cowel.*

BILANDER, in navigation, a ſmall flat-bottomed veſſel uſed in northern countries, with one large maſt and ſail; having

its

its deck raiſed from head to ſtern, half a foot above the plat-board. *Ozan.* Dict. Math. p. 272.

BILATERAL *cognation*, denotes kinſhip, or kindred, on both ſides; that of the father as well as mother. See COGNATION, *Cycl.*

Such is the relation of brothers, ſiſters. *Bilateral* ſtands contradiſtinguiſhed to unilateral. *Hartung.* Exerc. Jur. Civ. 5. c. 12. p. 41.

BILBOWS, at ſea, a puniſhment anſwering to the ſtocks at land. *Guill.* Gent. Dict. p. 3. in voc. See STOCKS.

BILCOCK, in zoology, a name given by ſome to the water rail, a bird of the moor-hen kind, but ſmaller than the common moor-hen. See ROLLUS.

BILE, in natural hiſtory and medicine. See GALL, *Suppl.* and BILE, *Cycl.*

BILIMBI, in natural hiſtory, the name of an Eaſt-Indian tree, very famous throughout that part of the world for its uſes in medicine. European botaniſts have called it *malus indica fructu pentagono*, or the Indian apple-tree, with the five-cornered fruit.

It ſeldom grows to above twelve feet high, and is not common wild, even in the Eaſt-Indies, but is carefully cultivated in gardens, where it flowers all the year round. *Bont*, Med. Ind.

The juice of the root is drank as a cure for fevers. The leaves boiled, and made into a cataplaſm with rice, are famed in all ſorts of tumors, and the juice of the fruit is uſed in almoſt all external heats, dipping linen rags in it, and applying them to the parts. And the ſame is drank, mixed with arrack, to cure diarrhæas; and the dried leaves, mixed with betle leaves, and given in arrack, are ſaid to promote delivery. The fruit is pleaſant to the taſte, when fully ripe, and is commonly eaten; when ſmaller, and unripe, it makes a very pleaſant pickle.

BILINGUIS, (*Cycl.*) διγλωσσος, properly denotes a perſon, who has two tongues in his mouth; an inſtance of which is given by Dolæus. *Bonet.* Medic. Septent. l. 5. §. 25. c. 1. p. 301. *Caſt.* Lex. Med. p. 104. See TONGUE, *Cycl.* and *Suppl.*

BILINGUIS is alſo uſed for a perſon who ſpeaks two languages, which was formerly reputed a kind of prodigy. *Gal.* l. 2. Diff. Pulſ. c. 5. *Caſt.* Lex. Med. p. 264. voc. *Diglottos.*

BILIOUS *fevers*, a term uſed by medical writers to expreſs ſuch fevers as ariſe from an immediate effuſion of the bile. Theſe often ariſe from violent fits of anger in the patient. Of this nature are the *cholerica febris*, and *cauſus*. See FEVER, *Cycl.* and *Suppl.* and CAUSUS, *Suppl.*

BILL, (*Cycl.*) in phyſiology, is a cartilaginous ſubſtance covered with a ſkin or cutis, which forms the beak, or *roſtrum*, of birds. See BIRD, *Cycl.* and *Suppl.*

The *bill* does the office of teeth in ſome birds; alſo of weapons of offence. In the parrot kind it is hooked, and ſerves to climb, and catch hold of boughs withal [a]. The upper *bill* of this bird is filled with rows of croſs bars; and the under *bill*, which is much ſhorter, ſhuts within the upper, and draws againſt the roof of the mouth; by which means a kind of maſtication is effected, before the meat paſſes into the craw [b]. The phœnicopter's *bill* is a true hyperbola, pointed at the end like a ſword; and what is remarkable, the upper *bill* of this bird moves in eating, the lower being fixed, which is the contrary of what is found in all other kinds [c]. The woodpecker's *bill* is ſtrong, and ſharp enough to dig holes, and build in the heart of the hardeſt timber [d]. [[a] *Grew*, Muſ. Reg. Societ. p. 57, ſeq. [b] Phil. Tranſ. N° 211. p. 155. [c] *Grew*, loc. cit. p. 67. [d] Phil. Tranſ. N° 350, p. 509.] See PHOENICOPTERUS and PICUS.

In the iſland of Fero, a fixed reward is given for the *bills* of ravenous birds: All watermen are obliged to bring a certain number yearly to the country courts, at the feaſt of St. Olaus; when they are thrown into a heap, and burnt in triumph [a]. Plott gives divers inſtances of monſtrous irregularities in the *bills* of birds; particularly of a raven, whoſe mandibles croſſed each other, the lower chap turning upwards, and the upper downwards [b]. [[a] *Barthol.* Act. Med. *Hoffn.* T. 1. p. 89. [b] *Plott*, Nat. Hiſt. Stafford. c. 7. §. 14. Item, §. 2.]

BILL, in commerce—*Lumbard* BILLS are inſtruments of an uncommon kind and figure, uſed in Italy and Flanders, and of late alſo in France; conſiſting of a piece of parchment, cut to an acute angle about an inch broad at top, and terminating in a point at bottom; chiefly given, where private perſons are concerned in the fitting out a ſhip on any long voyage.

The manner is thus: The party, who is deſirous to be concerned in the cargo or venture, carries his money to the merchant, who fits out the ſhip, where it is entered down in a regiſter; at the ſame time the merchant writes down on a piece of parchment, upwards of an inch broad, and ſeven or eight inches long, the name of the lender, and the ſum lent, which being cut diagonal wiſe, or from corner to corner, each party retains his half. On the return of the veſſel, the lender brings his moiety to the merchant, which being compared with the other, he receives his dividend accordingly. Much the ſame is practiſed in Holland by thoſe who lend money on pledges: The name of the borrower, and the ſum, are written on a like ſlip of parchment, which is cut in two, and half given to the borrower, and the other half ſtitched to the pledge; that, upon comparing them together again, the borrower may receive his goods on paying the money ſtipulated. *Savar.* Dict. Comm. T. 1. p. 343.

Crows BILL, *roſtrum corvi*, among chemiſts, the beginning of the philoſopher's ſtone, diſcovered by the blackneſs of the matter, called alſo the *crow's head*. *Libav.* Opp. T. 2. p. 205. *Caſt.* Lex. Med. p. 642. voc. *Roſtrum.*

BILLS *of mortality* are accounts of the numbers of births and burials within a certain diſtrict, every week, month, quarter, or year. See MORTALITY, *Cycl.*

In this ſenſe we ſay *weekly bills*, *monthly bills*, *quarterly*, and *yearly bills*. Phil Tranſ. N° 143. p. 21.

The London *bills of mortality*, which were the firſt, are compoſed by the company of pariſh clerks, and expreſs the number of chriſtenings of each ſex, and the number of deaths from each diſeaſe.

From the Breſlaw *bills* Dr. Halley has endeavoured to eſtimate the degrees or proportions of mortality at different ages, and from thence to ſettle thevalue of annuities on lives. Vid. Phil. Tranſ. N° 196. p. 597, and 654. See ANNUITY, *Cycl.* and *Suppl.*

Sir William Petty, and Capt. Grant, have publiſhed obſervations on the *bills of mortality* of London. The former of theſe authors has done the ſame on thoſe of Dublin. Phil. Tranſ. N° 143. p. 21, ſeq.

Dr. Sprengel gives a compariſon of the *bills of mortality* of ſeveral cities and countries in Europe. Phil. Tranſ. N° 380. p. 44. Item, N° 381. p 25. Item, N° 400. p. 365.

BILLARD, in ichthyology, an Engliſh name for the young fiſh of the coal fiſh, or rowling pollack, up to a certain ſize, as the cod to a certain ſize is called a *codling*. *Willughby*'s Hiſt. Piſc. p. 169.

BILLES, in traffick, a name given firſt by the French, and afterwards by other nations, to the maſſes of raw ſteel, or ſuch as has been tempered for ſale, and is ready to be wrought into tools, &c. This in working loſes its temper, but it recovers it again by plunging it into cold water.

BILLETS (*Cycl.*) are to be three feet long, and the band 24 inches round. *Moor*, Math. Comp. c. 2. p. 16.

BILLET, *billette*, in the French cuſtoms, a little ſign in form of a caſk, hung up at places where toll is to be paid, to advertiſe paſſengers and carriages, that ere they advance farther, the dues are to be paid to the king, or the lord who is charged with the care of repairing the highways. Trev. Dict. Univ. T. 1. p. 1044.

BILLETING *of ſoldiers*, is the lodging or quartering them in the houſes of the inhabitants of a place.

BILUR, in natural hiſtory, a name given by many of the Arabian writers to a gem, which, tho' they often mention, yet they have no where given us a deſcription of. Some have imagined it the onyx, and others the beryl; but it appears more probably to have been a ſpecies of cryſtal; probably the pebble cryſtal of the Eaſt-Indies, which is conſiderably finer than the common ſprig cryſtal, and is often ſold under the name of the white ſaphire; tho' conſiderably inferior, both in luſtre and hardneſs, to the true white ſaphire. The only reaſon that people have had for ſuppoſing the *bilur* to be the beryl, is, that the names ſeem eaſily formed out of one another, by the tranſpoſing of ſome of the letters; but as the Arabians have always deſcribed this as a clear, colourleſs ſtone, this will not bear. The medical writers of that nation, Aviſenna and others, have compared the fine pellucid, and colourleſs ſal armoniac to this ſtone: They ſay it was colourleſs as water, and reſembled the *bilur*. The author of the Nubian geography ſeems to have been well acquainted with this ſtone, but he has left us no deſcription of it; he only ſays, that it was found in the iſland of Serandib, and that the largeſt ſtones of it were found there.

Some of the people moſt ſkilled in the oriental languages, interpret the *ſoham* of the bible to be the ſame with the *bilur*; and ſay, that both theſe words expreſs only the onyx; but as there can be no reſemblance between a variegated ſtone, and a clear, uniform, and pellucid ſalt, it is plain from this alone, that the onyx was not the *bilur*. It is to be obſerved, that this ſal armoniac, of which this is ſpoken, is not the common factitious ſubſtance, now known under that name; but the foſſil ſalt, ſince called *ſal gemmæ*. See the article SAL AMMONIACUM.

BINDER, (*Cycl.*) in a general ſenſe. See BINDING.

BINDER, in a more particular ſenſe, denotes a perſon whoſe profeſſion is to bind books. See BOOK-*binding*, *Cycl.*

The antient *book-binders* were called *glutinatores*, as their chief buſineſs was to faſten together a number of leaves of the papyrus with glue, &c. *Pitiſc.* Lex. Antiq. T. 1. p. 877. in voc. *glutinatores.*

The tools uſed by the modern *book-binders* are, a folding-ſtick, hammer, block, preſs, needle, and knife for cutting, beſides gilding tools.

There were only two *binders* allowed in all Paris, with two gilders, under the name of *illuminers*, till the invention of printing, whereby books were publiſhed. In 1686, the *book-binders* were ſeparated from the bookſellers, and erected into a company

company apart, by the laws of which they are obliged to bind only perfect books; not to ſow above two quires or gatherings together; and to indorſe with parchment only, not paper. *Savar.* Dict. Comm. T. 2. p. 1370, ſeq. voc. *relieur.*

BINDER-*ooze*, the weakeſt kind of *tan-ooze*. Vid. *Hought.* Coll. T. 1. p. 319. See TANNING, *Cycl.*

BINDING, (*Cycl.*) the act of faſtening or joining two things together by ſome bond, or *vinculum.*

Bales are bound with cords; ſheaves of corn with ſtraw; faggots with bruſh-wood; maſts with iron-bands; caſks with hoops, &c.

BINDING is alſo uſed in ſpeaking of different matters joined together by ſomething which incorporates them together.

In this ſenſe, glue, ſize, and paſte, are uſed for *binding* paper, leather, wood, &c.

BINDING, in the art of defence, a method of ſecuring or croſſing the adverſary's ſword with a preſſure, accompanied with a ſpring from the wriſt.

Binding is a method of purſuit more ſafe and certain, as well as maſterly, than taking of time.

How *binding*, by thus ſpringing croſs on the adverſary's ſword, differs from beating, is ſhewn under the article *beating*. See BEATING.

Unleſs a man, by ſome kind of croſs, ſecure, as it were, or render his adverſary's ſword incapable to offend him during the time of his performing a leſſon upon him, it is impoſſible for him to be certain but that he may receive from his adverſary, either a fortuitous *contretemps*, or an exchanged thruſt, before the recovery of his body, or going off after a thruſt. *Hope*, Compl. Fenc p. 112.

The great objection made by ſome people, particularly thoſe time-catchers, againſt the frequent uſe of *binding*, is, that when a man, in performing it, cleaves too much to his adverſary's ſword, he is liable to his adverſary's ſlipping of him, and conſequently of receiving either a plain thruſt, or one from a feint. *Hope*, Compl. Fenc. ubi ſupra.

BINDING is a term in falconry, which implies tiring, or when a hawk ſeizes. Dict Ruſt. in voc.

BINDING is alſo uſed in a figurative and ſpiritual ſenſe: thus Chriſt is ſaid to have given his church a power of *binding and looſing*, i. e. of retaining or remitting ſins. Vid. *Calm.* Dict. Bibl. T. 1. p. 309.

The power of *binding and looſing* is otherwiſe called the power of the *keys*. See KEY, *Cycl.*

BIND-*weed*, in botany. See CONVOLVULUS.

BINN, *binna*, a ſort of cheſt or cupboard, wherein to lock up bread, meat, or other proviſions. *Du Cange*, Gloſſ. Lat. T. 1. p. 557.

The word is alſo uſed for a place boarded up to put corn in. Dict. Ruſt. in voc.

BINOMIUS, in middle-age writers, denotes a perſon with two names.

Moſt Chriſtians antiently were *binomii*, as having had other names in their heathen ſtate, which they changed at their converſion. Beſides, it was an antient cuſtom for parents to give names to their children immediately after they were born, and ſometimes other different ones afterwards at their baptiſm; one of which frequently became a *cognomen*, or ſurname. In reality, it was a conſtant practice to aſſume a new name at baptiſm, as the religious ſtill do in the Romiſh church, on their reception into the monaſtic ſtate; or the Jewiſh proſelytes at their circumciſion. *Du Cange*, Gloſſ. Lat. T. 1. p. 557, ſeq.

BIOCOLYTÆ, βιοκωλυται, in the Bizantine empire, an order of officers appointed to prevent the violences frequently committed by the ſoldiers. *Calv.* Lex. Jur. p. 117. *Du Cange*, Gloſſ. Lat. T. 1. p. 201. Trev. Dict. Univ. T. 1. p. 1047.

The word is Greek, compounded of βια, *vis*, violence, and κωλυω, *I hinder*; and ſhould rather be written *biacolytæ*.

The *biocolytæ* appear to have been much the ſame with the French archers of the marſhalſea. They were ſuppreſſed by the emperor Juſtinian.

BIOGRAPHY, βιογραφια, the art of deſcribing or writing lives.

Biography is a branch or ſpecies of hiſtory more entertaining, as well as uſeful in many reſpects, than general hiſtory, as it repreſents great men more diſtinctly, unincumbered with a croud of other actors, and, deſcending into the detail of a man's actions and characters, gives more light into human nature, as well as excites us more to imitation.

Holſtenius makes Homer's odyſſee the firſt pattern of *biography*, though he ſeems inclined to carry the invention up higher to Moſes, the author, or at leaſt tranſlator, of the life of Job. Vid. *Holſten.* de Vit. & Script. Porphyr. c. 1. *Fabric.* Bibl. Græc. T. 4. p. 207, ſeq.

Few have ſucceeded in this province: of all the moderns, ſome will not allow that glory to more than two, *viz.* Cammerarius and Gaſſendus, whoſe lives of Melancton and De Peiresk are maſter-pieces in *biography*. Vid. *Struv.* Bibl. Philoſ. c. 1. p. 12, ſeq. *Stoll.* Introd. Hiſt. Liter. P. 1. §. 71. p. 66.

BIOLYCHNIUM, βιολυχνιον, a ſubſtantial fire, flame, or heat, which ſome phyſicians ſuppoſe actually lodged, or inherent in the heart, and remaining there as long as life laſts. *Burggr.* Lex. Med. p. 1582. *Brun.* p. 173. See HEAT.

The word *biolychnium* is compounded of the Greek βιος, life, and λυχνος, lamp, or light.

Biolychnium frequently occurs in Charlton, and ſome other modern writers, where it ſignifies the ſame with what is otherwiſe expreſſed in Engliſh by the lamp of life, vital flame, innate heat; by the Latins, *calidum innatum*, *calor innatus*, *ignis inſitus*; by the Greeks, το εμφυλον θερμον, εμφυλον πυρ, &c.

Hippocrates and the antients have frequent recourſe to the ſyſtem of *biolychniſm*, though under other names. It firſt gave way to the diſcovery of the circulation of the blood.

This flame was ſuppoſed to be generated by the ingreſs of the air into the blood; but beſides that ſuch ingreſs is ſtill conteſted, the blood ſeems unfit to kindle, or take fire.

Some will have it to have been the human ſoul, others the animal ſpirits, and others the Deity, that did the office of a *biolychnium*, and was the ſpring of all the actions and motions of the body. See BLOOD, &c.

Caſp. Hoffman and Conringius have written treatiſes expreſs on the antient doctrine of the lamp of light, or innate heat.

BIOLYCHNIUM is alſo a denomination of a peculiar kind of vital balſam, prepared from human blood; the proceſs of which is deſcribed by Beguinus [a]. J. Ern. Burggravius has a treatiſe expreſs on it [b].—[[a] *Beguin.* Tyron. l. 3. c. 1. *Burggrav.* Lex. Med. p. 1584. [b] *J. E. Burggrav.* Biolychnium ſeu Lucerna cum Vita ejus, cui accenſa eſt, Myſtice vivens jugiter, &c. Franck. 1611.]

BIOTHANATI, βιοθανατοι, in ſome medicinal writers, denotes thoſe who die a violent death. *Foreſt.* ob. 1. in Schol. ii. ap. *Brun.* p. 173.

The word is alſo written, and with more propriety, *biathanati*; ſometimes *biæothanati*.

It was a common opinion, refuted by St. Chryſoſtom, that the ſouls of *biothanati* became dæmons, or goblins, and wandered in the air, without finding a place of reſt [a], at leaſt, for the ſpace of an hundred years; and hence the notion of ſpectres and apparitions ſeen about the places where perſons were put to death; unleſs we rather ſuppoſe the former notion to have taken its riſe from this latter. Be this as it will, the appellation *biothanati* appears to have been hence alſo given to ſpectres or goblins themſelves: ſo that, in the form of bleſſing the water in the eve of the epiphany, as preſcribed in an antient ritual written by the abbot of Miletus, we find the following words; *ſed expellas omnem umbram, omnes machinationes diaboli, ſive ſpirituum immundorum, ſive biothanatorum, ſive erraticium* [b]. —[[a] *Suic.* Theſ. Eccleſ. [b] *Chryſoſt.* Homil. 36. Opp. T. 5. *Suic.* loc. cit. *Magri.* Voc. Eccleſ. p. 36.]

BIOTHANATI, in a more particular ſenſe, denote thoſe who kill themſelves, more properly called *autothanati*. See MURDER, *Cycl.* and *Suppl.*

In this ſenſe it is that the word is uſed both by Greek and Latin writers. *Biothanati*, by the antient diſcipline of the church, were puniſhed by denying them burial, and refuſing all commemoration of them in the prayers and offices of the church. *Bingh.* Orig. Eccleſ. l. 16. c. 10. §. 6.

Dr. Donn, dean of St. Paul's, has publiſhed a book under the title of *biathanatos*, or a declaration of that paradox, that ſelf-homicide is not ſo naturally ſin, as that it may never be otherwiſe. The occaſion of the book, as aſſigned by the author, was, that he had often had a ſickly inclination to deſtroy himſelf, cauſed probably by his having had his firſt breeding and converſation among men of a ſuppreſſed and afflicted religion, accuſtomed to the deſpite of death, and hungry of an imagined martyrdom. Hence he goes on: whenever any affliction aſſaileth me, methinks I have the keys of my priſon in mine own hand, and no remedy preſents itſelf ſo ſoon to my heart as my own ſword. Often meditating on this has won me to a charitable interpretation of their action, who die ſo, and provoked me to inquire into their reaſons, who pronounce ſo peremptorily againſt them. Pref. p. 17.

BIOTHANATI was alſo a name of reproach given by the heathens to the primitive Chriſtians, for their conſtancy, and forwardneſs to lay down their lives in martyrdom.

Some will rather have the word *biothanatos*, here compounded of βιος, life, and θανατος, death; as alluding to the belief of a reſurrection, or future life after death, which was the real incentive to martyrdom. *Suic.* Theſ. Eccleſ. T. 1. p. 690. voc. βιοθανατος.

BIOTHANATOS is alſo uſed in ſome writers of the barbarous age for wicked, damnable, or accurſed. *Du Cange*, Gloſſ. Lat. T. 1. p. 559.

BIOUAC, BIVOUAC, or BIOVAC, in the military art, a nightly guard performed by the whole army, when there is an apprehenſion of danger from the enemy. *Guill.* Gent. Dict. P. 2. in voc. BIOVAC.

The word is formed, by corruption, from the German *weywacht*, a double watch or guard. Trev. Dict. Univ. T. 1. p. 1056. in voc. *Bivouac.*

BIPENNIS, a two-edged ax, uſed antiently by the Amazons in fight; as alſo by the ſeamen, to cut aſunder the ropes and cordage of the enemy's veſſels. *Scheffer.* de Mil. Nav. l. 2. c. 7. *Pitiſc.* Lex. Antiq. T. 1. p. 278, ſeq.

The *bipennis* was a weapon chiefly of the oriental nations, made like a double ax, or two axes, joined back to back, with a ſhort handle. Some compare it to the figure of a pen, and ſuppoſe it hence to have acquired the name *bipennis*; the tube or barrel of the pen repreſenting the handle, and the point or

nib the head. Modern writers uſually compare it to our halbard, or partizan [a]; from which it differed in that it had no point, and that its ſhaft or handle was much ſhorter [b].—[a *Fæſch.* p. 95. b *Heder.* p. 554.] See HALBARD, *Cycl.* and PARTIZAN, *Suppl.*

BIQUADRATIC *Equation*, in algebra, an equation raiſed to the fourth power; or where the unknown quantity of one of the terms has four dimenſions: thus $x^4+ax^3+bx^2+cx+d=0$ is a *biquadratic* equation. See EQUATION, *Cycl.*

BIQUADRATIC *parabola*, in geometry, a curve-line of the third order, having two infinite legs tending the ſame way. See PARABOLA, *Cycl.*

BIQUADRATIC *power of any number*, is the fourth power, or ſquared ſquare of that number: thus 16 is the *biquadratic* power of 2; for $2\times2=4$, and $4\times4=16$.

BIQUADRATIC *root of any number* is the ſquare root of the ſquare root of that number: thus the *biquadratic* root of 81 is 3; for the ſquare root of 81 is 9, and the ſquare root of 9 is 3.

BIQUALAR, in the cuſtoms of the Algerines, a cook of the divan.

The janizaries, whom the Algerines call *oldachis*, after ſerving a certain term as common ſoldiers, are preferred to be *biqualars*, or cooks of the divan, which is the firſt ſtep towards arriving at higher preferment. *Biqualars* have the care of furniſhing the officers and commanders of the Algerine ſoldiery with meat and drink in the camp, in garriſon, &c. From *biqualars* they are made *odobachis*; that is, corporals of companies, or commanders of parties, or ſquadrons. *Trev.* Dict. Univ. T. 1. p. 1047.

BIRABETANE, in the botanical writings of the antients, a name given to *verbena*, or vervain, and to other herbs uſed in ſacrifices. It is only the word *hierobotane*, as altered by the Æolic manner of writing and ſpeaking it. *Hierobotane* is the common Greek name of vervain, and other ſacrificial herbs, and it is probable that the Latin name *verbena* came from the Æolic manner of ſpeaking this word. All thoſe herbs, which were laid upon the altars on ſolemn occaſions, ſuch as making of peace, and other ſolemn contracts, and were to be taken up by the contracting parties as part of the ceremony, were called by the Greeks *hierobotanæ*, that is, ſacred plants, and *verbenæ*; but as the plant we now particularly know by the name *verbena* was more frequent in uſe than any other on this occaſion, it was afterwards diſtinguiſhed by that name.

BIRAO, in botany, the name given by the inhabitants of the Philippine iſlands to a plant more commonly known among botanical writers by the name *tugus*, and ſuppoſed by Camelli, who carefully obſerved it on the ſpot, to be the true *amomum* of the antient Greeks. See TUGUS.

BIRCH, *Betula*, in botany, the name of a genus of trees; the characters of which are theſe: the flower is of the amentaceous kind, being compoſed of a number of little leaves affixed to an axis, or long capillament, and abounding with a great number of apices: theſe are the male flowers. The embryo fruits are placed on different parts of the tree, and are ſquamoſe protuberances, which finally become cylindric fruits, containing a number of alated ſeeds, placed under the ſcales, which are affixed to an axis. There is no known ſpecies of this tree beſides the common one. *Tourn.* Inſt. p. 588.

The *birch* is a beautiful tree, of quick growth, yielding very ſlender twigs, reſembling the coniferous kind in its ſeed; the poplar in its leaves; and differing chiefly from the alder in the whiteneſs of its bark, the cuticle or outer skin of which falls off yearly. Vid. *Ray*, Synopſ. Stirp Britan p. 288.

The ſeeds of *birch* are ſo diſpoſed for germination, that they will even grow on the body of the mother-tree when falling, and being incaſed on it, adhere ſo ſtrongly, as never to ſeparate from it; but increaſing yearly, form thoſe crouded buſhes, like birds neſts, often ſeen on *birch*-trees. *Bradl.* Gard. Dict. T. 1. in voc. *betula.*

The piercing and bleeding of *birch* is performed thus: about the beginning of March, when the buds begin to be proud and turgid, and ere they expand into leaves, with a chizel and a mallet cut a ſlit almoſt as deep as the pith, under ſome branch of a well-ſpreading *birch*; cut it oblique, and not long-ways, as a ſurgeon does a vein; and inſert a ſmall ſtone or chip, to keep the lips of the wound a little open; laſtly, to this orifice faſten a bottle, or other convenient veſſel, appendant, into which will extil a limpid and clear water, retaining an obſcure ſmack both of the taſte and odour of the tree. The miracle is, that, in the ſpace of twelve or fourteen days, as much juice will be gathered, as will outweigh the whole tree, body and roots. *Evel.* Silv. c. 16. §. 3. p. 70. Phil. Tranſ. N° 43. p. 854. It. N° 44. p. 880. It. N° 46. p. 917 & 963.

The liquor or juice, thus procured, is uſed, in ſome northern countries, as a preſervative againſt the ſtone. Van Helmont extols a drink prepared with this juice, daucus-ſeeds, and brook-lime. Mr. Boyle tells us, he has ſeen extraordinary medicinal effects of the juice itſelf, even when other remedies failed; ſo that he uſually provided a quantity of it every ſpring. He ſays, it may eaſily be preſerved, by pouring a little oil on the top of it, or by diſtillation; but that the beſt way is, to impregnate it with the fumes of ſulphur. *Boyle*, Philoſ. Work. abridg. Vol. 1. p. 51. and Vol. 3. p. 338.

This juice is uſed both to make wine of, and to brew withal, being here employed in lieu of water, a barrel of malt will afford as much, and as good ale, as four with common water. Phil. Tranſ. N° 46. p. 917 & 963. *Evel.* Sylv. c. 16. §. 4. p. 72.

A great difference is found between the efficacy of that liquor which diſtils from the bold, or parts of the tree nearer to the root, and that which weeps out from the more ſublime branches; the former being more crude and watery, the latter purer, and more refined. *Evel.* Sylv. c. 16. §. 3. p. 71.

BIRCH-*bark* being bituminous, and conſequently warm and emolient, is uſed in fumigations to correct a diſtempered air.

The inner ſilken bark was antiently uſed for writing-tables, before the invention of paper; though Ray rather aſſigns the office of paper to the cuticle, or outer skin, which peels off yearly. And with the outward, thicker, and coarſer part are houſes in Ruſſia, Poland, and other northern tracts, covered, inſtead of ſlates and tyle. *Ray*, Hiſt. Plant. p. 1410.

The Indians make pinnaces with white cedar; which they cover with large flakes of *birch*-bark, ſewing them with thread of ſpruſe-roots, and pitching them; as the antient Britons did with the willow. Pliny ſpeaks of a bitumen actually procured from the *birch* tree. Plin. Hiſt. Nat. l. 16. c. 18.

Fungus of BIRCH, an excreſcence growing on its trunk: it is aſtringent, and good againſt hæmorrhages [a]; when boiled, beaten, and dried in an oven, it makes excellent ſpunk, or touch-wood [b].—[a *Ray*, loc. cit. b *Evel.* Sylv. loc. cit.]

BIRCH-*leaves* are of uſe in the dropſy, itch, &c. either internally or externally applied.

BIRCH-*twigs* ſerve to make rods and brooms; ſmeered with bird-lime, they are uſed by fowlers, to ſay nothing of the antient faſces carried by lictors.

BIRCH-*wine* is made by fermenting the vernal juice: formerly it was in great repute againſt all nephritic diſorders; but is left out in the modern London practice. *Quinc.* Pharmac. P. 2. ſect. 4. §. 212. p. 114.

The preparation of *birch*-wine is well and amply deſcribed in a book, intituled, *Vinetum Britannicum.* Vid. Phil. Tranſ. N° 123. p. 574.

BIRD, (*Cycl.*) *avis*, in natural hiſtory. The characters of this claſs of animals are, that they have a body covered with feathers, two legs, two wings, and a hard or bony bill; and that the females are oviparous. *Linnæus*, Syſt. Natur. p. 33.

The hiſtory and deſcription of *birds* makes a particular branch of ſcience called *ornithology.*

Birds are variouſly divided and denominated by naturaliſts from the places of their abode, their food and manner of living, make of their bills, wings, feet, &c.

From the diverſity of their bills, *birds* are divided into thoſe with *hard bills*, as the ſparrow; *long bills*, as the heron; *ſlender and ſoft bills*, as the ſwallow; *thick and ſtrong bills*, as the pica, or woodpecker; *ſhorter and leſſer bills*, as the hen and pidgeon kind; *crooked bills*, as the eagle and vulture. *Dale*, in Philoſ. Tranſ. N° 204. p. 930.

Small *birds* are ſubdivided into thoſe with *ſlender bills*, as the lark, ſwallow, martin, &c. *thick and ſhort bills*, as the bull-finch, houſe-ſparrow, linnet, &c. thoſe with a hard protuberance on the upper chap or bill, as the bunting, yellow-hammer, reed-ſparrow, &c. *Ray*, Loc. Words, p. 86, ſeq.

Of aquatic *birds*, ſome have *ſlender bills*, ſharp-pointed, as the greateſt diver, gull, grey gull, &c. others *toothed bills*, as the gaſſander, &c. others *broad bills*, as the ſwan, hooper, gooſe, duck, &c. Id. ib. p. 93, ſeq.

In flat-billed *birds*, as ducks, there are three pair of nerves, which come down between the eyes into the upper bill, whereby they are enabled to ſmell, and find out their food in the mire, water, and the like. The like has alſo been diſcovered in ſeveral round-billed *birds*; but much ſmaller, and ſcarce diſcernible, except in the rook, where they are conſpicuous enough; and it is remarkable that theſe, more than any other round-billed *birds*, ſeem to grope for their meat in cow-dung, and thelike. In the lower bill, there are alſo nerves, which have much the ſame ſituation with thoſe in the flat-billed kind; but very ſmall, and ſcarce diſcernible. Phil. Tranſ. N° 206. p. 990.

Of thoſe *birds* that live near wet places, ſome live upon fiſh or ſlime (out of which they ſuck ſomething that is oleoſe, and from thence yield a delicate fleſh, as wood-cocks, ſnipes, curlews, &c.) or on inſects. Phil. Tranſ. N° 120. p. 483.

The *colymbus minor*, or didapper, has ſuch a ſtructure of parts, that it moves much more eaſily under water than on its ſurface, or aloft. He raiſes himſelf from the water with great difficulty; but when he is got up to the air, he can then continue his flight long enough. Phil. Tranſ. N° 120. p. 485.

Concerning the carniferous or rapacious *birds*, it is obſerved, 1°. That though Ariſtotle ſays they fly ſolitary, yet that holds not in all; ſeeing that vultures have been ſeen to fly in troops fifty or ſixty together. Phil. Tranſ. N° 120. p. 483.

2°. That the females of the ravenous *birds* are bigger, ſtronger, and of greater courage, than the males, nature ſeeming to have been ſo provident, as to furniſh theſe females with ſuch advantages, upon the account that they muſt provide food not only for themſelves, but alſo for their young ones. Phil. Tranſ. ubi ſupra.

Of frugivorous *birds*, it is obſerved, among other particulars, that

that as quails eat hellebore, and ſtarlings hemlock, without any harm to themſelves; ſo parrots not only eat innoxiouſly the ſeed of *carthamus*, or baſtard-ſaffron, but alſo grow fat thereby; which yet is a purgative to man. Phil. Tranſ. ibid.

The ſtructure and œconomy of *birds* are, in many reſpects, different from thoſe of their fellow-biped man, and of their fellow-brutes the quadrupeds, having ſome parts which thoſe want, and being without others which they have, beſides great variations in the contrivance of parts which are common to both; all wiſely adapted to their different conditions and manners of life.

Among the parts peculiar to *birds*, are, firſt, the bill, which ſerves them both in lieu of lips and teeth; wherewith the rapacious tear their meat, the granivorous crack their ſeeds, and ſeparating the pulp with the tongue, throw out the huſk. *Drake*, Anthrop. l. 1. c. 13. p. 60.

Secondly, a horny membrane, to draw over and cover their eyes, and ſave them from the annoyance of thorns and buſhes, much like that which frogs are furniſhed with, to ſecure their eyes from mud and dirt. *Boyle*, Phil. Work. abridg. T. 2. p. 163. *Niewent.* Relig. Philoſ. cont. 22. §. 18. p. 340.

To which may, thirdly, be added, feathers and wings for cloathing and flight.

The parts not to be found in *birds* are, 1. Teeth and lips, as already mentioned. 2. Lacteal veſſels. 3. Kidneys, and a bladder of urine, which they can be without, as they have but little moiſture in their bodies, do but rarely drink, and this only to moiſten their food 4. A *ſeptum tranſverſum*, the want of which is ſupplied by a peculiar diſpoſition of the lungs. *Vater.* Phyſ. p. 806—810.

Laſtly, Pliny ſays they alſo want an epiploon; but in two eagles, and other *birds* diſſected by the royal academiſts at Paris, there were membranes like epiploons found. *Pitfield*, Nat. Hiſt. Anim. p. 185.

Some authors alſo ſpeak of ducts which paſs immediately from a ſort of kidneys to the extremity of the rectum of *birds*, whereby a white, liquid kind of excrement is diſcharged, being firſt mixed with the groſſer fæces. *Gentzken*, Phyſ. Hypoth. P. 2. c. 5. §. 4. p. 94.

Variations in the parts of *birds* from thoſe of men and quadrupeds, are, 1. In the ear, where the cavities and the drum are of a peculiar make. Vid. Philoſ. Tranſ. N° 199. p. 711.

2. In the diviſion of the aorta. Vid. *Pitfield*, Nat. Hiſt. Anim. p. 236.

3. In the ſpinal marrow, which is divided into two in the middle of the back, with a ventricle between the two. Phil. Tranſ. N° 189. p. 374.

4. In the bones, which are all hollow and fiſtular, to make the body lighter and more buoyant. *Niewent.* Relig. Philoſ. cont. 22. §. 12. p. 335, ſeq.

5. In the heart, which has a fleſhy valve at the mouth of the vena cava. *Pitfield*, lib. cit. p. 210.

6. In the lungs, which are ſtrongly conjoined to the back, for greater convenience of flight. *Vater.* lib. cit. p. 808.

7. In the ſtomach, of which *birds* have two or three, to ſupply the want of maſtication. *Grew*, Comp. Anat. of Stom. c. 8. p. 31, ſeq. *Vater.* ubi ſup. p. 710 & 810. *Gentzken*, Phyſ. P. 2. c. 5. §. 2. p. 93.

8. In the legs and feet, which, in ſome ſpecies of *birds*, are made to hold or cling faſt by; in others to wade in the mud without ſinking. *Niewent.* Relig. Philoſ. cont. 22. §. 19. p. 341.

9. In their tails, which are made to poiſe their bodies in flight. Id. ibid. §. 20. p. 342.

10. In the pectoral muſcles, which, in *birds*, are the ſtrongeſt of all, as ſerving for the motion of the wings, which, in long or ſwift flights, requires great ſtrength; whereas in man, the crural muſcles are ſtrongeſt; ſo that, if he would fly, it muſt rather be by the action of his legs than his arms. *Willughby*, in Phil. Tranſ. N° 120. p. 482.

11. In the brain, which is different from that both of man and quadrupeds, being adapted rather to the exerciſe of the locomotive faculty, than for imagination and memory. Id. ibid.

12. In the bronchial ducts, which are extended to the very bottom of the cavity of the abdomen, that the air received into them, may the better fill and inlarge the thorax, whereby they are rendered much lighter, than if their bodies were ſolid, like other animals. *Gentzken*, Phyſ. Hypoth. p. 93. Hiſt. Acad. Scienc. ann. 1693. p. 259, ſeq.

13. In the ovaries, which, in *birds*, are ſingle, and only furniſhed with ſingle tubes, whereby to convey the eggs to the uterus; the whole faſtened to their back. *Jauvry*, in Hiſt. Acad. Scienc. ann. 1699. p. 36.

The ears of *birds* differ much from thoſe of men or beaſts: there is almoſt a direct paſſage from one ear to the other of *birds*; ſo that prick but the ſmall membrane called the drum in either ear, and water poured in at the one ear will run out at the other. But this is not all; what is much more remarkable, they have no cochlea; but, inſtead thereof, there is a ſmall twiſting paſſage that opens into a large cavity running betwixt two ſculls, and paſſes all round the head; the upper ſcull is ſupported by many hundreds of ſmall thread-like pillars or fibres, which, as is ſuppoſed, have another uſe alſo, to break the ſound from making any confuſed echo, and to make it one and diſtinct.

This paſſage, obſerved betwixt the two ſculls, is much larger in ſinging *birds* than in others that do not ſing; ſo very remarkable, that any perſon that has been but ſhewn this, may eaſily judge by the head what *bird* is a ſinging *bird*, or has aptitude thereto, though he never ſaw the *bird* before, nor knew what *bird* it were. Phil. Tranſ. N° 206. p. 993.

The poſture and action of *birds* in ſtanding and walking, are ſhewn by Borelli to be very different from thoſe of man, tho' both be bipeds; particularly as to contrivance, whereby *birds* are enabled to ſtand better on one foot. *Borell* de Motu Animal. l. 1. prop. 144. Phil. Tranſ. N° 144. p. 63. *Sturm.* Math. Juven. T. 2. p. 177. *Redi*, in Phil. Tranſ. N° 92. p. 6004. *Ray*, Wiſd. of God, P. 1. p. 28.

The digeſtion of *birds* is very ſtrong, eſpecially in hens, ducks, and pigeons, whoſe ſtomachs have been found to act even on glaſs bullets. *Boyle*, Phil. Work. abridg. T. 2. p. 183.

The ſagacity of *birds* in building and placing their neſts out of the reach of enemies, and in avoiding noxious plants, is prodigious. It is ſaid they will not ſo much as touch or perch on ſuch plants, being warned of the danger by the ſmell or effluvia of the plant. Id. ibid. T. 1. p. 437.

Their whole ſtructure is admirably accommodated to flight, eſpecially that of the pelican, which, beſide all other apparatus for this purpoſe, has a quantity of air lodged in the veſiculæ of the ſkin, which it takes in at every inſpiration, and expels again at expiration, whereby its bulk is conſiderably inlarged, without any ſenſible increaſe of weight. Hiſt. Acad. Scienc. ann. 1693. p. 259, ſeq.

Cocks and hens in Virginia have no rumps; and what is more, in thoſe that are tranſported thither from England, the rumps in time rot off. Phil. Tranſ. N° 206. p. 992, ſeq.

Some have talked of the ſpeech or language of *birds*, with which Apollonius pretended to have been acquainted, and to have received divers intelligences by means thereof; particularly of an aſs fallen down loaded with corn, from the relation of a ſparrow. The augurs were ſuppoſed to be particularly knowing in this language; on which a great part of their ſcience depended. *Plin.* Nat. Hiſt. l. 10. c. 49. *Salmuth.* ad Pancirol. P. 2. tit. 10. p. 201. *Philoſtr.* l. 1. c. 14. *Pitiſc.* Lex. Antiq. T. 1. p. 217. voc. *avis*.

Feetleſs BIRDS, ἀπόδες, a fictitious denomination given by ſome of the antients to the *birds* of paradiſe, from a miſtaken notion that they had no feet, and could not walk, but only fly. *Vater.* Phyſ. Exper. p. 811. *Salmuth.* ad Pancirol. P. 2. tit. 1. p. 29. Theſe were placed in contradiſtinction to the oſtriches, which could only walk, not fly. *Pitfield*, Nat. Hiſt. Anim. p. 221.

Subterranean BIRDS, thoſe which reſide in caves and holes under ground; as ſome ſpecies of owls, batts, *&c.* *Kirch.* Mund. Subter. l. 8. §. 4. T. 2. p. 88.

To this claſs may alſo be referred thoſe vaſt quantities of ducks, which break out of the caves adjoining to the Zirchnitzer ſea in time of thunder, in ſuch numbers as to cover the lake. Phil. Tranſ. N° 191. p. 420.

Singing BIRDS are the nightingale, blackbird, ſtarling, thruſh, linnet, lark, throſtle, Canary-bird, bullfinch, goldfinch, *&c.*

Migratory BIRDS, the ſame with birds of paſſage. See PASSAGE *birds*.

Decoy BIRDS, thoſe trained up to call and allure others into the fowler's nets, ſnares, lime-twigs, or the like. *Salmuth.* ad Pancirol. P. 1. tit. 23. p. 303.

Meſſage BIRDS, *aves internunciæ*, thoſe employed to convey letters, or other diſpatches, either for the ſake of expedition or ſafety. *Salmuth.* ad Pancirol. P. 2. tit. 1. p. 31. See CARRIER *pidgeon*.

Mocking BIRD, in Virginia, a *bird* which imitates the voices of men, and the notes of all other *birds*, by way of diſguiſe, and thus eludes and eſcapes the fowler. Phil. Tranſ. No. 206. p. 993. Trev. Dict. Univ. T. 4. p. 264. See MOCK-*bird*.

Humming BIRD, the American *tomineius*, denominated from the noiſe it makes in flight. It is ſaid to be the ſmalleſt of the whole ſpecies of *birds*. Phil. Tranſ. N° 200. p. 760. See GUAINUMBI.

Anomalous BIRDS. It is diſputed whether the bat belong to the *bird* or quadruped kind. Later naturaliſts incline to the latter, and, notwithſtanding its wings, condemn it to be a mouſe. *Vater.* Phyſ. Exper. P. 2. §. 8. c. 3. p. 811. See BAT.

The like difficulty has been raiſed with reſpect to the barnacle, ſolan-gooſe, or macreuſe. Some, notwithſtanding its feathers, maintain it to be a fiſh. What ſhall we then ſay of the *pinguin*, or *penguin*, an eaſtern *bird*, denominated from the iſland of that name, which walks erect like a man, has no feathers, nor flies, nor aſſociates with other *birds*; and which ſome will have to participate both of the human, the volatile, and the fiſhy kingdom [a]. In reality, it is *animal bipes* and *implume*, and conſequently a man, on the terms of Plato's definition. Kircher ſpeaks of a *bird* called *hoang-cio-yu* in China, which even changes its nature and kind twice every year, being a *bird* all the ſummer, and a fiſh all the winter [b].—[[a] Trev. Dict. T. 4. p. 658. voc. *pinguin*. [b] Id. T. 4. p. 264. voc. *oiſeau*.]

Macer, among the antients [a]; and Willughby [b] and Ray [c], among the moderns, have written expreſsly on *birds*. This

laſt author aſſirms, that the kinds of *birds* known and deſcribed, are about 500 [d]. Boyle has given pneumatical experiments on *birds in vacuo* [e].—[a *Fabric.* Bibl. Græc. l. 6. c. 9. T. 13. p. 37. [b] Ornithol. Lond. 1676. fol. V. Phil. Tranſ. N° 120. p. 482, ſeq. [c] Synopſ. Method. Avium, &c. Vid. *Ray*, Phil. Lett. p. 278. Ejuſd. Collect. Local Words, p. 81, ſeq. [d] Id. Wiſd. of God, P. 1. p. 28. [e] Philoſ. Work. Abr. T. 2. p. 467, ſeq. 524, ſeq. 534, ſeq. 543, 594, 599.]

Preſcience, or knowledge of futurity, was ſuppoſed, among the antients, a natural faculty of *birds*, owing, perhaps, to their nearer intercourſe with heaven [c], or their breathing a purer and more celeſtial air than other animals. Hence it was, that Divination by *birds* obtained among the antient Greeks and Romans, being performed by obſerving, and interpreting the flight, chirping, and feeding of divers birds [d].—[c Mem. Acad. Inſcrip. T. 2. p. 384. Item, T. 6. p. 283. [d] *Pitiſc.* Lex. T. 1. p. 226. ſeq. voc. *auſpicium*. *Sale*, not. to Koran. c. 17. p. 229.] See AUGURY and AUSPICIUM, *Cycl.*

This kind of divination is ſaid to have been invented by Prometheus, or Melampus, the ſon of Amithaon and Dorippe; tho' Pliny reports that Car, from whom caria received its name, was the firſt who made predictions by means of *birds*, as Orpheus by other animals. Pauſanias aſſures us, that Parnaſſus, from whom the mountain of that name was denominated, firſt obſerved the flight of *birds*. Clemens Alexandrinus ſays the ſame of the Phrygians. The art, however, appears to have been much improved by Calchas; and at length gained ſo much credit, that nothing of moment was undertaken, either in war or peace, no honours conferred, nor magiſtrates created, without the approbation of *birds*. At Lacedemon the king and ſenate had always an augur attending them, to adviſe with; and Cælius reports, that kings themſelves uſed to ſtudy augury. *Potter*, Archæol. Græc. l. 2. c. 15. T. 1. p. 320. ſeq.

Birds, with regard to augury and divination, were of divers kinds, *viz.*

Aves auſpicatæ, or *felices*, thoſe which naturally portended good: Such were the dove, ſwan, &c.

Aves inauſpicatæ, *diræ*, *ominoſæ*, thoſe which boded ſome evil or miſchief: Such were the kite, raven, crow, and owl, every where, except at Athens. *Crinit.* de Honeſt. Diſcipl. l. 21. c. 15. *Struv.* Synt. Ant. Rom. c. 6. p. 262. *Lakemak.* Antiq. Græc. Sacr. P. 3. c. 9. §. 2. p. 545.

Admiſſiva, that which excites and encourages the conſulter to execute what he has in view. *Feſt.* in voc. *Pitiſc.* Lex. Ant. voc. *avis*. *Struv.* lib. cit. p. 263.

Arciva, or *arcula*, that which forbad a thing to be done; otherwiſe called *clivia*, *clamatoria*, and *prohibitoria*, *inebra*, and *inhiba*. *Struv.* ib. p. 263.

Incendiaria, that which gave omen of a fire, or other calamity; or which is ſeen carrying a fire-brand from the funeral pile to a houſe. *Struv.* ib. p. 264.

Remora, that which ſtays, or delays an action.

Siniſtra, that on the left hand, denoted a happy or proſperous omen; and was alſo called *ſecunda*, *proſtera*. *Serv.* ad Æn. l. 2. v. 693.

Alites, thoſe which gave omens by their wings and flight. *Pitiſc.* T. 1. p. 72. voc. *alites*.

Oſcines, thoſe by their ſinging or chirping.

Pulli, by their pecking.

Præpites, thoſe which by their flight, or perching gave happy omens. *Serv.* ad Æn l. 2. v. 361. *Pitiſc.* Lex. Ant. T. 2. p. 510. voc. *præpetes*. *A. Gell.* l. 6. c. 6. Crinit. de Honeſt. Diſcipl. l. 21. c. 15.

Inferæ, or *inebræ*, thoſe which in the like manner gave ill omens.

BIRD, *in falconry*, denotes a hawk, or falcon. See FALCON.

Niais BIRDS, *aves nidulariæ*, thoſe taken while in the neſt.

Ramage BIRDS, *arboreariæ aves*, thoſe only arrived at ſtrength ſufficient to fly from branch to branch.

Hagard BIRD, that which has lived at liberty, and is thence more wild and untractable.

BIRD *of the fiſt*, that which having been reclaimed, returns to, and perches on the hand, without the help of a lure.

BIRD *of lure*, that which comes to the lure, and by that means to the hand.

Baſtard BIRD, a hawk, for inſtance, bred of a hawk and a lanier. Or a ſaker, bred of a ſaker and a lanier.

Coward BIRDS, thoſe which only purſue their game for their own belly, and which are not to be reduced to juſt ſport. As ravens, kites, &c.

BIRDS, *in medicine*, are chiefly the gooſe, duck, hen, peacock, and pidgeon; of which the fat, eggs, and dung, are in uſe.

Sextus Placidus treats at large concerning remedies from *birds*. De Medicina ex Animal. P. 2. Vid. Fabric. Bibl. Græc. l. 6. c. 9. T. 13. p. 416.

Birds, conſidered as foods, are of a dry warm nature, as feeding chiefly on dry meats, and drinking little [a]. They are ſuppoſed to abound much in ſalt and ſulphur; whence Kircher accounts for the bright colours of their feathers [b]. Some have denied the exiſtence of any volatile ſalt in *birds*. Borrichius eſtabliſhes it [c]. [a *Caſt.* Lex. Med. p. 92. voc. *aves*. [b] Kirch. Mund. Subterr. l. 8. §. 1. T. 2. p. 17. [c] Vid. *Barthol.* Act. Med. T. 2. Obſ. 67. p. 169.]

The peacock has been called *avis medica*, or the medicinal *bird*, on account of its great efficacy in divers diſeaſes. *Schröd.* Pharm. l. 5. cl. II. 1. n. 65.

BIRDS, in huſbandry, are to be guarded againſt as deſtructive. Kites and hawks, to chickens; crows and pidgeons, to corn; jays, ſparrows, and other ſmall *birds*, to fruits, &c.

Writers in huſbandry preſcribe divers methods of ſcaring away, or deſtroying noxious *birds* [a]. Some prevent *birds* from eating the ſeed when firſt ſown, by liming, and mixing it with ſoot [b].—[a *Mortimer*, Syſt. of Huſband. l. 7. c. 3. T. 1. p. 320. [b] *Plott*, Nat. Hiſt. Staffordſ. c. 9. §. 40. p. 352.]

BIRD, *in aſtronomy*, *avis indica*, or *apoda*, is one of the 17 new conſtellations of the ſouthern hemiſphere, conſiſting of 12 ſtars of the fifth magnitude. Trev. Dict. T. 4. p. 264.

BIRD *of Phœbus*, the raven, one of the ſouthern conſtellations, containing ſeven ſtars; five of the third magnitude, one of the fourth, and one of the fifth. Trev. Dict. T. 4. p. 264.

BIRDS, *in heraldry*, are figures frequently born in arms.

Birds are eſteemed a more honourable bearing than fiſhes; and wild and ravenous birds, than tame ones.

Birds, according to Leigh, are to be numbered as far as ten; according to Chaſſaneus to 16; after which they are to be blazoned, without number. When their bills and feet are of a different colour from the reſt, they are ſaid to be *membred*.

Birds of prey are more properly ſaid to be *armed*.

Birds born of their natural colour, are to be blazoned by *proper*, without mention of the colour. In the blazoning of fowls much exerciſed in flight, if the wings be not diſplayed, they are ſaid to be born *cloſe*, e. gr. he beareth an eagle, a hawk, or a ſwallow, *cloſe*. In the general, wherever a *bird* is found in any action or poſture, to which nature does not ordinarily incline it, ſuch action or poſture is to be named, otherwiſe not. *Coats*, Her. Dict. p. 53, ſeq.

BIRD *of the wiſe*, among chemiſts, is the philoſophical mercury; and, in general, ſublimations or ſubſtances ſpiritualized by the ſeparation of their terreſtrial part.

Golden BIRD, the hermetic matter partly matured.

Green BIRD, the philoſopher's ſtone, at the time when its green colour appears. Dict. Trev. T. 4. p. 264.

BIRD-*call*, a little ſtick cleft at one end, in which is put a leaf of ſome plant, wherewith to counterfeit the cryer's call of ſeveral birds, and bring them to the net, or ſnare, or lime-twig, to be taken. Vid. *Savar.* Dict. Comm. T. 1. p. 116. voc. *appeau*. See CALL.

A laurel leaf fitted on the bird-call, counterfeits the voice of lapwings; a leak that of nightingales, &c. Dict. Trev. T. 4. p. 660. voc *pipeau*. *Cox*, Gent. Recreat. P. 3. p. 23.

Cyprian BIRDS, *aves Cypriceæ*, or *aviculæ Cypriæ*, is a denomination given to a kind of odorous candles, made of the matter of troches, and burnt for the ſake of their fumes, called alſo from their figure *baculi*, or *ſticks*. *Caſtel.* Lex. Med.

BIRD *of hermes*, *avis*, or *avicula hermetica*. All chemiſts ſpeak much of that which flies in the night without wings. *Dorn.* Tranſmut. Metall. c. 2. in Theat. Chym. T. 1. p. 725. and T. 4. p. 355. *Libav.* T. 2. p. 333. *Caſtel.* Lex. Med.

Some will have the *avicula hermetica* to be an univerſal ſalt prepared from dew. Ephem. Acad. Nat. Cur. T. 1. ann. 3. p. 452. It alſo denotes red lead. *Caſtel.* Lex. Med.

BIRD-*lime* (*Cycl.*)—This is a very peculiar vegetable juice, of the bark of the holly; but if trials were made, it ſeems probable, that many other juices would be found to have the ſame clammy nature. The miſletoe affords a juice, even ſuperior to that of the holly; and if a young ſhoot of the common elder be cut thro', there will a ſtringy juice draw out in threads, and follow the knife like *bird-lime*, or the juice of holly. It ſeems in this tree to be lodged, not in the bark, but in certain veins juſt within the circle of the wood. The roots of all the hyacinths alſo afford a tough and ſtringy juice of the ſame kind, and ſo does the aſphodel, the narciſſus, and the black bryany root, in a ſurpriſing quantity.

Bird-lime is a ſubſtance very apt to be congealed, and rendered unſerviceable by froſts; to prevent which, it is proper, at the cold ſeaſons, to incorporate ſome petroleum with it, before it is uſed. The method of uſing it is to make it hot, and dip the ends of a bundle of rods in it; then turn them about, and playing them together, till a ſufficient quantity is extended over them all. If ſtrings, or cords, are to be limed, they are to be dipped into the *bird-lime*, while very hot. The cords may be put in cold, but the rods ſhould be warmed a little. Straws are to be limed, while the matter is very hot; they are to be put into a large bundle at a time, and worked about in it, till they are well beſmeared. When thus prepared, they ſhould be put into a leather bag, till they are uſed. When the twigs, or cords, are to be put in places ſubject to wet, the common *bird-lime* is apt to have its force ſoon taken away. It is neceſſary, therefore, to have recourſe to a particular ſort, which, from its property of bearing water unhurt, is called *water bird-lime*; and is prepared thus.

Take a pound of ſtrong and good *bird-lime*, waſh it thoroughly in ſpring-water, till the hardneſs is all removed; and then beat it well, that the water may be clean ſeparated, ſo as not a drop remains; then dry it well, and put it into an earthen pot; add to it, as much capon's greaſe as will make it run. Then add two ſpoonfuls of ſtrong vinegar, one ſpoonful

of oil, and a ſmall quantity of Venice turpentine. Let the whole boil for ſome minutes over a moderate fire, ſtirring it all the time. Then take it off; and when there is occaſion to uſe it, warm it, and cover the ſticks well with it. This is the beſt ſort of *bird-lime* for ſnipes, and other birds that love wet places.

The moſt ſucceſsful method of uſing the common *bird-lime* is this: cut down the main branch or bough of any buſhy tree, whoſe twigs are thick, ſtrait, long and ſmooth, and have neither knots nor prickles. The willow and the birch-tree afford the beſt of this kind. Let all the ſuperfluous ſhoots be trimmed off, and the twigs all made neat and clean; they muſt all be well covered with the *bird-lime*, within four inches of the bottom; but the main bough, from which they grow, muſt not be touched with the *lime*. No part of the bark, where the *lime* ſhould come, muſt be left bare; but it is a nice matter to lay it on properly, for if it be too thick it will give the birds a diſtaſte, and they will not come near it; and if there be too little of it, it will not hold them when they are there. When the buſh is thus prepared, it muſt be ſet up in ſome dead hedge, or among ſome growing buſhes near the out ſkirts of a town, a farmer's back-yard, or the like, if it be in ſpring; for theſe places are the reſort of the ſmall birds at that time. If it be uſed in ſummer, the buſh muſt be placed in the midſt of a quick-ſet hedge, or in groves, buſhes, or white thorn trees, near fields of corn, hemp, flax, and the like; and in the winter, the proper places are about ſtacks of corn, hovels, barns, and the like. When the *lime*-buſh is thus planted, the ſportſman muſt ſtand as near it as he can, without being diſcovered; and with the mouth, or otherwiſe, make ſuch ſort of notes, as the birds do, when they attack, or call to one another. There are bird-calls to be bought for this uſe; but the moſt expert method is to learn the notes of call of the ſeveral birds, and imitate them by a ſort of whiſtling. When one bird is thus inticed to the buſh, and hung faſt, the buſineſs of the ſportſman is not to run up to take it, but to be patient; for it will hang itſelf more faſt, by its ſtruggling to get away; and its fluttering will bring more to the buſh; ſo that ſeveral may be taken together. The time of the day for this ſport is from ſun-riſe to ten o' clock, and from one to ſun-ſet. Another very good method of bringing the birds together, is by a ſtale; a bat makes a very good ſtale, but it muſt be faſtned, ſo as to be in ſight at a diſtance. An owl is a ſtill better ſtale, for this bird never goes abroad, but it is followed by all the ſmall birds in the neighbourhood. They will gather together in great numbers about it, and having no convenient place to ſit on, but the *lime*-buſh, will be taken in great numbers. If a living owl or bat is not to be had, the ſkin ſtuffed will ſerve the purpoſe, and will laſt twenty years. Some have uſed the image of an owl carved in wood, and painted in the natural colours, and it has been found to ſucceed very well.

A method of deſtroying ſmall birds in great numbers by *lime*-twigs, is this: take two or three hundred ſmall twigs, about as thick as ruſhes, and three or four inches long; ſtick theſe on the tops of ten or a dozen cocks of hemp, or other produce of the field, cut and cocked up. There are generally in theſe fields of hemp vaſt numbers of linnets, and other ſmall birds, feeding on the ſeeds; the whole field is to be beat over, after the twigs are planted, and the birds will naturally ſettle on the cocks, and many dozens of the ſeveral kinds will be taken at once.

Another method of taking great numbers in the winter ſeaſon is this; take a number of wheat ears, with the ſtraws about a foot long to them; melt ſome good *bird-lime* gently over the fire, adding one fourth part of its weight of ſome light fat, ſuch as the greaſe of fowls, or the like. When this runs thin, cover the ſtraws with it for ſix inches below the ears. Then take into a field, where the ſmall birds reſort in flocks, as they do at this ſeaſon of the year, a quantity of theſe limed ſtraws, and a peck or two of chaff; ſpread the chaff over a large ſpace of ground, and among it place the limed ſtraws, ſticking them in the ground at the bottom, and letting the ear droop down. When the place is thus planted, the ſportſman muſt beat the neighbouring fields and hedges; and the birds being diſturbed will riſe, and they will naturally make their way to where they ſee the chaff. They will then ſoon be pecking at the ears of corn; and, as the limed ſtraws will ſoon begin to ſtick to them, they will mount up into the air with them; but in their flight, the ſtraws ſoon get under their wings, and faſten them together; ſo that they can no longer fly, but fall ſtruggling to the ground.

As ſoon as they begin to fall, the ſportſman's buſineſs is to watch, not to run to take them up, for in a little time, more will be entangled; and, with patience, ſometimes five or ſix dozen may be taken in this manner at a time. This method ſucceeds better, as the weather is more and more ſevere; and beſt of all, when the ground is covered with ſnow. The ſame place will ſerve for many repeated flights. The limed ſtraws are to be taken away, as ſoon as the firſt flight is taken, and the place new bated with chaff; the birds may then be left to feed with freedom; and the next morning, the limed ſtraws being ſet up again, they will be caught in greater numbers, than at the firſt attempt.

M. Barrera, phyſician at Perpignon, has diſcovered an animal *bird-lime*, prepared of the bolls of a ſort of caterpillars, by putrifying them in the earth, ſteeping them in water, and then pounding and mixing them with olive oil. *Fontenel.* Hiſt. Acad. Scienc. 1720. p. 12.

BIRDS *neſts*, in cookery, the neſts of a ſmall Indian ſwallow, very delicately taſted, and frequently mixed among ſoops. On the ſea-coaſts of China, at certain ſeaſons of the year, there are ſeen vaſt numbers of theſe birds; they leave the inland country at their breeding time, and come to build in the rocks, and faſhion their neſts out of a ſpumous matter, which they find on the ſhore, waſhed thither by the waves. They are of a hemiſpheric figure, and of the ſize of a gooſe's egg, and in ſubſtance much reſemble the ichthyocolla, or iſing-glaſs. The Chineſe gather theſe neſts, and ſell them to all parts of the world; they diſſolve in broths, *&c.* and make a kind of jelly, of a very delicious flavour.

BIREMIS, in antiquity, a veſſel with one or more rows of oars, ranged, as ſome think, in two ſtages over each other; or a veſſel having two ranks or rows of oars placed over, and aſide of each other. But the particular fabrick of theſe veſſels ſeems far from being a ſettled point among the learned. Vid. *Meibom.* de Fabr. Trirem. *Pitiſc.* Lex. Antiq. T. 1. p. 279. Phil. Tranſ. N° 79. p. 3071. *Hook*, Poſth. Work. p. 572. *Kenn.* Rom. Ant. P. 2. l. 4. c. 20.

The Roman *Biremis* is the ſame with what the Greeks called δικρόλα, and ſtands contra-diſtinguiſhed from *triremis*, *quadriremis*, *&c.*

BIRETUM. See the article BIRRETUM.

BIROTA, *birotum*, a kind of vehicle denominated from the two wheels whereon it moved. *Pitiſc.* Lex. Antiq. T. 1. p. 279. The *birota*, by the conſtitution of Conſtantin [a], was drawn by three mules, and carried two hundred pound weight [b]; by which it was diſtinguiſhed from the rheda, which carried a thouſand pounds, and was drawn by eight, and in winter by ten mules.—[[a] Leg. 8. Cod. Theod. de Curſ. publ. [b] *Pancir.* Notit. Dignit. Imp. Orient. c. 6. *Du Cange*, Gloſſ. Lat. T. 1. p. 559.]

BIRRETUM, in writers of the middle and lower ages, a thin black cap, or cover for the head, made of linnen fitted cloſe to the head, and pointed by a pyramid, antiently worn by prieſts, ſoldiers, doctors, *&c.* *Pitiſc.* Lex. Ant. T. 1. p. 279. *Du Cange*, Gloſſ. Lat. T. 1. p. 560.

The word *birretum* ſometimes written *birrettum* and *biretum*, is alſo applied to a cap or coif of a judge, or ſerjeant at law *Spelm.* Gloſſ. p. 82.

The *birretum* alſo denotes the cap worn by the novices in the jeſuits order, formerly of a ſquare, now a round figure.

The *birret* was the ordinary cover of the head in France 500 years ago. It took its denomination from *birrus* or *birrum*, the coat antiently uſed by eccleſiaſtics; with which the cap was then of a piece, and made part of it; ſo that the whole covered, not only the head, but the ſhoulders. Afterwards, when they began to retrench the lower part, ſtill retaining the upper, it was no longer called *birrus*, or *birrum*, but diminutively *birret*, or *birretum*. *Trev.* Dict. Univ. T. 1. p. 1048.

BIRRUS, βιρρος, an antient habit worn by the chriſtians in Africa.

The word is alſo written *byrrus*, ſuppoſed to be formed from πυρρος, on account of its red colour. *Fab.* Theſ. p. 355.

Some will have the *birrus* an epiſcopal habit [a]. Others extend it to all the clergy [b]. Others, on juſter grounds, make it the common coat of all the chriſtians in that quarter [c].—[[a] *Magr.* Vocab. Eccleſ. p. 36. [b] *Pitiſc.* Lex. Ant. T. 2. p. 279. [c] *Bingh.* Orig. Eccleſ. l. 6. c. 4. §. 19. *Du Cange*, Gloſſ. Lat. T. 1. p. 560, ſeq. *Spelm.* Gloſſ. p. 81, ſeq. See BIRRETUM.

BIRTH (*Cycl.*)—*Eight months* BIRTH, *partus octimeſtris*, ſeldom if ever produces a living, or lively child. An eight month's *birth* is always weak and ſickly, and ſcarce ever ſurvives the fortieth day.

Phyſicians, as well as lawyers, have doubted, whether an eight months *birth* be legitimate and vital? grounded on the authority of Hippocrates, the ſuperſtitious concluſions of aſtrologers, the powers of numbers, and the malevolent influences of Saturn, the doctrine that the mother's labour and pains in this month are the ſevereſt, and her danger greateſt. Vid. *Plin.* l. 7. p. 5. *Hippoc.* de Octimeſt. Partu. *Maubr.* Fem. Phyſic. p. 142.

From the powers of the ſeptenary number, they conclude that the firſt efforts of the child for delivery muſt have been in the ſeventh month; and that, if its ſtrength had been ſufficient, it muſt have appeared at the cloſe of that month: But failing of that, it weakened itſelf ſo by its efforts, that the following month ſuffices not to recover itſelf; ſo that if it happen then to appear, it is no ways in a condition to ſupport the entrance upon a new ſtate of life. *Calv.* p. 676. voc. *Partus. Gorr.* Med. Defin. p. 464. voc. τοκος. *Maubr.* l. c. p. 141.

Seven months BIRTH, *partus ſeptimeſtris*, that which happens on the 180th or 182d day after impregnation. *Teichmey.* Inſt. Med. c. 9. qu. 9. p. 57.

This phyſicians allow may not only be a living, but a vital *birth*; tho' it does not often prove long-lived. And the civil laws all own it as legitimate. *Plin.* Nat. Hiſt. l. 7. c. 5.

Hippocrates has written expreſsly on the ſeven months *birth* [a], περὶ ἑπταμήνου, in two books, the firſt of which, as now extant, is held ſpurious. The ſecond is commented on by Galen. περὶ ἑπταμήνων βρέφων. [b].—[[a] Vid. *Fabric.* Bibl Græc. l. 2. c. 24. T. 1. p. 851, and 853. [b] *Fabric.* ibid. l. 4. c. 17. T. 3. p. 532.

Expoſition of BIRTH, among the antients, was where a new-born infant is expoſed or caſt-away, and left to the mercy of the firſt-comer, who may either take and bring it up, or ſuffer it to periſh. See EXPOSING *of children.*

Ger. Nodt has a treatiſe expreſs on the ſubject. *Julius Paulus*, ſive de partu expoſitione & nece apud veteres, Lugd. Bat. 1710, 4to.

Suppoſition of BIRTH, *partus ſuppoſitio*, in the civil law, is a crime, for which accuſation may be intented by thoſe who have intereſt therein, and is puniſhed with death, like the *crimen falſi*, or forgery. Trev. Dict. Univ. T. 4. p. 2070.

Suppreſſion of BIRTH, *partus ſuppreſſio*, is the crime of a woman, who endeavours, by medicines, to deſtroy or hinder the *birth* of a child; or, after its being born, hides, expoſes, or even ſtrangles it.

BIRTH-*day*, the anniverſary return of the day whereon a perſon was born.

This anſwers to what the antients called γενέθλιον, *genethlion*, *natalis dies*, *natalitius dies*, *natalitia*, and, in the middle age, *genetalius*.

The antients placed a good deal of religion in the celebration of *birth-days*, and took omens from thence of the felicity of the coming year. We meet with *birth days* of the gods, emperors, great men, poets, and even private perſons. What is more, the *birth-days* of cities, as Rome and Conſtantinople, were celebrated with great pomp by the inhabitants [a]. Virgil's *birth day* was held very ſtrictly by the wits and poets who ſucceeded him. Pliny aſſures us, that Silius did it with more ſolemnity than he did his own [b].—[[a] *Struv.* Ant. Rom. c. 9. p. 450, ſeq. *Pitiſc.* Lex. Ant. T. 2. p. 249, ſeq. voc. *natalis*. [b] *Plin.* Epiſt. l. 3. ep. 7. *Fabric.* Bibl. Lat. l. 1. c. 12. T. 1. p. 271.]

The manner of celebrating *birth-days* was by a ſplendid dreſs; wearing a ſort of rings peculiar to that day; offering ſacrifices, the men to their genius, of wine, frankincenſe; the women to Juno; giving ſuppers, and treating their friends and clients; who, in return, made them preſents, wrote and ſung their panegyrics, and offered vows and good wiſhes for the frequent happy returns of the ſame day. *Struv.* Ant. Rom. c. 1. p. 91 & 113, ſeq. It. c. 9. p. 450, ſeq. *Pitiſc.* Lex. Ant. T. 2. p. 249, ſeq. *Calv.* Lex. Jur. p. 605. voc. *natales*. *Fabric.* Bibl. Lat l. 2. c. 22. T. 1. p. 615.

The *birth-days* of emperors were alſo celebrated with public ſports, feaſts, vows, and medals ſtruck on the occaſion. *Du Cange*, Diſſ. de Infer. Ævi Numiſ. p. 31. *Struv.* Ant. Rom. c. 9. p 442.

But the antients, it is to be obſerved, had other ſorts of *birth-days* beſides the days on which they were born. The day of their adoption was always reputed as a *birth-day*, and celebrated accordingly.

The emperor Adrian, we are told, obſerved three *birth-days*; *viz.* the day of his nativity, of his adoption, and his inauguration. *Goldaſt.* Not. ad Hadrian. Reſp. & Reſcr. ap. *Fabric.* Bibl. Græc. l. 6. c. 6. T. 12. p. 541.

In thoſe times it was held, that men were not born only on thoſe days when they firſt came into the world, but on thoſe alſo when they arrived at the chief honours and command in the commonwealth, *e. gr.* the conſulate. Hence that of Cicero in his oration *ad quirites*, after his return from exile: *A parentibus id quod neceſſe erat, parvus ſum procreatus, a vobis natus ſum conſularis.*

Add, that thoſe who returned from baniſhment, were alſo conſidered as being born again, *renaſci*, and ever after called the day of their return their *birth-day*. Thus Cicero to Atticus; *Diemque natalem reditus mei cura, ut in tuis ædibus amæniſſimis agam tecum, & cum meis. Turneb.* adverſ. l. 3. c. 4. *Calv.* Lex. Jur. p. 605. in voc. *noſci.*

Cenſorinus has a treatiſe *de die natali*, addreſſed to Q. Cerellius, as a compliment on his *birth-day*. Vid. *Fabric.* Bibl. Lat. l. 3. c. 4. T. 2. p. 45.

BIRTH-*days of the ſaints and martyrs*, *natales ſanctorum*, denote the days of their deaths. *Du Cange*, Gloſſ. Lat. T. 3. in voc. *natales*.

In reality, *natalis* among the antients was not reſtrained to *birth-days*, but extended to all feaſt-days.

Hence it is we meet with *natalis ſolis*, *natalis calicis*, *natalis eccleſiæ*, *natalis reliquiarum*, &c. Trev. Dict. Univ. T. 4. p. 32. in voc.

BIRTH-*ſin*, the ſame with original ſin. *Benn.* Meth. Stud. 39 Art. p. 67. See ORIGINAL *ſin*, *Cycl.*

BIRTH *wort*, in botany, the Engliſh name of the plant *ariſtolochia*. See ARISTOLOCHIA.

BIS, in botany, a name given by ſome old writers to the *napellus*, or monks-hood; and by others to the *cicuta*, or hemlock. See NAPELLUS and CICUTA.

There is, however, another ſenſe of the word, very different from both theſe, in which it is uſed to expreſs an eſculent plant. The phraſe *bis alnil* is frequent among the Arabian writers; and as *alnil* ſignifies only of the river Nile, the whole name ſhould ſeem to expreſs the character of ſome poiſonous plant growing in the Nile. This, however, is by no means the ſenſe in which it is received; for we are told, that *bis alnil* ſignifies a bulbous root of a ſweet taſte, growing on the mountains about Damaſcus, and in other parts of Syria, and eaten in the ſpring by the people of the country thereabouts. It is certain, that this interpretation agrees very well with the ſenſe in which all the Arabians have mentioned this plant; though it is difficult to underſtand why they ſhould give the name of a poiſon to an eſculent root, or the name of the river Nile to a plant growing on the mountains of Syria. See BULBUS.

BIS *annual*, a name given by botaniſts to thoſe plants, which ordinarily do not flower till the ſecond year. Dict. Ruſt. in voc. *bloſſom*.

BISA, or BIZA, a coin in Pegu, current there for half a ducat.

The denomination is alſo given to a kind of weight uſed in the ſame country, equivalent to two Venetian pounds five ounces, or to three pounds nine ounces of the ſmaller weight of that city. *Savar.* Dict. Comm. T. 1. p. 350.

BISACUTA, in middle-age writers, an ax with two edges, or which cuts either way [a]; or a miſſive weapon, pointed at both ends [a].—[[a] *Du Cange*, Gloſſ. Lat. T. 1. p. 562. [b] *Aquin.* Lex. Milit. T. 1. p. 130.]

We meet with *ſecuris biſacuta*, πέλεκυς δίστομος, or δίστομος ἀξίνη. Walſingham repreſents the *ſecuris biſacuta* as peculiar to the Scottiſh nation. See BATTLE-*ax*.

BISARCA, in botany, a name uſed by ſome authors for the herb *tarragon*. *Ger.* Emac. Ind. 2.

BISBÆA, βισβαία, a feaſt celebrated by the Meſſapii, after the pruning of their vines, to obtain of the gods that they might grow again the better. *Meurſ.* Græc. Ferial. *Faſold.* de Feſt. Græc. l. 12. c. 9. *Schott.* Lex Ant. p. 221.

The word is formed from βισβη, uſed by ſome for a vine.

BISCAIAN *language* denotes the Cantabrian, or antient language of Spain, being a branch of the Celtic, which firſt gave way to the Romanſe. *Greenw.* Engl Gram. in Pref. p. 12, ſeq.

BISCIA, in zoology, a name by which ſome have called the *acus*, or, as we call it in Engliſh, the tobaccopipe-fiſh, the needle-fiſh, or trumpet-fiſh. *Willughby*, Hiſt. Piſc. p. 159. See the article ACUS.

BISCUTELLA, in botany, a name given by Linnæus to a genus of plants, called by Tournefort and others *thlaſpidium*. *Linnæi*, Gen. Plant. p. 314. See THLASPIDIUM.

BISELLIARII, or BISELLIARI, in antiquity, thoſe who enjoyed the honour or privilege of the *biſellium*. *Piteſc.* Lex. Ant. T. 1. p. 280. See BISELLIUM.

The word occurs in antient inſcription, CN. PLAETORIO VIRO AUGUSTALI BISELLIARIO. *Grut.* Corp. Inſcrip. p. 1099. n. 2.

The *honor biſellii* appears to have been much the ſame with what in France is called *droit de fauteuil*; and the *biſelliarii* thoſe who, in public aſſemblies, enjoy this diſtinction of the *fauteuil*, while other perſons are obliged to ſtand, or ſit on benches, ſtools, or ordinary chairs [a]. Scaliger, in his index to Gruter, miſtook the *biſelliarii* for artificers who made theſe ſeats [b].—[[a] Trev. Dict. Univ. T. 1. p. 1050. [b] *Varr.* de Ling. Lat. l. 4. *Pitiſc.* Lex. Antiq. T. 1. p. 280, ſeq.]

BISELLIUM, in antiquity, a kind of ſeat or chair, larger and richer than ordinary, big enough to hold two perſons, wherein to ſit in courts, theatres, and other public aſſemblies. *Grut.* Corp. Inſc. p. 475. n. 3.

Hence ſome will have the *honor biſellii*, in an antient inſcription in Gruter, to be underſtood of the *cella curulis*, or curule chair; but others, with more probability, of a privilege granted by authority to well-deſerving perſons of ſeeing the public ſhews at theatres and amphitheatres in a chair more ſplendid than thoſe of the reſt of the company [a]. Some ſuppoſe the magnitude and capacity of the *biſellium* to have been ſymbolical, and to have imported, that ſuch perſons were worth two, or equivalent to two others [b].—[[a] *Du Cange*, Gloſſ. Lat. T. 1. p. 563. [b] *Chimentel.* de Honor. Biſellii, c. 35, 36. *Schott.* Lex. Ant. p. 221.

BISERULA, in botany, the name of a genus of plants, including the *pelecinus* of Tournefort, and the *utrinque ſerrata* of Rivinus. The characters are theſe: the perianthium is compoſed of one leaf of a tubulated form, and lightly divided into five ſegments at the edge; theſe ſegments are pointed, and equal; and the two upper ones ſtand diſtant: the flower is of the papilionaceous kind: the vexillum is large, bent back at the ſides, roundiſh, and aſcending upwards: the alæ are of an oblong oval figure; they ſtand free, and are ſmaller than the vexillum: the carina is of the length of the alæ, and is obtuſe, and aſcends upwards: the ſtamina are diadelphous filaments, included in the carina: the antheræ are ſmall: the germen of the piſtil is oblong, and compreſſed: the ſtyle is pointed, and placed upwards: the ſtigma is ſimple: the fruit is a large, ſlender, flat, and bilocular pod, the partition which divides its cavity into two parts, running contrary-wiſe to the valves: the ſeeds are numerous, compreſſed, and kidney-ſhaped. *Linnæi*, Gen. Plant. p. 359. *Tourn.* Inſt. p. 234. *Rivin.* c. 4. p. 122.

BISETÆ, in natural history, a term used to express a genus of flies of the class of the *seticaudæ*, distinguished from the others by their having two hairs or bristles growing out at the tail. There are many species of this genus, and they are usually divided by authors into two principal kinds; such as have sharp ends, and such as have blunt ones. Of the former kind there are two species, which have silvery wings, four to each fly, ornamented with black spots, the shoulders blackish, the rest of the body of a dun colour, with transverse lines of black: the antennæ are slender, and black; and the hairs at the tail very long. These differ from one another only in size; and, besides these, our hedges afford us several other kinds of the sharp-ended *bisetæ*.

Among the blunt-ended, there is one of a yellowish colour, else much resembling the *henothrix*. Of the two bristles at the tail in this species, the one is extended to its full length, the other curled up in a spiral form. There are several other species of this kind also found frequently in our hedges. See HENOTHRIX.

BISHOP (*Cycl.*)—By the antient discipline, *bishops* were to be married once [a], and not to put away their wives on pretence of religion; but a second marriage was a disqualification for this order. If they lived chaste, they were ranked as confessors [b].—[[a] Can. Apost. 5. *Suic.* Thes. Eccles. T. 1. p. 725. voc. γαμος. [b] *Johns.* Eccles. Law, an. 740. §. 28. It. an. 957. §. 7.]

Hence, in writers of the middle age, we meet with the term *episcopa*, or *bishopess*, the *bishop's* wife, or the wife of one afterwards consecrated, and made a bishop. By an antient canon of the council of Tours, a *bishop*, who had no *bishopess*, was forbid to have any crowd of women in his retinue: *episcopum episcopam non habentem, nulla sequatur turba mulierum.* Vid. *Baron.* an. 34. n. 289. *Du Cange*, Gloss. Lat. T. 11. p. 254.

Bishops are called in antient writers by several other titles and denominations, as *apostles*, *angels*, *princes* of the church, *pontifices*, *pontifices maximi*, *summi sacerdotes*, or high-priests, *flamines*, *domini*, *beatissimi*, *sanctissimi*, θεωροι, προεδροι, προεστωτες, εφοροι, *God's beadles*, &c. Vid. *Bingh.* Orig. Eccles. l. 2. c. 2. §. 1, seq. It. l. 2. c. 9. §. 6. *Du Cange*, Gloss. Lat. T. 1. p. 191. voc. *angelus*. It. T. 2. p. 459. voc. *flamines*, & p. 160. voc. *domini*. It. T. 4. p. 346. voc. *pontifex*. *Bos.* Exerc. de Pontif. Max. c. 1. §. 4. *Suic.* Thes. Eccles. T. 1. p. 1293. voc. εφορος. It p. 1314. voc. ηγεμων. It. p. 1397. voc. θεωρος. It. p. 1444. voc. ιεροσολεστης.

Some *bishops*, in the middle age, on account of their *regalia*, or temporalities, were obliged to a military service called *hostis*, by which they were to lead their vassals into the field, and attend the king in his military expeditions. This Charlemaign excused, and even forbid: but the prohibition was little regarded; since we find the thing often practised afterwards. On the *bishop*'s refusal, his temporalities were seized, or mulcts imposed. Some, by a peculiar privilege, were only obliged to attend the army when the king himself was there; as the *bishop* of Orleans: others were intirely exempted from going in person, and only obliged to send their vassals. *Du Cange*, Gloss. Lat. T. 2. p. 791. voc. *hostes*. & p. 792—798.

Among the French *bishops*, there are three who are dukes and peers, and three counts and peers, by their office: the *archbishop* of Rheims is the first duke and peer; the *bishop* of Langres the second; the *bishop* of Laon the third: the *bishop* of Beauvais is the first count and peer; the *bishop* of Noyon the second; and the *bishop* of Chalons the third. Trev. Dict. Univ. T. 2. p. 1525. voc. *eveſque*.

The election of *bishops* was antiently placed in the clergy, and the people of the parish, province, or diocese; but afterwards, princes and magistrates, patriarchs and popes, usurped the power [c]. The election was to be within three months after the vacancy of the see; and the person to be chosen out of the clergy of that church [d]. Formerly the *bishop* claimed a share in the election of an *archbishop*; but this was set aside by the popes [d].—[[c] Vid. *Suic.* Thess. Eccles. T. 1. voc. επισκοπος, p. 1181. It. voc. επικηρυττω, p. 1167. *Bingh.* l. 17. c. 5. §. 3. It. l. 4. c. 2. §. 4. *Johns.* an. 692. per tot. [d] *Bingh.* l. 2. c. 10. §. 2. It. c. 11. §. 1. [e] *Johns.* an. 1126. Pref. It. an. 1222. Pref.]

In England, till the time of Henry VIII. *bishops* were elected by the chapters of monks or canons, some shadow of which still remains in the present method of disposing of bishopricks. *Johns.* Eccles. Law, an. 742. in Pref.

Ordinarily, at least three *bishops* are required in the ceremony of consecrating a *bishop* [f]; but, in some cases, a single one might suffice [g]. The English succession of protestant *bishops* stands on this last footing.—[[f] *Bingh.* l. 2. c. 11. §. 4. [g] *Johns.* an. 601. §. 6.]

The age of a *bishop* is to be at least thirty years; and, by the antient discipline, none were to be chosen but those who had passed through all the inferior orders [h]; but, in some cases of necessity, this was dispensed with, and deacons, nay laymen, were raised *per saltum* to the episcopal dignity [i].—[[h] *Suic.* Thes. Eccles. T. 1. voc. επισκοπος, p. 1183. *Bingh.* Orig. Eccles. l. 2. c. 10. [i] *Suic.* loc. cit. p. 1184. *Bingh.* loc. cit. §. 4.]

BISHOP *abbot*, *episcopus abbas*, was an abbot invested with the episcopal order; of which we meet with several in the richer and more considerable monasteries. See ABBOT, *Cycl.*

BISHOP *monk*, *episcopus monachus*, was a religious invested with the episcopal order, but still residing in a monastery, whether out of choice, or for want of another habitation. *Johns.* Eccles. Law, an. 673. §. 4. See MONK, *Cycl.*

Some take these *bishop monks* for a fiction, and to have arisen from a corruption of the text of a canon, where *episcopi monachi* crept in by the copyist's inadvertency, instead of *ipsi monachi*. The emendation may be just; but cannot disprove the existence of *bishop monks*. *Johns.* Eccles. Law, an. 693. §. 6.

BISHOPS *of villages*, *chorepiscopi*. See CHOREPISCOPUS, *Cycl.*

When, on account of the episcopal dignity, it was prohibited to appoint any *bishops* in villages or little towns, yet, in some cases, this had been found necessary, it was ordered, that they should not longer be denominated *bishops*, but *periodeutæ*. Concil. Laod. c. 57. *Suic.* Thes. Eccles. T. 2. p. 676. voc. περιοδευτης.

BISHOP is also a title sometimes given in the antient church to deacons. *Suic.* Thes. Eccles. T. 1. p. 870. voc. διακονος. See DEACON, *Cycl.*

Cardinal BISHOP, *episcopus cardinalis*, a *bishop* in chief, or *in capite*. *Du Cange*, Gloss. Lat. See the article CARDINAL, *Cycl.* and *Suppl.*

St. Gregory sometimes uses the term for a proper *bishop*. Antiently there were also *bishops*, who, by a peculiar privilege from the holy see, were ranked, and had a seat among the cardinals.

Cathedral BISHOP was also a title given the proper *bishops*, by way of distinction from the *chorepiscopi*. See CATHEDRAL, *Cycl.*

Vague BISHOPS, *episcopi vagantes*, those without any diocese, sometimes attendant in camps, or in foreign countries, for the conversion of infidels.

The like *vague bishops* were sometimes also granted by popes to monasteries, exempt from the jurisdiction of the diocesan, where they performed all the episcopal functions. They were chosen by the abbot from among his monks; but consecrated by the neighbouring *bishops*, and served on occasion to consecrate new abbots. Thus it was a *bishop* was granted by pope Stephen I. to the monastery of St. Dennis, and another by Urban II. to St. Martins at Tours. *Du Cange*, Gloss. Lat. T. 2. p. 256, seq.

BISHOP *in partibus infidelium*, he who is dignified with the title of a bishoprick, whose district or diocese is in the possession of infidels or heretics.

By the canon law, a *bishop in partibus* is qualified hereby to be a coadjutor of another *bishop*. See COADJUTOR, *Cycl.*

The denomination took its rise from the expulsion of the *bishops* and clergy out of the Holy-land by the Saracens; when flying into Italy for shelter, coadjutories were given them for their subsistence. *Du Cange*, ibid. T. 2. p. 256.

Acephalous BISHOP, he who is immediately subject to the papal see, without any metropolitan over him.

BISHOP *elect* is he who has the king's nomination, with the sanction of the chapter; but without consecration.

BISHOP *designed*, *episcopus designatus*, denoted a coadjutor of a *bishop*, who, in virtue of his office, is to succeed at the incumbent's death. *Calv.* Lex. Jurid. p. 278. voc. *designatus*. See COADJUTOR, *Cycl.*

Suffragan BISHOPS are coadjutors or assistants of diocesan *bishops*, authorized by commission from him.

Exempt BISHOPS, those freed from the jurisdiction of the metropolitan, and immediately subject to the see of Rome alone: See SUFFRAGAN, *Cycl.*

BISHOP *of the palace*, *episcopus palatii*, was probably the same with *bishop* of the king's chapel, a title in the court of Bohemia. *Du Cange*, Gloss. Lat. T. 2. p. 255, seq.

It was also a title given those *bishops*, who, by licence of the pope, dwelt in palaces of kings, to be in readiness for spiritual service, and counsel in church-matters.

Such court *bishops* the kings of Hungary and Croatia appear to have had; sometimes also called *royal bishops*, *episcopi regales*.

BISHOP *of the prime see*, *episcopus primæ sedis*, denoted a primate, otherwise denominated a *senior bishop*, *senex episcopus*. *Du Cange*, Gloss. Lat. T. 4. p. 806. voc. *senex*. See PRIMATE, *Cycl.*

Commendatory BISHOPS, or *bishops in commendam*, are cardinals not of the order of *bishops*, or other prelates, who yet hold bishopricks *in commendam*. See COMMENDAM, *Cycl.*

The appellation had its origin during the residence of the papal see at Avignon, when scarce any cardinal, priest, or deacon, was created, who held not one, two, three, or more bishopricks *in commendam*. *Du Cange*, Gloss. Lat. T. 2. p. 255.

Universal or catholic BISHOP is a title given to the patriarch of Armenia. *Fabric.* Bibl. Græc. l. 5. c. 5. T. 6. p. 393.

BISHOP *of the catholic or universal church*, *episcopus catholicæ ecclesiæ*, a title sometimes assumed by the popes.

Cyprian has a notion, which frequently occurs, of but one bishoprick in the church, wherein every single *bishop* had his share, so as all had the same concern in the whole. He does not represent it as a monarchy in the hands of any single *bishop*; but a diffusive power, which lay in the whole college of *bishops*, every one of which had a title to feed the whole church, or drive heresy out of any part of it. *Bingh.* Orig. Eccles. l. 2. c. 5. §. 2.

In

In things which did not belong to the faith, they were not to meddle with other men's dioceſes; but, when the faith or welfare of the church were at ſtake, every other biſhoprick was as much their dioceſe as their own.

BISHOP *of biſhops*, *epiſcopus epiſcoporum*, was a title antiently given to the prelates of ſome of the greater and more honoured ſees, as Jeruſalem and Rome.

The firſt who had the title was James *biſhop* of Jeruſalem; which made the ſpurious author of the epiſtles under the name of Clemens Romanus, addreſs one to that *biſhop* thus: *Clemens Jacobo domino epiſcopo epiſcoporum.* Some will have the appellation to have been common to all *biſhops*. *Bingh.* Orig. Eccleſ. l. 2. c. 2. §. 8.

BISHOPS, in the Lutheran church, are thoſe more uſually called *ſuperintendents*. See SUPERINTENDENT, *Cycl.*

The Calviniſts allow of no other *biſhops* beſides preſbyters; but the Lutherans make ſome diſtinction, and give a ſuperiority or preheminence over the reſt to their *biſhops*, or ſuperintendents.

BISHOP is alſo a quality ſometimes attributed to ſecular princes, in reſpect of their ſupremacy or juriſdiction in matters belonging to religion. See SUPREMACY, *Cycl.*

In this ſenſe it is that the emperor Conſtantin, in a letter to the *biſhops* in his dominions, calls himſelf *common biſhop*, κοινὸς ἐπίσκοπος, as being, in ſome reſpects, general *biſhop* of the whole Roman world. Vid. *Euſeb.* Hiſt. Eccleſ. l. 1. c. 44. & *Eund.* de Vit. Conſtant. l. 4. c. 24. *Fabric.* Bibl. Antiq. c. 13. §. 3. p. 437.

This epiſcopate of princes has given offence to the adorers of the eccleſiaſtic hierarchy, who have made many attempts to explain it away. Some, with Pet. de Marca, will have the epiſcopate of Conſtantin to be only underſtood in reſpect of the Gentiles, who were yet out of the church: others, with Leo Allatius, maintain it only to relate to civil matters: others give other ſolutions: yet pope Leo allowed the prieſthood to kings and emperors; on which footing, we do not ſee how the epiſcopate can be denied them. Vid. *Fabric.* Lux. Evangel. p. 282.

BISHOP *of the Jews*, *epiſcopus Judæorum*, the head of that people in England, choſen by themſelves, to whom they ſubmitted to be judged, and governed according to their law. *Prideaux*, Connect. P. 2. l. 5. p. 478. not.

This officer, which ſubſiſted under our Norman kings, and was licenſed by them, anſwered to the *æchmalotarchs* in Babylonia, and the *alabarchs* in Egypt. See ÆCHMALOTARCHA and ALABARCHA.

BISHOPS *at cheſs*, a kind of pieces, the third in rank below queens, but above knights, diſtinguiſhed by their cloven heads. Vid. Compl. Gameſt. p. 125 & 128. Court Gameſt. p. 95.

In Latin writers of the middle age, the *biſhop* is called *alphinus*; by the French *le fou*, the *fool* or *madman*. *Du Cange*, Gloſſ. Lat. T. 1. p. 150. voc. *alphinus*. See CHESS, *Cycl.*

BISHOP'S *ſee*, or *ſeat*, originally denoted the throne or chair in the church where the *biſhop* ſat. Vid. *Bingh.* Orig. Eccleſ. l. 2. c. 9. §. 7.

This was alſo denominated ἁψὶς, *apſis*. *Suic.* Theſ. Eccleſ. T. 1. p. 612. voc. ἁψὶς. See APSIS, *Cycl.*

BISHOP'S ſee alſo denotes the city or place where the reſidence of the *biſhop* is fixed.

Every *biſhop*'s ſee was antiently called *ſedes apoſtolica*; though the appellation has ſince been reſtrained to the ſee of Rome. *Bingh.* Orig. Eccleſ. l. 2. c. 2. §. 3. p. 22.

Antiently *biſhops* ſeem to have had a right to ſit as judges in the hundred and county-courts [k]. In after-times, they were forbid to ſit in ſecular courts [l], and had ſeparate courts erected for them [m]; which proved an occaſion of much diſpute between the two juriſdictions [n]. No church-tenant might be ſued in any court but the *biſhop's* [o]. There are alſo traces of a ſeparate court of the *biſhops* much earlier, among our Saxon anceſtors, in the eighth century [p].—[[k] *Johnſ.* Eccleſ. Law, an. 877. §. 16. It. an. 958. §. 7. It. an. 1008. §. 8. [l] Id. an. 1102. §. 1. [m] Id. an. 1085. [n] Id. an. 1164. Pref. [o] Id. an. 1064. §. 4. [p] Id. an. 734. §. 10.]

The regard born to the character of *biſhops*, made them the common arbitrators even of ſecular cauſes [q]: they had the cognizance of all cauſes concerning lands in frank almoign [r]; and for eccleſiaſtics, were judges even in capital cauſes [s].—[[q] *Bingh.* l. 2. c. 7. §. 1. & §. 4. It. l. 5. c. 2. §. 1. [r] *Johnſ.* an. 1164. §. 9. [s] Id. an. 1018. §. 14.]

BISHOPRIC (*Cycl.*)—The *biſhoprics* of England have undergone many alterations, divers antient ſees being loſt, or removed to other places, and many new ones erected. *Johnſ.* Eccleſ. Law, an. 1075. Pref.

It was long a complaint, that the number of biſhops and *biſhoprics* in the iſland was too ſmall [a]. About the middle of the eighth century, there were only twelve [b]; and, in the middle of the ſeventh century, there were no more biſhops than kingdoms, except that Kent had two; and the like had the eaſt Angles and Northumbrians for ſome time [c]. On excluding the pope, king Henry VIII. had a deſign to increaſe the number of *biſhoprics*, by contracting the dioceſes, which appeared too great and vaſt to be well overlooked by a ſingle man; but the deſign miſcarried [d]. Weſtminſter indeed was erected into a *biſhopric* in 1541; but it ſubſiſted not long, being converted, in 1550, into a dean and chapter [e].—[[a] *Johnſ.* Eccleſ. Law, an. 679. per tot. Id. an. 1023. Pref. [b] Idem, an. 679. §. 4. [c] Id. an. 673. §. 9. [d] *Bingh.* Orig. Eccleſ. l. 9. c. 8. in fine. [e] New View of Lond. T. 2. §. 2. p. 495.]

Many of the biſhops ſees were antiently fixed in obſcure villages; which ſeeming a diminution to the epiſcopal dignity, it was ordained, that, for the future, no biſhops ſhould be ordained in ſmall cities; which yet was not ſo ſtrictly kept to, but that we meet with deviations from it. *Bingh.* l. 2. c. 12. §. 1. & §. 3. It. c. 13. §. 2. See BISHOP.

Archbiſhop Lanfranc cauſed the ſees of many biſhops which till then remained in country villages, to be removed into cities. Whence a biſhop and a cathedral with us is the note of a city, excepting in that of Weſtminſter. The ſame alſo obtained in other countries. *Somn.* Antiq. of Canterb. p. 240.

Biſhops in Scotland had antiently no fixed ſees; but each exerciſed his epiſcopal office and juriſdiction indifferently, in whatever part of the kingdom he happened to reſide. King Malcolm III. founded the firſt regular *biſhopric*, which was that of Muthlac; though the *biſhopric* of St. Andrews claims an elder eſtabliſhment under king Kenneth II. *Nicolſ.* Scott. Hiſt. Libr. c. 5. p. 210.

BISK, or BISQUE, in cookery, a rich ſort of broth or ſoop, made of pidgeons, chickens, force-meat, mutton-gravy, and other ingredients. Trev. Dict. Univ. T. 1. p. 1052.

The word is French, formed, as ſome think, from *biſcocta*; by reaſon the *biſque*, conſiſting of a diverſity of ingredients, needs ſeveral repeated coctions to bring it to perfection.

There is alſo a *demi-biſque*, made at a low expence, where only half the ingredients are uſed; and a *biſque* of fiſh, made of carps, minced with their roes and lobſters.

BISKET (*Cycl.*)—To preſerve ſea-*biſket* from inſects, Mr. Hales adviſes to make the fumes of burning brimſtone paſs through the caſks full of bread. *Hales*, Philoſ. Experim

Biſket may be likewiſe preſerved a long time, by keeping it in caſks well calked, and lined with tin. *Boyle*, Phil. Work. abridg. Vol. 1. p. 52.

The antients had their *biſket* prepared after the like manner, and for the like uſe, as the moderns. The Greeks called it ἄρτον δίπυρον, *q. d.* bread put twice to the fire. The Romans gave it the name of *panis nauticus*, or *capta*. Pliny denominates it *vetus aut nauticus panis tuſus atque iterum coctus* [a]. By which it appears, that, after the firſt baking, they ground or pounded it down again for a ſecond. In ſome middle-age writers, it is called *paximas*, *paximus*, and *panis paximatus* [b]—[[a] *Plin.* Hiſt. Nat. l. 22. c. 25. [b] *Caſen.* Orig. p. 24. *Calv.* Lex. Jur. p. 612. voc. *nauticus*. *Pitiſc.* Lex. Ant. T. 1. p. 565. voc. *capta*.]

Among the Romans, we alſo meet with a kind of land-*biſket* for the camp ſervice, called *buccellatum*, ſometimes *expeditionalis annona*, which was baked much, both to make it lighter for carriage, and leſs liable to corrupt, the coction being continued till the bread was reduced one-fourth of its former weight. *Pitiſc.* Lex. Antiq. T. 1. p. 299. voc. *buccellatum*. *Calv.* Lex. Jur. p. 127.

BISLINGUA, *double-tongue*, a name uſed by many authors for the narrow-leaved *ruſcus*, or butchers broom; called by many others the Alexandrian bay, or *laurus Alexandria*. See the article RUSCUS.

BISMILLAH, in the Mahometan cuſtoms, a ſolemn form, *viz.* *in the name of the moſt merciful God*, conſtantly placed at the beginning of their books and writings in general, as a peculiar mark, or diſtinguiſhing characteriſtic, of their religion, it being counted an impiety to omit it.

The Jews, for the ſame purpoſe, make uſe of the form, *in the name of the Lord*, or, *in the name of the great God*; and the eaſtern Chriſtians that of, *in the name of the Father, and of the Son, and of the Holy Ghoſt*. Vid. *Sale*. Prelim. Diſc. to Koran, §. 3. p. 59.

BISMILLAH is alſo uſed among the Arabs as a word of invitation to eat.

An Arab prince will frequently ſit down to eat in the ſtreet before his own door, and call to all that paſs, even beggars, in this word, who do not fail to come and ſit down to eat with him; for the Arabs are great levellers, and ſet every body upon a footing with them. *Pocock*'s Egypt. p. 483.

BISMUTH, (*Cycl.*) in natural hiſtory, the name of a mineral ſubſtance, of the genus of the *aſphurelata*, or, as they are commonly called, the *ſemi-metals*. See ASPHURELATA.

Biſmuth bears a near affinity to zink. See ZINK, *Cycl.* and *Suppl.*

Its weight and colour diſcover it to be of a mercurial or metallic nature. In common menſtruums, it undergoes much the ſame alterations, and aſſumes much the ſame forms as lead [a]. Quincy ſays, there is always ſome ſilver in it [b].—[[c] *Stahl*, Philoſ. Princip. Chem. P. 2. §. 4. p. 345. [b] *Quinc.* Diſpenſ. p. 51.]

It is hard, and leſs friable than antimony, not ductile under the hammer, and, by the action of an acid on it, lets fall a bituminous matter. *Boerh.* Elem. Chem. P. 2. p. 35. *Chauv.* p. 82.

Its ingredients ſeem to be a mineral ſalt, a groſs ſulphur, mercury, a little arſenic, and a great deal of earth. Mem. Acad. Scienc. ann. 1713. p. 55.

Biſmuth is ſometimes found native, but that very rarely. Its

moſt

moſt uſual appearance is in the ſtate of ore, into which it is reduced by its particles being penetrated by, and intimately mixed with, a ſulphur, and with a large quantity of arſenic, and with an earthy matter, which yields a blue colour, equal to the zaffar, or ſmalt produced from cobalt.

In the fuſion of this ore, the ſulphur and arſenic evaporate over the fire; and the reguline matter being freed from its impriſoned ſtate, runs off from the earthy ſubſtance, which being left fixed behind, may, with the addition of flints, and a fixed alkali, be run into a fine blue, glaſſy matter, no-way differing from the ſmalt of cobalt.

Native *biſmuth* is found in ſmall compact maſſes, of a pale lead colour on the outſide, and when broken, of a fine, glittering, ſilvery white, and compoſed of a multitude of foliaceous flakes or plates, laid evenly over one another, and diſpoſed in ſeveral irregular directions in the maſs.

In the ſtate of ore, it is uſually of a bright ſilvery white, and of an obſcurely foliaceous ſtructure. Sometimes alſo it appears granulated; and in ſome ſpecimens, the granules are large, and the maſſes coarſe; in which caſe, every ſeparate granule appears of a cubic form.

It is ſubject to fewer variations in its ore than moſt other minerals; but it is ſometimes turned yellow by an over-proportion of ſulphur, and ſometimes is very deeply tinged with the matter of the common marcaſites, and, in this condition, is often miſtaken for mere marcaſite, to the no ſmall loſs of the proprietor of the mine.

It is very common in Germany and England. The tin-mines in Cornwall afford great quantities of it; but it is not much known there

Biſmuth is eaſily ſeparated from its ore, and may be procured pure, only by melting it in a crucible over a gentle fire. When the ore is more impure, it is eaſily ſeparated by means of the common black flux of the metallurgiſts; but, with this mixture, the fire muſt be kept very moderate, otherwiſe the *biſmuth* will be loſt. The regulus of *biſmuth*, thus prepared, is like the ore of *biſmuth* in its pureſt ſtate, or the native *biſmuth*, being compoſed of a ſeries of plates or flakes, arranged in various directions, and looking very much like thoſe of many of the ſpars; and each plate in theſe ſeries is compoſed, as in the ſpars, of regular cubic or parallelepiped concretions. It is naturally very bright and ſhining, and of a ſilvery white; but it eaſily tarniſhes, and acquires a pale yellow.

Biſmuth attenuates the parts of all other metals, by mixture with them. It renders them much more eaſily fuſible, and much more fit for amalgamation with mercury; the mercury, by its means, taking up a much larger quantity of them, and carrying them much more eaſily through leather. It is ſoluble, like lead, in vinegar; and the ſalt produced from it reſembles that of lead in its ſweet taſte. When diſſolved in ſtronger acids, it yields the famous coſmetic magiſtery, and is a very valuable mixture in the metal uſed for caſting types for printing, and in bell-metal. *Hill*, Hiſt. of Foſſ. p. 624.

Mr. Boyle mentions a medicine prepared from *biſmuth* by calcination, and the addition of ſpirit of vinegar and *cremor tartari*, which has been extolled in the dropſy. He alſo mentions a preparation of it with common ſublimate into a white powder, a few grains of which purge gently. *Schroder.* Pharmacop. l. 3. c. 18. ap. *Boyle*, Works abridg. p. 501.

Chemiſts have talked of a ſtrange liquor obtainable from the ore of *biſmuth*, which put into a phial cloſely ſtopped, would riſe and fall with the increaſe and wane of the moon. Vid. *Boyle*, Works abridg. Vol. 1. p. 69, 70. & p. 583.

He does not ſay he himſelf ever ſaw ſuch a liquor; but quotes Orthelius for that purpoſe.

Some, on account of the white bright colour of *biſmuth*, call it the *ſilver marcaſite*. Phil. Tranſ. N° 396. p. 193. *Burggr.* Lex. Med. T. 1. p. 1586. See MARCASITE.

Piſmuth is of great uſe as a flux-poader, to procure a thin fuſion to metals; and hence becomes of ſervice in the making of ſodders. It is alſo uſed by pewterers, inſtead of regulus of antimony. *Kirch.* Mund. Subter. l. 11. §. 3. p. 301. *Stahl.* loc. cit. p. 346. See FLUX.

Its medicinal virtue is much the ſame with that of the droſs of lead, being ſeldom uſed except in external forms [a], as containing an arſenical ſalt, very dangerous to be taken inwardly; yet M. du Clos made a purgative of it to be uſed in the dropſy [b]. Add, that *biſmuth* being diſſolved in ſpirit of nitre, yields a fume, which being precipitated with water, produces a white powder, found a good diaphoretic in acute caſes [c].—[a *Quinc.* Diſp. p. 51. b *Boyle*, Phil. Work abridg. T. 1. c *Stahl*, loc. cit. p. 345.]

But its chief uſe among the antients, as well as moderns, is as a coſmetic. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 281.

Sig Poli, by repeated diſtillations of *biſmuth* with an equal quantity of corroſive ſublimate, procured a running mercury, and a fine powder, of the colour of pearl, which might be of uſe in counterfeiting the oriental pearls. Hiſt. Acad. Scienc. ann. 1713. p. 55.

BISMUTH *graupen*, in mineralogy, a name given by the Germans to a fixed earth contained in the ores of *biſmuth*, which ſerves to make ſmalt, as well as the earth of cobalt. After the *biſmuth* is melted from the ore, they take the *reſiduum*, or *graupen*, and mixing it with flints calcined and powdered, they run it into fine blue glaſs, which is no-way inferior to the common ſmalt.

The *biſmuth* ore is often mixed among the cobalt, and, in this caſe, the miners ſeparate them with all the care they can; but often they are not able to do it perfectly, and the two minerals bear the fire together; in which caſe, there ariſes ſome difficulty in the working, for the *biſmuth* mixing itſelf with ſome of the earth of the cobalt, in this caſe, ſubſides to the bottom of the veſſel in form of a rediſh regulus; but this is to be ſeparated by a ſecond operation, and the regulus obtained pure and white; and its own earth, together with that of the cobalt, are ſeparated from it, and wrought together into ſmalt.

BISNOW, or BISCHNOU, a ſet among the Indian banians, or caſt of merchants. See BANIAN.

The banian ſect conſiſts of two leſſer ones; that of *biſnow*, and that of *ſamarath*.

The followers of the former hold one God, whom they call *ram-ram*, and allow of no lieutenants or deputy-gods, as is done by thoſe of the ſect *ſamarath*; but they allow their god a wife, and have idols, which they dreſs up with gold chains, and collars of pearl and precious ſtones, and pay them worſhip, by ſinging hymns in their temples, and dancing before them to the ſound of flagelets and kettle-drums.

In this ſect, the wives do not burn themſelves after their huſbands death, as is practiſed by thoſe of the *ſamarath* ſect; but content themſelves with a perpetual widowhood. Trev. Dict. Univ. T. 1. p. 1051.

BISOMUM, in antiquity, a tomb for two bodies, or the aſhes of two. See TOMB, *Cycl.*

The word is hybrid, compounded of the Latin *bis*, twice, and the Greek σωμα, body, or aſhes of a body. Some, with more purity, write *diſomum*.

The antients frequently buried two, three, or four bodies in the ſame ſepulchre, diſpoſed aſide of each other; for it was held an impiety to lay one a-top of another [a]. Hence the ſepulchres of the primitive Chriſtians had the words *biſomi*, *triſomi*, *quadriſomi*, &c. inſcribed on them, to indicate the number of bodies depoſited in them [b].—[a *Pitiſc.* Lex. Ant. T. 1. p. 281. b *Du Cange*, Gloſſ. Lat. T. 1. p. 564. *Salmaſ.* Exerc. ad Solin. p. 1207.]

BISON, in natural hiſtory, the name of a ſpecies of wild bull, which differs from all other ſpecies, by having a very ſhaggy mane, running down his neck quite to his ſhoulders, and a large hump upon his back. In Mr. Ray's time, there was a bull of this kind kept in St. James's Park; but there was no account of whence it was brought. This author ſuppoſes it to have been from Florida, where, according to Ambroſe Paré, there are bulls called *butrones* by the natives, which have horns of about a foot long, and a bunch in the middle of the back, like the camel. Thevet alſo mentions this creature; and Geſner deſcribes it under the name of the *bos camelita*.

BISSACRAMENTALES, a denomination given by ſome Romiſh writers to proteſtants, on account of their only holding two ſacraments, *viz.* baptiſm and the ſupper. *Prateol.* Elench. Hæreſ. l. 2. §. 24. p. 101. See SACRAMENT, *Cycl.*

BISSELÆON, in the materia medica, a name that is found in many copies of the moſt antient Greek and Roman writers, and uſed to expreſs the oil of pitch, or that fluid ſubſtance which ſwims at the ſurface of melted pitch, and was taken up by means of wool or cotton by the antients, and uſed in many external diſorders. The common name of this oil was *piſſellæum*; and this other name is only a corrupt way of ſpelling it. The old authors, in many other words as well as this, have changed the initial P into B.

BISSEXTIALIS, or BISEXTIALIS *olla*, an antient meaſure or veſſel, containing twelve ounces, or two ſextaries. *Marcell.* Empir. c. 15. p. 108. *Du Cange*, Gloſſ. Lat. T. 1. p. 564. See SEXTARIUS, *Cycl.*

BISTI, a ſpecies of Perſian money, valued at ſixteen or eighteen French deniers. Some repreſent the *biſti* as an antient ſilver coin: others, as Chardin, make it only a money of account, and call it *dinar biſti*. *Savar.* Dict. Comm. T. 1. p. 352.

BISTORT, *biſtorta*, in botany, the name of a genus of plants; the characters of which are theſe: the flower is of the apetalous kind, conſiſting of a number of ſtamina, which ariſe from a cup, divided into ſeveral ſegments at the edge: the piſtil becomes afterwards a ſeed, uſually of a triangular figure, and contained in a capſule, which was before the cup of the flower. See Tab. 1. of Botany, Claſs 15.

To this it is to be added, that the flowers are diſpoſed in ſpikes; and the roots are large and fleſhy, oddly twiſted or contorted, and furniſhed with a number of ſmall fibres, like hairs. There are alſo ſome ſpecies of *biſtort*, in which, beſide the common flowers and ſeeds, there are certain tubercles, which have their roots, and rudiments of leaves.

The ſpecies of *biſtort*, enumerated by Mr. Tournefort, are theſe:

1. The common *biſtort*, with a leſs contorted root. 2. The *biſtort*, with a more contorted root. 3. The great alpine *biſtort*. 4. The middle-ſized alpine *biſtort*. And, 5. The little alpine *biſtort*. *Tourn.* Inſt. p. 511.

Biſtort, popularly called *ſnake weed*, is a very beautiful plant, and may be met with in moiſt places in many parts of England,

and growing to about a foot high, with deep green leaves, and very beautiful fleſh-coloured flowers, in ſhort, but thick ſpikes. The root is often an inch thick, and is oddly contorted and twiſted; it is of a blackiſh brown without, and of a beautiful pale red within. It ſhould be choſen plump, full, and well dried, not eaſy to be broken, and of an aſtringent, but not diſagreeable taſte.

The roots of the common *biſtort* are a ſtanding medicine in the ſhops; they are given in decoction, and ſometimes in powder, as an aſtringent, and generally in conjunction with the tormentil root. They give a bright red colour to the common hartſhorn drink, and add conſiderably to its virtue. It is good in diarrhœas, and hæmorrhages of all kinds.

Some alſo commend it as an alexipharmic, and ſudorific. *Quinc.* Diſpenſ. P. 2. Sect. 2. §. 164. p. 103. *Ray*, Synopſ. p. 59, ſeq. *Burrgr.* p. 1593. Savar. T. 1. p. 352.

Eiſtort is ſuppoſed to be the ſame with the antient καλαναγκη; others ſay, with the σπλαφυλλον, and others with the βεβλαυικη. *Gorr.* Def. Med. p. 80. 214, in voc. καλαναγκη, &c. See BRITANNICA.

BISTOURY (*Cycl.*)—We have the deſcription of a *biſtoury*, and furrowed director, ſomewhat different from the common, by Mr. Monro, in the Medic. Eſſ. Edinb. vol. 5. art. 41.

M. le Dran deſcribes a *biſtoury cachè*, for more ſafely performing the operation for herniæ. The point of the *biſtoury* ſlides in the furrow of the director, to keep down the guts, and thereby prevent their being cut. *Le Dran*, Tom. 2. Obſ. 80.

BISTRE, a compoſition made of the moſt gloſſy and higheſt burnt ſoot pulverized, and paſſed thro' a fine ſieve, then baked in a little gum water, and made into cakes. *Savar.* Dict. Comm. T. 1. p. 353.

BIT (*Cycl.*)—To BIT *a horſe*, is to give him ſuch a bridle as is moſt proper for gaining his conſent to thoſe actions, which are required of him. Dict. Ruſt. T. 1. in voc.

All *Bits* ought to be proportioned to the mouth of the horſe, according as it is more or leſs cloven or wide; or more or leſs ſenſible and tender: Alſo according as the tongue and lips are higher and flatter; and as the palate is more or leſs fleſhy. *Guill.* Gent. Dict. P. 1. in voc.

BIT is alſo uſed for a little tool, fitted to a ſtock, or handle to bore withal.

In this ſenſe we ſay, the *bit* of a piercer, an augre, or the like; meaning that iron part of thoſe tools, wherewith the holes are bored. See AUGRE, *Cycl.*

BIT *of a Key* is that part fitted at right angles to the ſhank of the key, wherein the wards are made. *Moxon*, Mechan. Exerc. P. 1. p. 94. See KEY, LOCK, *&c. Cycl.*

BIT is alſo uſed in commerce, for a piece of coin current in Jamaica, and valued at 7 *d.* ½. Lex. Mercat. p. 386.

BITS, or *bitts*, in a ſhip, are two great pieces of timber uſually placed abaft the manger in the ſhip's looſ, thorough which the croſs piece goes, their lower parts being faſtned to the rudders; and their middle parts, in great ſhips, bolted to two large beams, croſs the bows. Their uſe is to belay the cable to, when the ſhip rides at anchor. *Guill.* Gent. Dict. P. 3. *Manwvr.* Seaman's Direct. p. 9.

The word ſeems formed from the French *bittes*, which ſignifies the ſame [a]; unleſs we will ſuppoſe the French word formed from ours [b].—[a *Aubin*, Dict. Marin. p. 84, voc. *bittes*. b *Skin.* Etym. in voc.]

In great ſtorms, to ſtrengthen the *bitts*, and ſecure the bows, the cable is faſtened to the main maſt. *Guill.* loc. cit.

Fore-jeer-BITS, thoſe to which the fore-jeer is faſtened and belayed. *Guill.* loc. cit.

Fore-top-ſail-ſheet-BITS, thoſe to which the fore-top-ſail-ſheet is belayed. *Guill.* loc. cit.

BITE (*Cycl.*) is defined to be a ſolution of the continuity of a ſoft part, cauſed by the impreſſion of an animal's teeth. *Caſt.* Lex. Med. p. 510. in voc. *morſus.*

For the poiſonous, or venomous *bites* of vipers, the rattle-ſnake, mad-dogs, the Tarantula, *&c.* See VIPER, RATTLE-SNAKE, *&c.*

Snake-ſtone, ſnake-weed, *terra melitenſis*, &c. are reputed ſpecifics againſt poiſonous *bites*. *Grew*, Muſ. Reg. Societ. P. 1. §. 3. p. 52. and p. 227, and 347. See SNAKE-*ſtone*, SNAKE-*weed*, &c.

The *bites* of ſpiders, at leaſt ſome ſpecies, alſo appear to be poiſonous; which has perhaps been the occaſion of the common error, that this inſect is poiſonous, when eaten. See the article SPIDER.

Mr. Robie, a phyſician in New England, gives the hiſtory of a perſon bitten in the leg by a ſmall ſpider, accidentally incloſed in his ſtocking; it was followed by an acute, erratic pain; firſt in the leg, then in the groin, and ſucceſſively paſſing into the ſmall of the back, the thigh, and the head, attended with a numbneſs, *&c.* It was cured with ſp. cor. cerv. and ſal. vol. corn. cerv. with *vinum viperinum*, and onions or garlic externally applied to the wound. Vid. Phil. Tranſ. N° 382. p. 69. ſeq.

Sig. Redi attributes the malignity of the *bite* of a viper, to a yellow juice lodged in a bag behind the gum, which is inſtilled thro' a ſlit in the teeth, into the wound. M. Bourdelot, and Charas, aſcribe it to the irritated bilious ſpirits, and breath of the enraged animal. Vid Phil. Tranſ. N° 83. p. 4074 ſeq.

In ſupport of which it is alledged, that the viper's lungs are full of bilious ſpirits, which exhale with its breath; and that there is an immediate duct in this creature, from the gall-bladder to the throat; by means of which, a quicker, and more copious infuſion of the bile, is made into the wound. But much of this may be juſtly doubted of. Phil. Tranſ. N° 77. p. 3015.

The beſt remedy for it is ſucking the wound; a kind of cure, for which the antient Marſi and Pſilli are celebrated. *Redi*, in Phil. Tranſ. N° 9. p. 161. See VIPER.

The beſt cure for the *bite* of the rattle-ſnake is an actual cautery; *e. gr.* a hot burning coal held on the wound. Phil. Tranſ. N° 210. p. 127.

The *bites* of divers creatures, when mad, are poiſonous, which at other times are not ſo, as of dogs, cats, men, *&c.* See HYDROPHOBIA, MAD-*dog*, MADNESS, MANIA, *&c.*

BITE is alſo applied, in a leſs proper ſenſe, to the impreſſion of other ſharp, or pungent bodies. Thus a file is ſaid to *bite* the metal; aqua fortis *bites*, or eats into copper.

BITERLOGH, or BITHERLAGE, the antient Daniſh military, or camp-law. *Suen. Agg.* Hiſt. Dan. p. 144.

The word is compounded from *bithe*, mulct; and *lagh*, law; q. d. the law of *mulcts*, or *wites*.

Among the laws of the Danes, there are two peculiarly eminent; *viz.* the *hird-ſtraa*, or court-law; and the *bitherlage raett*, made by Canute the Great, about the year 1035. Of which an Edition has been given by Reſenius. Hafn. 1673. *Du Cange*, Gloſſ. Lat. T. 1. p. 565, ſeq.

BITHYNIARCHIA, a ſort of ſuperior prieſthood in the province of Bithynia, to which belongs the ſuper-intendency of the ſacred games, and which gave an exemption to him poſſeſſed of it, called *bithyniarcha*, from the care of tutorage. *Montfauc.* Palæogr. l. 2. c 6. p. 161. *Calv.* Lex. Jur. p. 117. *Pitiſc.* Lex. Ant. T. 1. p. 283. *Du Cange*, Gloſſ. Græc. T. 1. p. 200.

BITTACLE, a ſquare box, or frame of timber, placed in the ſteerage of a ſhip, wherein the compaſs is placed. *Botel.* Sea Dial. 4. p. 121. *Guill.* Gent. Dict. P. 3. in voc. See COMPASS, *Cycl.* and *Suppl.*

The word is formed, by contraction, from the French *habitacle*, which ſignifies the ſame.

Large veſſels have two *bittacles*, a leſſer placed before the pilot, and a greater before the ſteerſman. *Ozan.* Dict. Math. p. 279. *Savar.* Suppl. p. 869.

In the ſmaller veſſels, the *bittacle* is divided into three ſpaces or apartments; in large veſſels into five. One for the hour-glaſſes; another for the lamp, or light; another for the compaſs, *&c.* *Aubin*, Dict. Marin. p. 478. voc. *Habitacle.*

Great care is to be taken in the diſpoſition, framing, *&c.* of the *bittacle*, that it ſtand true, and that it be not faſtened together with iron nails, but with wooden pins, in regard the former would affect the compaſs. Vid. *Harris*, Treat. of Navigation, c. 4. p. 191.

BITTACUS, in natural hiſtory, a name given by Cteſias, and ſome others of the Greek authors, to the parrot. The word *pſittacus* is ſo near this, that they are plainly only a corruption of one another. The Greeks called this bird indifferently *pſittacus* and *ſittacus*, as they did the fine ointment *ſagda*, indifferently by that name, or *pſagda*, the *ps* being only one letter with them; and that, and the ſingle S, very frequently uſed at pleaſure for one another.

BITTER (*Cycl.*)—The qualities of *bitter* bodies, are ſuppoſed to be dry, warm, aſtringent and earthy. *Gorr.* Med. Defin. p. 373. voc. πικρον.

According to Grew, all plants which are *bitter* and pungent, either on the tongue, or in the throat, are good cleanſers, *e. gr.* daiſy, anagallis [a], *&c.* The ſame author adds, that moſt purgative and emetic plants, which have any ſenſible taſte, are *bitter*; either ſimply, as colocynthis; or *bitter* and aſtringent, as aloes, *&c.* [b]—[a *Grew*, Idea of Philoſ Hiſt. of plants, §. 30. p. 15. b *Grew*, l. c. §. 30. p. 14.]

Bitter things are generally reputed ſtomachic; yet, according to Abercromby, they are naturally the reverſe, and hurtful to the ſtomach; and only become beneficial to it, where their aſtringency renders them proper. Philoſ. Tranſ. N° 171, p. 1026. See STOMACHIC, *Cycl.*

BITTER *purging ſalt*, *ſal catharticum amarum.* See EPSOM *ſalt.*

BITTER *place*, *locus amarus*, a poor barren ſoil, by Pliny called *terra amara*, *ſive macra*. *Plin.* Hiſt. Nat. l. 17. c. 5. *Du Cange*, Gloſſ. Lat. T. 1. p. 159. voc. *amarus.*

BITTER, in the ſea language, denotes a turn of the cable about the bitts, in order to its being veered out by little and little at pleaſure. *Botel.* Sea Dial. 4. p. 199. *Guill.* Gent. Dict. *Manwar.* lib. cit. P. 3. p. 9. in voc.

A ſhip is ſaid to be brought up to a *bitter*, when ſhe is ſtopped by her cable. *Guill.* loc. cit.

BITTER-*end*, is that part of the cable, which ſtays within board, wound about the bitts, when the ſhip is at anchor [a], When they would have that end bent to the anchor, they ſay, bend to the *bitter-end* [b].—[a *Botel.* l. c. b *Manw.* p. 9.]

BITTERN, in zoology, the name of a bird of the heron kind, called by authors *ardea ſtellaris*; and by ſome *taurus*, *botaurus*, *butorius*, and *ocnus*. In Engliſh, the *butter-bump*, and *mire-drum.*

It is nearly of the ſize of the common heron; its head is ſmall and narrow; its crown is black; and there is alſo a black ſpot on each ſide, near the angle of the mouth. Its throat and ſides are reddiſh, variegated with black tranſverſe lines; the neck is covered with very long feathers, which make it appear much thicker and ſhorter than it really is; its belly is of a duſky white, with a caſt of a browniſh red, and its back is variegated with a pale reddiſh brown and black. It makes a very remarkable noiſe, which it repeats either three or five times. It is heard only in the building time, which begins in February. The common people, from the ſingularity of the noiſe, think the bird, in order to make it, ſticks its beak in a reed, or in the mud. It is commonly found lurking in ſedgy and reedy places, near the waters, and ſometimes in hedges.

Toward autumn, this bird flies very high in an evening after ſun-ſet, riſing with a ſpiral aſcent, till quite out of ſight; and as they riſe they make an odd noiſe, not at all like their uſual note. This they repeat alſo very often, as they are on the wing in the night; and hence they are called by ſome, tho' improperly, the *night raven*. It builds on the ground, and lays five or ſix eggs, which are roundiſh, and of a greeniſh white. When wounded, and going to be taken, it ſtrikes at the perſon's eye, and ought carefully to be guarded againſt. *Ray*'s Ornithol. p. 208.

BITTERN is alſo a name given to the brine ſwimming upon the firſt concreted ſalt in the ſalt-works; this liquor is ladled off, that the ſalt may be taken out of the veſſel, and is afterwards put in again, and affords more ſalt, which is to be ſeparated like the reſt, by ladling off the liquor a ſecond time, and ſo on. *Boerhaave*'s Chem. p. 104. n.

The *bittern*, according to Mr. Boyle, is a very ſaline, bitter, ſharp, pungent liquor, which drains off in the making of ſalt from ſea water; or which remains in the pans, after the coagulation, and granulation of the purer, and more ſaline part, by boiling. Vid *Boyle*, Phil. Work. Abr. T. 3. p. 482. *Collins* Salt. and Fiſh. p. 53. *Quinc.* p. 51.

A *bittern* alſo runs, or oozes, from the heaps of foſſil ſalt at Limington, and Portſea in Hampſhire. Phil. Tranſ. N° 377. p. 348.

Bittern makes the baſis of the *ſal catharticum amarum*, or Epſom ſalt. Phil. Tranſ. loc. cit. See EPSOM *ſalt*.

BITTERNESS (*Cycl.*)—According to Grew, *bitterneſs* is produced by a ſulphur well impregnated with a ſalt, either alcaline or acid, and ſhackled with earth.

Hence it is that the bittereſt plants uſually yield the greateſt quantity of lixivial ſalt; and that many diſtilled oils, digeſted with any ſtrong acid, acquire a bitter taſte. Add, that the leaves of all ſweet roots are bitter; the fig-tree, which bears a ſweet fruit, bleeds a bitter milk; and that the roots of plants, which bear a bitter ſtalk, are not bitter, but hot. That the earthy parts contribute conſiderably to the *bitterneſs* of bodies, appears hence, that moſt bodies of that kind are fixed; or, if they do emit fumes, do not loſe their bitter taſte therewith. Vid. *Grew*, Diſc. of taſte of Plants, c. 4. §. 12.

Mr. Boyle obſerves, that a ſubſtance bitter in the higheſt degree, may be divided into two ſubſtances, the one extremely ſour, and the other inſipid. This happens, when the cryſtals of ſilver are diſtilled by a heat ſufficient to drive away all the ſpirits from the ſilver. What remains is inſipid, and what riſes is highly acid. Works abr. Vol. 1. p. 541.

The extinguiſhing, or removing of *bitterneſs*, is called dulcifying, ſweetning, *&c.* See DULCIFYING, *Cycl.*

M. Bon has given methods of removing, or diſcharging the *bitterneſs* of olives and Indian cheſnuts. Vid. Mem. Acad. Scienc. 1720. p. 600.

The *bitterneſs* of ſea-water ariſes from the diſſolution of the beds, or ſtrata of bitumen; as its ſaltneſs does from a diſſolution of the ſtrata of ſalt. *Marſigli*, in Hiſt. Acad. Scienc. an. 1710. p. 33. See the article SEA.

BITUMEN (*Cycl.*)—From the origin and inflammability of *bitumens*, it appears they bear a near affinity to ſulphurs, and are ſuppoſed both formed of the ſame principles or ingredients; only differing in this, that ſulphurs are harder and more brittle, *bitumens* more fatty and tenacious. Yet is not this diſtinction ſtrictly kept to; divers other bodies being by ſome naturaliſts placed in one of thoſe ranks, by others in another. Vid. *Mercat.* Metalloth. p. 82. and *Budd*, Elem. Philoſ. Theor. P. 2. c. 2. §. 33. p. 175.

Bitumens are of different kinds, ariſing from the different proportion of the ſulphur principle in them; and the different intermixture of ſalts and earth, and other foreign matters with them. *Mercat.* ubi ſupra. *Verdr.* Phyſ. P. 2. c. 6. §. 6. p. 470.

Bitumens are uſually divided into two ſpecies, liquid and ſolid. Tho' ſome diſtinguiſh three kinds. *Gorr.* Med. Defin. p. 60. voc. Ασφαλτος. See the Cyclopædia.

Dr. Woodward gives a different diviſion of the Engliſh *bitumens*, or bituminous foſſils. The firſt are thoſe of a more lax and coarſe conſtitution; and which, when wetted, yield a groſſer, or pitchy matter: Such are the *lapis piceus*, or pitch-ſtone, the *lapis ampelites*, *obſidianus* or canel, and the *lithanthrax* or coal. The ſecond of a more denſe and fine conſtitution, and which yields an oil: Such are the *gagates*, or jet; and *ſuccinum*, or amber. *Woodw* Nat. Hiſt. Engl. Foſſ. T. 1. p. 165. See GAGATES and SUCCINUM.

Bitumen is ſuppoſed the chief fuel of the ſubterranean fires. Vid. *Kirch.* Mund. Subterr. p. 157. *Lang.* Epiſt. p. 737.

Many have been fond of ſuppoſing all ſea-water to contain a large quantity of *bitumen*, and that it owes its bitterneſs to this admixture; but this ſeems erroneous, ſince we find that all ſea-water contains a large quantity of bitter purging ſalt of the nature of what is ſold in our ſhops, under the name of *Epſom ſalt*; and its bitterneſs is of the very ſame kind with the taſte of that ſalt.

That there are, however, *bitumens* mixed in ſeveral places with the water of the ſea, is very certain. Barbadoes tar is found floating on the ſea, being waſhed in great quantities from the rocks, and count Marſigli obſerved ſpiral filaments ariſing from the ſurface of the ſea Marmora, near Conſtantinople, which concreted into *bitumen*, exactly of the ſame kind with that he obſerved at Zant, flowing from the ſides of a bituminous mountain. On ſome of the coaſts of Italy they ſkim off a kind of liquid *bitumen*, or petroleum, from the ſurface of the ſea. Some think that ambergreaſe is a *bitumen* of the ſea, and many travellers tell us of a fatty ſubſtance on the ſurface of it, that gives light in the night. Theſe various ſubſtances may impart various properties to the ſea-water, in ſuch parts where they are found to abound, and they may be common in many places, but they are certainly not found in all, nor is *bitumen* a neceſſary ingredient in ſea-water. Count Marſigli has indeed proved, that a ſpirit diſtills from the moſt common of all *bitumens*. Pit-coal will give water a bitter taſte, but ſea-water is not yet proved to be impregnated with ſuch a ſpirit. On the contrary, when diſtilled, it has no bitter taſte; therefore marine waters are not impregnated with ſuch a volatile ſpirit, but evidently owe their *bitterneſs* to a fixed principle; and it is very certain, that pit-coal cannot give this taſte, ſince the waters which iſſue out from among the ſtrata of Sea-coal are never found to be bitter, tho' often ſtrongly impregnated with iron.

All the *bitumens* are inflammable, and have this good quality in their burning, that they will do without a wick. Dr. Plot therefore conjectures, that the famous ſepulchral lamps of the antients were contrived of theſe *bitumens*, particularly of the liquid kind, becauſe any thing that would require a wick, would be liable to its choaking up, and being deſtroyed. See LAMPS *perpetual*.

BITUMEN, in a more particular ſenſe, is reſtrained to the *aſphaltos*, otherwiſe called *bitumen Judaicum*. *Mercat.* Metalloth. Arm. 5. c. 2. p. 81. *Caſt.* p. 106. See ASPHALTOS, *Cycl.* and ASPHALTA, *Suppl.*

BITUMEN *byblæanum*, in mineralogy, a name given by Boccone and others to a peculiar ſpecies of bituminous foſſil, which is flexile while in the earth, a property very ſingular in a foſſil not of the talky kind, as this evidently is not. It is a ſtony ſubſtance, ſmelling like the common *bitumens*, and compoſed of a very great number of thin plates, laid evenly and regularly on one another. It has its name from the place where it is found, which is the Hyblæan mountains of Sicily, near Milelli, neighbouring upon the town of Auguſta and the antient Megara. When burnt in a candle, the bituminous ſmell is perceived very ſtrong; and the ſtone, though when firſt taken up it be flexible like paper, yet in time it hardens, and becomes brittle like other foſſils of that lax conſiſtence. There are found whole hillocks covered with it. They do not ceaſe to bear plants and herbage for this, the roots of the graſs, *&c.* inſinuating themſelves between the laminæ of this ſtone, and getting good nouriſhment there. Phil. Tranſ. N° 100.

BITUMINOUS, ſomething that relates to, or partakes of, the nature and qualities of bitumen. See BITUMEN.

All *bituminous* bodies are offenſive to the head [a]. Their ſmell or ſtench makes the epilepſy diſcover itſelf [b].—[a] *Lang.* Epiſt. Med. l. 2. [b] *Plin.* Hiſt. Nat. l. 35. c. 15. *Lang.* l. 2. ep. 75. See EPILEPSY.

Naturaliſts diſcover a *bituminous* quality in the ſea-water, which it derives either from *bituminous* exhalations out of the body of the earth, or from ſprings and rivers, which import liquid and other bitumens into the ocean. It is to this *bituminous* mixture the bitterneſs of ſea-water is aſcribed by ſome. *Boyle*, Phil. Work. abridg. T. 3. p. 221, ſeq. See BITUMEN.

BIVALVE, in the hiſtory of ſhell-fiſh, the name of one of the three general claſſes, the other two being the *univalves* and the *multivalves*. The *bivalve* ſhells are thoſe which conſiſt of two pieces or ſeparate ſhells joined together by a cardo or hinge. Theſe are a leſs numerous claſs than the *univalves*, and have been arranged by a late accurate French writer under ſix genera. Theſe are: 1. The oiſters. 2. The chamæ. 3. The *mytuli*, or muſcles. 4. The cardiform ſhells. 5. The *pectines*, or ſcallops. And, 6. The *ſolens*, or razor-ſhells. For the characters and ſpecies of each of theſe, ſee their ſeveral heads, OSTREA, CHAMA, *&c.* Hiſt. Nat. Eclair. T. 2. p. 235.

BIUMBRES, in geography, an appellation given to the inhabitants of the torrid zone, by reaſon, at two different ſeaſons of the year, their ſhadows are projected two different ways. *Wolf.* Lex. Math. p. 260.

The

The *biumbres* are the same with those otherwise denominated *amphiscii*. See AMPHISCII, *Cycl.*

BIXA, in botany, the name of a genus of plants; the characters of which are these: the perianthium is flat, small, and permanent, the whole formed of one little leaf, divided into five segments at the end: the flower is double; the exterior one is composed of five large, oblong, equal, and coarse petals; the inner flower is composed of five petals also; but they are thinner and finer: the stamina are a great number of setaceous filaments, of about half the length of the flower: the antheræ are erect: the germen of the pistil is of an oval figure: the style is capillary, and of the length of the stamina: the stigma is bifid, compressed, and parallel: the fruit is a capsule, of an oval cordated form, beset with hairs, and composed of two valves; but having only one cell, in which are a number of turbinated seeds, with a truncated umbilicus. *Linnæi*, Gen. Plant. p. 242.

BIXA, in botany, is also a name by which some authors have called the *arnotto*; the same with the *orleana* and *orellana* of other writers. *J. Bauhin*, Vol. 1. p. 440.

BIZARRE, a term used among the florists for a particular kind of carnation, which has its flowers striped or variegated with three or four colours.

BIZE, in zoology, a name by which some call the *pelamys*, a sea-fish, of the shape of the tunny, and resembling the young brood of that fish; but distinguishable by its wanting scales in most parts of its body. *Willughby*, Hist. Pisc. p. 179.

BIZOCHI, or BISOCHI, a sect or branch of religious minorites, condemned by several popes. Vid. *Du Cange*, Gloss. Lat. T. 1. p. 566. *Prateol.* Elench. Hæres. l. 1. n. 2. p. 101.

The *bizochi* were also called *fratricelli*, or *fratres de paupere vita*; sometimes *bichini*, or *bicchini*. See BEGUINS, *Cycl.*

The name is formed from *bisaccus*, on account of a double budget or wallet wherewith they begged their living.

BIZZARRO, or *con* BIZZARIA, in the Italian music, signifies *with capricious changes*; sometimes fast, at others slow, soft, strong, &c. at the fancy of the composer. *Bross.* Dict. Mus. in voc.

BLACK (*Cycl.*)—Bodies of a *black* colour are found more inflammable, by reason the rays of light falling on them are not reflected outwards, but enter the body, and are often reflected and refracted within it, till they be stifled and lost [a]. They are also found lighter, *cæteris paribus*, than white bodies, being more porous [b]. It may be added, that cloaths dyed of this colour wear out faster than of any other, by reason their substance is more penetrated and corroded by the vitriol necessary to strike their dye, than other bodies are by the galls and alum which suffice for them [c].—[a *Newton*, Opt. Qu. 6. p. 314. b *Rohault*, Phys. P. 2. c. 27. §. 61. c Id. ibid. §. 72, seq.]

The inflammability of *black* bodies, and their disposition to conceive heat, beyond those of other colours, is easily evinced. Some appeal to the experiment of a white and a *black* glove worn in the same sun; the consequence will be, a very sensibly greater degree of heat in the one hand than the other [d]. Others alledge the phænomena of burning-glasses, where *black* bodies are always found to kindle soonest [e]. Mr. Boyle gives other proofs still more obvious: he took a large tile, and having whited over one half of its superficies, and blacked the other, exposed it to the summer-sun; where having let it lie a convenient time, he found, that whilst the whited part remained still cool, the *black* part was grown very hot. For farther satisfaction, the same author has sometimes left on the surface of the tile a part retaining its native red, and exposing all to the sun, has found the latter to have contracted a heat in comparison of the white part, but inferior to that of the *black* [f].—[d Vid. *Boyle*, Phil. Work. abridg. T. 1. p. 144. e *Rohault*. P. 1. c. 27. f *Boyle*, lib. cit. T. 2. p. 36.]

So also on his exposing two pieces of silk, one white, the other *black*, in the same window to the sun, he often found the latter considerably heated, when the former has remained cool [g]. It is observable likewise, that rooms hung with *black* are not only darker, but warmer than others [h].—[g *Boyle*, ibid. h Id. ibid.]

To all which may be added, that a virtuoso of unsuspected credit assured Mr. Boyle, that, in a hot climate, he had, by carefully blackening the shells of eggs, and exposing them to the sun, seen them thereby well-roasted in a short time. *Boyle*, ibid. See also *Gravesend*, Inst. Philos. Newton. §. 1251. p 344. *Verdr.* Phys. P. 2. c. 10. §. 6. p. 236. *Teichm.* Inst. Phil. Nat. P. 1. c. 19. p. 112.

BLACK, in matters of dress, is the distinguishing habit of churchmen and mourners. Vid. *Potter*, Archæol. Græc. l. 4. c. 5. T. 2. p. 196.

Some will have it, that the common people among the Romans were cloathed in *black*; whence the denomination given them of *turba pullata*. *Pitisc.* Lex. Antiq. T. 2. p. 561. voc. *pullati*.

To give the common *black* colour to glass, the glassmakers use the following method: take old broken glass of different colours; grind it to powder, and add to it, by different parcels, a sufficient quantity of a mixture of two parts zaffer and one part manganese: when well purified, work it into vessels, &c. See COLOURING *of glass*.

BLACK, in heraldry, is properly called *sable*. See SABLE, *Cycl.*

BLACK, in the manege.—A horse of a deep, shining, and lively *black* is called a *black-more*, or *coal black* [i]. Horses *black* all over are commonly reckoned dull and melancholy; but a white foot, or star in the forehead, gives them a degree of sprightliness. The Spanish gravity is said to be best pleased with those intirely *black* [k].—[i *Guill.* Gent. Dict. P. 1. in voc. k Farr. Dict. in voc.]

Bone-BLACK is made of the bones of bullocks, cows, &c. well burnt and ground. To be good, it must be soft and friable, of a glossy cast. It is in considerable use, though inferior in goodness to *ivory black*. *Savar.* Dict. Comm. T. 1. p. 871. The invention of *bone* or *ivory black* is attributed to Apelles. *Plin.* Hist. Nat. l. 35. c. 5. *Felib.* Princ. de l'Arch. p. 293.

Harts-BLACK, that which remains in the retort after extracting the spirit, salt, and oil of hartshorn. This residue being ground up with water, makes a *black* not much short of that of ivory.

Lamp-BLACK (*Cycl.*)—There is a finer and brighter kind of *lamp* or *candle-black* procured from the fumes of a lamp or candle, gathered by a proper receptacle placed in manner of a canopy over the luminary, and wiped or brushed off; but it is not procured in quantity sufficient for ordinary use. Vid. *Park.* Art of Japann. c. 5. p. 21.

Soot, or *Chimney*-BLACK, is a poor colour; but ready for painting *black* draperies in oil. *Felib.* Princ. de l'Archit. l. 3. c. 6. p. 299.

Curriers BLACK signifies a teint or dye laid on tanned leather; of which there are usually two, the first made of galls, alegre, and old iron; the second of galls, copperas, and gum Arabic. *Savar.* Dict. Comm. T. 1. p. 872. See CURRYING, *Cycl.*

BLACKBIRD, *merula*, in zoology. See the article MERULA.

The music of the *blackbird* is not its only valuable quality; for it is a very delicate bird for the table. It builds its nest in woods, very early in the spring, often in march, while the snow is on the ground. It generally chooses the stumps of trees, or thick hedges, for the place. The outside of the nest is made of dry grass, sticks, and the fibres of roots of trees: the inside is lined with clay, and formed so round, that art cannot mend it. They build three or four times in the year, and even oftner than that, if their nests are taken early from them. The young ones may be easily raised with any kind of meat. It sings three or four months in the year: the note is loud, and not very agreeable; but may be much improved by teaching.

Some people are very fond of them as food, and take them alive, and fatten them up: the way is, to have very large cages with some tame ones in them; these will teach the new-taken birds to eat, and plenty and variety of food being set before them, they will soon grow much fatter than when wild. Kircher, in his *China illustrata*, seriously tells of certain trees, whose leaves falling into the water of a lake, on the sides of which they grow, become *blackbirds*. He took this romantic story upon credit; but plays the philosopher in a very idle manner in attempting to account for it, by supposing, that it is owing to the seminal parts of some of the eggs of those birds dropped from their nests, which are sometimes built on those trees. The whole truth seems to be no more than this, that the tree easily sheds its leaves, and its young branches being brittle, are apt also to be broken by the winds. The waters are naturally strewed with these leaves, and, at the breeding-season of the birds, their nests being sometimes thrown down by the breaking of the twigs, the young ones are seen floating on the water among the leaves; and the people have been idle enough to suppose, that they were formed of them. The firm assertions of some great men about our shell-fish in Lancashire turning into geese, is a proof, that the general credit of a country about a miracle of this kind, does not prove the truth of it. *Kircher*, China illustrata.

BLACK *books*, a name given to those which treat of necromancy, or, as some call it, nigromancy. See NECROMANCY, *Cycl.*

The *black book* of the English monasteries was a detail of the scandalous enormities practised in religious houses, compiled by order of the visitors under king Henry VIII. to blacken, and thus hasten their dissolution. Vid. *Dugd.* Monast. abridg. in Pref. p. 8.

BLACK *canons*, a name given to the regular canons of St. Augustine, who wore a *black* mantle over their surplice, by way of distinction from the præmonstratenses. *Steph.* Suppl. to *Dugd.* Monast. T. 1. p. 69.

BLACK *cap*, in zoology, a name given by the common people of many counties of England to the *pewit*, a bird of the gull-kind. See the article PEWIT.

BLACK *cap* is also the common English name for the *parus palustris*, or marsh titmouse. The *atricipilla*, which is a much scarcer bird, being also called in English by the same name, many have contended for its being very common with us, mistaking it for this titmouse. *Ray*, Ornithol. p. 175. See the article ATRICIPILLA.

BLACK *diver*, in zoology, a name given by many to a species of duck very common about the coasts of Lancashire, Yorkshire, and some other counties, and called more generally the *scoter*. It is all over *black*. See SCOTER.

BLACK *game*, in zoology, a common Engliſh name for the *urogallus*, or *tetrao minor*, called alſo the *grouſe*. See the article GROUSE, *&c.*

BLACK *earth*, *terra nigra*, denotes the natural mould or loam. *Woodw.* Meth. Foſſ. p. 4. See SOIL, *&c.*

BLACK *eunuchs*, in the cuſtoms of eaſtern nations, are Ethiopians caſtrated, to whom their princes commonly commit the care of their women. *D'Herbel.* Bibl. Orient. p. 155. voc. *azhar*. See EUNUCH, *Cycl.*

BLACK *eye*, *hypoſphagma*, in medicine, a ſuffuſion of blood on the tunica adnata turning livid, occaſioned by a blow. *Caſt.* Lex. Med. p. 408. voc. *hypoſphagma*. See ECHYMOSIS, *Cycl.* and *Suppl.*

BLACK *eye* is alſo a name given to the germ in beans, which the Romans called *hilum*. *Vat.* Phyſ. Exper. P. 2. §. 6. c. 2. p. 501. See BEAN, GERMINATION, *&c.*

BLACK *fryers*, a name given to the dominican order, called alſo *predicants* and *preaching fryers*, in France *jacobins*. *Steph.* Suppl. to *Dugd.* Monaſt. T. 1. p. 186. See DOMINICANS, *Cycl.*

BLACK *land*, in agriculture, a term by which the husbandmen denote a particular ſort of clayey ſoil, which, however, they know more by its other properties than by its colour, which is rarely any thing like a true *black*, and often but a pale grey. This, however pale when dry, always blackens by means of rains; and when ploughed up at theſe ſeaſons, it ſticks to the plough-ſhares, and the more it is wrought, the muddier and duskier-coloured it appears. This ſort of ſoil always contains a large quantity of ſand, and uſually a great number of ſmall white ſtones. *Moreton*'s Northampt. p. 45.

BLACK *lead*, a mineral ſubſtance, in colour reſembling lead, but more tender and friable; and on that account uſed for marking, writing, and drawing.

The name ſeems given it with ſome impropriety, the common lead being the true *black lead*, ſo called by way of contradiſtinction from tin, otherwiſe called white lead. *Plott*, in Phil. Tranſ. N° 240. p. 183. See LEAD and TIN.

Black lead is otherwiſe popularly denominated *wad* or *wadt*, and *kellow*; by naturaliſts *nigrica fabrilis*, from its uſe in ſcoring; by analogy to the *rubrica fabrilis*, or ruddle, which has the ſame uſe. *Woodw.* Meth. Foſſ. cl. 5. p. 43. See RUDDLE.

Black lead was known to the antients under the names of *plumbago*, *galena*, and *molybdena*. Vid. *Ruland.* Lex. Alchem. p. 370. voc. *plumbago*. *Caſt.* Lex. Med. p. 355. voc. *galena*. See PLUMBAGO, *&c.*

It is found in divers parts of Germany, *&c* [a]. but the better ſort is the produce of England alone, and that reſtrained to the mines near Keſwick in Cumberland; beſides which, Dr. Woodward aſſures us, there is none found worth any thing in any other country [b].—[[a] *Savar.* Dict. Comm. T. 2. p. 739. voc. *mina de plomb*. [b] *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 1. p. 5.]

'Tis ſomewhat difficult to aſcertain what claſs of minerals *black lead* belongs to. Metal it is not, as not being either ductile or even fuſible; nor can it be reckoned among ſtones, for want of hardneſs: it remains, therefore, that it muſt be placed among the earths, though it diſſolve not in water, as moſt earths will, except ſtiff clays and ochres; among the latter whereof Dr Plott judges it may be reckoned, it ſeeming to be a ſort of cloſe earth, of very fine and looſe parts, ſo burnt as to become *black* and ſhining, diſcolouring the hands, as all ochres do. Whence the moſt proper name that can be given it, according to this author, is *ochra nigra*, or *black* ochre. Phil. Tranſ. N° 240. p. 183. See OCHRE.

Some writers ſpeak alſo of a factitious *black lead*, or *plumbago*, produced in furnaces, being found adhering to the ſides of thoſe where gold or ſilver are melted. *Ruland.* Lex. Alch. p. 373. voc. *plumbago*.

BLACK *leather* is that which has paſſed the curriers hands, where, from the ruſſet as it was left by the tanners, it is become *black*, by having been ſcored and rubbed three times on the grain-ſide with copperas-water. *Hought.* Collect. T. 1. N° 122. p. 322.

BLACK *mail* (*Cycl.*)—The origin of this word is much conteſted; for though it ſeems a compoſition of *black* and *maille*, uſed for a ſmall piece of metal or money, whence the tribute of *black mails* ſeems to ſome to have been ſo denominated, as being paid not in ſilver or white money, but either in copper or victuals, according to the ability of the debtor; yet there is ground to hold the word *black* to be here a corruption of *blank* or white, and conſequently to ſignify a rent paid in a ſmall copper coin called *blanks*. This may receive ſome light from a phraſe ſtill uſed in Picardy, where ſpeaking of a perſon who has not a ſingle half-penny, they ſay, *il n' a pas une blanque maille*. *Du Cange*, Gloſſ. Lat. T. 1. p. 569. voc. *blakmale*.

BLACK *monks*, a denomination given to the benedictins [c], called in Latin *nigri monachi*, or *nigromonachi*; ſometimes *ordo nigrorum*, the order of *blacks* [d].—[[c] *Steph.* Suppl. to *Dugd.* T. 1. p. 69. [d] *Magri*, Voc. Eccleſ.] See BENEDICTINS, *Cycl.* and *Suppl.*

BLACK *proceſſion*, in eccleſiaſtical writers, that which is made in *black* habits, and with *black* enſigns and ornaments. See PROCESSION, *Cycl.*

Antiently at Malta there was a *black proceſſion* every Friday, where the whole clergy walked with their faces covered with a *black* veil. *Magri*, lib. cit.

BLACK *rents*, the ſame with *black-mail*, ſuppoſed to be rents formerly paid in proviſions and fleſh, not in ſpecie. See BLACK *mail*, *Cycl.* and *Suppl.*

BLACK *row grains*, a ſpecies of iron-ſtone or ore found in the mines about Dudley in Staffordſhire. *Plott*, Nat. Hiſt. Staffordſh. c. 4. §. 17. p. 159.

BLACK *ſheep*, in the oriental hiſtory, the enſign or ſtandard of a race of Turkmans ſettled in Armenia and Meſopotamia; hence called the *dynaſty of the black ſheep*. Vid. *D'Herbel.* Bibl. Orient. p. 253. voc. *cara*.

BLACK *ſtones* and gems, according to Dr. Woodward, owe their colour to a mixture of tin in their compoſition. Vid. *Woodw.* Hiſt. Engl. Foſſ. T. 1. p. 190.

BLACK *tin*, in mineralogy, a denomination given to the tin-ore when dreſſed, ſtamped, and waſhed ready for the blowing-houſe, or to be melted into metal. Phil. Tranſ. N° 69. p. 2110. *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 1. p. 199. *Pettus*, Hiſt. Mines, c. 18. p. 79.

It is prepared into this ſtate by means of beating and waſhing; and when it has paſſed through ſeveral baddles or waſhing-troughs, it is taken up in form of a black powder, like fine ſand, called *black tin*. See TIN.

BLACK *whytlof*, in our old writers, bread of a middle fineneſs betwixt white and brown, called in ſome parts *ravel bread*.

In religious houſes, it was the bread made for ordinary gueſts, and diſtinguiſhed from their houſhold loaf, or *panis conventualis*, which was pure manchet, or white bread. *Cowel.*

BLACK *work*, iron wrought by the blackſmith; thus called by way of oppoſition to that wrought by whiteſmiths. *Savar.* Dict. Comm. T. 2. p. 1651. voc. *taillanderie*.

BLACKING is ſometimes uſed for a factitious black, as lamp-black, ſhoe-black, *&c.* *Crouch*, Surv. Brit. Cuſt. T. 1. p. 120. See BLACK.

BLACKS, in phyſiology. See NEGRO.

BLADDER (*Cycl.*)—Though the urinary *bladder* be naturally ſingle, yet there have been inſtances of nature's varying from herſelf in this particular. The *bladder* of the famous Caſaubon, upon diſſecting his body after his death, was found to be double; and, in the Philoſophical Tranſactions, we have an account of a triple *bladder* found in the body of a gentleman, who had long been ill, and no one could gueſs the cauſe. In this perſon's beſt ſtate of health, he never could void his urine in a continued ſtream, like other healthful perſons; but the quantity uſed to come away by little and little, and that with great trouble: and in the two or three laſt years of his life, a thick mucus diſcharged itſelf with the urine, and gave him pain, which he never had been ſubject to before. He ſuſpected at length that he had a ſtone in the *bladder*, and being ſearched for it with a catheter, the perſon who performed that operation, meeting with ſome reſiſtence in the way, forced the inſtrument through the membranes, and cauſed an effuſion of blood, which finally was the cauſe of his death, and on opening him, the *bladder* was found to be triple; a circumſtance which cauſed all his complaints, but which could not be known till it diſcovered itſelf too late.

As to the figure and ſituation of the human *bladder*, Mr. Weitbrecht has given a better deſcription of them than is to be met with in the common ſyſtems. Vid. Med. Eſſ. Edinb. from Comment. Acad. Petrop. T. 5.

The diſeaſes to which the *bladder* is ſubject [a] are ulcers [b], wounds [c], deſcents or ruptures [d], preternatural contents, particularly ſtones and gravel [e], ſchirrus [f], palſies [g], inflammations of its neck [h], *&c.*—[[a] *Diocl. Cariſt.* Epiſt. ad Antigon. ap. *Fabric.* Bibl. Græc. l. 6. c. 7. T. 12. p. 589, ſeq. [b] Phil. Tranſ. N° 280. p. 1211. where is an account of the cure of ulcers of the *bladder* by cantharides internally given, firſt practiſed by Groenvelt, and afterwards with ſucceſs by Mr. Yonge. [c] *Teichmey.* Inſt. Med. Leq. c. 23. p. 288. where it is inquired, whether wounds of the *bladder* be always mortal, as is aſſerted by Hippocrates. [d] Hiſt. Acad. Scienc. ann. 1717. p. 17. where is given an inſtance of a rupture of the *bladder*, by many held impoſſible on account of its magnitude. [e] Hiſt. Acad. Scienc. ann. 1702. p. 29. It. Mem. p. 34. *Teichmey.* ubi ſupra, c. 17. p. 138. [f] Med. Eſſ. Edinb. T. 1. §. 34. p. 321. where the hiſtory is given of a *bladder* becoming ſchirrous. [g] Id. T. 2. §. 32. p. 365. where is an inſtance of a cure of a ſuppreſſion of urine, cauſed by a palſey of the *bladder*. [h] *Littre*, in Hiſt. Acad. Scienc. ann. 1704. p. 35, ſeq. where an account is given of a total ſuppreſſion of urine, cauſed by an inflammation of the neck of the *bladder*.]

The internal membrane of the *bladder* has been known to come away with the urine, without any great danger. Mr. Rohault gives an account, in the memoirs of the academy of ſciences, of a patient he had, who, after a very violent ſtoppage of urine, voided with ſome pain a piece of a membrane of an inch ſquare. Three or four days afterwards, the patient felt ſomething again obſtruct the paſſage; and as it came nearer the end of the urethra, he at length took hold of it, and drew out a larger piece of the ſame ſort of membrane. Some time after this, in ſtraining violently in diſcharging his urine, he voided three other ſuch pieces, which together, according to Mr. Rohault's judgment, could not make leſs than two-thirds of the internal membrane of the whole *bladder*; and in effect it was plain, that, in the courſe of the diſeaſe, the whole in-

terna

ternal membrane had gradually detached itself from the external one, and made its way out by the urethra. After the whole was thus discharged, the urine found no stoppage; and it is evident, that what had before stopped its passage, was no other than the pieces of this membrane falling before, or blocking up the urethra. The pieces of the membrane, when examined, appeared to have all their blood-vessels in their natural size; and the urine, in the whole course of the disease, having never been tinged with blood, is a proof, that the membrane detached itself naturally, not by violence. The patient, after this, was wholly cured of his complaint; but had a small incontinence of urine attending him, which was plainly owing to the sphincter's having been weakened, by being, as well as the *bladder*, divested of its membranes. Mem. Acad. Par. 1714.

The operations performed on the *bladder* are chiefly section, and extraction for the stone[i]; to which may be added injection, dilatation, the application of lithontriptics[k], diuretics, *&c.*—[[i] Phil. Transf. N° 236. p. 15, seq. where Hippocrates's aphorism, that the sections of the *bladder* are always mortal, is defended; and the best method of extracting the stone out of the *bladder*, especially in women, is shewn to be by a gradual dilatation of the urethra. [k] Hist. Acad. Scienc. an. 1720. p. 33. where the great impediments to the dissolution of the stone in the *bladder* by lithontriptics, are represented to be the medicines not continuing long enough in the *bladder*, and its being altered by the urine.] See STONE.

The urinary *bladders* of brutes are differently contrived from the human *bladder*, and from each other, according to the structure, œconomy, and manners of living of each creature.

Birds are usually said to be without *bladders*, as being without urine[l]; yet does not this hold universally, since, in an ostrich dissected by the French academy, a *bladder* was found situate at the extremity of the rectum, big enough to hold both fists, and in it eight ounces of urine[m].—[[l] *Vater.* Phys. Exper. P. 2. §. 8. c. 3. qu. 4. p. 810. [m] Mem. for Nat. Hist. Anim. p. 227.]

Many have also denied a *bladder* of urine to fishes[n]; but the more exact observers find this part in all, at least, the greater part of the fishy kind[o].—[[n] Mem. for Nat. Hist. Anim. p. 257. [o] Phil. Transf. N° 178. p. 1303, seq.]

Tortoises, Aristotle observes, have large *bladders*, and they need no less; since being covered with a thick shell, and having no pores or perspirative vessels whereby to carry off their moisture, it is retained within them, and accumulated in the *bladder* of urine. But what he adds, that the sea-tortoise has a large, and the land-tortoise a small *bladder*, is contradicted by later philosophers, who find the reverse. Perhaps the mistake may have arisen from a corruption of the text; since the reason which Aristotle assigns, seems rather to conclude against him. Mem. for Nat. Hist. Anim. p. 257.

In the lion, the *bladder* is small, as is the kidney; for that creature rarely drinks, insomuch that Albertus affirms the female does not suckle her young, as having no milk. Mem. for Nat. Hist. Anim. p. 14.

Bladders, when below a certain magnitude, are more usually denominated by the diminutive vesicles, *vesiculæ*.

Of these we meet with many sorts both in the animal and vegetable world; some natural, as in the lungs[p], especially of frogs[q], and as some also imagine, in the muscles[r]; others morbid or preternatural, as the hydatides[s], and those observable in the itch[t]. Naturalists have also discovered *bladders* in the thorax and abdomen of birds[u], as well as others in the belly of fishes, called *air-bladders* and *swims*[w].—[[p] *Cast.* Lex. Med. p. 239. voc. *cystis*, where it is noted, that Malpighi held the substance of the lungs to be wholly vesicular, or composed of an infinite number of spherical *bladders*, formed of the finest and tendereſt membranes. [q] *Ent*, Antidiatr. p. 69. Phil. Transf. N° 142. p. 1073, where it is shewn, that what we call lungs in a frog, are only wind-*bladders*, answering to the office of swimming in fishes. [r] *Hook*, Philos. Collect. N° 2. p. 22, seq. *Waller*'s Life of Hook, prefix. to Posth. Works, p. 20. where the structure and action of a muscle are explained, by supposing the fibres thereof composed of a chain of little *bladders*, like a necklace of pearl, blown up by the ingress of some aerial matter or spirit. It is known, that, by blowing into a *bladder*, a small force will raise a considerable weight; but this hypothesis does not well account for the velocity or quickness wherewith muscular motions are performed. Vid. *Winsl.* in Hist. Acad. Scienc. ann. 1724. p. 43. [s] Philos. Transf. N° 295. p. 1798, where is an account of a great number of *bladders* voided by stool, and some also by vomiting. [t] Phil. Transf. N° 283. p. 1296, where it is observed, that each of the itchy *bladders* is the residence of an insect. [u] Mem. Nat. Hist. Anim. p. 179. It. p. 235. Mem. Acad. Scienc. an. 1693. p. 258, seq. *Du Hamel*, Hist. Acad. Scienc. l. 3. §. 6. c. 2. p. 277, seq. [w] *Niewent.* Relig. Philos. cont. 22. §. 26. p. 346. Phil. Transf. N° 178. p. 1303, seq.]

Vegetable *bladders* are found every-where, in the structure of the bark[x], the fruit, pith[y], and parenchyma, or pulp[z]; besides those morbid ones raised on the surface of leaves by the puncture of insects[a].—[[x] *Grew*, Anat. Plants, l. 3. c. 2. §. 2. p. 107. It. l. 3. c. 4. §. 1. p. 119. [y] Id. ibid. l. 2. c. 1. §. 5. p. 62. & c. 3. §. 4. p. 64. & c. 5. §. 6. p. 76. [z] Id. ibid. l. 1. c. 1. §. 18. p. 4. & l. 4. c. 1. §. 3. p. 179. & c. 3. §. 2. p. 182. [a] Mem. Acad. Scienc. 1724. p. 463.]

Air-BLADDER, in fishes, is a hollow membranous body, always distended with air, and affixed generally to the backbone. Artedi's description of the *air-bladder*, being more particular than what we have already given under the article *air*, is as follows.

In the spinose-fish it is always found single, and is found in all of them, except the pleuronectæ. As to its figure, it is in some fish single, oblong, and pointed at each end, as in the clupea and osmerus. In others it is oblong, and more obtuse at the ends, as in the esox, pearch, salmon, *&c.* In others it is oblong, and obtuse in the lower part; but, in the upper part, divided into two parts, as it were, in the manner of the figure of a heart at cards.: this is its figure in the lucioperca, and the mustela fluviatilis. In others it is transversely divided into two lobes, the hinder one being larger, as in the cyprini and congers; and in some it is divided longitudinally into two parts, as in the silurus.

As to the differences of its situation, it is, in some, extended along the whole abdomen from the diaphragm to the anus. This is the case in the cyprini, clupeæ, coregones, salmons, *&c.* In others it is lodged only in the upper part of the abdomen, separated by a membrane from the rest of the abdomen. As to its connection to the other parts of the fish, it is in some wholly free and loose, except that it adheres to the stomach by the pneumatic duct, as in the cyprini and clupeæ. In others it is longitudinally affixed to the backbone, as in the pearch, salmon, coregones, esoces, *&c.* *Artedi*, Ichthyol. See the articles AIR-*bladder* and DUCTUS *pneumaticus*.

Oil-BLADDERS, in the anatomy of plants. See OIL-*bladders*.

BLADDER *puceron*. See PUCERON.

BLADE, in botany, that part of the flower, or florid attire of a plant, which arises out of the concave of the sheath, and, at the top, usually divides into two parts, which are covered with globules of the same nature as those of the apices, but not so copious. *Grew*, Anat. of Plants, l. 1. c. 5. §. 20. p. 39.

The *blade* runs through the hollow of the sheath and base, and is fastened to the convex of the seed-case, having its head and sides beset with globules, which, through a glass, appear like turnip-seeds, and which, in some plants, grow close to the *blade*, and in others adhere to it by little pedicles, or foot-stalks. These globules, as the *blade* springs up from within the sheath, are still rubbed off, and so stand like a powder on both. In some plants, as knap-weed, they seem also to grow on the inside of the sheath, as appears on splitting it with a pin.

The head of a *blade* is divided usually into two; but sometimes, as in the cichory, into three parts, which, by degrees, curl outward, like scorpion-grass. *Grew*, ibid. l. 4. c. 4. §. 5, p. 170, seq.

BLADE, in commerce, a thin, slender piece of metal, either forged by the hammer, or run and cast in moulds, to be afterwards sharpened to a point, edge, or the like. *Savar.* Dict. Comm. T. 1. p. 476. voc. *lame*.

Sword-*blades* are made by the armourers, knife-*blades* by the cutlers, *&c.*

The English and Damascus *blades* are most esteemed. Among the French, those of Vienne in Dauphiny have the preference. *Savar.* loc. cit.

The conditions of a good *blade* of a small sword are, that it be light and tough, apter to bend than break. When it will stand in the bend, it is called *a poor man's blade*. *Hope*, Art. of Fenc. c. 4. §. 3. p. 60. It. c. 7. p. 200.

BLADE *of a chissel* is the iron or steel-part, as distinguished from the wooden handle. *Moxon*, Mech. Exerc. p. 77. Id. ibid. p. 202.

BLADE *of mace*, or cinamon, among apothecaries, are little slips or slices of those barks.

BLADE *of an oar* is the flat part, which is plunged into the water in rowing. On the length of this does the force and effect of the oar depend. *Petty*, Dis. of Dupl. Propor. p. 59.

BLADE *of a saw*, the thin part wherein the teeth are cut, which, to be good, must be stiff, yet bend equally into a regular bow all the way, without yielding more in one place than another. *Moxon*, Mech. Exerc. p. 96.

BLADE-*mill* is that contrived for grinding iron-tools, as scithes, reaping-hooks, axes, chissels, and the like, to a bright edge. *Hought.* Collect. T. 2. N° 276. p. 232.

BLADUM, in middle-age writers, is taken for all sort of standing corn in the blade and ear. The word is also written *blatum*, *blava*, and *blavium*.

In our old charters, the word *bladum* included the whole product of the ground, fruit, corn, flax, grass, *&c.* and whatever was opposed to living creatures. Vid. *Du Cange*, Gloss. Lat. T. 1. p. 567 & 571.

The word *bladum* was sometimes also applied to all sort of grain or corn threshed on the floor[a]: *tria quarteria frumenti, tria quarteria avenarum, & unum quarterium fabarum, erunt quieti de solutione prædicti bladi in perpetuum*[b].—[[a] *Kennet*, Paroch. Antiq. p. 291. [b] *Calv.* Lex. Jur. p. 117, seq. See also *Du Cange*, Gloss. Lat. T. 1. p. 567. *Spelm.* Gloss. Arch. p. 83.

But the word was more peculiarly appropriated to bread-corn, or wheat, called in French *blé*.

Thus the knights templars are said to have granted to Sir Wido

de Meriton's wife *duas ſummas bladi*. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *Caſen.* Orig. Franc. p. 25. *Menag.* Orig. Franc. p. 106.

BLÆSUS, βλαισος, among medical writers, the ſame with *balbus*. *Sigon.* de Nom. Rom. ap. Gothofr. Script. Lat. p. 2440. voc. βλαισος. *Calv.* Lex. Jur. p. 118.

Dr. Holder calls the letters F. and Th. *Bleſe*, in regard of the difficulty multitudes find of pronouncing them. *Hold.* Elem. Speech, p. 52.

The word is alſo uſed to denote an irregularity in the figure of the limbs, eſpecially the legs, when bent outwards. *Gorr.* Def. Med. p. 75. *Caſt.* Lex. Med. p. 106.

BLAISE, a military order inſtituted by the kings of Armenia, in honour of *St. Blaiſe*, antiently biſhop of Sebaſta in that country, the patron ſaint of that nation.

Juſtinian calls them *knights of St. Blaiſe and St. Mary*, and places them not only in Armenia, but in Paleſtine. *Giuſt.* Hiſt. Ord. Mil. T. 1. c. 24.

They made a particular vow to defend the catholick religion of the church of Rome, and followed the rule of St. Baſil. Trev. Dict. Univ. T. 1. p. 1057.

The preciſe year of the inſtitution of the knights of *St. Blaiſe* is not known; but they appear to have commenced about the ſame time with the knights templars, and hoſpitallers, to the former of which they bore a near affinity; the regulars being the ſame in both.

BLANC. See the article BLANK.

BLANCS *manteaux*, a name originally given to the ſervites, or ſervants of the bleſſed virgin, on account of their white cloaks; but ſince applied to divers ſorts of religious, who have ſucceſſively inhabited the houſe of the ſervites, and now to the benedictins at Paris, though habited in black. Trev. Dict. Univ. T. 1. p 1061.

BLANCA, in medicine, denotes a lenitive compoſition, formerly much in uſe; ſo called either from its white colour, or becauſe of its purging white, *i. e.* phlegmatic humours. There were three ſorts; a great, middle, and leaſt *blanca*. *Caſt.* Lex. Med. p. 106.

BLANCA *mulierum*, among the chemiſts, ſignifies ceruſs. *Ruland.* Lex Alch. p. 104. See CERUSS.

Charta BLANCA, *carta bianca*, a ſort of white paper ſigned at the bottom with a perſon's name, and ſometimes alſo ſealed with his ſeal; giving another power to ſuperſcribe what conditions he pleaſes. *Fæſch.* p. 96.

Much like this is the French *blanc ſigne*, a paper without writing, excepting a ſignature at the bottom, given by contending parties to arbitrators, or common friends, to fill up with the conditions they judge reaſonable, in order to end the quarrel. *Savar.* Dict. Com. T. 1. p. 356. Trev. Dict. Univ. T. 1. p. 1060.

BLANCH *fermé*, or BLANK-*farm*, a *white farm*, that is, where the rent was to be paid in ſilver, not in cattle. *Jac.* Law Dict. in voc. *Skin.* Etym in voc.

In antient times the crown rents were many times reſerved to be paid in *libris albis*, called *blanch firmes*: In which caſe the buyer was holden *dealbare firmam*; *viz.* his baſe money or coin, worſe than ſtandard, was melted down in the exchequer, and reduced to the fineneſs of ſtandard ſilver; or inſtead thereof he paid to the king 12*d.* in the pound, by way of addition. *Lownd.* Eſſ. on coin, p. 5.

BLANCHERS, a name given to mechanics employed in *blanching*. See BLANCHING.

BLANCHING, (*Cycl.*) in gardening, an operation performed on certain ſallets, roots, &c. as of ſellery and endives, to render them fairer and fitter for the table.

The time for *blanching* of ſellery is about the middle of June, when ſome of the firſt ſowing will be fit to plant out in trenches for this purpoſe. Theſe trenches are to be cut by a line eight or ten inches wide, and about as many deep; into which they put their plants, after having firſt pruned off the tops and roots. As they grow large, they earth them up within four or five inches of their tops, and ſo continue to do at ſeveral times, till whitened ſufficiently for uſe; which they will not ordinarily be till ſix weeks after earthing them up [a]. For endive, as ſoon as it is well grown, they tie up ſome of it to whiten; and continue every fortnight, as long as it laſts, to tie up freſh parcels [b]. [[a] *Bradl.* New Improv. Gard. P. 3. p. 162. [b] *Bradl.* l. c. p. 163.]

BLANCHING is alſo a term uſed by the people, who cover thin plates of iron with tin, for that part of the work, which conſiſts in dipping the plates into the melted tin, in order to the covering of them. The people who do this part of the buſineſs are hence called *blanchers*.

BLANK, or BLANC, in a general ſenſe, ſignifies *white*.

BLANK, BLANCUS, or BLANCA, is more particularly uſed for a kind of white, or ſilver money, of baſe alloy, coined by Henry the 5th, in thoſe parts of France then ſubject to England, valued at 8*d.* ſterl. [a]. They were forbidden by his ſucceſſor to be current in this realm [b]. In ſome antient charters they are called *ſolidi blanci*, white Shillings [c].—[[a] *Stow*, Ann. p. 586. [b] Stat. 2. Hen. 6. c. 9. *Jac.* Law Dict. in voc. *Spelm.* Gloſſ. p. 83. *Cow.* Interp. in voc. *Skin.* Etym. in voc. [c] *Dugd.* Monaſt. T. 1. p. 352. *Du Cange*, Gloſſ. Lat. T. 1. p. 569. *Menag.* Orig. Franc. p. 105.]

BLANK alſo denotes a ſmall copper coin, formerly current in France, at the rate of five deniers Tournois.

They had alſo great *blanks*, or pieces of three *blanks*, and others of ſix, in reſpect whereof the ſingle ſort were called little *blanks*; but of late they are all become only monies of account. *Savar.* Dict. Comm. T. 1. p. 356. See alſo, Trev. Dict. Univ. T. 1. p. 1060.

BLANK, or BLANK-*ticket*, in lotteries, that to which no prize is allotted. See LOTTERY, *Cycl.*

The French have a game, under the denomination *blanque*, anſwering to our lottery. *Savar.* Dict. Comm. Supp. in voc. Trev. Dict. Univ. T. 1. p. 1063. *Menag.* Orig. T. 1. p. 105. voc. *blanque*.

BLANK, in coinage, a plate, or piece of gold, or ſilver, cut and ſhaped for a coin, but not yet ſtamped. Vid. *Savar.* Dict. Comm. T. 2. p. 184.

BLANK, in zoology, a name given by authors to a ſpecies of the cod-fiſh, called *gelbe*, *kolmulen*, and *aſellus flaveſcens*. It comes the neareſt of all the ſpecies to the whiting pollack, but its fins are ſmaller; and thoſe under the gills are of a fine clear yellow; all the reſt of a duſky browniſh hue, but with ſome yellow intermixed. Its back and ſides are alſo of a browniſh yellow, and are variegated with a great number of ſaffron-coloured marks. The belly is of a fine ſilvery whiteneſs; and the line that runs on each ſide, from the gills to the tail, is yellow, and is ſomewhat arched near the abdomen. *Willughby's* Hiſt. Piſc. p. 173.

BLANK-*bar*, in law, is uſed for the ſame with what we call a *common bar*, and is the name of a *plea in bar*, which in an action of treſpaſs is put in to oblige the plaintiff to aſſign the certain place, where the treſpaſs was committed.

It is moſt in practice in C. B. for in the court of B. R. the place is uſually aſcertained in the declaration. *Blount*.

BLANKET, in commerce, a warm woolly ſort of ſtuff, light and looſe woven; chiefly uſed in bedding.

The manufacture of *blankets* is chiefly confined to Witney in Oxfordſhire, where it is advanced to that height, that no other place comes near it. Some attribute a great part of the excellency of the Witney *blankets* to the abſterſive, nitrous water of the river Windruſh, wherewith they are ſcoured; others rather think they owe it to a peculiar way of looſe ſpinning, which the people have thereabouts. Be this as it will, the place has engroſſed almoſt the whole trade of the nation for this commodity; inſomuch, that the wool fit for it, centers here from the furthermoſt parts of the kingdom. There are ſaid to be at leaſt threeſcore blanketers in this town, who, amongſt them, have at leaſt 150 looms, and employ 3000 perſons, from children of eight years old, who work out about a hundred packs of wool per week. *Plott*, Nat. Hiſt. Oxford. c. 9. §. 169. p. 283.

Blankets are made of felt-wool, *i. e.* wool from off ſheep-ſkins, which they divide into ſeveral ſorts.

Of the head wool, and bay wool, they make *blankets* of 12, 11, and 10 quarters broad; of the ordinary and middle ſort, *blankets* of eight and ſeven quarters broad; of the beſt tail wool, *blankets* of ſix quarters broad, commonly called *cuts*, ſerving for ſeamen's hammocks. *Plott*, lib. cit. §. 170. ſeq. p. 284, ſeq.

Toſſing in a BLANKET, a ludicrous kind of exerciſe, or rather puniſhment, of which we find mention in the antients, under the denominations παλμος, and *ſagatio* [a]. Martial deſcribes it graphically enough.—*Ibis ab excuſſo, miſſus ad aſtra, ſago* [b].—[[a] Vid. *Pitiſc.* Lex. Antiq. T. 2. p. 672. voc. *ſagatio*. [b] *Mart.* l. 1. Epig. 4. *v.* 8.]

A late writer repreſents it as one of Otho's imperial delights, to be *toſſed in a blanket* [c]: But this is turning the tables; that emperor's diverſion, as related by Suetonius, was not to be the ſubject, but the agent in the affair; it being his practice to ſtroll out in dark nights, and where he met with a helpleſs, or drunken man, to give him the diſcipline of the *blanket* [d].—[[c] Trev. Dict. Univ. T. 1. p. 995. voc. *berner*. [d] *Suet.* in Othone, §. 2.]

BLANQUILLE, a ſmall ſilver coin, equivalent to about 2*d.* ſterling, current in Morocco, and on the coaſts of Barbary. *Savar.* Dict. Comm. T. 1. p. 364.

BLAPSIGONIA, βλαψιγονια, a kind of diſeaſe, or defect in bees, when they neglect, or fail to produce young, being wholly employed in making honey. *Plin.* Hiſt. Nat. l. 11. c. 19. *Columell.* l. 9. c. 13. p. 335.

The word is Greek, compounded of βλαπτω, I hurt, and γονη, brood or iſſue.

BLARE, a ſmall copper coin, containing a little mixture of ſilver, ſtruck at Bern, and valued at much the ſame with the *ratze* in other places. *Savar.* Dict Comm. T. 1. p. 364.

BLAS, a novel term, in the Helmontian philoſophy, denoting the local, and alterative motion of the ſtars; from whoſe influence proceed changes of weather, ſeaſons, ſtorms, and the like.

In imitation of this *blas ſtellarum*, the ſame author framed another in animals, either natural, whereby each viſcus is framed, according to the model of its particular; or voluntary, which is directed to motion by the will. *Helmont*, Tract.

Blas Meteor. & Blas Humanum. See alſo *Caſt.* Lex. Med. p. 106, ſeq.

BLASIA, in botany, the name of a genus of plants approaching to the nature of the *lichens*, the characters of which are theſe; the male flower has a cup compoſed of one leaf, which is oval at the baſe, ſomewhat cylindric in the middle, and expanded and truncated at the top; in this are contained a number of looſe granules, which ſeem to perform the office of apices, and contain the farina fœcundans. The female flower has ſcarce any cup, but produces a ſingle roundiſh fruit, uſually immerſed in the leaves; in this are contained certain round bodies, which appear to be ſeeds. Linnæus is much in doubt, whether theſe flowers are not to be underſtood a contrary way, and ſeems to ſuſpect, that what are called female flowers are really male ones; and what are called male, female. *Linnæi*, Gen. Plant. p. 807.

BLASPHEMY, *blaſphemia*, or *blaſphemium*, in middle-age writers, denotes ſimply the blaming, or condemning of a perſon, or thing. *Du Cange*, Gloſſ. Lat. T. 1. p. 570. voc. *blaſphemare*. Trev. Dict. Univ. T. 1. p. 1064. voc. *blaſmer*.

The word is Greek, βλασφημια, though others will have it deduced from the Italian *biaſimare*, or French *blaſmer*, which ſignifies the ſame. *Menag.* Orig. p. 105. *Caſen.* Orig. p. 25. voc. *Blaſmer*. Trev. loc. cit. *Voſſ.* Etym. p. 72. voc. *blaſphemus*. *Spelm.* Gloſſ. Arch. p. 83. voc. *blaſphemare*.

In this ſenſe, we meet with to *blaſpheme* the religion of a monaſtery. Azymos bread in the Euchariſt was called, *panis blaſphematus*, as being held unlawful. *Du Cange*, Gloſſ. Lat. T. 1. p. 570.

To blaſpheme a judgment or ſentence, *blaſphemare judicium*, was to falſify, *i. e.* impugn it as falſe, and appeal from it; anſwering to the French formula, ſtill in uſe, *blaſmer une ſentence*.

Among the Greeks *to blaſpheme*, βασφημιαν φθεγξασθαι, was to uſe words of evil omen, or that portended ſomething ill, which the antients were careful to avoid, ſubſtituting in lieu of them other words of ſofter and gentler import, ſometimes the very reverſe of the proper ones. Vid. *Lakemak.* Antiq. Græc. Sacr. P. 3. c. 10. §. 4. p 566, ſeq.

BLASPHEMY is more particularly uſed for the accuſing or condemning a thing that is good, *eſt blaſphemia cum aliqua mala dicuntur de bonis*. In which ſenſe, *blaſphemy* may hold both in reſpect of God and man.

Accordingly, among the ſchoolmen and caſuiſts, we meet with *blaſphemy* uſed for reproachful words againſt the ſaints, things ſacred, the myſteries of religion, *&c.* Trev. Dict. Univ. T. 1. p. 1066. *Magr.* Not. Vocab. Eccleſ. p. 37.

BLASPHEMY is more peculiarly reſtrained to evil or reproachful words ſpoken of the Deity. Auguſtin ſays, *jam vulgo blaſphemia non accipitur niſi mala verba de Deo dicere*. Vid. *Auguſt.* de Morib. Manich. l. 2. c. 11. *Du Cange*, Gloſſ. Lat. T. 1. p. 570.

In which ſenſe, *blaſphemy* may be defined, either by detracting from God that power or goodneſs which belongs to his nature, or by attributing to God ſomething that is not agreeable to his eſſential attributes. *Wood*, Inſt. Imp. Law. l. 3. c. 10. p. 270.

Blaſphemy, in this ſenſe, makes a crime to be puniſhed by the judge. St. Chryſoſtom does not allow it to be left to the magiſtrate, but enjoins private perſons to inflict a puniſhment. If thou meeteſt a man *blaſpheming*, ſtrike him a box on the ear, give him a daſh on the mouth, and ſanctify thy hand with a blow. *Chryſoſt.* Hom. 1. ad Antioch. p. 460. Edit. *Savil.*

The antient church diſtinguiſhed three kinds of *blaſphemy*; *viz.* that of apoſtates, and lapſers; of heretics, and prophane perſons; and the *blaſphemy* againſt the Holy Ghoſt.

The *blaſphemy* of apoſtates, and lapſers, conſiſted in a formula of words reviling, and curſing Chriſt, which the heathen perſecutors obliged their converts to pronounce. This appears to have been the common way of renouncing their religion. *Euſeb.* Hiſt. Eccleſ. l. 4. c. 15.

There ſeems to have been a peculiar formula of blaſphemous words, which the confeſſors were required to pronounce; but what they were does not appear. *Bingh.* Orig. Eccleſ. l. 16. c. 7. §. 1.

What the *blaſphemy againſt the Holy Ghoſt* is, which is pronounced unpardonable, has been much controverted; ſome hold it to be lapſing into idolatry; others denying Chriſt; others oppoſing the divinity of the Holy Ghoſt; others in attributing the miraculous works of the Holy Spirit to the operation of the devil. Vid. *Matth.* c. 12. v. 31. *Eulog.* Contr. Novat. l. 1. *Phot.* Bibl. Cod. 280. p. 1599. *Bingh.* loc. cit. §. 3.

The *blaſphemy* of heretics, and prophane perſons, conſiſted either in maintaining impious doctrines, or uttering impious diſcourſes, derogatory to the honour and majeſty of God, or detracting from the excellencies of the divine nature. In this ſenſe Chryſoſtom [a] terms thoſe *blaſphemers*, who introduced fate, in derogation of the providence of God. Irenæus [b] gives the ſame appellation to thoſe who denied God to be the creator of the world. And the Arians and Neſtorians are generally charged with the ſame, for denying the divinity of Chriſt [c]. St. Cyril has written expreſsly againſt the *blaſphemies* of Neſtorius [d].—[a *Chryſoſt.* Hom. 2. de fato. opp. T. 1. p. 118. b *Iren.* Præf. ad Libr. 4. c *Bingh.* l. c. §. 2. d Vid. *Fabric.* Bibl. Græc. l. 5. c. 27. §. 16. T. 8. p. 568.]

In this ſenſe, heathens, Jews, and other infidels, are charged with *blaſphe ming* Chriſt, and his goſpel. Porphyry, Celſus, Julian, and Proclus, are noted *blaſphemers*; and Lucian, for his ſarcaſms, has even acquired the ſurname *Dyſphemus*, or the *blaſphemer*. *Fabric.* Bibl. Græc. l. 5. c. 40. p. 730.

The charge of *blaſphemy* on the Jews has been maintained by ſeveral of the converts from judaiſm, as *Chriſtlieb* [a] and others. Rabbi Lipman's book, entitled *Nizzachon*, is full of *blaſphemies* of this kind [b]. But much more ſo is another book among the Jews, called *Zefer toldot Jehoſchua hanozeri*, or *the book of the generation of Jeſus the wanderer*; where he is never mentioned, but as the moſt vile and flagitious of men; and charged with crimes moſt abominable to nature [c].—[a Vid. *Wolf.* Bibl. Hebr. T. 3. p. 958. b Id. ibid. T. 1. p. 736. c Vid. *Nigri.* Tract. contra Judæos, p. 64. ap. *Wolf.* Bibl. Hebr. T. 2. l. 5. p. 1114.]

By the canon law, *blaſphemy* was puniſhed only by a ſolemn penance; and by cuſtom, either by a pecuniary or corporal puniſhment [a]. By the *Engliſh* laws, *blaſphemies* of God, as denying his being, or providence, and all contumelious reproaches of Jeſus Chriſt, *&c.* are puniſhed by fine, impriſonment, and pillory [b]. And, by the ſtatute law, he that denies one of the perſons in the Trinity, or aſſerts there are more than one, or denies Chriſtianity to be true; for the firſt offence, the party is rendered incapable of any office; for the ſecond, adjudged incapable of ſuing, being executor or guardian, receiving any gift or legacy, and to be impriſoned for three years [c].—[a *Greenw.* de Legib. Abrog. in Nov. 77. b *Hawk.* Pl. Cr. T. 1. p. 8. c Stat. 9 and 10 Will. 3. c. 32. *Wood*, Inſt. Engl. Law. l. 3. c. 3. p. 396.]

By the moſaic law, *blaſphemy* was puniſhed with death. Levit. xxiv. 13—16. As alſo by the civil law. Novel. 77. In Spain, Naples, France, and Italy, the pains of death are not now inflicted. In the empire, either amputation, or death, is made the puniſhment of this crime. See *Carpzov.* P. 1. Q. 45. n. 4. and 24.

Yet it is to be obſerved, that the law of thoſe countries takes *blaſphemy* as *læſa majeſtas divina*; and that it may be committed, either by the abſolute denial of the exiſtence of the ſupreme being; or of any of his eſſential attributes. Abſolute *blaſphemy*, that is, the abſolute denial of the exiſtence of God, is puniſhed capitally; and this puniſhment is extended to thoſe, who utter maledictions againſt the author of their being. But this rule is limited in practice, and only inflicts an arbitrary puniſhment. 1. In the caſe of thoſe under a total alienation of mind, by the effects of wine. 2. Of thoſe ſurprized by ſome violent fit of grief or anger, from ſome cauſe of moment, and while lawfully employed. 3. Of thoſe who ſhew a ſudden repentance, accompanied with horror at their crime: but ruſticity is no excuſe.

According to the law of Scotland, the puniſhment of *blaſphemy* is death. The firſt ſpecies thereof conſiſts in railing at, or curſing God, and here the ſingle act conſtitutes the crime. The ſecond conſiſts in denying the exiſtence of the ſupreme being, or any of the perſons of the Trinity; and therein obſtinately perſevering to the laſt. For reiterated denial does not fully conſtitute the crime, becauſe the Stat. of Charles 2. 1661. admits of repentance before conviction, as a complete expiation.

This ſtatute of 1661, is ratified by a ſtatute of king William, whereby the calling in queſtion the exiſtence of God, or of any of the perſons of the Trinity, or the authority of ſcripture, or the divine providence, is made penal. For the firſt offence impriſonment, till ſatisfaction given by publick repentance in ſack-cloth. For the ſecond, a fine of a year's valued rent of the real eſtate, and twentieth part of the perſonal eſtate. And the trial in both theſe caſes is competent to inferior judges. The trial of the third offence is death, to be tried only by the juſtices. *Bayne.*

BLAST, *flatus*, in the military art, a ſudden compreſſion of the air, cauſed by the diſcharge of the bullet out of a great gun. Trev. Dict. Univ. T. 4. p. 1829. voc. *Souffle.*

The *blaſt* ſometimes throws down part of the embraſures of the wall.

BLAST is alſo applied, in a more general ſenſe, to any forcible ſtream of wind, or air; excited by the mouth, bellows, or the like. Men, trees, houſes, are ſometimes thrown down by a *blaſt* of lightning: A *blaſt* of gunpowder will ſometimes ſhatter the windows at a diſtance. Vid. Phil. Tranſ. N° 236. p. 11. See THUNDER, LIGHTNING, *&c.*

The walls of Jericho fell down with the *blaſt* of rams-horn. St. John ſpeaks of the *blaſts* of a trumpet uſhering in the reſurrection. Theſe have been adopted by the followers of Mahomet, who have many traditions concerning the three *blaſts* of the laſt trumpet. The firſt, which they call the *blaſt of conſternation*, is to ſtrike all creatures in heaven and earth with terror; to ſhake the earth, level mountains, and throw the ſtars into the ſea. The ſecond is called the *blaſt of inanition*, at which all creatures, both in heaven and earth, are to be annihilated, except thoſe whom God ſhall be pleaſed to exempt from the common fate. Forty years after is to be heard the third, or *blaſt of reſurrection*; at which the angels, being reſtored

ſtored to life, ſhall call together all the dry, rotten bones, duſt, &c. to the very hairs of the head, to come to judgment. *Sale*, Prelim. Diſc. to Koran. ſect. 4. §. 17. p. 82. ſeq.

BLAST is alſo uſed in agriculture and gardening, for what is otherwiſe called a *blight*. *Mortim.* Syſt. of Huſbandry, T. 1. p. 303. See BLIGHT.

Blaſts differ from mildews, *rubigines*. See MILDEW.

The ſmut of corn is a ſpecies of *blaſt*. Vid. *Plott*, Nat. Hiſt. Stafford. c 9. §. 37. See SMUT.

Blaſts, or *blaſtings*, are by ſome ſuppoſed owing to cold [a]; by others, to the want of a due ſupply of ſap [b]; by others, to aſcending fumes of the earth [c]; by others, to ſharp winds and froſts, immediately ſucceeding rains [d]. [[a] *Calv.* Lex. Jur. p. 958. voc *uredo*. [b] Phil. Tranſ. N° 44. p. 881. [c] *Boyle*, Phil. Work. Abr. T. 3. p. 533. [d] Ruſt. Dict. in voc.]

That ſpecies called *uredines*, or *fire-blaſts*, is ſuppoſed by Mr. Hales owing to the ſolar rays reflected from, or condenſed in the clouds, or even collected by the denſe ſteams in hop-gardens, and other places. Vid. Phil. Tranſ. N° 399. p. 269.

The effect of them is to wither, ſhrivel, ſcorch, turn black, and, as it were, burn up the leaves, bloſſoms, and fruits of trees, ſhrubs, herbs, graſs, corn, even for whole tracts of ground. *Boyle*, loc. cit.

Phyſicians alſo ſpeak of a kind of *blaſts* affecting human bodies, and cauſing eryſipela's, palſies, &c. *Shaw*, New Pract. of Phyſ. p. 163. See ERYSIPELAS, PALSY, &c.

BLASTS, among miners. See DAMPS.

BLASTED, ſomething ſtruck with a blaſt. See BLAST.

Among the Romans, places *blaſted* with lightning were to be conſecrated to Jupiter, under the name of *bidentalia*, and *putealia*. See BIDENTAL and PUTEAL.

It was alſo a piece of religion to burn *blaſted* bodies in the fire. *Pitiſc.* Lex. Ant. T. 1. p. 825. voc. *fulgurati*.

BLASTING, among miners, a term for the tearing up rocks, which they find in their way, by gunpowder. The method of doing which is this; they make a long hole, like the hollow of a large-gun-barrel, in the rock they would ſplit; this they fill with gunpowder, then they firmly ſtop up the mouth of the hole with clay, except a touch-hole, at which they leave a match to fire it. A ſmall quantity of powder does great things this way. *Shaw's* Lectures, p. 247.

BLASTOLOGY, βλαϛολογια, the regular and ſtated pruning of vines. *Salmaſ* Exerc. ad Solin. p. 519, b. See VINE.

BLASTUM *moſylitum*, in the materia medica, a term uſed by ſome writers to expreſs the *caſſia lignea*, or caſſia bark, when not peeled off from the branches, but kept with the wood within it; this was a common way of collecting and preſerving, not only this bark, but the cinnamon, and many others. The word cinnamon with them is never uſed to expreſs any thing but this ſort of drug, the young ſhoots of the tree preſerved with the bark upon them: when they peeled off the bark, and kept it ſeparate, they called it *caſſia ſyrinx*, or *caſſia fiſtula*; and when they preſerved it with the wood within it, they called it *caſſia lignea*, or *hylo-caſſia*, and *blaſtum moſylitum*. We have perverted the ſenſe of theſe words, ſince their time, but this was their original meaning.

BLATTA, (*Cycl.*) in natural hiſtory, the name of a ſpecies of beetle, called by Columna *ſcarabæus teſtudinatus*. The common kind are frequently found in bakers houſes; the males have wings, and are ſmaller than the females, which have only a ſort of rudiments of wings near the ſhoulders, and are much rougher on the body than the males. The common length is about an inch; the head is ſmall, and is furniſhed with two long and ſlender antennæ, which are remarkably mobile any way. The breaſt is covered with a cruſtaceous ſcale; the wings in the male are four, the outer ones are of a middle nature, between the cruſtaceous and membranaceous kinds, the under wings are wholly membranaceous, and white; the legs are very long, and hairy on each ſide; and the tail has two ſpines ſtanding out at it, which give it a forked look. The female is of a blacker colour than the male, and has a broader body, covered with eight or nine ſcales. *Columna*, Aquat & Terreſtr. Obſ. cap. 19. *Ray's* Hiſt. Inſect. p. 68.

Beſide this kind, which is very common with us, there is another found in Jamaica, which is larger than the former, and has wings that cover the whole body, and reach beyond the tail: alſo a ſmall kind, found both in the Eaſt and Weſt Indies; the wings of which are of a yellowiſh colour, and the ſhoulders variegated with lines and ſpots of black.

BLATTA, in middle-age writers, denotes a purple in the wool or ſilk, dyed with the liquor of the fiſh of the *blatta*. *Briſſ.* de Verb. ſignif. p. 80. *Calv.* Lex. Jur. p. 118. *Pitiſc.* Lex. Ant. T. 1. p. 284. *Fab.* Theſ. p. 359. *Voſſ.* Etym. p. 72.

This was otherwiſe denominated *blatta ſerica*, or *blatto-ſericum*; whence alſo *blattiarius*, uſed in antient writers for a dyer in purple. *Pitiſc.* Lex. Ant. loc. cit. *Fab.* loc. cit.

BLATTA, according to ſome writers, was alſo uſed for the kermes inſect [a]; and, according to others, for the purple worm [b]. But both of theſe acceptations are ſuſpicious.—[[a] Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 571. [b] *Paul. Diacon.* ap. eund. ibid.] See KERMES.

We know that it was antiently uſed for a kind of moth, or fly, whoſe fat was reputed excellent for the ears. *Plin.* Hiſt. Nat. l. 29. c. 6. *Harduin.* Not ad loc.

BLATTARIA, *moth mullein*, in botany, the name of a genus of plants, the characters of which are theſe. The flower in all particulars reſembles that of mullein; the fruit, however, is not oval or pointed, but round, or nearly ſo

The ſpecies of *blattaria* enumerated by Mr. Tournefort are theſe.

1. The yellow *blattaria*, with long laciniated leaves. 2. The white flowered *moth mullein*. 3. The purple flowered *moth mullein*. 4. The duſky, or browniſh purple flowered *blattaria*. 5. The violet flowered *blattaria*, with large ſhining flowers. 6. The duſky blue flowered *blattaria*. 7. The ferrugineous coloured *blattaria*. 8. The perennial Engliſh *blattaria*, with duſky red flowers. 9. The great flowered *blattaria*. 10. The great flowered *blattaria*, with leaves like white mullein, and yellow flowers. 11. Hoary *blattaria*, with multifid leaves. 12. Hoary perennial cretic *blattaria*, with leaves placed two and two at the ſtalk. *Turn.* Inſt. p. 147.

BLEA, in vegetables, is that part of a tree, which lies immediately under the bark, and between that and the hard wood, and is the firſt progreſs of the alteration of the bark into wood by the natural growth and ſtrengthning of the fibres.

While the *blea* remains yet ſoft, and retains ſomething of the nature of bark, it may maintain a feeble vegetation; but when it is grown abſolutely hard and woody, it can contribute nothing to the growth of the tree. The vegetation of the young branches of trees is the moſt lively and vigorous, and the only one that goes as far as the flowers and fruit, and that becauſe theſe branches are little elſe but bark. *Boerhaave's* Chym. n. p. 138.

BLEACHED. See BLEACHING, *Cycl.*

We ſay *bleached* hair [a], *bleached* linnen [b], *bleached* yarn or thread [c], *bleached* wax, &c.[d]—[[a] *Savar.* Dict. Comm. T. 2. p. 345. voce *herbe*. [b] *Skin.* Etym. in voc. [c] *Savar.* T. 1. p. 1635. voc. *fil*. [d] Id. in Suppl. p. 147. voc. *cire*.] See the article HAIR, &c.

BLEAKE, in ichthyology, a name given by us to the fiſh, called by authors the *alburnus* and *albula*. According to the new ſyſtem of Artedi, it is a ſpecies of the *cyprinus*. The French call it the *ablette*. See the articles ALBURNUS and CYPRINUS.

BLEB, a ſmall bliſter or bubble. See BUBBLE, *Cycl.*

Naturaliſts have obſerved ſmall purple *blebs* on all the plants of the *hypericum* kind. Phil. Tranſ N° 224. p. 365.

Thick pieces of glaſs, fit for large optic glaſſes, are rarely to be had without *blebs*. Id. N° 4. p. 57.

BLEEDING (*Cycl.*)—The puncture made in the operation of *bleeding* ſhould neither be too ſmall, nor too large. In the making it, the lancet is to be puſhed ſlightly forward by the thumb and forefinger, till it has penetrated through the coats of the vein; and at that inſtant it ſhould be raiſed a little upwards, in order to inlarge the orifice, and give a more free paſſage to the blood. The operator ſhould keep between the two extremes of raſhneſs and timidity in making the puncture; for, as in the one caſe, he will only divide the common integuments, and leave the work undone, ſo, in the other, he will run the riſk of wounding an artery, nerve, or tendon. Different ſurgeons open the vein in three different directions: ſome make the orifice in a ſtreight line with the courſe of the vein; others tranſverſely; but moſt make it obliquely: and if the patient is to be blooded in the left-arm, the ſurgeon ſhould be able to uſe his left hand, inſtead of his right. *Heiſter's* Surgery, p. 276.

If the blood ſtops after a ſmall time, looſen the bandage a little, to give way to more blood's deſcending by the artery, and it will bleed freſhly again; and if the orifice be obſtructed by too great a tenſion of the ſkin, or an intruſion of the membrana adipoſa, the piece of fat ſhould be returned by preſſing with the finger, or a bit of ſponge, and the ſkin relaxed by bending the arm; and, laſtly, if the orifice be obſtructed by thick grumous blood, that impediment may be removed by wiping with a ſponge dipped in warm water.

As to the quantity of blood to be taken away, there can be no general rule given, becauſe different caſes and conſtitutions require different quantities; but this may be ſaid in general, that the patient, who ſhews no paleneſs of countenance, or diminution of ſtrength or ſpirits, may bleed longer than thoſe who quickly grow faint.

When a ſufficient quantity of blood is diſcharged, the ligature muſt be immediately taken off, and the ſkin about the orifice gently ſtroaked or preſſed together by the two forefingers of the left-hand; by which means, the lips of the divided vein are cloſed: then the ſmaller of the two compreſſes is to be applied, firſt leting what little blood there may be between the orifice and the vein be diſcharged; the larger compreſs ſhould then be laid on the ſmaller, and preſſed ſlightly down with the thumb: then wiping the blood from the arm, the bandage is to be applied. Some wet the compreſſes in vinegar, water, or ſpirit of wine; but it is not neceſſary, and they ſit eaſieſt when applied dry. *Heiſt.* Surg. p. 277. See BANDAGE.

BLEEDING *in the hand*.—There are two principal veins in the hand, which are ſometimes opened to bleed the patient: the

one

one is the ſalvatella, which runs on the outſide of the back of the hand towards the little finger. This was called ſplenica by the antients, and they eſteemed the opening it particularly ſerviceable in melancholy, and diſeaſes of the ſpleen. The other is the cephalica, which runs betwixt the thumb and forefinger, and was ſo denominated from an opinion, that the *bleeding* from it was particularly ſerviceable in diſeaſes of the head; but theſe opinions were all without foundation; and tho' the patient is bled more difficultly and ſlowly in theſe veins, the effect is the ſame as if bled in the arm. It is ſometimes, however, neceſſary for a ſurgeon to open them, either at the particular deſire of the patient, or when the veins of the arm are very obſcurely ſituated, or lie deep, while theſe lie fair and conſpicuous.

When any one is to be blooded in the hand, it muſt firſt be held for a conſiderable time in warm water, and well rubbed there with the other hand, in order to make the ſmall veins become turgid and conſpicuous; then a ligature is to be fixed on the wriſt, that the veins may continue thus diſtended, and wiping the hand dry with a napkin, an orifice is to be made in the moſt convenient part of the vein, as in *bleeding* in the arm. If the blood does not flow freely from the orifice, the hand muſt be again plunged into warm water, and kept there, till the quantity taken away is judged ſufficient; then the hand is to be wiped dry, and the orifice covered with a compreſs, defended by a proper bandage. *Heiſt.* Surg. p. 279.

BLEEDING *in the neck*.—It has been a very antient practice to bleed in the external jugular veins of the neck for moſt inflammatory diſorders of the adjacent parts. The accumulated blood and humours may certainly be thus diſcharged from the parts, and the operation is no-way difficult or dangerous; ſince the jugular veins run on each ſide the neck from the head to the clavicles, juſt under the ſkin. They are very large, and eaſily opened; but a ſtricture is firſt to be made on the lower part of the neck with a handkerchief, or the like ligature. The beſt method of raiſing this vein is, however, by a looſe ligature thrown over the neck, which the patient, or an aſſiſtant, may pull downward over the breaſt; and by this means the jugular veins will be compreſſed on each ſide, and become turgid, without occluding the trachea, or obſtructing perſpiration. When the veins are thus made turgid, which ever of them lies the faireſt, may be ſecured by the finger for inciſion, if the diſorder affects the whole head; but if only one ſide, it is beſt to open the jugular on that ſide.

When the proper quantity of blood is taken, cloſe the orifice, and apply a proper compreſs and bandage. The common fear of this vein's *bleeding* afterwards is but ill-grounded, and there ſeldom is any difficulty of ſtopping the blood. The patient commonly faints away in *bleeding*; but this occaſions no harm. *Heiſt.* Surg. p. 283.

BLEEDING *in the ranulæ*.—It is often found of ſervice in quinſies and other inflammatory diſorders of the neck, to bleed in two ſmall veins, which run under the tip or end of the tongue, eſpecially if a larger vein has been before opened in the neck or arm. To bleed in theſe veins, a ſtricture muſt be made upon the neck; the apex of the tongue muſt be then elevated with the left-hand, while with the other the veins are both opened, firſt one, and then the other, by the lancet. When they have bled ſufficiently, remove the ſtricture from the neck, on which the *bleeding* uſually ſtops of itſelf; but, if it does not, let the patient take a little vinegar, or red wine, in his mouth, or elſe apply a bit of vitriol, or alum, or a compreſs dipped in ſome ſtyptic liquor, till the hæmorrhage ceaſes. But there is no need of being too buſy with theſe topics; for the blood never flows violently, or long, without them; and if there be not a good quantity of blood diſcharged by theſe veins on the occaſions for which they are uſually opened, the operation is of no uſe. *Heiſt.* Surg. p. 284. See PHLEBOTOMY.

BLEEDING *at an artery* is called *arteriotomy*. See ARTERIOTOMY.

Some phyſicians extol *bleeding* as the ſureſt and moſt efficacious of all evacuants; yet was it little known or uſed among the antients. Eraſiſtratus of old, and Helmont and his followers among the moderns, decried *bleeding* as only fit to let out the treaſure of life, and draw away the receptacle of the ſoul [a]. Dr. Morgan ſays, that a man never recovers any great loſs of blood; which, if true, ſhould make us leſs willing to part with it. Others pretend, that twenty or thirty ounces of blood are recovered in little more than as many hours; elſe whence ſhould ſuch profuſe hæmorrhages as we read of have been ſupported. Some make no ſcruple of *bleeding* every other day in conſumptions, for ſeveral weeks together; and Dr. Morgan owns it of conſequence to a phyſician, in moſt caſes, to take at firſt a little blood, that he may be enabled to judge of its ſtate and conſtitution, whether there be any other occaſion for *bleeding*, or not; for as this can do no harm, ſo it may often be of great uſe [b].—[[a] *Hoffm.* New Exper. on Miner. Water. §. 3. p. 119. [b] *Morg.* Phil. Princ. Med. P. 3. pr. 1. p 407.]

In monaſteries there were five ſtated times in the year, when all the monks were obliged to bleed, whatever their habit of body might be [c]. This looks a little too like the method ſtill uſed in reſpect of ſoldiers horſes, where a whole troop are uſually blooded in a day [d].—[[c] *Du Cange*, Gloſſ. Lat. T. 3. p. 564. voc. *minuere*. It. T. 4. p. 597. voc. *ſanguiminuere*. [d] *Brack.* Not. to *Burd.* Farr. p. 96.]

Nothing is more ſucceſsful to ſtop the *bleeding* of the ſmaller veſſels, for inſtance, in cutting for the ſtone, than the application of wet ſponge. Phil. Tranſ. N° 478. p. 33.

Phyſicians ſeem greatly divided as to the propriety of letting blood in the ſmall-pox. See Med. Eſſ. Edinb. abridg. Vol. 2. p. 419.

From conſidering, ſays Mr. Queſnay, all the effects of bloodletting, it muſt be concluded, that there is only place for *bleeding*, when the liquids diſturb the action of the ſolids, or when the ſolids cauſe diſorder in the fluids; for when the ſolids or the fluids are found defective abſolutely, or in themſelves, the bad ſtate of neither of them can be repaired by *bleeding*. L'Art de Guerir par le Saignée. ap. Med. Eſſ. Edinb.

The aphoriſm of Hippocrates, if a pregnant woman be let blood, ſhe will miſcarry, has proved not a little deſtructive to many. Experience ſhews not only the ſafety, but benefit, of phlebotomy in many caſes of pregnancy. Vid. *Boyle*, Works abridg. Vol. 1. p. 27.

The bramins never bleed, but, in lieu thereof, faſt. Hiſt. des Bram. ap. Trev. T. 4. p 1438. voc. *ſaigner*.

BLEEDING *by meaſure* is where account is taken of the quantity as it flows from the vein, in order to put a ſtop to the flux when the requiſite proportion is had.

BLEEDING *at large*, where the flux is continued without regard to the quantity, till ſuch time as ſome expected effect is perceived. This method is ſometimes uſed in caſes of apoplexies, comata, *&c.*

BLEEDING, in farriery, is that practiſed on horſes, oxen, and other black cattle, eſpecially to cure and prevent defluxions, fevers, founderings, farcy, mange, *&c.* Vid. *Burd.* Farr. p. 42. Dict. Ruſt. T. 1. in voc.

BLEEDING is alſo uſed for a hæmorrhage or flux of blood from a wound, rupture of a veſſel, or other accident. See HÆMORRHAGE.

BLEEDING *of a corpſe*, *cruentatio cadaveris*, is a phænomenon ſaid to have frequently happened in the bodies of perſons murdered, which, on the touch, or even approach of the murderer, began to bleed at the noſe, ears, and other parts; ſo as formerly to be admitted in England, and ſtill allowed in ſome other parts, as a ſort of detection of the criminal, and proof of the fact. Vid. *Walc.* Introduct. Philoſ. l. 3. c. 2. §. 28. p. 689. *Voight.* Delic. Phyſ. ap. Phil. Tranſ. N° 77. p. 3017. Numerous inſtances of theſe poſthumous hæmorrhages are given by Webſter [e], Lemnius, Libavius, and eſpecially Horſtius [f], who has a diſcourſe expreſs on the point. [[e] Exam. Witch. c. 16. §. 28, ſeq. *Walc.* Lex. Phil. p. 280. voc. *bluten*. [f] De Cruentatione Cadaverum. Vid. *Vater.* Phyſ. Exper. P. 2. §. 2. c. 15. qu. 11. p. 273, ſeq.]

But this kind of evidence ought to be of ſmall weight; for it is to be obſerved, that this *bleeding* does not ordinarily happen, even in the preſence of the murderer, yet ſometimes in that even of the neareſt friends, or perſons moſt innocent, and ſometimes without the preſence of any, either friend or foe. In effect, where is the impoſſibility that a body, eſpecially if full of blood, upon the approach of external heat, having been conſiderably ſtirred or moved, and a putrefaction coming on, ſome of the blood-veſſels ſhould burſt, as it is certain they all will in time? *Vater.* loc. cit.

BLEEDING is alſo applied, in a leſs proper ſenſe, to a flux of ſap out of the wounded veſſels of plants, either ſpontaneouſly at certain ſeaſons, or by art, and the help of inciſion. See the article SAP.

This amounts to the ſame with what is otherwiſe called *weeping*, *dropping*, *running*, &c.

In this ſenſe, all plants, in the ſummer-time, are found to bleed, that is, to yield a juice from ſap-veſſels, either in the bark, or in the margin of the pith; the ſaps, thus bled, having either a ſour, ſweet, hot, bitter, or other taſte. At times alſo, the veſſels in the bark of a vine-branch bleed a ſour ſap.

But that which is vulgarly called *bleeding*, as in a vine, is a different thing, both as to the liquor iſſuing, and the place where it iſſues, being neither a ſweet, nor ſour, but taſteleſs ſap, iſſuing not from any veſſels in the bark, but from the air-veſſels in the wood.

So that there is as much difference betwixt *bleeding* in a vine, and the riſing of the ſap in any other tree in March and July, as there is betwixt ſalivation and an hæmorrhage; or betwixt the courſe of the chyle in the lactiferous veſſels, and the circulation of the blood in the arteries and veins. *Grew*, Anat. of Plant. l. 3. c. 1. §. 8. p. 125.

Ray, Willughby, Liſter, Tonge, Grew, Hales, and other modern naturaliſts, have given a great number of obſervations on the *bleeding* of plants, the times and ſeaſons thereof, the quantities diſcharged [g], and the ſorts of trees moſt ſubject thereto, particularly the birch [h], ſycamore [i], walnut-tree [k], vine [l], willow [m], and aloe [n]. Such *bleedings*, when ſpontaneous, are ranked by Tournefort in the number of diſeaſes of plants, anſwering to a plethora in animals, or a ſuperabundance of juice [o].—[[g] Phil. Tranſ. N° 40. p. 798. It. N° 44. p. 880, ſeq. It. N° 43. p. 854. It. N° 57. p. 1165. It. N° 70. p. 2119, ſeq. It. N° 224. p. 382. *Grew*, Idea Anat. Plant. §.

23. p. 11. [h] Vid. Phil. Tranſ. N° 48. p. 963. [i] Id. N° 68. p. 2067, ſeq. [k] Id. N° 58. p. 1199, ſeq. [l] *Hales*, Veget. Stat. c. 3. Phil. Tranſ. N° 398. p. 274. [m] *Ray*, Phil. Lett. p. 205. [n] *Hought.* Collect. T. 2. p. 337. N° 324. [o] Mem. Acad. Scienc. an. 1705. p. 437. and p. 452.] See BIRCH, &c.

BLEMMYES (*Cycl.*)—Some hold the origin of the fable of the *blemmyes* to have ariſen from this, that the people of that part hid, in ſome meaſure, their heads between their ſhoulders, by twiſting theſe up to an immoderate height; ſo that wearing withal long hair, their heads and necks did not appear: ſomething like which has been obſerved by modern travellers. Vid. *Borell.* Obſerv. Medic. Phyſ. cent. 3. obſ. 3. *Aldrovand.* ap. Schott. Phyſ. Cur. l. 3. c. 11. & c. 9. §. 1. *Beeman.* Hiſt. Orb. Ter. P. 1. c. 9. ſect. 2. §. 12. p. 362.

BLENCH, a ſort of tenure of land; as to hold land in *blench* is by payment of a ſugar-loaf, a couple of capons, a beaver-hat, &c. if the ſame be demanded in the name of *blench*, i. e. *nomine albæ firmæ*. *Blount.*

BLEND-*metal iron*, a coarſe ſort of iron from Staffordſhire mines, uſed for making nails and heavy ware; in ſome places alſo for horſe-ſhoes. *Plott*, Nat. Hiſt. Staffordſh. c. 4. §. 21. *Hought.* Collect. T. 2. N° 271. p. 221.

BLEND-*water*, a diſtemper incident to black cattle, and comes ſeveral ways, 1. From blood. 2. From the yellows, which is a ringleader of all diſeaſes. And, 3. From change of ground; for being hard, it is apt to breed this evil, which, if not remedied in ſix days, will be paſt help. Dict. Ruſt. T. 1. in voc.

BLENDE, in natural hiſtory, a name given to a ſubſtance, reſembling, in ſome degree, the ores of lead; but containing very little of that metal, and ſometimes none at all: it is therefore called by ſome *mock lead*. It is uſually found about the mines of lead, and has commonly ſpars and cryſtals about it.

BLENNIUS, in the Linnæan ſyſtem of zoology, the name of a genus of fiſhes of the general order of the *acanthopterygii*. The characters of this genus are, that the membrane of the gills has ſix bones; the fore-part of the head is very ſlanting; and the belly fins have two bones. Of this genus are the *blennus*, *alauda*, &c. *Linn.* Syſt. Nat. p. 54.

BLENNIUS, in the Artedian ſyſtem of ichthyology, the name of a genus of fiſhes; the characters of which are theſe: it is of the acanthopterygious kind; and the branchioſtege membrane on each ſide contains ſix diſtinct and eaſily perceived bones: the head is compreſſed, and in many ſpecies obtuſe at the end, or very declivious from the eyes to the mouth: the body alſo is compreſſed, and uſually variegated with ſeveral colours: the jaws are covered with large lips: there is only one fin on the back, and that generally reaches from the head to the tail, or nearly ſo: this ſometimes has little bones, in ſome ſpecies prickly, in others not ſo, and ſometimes one or two *pinnulæ*, or appendages, in the forehead near the eyes: the belly fins ſtand very forward; and the eyes are covered with a ſkin: the belly fins never have any more than two ribs. Theſe are the true and diſtinctive characters of the *blennius*; and the genuine ſpecies of this genus are theſe: 1. The *blennius*, with a furrow between the eyes, and a large ſpot in the back fin. This is the common *blennius* of authors. 2. The *blennius*, with two ſmall pinnulæ at the eyes, and with twenty-three bones in the *pinna ani*. This is the fiſh called by Willughby and others *gottorugine*. 3. The *blennius*, with the upper jaw longer than the under, and with the head acuminated at the top. This is the fiſh called *alauda non criſtata* by authors; and the *mulgrano* and *bull-card* by the people of Cornwall. 4. The *blennius*, with a cuticular creſt running tranſverſely over the head. This is the *alauda criſtata* of authors. The creſt is a triangular lobe of ſkin, red at the edges. It is ſituated between the eyes. 5. The *blennius*, with about ten black ſpots, and a white limb, on each ſide of the back fin. This is the *gunellus cornubienſium*, or, as ſome call it, the *butter-fiſh*, or *liparis*. *Artedi*, Gen. Piſc. p. 22.

The name is of Greek origin, and is derived from the word βλεννα, which ſignifies a tough and mucous matter, ſuch as the body of this fiſh is covered with.

BLENNUS, in zoology, a very remarkable fiſh, called in Engliſh the *butterfly-fiſh*. It is very thick at the head, and grows gradually ſmaller towards the tail. Its moſt uſual ſize is about ſix inches in length, and oftener leſs than more than that. Its colour is a pale-blueiſh, variegated with olive-coloured or duſky greeniſh lines. The eyes are very large, and their iris red or ſaffron-coloured. They are placed in the top of the head, and very near one another, with a furrow between them, and over each a ſmall fin. The mouth is ſmall; but capable of great extenſion: the foreteeth long, and placed regularly, reſembling the *dentes inciſores* of quadrupeds, with two other longer and crooked behind them, like the *canini*. It has a tranverſe ſkin in the middle of the palate, to keep the food from returning out of the mouth. It has one long back fin reaching from near the head to the tail. This is much broader near the head than elſewhere; and has, near its fifth ray or nerve, a beautiful ſpot, reſembling an eye, black in the middle, and ſurrounded with a white circle. It is from this ſpot, ſo like thoſe in the wings of ſome butterflies, that it got its Engliſh name; and by this it is eaſily known from all other fiſhes. It has no ſcales; but has a dotted line running down its ſides, and a large and prominent belly. It is common in the Mediterranean, and is ſold in Venice and elſewhere for the faber. The fleſh is very ſoft. *Willughby*, Hiſt. Piſc. p. 132. *Aldrovand.* de Piſc. l. 2. c. 26. See Tab. of fiſhes, N° 16.

Bellonius ſeems to have deſcribed a different fiſh under this name, mentioning it as covered with looſe ſcales, and with extremely minute teeth. But Salvian, Aldrovand, Ray, &c. all underſtand this fiſh alone by this name.

BLENNUS, in ichthyology, is alſo a name given by ſome authors, particularly Schonfeldt, to the *ſyngnathus corpore hexagono, cauda pinnata*; the *acus* of Ariſtotle; and *acus ſecunda* of other writers; called alſo by Geſner and Bellonius *typhle marina*.

BLENNUS, in zoology, a name uſed alſo by ſome for the tobaccopipe-fiſh. *Schonf.* Ichth. p. 11.

BLESENSIS *bolus*, *bole of Blois*, in the materia medica, a very valuable medicinal earth dug about Saumur, Blois, and Bourgoyne in France, and ſeeming to poſſeſs all the virtues of the Armenian bole of Galen, which it alſo much reſembles in external appearance. It is an extremely pure and fine earth, of a regular and compact texture, yet very light; and in colour of an extremely pale yellow, with ſome faint bluſh of rediſhneſs. It is naturally of a ſmooth ſurface, crumbles to pieces eaſily between the fingers, and does not ſtain the hands; and melts freely in the mouth, leaving no ſenſation of hard particles between the teeth. It ferments violently with acid menſtruums, and does not burn to a redneſs, as the common yellow earths do. *Hill*, Hiſt. of Foſſ. p. 7.

It is a very valuable medicine in fluxes and many other caſes, and might be had in any quantities, at a ſmall price; but ſuch is the preſent unhappy ſtate of medicine, that the druggiſts content themſelves with the moſt wretched counterfeits in the place of drugs even ſo cheap as theſe, while there can be had any thing cheaper. Many of our phyſicians preſcribe this bole; but it is not kept in the ſhops. The common red French bole is generally ſold in its place, and that too often counterfeited, or, inſtead of it, the ſubſtance we call bole Armenic, which is no other than a mixture of tobaccopipe-clay and red ochre.

BLESTRISMUS, βλησμος, in the antient phyſic, a continual toſſing and inquietude of the body, occaſioned by a tumultuary efferveſcence of the blood, eſpecially in acute fevers. *Caſt.* Lex. Med. p. 107.

BLETA *alba*, an epithet given by ſome to the milky urine voided in ſome diſorders of the kidneys, ranked by Paracelſus among the cauſes of the phthiſis. *Paracelſ.* de Tartar. l. 2. tract. 3. c. 3. *Caſt.* Lex. Med. p. 107.

BLETUS, βλητος, in the antient phyſic, a perſon whoſe ſide, by reaſon of ſome internal inflammation, as a pleuriſy or peripneumony, turns black or livid ſpotted, chiefly preſently after death. *Caſt.* Lex. Med. p. 107.

BLEW-CAP, an Engliſh name for a peculiar ſpecies of fiſh of the ſalmon-kind, diſtinguiſhed by a broad blue ſpot on the head, from whence they have their name. Theſe ſeem not to breed with us; but appear in our rivers only at certain ſeaſons, when there have been very violent north winds. This fiſh is ſeldom found ſingle; ſo that the fiſhermen rejoice at the taking one of them, expecting a large ſhoal of them near. *Willughb*, Hiſt. Piſc. p. 193.

BLEYME, in farriery, an inflammation in a horſe's hoof, occaſioned by blood putrified in the inner part of the coffin towards the heel, between the ſole and the coffin-bone.

Some write the word corruptly *bleyne* [a]. It is originally French, *bleime*, which ſignifies the ſame [b].—[[a] *Guill.* Gent. Dict. P. 1. in voc. *bleyne*. [b] Trev. Dict. Univ. T. 1. p. 1072. in voc. *bleime*.]

There are three ſorts of *bleymes*; the firſt bred in ſpoiled wrinkled feet with narrow heels, are uſually ſeated in the inward or weakeſt quarter: the ſecond, beſides the uſual ſymptoms of the firſt, infects the griſtle, and muſt be extirpated, as in the cure of a quitter-bone: the third is occaſioned by ſmall ſtones and gravel between the ſhoe and the ſole.—For a cure, they pare the foot, let out the matter, if any, and dreſs the ſore, like the prick of a nail. Dict. Ruſt. T. 1. in voc.

BLICEA, in zoology, the name of a ſmall fiſh of the harengiform kind, caught in the German and other ſeas, and ſuppoſed by many to be the ſame with what in England we call the ſprat, which to ſome ſeems to be no other than a young herring. *Willughby*, Hiſt. Piſc. p. 228.

BLICEA, in zoology, is likewiſe the name of a freſh-water fiſh of the malacoſtomous, or, as we call it in Engliſh, the leather-mouthed kind, ſeeming to be the ſame with the more common kind of carcaſſius. *Willughby*, Hiſt. Piſ. p. 250.

BLICEA *marina*, in zoology, the name of an Eaſt Indian fiſh, which might be more properly called *harengus minor Indicus*, or the ſmall Indian herring. It is of the ſhape of the herring; but ſomewhat broader and thinner, and is of the ſame colour. Its tail alſo is forked; but its head is of an odd figure, its eyes and the end of its ſnout being extremely large. This fiſh ſwims uſually in vaſt ſhoals, and is caught principally on the coaſt of Malabar. It is a well-taſted fiſh; but has not at all the taſte of the herring. It takes ſalt, which ſcarce any other of the Eaſt Indian fiſh will do, and is therefore very much valued, and ſent into all the neighbouring parts of the country in pickle. There is alſo another very conſiderable uſe it is put to

by the natives, which is the manuring the lands whereon they ſow their rice: they uſe this fiſh, which is caught in prodigious plenty, inſtead of dung on this occaſion. *Ray*, Ichthyol. Append. p. 2.

BLIEGG, in ichthyology, a name given by the Germans to the fiſh we call the *bleake*, and authors in general the *albula* and *alburna*. It is by Artedi very properly referred to the genus of the *cyprini*, and diſtinguiſhed by the name of the five inch *cyprinus*, with twenty rays in the *pinna ani*.

BLIGHTS, (*Cycl.*) ſometimes alſo written *blites*, are the ſame with what we otherwiſe call *blaſts*, or *blaſtings*. *Mortim.* Art. Husband. l. 7. c. 1. p. 305.

Another method, beſides that mentioned in the Cyclopædia, to preſerve trees from *blights*, is the uſe of tobacco-duſt; or by waſhing the leaves with water, wherein tobacco-ſtalks have been infuſed.

Another is by pulling off the leaves when withered, and cutting off the ſmaller branches, when they produce crooked and unnatural ſhoots.

Some imagine, that the *blights*, moſt deſtructive to fruit-trees, are produced by ſmall ſhowers of rain, or white hoar-froſts falling on the bloſſoms; which being ſucceeded by north or eaſterly winds, or froſty mornings, occaſion the miſchief ſo frequent in the ſpring-ſeaſon. To prevent theſe, it has been recommended by a reverend author to build new walls, in which, at every third courſe of bricks, are to be laid a row of plain tiles, to project forwards, and hang over the plain of the wall an inch and half, to carry off the perpendicular dews and rain, leaving room at diſtances between the tiles to carry up the branches of the tree.

Some judge, that the frequent *blights* to which corn is ſubject after a wet ſummer, are owing to over much moiſture lying continually at its roots, which makes it run much to ſtraw, and little to grain; the moiſt vapours exhaling from the ground at the time when it ſhould kern, operating like a mildew, and preventing the due growth of the ear. *Mortim.* loc. cit.

But Mr. Hales's account of *blights* appears the moſt authentic. According to him, they are often cauſed by a continued dry eaſterly wind for ſeveral days together, without the intervention of ſhowers, or any morning dew, by which the perſpiration in the tender bloſſoms is ſtopped; ſo that in a ſhort time their colour is changed, and they wither and decay: and if there happen a long continuance of the ſame weather, it equally affects the tender leaves, whoſe perſpiring matter becomes thickened and glutinous, ſo as cloſely to adhere to the ſurfaces of the leaves, and become a proper nutriment to inſects, which are always found preying on the leaves and tender branches of fruit-trees, when this ſort of *blight* happens, tho' it be not the inſects which are the firſt cauſe. The beſt remedy yet known, is gently to waſh and ſprinkle over the trees from time to time with fair water; and if the young and tender ſhoots ſeem much infected, to waſh them with a woolen cloth, ſo as to clear them, if poſſible, from this glutinous matter, that their reſpiration and perſpiration may not be obſtructed. Add, that broad flat pans or tubs of water being placed near the trees, which may receive the vapours exhaled from them, will help to keep their tender parts in a ductile ſtate; but whenever this operation of waſhing the tree is performed, it ſhould be early in the day, that the moiſture may be exhaled before the cold of the night comes on, eſpecially if the nights are froſty; nor ſhould it be done when the ſun ſhines very hot upon the wall, which would be ſubject to ſcorch up the tender bloſſoms.

Another cauſe of *blights* in the ſpring is ſharp hoary froſts, which are often ſucceeded by hot ſun-ſhine in the day-time, which is the moſt ſudden and certain deſtroyer of fruits known; for the cold of the night ſtarves the tender parts of the bloſſoms, and the ſun riſing hot upon the walls before the moiſture is dried from the bloſſoms, which being in ſmall globules, doth collect the rays of the ſun, and thereby ſcorch the tender flowers and other parts of plants.

But that *blights* are frequently no more than an inward weakneſs or diſtemper in trees, evidently appears, if we conſider how often it happens, that trees againſt the ſame wall, expoſed to the ſame aſpect, and equally enjoying the advantages of ſun and air, with every other circumſtance which might render them equally healthy, are often obſerved to differ greatly in ſtrength and vigour; and as often do we obſerve the weak trees to be continually blighted, when the vigorous ones in the ſame ſituation eſcape. This weakneſs in trees proceeds either from want of a ſufficient ſupply of nouriſhment to maintain it in perfect vigour, or from ſome ill qualities in the ſoil where it grows, or, perhaps, from ſome bad quality in the ſtock, or inbred diſtemper of the bud or cyon, which it had imbibed from its mother-tree, or from miſmanagement in the pruning, &c. See PRUNING, *Cycl.*

But there is another ſort of *blight*, againſt which it is more difficult to guard fruit-trees; that is, ſharp, pinching, froſty mornings, which often happen at the time when the trees are in flower, or while the fruit is very young, and occaſion the bloſſoms or fruit to drop off; and ſometimes the tender parts of the ſhoots and leaves are greatly injured thereby. The only method yet found out to prevent this miſchief is, by carefully covering the walls, either with mats, canvas, &c. which being faſtened ſo as not to be diſturbed with the wind, and ſuffered to remain on during the night, are to be taken off every day, if the weather permits.

Another ſort of *blight*, which ſometimes happens in April or May, and which is often very deſtructive to orchards and open plantations, and againſt which we know of no remedy, is what is called a *fire blaſt*, which in a few hours hath not only deſtroyed the fruit and leaves, but many times parts of the trees, and ſometimes whole ones have been killed by it. This is ſuppoſed to be effected by volumes of tranſparent flying vapours, which, among the many forms they revolve into, may ſometimes approach ſo near to a hemiſphere, or hemicylinder, either in their upper or lower ſurface, as thereby to make the beams of the ſun converge enough to ſcorch the plants, or trees they fall upon, in proportion to the greater or leſs convergency of the ſun's rays. This more frequently happens in cloſe plantations, where the ſtagnating vapours from the earth, and the plentiful perſpirations from the trees, are pent in, for want of a free air to diſſipate and diſpel them; than in thoſe planted at a greater diſtance, or ſurrounded with hills or woods. *Mill.* Gard. Dict. in voc. See RUST.

BLIKE, in zoology, a name given by ſome to an anadromous fiſh, ſomewhat reſembling our river chub, and called by Geſner *capito anadromus*; but more generally known by the name of *zerta*, or the *zerte*. *Willughby*, Hiſt. Piſc. p. 257. See the article ZERTA.

BLIND (*Cycl.*)—*Pore* BLIND denotes only a great degree of ſhort-ſightedneſs. Phil. Tranſ. N° 37. p. 731.

Moon BLIND is uſed in ſpeaking of horſes, which loſe their ſight only under certain ſtates of the moon, and ſee at every other time. Dict. Ruſt. T. 2. voc. *Moon*.

A *blind* man by the civil law cannot make a teſtament, except under certain modifications; but in every caſe he is diſabled from being a witneſs to a teſtament. *Calv.* Lex. Jurid. p. 131, and p. 195. voc. *cæcus*.

We read of *blind* authors, and men of learning [a]. *Blind* poets, as Thamyrus [b], Homer [c], and Milton. *Blind* aſtronomers, as Galilæo and Caſſini [d]. Blind geometricians, as profeſſor Saunderſon of Cambridge, &c.—[[a] *Bartholin.* Act. Med. T. 2. p. 78. Hiſt. Acad. Inſcr. T. 1. p. 487. [b] *Fabric.* Bibl. Græc. l. 1. c. 35. §. 4. T. 1. p. 240. The tradition is, that his eyes were put out for his temerity, in having contended for the palm in poetry with the muſes. [c] *Fabric.* Bibl. Græc. l. 2. c. 1. §. 7. T. 1. p. 259, where the ſeveral writers in the diſpute concerning Homer's blindneſs are recited. [d] *Fonten.* Elog. des Acad. T. 2. p. 145, where the author poetically imagines them to have been ſtruck *blind*, like Tireſias, for prying too near into the ſecrets of the gods.]

The moſt extraordinary of all is a *blind* guide, who, according to the report of good writers, uſed to conduct the merchants through the ſands and deſarts of Arabia [a]. James Bernoulli contrived a method of teaching *blind* perſons to write [b].—[[a] *Leo. Afr.* Deſcr. Afr. l. 6. p. 246. *Coſaub.* Treat. of Enthuſ. c. 2. p. 45. [b] *Fonten.* Elog. des Acad. p. 114.]

BLIND is alſo uſed for occult, or imperceptible. Hence *blind* rampart, *cæcum vallum*, among the antients, was that beſet with ſharp ſtakes, concealed by graſs or leaves growing over them. *Feſt.* l. 3. ap. *Calv.* loc. cit.

BLIND *teſtimonies*, cæca teſtimonia, thoſe given by abſent perſons in writing. *Calv.* Lex. Jur. p. 131. voc. *cæca*.

BLIND is alſo uſed in ſpeaking of bodies without apertures. Hence,

BLIND *wall*, *cæcus paries*, that without windows [a]. In a like ſenſe we meet with *blind* chamber, *cæcum cubiculum* [b].—[[a] *Calv.* ibid. [b] *Varro*, Ling. Lat. l. 8.]

BLIND is alſo uſed in ſpeaking of veſſels which are not perforated.

In this ſenſe, the chemiſts ſay a *blind* alembic. A tube is ſaid to be *blind*, when it is cloſed a-top.

Some anatomiſts alſo call the third cavity of the ear *cæcum*, as having no iſſue; but it is more uſually denominated labyrinth. See LABYRINTH, *Cycl.*

BLIND *granado*, that which does not light or take fire. *Fæſch.* Lex. Milit. p. 100.

BLIND, in zoology, a local name for a fiſh, called by authors the *aſellus luſcus*, and more univerſally in Engliſh the *bil*. It is a fiſh of the cod kind, but never growing to any great ſize. The word *blind* is uſed in Cornwall. *Willughby*'s Hiſt. piſc. p 169. See ASELLUS and BIL.

BLIND, or BLINDE, among mineraliſts, a kind of lead marcaſite, by our miners called *mock-ore*, *mock-lead*, and *wild lead*. See MARCASITE, LEAD, &c.

Blinde is a mineral maſs, flaky, gloſſy, and breaking in angles, much like the potters lead ore, only of a colour more duſky, and approaching to black. In it are veins of a yellow ſhining marcaſite, with a little white ſpar, and on one ſide a greeniſh æruginous matter. On a trial by the fire, it yielded a very little copper, leſs lead, and no tin. It is very obſtinate, ſeveral attempts having been made with the alcaline fluxes to run it, in vain. *Woodw.* Nat. Hiſt. Engl. Foſſ. P. 1. p. 183.

The German mineraliſts call it *blende*, whence our denomination *blinde*. It anſwers to what in Agricola is called *Galena inanis*. See GALENA.

It usually lies immediately over the veins of lead ore, in the mines which produce it, for it is not found in all. When the miners see this, they know the vein of ore is very near. *Ray*'s Engl. Words, p. 118.

BLINDS, or BLINDES. in the military art, denote every thing serving to cover the besiegers from the enemy, as wool-packs, earth-baskets, sand-bags, and the like. *Guill.* Gent. Dict. P. 2. in voc. *Fæsch.* Lex. Milit. p. 96. seq. voc. *blendungen.*

Blindes are sometimes only canvas stretched to take away the sight of the enemy; sometimes they are planks set up, properly called mantelets; others are of baskets, others of barrels.

BLINDES more peculiarly denote pieces of wood laid a-cross a trench, to support fascines or baskets, which are placed on them, loaded with earth to cover the workmen [a]. They are chiefly used, where the trenches are carried on in the face of the place, in a right line, so as the enemy might scour them with their guns from the walls [b].—[a *Ozan.* Dict. Math. p. 600. b *Fæsch.* Lex. Milit. p. 96.]

Blindes differ from *chandeliers*, as the latter are intended as a screen from above, the former from before. *Felib.* Princ. de l'Archit. p. 74. See CHANDELIER, *Cycl.*

Some also rank mantelets in the number of *blindes*. *Fæsch.* Lex. Milit. p. 97. voc. *blendungen.* See MANTELET, *Cycl.*

BLIND is sometimes also used for orillon. Milit. Dict. in voc. See ORILLON, *Cycl.*

BLINDING, a species of corporal punishment antiently inflicted on thieves [a], adulterers [b], perjurers [c], and others; and from which the antient christians were not exempt [d]. The inhabitants of the city Apollonia executed it on their watch, whom they found asleep [e]. Democritus, according to Plutarch, Cicero, and A. Gellius, put out his own eyes, that he might be less disturbed in his mental contemplations, when thus freed from the distraction of the objects of sight [f]. Though Laberius gives another reason, *viz.* that he might not have the mortification of seeing wicked men in splendor and triumph; and Tertullian another, *viz.* that he might be exempted from the stimulus to venery, excited by the sight of women [g].—[a Vid. *Solin.* Polyhist. c. 4. *Lamprid.* in Alex. Sever. c. 17. b *Valer. Max.* l 6. c. 5. n. 3. c *Luitprand.* de Reb. Imp. & Reg. l. 2. c 11. d *Lactant.* de Mort Persecut. c. 36. n. 7. e *Herodot* l. 6. c. 92. f *Au. Gell.* Noct. Att. l. 10. c. 77. *Cicero*, Tusc. Quæst. 5. g *Tertull.* Adv. Gent. *Stanl.* Hist. Philos P. 11. c. 5. p. 755.]

BLINDING, *obcæcatio*, in the black art, denotes a species of necromancy, whereby a visible body may be concealed, or hidden by an invisible power. *Cast.* Lex. Med. p. 532. voc. *obcæcatio.*

BLINDING *of a casemate* signifies erecting a battery against it, in order to dismount its cannon, and render them useless. Trev. Dict. Univ. T. 1. p. 723. voc. *aveugler.*

BLINDNESS (*Cycl.*) is of divers kinds. Natural *blindness* is that happening according to the ordinary course of things; thus that of certain insects formed without eyes, though it is not easy to fix which these are, since divers animals have been erroneously supposed so, on account of their smallness or imperceptibleness; as the cæcilia, commonly called the *blind* worm, the mole, &c. *Grew*, Mus. Reg. Societ. P. 1. § 3. p. 48.

That moles are naturally *blind* is a popular error, arising partly from the smallness of their eyes, and partly from their being hid, or buried deep in the head, to save them from the annoyances, which otherwise they would be perpetually liable to, in digging under ground; but, on occasion, they can exert or thrust them forward, as is likewise done by snails. *Brown*, Vulg. Error, l. 3. c. 18. p. 123.

Præternatural, or morbid *blindness*, is that owing to disease or accident.

Total *blindness*, that wherein all sight or perception, even of light, is wanting, as is the case of those who are said to be *stone blind.*

Partial *blindness*, that wherein some faint glimmering is left, as is always the case in people who have ripe cataracts, who are never so blind, but they can discern day from night; and, for the most part, in a strong light, distinguish black, white and scarlet, though they cannot perceive the shape of any thing. The reason is, that the light by which those perceptions are made, being let in obliquely through the aqueous humour, or the anterior surface of the chrystalline, (by which the rays cannot be brought into a focus upon the retina) they can discern in no other manner, than a sound eye can through a glass of broken jelly, where a great variety of surfaces so differently refract the light, that the several distinct pencils of rays cannot be collected by the eye into their proper foci; wherefore the shape of an object in such a case cannot be at all discerned, though the colour may. Vid. Philos. Trans. N° 402. p 447.

Perpetual *blindness*, that which remains alike under all the diversity of seasons, times, ages, &c.

Transient *blindness*, that which gives way of itself in due time, as that of whelps.

The Nogais tartars, according to father du Ban the jesuit, who lived among them, are born *blind*, and open not their eyes, ti after several days [a]; as the *blindness* of whelps for several days after they are littered, which is commonly said to hold nine days, rarely twelve [b].—[a Vid. Nouv. Mem. des Mess. T. 1. p. 23. Trev. Mem. Hist. Art. an. 1715. p. 1532. b *Brown*, Vulg. Err. l. 3. c. 27. p. 147.]

Periodical *blindness*, that which comes and goes by turns, according to the season of the moon, time of day, and the like.

Nocturnal *blindness*, called also *nyctalopia*, that which ensues on the setting of the sun in persons who see perfectly in the day, but become blind as posts as soon as night comes on. *Brigg*, in Phil. Trans. N° 159. p. 560, where an instance of it is given.

Lunar *blindness*, that which happens under a certain state or age of the moon, frequent enough in horses, but sometimes also observed in men. A very extraordinary instance of this kind is related in the Philosophical Transactions: a poor man in the north of Scotland was, every year in his life, taken blind two days before the new moon, and recovered again at the instant of the new moon. Vid. Phil. Trans. N° 233. p. 728.

The causes of *blindness* are either ordinary, as a decay of the optic nerve; (an instance whereof we have in the academy of sciences, where, upon opening the eye of a person long blind, the optic nerve was found extremely shrunk and decayed, and having no medulla in it) or some external violence, vitious conformation, growth of a cataract, gutta serena, small-pox, or the like. Vid. *Mery*, in Hist. Acad. Scienc. Par. ann. 1713. p. 161.

In the history of the academy of sciences, we have an account of a person born seemingly without eyes, *i. e.* the eyes were covered up by the eye-lids, which were grown together. Hist. Acad. Scienc. ann. 1721. p. 42.

Extraordinary causes of *blindness* are malignant stenches, poisonous juices dropped into the eye, baneful vermin, long confinement in the dark, or the like.

We have an account in the history of the academy of sciences, of two labourers struck quite blind by a fetid damp or stench; but cured again in twenty-four hours by M. Chomel [a]. And Boyle speaks of a *blindness* occasioned by a drop of liquor from a spider deposited in the eye [b].—[a Hist. Acad. Scienc. ann. 1711. p. 33, seq. b *Boyle*, Phil. Work. abrid. T. 3. p. 547.]

The ducks which generate under ground, and break out into the Zirchnitzer-sea in Carniola after all great storms, are blind at their first eruption; but, in some time, come to their sight.

Among the causes of *blindness* must also be recited the artificial ways of blinding practised on criminals, &c. of which we find frequent mention in antient writers, under the denominations *obcæcatio*, *exoculatio* [c], *oculorum effossio* [d], *abbacinatio* [e]. To which may be added *eluscatio*, which only denoted a kind of half-blinding, or putting out one of the eyes, and leaving the other [f].—[c *Du Cange*, Gloss. Lat. T. 2. p. 321. voc. *exoculare.* d Vid. *Spelm.* Gloss. p. 434. voc. *oculorum effossio.* e *Du Cange*, ibid. T. 1. p. 1. voc. *abbacinare.* f *Calv.* Lex. Jur. p. 323. voc. *eluscare.*]

Sometimes lime and vinegar, or barely scalding vinegar, was poured into the eyes, till their balls were consumed; sometimes a rope was twisted round the head till the eyes started out. *Schott.* Lex. Antiq. in voc. *augen.*

In the middle age, they changed total *blindness* for a great darkness, or diminution of sight, which they produced by holding a red-hot iron dish or bason before the eyes, till their humours were dried, and their coats shrivelled up.

The remedies for *blindness* are either regular, empirical, or superstitious.

Regular remedies are ophthalmic lotions adapted to the particular evil, collyriums, and the like.

Empirical remedies are certain mercurial and arsenical drops and powders, prescribed equally against all species of this disease [g]; or manual, as by couching [h], and the like.—[g Vid. *Boyle*, Phil. Work. abridg. T. 1. p. 103, where he speaks of an empyrical cure for *blindness* invented by Adr. Glassmaker, being a sort of turbith made by precipitating quicksilver with oil of vitriol. h Vid. Hist. Acad. Scienc. ann. 1721. p. 42, where is an account of cutting open the eyes of a person, in whom they were naturally closed up, and covered over by the eye-lids.]

Superstitious remedies are of various kinds, as that given by Myrepsus, pretended to have been revealed by the Virgin [i]; or the gall of Jonas's whale, the fish lamia, or canis carcharias; not to mention those fictitious cures attributed by Spartian to the emperor Hadrian [k], and others.—[i Vid. *Fabric.* Bibl. Græc. l. 6. c. 9. p. 7. & *Barth.* Act. Med. T. 1. p. 298. k Vid. *Bayle*, Dict. Crit. T. 2. p. 668. voc. *Hadrian.* note (M).]

The miseries of *blindness* are feelingly painted by Milton [l], and may be also partly guessed at by the extasies into which persons have fallen on their recovery from it [m]. Mr. Boyle mentions a gentleman, who having been blind, and brought to sight at eighteen, was very near going distracted with the joy [n].—[l *Milt.* Parad. Lost, l. 3. init. m Phil. Trans. N° 402. p. 450. n *Boyle*, Phil. Work. abridg. T. 1. p. 4.]

We find various recompenses for *blindness*, or substitutes for the

the uſe of the eyes, in the wonderful ſagacity of many blind perſons recited by Zahnius in his *oculus artificialis*, and others. In ſome, the defect has been ſupplied by a moſt excellent gift of remembring what they had ſeen; as was the caſe of the ſculptor mentioned by Aldrovandus. Others by a delicate noſe, or ſenſe of ſmelling; as in the blind guide mentioned above, who diſtinguiſhed the different ſcent of the earth in different parts, and thus found his way through the ſandy deſarts of Arabia, ſome of the earth being reached up to him at every mile [o]: not to mention other inſtances given by Smetius [p], of perſons whoſe loſs of ſight has been ſupplied by their noſes. Others by a fine ear, or ſenſe of hearing; as in Richard Clutterbuck of Redborough in Gloceſterſhire, who, though perfectly blind, had ſo curious an ear, that he could hear the fine ſand of an hour-glaſs fall [q]. Others by an exquiſite touch, or ſenſe of feeling, which they have had in ſuch perfection, that as it has been ſaid of ſome, that they learned to hear with their eyes, it may be ſaid of theſe, that they taught themſelves to ſee with their hands [r].—[[o] *Leo Afric.* Deſcr. Afr. l. 6. p. 246. *Caſaub.* of Enthuſ. c. 2. p. 45. [p] Miſc. Med. l. 5. ep. 15. *Barthol.* Act. Med. T. 2. obſ. 32. p. 78. [q] *Plott*, Hiſt. Nat. Stafford. c. 8. §. 60. p. 300. [r] *Plott*, loc. cit.]

Some have been enabled to perform all ſorts of curious and ſubtile works in the niceſt and moſt dextrous manner, as Martin Catelyn mentioned by Guiccardin, and Richard Clutterbuck by Dr. Plott, who would not only take a watch in pieces, and ſet it together again, and ſo an organ or virginals, and put them in tune; but would make all ſorts of ſtring-muſical inſtruments, which he alſo played on by notes cut in their uſual form, and ſet upon protuberant lines on a board: yet neither of theſe came near Van Eyck, the organiſt of Utrecht, who, though he had been blind from two years old, did every thing as nimbly as if he had carried his eyes in his hands, playing on all ſorts of inſtruments. *Plott*, loc. cit.

Others have been enabled to take the figure and idea of a face by the touch, and mould it in wax with the utmoſt exactneſs; as was the caſe of the blind ſculptor mentioned by De Piles, who thus took the likeneſs of the duke de Bracciano in a dark cellar, and made a marble ſtatue of king Charles I. extremely well. Vid. *De Piles*, Cours de Peint. p. 329. *Wolf.* Pſychol. Rat. §. 162.

But the higheſt atchievement this way is that of ſeveral perſons, who have been able to diſtinguiſh colours by the touch; of which Schmidius has a diſſertation expreſs. *Schmid.* Cæcus de Colore judicans.

The count of Mansfield, tho' blind, is alſo ſaid to have been able to diſtinguiſh black from white by the touch [s]. Van Eyck could tell in a crowd of virgins and young women which was the faireſt: yet more was performed by Peter of Maeſtricht, who, as Job Meckren informs us, tho' perfectly blind, played at dice and cards, and diſtinguiſhed the different colours of cloth by the touch [t]: in which, however, he ſeems to have come behind J. Vermaaſen of Utrecht, who had this talent in a wonderful degree. Indeed, ſome [u] have ſuppoſed it was not by the touch that he diſtinguiſhed, but by the exquiſiteneſs of his ſmell, which diſcovered the different ingredients uſed in the dying different cloths; and the rather as he is ſaid to have performed beſt faſting, which ſeems confirmed by the inſtance of the blind man alledged by Sturmius, who could readily diſtinguiſh the dyes or colours of cloths, ſilks, and the like, by applying them to his noſe [w]; but the man of Utrecht, it is pretty evident, judged altogether by the different degrees of aſperity or roughneſs, which he felt on the ſurfaces of the clothes [x]. —[[s] Phil. Tranſ. N° 114. p. 316. *Barthol.* Hiſt. Anat. cent. 3. hiſt. 44. [t] *Plott*, Nat. Hiſt. Stafford. c. 8 §. 61. p. 300. [u] *Boyle*, of Colour. P. 1. c. 3. §. 11. [w] Vid. *Sturm.* Phyſ. Elec. l. 1. §. 2. c. 8. phæn. 25. *Verdr.* Phyſ. P. 1. c. 10. §. 5. p. 226, ſeq. [x] *Vater.* Phyſ. Exper. P. 2. §. 2. c. 11. qu. 2. *Barthol.* Hiſt. Rar. 49. cent. 3.]

Yet have not blind perſons any idea of viſible objects, though they can diſtinguiſh them by the touch [y]: thus the gentleman couched by Mr. Cheſelden, though he knew the colours aſunder in a good light during his blind ſtate; yet when he ſaw them after couching, the faint ideas he had of them before were not ſufficient for him to know them by afterwards [z]. —[[y] *Wolf.* Pſychol. Rat. §. 145. [z] Vid. Phil. Tranſ. N° 402. p. 447.]

It was even a conſiderable time ere he could remember which was the cat, and which the dog, though often informed, without firſt feeling them. Add, that he had no idea of diſtance; but thought that all the objects he ſaw touched his eyes, as what he felt did his ſkin.

BLINDNESS, in farriery, is a diſeaſe incident to horſes, eſpecially thoſe of an iron-grey or dapple-grey colour, when ridden too hard, or backed too young. Phil. Tranſ. N° 37. p. 730.

It may be diſcovered by the walk or ſtep, which, in a blind horſe, is always uncertain and unequal, for that he dares not ſet down his feet boldly when led in one's hand; though, if the ſame horſe be mounted by an expert horſeman, and the horſe of himſelf be mettled, the fear of the ſpur will make him go more freely; ſo that his *blindneſs* can hardly be perceived.

Another mark whereby a horſe may be known to have loſt his ſight, is, that upon hearing any-body enter the ſtable, he will prick up his ears, and move them backwards and forwards, as miſtruſting every thing, and being in continual alarm by the leaſt noiſe Dict. Ruſt. T. 1. in voc.

D. Lower firſt ſhewed the cauſe of the ordinary *blindneſs* in horſes, which is a ſpongy excreſcence, growing in one, ſometimes in two or three places of the uvea, which being at length overgrown, covers the pupil when the horſe is brought into the light, tho' in a dark ſtable, it dilates again. *Ray*, Philoſ. Lett. p. 28.

BLINKS, among antient ſportſmen, denoted boughs broken down from trees, and thrown in the way where deer are likely to paſs, to hinder their running [a]; or rather to mark which way a deer runs, to be a guide to the hunter [b].—[[a] *Skinn.* Etym. Ant. in voc. *Jac.* Law Dict. in voc. [b] Trev. Dict. Univ. T. 1. p. 1248. voc. *briſees.*]

BLINKING *of beer*, in Lincolnſhire, ſignifies letting the wort ſtand for ſome time in the vat, till it have acquired ſome degree of acidity, in order to diſpoſe it to fine, and be ready for drinking the quicker. *Skin.* Etym. Angl. in voc. *blink.*

BLISSOM, among husbandmen, corruptly called *bloſſom*, is the act of a ram when coupling with a ewe. *Skin.* Etym. in voc.

BLISTER, (*Cycl.*) in the animal œconomy, denotes a thin bladder raiſed on the ſkin, and full of a watry or other humour.

Bliſters are ſymptoms uſually enſuing on burns, ſcalds, and cauſtic matters applied to the skin. *Caſt.* Lex. Med. p. 742. voc. *veſicatio.*

'Tis diſputed among ſurgeons, whether *bliſters*, in caſe of burns, are to be opened, or not? Some adviſe it, to prevent further ulcerations underneath; others, unleſs they be large, diſſuade it, as creating the patient needleſs pain. Vid. *Junck.* Conſp. Chir. tab. 11. p. 103.

BLISTER is more peculiarly uſed, in medicine, for that raiſed by an epiſpaſtic, or veſicatory, laid for that purpoſe on the ſhoulders, arms, legs, or other parts. Vid. *Quinc.* Pharmac. P. 2. §. 571. & §. 412. p. 167, ſeq.

Dr. Morgan endeavours to diſcard the method of dreſſing *bliſters*, by which nothing is gained, but the plaguing and tormenting the patient, and depriving him of the benefit of a much greater diſcharge, which would be at leaſt three to one, were the ſame plaſter left on for four or five days, or as long as it will draw off any thing; and then, when it has done running, taking it off, and applying a plaſter of melilot, or rather of diachylum, once for all, till the part is quite well and healed. Indeed, when a *bliſter* is firſt riſen, if it do not break and run of itſelf, it may be proper to raiſe the lower end of the plaſter a little, to ſnip the bladder, and let out the water; but if the ſurgeon has made the plaſter ſtrong enough, this is commonly done of itſelf, without help [a]. It is uſually objected, that a ſtrong epiſpaſtic left on five or ſix days, muſt deeply corrode the fleſh under it, and thereby endanger a mortification. But this, according to the author laſt cited, is ſo far from being true, that, on the contrary, it prevents the worſt accidents uſually happening in bliſtering, which are what they call *ſloughs*, or deep ſtrong incruſtations of a ſharp ſalt and adheſive matter, covering the whole ſurface of the fleſh where the plaſter had been applied. Now, this is always occaſioned by an unſeaſonable removal of the epiſpaſtic, while the humour is in full flow, and ſtrongly feeding to the part; and the humour, thus ſuddenly checked and thrown back for want of a ſufficient drain, forms this ſlough [b].—[[a] *Morg.* Mech. Pract. Phyſ. p. 176. [b] *Morg.* lib. cit p. 177.]

BLISTER is alſo uſed improperly for the medicine, by whoſe operation the veſicle is raiſed; which is more properly called a *veſicatory*, or *bliſtering plaſter*. See VESICATORY, *Cycl.*

Pharmaceutical writers give divers forms of *bliſters*, *bliſtering plaſters*, *bliſtering paſtes*, and the like. Vid. *Boerh.* Lib. de Mat. Med. p. 33. *Quinc.* Pharm. p. 356, ſeq.

The operation and effect of *bliſters* in curing fevers, is by ſome reſolved into the pain which they excite; by others into the ingreſs of the particles of the cantharides into the blood; by others into the quantity of hot, ſharp, and ſalt lymph diſcharged; by others into the condenſation of the blood, and ſtoppage of the rarefaction, whereby the ſpirits are diſpoſed to be plentifully ſeparated [c]. Dr. Cockburn, who refutes all theſe ſyſtems, accounts for it from the cantharides wounding the nerves or canals whereby the ſpirits are conveyed to the heart [d]; Dr. Morgan from the ſubtile, hot, active ſalts of the flies, ſtrongly attracted by the ſerum, and carried with it thro' the ſeveral glands and ſecretory ducts of the body, where they act by diſſolving, attenuating, and rarefying the viſcid coheſions of the lymph and ſerum, and ſtimulating the nervous coats of the veſſels, whereby they are induced to throw off their ſtagnating viſcidities, and reſtore the free drain of the lymph from the arteries to the veins; and at the ſame time, by ſcouring and cleanſing the expurgatory glands, bring on critical ſweats and urines [e].—[[c] *Morg.* Philoſ. Princ. Med. p. 229, ſeq. [d] Vid. Phil. Tranſ. N° 252. p. 173, ſeq. [e] *Morg.* Philoſ. Princ. Med. p. 303, ſeq.]

BLISTERING, in medicine and ſurgery, denotes an operation whereby a bliſter is raiſed on the cuticula, and a quantity of ſerum evacuated therefrom, by means of certain cauſtic medicines, eſpecially canthariſes, applied in form of plaſter thereon. *Junck.* Conſp. Chirurg. tab. 72. p. 507, ſeq. See the article BLISTER.

Bliſtering chiefly takes place in the dropſy [a], delirious and feveriſh [b] diſorders, apoplexies [c], pleuriſies [d], and the like. Some alſo preſcribe it in the hydrocephalus [e], ophthalmia [f], ſuffocative catarrhs [g], cephalæa [h], &c. Some ſay, that *bliſtering* is generally found hurtful in dropſies [i].—[[a] Vid. *Nent.* Fund. Med. T. 2. P. 3. p. 427. [b] Idem, ibid. T. 1. P. 2. p. 232. *Morg.* Phil. Princ. Med. p. 301, 307. [c] *Junck.* Conſp. Med. p. 055. & *Nent.* lib. cit. T. 2. P. 3. p. 434. [d] *Junck.* lib. cit p. 305. [e] Id. Conſp. Chir. p. 174. [f] *Nent.* lib. cit. T. 1. P. 2. p. 240. [g] Id ibid. T. 2. P. 3. p 153. *Junck.* Conſp. Med. p. 513. [h] *Nent.* lib. cit. T. 1. P. 2. p. 114. [i] *Junck.* lib. cit. p. 434.]

BLISTERING, in farriery, is uſed in caſes of ſtrains and ſhrunk ſinews in horſes, as ſome hold, with good effect [k], as others, with none [l].—[[k] *Bracken.* Notes on *Burd.* p. 23. [l] *Burd.* Farr. p. 36]

BLITUM, *Blite*, in the Linnæan ſyſtem of botany, the name of a diſtinct genus of plants; the diſtinguiſhing characters of which are theſe: the cup is a hollow, pointed, and expanded perianthium, compoſed of one leaf, divided into five ſegments, and remains after the flower is fallen: there are no petals: the ſtamina are three ſimple filaments, of the length of the cup: the antheræ are ſmall and ſimple: the germen of the piſtillum is rounded: the ſtyle is very ſmall, reflex, and divided into two: the ſtigmata are pointed: the ſeed is ſingle, rounded, and flattiſh, and is contained in the open cup. *Linn.* Gen. Plant. p. 20.

The characters of *blite*, according to Tournefort, are, that the flower has no petals; but is compoſed of three ſtamina, which ariſe from a cup divided into three ſegments: the piſtil finally becomes an oblong ſeed, contained in an inflated capſule, which was before the cup of the flower.

The ſpecies of *blite*, enumerated by Mr. Tournefort, are theſe: 1. The great white *blite*. 2. The great red *blite*. 3. The ſpiked wild *blite*. 4. The ſpiked wild *blite*, with leaves variegated with white and green. *Tourn.* Inſt. p. 507.

Blite is eſteemed cooling and emolient, and therefore good in dyſenteries and ſpitting of blood. *Lemery*, des Drog.

BLOATED *fiſh* or *herring*, in our ſtatutes, are thoſe which are half-dried. Vid. Stat ann. 18. Car. II. c. 2. *Blount.* in voc. *Bloated herrings* are made, by ſteeping them in a peculiar brine, and then hanging them in a chimney to dry. *Collins*, Salt and Fiſh. p. 109.

BLOATING, a puffing up or inflation of the exterior habit of the body, lodged chiefly in the adipoſe cells. It is the ſame with what phyſicians call an *emphyſema*. *Gorr.* Def. Med. p. 138. voc. εμφυσημα. *Caſt*, Lex. Med. p. 296. voc. *emphyſema*. Hiſt. Acad. Scienc. ann. 1713. p. 15, ſeq.

BLOATING or *bloting of herrings*. See BLOATED.

BLOCK, *(Cycl.)* in the mechanic arts, a maſs of wood, one or two feet high, and difficult to move, ſerving to work and cut things on, or faſten them to.

In this ſenſe, we ſay a chopping *block* [a]; a ſugar-finer's *block* [b]; a ſmith's *block*, on which his anvil is faſtened; an executioner's *block*, on which the criminal's head is laid to be ſtruck off.—[[a] *Moxon*, Mech. Exerc. p. 196. [b] *Savar.* Supp. Dict. Comm. p. 73.]

Mounting BLOCK, an eminence uſually of ſtone, cut in ſteps or notches, ſerving as a help to mount on horſeback. Theſe were much in uſe among the antients, who were unacquainted with ſtirrups. The Romans erected them at proper ſtations along all their great roads. *Davil.* Explic. Term. Archit. p. 712. in voc. *montoir*.

BLOCK, among cutters in wood, is a form made of pear-tree, box, or other hard and cloſe-grained wood, free from knots, on which they cut their figures in relievo with knives, chiſſels, &c. *Savar.* Dict. Com. T. 2. p. 1106. voc. *planche*.

The like *blocks* are in uſe for card-making; and from the ſame firſt aroſe the modern art of printing. Phil. Tranſ. N° 310. p. 2398.

BLOCKS, aboard a ſhip, are pieces of wood, in which the ſhivers of pullies are placed, and wherein the running ropes go. *Fæſch.* Lex. Milit. p. 311. voc. *Fluſchen.* & p. 446. voc. *Kloben.*

Of theſe ſome are ſingle, ſome double, and ſome have three, four, or five ſhivers in them. They are named and diſtinguiſhed by the ropes they carry, and the uſes they ſerve for; as the ſheet-*block*, the tack-*block*, the fiſh-*blocks*, &c. Double *blocks* purchaſe more than ſingle ones, ſo that on all occaſions, where much force is expected from few hands, they uſe double *blocks*. But theſe, as they do the work with more eaſe, do it alſo more ſlowly; ſo that, on occaſions which require diſpatch, ſingle *blocks* are uſed. *Boltel*, Sea Dial. 4. p. 121. *Manwar.* Seam. Direct. p. 9. *Guill.* P. 3. in voc.

Block and *block* is a phraſe uſed, when on hauling on any tackle, hallyard, or the like, to which two *blocks* belong, the two meet and touch; ſo that they can haul no farther. *Manwar.* loc. cit. *Guill.* loc. cit.

The *fiſh-block* is hung in a notch at the end of the davit, ſerving to haul up the flooks of the anchor to the ſhip's bow. *Guill.* P. 3 in voc.

The *ſnatch block* is a large *block* with a ſhiver in it, and a notch cut through one of its cheeks, for the more ready receiving a rope, ſince, by means of this notch, the middle part of the rope may be reeved into the *block*, without paſſing it endwiſe. It is commonly faſtened with a ſtrap about the main-maſt cloſe to the upper-deck, and is chiefly uſed for the fall of the winding-tackle, which is reeved into this *block*, and then brought to the capſtan. *Guill.* P. 3. in voc.

BLOCK, among bowlers, the mark which is aimed at, being a ſmall-ſized bowl led on the green for this purpoſe.

BLOCK-*Battery*, in the military art, denotes a wooden battery on four wheels, moveable from place to place, whereby to fire *en barbe*, or over the parapet; ſometimes alſo uſed in galleries and caſements, where room is wanted. *Fæſch.* Lex. Milit. p. 102.

BLOCK-*Houſe*, a kind of wooden fort or battery, either mounted on rollers, or on a veſſel, and ſerving either on the water, or in counterſcarps and counter-approaches.

The name is ſometimes alſo given to a brick or ſtone fort built on a bridge, or the brink of a river, ſerving not only for its defence, but for the command of the river both above and below; ſuch was that noted *block-houſe* antiently on the bridge of Dreſden, ſince demoliſhed on inlarging the bridge. *Fæſch.* loc. cit.

BLOCKADE *(Cycl.)*—There are two manners of forming *blockades*. The firſt is ſimply by fortifying or ſeizing poſts at ſome diſtance from the place, chiefly on the banks of rivers both above and below, and on the great roads and inlets, where bodies of foot and horſe are placed, communicating with each other, till the place being diſtreſſed for want of neceſſaries, occaſions deſertions of the garriſon, and murmurings or inſurrections of the townſmen, whereby the governor is frequently forced to capitulate.

The other ſort is made nearer the place, by lines of circumvallation, wherein an army is poſted; being chiefly uſed when after a battle, the vanquiſhed party have ſhut themſelves up in ſome town ill provided, and thereby capable of being ſtarved in a ſhort time. *Feuquiere*, Mem. ſur la Guer. art. 77. p. 326.

BLOCKING, in middle-age writers, denotes a kind of burial uſed for perſons dying excommunicated. *Du Cange*, Gloſſ. Lat. T. 3. p. 22. voc. *imblocatus*.

BLOCKY, among jewellers, a name given to a diamond when its ſides are too upright, by its table and collet being larger than they ought to be. *Jeffreys* on Diamonds, p. 25. See TABLE and COLLET.

BLOOD *(Cycl.)*—The *blood*, and other parts of animals, all contain more or leſs of an acid; and this ſeems wholly owing to the effects of their organs of digeſtion upon the aliments they take in, which, in fine, become aſſimilated to, and make part of their fluids and ſolids. All animals do not feed in the ſame manner; but may be divided, in this reſpect, into three different claſſes; the firſt of thoſe uſually called carnivorous animals, that is to ſay, ſuch as have no other food than the fleſh of other animals; the ſecond, of thoſe which never eat of fleſh at all, but feed wholly upon roots, fruits, and other vegetable matters; and the third of thoſe, which feed indifferently both on fleſh and vegetables. This diviſion extends itſelf to the whole animal creation; for there are birds, beaſts, fiſhes, and inſects of all three claſſes.

It ſhould ſeem, that the ſubſtance of thoſe creatures, which feed only on one ſort of animals, ſhould be of a nature nearly allied to that of the animals they feed on, ſince it is that which replaces every part of the creature, and becomes its fleſh and its juices; and we have, indeed, an inconteſtable proof of the truth of this obſervation in the fleſh of ſeveral of the ſea-birds, which, as they feed wholly on fiſh, is ſo ſtrongly rank and fiſhy to the taſte, that it is not eatable. Another very familiar inſtance is in the ſmall-birds with us, which feed on buckthorn berries; for, during the whole time that thoſe berries are in ſeaſon, the fleſh of theſe birds is of a purgative nature.

From hence it ſeems not raſh to conclude, that ſuch animals as feed on things which have acid juices in them, muſt preſerve thoſe acids unaltered in their parts and fluids; for it appears by the above inſtances, that the change of the food into part of the animal, does not conſiſt in an abſolute change of its nature, but merely in a nice and regular arrangement of its parts; and hence the acid, which made part of the food, now becomes part of the animal which eat that food. Hence the fleſh of that animal, and its juices, muſt yield that acid on a chemical analyſis; and that this acid, if it were originally owing to a vegetable, will, after this ſtate, be, at leaſt, wholly equal in ſtrength to that obtained at once from the original plant; nay, there are reaſons, of which hereafter, why it may be more than ſo. All the chemical analyſes that ever were made of the common herbs, fruits, and ſeeds uſed in food, have yielded, among other principles, a liquor manifeſtly acid. This makes a part of the body of the vegetable; and therefore man, who eats theſe vegetables, muſt be ſuppoſed to contain in his fleſh and juices theſe acids unaltered.

It might be ſuppoſed, that this acid, however, ſhould be only found in ſuch animals as eat vegetables, not on ſuch as feed on other creatures; but this doubt will vaniſh when we conſider, that the carnivorous animals ſwallow theſe acids, at leaſt, at ſecond-hand in the fleſh of thoſe animals which had fed on vegetables. This, tho' a very fair way of reaſoning, did not, however, content Mr. Homberg, but that he tried the facts themſelves by a number of experiments, the principal of which for inſtruction are theſe.

He took thirteen pounds of lambs *blood*, and when the ſerum was ſeparated, there remained ſix pounds of the coagulum; this he put without any mixture into a very large glaſs retort, and diſtilled it very gradually by a gentle ſand-heat, till with this degree of fire there aroſe no more vapours from the retort. The veſſels being unluted, there was found in the receiver about five pints of a clear aqueous liquor, which had not the leaſt mark of containing any acid. Another receiver being fitted to the retort, the fire was raiſed to the utmoſt degree of violence. There now came over about eight ounces of a liquor, one half of which was of an oily nature, and the other a red fluid, ſmelling very ſtrong of burning. This red liquor gave equal marks of its containing acid and alkaline particles, for it made an effervescence with ſpirit of ſalt, in the manner of alkali's; and turned a tincture of turnſol red, in the manner of acids. The caput mortuum in the retort was a hard and light ſpungy coal, weighing about five ounces.

The ſame experiment being tried with ſheeps *blood*, the red liquor of the laſt diſtillation was ſomewhat leſs acid than in the other proceſs. Calves and bullocks *blood*, being diſtilled in the ſame manner, gave at the end a red acid liquor of the ſame kind with the former; but in theſe, as in the former trials, the *blood* of the younger animal ſeemed to contain a ſtronger acid than that of the full grown of the ſame ſpecies.

It is remarkable in this liquor, that the acid and alkaline particles of the animal ſubſtance are both blended together in the ſame fluid, without deſtroying one another; which is the caſe in no other known inſtance, theſe two principles always blending intimately together, and forming a third ſubſtance, a ſort of neutral one, which is neither acid nor alkali; but here they appear to be kept diſtinct, and always ready to act upon other bodies, without any power of acting upon one another. The general rules, as to acids and alkali's, ſeem to hold good in the vegetable and mineral kingdoms, but not at all in the animal, where the animal or vegetable acids, and the volatile alkali's, ſeem to obſerve other rules, and require a certain portion of phlegm to ſwim freely in, in order to their acting upon one another. Now in this red liquor there is very little phlegm, and to this it is owing, that they act not at all upon each other, though both are prepared to exert their qualities, on mixing with other ſubſtances.

Human *blood* being diſtilled in the ſame manner, ſix pounds of it, when reduced to a pound and a half, by driving off the aqueous humidity, was put into a retort, and worked by different degrees of fire up to ſo great a one, as to make the retort red hot. The diſtillation afforded in all ſeventeen ounces of liquor; twelve ounces of this was a red aqueous liquor, very full of volatile ſalt, and ſmelling ſtrongly of burning, and the other five ounces were oil. The caput mortuum was a light coal, weighing four ounces and an half.

On rectifying the red liquor by a ſmall fire, in order to ſeparate the volatile ſalt, and the aqueous humidity, there remained at laſt in the retort about an ounce of a red liquor, of a ſtinking, auſtere, and very acid ſmell; this turned the tincture of turnſol to a deep red. Mr. Homberg now imagined, that the acid liquor in the *blood* of animals could not diſengage itſelf perfectly by theſe diſtillations, without addition; as the common ſalts, ſalt petre, and ſea ſalt, yield very little of their acid ſpirits, on a ſimple diſtillation, without mixture; whereas, on barely mixing them with ſome earthy matter, before they are put into the retort, they give all the acid they contain. He therefore determined to diſtil human *blood* with an admixture of ſome other ſubſtance; but as earths contain a ſalt, which might render the operation uncertain, he determined to uſe only the caput mortuum of a former diſtillation of the ſame ſubſtance, To this purpoſe, four pounds of the coagulum of human *blood* being well mixed with a large quantity of this reſiduum, and the whole dried in the ſun, it was put into an earthen retort, and diſtilled in an open fire, raiſed by degrees to the utmoſt violence. The oil being ſeparated from the aqueous liquor, this was rectified; and the effect was, that there came over four pounds of a red acid liquor, which turned the tincture of turnſol to a ſtrong red. All the diſtillations before mentioned of the red liquors being mixed together, and ſeparated from their yet remaining oil, by diluting with water, and careful filtration, were at length diſtilled together; the liquor that came over was as clear as water, and its firſt quantities contained a great deal of volatile ſalt, but the two laſt ounces were found to be as ſour as diſtilled vinegar. Convinced by this, that in carnivorous and fructivorous animals, and in ſuch as eat vegetables alone, the acids of thoſe vegetables remained acids in the parts of the animal; Mr. Homberg tried the ſame experiments on the fleſh and *blood* of the wolf, as a creature that eats only fleſh, and on the duck and the hog, which eat indiſcriminately every ſort of food, and the event proved the ſame in all. All contained a red acid liquor, which had the properties before deſcribed, and in which the alkali and acid were ſo blended together, that they deſtroyed not one another, but each was ready to exert itſelf on occaſion. Mem. Acad. Par. 1712.

Mr. Mery attempted to eſtabliſh the doctrine of air being mixed with the *blood* in the pulmonary vein, and being again diſcharged into the branches of the trachea by the ſmall branches of the pulmonary artery. His principal argument was, that air blown into the trachea, paſſed by the pulmonary veins into the heart; and that by blowing air into the pulmonary artery, it could be forced into the trachea. Mr. Bulffinger obſerved from experiments, that water thrown in at the trachea, ran out at both the pulmonary artery and vein, which neither milk nor air would do. Water injected into the pulmonary artery, paſſed into the trachea, and pulmonary vein, which air alſo did; water injected into the pulmonary vein was puſhed with difficulty, but at laſt ran into the trachea, and not into the pulmonary vein. Hence he concludes Mr. Mery's experiment, and conſequently his ſyſtem, to be falſe. See *Comment. Acad. Petrop.* T. 3. p. 230.

Boerhaave extends the proportion of the ſerum of *blood* to $\frac{5}{8}$ parts of the whole maſs [a]; yet Dr. Morgan ſcruples not to depart from this, and all thoſe mentioned in the Cyclopædia, and makes the cruor and ſerum equal to each other [b]. Indeed in cold, and ſufficiently coagulated *blood*, the tough craſſamentum, and its ſurrounding fluid, ſerum, are ordinarily found to the eye pretty nearly equal to one another [c].—[[a] Med. Eſſ. Edinb. T. 2. p. 90. [b] *Morg.* Phil. Princ. Med. P. 3. Prop. 1. p. 406. [c] *Boyle*, Phil. Works abr. T. 3. p. 252, 460. Med. Eſſ. Edinb. T. 2. p. 91.]

BLOOD *microſcopically examined*—*Blood* makes a very common object for microſcopical obſervations. The method of examining it is this; take a ſmall drop of warm *blood* immediately from the vein, with the nib of a pen, or a hair-pencil, and ſpread it as thin as poſſible on a plate of glaſs; and applying this to the microſcope with the ſecond, or firſt magnifier, the globules will be all ſeen very diſtinctly, and a little practice will enable us to form a judgment on the alterations that may happen in the ſize, figure, or colour of them. If a little warm water be applied to the *blood*, the globules will be divided, and many of them break into a number of ſmaller globules. If warm milk be added inſtead of water, the larger globules will be ſeen very diſtinct; but this ſmaller will be blended with, and loſt in milk, which is itſelf no other than a congeries of ſuch globules. *Baker*'s Microſcop. p. 112.

The mixing of different poiſonous and medicinal liquors with the *blood* may be of great uſe, but the experiments muſt be carefully made, and the apparatus all got ready before the *blood* is let out of the vein, becauſe if it be ſuffered to coagulate firſt, no judgment could be formed of the effects of the mixture.

Mr. Cowper examining by the microſcope a ſolution of opium, found its diſſolved particles in the ſhape of fringed globules; whence he concludes, that ſuch particles circulating in the maſs of *blood*, may eaſily be entangled in its ſerum, and thicken it in ſuch a manner, as to retard its velocity, when over violent, and render its motion calm and equal, whereby all painful ſenſations will be taken off; and, from the ſame principles it is eaſy to account for its other effects, and to conceive how too great a number of ſuch fringed globules muſt cauſe a total ſtagnation of the *blood*, and conſequently be the occaſion of death. Phil. Tranſ. N° 222.

A little *blood* being mixed with about four times its quantity of ſal volatile oleoſum, and viewed by the microſcope, there is ſeen an immediate ſeparation of the globules. They are immediately ſeen much diminiſhed in number as well as ſize, and ſeem quite diſſolved away, only two or three being often left out of twenty in a minute. It is probable hence, that ſal volatile, taken inwardly, may retain the ſame power, and by that means prevent coagulations of the *blood*.

Late writers have purſued the globules of the *blood* to a great length; and found divers orders of them: thoſe large ones viſible to the eye conſtitute the *globules of the firſt order*; each of which, according to Lewenhoeck, is compoſed of ſix ſmaller ſpheres, cluſtered together in a very regular way; and that ſo nicely, in a perfect globule, that the compoſition comes to be imperceptible [d]. But ſometimes the ſame perſon has ſeen a red globule looſening and breaking into theſe compounding ſpherules; and ſometimes has had the good fortune to perceive theſe running together, and beginning the compoſition of a new red globule. Theſe ſmaller ſpherules they call *globules of the ſecond order*. But Lewenhoeck did not ſtop here; he ſaw in the chyle and *blood* a great many particles ſix times leſs than theſe globules of the ſecond order, and thirty-ſix times leſs than the great red globules. So that the globules of the ſecond order are to be looked on as compounded of theſe ſmaller ones; which therefore are juſtly to be reckoned as another claſs, or *globules of the third order* [e]. Further, he finds innumerable *blood*-veſſels in the body, of ſuch ſmallneſs, that none of thoſe hitherto mentioned globules could paſs; ſo that it ſeems neceſſary to ſuppoſe inferior claſſes of *globules of the fourth, fifth, ſixth, &c. orders*. He even ſaw veſſels, the wideneſs of which was leſs than the eighth part of the diameter of a red globule; ſo that the particles paſſing through them, ſhould be upwards of five hundred times leſs than ſuch globules, and conſequently ſmaller than thoſe of the fourth order. What is more, upon a careful examination, he could perceive ſtill ſmaller veſſels, narrower than the tenth part of the diameter of a red globule, and conſequently not capable of tranſmitting ſpherules greater, than if a red globule were broken into a thouſand parts [f]. On the

the whole then, the globules of the firſt order are made up of ſix globules of the ſecond, theſe of ſix of the third, theſe of ſix of the fourth, theſe of ſix of the fifth order, and ſo on. And accordingly, we find the globules of the higher orders may be broken down into their compounded particles. That the *blood*, in ſome caſes, might be turned into ſerum, was obſerved by Ariſtotle Nor did ſuch a change of the *blood* eſcape the obſervation of the accurate Dr. Harvey [g].—[[d] Vid. Philoſ. Tranſ. N° 102. p. 23. Item, N° 106. p. 122. and p. 129. It. N° 109. p. 380. It. N° 165. p. 788. ſeq It. N° 263. p. 552. It. N° 380. p. 436. [e] Med. Eſſ. Edinb. T. 2. p. 74. [f] Id. ibid. p. 76. [g] Id. ibid. p. 77.]

Dr. Martine has alſo given us ſome computations of the diameters, magnitudes, weights, &c. of the globules of the *blood*. The doctor's computation of the diameter of a red globule agrees with Lewenhoeck's and Dr. Jurin's, being about $\frac{1}{1938}$ of an inch.

The *blood*, as already obſerved, is compoſed of globules of different orders and magnitudes. The diameters of thoſe of the tenth order are eſtimated at leſs than $\frac{1}{100000}$ of an inch. See Medic. Eſſ. ibid. or Abridg. Vol. 1. p. 256. ſeq.

Elements of the BLOOD, according to the antients, were,

1. The αἷμα, or the red part, which they conſidered as the true and proper *blood*. 2. The φλεγμα, or ſerum. 3. Bile. And, 4. Μελαγχολια, or *atra bilis*: and from hence did the doctrine of temperaments take its origin. *Martine*, in Medic. Eſſ. Edinb. T. 2. Art. 7. §. 2. p. 68.

The ſeveral temperaments, ſanguine, choleric, phlegmatic, &c. took their denominations from the conſtituent parts of the *blood*, as abounding more or leſs in one, or other of theſe elements. *Martine*, loc. cit. §. 6. p. 82. ſeq.

The elements of the *blood*, according to the chemiſts, are water, ſulphur, ſalt and earth. Vid. *Martine*, ibid. §. 3. p. 70. ſeq.

The fibres in the *blood*, ſtrenuouſly aſſerted by Malpighi, are not to be found in its natural ſtate. If they were, they muſt diſturb the circulation. Their appearance ſeems to be entirely owing to a ſubſequent preparation of extravaſated *blood*, whoſe viſcid parts, by the heat of warm water, and conquaſſations, or ſuch artifice, run together into new forms. *Martine*, in Medic. Eſſ. Edinb. Vol. 2. Art. 7.

According to Dr. Martine, the *blood* being unity, and conſiſting of 4873 grains, its elements are in the following proportions.

Water	gr. 4086		$\frac{5}{6}$
Oil	333		$\frac{1}{15}$
Salt	190		$\frac{1}{23}$
Earth	65		$\frac{1}{75}$
Air	171		$\frac{1}{28}$

The denſity of the *blood* is commonly examined, when it is expoſed to cold air; but as the *blood* thus expoſed muſt differ from what it is, when circulating in the veſſels of the animal, its real and natural denſity ſhould be inveſtigated in a live ſtate. We know that all bodies are condenſed by cold, and expanded by heat; therefore cold *blood* is ſpecifically heavier than the warm fluids circulating in the veſſels of a living animal; but the difference is not eaſy to determine. Dr. Martine, from his obſervations and experiments, concludes the real denſities of water and *blood* to be in theſe proportions.

Water in a temperate degree of heat	1000
—— freezing	1003
—— of the heat of human *blood* in the body—	990
Blood of the heat of temperate air	1056
—— in its natural living ſtate	1045$\frac{5}{8}$

Hence we may determine the weight of a given bulk of *blood*, which has not been hitherto done ſo accurately as it deſerves. The doctor from his experiments concludes, that a cubic inch of rain water, weighing 253$\frac{1}{2}$ grains, a cubic inch of warm *blood* will be equal to 264$\frac{3}{4}$ grains; and an ounce of *blood* will be 1,813 inches. An averdupois ounce is found to weigh 437$\frac{1}{2}$ grains, and is therefore in water equal to 1,727 inches; and 1,6526 inches of warm *blood*. See Medic. Eſſ. Edinb. Vol. 2. Art. 7.

The ſame author makes the denſity of cold ſerum 1032, that of rain water being 1000. And the ſerum reduced to the heat of live *blood* 1021$\frac{2}{3}$, or 1022. Dr. Jurin found the denſity of the craſſamentum 1084. but this varies conſiderably in different ſubjects, and Dr. Martine, at a medium, found it 1080; and he thinks the true denſity of a red globule circulating in the *blood* of a living man to be 1093. The reaſon for this increaſe of denſity is, that two thirds of the craſſamentum are taken up by red globules, and the other third by ſerum. This differs ſomething from Dr. Jurin's computation. See Medic. Eſſ. ibid. & Phil. Tranſ. N° 361.

If the red part of the *blood* bears too great a proportion to the ſerum, which is the caſe of athletic perſons, and others who do not take a ſufficient quantity of drink with their meat, the fault may be corrected by leſſening the meat, or by increaſing their drink. Dr. Bryan Robinſon tells us of a young man, who not having for a conſiderable time drank with his meat, had a very florid complexion, and ſcorbutic eruption all over his body, arguments of too great a proportion of the red part of the *blood* to the ſerum, was freed from his diſorder by drinking with his meat, without any farther remedy. Diſſ. on the food and diſcharge of human bodies, p. 65.

In the beginning of fevers, the proportion of the red part of the *blood* to the ſerum is greater, and at the end of them leſs, than it is in health. The change of this proportion is owing to perſons under this diſorder living wholly on drink and liquid nouriſhment. And bodies loaded with ſerous moiſture, an argument of too ſmall a proportion of the red part of the *blood* to the ſerum, have been freed from their load, by abſtaining wholly from drink.

There are other cauſes beſides the bare quantities of meat and drink, which vary the proportion of the red part of the *blood* to the ſerum; for this proportion is greater in country people than in citizens, in perſons who uſe exerciſe than in perſons who are inactive, and in perſons who live upon fleſh meats, and fermented liquors, than in perſons who live upon vegetables and water. In ſhort, this proportion is increaſed by things which dry the body, and ſtrengthen the fibres, and leſſened by things of a contrary nature.

Too great a proportion of the red part of the *blood* to the ſerum, renders bodies ſubject to inflammatory fevers on taking cold. Ibid. p. 66, ſeq.

When extravaſated *blood* is left to itſelf, the red globules run forcibly together, and ſqueeze out the intervening ſerum in ſome animals with a greater, in others with a leſs force; which is a proof, that theſe globules are endowed with an attractive power. This force in deer's *blood* is ſo weak, that it ſcarcely coagulates into a firm craſſamentum. On the contrary, in ſome great and ſtrong beaſts, it becomes a tough, and almoſt indiſſoluble maſs; ſo that the *blood* of bulls was frequently drank by the antients, as a moſt effectual poiſon. See *Herod.* III. 15. *Plin.* Hiſt. Nat. XI. 33. XX. 9. XXIII. 7. *Plutarch*, in vit. Themiſt. See EXTRAVASATED.

Mr. le Cat thinks, that the *blood* is detained in its fluid ſtate by a cauſtic fluid, and that this forms the red globules. But then it needs the aſſiſtance of the animal fluid, which is the principle that preſerves all from corruption, and to which we owe our ſenſation and motion. Med. Eſſ. Edinb. Abrid. vol. 2. p. 481. See SENSITIVE *fluid*.

Colour of the BLOOD varies according to the circumſtances of the perſon; a blackneſs ariſes in it from a deficiency of the ſerum; and a paleneſs, from a too great abundance of it. It will always be found, that when globules cohere together in too great a number, they give a black appearance; and when this is found to be the ſtate of the *blood*, the means of diluting it ſhould always be attempted. When Mr. Lewenhoeck found his *blood* too deep-coloured, his method always was to drink four diſhes of coffee in the morning inſtead of two, and ſix diſhes of tea in the afternoon inſtead of three. Theſe he always drank as hot as poſſible, and did not return to his uſual ſtint, till he found the globules of his *blood* grow paler.

Circulation of the BLOOD, viewed with the microſcope in the tail of a ſmall eel, affords one very beautiful phænomenon; that is, when the *blood* has paſſed in ſeveral channels to the end of the laſt bone; it there forms one ſimple channel, in which there ſeems to be a valve; and the progreſſive motion of the *blood* is different there from what it is in other places, the whole maſs coming to a ſudden ſtop, yet never getting at all back, and then advancing forward in a ſtrait line with violence; and theſe ſucceſſive progreſſes were ſo quick, that one could ſcarce have time to pronounce a ſyllable between one and the other of them. The veſſels alſo about the head in a very ſmall eel ſhew very beautifully this circulation; and the motion of the heart is eaſily ſeen. See CIRCULATION.

Motion of the BLOOD is either progreſſive or inteſtine. The progreſſive motion is its courſe or circulation from the heart by the arteries to the extreme parts, and thence by the veins to the heart [a]; which is differently performed in adults from what it is in a fœtus [b].—[[a] Vid. Hiſt. Acad. Scienc. ann. 1718. p. 21. It. Mem. p. 2810. [b] Vid. *Nent.* Fund. Med. tab. 1. T. 1. p. 7. Mem. Acad. Scienc. ann. 1708. p. 240.] See CIRCULATION and FOETUS.

The propulſion of the *blood*, or the impetus wherewith it is driven along its courſe to the remoteſt capillaries, is owing to the contraction of the left ventricle of the heart and that of the arteries; regurgitation of the *blood* being prevented by the ſigmoid valves. Hiſt. Acad. Scienc. an. 1713. p. 29.

This is great enough in ſome animals to raiſe the *blood* ſix, ſeven, or eight feet high from the orifice it ſpins out at; which, however, is far exceeded by that of the ſap of a vine in bleeding-time, which will ſometimes riſe upwards of forty feet high. *Hales*, Veget. Stat. c. 3. Phil. Tranſ. N° 398. p. 274.

The heat and motion of the *blood* are always greater from a greater

greater activity in the ſoul, in the day than in the night; and they are likewiſe ever greater from the food taken in the day-time, for the pulſe is always quicker after eating than before it; after a full meal than after a ſpare one; and after a meal of drier and ſtronger food than after a meal of food that is moiſter and weaker. Dr. *Bryan Robinſon*, Diſſ. on the Food and Diſcharges of human Bodies, p. 73.

Vitality and accenſion of the BLOOD—Dr. Willis endeavours to ſhew, that the *blood* being animate, this animation or life depends on its being kindled; inaſmuch as the common affections of fire and flame belong to the *blood*, though this vital flame do not appear to ſight, by reaſon its form is ſubordinate to another ſuperior form, *viz.* the ſoul of the animal. Vid. *Willis*, de Sanguinis Accenſione, ap. ejuſd. Exerc. de Affect. Hyſt. & Hypoch. Lond. 1670. 4to. Phil. Tranſ. N° 57. p. 1178. See the article BIOLYCHNIUM.

Quantity of the BLOOD—Anatomiſts and phyſicians have generally determined the quantity of *blood* in the human body to be between fifteen and twenty-five pounds weight. D. Keill ſhews, from many inſtances of profuſe hæmorrhages, that a conſiderable greater quantity muſt be allowed, ſince otherwiſe the patient could never have furniſhed, or at leaſt not ſurvived, ſuch evacuations; the leaſt of which exceeded the whole quantity of *blood* ſuppoſed by Dr. Moulin in the whole body, and many of them more, almoſt double of the largeſt quantity allowed by any. *Keill*, of Animal Secret. p. 104, ſeq.

In reality, the quantity of *blood* in the body is very difficult to determine. Bleeding to death, the method uſed by Dr. Moulin and others, can never give the eſtimate of its true quantity; becauſe no animal can bleed longer than while the great artery is full, which will be longer or ſhorter as the wounded artery is ſmaller or greater; and the aorta muſt always be the firſt veſſel that empties. The moſt certain way, in Dr. Keill's opinion, is, by finding what proportion the cavities of the veſſels, of which the whole body is compoſed, bear to the thickneſs of the coats. This, in the veins and arteries, may be exactly found; but, in the other veſſels, we only know the quantity of fluid they contain, by carefully evaporating as much as poſſible. Thus the doctor found the fluids to be to the veſſels, in the arteries as 1.7 to one; in the veins as 15.6 to 1; in the bones as 1 to 1: the leaſt of which proportions ſhews the liquors to be one-half of the weight of the body; and if a calculation be made on the proportion of the *blood* in the arteries to their coats, in a body weighing 160 pounds, there will be found 100 pounds of *blood*. *Keill*, of Anim. Secret. p. 89, ſeq. It. p. 109, ſeq. *Quinc.* Lex Phyſ. Med. p. 53.

Some think it probable, that at leaſt two-thirds of the quantity of *blood* contained in an animal body, is continually paſſing the capillaries and ſmall veſſels in the glandular and muſcular parts, which can never be drawn off by any quick diſcharge from cutting the large veſſels; ſince, in that caſe, the larger veſſels being emptied much faſter than they can be ſupplied again from the capillaries, a defect of *blood* will ſoon enſue at the heart, upon which the animal falls into convulſions, and the circulation ſtops, while far the greater part of the *blood* muſt be ſuppoſed ſtagnating in the ſmaller and remoter veſſels. *Morg.* Phil. Princ. P. 3. prop. 1. p. 398.

Inflammability of the BLOOD—Mr. Boyle having held a piece of human *blood*, dried till it was almoſt pulverable, in the flame of a candle, found it would take fire, and afford a flame much like that which excited it, burning with a crackling noiſe, and here and there melting. But this inflammability much better appeared, when putting together four or five thoroughly kindled coals, he laid on them a piece of dried *blood* of the bigneſs of a ſmall nutmeg; for this yielded a large and very yellow flame, and if it were ſeaſonably and warily blown from time to time, as the effluvia degenerated into ſmoak, would long continue to yield clear and yellow flames. The ſame author having cauſed ſome *blood* to be dried till it was reducible to fine powder, took part of the powder, which had paſſed a fine ſearce, and caſting it on the flame of a good candle, the grains, in their quick paſſage through it, took fire; and the powder flaſhed not without noiſe, as if it had been roſin. *Boyle*. Phil. Works abridg. T. 3. p. 449.

BLOOD, in medicine—The preſcriptions of modern phyſicians are generally founded on ſuppoſition, that a great ſhare of diſeaſes depend chiefly on the vitiated conſtitution of the maſs of *blood* [d]; and their cure on reſtoring the *blood* to its natural ſtate, to be done partly by evacuants, but more by ſpecifics or alterants, ſo adapted, as to furniſh certain active corpuſcles proper to ferment, or excite an unuſual commotion or agitation in the *blood*, whereby it may be corrected, and enabled to expel or ſurmount the cauſe of the diſeaſe. But it muſt be obſerved, that, when the whole maſs of *blood* is to be altered, the courſe of phyſic muſt be continued a long time, by reaſon the *blood* moves ſlower and ſlower the farther it moves from a great artery; conſequently it muſt be a long time before the whole maſs of *blood* can he mixt with the alterative medicine. Add, that the circulation of the *blood* through glands, which receive arteries immediately from any great veſſel, being very quick, they may carry off a great proportion of the medicine in a very little time; ſo that it is not the taking great quantities, but a conſtant taking for a conſiderable time, that can alter the maſs of *blood* [e].—[[d] Phil. Tranſ. N° 238. p. 101. *Boyle*, Phil. Work. abridg. T. 3. p. 565. [e] *Keill*, of Anim. Secret. &c p. 153, 154.]

It has long been a diſputed point, whether there be any real acid ſalt in the human *blood?* Boyle [f], Drake, and others, hold the negative; but from what has been already ſaid, this appears to be a miſtake. Sig. Lancifi [g] and M. Homberg [h] have ſufficiently proved the exiſtence of an acid in the *blood*, derived, doubtleſs, from the ſea-ſalt and vegetable acid ſo plentifully taken in among our food, and not ſo totally deſtroyed by the action of the viſcera, but that it ſtill retains its nature. —[[f] *Boyle*, Phil. Work. abridg. T. 3. p. 457. [g] Phil. Tranſ. N° 264. p. 599, ſeq. [h] Hiſt. Acad. Scienc. an. 1712. p. 58. Mem. p. 352.] See the articles ACID, SALT, *&c.*

Dr. Willis, and others after him, ſuppoſed fevers, agues, and ſeveral other diſeaſes, the effects of a fermentation of the *blood*. Other more mechanical writers deny, that the *blood*, while contained in the veſſels of the human body, is capable of any fermentation [i]: yet Malpighi ſeems to allow a perpetual fermentation of the *blood*, for the production of urine [k].—[[i] *Boyle*, Phil. Work. abridg. T. 3. p. 365. [k] *Junck.* Conſp. Phyſ. tab. 20. p. 306.]

To which may be added divers other morbific conſtitutions depending on the different ſtates and diſpoſitions of the *blood*, in reſpect of quantity, velocity, fluidity, denſity, ſeroſity, *&c.*

An exceſs in the quantity of *blood* conſtitutes what we call a *plenitude*, or *plethora*; a defect or want of a competent quantity, a *leiphæmia*. *Caſt.* Lex. Med. p. 452. voc. *leiphæmos*.

The ſymptoms of exceſs or defect, of an over-repletion or depletion, in the *blood*-veſſels, are obvious; but caution muſt be uſed not to miſtake every occaſional flushing or tide of the *blood* to the head for a general plethora of the *blood*-veſſels, ſuch tides and flushings being very common in caſes where there is yet no *blood* to ſpare. *Morg.* Phil. Princ. Med. P. 3. prop. 1. p. 399.

The æquilibrium of the *blood* is an uniform and proportional diffuſion of it through all the parts of the body.

Any conſiderable ſtimulus, it is known, will derive the *blood* in large quantities to the ſtimulated part, which muſt neceſſarily break the æquilibrium and uniformity of its circulation; whence congeſtions, ſtagnations, concretions, *&c.* of the *blood*; and hence it is that a great part of regular practice conſiſts in deriving, revulſing, diſcuſſing, and variouſly directing and determining the *blood*, in order to recover its æquilibrium. *Nent.* Fund. Med. T. 1. P. 2. p. 10, 25, 48, 57, 94, 101, 184, 218, ſeq. *Junck.* Conſp. Med. p. 108 & 629. *Morg.* Phil. Princ. Med. P. 3. pr. 1. p. 410.

The æquilibrium of the *blood* againſt any occaſional affluxes and refluxes of this fluid, is preſerved or reſtored, either by raiſing and diffuſing it when too weak and languid by cardiacs; as ſaffron, opium, Virginia ſnake-root, *&c.* or by depreſſing and repelling it when too much raiſed and diffuſed; which is done by the abſorbents, coolers, purgatives, acids of all ſorts, eſpecially apples. *Morg.* lib. cit. P. 3. prop. 3. p. 429, ſeq.

The morbific exceſs or defect of the *blood*'s velocity is as remarkable as that of its quantity; but this cannot be judged from the natural ſtate of the pulſe in health, which is different in different conſtitutions. The ordinary number of pulſations in a minute is from 70 to 80 under a ſtate of waking and moderate heat, and from 80 to 96 during the time of ſleep. *Morg.* lib. cit. P. 3. prop 1. p. 399.

The too great heat and viſcidity of the *blood* is one of its moſt generally prevailing morbific conſtitutions, eſpecially in a country as ours, abounding with all the temptations to, and proviſions for, eaſe and luxury. This ſtate of the *blood* is brought on generally by drinking too freely hot, ſpirituous, inflammable liquors, and feeding plentifully on things, which contain a large proportion of volatile oily ſalts; as fleſh-meats half-boiled or roaſted, eaten in their bloody gravy, and all hot, ſpicy, and high-ſeaſoned broths, ſauces, and the like. The *blood* being by theſe over-heated and rarefied, the ſerum is, in conſequence, thickened into a ſort of jelly, by which means it is rendered unfit for motion, coheres too ſtrongly with the craſſamentum, and paſſes but ſlowly through the lymphatics and ſecretory glands. In this ſtate, the thicker and more viſcid parts of the ſerum, lodging on the lymphatics and receptacles of the glands, gradually obſtruct or fill them up. From which obſtruction and diminiſhed or intercepted circulation of the animal fluids, the heat and viſcidity of the *blood* ſtill increaſes, till the vital flame, raiſed too high, produces a fever. This ſtate of the *blood*, and its ſymptoms, are aggravated by a ſedentary life, or the want of due motion and exerciſe; for while the natural motion of the muſcular fibrillæ is either not at all, or but little promoted by voluntary action, the glands, and their receptacles, muſt be the ſooner ſtuffed up, and the circulation of the lymph, that powerful means by which nature continually cools and dilutes the *blood*, ſooner be ſuſpended. *Morg.* lib. cit. P. 3. prop. 2. p. 411.

The *blood* is cooled, diluted, and attenuated by temperance, exerciſe, the uſe of water as beverage, and otherwiſe, and by deobſtruents, eſpecially mercury, in the gentler preparations of it; as

æthiops or cinnabar given in moderate doſes, ſo as not ſenſibly to affect the ſtomach, nor excite ſalivation, for a long time. *Morg.* Phil. Princ. Med. P. 3. prop. 2. p. 412, ſeq.

As to the greater or leſs degree of fluidity and viſcidity of the *blood*, it is manifeſt, that this humour may either have its parts too intimately divided and attenuated, or, on the contrary, there may be too cloſe a cohesion between its parts, ſo as to render the maſs too thick and viſcous. The firſt of theſe ſtates diſpoſes the *blood* to a too quick, eaſy, and rapid motion, and ſometimes diſſolves and fuſes it to ſuch a degree, that the globules or craſſamentum paſſes, together with the ſerum, through the glandular ſtrainers, and occaſions bloody ſecretions; as in malignant and peſtilential fevers, bloody ſweats, and other preternatural hæmorrhages. The latter or viſcid ſtate renders the *blood* unapt for motion, and diſpoſes it to ſtick and lodge in the capillaries and lymphatics. *Boerh.* Aphor. §. 96. Phil. Tranſ. N° 44. p. 891. *Morg.* lib. cit. P. 3. prop 1. p. 402. *Nent.* Fund. Med. T. 1. P. 2. p. 87.

The ſpecific gravity of the *blood*, or the various degrees of its rarefaction and condenſation, depend on the degrees of heat; as the natural heat either riſes too high, or ſinks too low, the *blood* will, of conſequence, be either too much rarefied, or too much condenſed. In the former caſe, where the *blood* is overheated and rarified, the expanſive force of the elementary fire and air contained in the maſs, prevails over the corpuſcular attraction; and then, by the coagulating power of heat upon the ſerum, and its too intimate mixture and cohesion with the craſſamentum, the lymph, which ſhould form the ſecretions, cannot be ſeparated, but the ſerum is, as it were, abſorbed in the craſſamentum; in conſequence of which, the ſecretions muſt be diminiſhed, or quite ſuſpended, and a fever enſue, more or leſs inflammatory, according to the degrees of heat in the *blood*, and the conſequent ſuſpenſion or interruption of the lymphatic ſecretions. *Morg.* lib. cit. P. 3. prop. 1. p. 403. See the article FEVER.

On the other hand, where the *blood* is immoderately cooled and condenſed, the corpuſcular attraction prevailing over the expanſive force, the ſerum will be over-thinned and diluted, and conſequently ſeparated too faſt, and thrown off too plentifully on the glands and lymphatics; ſo that if the urinary drains happen to be obſtructed, a ſurcharge of ſerum muſt enſue, and in conſequence of this a dropſy: and in caſe the fluid parts of the urine paſs freely enough, and only the groſſer recrements, ſalts, and fabula, be kept back, theſe being thrown on the ſeveral organs, will produce the ſymptoms of the ſcurvy. *Morg.* lib. cit. p. 404.

Thickneſs of the BLOOD, *ſpiſſitudo ſanguinis*, is alſo a preternatural concretion, following on a plethora, or diminution of its motion, from which ſtagnations and other diſorders draw their riſe. This is either general throughout the whole body; or ſpecial, confined to ſome particular part; as in hypochondriac and hyſteric caſes, where the *blood*, by reaſon of the ſlowneſs of its progreſſion, acquires a lentor in the region of the abdomen [a]. To the ſame cauſe are alſo owing polypuſes [b], apoplexies, pleuriſies, infarctions of the viſcera [c], palpitations of the heart [d], ſuppreſſions of the menſes [e], &c.—[[a] *Nent.* Fund. Med. tab. 2. T. 1. p. 87, ſeq. *Junck.* Conſp. Med. p. 188, ſeq. [b] Phil. Tranſ. N° 44 p. 891. [c] *Junck.* Conſp. Med. p. 197, ſeq. [d] Id. ibid. p. 629. [e] *Nent.* Fund. Med. T. 1. P. 2. p. 63.]

Solubility of the BLOOD is that tendency in the ſerum and craſſamentum, by which they are diſpoſed to ſeparate and diſengage from each other, when the *blood* comes to cool, and ſtand in a baſon. When *blood* is taken off, it muſt frequently ſtand a long time at reſt, and in a cold place, before its principles can diſunite, ſo as to effect a perfect ſeparation of the ſerum from the craſſamentum; and yet at laſt, when the ſeparation is made, there may be a ſufficient quantity of ſerum, and perhaps a greater proportion than ordinary; whereas, at other times, this ſeparation ſhall be quickly made, and the ſolution effected after a ſhort time of ſtanding in a warmer air. The principal reaſon of this difference ſeems to be, the different degrees of heat to which the *blood* is ſubject, the globules being much more rarified and expanded at one time than at another; and therefore, as the arterial *blood*, being hotter, is longer in effecting this ſeparation than the venal, ſo, in a high inflammatory fever, the venal *blood* requires a conſiderable time ſtanding in a cool place before it can throw off its ſerum; but, in in a cold condenſative ſtate of the *blood*, this ſeparation is procured almoſt preſently. *Boyle*, Phil. Work. abridg. T. 3 p. 454, ſeq. Idem, p. 610. Phil. Tranſ. N° 44. p. 891. *Morg* lib. cit. P. 3. prop. 1. p. 407.

Sweetening, purifying, or cleanſing the BLOOD [f], are terms which ſeem to have ariſen from a miſtake, as if the *blood* were an impure fluid, or capable of receiving impurities with the chyle; which ſeems to be overturned by the extreme fineneſs of the orifices of the lacteals, which will hardly allow any thing impure to paſs [g].—[[f] *Boyle*, Phil. Work. abridg. T. 3. p. 610. [g] Trev. Dict. Univ. T. 4. p. 1485.]

Excretions or evacuations of the BLOOD are either ſpontaneous, as in the hæmorrhoids, hæmoptoe, hæmorrhages at the noſe, the lochia, and menſtrual flux; or artificially produced by medicines, emenagogues, venæſections, ſcarifications, leeches, &c. *Junck.* Conſp. Therap. tab. 10. p. 305, ſeq.

The want of due evacutions of the *blood* produces plethoras [h]. In hypochondriacal caſes, the natural excretions by the anus, menſtrual flux, &c. are by all means to be promoted, as the ſureſt means of cure [i].—[[h] *Junck.* Conſp. Med. p. 8. [i] *Nent.* Fund. Med. T. 1. P. 2. p. 150.]

BLOOD, injecting liquors into it. See INJECTION.

Spitting of BLOOD.—Spirit of plantan-juice, comfrey-roots, and fine ſugar, are recommended by Mr. Boyle as an approved remedy againſt ſpitting and vomiting of *blood*. *Boyle*, Phil. Works abridg. T. 1. p. 66.

Tar-water is ſaid to be a very good remedy in this caſe. See TAR-*water*.

Orgaſm of the BLOOD denotes an extraordinary efflatus or ebullition, obſerved in fevers, phrenzies, hæmoptoes, palpitations of the heart, and even by ſome ſuppoſed in cephalalgias, ſcurvies, arthritic pains, &c. It is to be compoſed or allayed by calmers, nitroſe preparations, &c. rather than by opiats. *Junck.* Conſp. Med. p. 108, 265, 269, ſeq. 303, 629. *Nent.* Fund. Med. T. 1. P. 2. p. 25, 101, 103, 165, & 313. *Junck.* Conſp. Chir. p. 378. Ib. p. 10 & 16.

Cooling of the BLOOD, recommended by lord Bacon as a means of longevity, is to be effected by clyſters, baths, unctions, refrigerating decoctions applied to the belly [k], &c. Some have vainly imagined the chief office of reſpiration to be, to cool the kindled *blood*, and prevent too great a deflagration [l].—[[k] *Bac.* Hiſt. Vit. & Mort. ap. Works, T. 2. p. 158, ſeq. [l] *Junck.* Conſp. Phyſ. tab. 8. p. 198.]

Fluxes of BLOOD are called hæmorrhages. See HÆMORRHAGE. The periodical ones of women, menſes. See MENSES. Thoſe after child-birth, lochia. See LOCHIA. That ordinarily happening on the firſt coition, is by ſome called and conſidered as the teſt of virginity. *Blas*, Not. ad *Veſling*, c. 7. p 109, *Barth.* Anat. Reform. l. 1. c. 3. *Teichmey.* Inſt. Med. c. 4. qu. 3. p. 28.

Uſes of the BLOOD are either in the animal œconomy, or in medicine, religion, diet, arts, manufactures, &c.

In the animal œconomy, the *blood* ſerves as the ſource or fund from which all the humours of the body are ſecreted [m], whether neceſſary for nutrition, digeſtion, muſcular motion, ſenſation, or the like. Some alſo make it the principle of life and heat. And others hold it to do the office of a pondus in the alternate motion of the heart [n].—[[m] *Niewent.* Relig. Philoſ. cont. 8. §. 18. p. 63. *Vater.* Phyſ. Exper. §. 7. c. 24. p. 684. *Junck.* Conſp. Phyſ. tab. 19. p. 297. [n] Phil. Tranſ. N° 281. p. 1224. & p. 1229.]

Mechanical and commercial uſes of BLOOD are chiefly in agriculture, where it is found an excellent manure for fruit-trees [o]; among lapidaries, where, it is pretended, rabbits *blood* will ſoften glaſs and flint [p]; and goats *blood* diſſolves diamonds [q]; in building, boards are ſometimes rubbed with *blood* to turn them brown. Some alſo pretend it has antiently been uſed in the mortar of old walls [r].—[[o] *Evel.* Phil. Diſc. of Earth, p. 319. *Hought.* Collect. T. 1. N° 129. p. 339. [p] *Caſt* Lex. Med. p. 755. voc. *yrcus*. [q] *Brown*, Vulg. Err. l. 2. c. 5. p. 64. [r] *Hought.* loc. cit.]

Blood is the baſis of that noble colour called by painters *Pruſſian blue*; and it is to vitriol, that is, to iron diſſolved, and formed into a ſalt, that it owes its change into that colour. See PRUSSIAN *blue*.

On this principle, Mr. Brown, an excellent chemiſt among us, tried the effect of ſolutions of other metals mixed with *blood*, the reſult of which may be a baſis for many valuable diſcoveries. The *blood*, in all theſe experiments, was prepared into a lixivium, in the ſame manner as in the making the Pruſſian blue, that is, by calcining it with an equal weight of ſalt of tartar, and then diſſolving it in boiling water.

This lixivium of *blood* being poured into a ſolution of ſilver in aqua fortis, there is produced a coagulum of a pure fleſh colour. The like lixivium made with fleſh inſtead of *blood*, produces, in this caſe, a white coagulum; and ſimple oil of tartar being uſed in the ſame experiment, by way of compariſon with theſe lixivia, afforded a much whiter ſediment. Spirit of ſalt being added ſeverally to all the three mixtures, the bloom of the fleſh-colour was taken off in the firſt; but it ſuffered no other change. In the ſecond, the coagulum was tinged a little blue; and in the third, the whiteneſs was evidently improved. The blueiſh tinge in the ſecond caſe, is not wholly to be attributed to the fleſh, but perhaps might be owing to an alloy of copper in the ſilver, from which it is ſeldom entirely freed.

The ſame liquors were made uſe of to form a precipitate from corroſive ſublimate of mercury diſſolved in water, the conſequence of which was, that the lixivium with *blood* produced a pure yellow; that with fleſh, an orange colour; and the ſimple oil of tartar, a dingy red. The addition of ſpirit of ſalt afterwards to theſe made ſome very odd alterations; for the firſt changed its yellow for an orange colour; and the ſecond, its orange colour to a blue; while the third became without any colour. The blue colour in the lixivium with the fleſh, when mixed with this ſolution, may be accounted for from the vitriol in this preparation; but it is not ſo eaſy to ſay, why the ſame vitriol ſhould not have produced alſo a blue in a lixivium with *blood*.

Copper, when diſſolved in aqua fortis, brings the water of a green colour; and, on pouring to this the two lixivia of *blood*, and of fleſh, the coagula are much alike; that is, they are white,

white, tinged with green; but, on adding ſpirit of ſalt to them, they become of a colour not unlike that of copper before the ſolution. Oil of tartar gives a pale green ſolution, and the ſpirit of ſalt clears up the liquor, and reſtores it to its former colour.

Biſmuth diſſolved in aqua fortis, and mixed with a lixivium of *blood*, produces a milky coagulum, which, after a ſmall time ſtanding, with the addition of ſome ſpirit of ſalt, becomes of a pale blue. The lixivia of fleſh, and of crude ſalt of tartar, produced both white coagula, which the ſpirit of ſalt made no alteration in. From theſe experiments it appears, that not any of theſe metallick bodies would produce a fine blue colour, with the lixivium of the *blood*; but a ſolution of iron anſwers all the experiments that are made with the ſolution of vitriol, and produces as fine a blue colour, as that made in the common way. Philoſ. Tranſ. N° 381. p. 23.

Medicinal uſes of BLOOD—We find a great number of theſe enumerated by antient and modern writers; but moſt of them, we doubt, on falſe and inſufficient grounds.

The *blood* of the hare, is, by ſome, reputed a ſpecific againſt inflammatory tumors [a]. That of the mole againſt mortifications [b]. That of the aſs againſt manias, and other diſorders of the nervous kind [c]. That of the barble-fiſh againſt marks of the mother [d]. That of a cock's comb for facilitating dentition [e]. That of doves, as a filtre for procuring love [f]; and, by others, held excellent in cataracts [g]. Even that of the menſes is by ſome cried up for its uſe in ſynovias and white ſwellings [h].—[a *Junck.* Conſpec. Chir. tab. 5. p. 64. b Id. ib. tab. 10. p. 97. c *Nent.* Fund. Med. T. 2. P. 3. p. 786. It ſeems it is to be drawn from behind the ears, then dried, and a piece put into the patient's drink. d *Junck.* lib. cit. tab. 37. p. 237. e Id. Conſp. Med. p. 750. f *Potter*, Archæol. Att. l. 4. c. 10. T. 2. p. 251. g *Junck.* Conſp. Chir. tab. 88. p. 604. h Id. ib. tab. 60. p. 391.]

The volatile ſalt, and ſpirit of human *blood*, are commended by Mr. Boyle, as preferable to that of harts horn, for the cure of aſthmas, conſumptions [i], *&c.* though Quincy only puts them on a level [k]. Borrichius ſhews, that this ſpirit was much uſed by the Egyptians againſt epilepſies [l]. Several have pretended, that the *blood* of Chriſtian children is uſed by the Jewiſh women to facilitate delivery [m]; but this ſeems a calumny. Some ſcruple not to make the *blood* a preſervative from the leproſy, and attribute the frequency of this diſeaſe among the Jews, to their eating meat void of all *blood*; but it appears without all foundation [n]. In effect, all the medicinal uſes of *blood* are rejected by Bartholin, both from reaſon and experience [o]. Even the famed virtues of goats *blood* [p], for curing pleuriſies without bleeding, and diſſolving the ſtone in the bladder, ſeem not much better warranted than the reſt. —[i *Boyle*, Phil. Works abr. T. 1. p. 65. Item, T. 3. p. 492. It is to be preſerved in ſpirit of wine: and will draw tincture from ſaffron, turmeric, *&c.* Vid. *Boyle*, lib. cit. T. 3. p. 565, and 480. k *Quinc.* Pharmac. P. 2. §. 179. p. 107. l *Borrich.* ap. Philoſ. Tranſact. N° 113. p. 299. m *Wolf.* Bibl. Hebr. T. 2. p. 1102. Item, T. 3. p. 913. ſeq. n *Barthol.* Act. Med. l. c. p. 259. and 261. o *Barth.* Diſq. de Sang. ap. ejuſd. Act. Med. T. 1. p. 306. p *Savar.* Dict. Comm. T. 2. p. 1459. voc. *ſang de bouc.*]

Eating of BLOOD.—This practice appears to have been prohibited by Noah [a], which prohibition was renewed by Moſes, obſerved by the Jews, repeated by the apoſtles at the council of Jeruſalem, confirmed and defended by all the fathers, except St. Auguſtin, and the univerſal practice, both of the eaſtern and weſtern church [b], till his time; and, in many churches, even of the weſt, much longer, as low as the middle of the tenth [c], ſome ſay the eleventh [d] century. The queſtion is, whether the apoſtolical precept to abſtain from *blood*, be to be conſidered as only temporal and occaſional, a ſort of accommodation to the weakneſs of the Jewiſh converts [e]; or perpetual, founded on moral principles, and conſequently ſtill obligatory.—[a *Bud.* Hiſt. Eccleſ. Vet. Teſt. P. 2. ſec. 2. T. 1. p. 159. b *Barth.* Diſq. de Sang. vetito, Francof. 1672. 8°. Act. Med. Hafn. T. 1. p. 306. *Chriſt. Theophil.* de Sanguine vetito Diſquiſitio uberior pro Bartholino, Francof. 1678. 8°. Act. Med. Hafn. T. 4. p. 200. c *Johnſ.* Eccleſ. Laws, T. 1. d Trev. Dict. Univ. T. 4. p. 1845. voc. *ſang.* e *Bingh.* Orig. Eccleſ. l. 17. c. 5. §. 20.]

Religious uſes of BLOOD—Among the antients, *blood* was uſed for the ſealing and ratifying covenants and alliances, which was done by the contracting parties drinking a little of each other's *blood* [a]; for appeaſing the manes of the dead, in order to which *blood* was offered on their tombs, as part of the funeral ceremony. Thus we read, that twelve youths were ſacrificed at the funeral of Patroclus [b]; and eight at that of Pallas [c].—[a Vid. *Tacit.* Annal. l. 12. c. 47. n. 3. *Pitiſc.* Lex. Antiq. T. 2. p. 690. voc. *ſanguis.* *Potter*, Archæol. l. 4. c. 8. p. 236. b *Hom.* Il. Φ. ver. 27. c *Virgil*, Æn. l. 10. v. 518.]

The *blood* of victims was the portion of the Gods, both among Jews [a] and heathens [b]; and accordingly was poured, or ſprinkled on the altars in oblation to them.—[a *Calm.* Dict. Bibl. T. 1. p. 314. b *Lakemak.* Antiq. Græc. Sacr. P. 3. c. 1. §. 19. p. 371. ſeq.]

Some have aſſerted, that the Romans offered human *blood* to appeaſe their deities, which is denied by others. *Macrob.* Saturn. l. 1. c. 7. *Struv.* Synt. Ant. Rom. c. 10. p. 458. The prieſts made another uſe of *blood*, *viz.* for divination: the ſtreaming of *blood* from the earth [a], fire [b], and the like, was held a prodigy, or omen of evil.—[a *Apul.* Metam. l. 9. p. 302. b *Q. Curt.* l. 4. c. 2. n. 11. *Buleng.* de Prodig. c. 11. *Pitiſc.* Lex. Ant. T. 2. p. 690. voc. *ſanguis.*]

The Roman prieſts were not unacquainted with the uſe of *blood* in miracles; they had their fluxes of *blood* from images, ready to ſerve a turn; witneſs that ſaid to have ſtreamed from the ſtatue of Minerva at Modena, before the battle at that place [a]. But I know not whether in this their ſucceſſors have not gone beyond them! How many relations in eccleſiaſtical writers of madonas, crucifixes, and wafers bleeding? At leaſt the liquification of the *blood* of St. Januarius at Naples, repeated annually for ſo many ages, ſeems to tranſcend by far, all the frauds of the Grecian or Roman prieſthood. But the chemiſts are got into the ſecret, and we find M. Neumann at Berlin performed the miracle of the liquification of dried *blood*, with all the circumſtances of the Neapolitan experiment [b].—[a Dio. l. 46. p. 313. b Vid. Bibl. Germ. T. 29. an. 1734. p. 204.]

Among the ſchoolmen we find a famous diſpute, under Pope Pius II. whether the *blood* of Chriſt, which fell from him in the three days paſſion, retained or loſt the hypoſtatic union; and conſequently whether it were the proper object of adoration; that is, to be worſhipped with the *cultus latriæ*. The dominicans maintaining the former, the Franciſcans the latter. *Pfaff.* Inſt. Theol. P. 2. c. 6. p. 432. Ejuſd. Hiſt. Eccleſ. ſæc. 15. c. 2. §. 7. p. 721.

It ſeems the dominican doctrine gained the aſcendant, as being fitter to favour the profits of the monks; who becoming poſſeſſed ſome way or other of a few drops of this precious liquor, were ſecured of ample offerings from the deluded laity, who flocked to pay their homage to the ſacred relick. Joſeph of Arimathea is ſaid to have firſt brought into Britain two ſilver veſſels filled with the *blood* of Chriſt, which by his order were buried in his tomb. King Henry III. had a cryſtal, containing a portion of the ſame *blood*, ſent him by the maſter of the temple at Jeruſalem, atteſted with the ſeals of the patriarch; which treaſure the king committed to the church of St. Peter's, Weſtminſter, and obtained from the biſhops an indulgence of ſix years, and one hundred ſixteen days, to all that ſhould viſit it. Mat. Paris [a] even aſſures us, that the king's ſummoning his nobles and prelates to celebrate the feaſt of St. Edward in St. Peter's church, was chiefly *pro veneratione ſancti ſanguinis Chriſti nuper adepti* [b]. Divers others of our monaſteries were poſſeſſed of this profitable relick; as the college of Bon Hommes at Aſhridge, and the abby of Hales, to whom it was given by Henry, Son of Richard duke of Cornwall, and king of the Romans. To it reſorted a great concourſe of people for devotion and adoration; till in 1538, as the reformation took place, it was perceived to be only honey clarified, and coloured with ſaffron, as was ſhewn at Paul's croſs by the biſhop of Rocheſter. The like diſcovery was made of the *blood* of Chriſt, found among the reliques in the abby of Feſcamp in Normandy, pretended to have been preſerved by Nicodemus, when he took the body from the croſs, and given to that abby by William duke of Normandy: it was buried by his ſon Richard, and again diſcovered in 1171, and attended with different miracles; but the cheat, which had been long winked at, was at length expoſed, the relation of which is given by Speed [c]. [a *Matt. Paris*, Hiſt. Angl. ad an. 1249. b *Pryn*, Hiſt. Coll. T. 2. p. 715. c *Kenn.* Paroch. Antiq. p. 300. ſeq.]

BLOOD, in the Romiſh church, is uſed in ſpeaking of the wine in the euchariſt; which they ſuppoſe miraculouſly converted, by the prieſt's conſecration, into the real *blood* of Chriſt. See EUCHARIST, TRANSUBSTANTIATION, *&c. Cycl.*

There have been divers diſputes among their divines concerning the matter and form of the veſſel or cup, wherein the *blood* of Chriſt was to be made and contained. Vid. *Durant.* de Ritib. Eccleſ. l. 1. c. 7. p. 67, ſeq.

BLOOD is alſo uſed abuſively for the ſap of plants; as having much the ſame office in the vegetable, as the other in the animal oeconomy. See SAP.

In a ſenſe, not unlike this, wine is ſometimes alſo denominated the *blood of the grape*. *Calmet*, Dict. Bibl. p. 314.

BLOOD is alſo applied, in pharmacy, to certain vegetable juices, tears, *&c.* as dragons *blood*, *ſanguis draconis*, a ſort of eaſtern gum. See DRAGONS *blood*, *Cycl.*

Dragons BLOOD, *ſanguis draconis*, is alſo uſed by the Arabs for the juice of the anchuſa. *Caſt.* Lex. Med. p. 377. voc. *hæma.*

Satyrion BLOOD, *ſanguis ſatyrii*, a ruddy liquor produced from the roots of ſatyrium, baked with bread; and liquified, as it were, into *blood*, by a long digeſtion.

BLOOD, in chemiſtry and alchemy, is a denomination given to ſeveral artificial compoſitions, chiefly on account of their red colour.

BLOOD *of ſulphur*, *ſanguis ſulphuris*, is a preparation of liver of ſulphur, ground with oil of tartar *per deliquium*, then digeſted with dulcified ſpirit of nitre. It is reputed a good pectoral and diuretic, but rarely preſcribed. *Quinc.* Pharmac. P. 2. ſec. 17. p. 328.

BLOOD is more peculiarly used by the alchemists for the tincture of a thing.

In which sense we meet with *blood of mercury*, denoting the tincture of it; *dragons blood*, denoting the tincture of antimony.

BLOOD *of the philosophers*, in the hermetic art, denotes a mercurial spirit, inherent in all metals, but chiefly in gold and silver. *Cast.* loc. cit.

Salamanders BLOOD, signifies the redness remaining in the receiver, after distilling the spirit of nitre.

BLOOD, or *sanguis veri ruffi*, denotes the sulphur of marcasite. *Cast.* loc. cit.

Princes of the BLOOD, in France, are those descended from the *blood* royal. The antient heroes were all supposed to be issued from the *blood* of the gods. Trev. Dict. Univ. T. 4. p. 1486.

Avenger of BLOOD, among the Jews, was the next of kin to the person murdered, who was to pursue the murderer. *Calm.* Dict. Bibl. T. 1. p. 314.

Ecclesiastical judges retire, when judgment is to be given in *cases of blood*, by reason the church is supposed to abhor *blood*: it condemns no person to death; and its members become irregular, or disabled from their functions, by the effusion of *blood*. Vid. *Bingh.* Orig. Eccles. l. 2. c. 7. §. 4. Item, l. 17. c. 5. §. 34.

BLOOD is also used in middle-age writers for supreme jurisdiction, exercised by the lord of the fee, in cases where *blood* is spilt.

This is also called *judgment of blood*, *justice of blood*, sometimes *cognizance of blood*. *Du Cange*, Gloss. Lat. T. 4. p. 698. voc. *sanguis*.

BLOOD, in farriery, denotes a distemper in cattle's backs, which makes them in going draw their heads aside, or after them: the cure is by slitting the length of two joints under the tail, and thus letting the beast bleed plentifully. If he bleed too much, they knit his tail next the body, and then bind salt and nettles bruised on the part. Dict. Rust. T. 1. in voc.

BLOOD *running-itch*, is a species of itch in a horse, proceeding from an inflammation of the *blood* by over heating, hard riding, or other sore labour; which, getting between the skin and flesh, makes the beast rub and bite himself; and, if let alone, sometimes turns to a grievous mange, highly infectious to all nigh him. Dict. Rust. T. 1. in voc.

Precious BLOOD, a denomination given to a reformed congregation of Bernardin nuns at Paris, first established under that name in 1661. *Helyot.* Hist. Ord. Monast. P. 4. c. 43. T. 5. p. 447. Trev. Dict. Univ. T. 1. p. 1487.

Field of BLOOD, αγρος αιμαλος, in Syriac *aceldama*, was a field purchased by the Jews, with the thirty pieces of silver, which had been given to Judas for betraying his master, and which he had restored.

It still serves for a burial-ground, in which all pilgrims, who die in their pilgrimage at Jerusalem, are interred. *Heder.* Schul. Lex. p. 560. voc. *blut-acker*.

BLOOD *stone*, among naturalists, the *lapis hæmatites*. See HÆMATITES.

BLOOD *vessels*, in anatomy, usually include only the veins and arteries; tho', in a larger sense, all the vessels in the body, as the nerves, lymphatics, &c. to the very hair, may be comprehended under the denomination.

Mr. Boyle observed an actual *blood* vessel, and full of red *blood* in the middle of a nerve. Vid. *Boyle*, Phil. Work. abr. T. 1. p. 173 See NERVE, *Cycl.* and *Suppl.*

In the plica polonica, each hair is sensibly a *blood* vessel; and, when cut, will bleed like a small vein. Id. ibid. p. 449. See PLICA, *Cycl.*

BLOOD-*snake*. See HÆMORRHUS.

BLOOD-*wite*, in antient law writers, signifies *blood*, and a customary amercement paid as a composition for the shedding or drawing of *blood*. Vid. Leg. Hen I. c. 39. *Du Cange*, Gloss. Lat. T. 1. p. 573. *Kenn.* Gloss. ad Paroch. Antiq in voc. *Spelm.* Gloss. p. 38. *Skene* de Verb. Signif. p. 21. *Skinn.* Etym. voc. *forens*. *Cowel* Interpr. in voc.

The word is also written *blodwite*, *blodwita*, *blodwyta*, *bloodwit*, *blodwit* and *bloudwit*, *bluidweit*.

It is formed from the antient Saxon *blud*, *blood*, and *vite*, or *wite*, a fine or penalty.

BLOOD-*wite* also denotes a privilege or exemption from this penalty, granted by the king to certain persons and communities, as a special favour. *Fleta.* l. 1. c. 47. *Du Cange*, loc. cit. *Kenn* loc. cit. *Spelm.* ubi supr.

King Henry II. granted to all tenants within the honour of Wallingford—*Ut quieti sint de hidagio & blodwite & bredwite.* *Kenn.* Paroch. Antiq p. 114.

BLOOD-*wort*, in botany. See SANGUINARIA.

BLOODY (*Cycl.*)—BLOODY *crime*, *sanguineum crimen*, in writers of the middle and barbarous age, that which is punished with the *blood*, or life of the offender. *Du Cange*, Gloss. Lat. T. 4. p. 698. voc. *sanguineum*.

BLOODY *flux*—Boccone tells us, that the plant called *sophia chirurgorum*, and by us *flix weed*, that is, flux herb, is a certain cure for this disease. He says, however, that it must only be given in an infusion in wine from the whole plant; for that if it be bruised, or beaten to powder, it does not succeed.

BLOOM, (*Cycl.*) in the iron-works, a term used by the miners for a four square mass of hammered iron, of about two foot long, and three quarters of a hundred weight, made from part of a sow of cast iron. The *bloom*, however, is not yet become iron fit for the smith's use, but must undergo many hammerings first, and be first made what they call the *ancony*. *Ray*'s English Words, p. 128. See the article ANCONY.

BLOSSOM, in a general sense, denotes the flower of any plant. See the article FLOWER.

BLOSSOM, in a more proper sense, is restrained to the flowers of trees, which they put forth in the spring, as the forerunners of their fruit, otherwise called their *bloom*. *Bradl.* Lex. Bot. in voc.

The office of the *blossom* is partly to protect, and partly to draw nourishment to the embryo fruit, or seed. *Hales*'s Veget. Stat. c. 7. Phil. Trans. N° 399. p. 329.

As essential as *blossoms* may seem to be to fruits, being, according to Malpighi, both the uterus, and the egg, or fœtus of the plant [a]; yet we are told of trees bearing fruit without *blossoms* [b], as was done by the mapple-tree in New England, mentioned by Mr. Dudley, and is always done by the polonic tree in China, which, according to Kircher's relation, produces its fruit immediately from the stock, without the intervention of any *blossoms* [c].—[[a] Phil. Trans. N° 117. p. 405. [b] Phil. Trans. N° 385. p. 199. [c] *Kirch.* Chin. Illustr. ap. Phil. Trans. N° 26. p. 486.]

In some plants the male and female parts of generation are remote from each other; *e. gr.* in the gourd pumpkin, melon, cucumber, and all of that race; to which may be added the nut bearing, and perhaps most bearing trees, which have all *blossoms* distinctly, male and female, on the same plant.

The *male blossoms*, called also *catkins*, may be distinguished from the others, in that they have not any pistil, or rudiment of fruit about them, but have only a large thrum, covered with dust in their middle. See CATKINS, *Cycl.*

The *female blossom* has a pistil within the petala, or flower leaves, and the rudiments of their fruit is always apparent at the bottom of the flower before it opens.

Some sorts of willows appear to change their sex every year, and produce only male *blossoms*, or catkins, one year; and the year following strings of female *blossoms*, which, if they happen to be near enough some flowering male, will produce seed, not much unlike those of an apocinum. *Bradl.* New Improv. Gard. P. 1. p. 16. seq.

BLOSSOM is also used in the manege for the colour of a horse, which has his hair white, but intermixed all over with sorrel and bay hairs, called also *peach-coloured*.

Horses of this colour generally are hard and insensible, both in the mouth and the flanks; so that they are little valued; besides, they are apt to turn blind. *Guill.* Gent. Dict. P. 1. in voc.

BLOSSOM, in respect of sheep. See BLISSOM.

BLOSSOMING *of plants*, the act of blowing, or putting forth flowers or *blossoms*, called also flowering. See BLOWING.

The *blossoming* of the spina acuta, or Glastenbury thorn, piously on christmas day morning, is a vulgar error, owing to this, that the plant, besides its usual *blossoming* in the spring, sometimes puts forth a few white transient *blossoms* in the middle of winter [a]. For the *blossoming* of the rose of Jericho on the same day, as it is commonly held in England; or in the time of midnight mass, as it is held in France, is somewhat more than an error, being really a fraud on one side, and a superstition on the other. This rose, whose leaves are only closed and shrivelled up in winter, will, at any time, upon setting its pedicle in water, expand and blossom a-new; for that the pedicle being spongy imbibes the fluid apace, and thus fills and swells out the shrivelled leaves; which property some monks have turned to good account [b].—[[a] *Miller*, Gard. Dict. in voc. *mespilus*. [b] *Grew*, Mus. Reg. Societ. P. 2. sec. 2. c. 1. p. 219. *Brown*, Vulg. Err. l. 2. c. 6. p. 79. Trev. Dict. Univ. T. 2. p. 1394. voc. *epanouir*.]

BLOTTED *china ware*, a name given by some to a sort of china that is loaded with colours in an irregular manner. This pleases some people, but it is a defective sort of ware, the large blotches of colours having been only laid on to cover the blemishes or faults in the first baking.

BLOTTING *paper*, a species of *paper* made without size or stiffening, serving to imbibe the wet ink in books of accounts, and prevent its setting off, or blotting the opposite page. Trev. Dict. Univ. T. 1. p. 1259. voc. *brouillard*.

BLOTTING *book*, a sort of minute book, or memorandum book, used by some merchants, for making imperfect entries in a present hurry, which are to be copied out fairer and fuller at night into the journal. Comp. Engl. Tradesm. T. 1. Supp. p. 42. and p. 115. *Savar.* Dict. Com. T. 1. p. 491. voc. *brouillard*.

BLOW, in a general sense, denotes a stroke given either with the hand, a weapon or instrument.

In fencing, *blows* differ from thrusts, as the former are given by striking, the latter by pushing. *Hope*, New Meth. of Fenc. c. 1. p. 10.

We say to give, to return, to parry a *blow*. See PARRYING, *Cycl.*

‡

Blows

Blows on the ſword make a ſpecies of purſuit, called *beating*. *Hope*, New Meth. of Fenc. c. 5. p. 151, ſeq. See the article BEATING.

Blind BLOW, *ictus orbus* or *cæcus*, is that which does not appear, or is not attended with effuſion of blood; in contradiſtinction from that followed by a wound, diſcolouring, tumor, or the like, called *ictus apertus* or *apparens*, an open *blow*. *Du Cange*, Gloſſ. Lat. T. 3. p. 7. voc. *ictus*.

In the antient laws, we find *blows* for remembrance, given to make perſons remember ſome tranſaction, and enable them to become better witneſſes of it in future times. Leg. Ripuar. tit. 60. §. 1. Alapam dare & aurem torquere in teſtimonium. *Du Cange*, lib. cit. T. 1. p. 117. voc. *alapa*.

Military BLOW, *alapa militaris*, that given with a ſword on the neck or ſhoulder of a candidate for knighthood, in the ceremony of dubbing him. *Caſen.* Orig. Franc. p. 2. voc. *accolée*.

The cuſtom ſeems to have taken its riſe from the antient ceremony of manumiſſion.

In giving the *blow*, the prince uſed the formula *eſto bonus miles*; upon which the party roſe a complete knight, and qualified to bear arms in his own right. Sometimes a double or even triple *blow* was given, called *trinapercuſſio*. Vid. *Du Cange*. lib. cit. T. 1. p. 117, ſeq. voc. *alapa*.

BLOWS, in common law. See BATTERY, *Cycl.*

Blows and contuſions on the head, and about the larynx, are dangerous [a]; thoſe in the epigaſtric region, eſpecially about the ſcrobiculus cordis, are frequently mortal [b]—[a *Teichmey*. Inſt. Med. Leg. c. 23. qu. 2. p. 210. b Id. ibid. c. 22. qu. 5. p. 198, ſeq.]

Fly BLOWS, the ova of flies depoſited on fleſh, or other bodies proper for hatching them.

It is an experiment worth trying, whether inſects will breed in an ox-bladder ſo cloſe, that no paſſage be left for any *fly-blows*; and becauſe flies may be ſuppoſed to have blown on the outſide of the bladder, and the *fly-blows* to have eaten through the bladder, it might be proper to include it in a caſe, ſo as to defend it from *fly-blows* outwardly as well as inwardly. Vid. *Ray*, Phil. Lett. p. 110.

BLOW-*pipe*, among jewellers and other artificers, is a glaſs tube, of a length and thickneſs at diſcretion, wherewith they quicken the flame of their lamp, by blowing through it with their mouth. It is uſed in works of quicker diſpatch, which do not need the bellows. *Savar.* Dict. Comm. T. 2. p. 1829. voc. *tube*.

Though the wind blown out at a ſmall bent tube of glaſs, called a *blow-pipe*, ſeems not to have any great celerity, in compariſon of the parts of flame, and is itſelf of little force; yet, when the flame of a lamp or candle is directed by it, ſo as to beat upon a body at a convenient diſtance, it may be made to melt ſilver, or even copper itſelf, which yet may be kept, for many hours, unmelted in a red-hot crucible, or the flame of the lamp or candle unaſſiſted by the blaſt. *Boyle*, Phil. Work abridg. T. 1. p. 477.

The enamellers have alſo tubes of divers ſizes, wherewith to *blow* their enamel, anſwering to the ſame purpoſe as the *pontillo*, or *blow-pipe*, of glaſſmen. *Savar.* loc. cit.

BLOWER, *ſouffleur*, an appellation of contempt ſometimes given to alchemiſts. See ALCHEMIST.

In the French king's kitchen, there was antiently an officer under the denomination of *ſuffiator*, or *fire-blower*. *Du Cange*, Gloſſ. Lat. T. 4. p. 1002. voc. *ſuffiator*.

The Roman mint-men were diſtinguiſhed by the appellation of *blowers* of gold, ſilver, and braſs, *&c. flatores auri, argenti*, &c. *Pitiſc.* Lex. Ant. T. 1. p. 792. voc. *flator*.

BLOWING (*Cycl.*)—Butchers have a practice of *blowing* up veal, eſpecially loins, as ſoon as killed, with a pipe made of a ſheep's ſhank, to make it look larger and fairer. *Hought.* Collect. T. 1. N° 112. p. 301. *Savar.* Dict. Comm. T. 1. p. 428. voc. *bouffer*.

One method of adminiſtring medicines is by inflation, or *blowing* them into the part by a tube: thus it is they ſometimes convey powders into the eye, and ſometimes up the noſe, for the cure of a polypus. *Caſt.* Lex. Med. p. 431. voc. *inſufflatio*.

BLOWING is alſo uſed for breathing or reſpiring, or alternately receiving and expelling the air by the lungs. Trev. Dict. Univ. T. 4. p. 1829. voc. *ſouffler*. See RESPIRATION.

Aſthmatic perſons are ſubject to *blow* much after motion. A horſe is ſaid to be purſy when he *blows*, and his flank heaves upon briſk exerciſe. *Chauv.* Lex. Phil. p. 42. voc. *anhelitus*.

BLOWING, *exſufflatio*, was alſo a ceremony in the antient adminiſtration of baptiſm, whereby the catechumen, upon rehearſing the renunciation, *blew* three blaſts with his mouth, to ſignify that he rejected or caſt the devil abſolutely off. See the article BAPTISM.

Something like this is ſtill retained in the Ruſſian church, where the godfathers being interrogated in the child's behalf, whether they renounce the devil, ſpit thrice on the ground, to teſtify their abhorrence. *Du Cange*, Gloſſ. Lat. T. 2. p. 329, ſeq. voc. *exſufflatio*.

In the ſacramentary of St. Gregory, the prieſt who adminiſters baptiſm, is enjoined to *blow* thrice on the child's face, making the ſign of the croſs with his head, and pronouncing the words *exi ab eo ſatan* [a]. Juſtin Martyr, Tertullian, St. Cyril, and St. Auguſtin, ſpeak of this ceremony as uſed in their times [b].—[a *Durant.* de Ritib. Eccleſ. l. 1. c. 19. n. 22. p. 138. b *Cyril.* Catech. 2. *Auguſt.* contra Julian. l. 6. c. 2. *Calv.* Inſt. l. 4. c. 19. *Du Cange*, loc. cit.] See EXORCISM, *Cycl.*

BLOWING *of tin*, the running or melting the ore, after firſt burning it in a kiln, to deſtroy the mundic. Phil. Tranſ. N° 69. p. 2111, ſeq. See TIN.

BLOWING *of a fire-arm*, is when the touch-hole is gulled, ſo that the powder will flame out. *Manwayr.* Seam. Direct. p. 10.

BLOWING is alſo uſed in ſpeaking of the natural motion or courſe of the wind.

In the ſea-language, the wind is ſaid to *blow home*, or *blow through*, when it does not ceaſe, or grow leſs, till it comes paſt the place where the ſpeaker is. To *blow through* is ſometimes alſo uſed to denote, that the wind will be ſo great as to *blow* aſunder the ſails. When a wind increaſes ſo much that they cannot bear any top-ſails, they ſay, they were *blown into their courſes*, i. e. they could only have out the ſails ſo called. To expreſs an extraordinary great wind, they ſometimes ſay, it will *blow the ſail* out of the bolt-ropes. *Manwar.* Seam. Direct. p. 10.

BLOWING is alſo uſed in ſpeaking of the force and effect of kindled gun-powder, on bodies which happen to be over it. See GUN-*powder*.

In this ſenſe we ſay to *blow* up a houſe. Engineers at ſieges make mines wherewith to *blow* up walls, baſtions, and other defences. See MINE, *Cycl.*

Powder-mills are apt to *blow* up by the iron gudgeon's growing hot, and ſetting fire to the powder-duſt flying about. *Hought.* Collect. T. 2. N° 229. p. 125.

BLOWING, among gardners, denotes the action of flowers, whereby they open and diſplay their leaves.

In which ſenſe, *blowing* amounts to much the ſame with flowering or bloſſoming. See FLOWERING and BLOSSOMING.

The regular *blowing* ſeaſon is in the ſpring; though ſome plants have other extraordinary times and manners of *blowing*, as the roſe of Jericho, and the Glaſtenbury thorn. Divers flowers alſo, as the tulip, cloſe every evening, and blow again in the morning. Trev. Dict. Univ. T. 2. p. 1394.

Tulips are divided into *early blowers*, called alſo *præcoce*, and *late blowers*, or ſeratine tulips. *Bradl.* New Improv. Gard. P. 2. c. 7. §. 1. p. 143.

The *blowing* of hops differs from their belling, the former happening about the end of July, the latter about a week or fortnight after. *Hought.* Collect. T. 2. N° 376. p. 448. See the article HOPS.

Annual plants *blow* ſooner or later, as their ſeeds are put in the ground; whence the curious in gardening ſow ſome in every month in ſummer, to have a conſtant ſucceſſion of flowers [c]. The *blowing* of roſes may be retarded by ſhearing off the buds as they put forth [d].—[c *Bradl.* lib. cit. p. 134, ſeq. d *Mortim.* Huſband. l. 13. c. 1. T. 2. p. 167.]

BLOWING *of a flower*, among floriſts, an artificial proceſs, in order to bring a flower to diſplay itſelf with greater perfection and beauty than it would arrive to in the natural way of *blowing*. The uſual method is thus: about April, when the flower-ſtems begin to put forth, or ſpindle, as the gardeners call it, they place by each flower a ſtreight ſtick four feet long, and tie the ſpindles to it as they ſhoot. As ſoon as the flower-buds appear, they leave only one of the largeſt on each flower-ſtem to bloſſom. About ten days before the flowers open themſelves, the round podded kinds will begin to crack their huſks on one ſide, when the careful gardener, with a fine needle, ſplits or opens the huſk on the oppoſite ſide to the natural fraction; and about three or four days before the complete opening of the flower, cuts off with a pair of ſciſſars the points on the top of the flower-pod, and ſupplies the vacancies or openings on each ſide the huſk with two ſmall pieces of vellum or oil-cloth ſlipped in between the flower-leaves and the inſide of the huſk; by ſuch means, the bloſſom will diſplay its parts equally on all ſides, and be of a regular figure. Beſides this care, when the bloſſom begins to ſhew its colours, they uſe to ſhade it from the extreme heat of the ſun with a trencher-like board, or other device of the like nature, faſtened to the ſtick which ſupports it; for the flowers, as well as fruits, grow larger in the ſhade, and ripen and decay ſooneſt in the ſun. *Bradl.* New Improv. Gard. P. 2. p. 88.

In heraldry, a flower-de-luce is ſaid to be *blown*, *eſpanoui*, when its leaves are opened, ſo as buds appear among the fleurons. The arms of the city of Florence are argent, a flower-de-luce *blown*, gules. Trev. Dict. Univ. T. 2. p. 1395.

BLOWING *ſnake*, in zoology, a name given by the people of Virginia to a ſpecies of ſerpent much reſembling the European viper, but conſiderably larger, and very remarkable for its inflating and extending the ſurface of its head before it bites. Its wound is very fatal.

BLOWN *red*, in the manufacture of porcelane. See RED.

BLUBBER, in phyſiology and trade, the fat which inveſts the bodies of all large cetaceous fiſhes, or ſea-monſters, ſerving to furniſh an oil. Vid. *Collins*, Salt & Fiſh. p. 89.

The *blubber* is properly the adeps of the animal: it lies immediately under the ſkin, and over the muſcular fleſh [a]. In the porpoiſe, it is firm and full of fibres, and inveſts the body about

an inch thick [b]. In the whale, its thickneſs is ordinarily ſix inches; but, about the under lip, it is found two or three feet thick. The whole quantity yielded by one of theſe animals ordinarily amounts to forty or fifty, ſometimes to eighty, or more hundred weight [c].—[[a] *Hought.* Collect. T. 3. N° 534. & N° 535. p. 277 & 281. [b] Phil. Tranſ. N° 77. p. 2275. [c] *Atlaſ.* Marit. p. 134.]

The uſe of *blubber* to the animal ſeems to be partly to poiſe the body, and render it equiponderant to the water; partly to keep off the water at ſome diſtance from the blood, the immediate contact whereof would be apt to chill it; and partly alſo for the ſame uſe that cloaths ſerve us, to keep the fiſh warm, by reflecting or reverberating the hot ſteams of the body, and ſo redoubling the heat; ſince all fat bodies are, by experience, found leſs ſenſible of the impreſſions of cold than lean ones. *Ray*, Wiſd. Creat. P. 1. p. 152.

Its uſe in trade and manufactures is to furniſh train-oil, which it does by boiling down. Formerly this was performed aſhore, in the country where the whales were caught; but of late the fiſhers do not go aſhore, they bring the *blubber* home ſtowed in caſks, and boil it down there. Vid. *Atlaſ.* Marit. p. 132. *Savar.* Dict. Comm. Supp. p. 1072. *Hought.* loc. cit.

BLUBBER *livers*.—The livers of cods, which having been barrelled, yield ſpontaneouſly a conſiderable quantity of oil, which being ſkimmed off, the reſidue are called *blubber-livers*, to be boiled down for more oil. *Collins*, Diſſ. of Salt and Fiſh, p. 89.

Sea BLUBBER, a denomination given by our navigators to the *urtica marina*, or ſea-nettle. Phil. Tranſ. N° 349. p. 478. See URTICA *marina*.

BLUE (*Cycl.*)—The colour *blue* anſwers to what was called among the Greeks κυανος [a]; among the Latins, *cæruleus* [b]; in middle-age writers, *blavus*, *blaveus*, *blavius*, and *blocus* [c].—[[a] Vid. *Gorr.* Def. Med. p. 251. voc. κυανος. [b] *Caſt.* Lex. Med. p. 452. voc *cæruleus*. See alſo *Menage*, Orig. Franc. p. 106. *Caſen.* Orig. p. 25. voc. *bleu*. *Skinn.* Etym. voc. *blew*. [c] *Du Cange*, Gloſſ. Lat. T. 1. p. 572. voc. *blavus*.]

Of a mixture of *blue* and yellow is compounded 'green; tho' every *blue* and every yellow will not, by their mixture, produce green, *e. g.* amaranth. Vid. *Boyle*, Phil. Work. abridg. T. 1. p. 70.

Of *blue* and ſcarlet is made violet and panſy colour; and of *blue* and crimſon is made purple, and columbin or dove colour [d]. Dr. Hook will have *blue* and ſcarlet to be the only ſimple and primitive colours, out of whoſe mixture all the others are compounded [e]. Others aſcribe this prerogative to *blue* and yellow; an opinion which has had the honour of being combated by Sir Iſaac Newton [f].—[d Trev. Dict. Univ. T. 1. p. 1074. [e] Vid. *Hook*, Microgr. obſ. 9. p. 58, ſeq. [f] Phil. Tranſ. N° 96. p. 6086, ſeq.]

The juices of *blue* flowers become green by the admixture of alcalis; and red by that of acids. See the articles ACID and ALCALI.

The *blue* flowers of cichory are preſently changed to a blood colour by the juice of piſmires [g]. A ſolution of verdigreaſe with oil of tartar is found to produce a beautiful *blue* [h].--[g Phil. Tranſ. N° 68. p. 2064. [h] *Boyle*, Phil. Works abridg. T. 2. p. 73]

There are divers ſhades or degrees of *blue*, as ſky-*blue*, light-*blue*, deep livid-*blue*, &c. anſwering to which the Romans had their *cæruleus*, *cæſius*, *cæſitius*, &c [i]. Sir Iſaac Newton diſtinguiſhes *blues* by different orders: that of the firſt order is very faint and weak, ſuch as is the azure of the ſky [k].—[[i] *Pitiſc.* Lex. Ant. T. 1. p. 504, ſeq. voc. *color*. [k] *Newton*, Opt l. 2. P. 3. prop. 7. p. 232.]

BLUE, in commerce, is uſed for an artificial or compound body, prepared for imparting a *blue* colour to woods, ſtuffs, canvas, and the like.

The antient painters uſed an artificial *blue* made of ſand, ſalt, nitre, and copper-duſt [l]. But the moderns have a much better, which is ultramarine procured from lapus lazuli [m].—[[l] *Vitruv.* Archit. l. 7. c. 11. *Felib.* Princ. de l'Archit. p. 356. [m] *Felib.* lib. cit. p. 356.] See the article ULTRAMARINE, *Cycl.*

The azure or *blue* prepared from the lapis Armenus [n], ſuppoſed by Dr. Woodward to be much the ſame with the *terre bleue*, or *blue* earth, and called among us *Lambert's blue*, is a mineral earth of a bright colour, found in the north. Its blueneſs, which is much eſteemed, is owing to an admixture of copper [o].—[[n] Vid. *Grew*, Muſ. Reg. Societ. P. 3. §. 1. c. 6. p. 316. *Junck.* Conſp. Therap. tab. 3. p. 82. *Du Hamel*, Hiſt. Acad. Scienc. l. 4. §. 4. c. 1. p. 332. [o] *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 1. p. 7 & 3.] See ARMENUS *lapis*.

To theſe may be added divers other mineral *blues*, or metallic cadmiæ, all prepared from cobalt. *Woodw.* Catal. For. Foſſ. p. 50. *Felib.* Princ. Archit. l. 3. c. 13. p. 319.

Dr. Plott alſo ſpeaks of a native or *earth blue*, found in a marl-pit in Oxfordſhire, the ſteam of which covered the roots of trees and other vegetables near it with a *bluiſh* ſubſtance, like flour of ſulphur. *Plott*, Nat. Hiſt. Oxfordſh. c. 6. §. 52. It. c. 3. §. 18.

Pruſſian BLUE, or *Berlin* BLUE, is a modern invention, conſiderably in uſe among painters, though inferior to the ultramarine *blue*. See PRUSSIAN *blue*.

Stone or *powder* BLUE, uſed in waſhing of linen, is the ſame with ſmalt, either in the lump or powdered. Vid. *Savar.* Dict. Comm. T. 1. p. 206. voc. *azur*. See SMALT.

When the ſmalt is taken from the pot, it is thrown into a large veſſel of cold water: this makes it more tractable, and eaſily powdered. Afterwards, when examined after cooling, it is found to be mixed with a greyiſh matter reſembling aſhes, which they call *eſchel*. This grey matter is ſeparated by waſhing, and then the *blue* ſubſtance is powdered and ſifted through fine ſieves, to bring it to what we call *powder blue*. Phil. Tranſ. N° 396.

BLUE *japan* is made of white lead, ſmalt, and iſinglaſs mixed. *Park.* Treat. of Japann. c. 5. p. 23.

BLUE-*cap*, in ichthyology. See BLEW-*cap*.

BLUE *gems*, ſuch are the turcois, and divers other artificial ſtones, whoſe preparation is deſcribed by Neri. Vid. *Neri*, Art. Vitriar. l. 1. c. 36. p. 56. It. l. 7. c. 111. p. 164 & 291. See TURCOIS, *Cycl.*

All *blue* gems, according to Woodward, derive their colour from a mixture of copper. *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 1. p. 190. See GEM.

BLUE *nuns*, *filles bleues*, thoſe of the order of the annunciation.

BLUE-*bottle*, in botany, the Engliſh name of the *cyanus*, a ſmall plant, with beautiful blue flowers, common in our corn-fields, and of which many beautiful ſpecies are kept in gardens. See CYANUS.

BLUFF-*head*, or BLUFF-*headed*, in the ſea-language, is when a ſhip has but a ſmall rake forward on, being built with her ſtem too ſtreight up. *Botel.* Sea Dial. 4. p. 103. *Guill.* Gent. Dict. P. 3. in voc.

Bluff-headed ſhips are oppoſed to thoſe that are ſharp-headed. They are ſhorter, leſs maſted, and ſail cheaper. Vid. *Petty*, Diſc. of Duplic. Proport. p. 29, ſeq.

BLUING, (*Cycl.*) the act or art of communicating a blue colour to bodies otherwiſe deſtitute thereof. See BLUE.

Laundreſſes blue their linen with ſmalt; dyers their ſtuffs and woolls with woad or indigo. *Savar.* Dict. Comm. T. 1. p. 96. voc. *ampaſteler*.

BLUING *of iron*, a method of beautifying that metal ſometimes practiſed; as for mourning buckles, ſwords, and the like. The manner is thus: take a piece of grind-ſtone or whet-ſtone, and rub hard on the work, to take off the black ſcurf from it; then heat it in the fire, and as it grows hot, the colour changes by degrees, coming firſt to light, then to a darker gold colour, and laſtly to a blue. Sometimes alſo they grind indigo and ſallad oil together; and rub the mixture on the work with a woollen rag, while it is heating, leaving it to cool of itſelf. *Neve*, Build. Dict. in voc. *iron*.

Among ſculptors we alſo find mention of *bluing* a figure of bronze, by which is meant the heating of it, to prepare it for the application of gold-leaf, becauſe of the bluiſh caſt it acquires in the operation. *Felib.* Princ. Archit. p. 356.

BLUNDERBUSS, in the military art, a ſhort ſort of fire-arm, with a large bore, contrived to carry a number of muſket or piſtol-bullets at once.

The *blunderbuſs* is proper to do execution in a crowd, or to make good a narrow paſſage, as the door of a houſe, ſtair-caſe, or the like. Milit. Dict. in voc. Trev. Dict. Univ. T. 3. p. 524. voc. *mouſqueton*. *Skinn.* Etym. in voc.

BLUNT, in fencing.—To fight with *blunts*, is to exerciſe or parade with weapons without points or edges. *Hope*, New Art Fenc. c. 4. §. 5. p. 68.

BLUNTING *the angles of a battalion*, in the military art, ſignifies to retrench the four corners, and turn the ſquare into an octogon.

This is done in order to give an opportunity for preſenting the pikes, or firing on all ſides, and was a military evolution formerly much in uſe; but now out of doors. Trev. Dict. Univ. T. 2. p. 1286. voc. *emouſſer*.

BOADODA *Baſhee*, in the Turkiſh military orders, an officer of the janizaries, whoſe buſineſs it is to walk every day about the principal parts of the city, with a number of janizaries to attend him, to keep order, and ſee that all things are regular, even to the dreſs. This office is for three months, and from this the perſon is uſually advanced to be a *ſerach*. *Pocock's* Egypt, p. 167.

BOAR, in zoology. See the articles HOG and SUS.

BOARD (*Cycl.*)—Deal-*boards* are generally imported into England ready ſawed, becauſe done cheaper abroad, in regard we want ſaw-mills. *Hought.* Collect. T. 3. p. 45.

Clap-*boards* are imported from Sweden and Dantzic.

Oak-*boards* chiefly from Sweden and Holland; ſome from Dantzic. *Hought.* ibid. p. 194.

Pipe-*boards* are brought from Dantzic. We alſo import white *boards* for ſhoemakers; mill and ſcale-*boards*, paſt-*boards*, &c. for divers artificers. *Crouch*, View Brit. Cuſt. T. 1. p. 120.

Scale-*board* is a thinner ſort, uſed for the covers of primers, thin boxes, and the like. It is made with large planes; but might probably be ſawed with mills to advantage. *Hought.* lib. cit. T. 3. p. 46.

BOARD is alſo uſed for a kind of table or bench, whereon ſeveral artificers perform their work. *Felib.* Princ. Archit. p. 414. voc. *eſtabli*.

In this ſenſe, we ſay a work-*board*, a ſhop-*board*, a taylor's *board*, &c.

BOARD is alſo uſed for a flat machine, or frame, uſed in certain games, and the like.

In this ſenſe, we ſay a draught *board*, a cheſs-*board*, a ſhovel-*board*, and the like.

BOARDS, in bookbinding. See BOOKBINDING, *Cycl.*

BOARD, *bureau*, is alſo uſed for an office where accounts are taken, payments ordered, and the like. *Davil.* Explic. Term. Archit. p. 438. voc. *bureau.*

In this ſenſe, we ſay the *board* of works, *board* of ordnance, *board* of treaſury, and the like.

BOARD *of green cloth*, a court of verge for the king's houſhold, compoſed of the lord ſteward, treaſurer, comptroller, maſter, and cofferer of the houſhold, with clerks, *&c.* New View of Lond. §. 5. T. 2. p. 641.

BOARD *of trade*, *bureau de commerce*, an office in the French polity, eſtabliſhed in 1723, compoſed of eight perſons of experience in commerce and navigation, where all papers and propoſals relating to the improvement of trade are examined, and all difficulties which occur in affairs of navigation and commerce, either within or without the realm, are diſcuſſed. *Savar.* Dict. Comm. Suppl. p. 91. voc. *bureau.*

BOARD, or *aboard*, in the ſea-language, is uſed in ſpeaking of things within a ſhip, or other veſſel. *Fæſch.* Ing. Lex. p. 111, ſeq. voc. *bort.* *Aubin.* Dict. Mar. p. 101, ſeq. voc. *bord.* *Manwayr.* Seam. Direct. in voc.

Hence, to go *aboard* ſignifies to go into the ſhip; to heave over *board*, is to throw a thing out of the veſſel into the ſea; to ſlip by the *board*, is to ſlip down by the ſhip's ſide; *board* and *board*, is when two ſhips come ſo near as to touch one another, or when they lie ſide by ſide.

A ſhip is ſaid to make *a good board*, when ſhe advances much at one tack.

Weather board is that ſide of a ſhip which is to windward.

To *board a ſhip* is to enter an enemy's ſhip in a fight. *Guill.* Gent. Dict P. 3. in voc. See BOARDING.

To *make a board*, or, as it is otherwiſe expreſſed, *to board it up* to a place, is to turn to windward; which is done ſtanding ſometimes one way, ſometimes the other, to reach a place to the windward. In which it is to be noted, that the farther you ſtand off on one point of the compaſs, the better *board* you will make; and that it is better making *long boards* than ſhort ones, if you have ſea-room. A *long board* is when you ſtand a great way off before you tack or turn; a *ſhort board* is when you ſtand off a little; a *good board* is when we have got up much to windward; for ſometimes we take a great deal of pains, and get little, either by reaſon of a current or tide, that may take her on the weather-bow; or by reaſon of a head-ſea, which may drive her to leeward, and hinder her way; or becauſe the ſhip may be a leeward ſhip. Sometimes again, when it is a ſmooth ſea, a current under the lee-bow, and a good ſhip by a wind, ſhe will get a point or two more in the wind than we expect. But note, that a croſs-ſail ſhip in a ſea cannot make her way nearer than ſix points, unleſs there be a tide or current ſetting to windward.

To leave a land on *back-board*, is to leave it a-ſtern or behind; the *back-board* being that which, in boats or ſhips, we lean our backs againſt. *Manwayr.* loc. cit.

BOARDING *of a ſhip*, an attack made to take her, by entering men on her decks. When two ſhips fight, the defendant may chuſe whether the other ſhall board him, except in the quarter, which is a bad place to board; for that men can worſt enter there, in reſpect it is the higheſt part of the ſhip's hull, and that there are only the mizen-ſhrouds to enter by; as alſo for that ſhips are hotteſt there, and men being entered, can do little good, and are eaſily ſcoured off with muſkets from the cloſe-fights. *Manwayr.* Seam. Direct. in voc.

In order to *board* a ſhip, it is beſt to bear directly up with her, and cauſe all your ports to leeward to be beat open, and bring as many guns from the weather-ſide thither as you have ports for; and then lay the enemy's ſhip on board loof for loof, and order your tops and yards to be manned and furniſhed with neceſſaries, and let all your ſmall-ſhot be in a readineſs; then charge at once with both ſmall and great, and at the ſame time enter your men in the ſmoke, either on the bow of of the enemy's ſhip, or bring your mid-ſhip cloſe up with her quarter, and ſo enter your men by the ſhrouds: or, if you would uſe your ordnance, it is beſt to board the enemy's ſhip athwart her hawſe; for then you uſe moſt of your great guns, and ſhe only thoſe of the prow. Let ſome of your men endeavour to cut down the enemy's yards and tackle, whilſt others clear the decks, and beat the enemy from aloft; then let the ſkuttles and hatches be broke open with all ſpeed, to avoid trains, and the danger of being blown up by barrels of powder placed under the decks. Thus, your men being in poſſeſſion of the ſails and helm, and the enemy every way ſtowed below the decks, the ſhip is taken, and all lies at your diſcretion. *Botel*, Sea Dial. 6. p. 367, ſeq. *Guill.* Gent. Dict. P. 3. in voc.

BOARIA *Lappa*, a name given by the antient Romans to the fruit or rough balls of the common aparine or clivers. Pliny calls this plant ſometimes *lappa*, ſometimes *lappago*; and the fruit by the names of *lappæ boariæ*, or *lappæ caninæ*, and ſometimes *canariæ*.

BOAROLA, or BOARINA, in zoology, the name of a very ſmall bird, deſcribed by Aldrovandus, and ſome others, and ſeeming the ſame ſpecies with the *muſcicapa*, or fly-catcher. See MUSCICAPA.

BOAT (*Cycl.*)—The antients had their *boats* called *cymbæ* [a]; fiſhing *boats* called *lembi* [b]; *boats* formed of ſingle trees cut hollow, called *ſcaphæ* and *alveoli* [c], anſwering to the canow of the modern Indians, *&c.*—[[a] Vid. *Pitiſc.* Lex. Ant. T. 1. p. 627. voc. *cymba.* [b] Id. ibid. T. 2. p. 35. voc. *lembus.* [c] Id. ibid. T. 2. p. 700. voc. *ſcapha.* Item, T. 1. p. 77. voc. *alveolus.*] See CANOW.

Train of BOATS, a number of ſmall veſſels faſtened to each other, aſcending up the Loir in France, by ſails when the wind ſerves; otherwiſe towed by men, ſometimes to the number of ſeventy or eighty to a ſingle rope. *Savar.* Dict. Comm. Suppl. p. 788. voc. *equipes.*

Coach BOATS, *bateaux coches*, more frequently called *water-coaches*, are large covered *boats*, uſed chiefly on the river Seine, for the convenience of paſſengers, and conveyance of all ſorts of goods. *Savar.* Dict. Comm. T. 1. p 299. voc. *bateau.*

Boats belonging to a ſhip of war are, the long-*boat*, the ſkiff or ſhallop, and the barge. *Botel*, Sea Dial. 4. p. 246.

Long-BOAT, called alſo the *ſhip's boat*, is the largeſt and ſtrongeſt *boat* belonging to a ſhip that can be hoiſted aboard of her. It has a maſt, ſail, and oars, as other *boats*; alſo a tiller to the rudder, which anſwers to the helm of a ſhip.

Her thaughts are the ſeats where the rowers ſit; and her thowls the ſmall pins between which the oars are put when they row. *Botel*, loc. cit. p. 247.

A ſhip's *boat* is the very model of a ſhip, and is built in parts in all things anſwerable to thoſe which a ſhip requires, both for ſailing and bearing a ſail; and they bear the ſame names as to all the parts of a ſhip under water, as rake, run, ſtem, ſtern, bow, bildge, *&c.* *Manw.* Seam. Direct. in voc.

Its uſe is to weigh the anchor, bring goods, proviſion, *&c.* to or from the ſhip, and other ſervices as occaſion requires.

The terms uſed in navigating a *boat* are, *to trim the boat*, that is, to keep her even; *to wind the boat*, i. e. to bring her head the other way; *free the boat*, i. e. to fling out the water; *man the boat*, i. e. let ſome men go to row the *boat.* *Guill.* Gent. Dict. P. 3. in voc.

The *boat*'s gang includes thoſe who uſe to row in the *boat*, which are the cockſon and his gang, to whom the charge of the *boat* immediately belongs. *Fend the boat*, i. e. ſave her from beating againſt the ſhip's ſides. *A bold boat* is that which will endure a rough ſea well.

A good *long-boat* will live in any grown ſea, if the water be ſometimes freed, unleſs the ſea break very much. The rope by which it is towed at the ſhip's ſtern, is called the *boat-rope*, to which, in order to keep the *boat* from ſheering, they add another, called a *geſt-rope.*

To ſave the bows of the *boat*, which would be torn out with the twitches which the ſhip under ſail gives it, they uſed to ſwite her, *i. e.* make faſt a rope round by the gunwale, and to that faſten the *boat-rope.* *Manw.* Seam. Direct.

Pleaſure-BOAT among the antients. See THALAMEGUS.

BOAT, *ſcapha*, in ſurgery, a ſpecies of bandage, uſed when the crown of the head and the part between that and the forehead are to be bound. It is likewiſe called *tholus diocleus.* *Caſt.* Lex. Med. p. 654. voc. *ſcapha.* See BANDAGE.

BOAT-*fly*, a water inſect, whoſe back is ſhaped much like the bottom of a *boat*; the hind-legs, which are thrice as long as the fore, aptly enough reſembling a pair of oars. Accordingly, contrary to all other creatures, he ſwims, ſays Mouſet, on his back. *Mouſet*, de Inſect. l. 2. c. 38. *Grew*, Muſ. Reg. Societ. P. 1. §. 7. c. 2. p. 171.

BOATING, a kind of puniſhment in uſe among the antient Perſians for capital offenders.

The manner of *boating* was thus: the perſon condemned to it being laid on his back in a *boat*, and having his hands ſtretched out, and tied faſt to each ſide of it, had another *boat* put over him, his head being left out through a place fit for it. In this poſture they fed him, till the worms, which were bred in the excrements he voided as he thus lay, eat out his bowels, and ſo cauſed his death, which was uſually twenty days in effecting, the criminal lying all this while in moſt exquiſite torments. *Prideaux*, Connect. P. 1. T. 2. p. 368.

BOATSWAIN (*Cycl.*) is the ſame with what the Dutch call *bootſ-man*; the Germans, *bootſ-mann*, or *over bootſ-mann*; and the French, *contre maitre*, or *nocher.* *Fæſch.* Ingen. Lex. p. 110. voc. *bootſ-mann.*

It is he ſets the crew to work by direction of the maſter, and ſuperintends the handling the ſails and boltſprit, caſting or weighing anchor, and the like. *Aubin*, Dict. Mar. p. 271. voc. *contre maitre.* *Ozan.* Dict. Math. p 328.

BOATSWAIN's *mate* is an aſſiſtant of that officer, who has the peculiar command of the long-boat for the ſetting forth of anchors, weighing or fetching home an anchor, warping, towing, or mooring. He is alſo to give an account of his ſtore. *Guill.* Gent. Dict. P. 3. in voc.

This officer is the ſame with what the Dutch called *bootſ-man's mate*;

maet; the Germans, *unter bootſ-mann*; and the French, *boſſeman*, or *ſecond contre maitre*. *Fæſch.* Ing. Lex. p. 110, ſeq. voc. *unter bootſ-mann.* Item. p. 112. voc. *boſſeman.* *Aubin*, Dict. Math. p. 110. voc. *boſſeman.*

BOB *of a pendulum*, the ſame with its ball; except that the former is uſed in ſpeaking of ſhort pendulums, the latter of long ones. *Derh.* Artif. Clockmak. c. 1. p. 4. See PENDULUM, *Cycl.* and *Suppl.*

BOB, in ringing, denotes a peal conſiſting of ſeveral courſes, or ſets of changes.

BOBBING, or BOBBIN, in the manufactory of lace, a little piece of turned wood, whereon thread is wound, to be uſed in the weaving of bone-lace. *Hought.* Collect. T. 2. p. 404. The French alſo give the denomination *bobine* to what among us is more properly called a *ſpool* or *quill* [a]. In which they are alſo followed by ſeveral Engliſh [b].—[a *Savar.* Dict. Comm. T. 1. p. 376. b *Skinn.* Etym. in voc.

BOBBING, among fiſhermen, a particular manner of catching eels different from *ſniggling*.

Bobbing for eels is thus performed: they ſcour well ſome large lobs, and with a needle run a twiſted ſilk through them from end to end, taking ſo many as that they may wrap them about a board a dozen times at leaſt: then they tie them faſt with the two ends of the ſilk, that they may hang in ſo many hanks; which done, they faſten all to a ſtrong cord, and, about an handful and an half above the worms, fix a plummet three-quarters of a pound weight, and make the cord faſt to a ſtrong pole. With this apparatus fiſhing in muddy water, they feel the eels tug luſtily at the bait; when they think they have ſwallowed it ſufficiently, gently draw up the rope to the top, and bring them aſhore. *Cox*, Gent. Recr. P. 4. p. 39. Dict. Ruſt. in voc. *eel-fiſhing.*

BOBISATIO, or BOCEDISATIO, in muſic, denotes the uſing the ſeven ſyllables *bo*, *ce*, *di*, *ga*, *lo*, *ma*, *ni*, to expreſs the ſeven muſical notes, in lieu of the ſix uſual ones introduced by Aretine, *ut*, *re*, *mi*, *fa*, *ſol*, *la*, as has been ſometimes done by the Netherland and German muſicians ſince the beginning of the ſeventeenth century, to avoid the mutation neceſſary in the uſe of theſe latter. *Walth.* Lex. Muſ. p. 97.

BOCA, in ichthyology, the name given by Paulus Jovius to the *boce* of Ariſtotle, called the *boops*, from the largeneſs of its eyes. It is a ſpecies of the *ſparus*, and is diſtinguiſhed by having four parallel longitudinal gold and ſilver-coloured lines on each ſide. Gaza and ſome others call it *voca*; and the Italians *boga*.

BOCAMOLLE, in zoology, a name given by ſome to a very large and long Braſilian fiſh, more uſually called by its Braſilian name, *pira jurumenbeca*. *Willughby*, Hiſt. Piſc. p. 333.

BOCCA, in zoology, a name by which ſome authors have called the fiſh, more commonly known by the name of the *uranoſcopus*, or ſtargazer. *Aldrovand.* de Piſc. p. 258.

It is a ſpecies of the *trachinus*, diſtinguiſhed from the other kinds by having a great number of beards on the lower-jaw. See TRACHINUS.

BOCCA, in glaſs-making, the round hole in the working furnace, by which the metal is taken out of the great pots, and by which the pots are put into the furnace. This is to be ſtopped with a cover made of earth and brick, and removeable at pleaſure, to preſerve the eyes of the workmen from the violence of the heat. *Neri*, Art of Glaſs, p. 242.

BOCCALE, or BOCAL, a liquid meaſure uſed at Rome, anſwering to what among us is called a *bottle*, being equivalent to about an Engliſh quart. Seven *boccales* and an half make the *rubbia*. *Savar.* Dict Comm. T. 1. p. 376.

BOCCARELLA, in the glaſs manufacture, a ſmall hole or apperture of the furnace, one of which is placed on each ſide the *bocca*, almoſt horizontally with it. Out of them the ſervitors take coloured or finer metal from the piling pot. *Merret*, Obſerv. on Neri, p. 242. See BOCCA.

BOCCONIA, in botany, the name of a genus of plants; the characters of which are theſe: the cup is an oval, obtuſe, and hollow ſpatha, conſiſting of two leaves: the flower is compoſed of four extremely narrow petals: the ſtamina are a number of filaments about twelve, which are very ſhort: the antheræ are oblong and erect: the germen of the piſtil is large and roundiſh, but contracted on each ſide: the ſtyle is ſingle, and ſlightly divided into two: the ſtigmata are ſingle: the fruit is of an oval, oblong figure, contracted on each ſide, and ſomewhat compreſſed: it is filled with pulp; and has only one cell, in which there is a ſingle globoſe ſeed. *Linnæi*, Gen. Plant. p. 228. *Plumier*, p. 25.

BOCE, in ichthyology, the name given by Ariſtotle, and many other of the antient Greek writers, to the fiſh commonly called by authors *boops*. It is a ſpecies of the *ſparus*. See BOCA and SPARUS.

BOCKING *herring*, in the Dutch trade, ſignifies the ſame with bloated herring among us. *Savar.* Dict. Comm. Suppl. p 74. See BLOATED.

BOCKLAND, (*Cycl.*) in antient law-writers, denotes a poſſeſſion or inheritance held by evidence in writing.

The word was doubtleſs written *bockland*, quaſi *book-land*, anſwering to free land. It ſtood oppoſed to *folkland*, which was that held without writing. See FOLKLAND and COPYHOLD, *Cycl.*

BODIANO, in zoology, the name of an Amercian fiſh, of the ſize of a perch, with a purple back, and yellow ſides and belly. It is more uſually known among authors by the name *pudiano*. *Ray*, Ichthyogr. p. 339. See the article PUDIANO.

BODTY, in zoology, the name of a ſpecies of American ſnake of the *amphisbæna* kind, called alſo *ibijara*. See IBIJARA.

BODY (*Cycl.*)—According to the Peripatetics, *body* differs from matter, as a part from the whole, or an element from a mixt. *Walc.* Introd. ad Philoſ. l. 2. c. 3. §. 12. p. 241.

Among the mechanical philoſophers, *body* and matter generally denote the ſame thing; yet, on ſome occaſions, they ſeem to diſtinguiſh between them, as when ſpeaking of the poroſity of *bodies*, they ſay, there is but little matter in ſuch a *body*. Vid. Mem. Acad. Scienc. ann. 1709. p. 177.

The Carteſians are great aſſerters of the identity of matter and *body*; yet M. Cordemoy, otherwiſe a retainer of the Carteſian ſcheme, makes a difference between them. *Body*, according to this writer, is indiviſible extenſion, and matter an aſſemblage of ſuch *bodies*, but diviſible. Phil. Tranſ. N° 17. p. 307.

Body generally ſtands contradiſtinguiſhed from ſpirit; though, in Spinoſa's and the Chineſe ſyſtem, this difference is ſet aſide, and *body* and ſpirit ſuppoſed to be the ſame ſubſtance under different modifications. Mr. Hobbs likewiſe affirms ſpirits to be *bodies*, the exiſtence of any ſubſtance not corporeal being rejected by him. *Hob.* of Hum. Nat. c. 11. §. 5. p. 136.

The Chineſe philoſophers reaſon thus: among an infinite number of properties, all equally contained in the nature of being, we are ſometimes affected with its extenſion, mobility, ſolidity, figure, and colour; in which caſe we call it ſimply *body*, or matter. Sometimes we add moving force to the former, which conſtitutes what we call a living being. Sometimes, again, we conſider it as poſſeſſed with ſenſe, will, and underſtanding; in which caſe we allow it a ſoul, mind, or ſpirit. On this footing, the ſeveral properties of being, however different from each other in the impreſſions they make on us, are no-ways different as to their real nature; ſince they all exiſt neceſſarily with an infinity of others, and partake alike of one and the ſame infinite and unalterable exiſtence. *Freret*, in Mem. Acad. Inſcrip. T. 9. p. 364.

The true notion of *body* is hard to frame, and philoſophers are not yet agreed on it; the rather as the purſuit leads to the perplexing controverſy *de compoſitione continui*. *Boyle*, Phil. Work. abridg. T. 2. p. 210.

Some place the eſſence of *body* in ſolidity, or impenetrability; others in weight or gravity; others in extenſion; others in mobility. According to the firſt of theſe, *body* is defined as ſomewhat that perfectly fills a determinate quantity of ſpace or extenſion, ſo as neceſſarily to exclude all other *bodies* from being comprehended within the ſame dimenſions [a]. According to the ſecond, *body* is defined as a thing which is receptive and communicative of motion and progreſſion. Sir. W. Petty repreſents *body* as matter under ſome figure [b]. The Carteſians define it any thing extended every way, or towards all ſides, *res quoquoverſus extenſa* [c]. According to Wolfius, the eſſence of *body* conſiſts in its compoſition, or mechaniſm of parts, from which all its other properties reſult, even extenſion itſelf, ſince we cannot conceive a compounded *body* otherwiſe than as extended, or conſiſting of parts, at leaſt poſſible if not actual ones [d].—[a *Hook*, Lect. Cutl. p. 3. b *Pett.* Diſc. of Duplic. Proport. p. 16. c *Rohault*, Tract. Phyſ. P. 1. c. 7. §. 3. p. 21. *Chauv.* Lex. Phil. p. 151, ſeq. voc. *corpus*. d *Wolf.* Coſmol. §. 140. p. 120, ſeq.]

Dr. Hook places the eſſence of *body* in its mobility, or being receptive and communicative of motion, aſſerting, that, as to thoſe other properties of extenſion or quantity, hardneſs, ſoftneſs, &c. they are not the properties of *body*, but of motion. In reality, according to this author, every ſenſible particle of matter owes the greateſt part of its ſenſible or potential extenſion to its vibratory motion, whatever part thereof it may owe to *body*, according to the common notion thereof. *Hook*, Lect. de Potent. Reſtit. p. 7.

To make this more intelligible, imagine a thin plate of iron, a foot ſquare, moved with a vibratory motion forwards and backwards, flat-ways, the length of a foot, ſo ſwiftly as not to permit any other *body* to enter that ſpace within which it vibrates; this will compoſe ſuch an eſſence as I call, in my ſenſe, a cubic foot of ſenſible *body*, which differs from the common notion of *body*, as this ſpace of a cubit foot, thus defended by this vibrating plate, does not form a cubic foot of iron, or the like, ſolid throughout. *Hook*, lib. cit. p. 8.

A jeſuit, under the name of M. de Ville, in 1680, publiſhed a treatiſe expreſs on Des Cartes's doctrine of the eſſence of *body*; wherein he endeavours to ſhew, that it leads to hereſy and Calviniſm; that ſuppoſing this principle, it appears impoſſible for the *body* of Chriſt to be preſent in the euchariſt, according to the doctrine of the church of Rome; and that Calvin's concluſion muſt be allowed to be good, if Des Cartes's principle be true. Trev. Dict. Univ. T. 2. p. 254. voc. *corps*.

Dr. Hook ſuppoſes all the things in the univerſe, which become the objects of our ſenſes, to be compoſed of *body* and motion. Theſe he conſiders as diſtinct eſſences; but ſuggeſts, that

that they may poſſibly be found to be only different conceptions of one and the ſame eſſence. *Hook*, Lect. Cutl. p. 7.

Bodies, according to Wolfius are, compound beings, out of which, as of parts, the univerſe is framed. *Wolf.* Coſmol. §. 119. p. 108.

Bodies are aggregates of certain ſimple ſubſtances or principles, of which all that is ſubſtantial in them conſiſts. Id. ib. §. 176, 177. p. 143.

The firſt or internal principles of *bodies*, which are not reſolvable into others, are called *elements*. Id. §. 181. p. 145. See ELEMENT and PRINCIPLE, *Cycl.*

Light or fire is found an ingredient in all *bodies*; which ſome indeed, eſpecially among the chemiſts, make to be the ſame with the principle ſulphur. Vid. *Homberg*, in Mem. Acad. Scienc. ann. 1705. p. 122. It. ann. 1706. p. 336. See LIGHT, FIRE, and SULPHUR.

The Peripatetics maintain, that beſides the common matter of all *bodies*, there is ſomething in every ſpecies, which diſcriminates it from every other, and makes it what it is: this they call *form*; which, becauſe all the qualities, and other accidents of the *body*, muſt depend on it, they alſo imagine to be a ſubſtance, and indeed a kind of ſoul, that, united to the groſs matter, with it compoſes a natural *body*. Vid. *Vater.* Phyſ. Exper. P. 1. c. 3. qu. 1. p. 13. *Boyle*, Phil. Work. abridg. T. 1. p. 207.

The affections, properties, or attributes of *body*, are either eſſential and general, as belonging to all *bodies*, and not capable of intenſion or remiſſion; or particular and accidental, which may be abſent, yet the *body* ſtill ſubſiſt, and which may alſo be intended and remitted. Vid *s'Graveſande*, Inſt Phil. Newt. c. 2. n. 9. p. 4. *Junck.* Conſp Chem. tab. 1. p. 6. *Vater.* Phyſ. Exper. P. 1. c. 4 p. 21, ſeq.

The general affections of *body* are extenſion, ſolidity, diviſibility, mobility, figurability, and gravity. *Wolf.* Coſmol. c. 1. p. 108. §. 122, ſeq. *s'Graveſande*, loc cit.

The particular affections are coheſion, hardneſs, ſoftneſs, fluidity, elaſticity, fixity, volubility, denſity, levity, &c. *s'Graveſande*, lib. cit. c. 5 p. 11. n. 32.

Mechanical writers reſolve all the force and activity of *body* into its motion; and all the paſſion of *body* into impreſſions made on it by other *bodies* in motion [a]. Hence *bodies* can only act when in contact, that is, can exert no action at a diſtance, or where they do not impinge [b].—[[a] *Wolf.* Coſmol. §. 133. p. 116. [b] Id. ibid. §. 320, 325.]

The motion of *bodies* is either local or inteſtine. The latter is not ſenſible; but may be inferred from a great number of operations. Dr. Hook does not deſpair, but that, under further helps and improvements of the organ of hearing, we may come at length to diſcern the inteſtine motions of *bodies* by the ear. *Hook*, Poſthum. Works, p 39.

We muſt not, Mr. Boyle obſerves, look on the ſeveral *bodies* which affect our ſenſes, as bare lumps of matter of ſuch bigneſſes and ſhapes: many of them have their parts curiouſly contrived, and moſt of them, perhaps, in motion too. Nor muſt we ſuppoſe the univerſe that ſurrounds us a motionleſs and undiſtinguiſhed heap of matter, but a great engine, which having either no vacuity, or none that is conſiderable betwixt its known parts, the actions of particular *bodies* one on another muſt not be barely eſtimated as if two portions of matter, of their bulk and figure, were placed in ſome imaginary ſpace beyond the world, but as being ſituate in the world, conſtituted as it now is, and conſequently as having their action upon each other liable to be promoted, hindered, or modified by the actions of other *bodies*. *Boyle*, of Forms and Qualities, ap. Phil. Work. abridg. T. 1. p. 203.

The chemiſts call the ſoul the *inviſible body*, as being a medium between the viſible *body* and the inviſible ſpirit. *Rul.* Lex. Alchem. *Johnſ.* Lex. Chym. *Caſt.* Lex. Med. p. 220.

Paracelſus and his followers give the name *body* to that wherein the virtues or powers of things are concealed. *Paracelſ.* Tract. Paragram. tr. 2. *Caſt.* Lex. Med. p. 220. voc. *corpus*.

In which ſenſe, they even ſpeak of the *bodies* of diſeaſes.

Chemiſts ſpeak of the *bodies* of metals; of opening the *body* of gold, that is, diſſolving it.

BODY is alſo uſed figuratively for conſiſtence, ſolidity, and ſtrength.

In this ſenſe, we ſay the *body* of a cloth, wine, &c.

Vintners have divers arts of increaſing or diminiſhing the *body* of wine. Vid. *Charlt.* Myſt of Vint.

Cœleſtial BODIES are by ſome divided into two kinds, ſolid and fluid.

The ſolid are thoſe which appear or are ſenſible to us, either by their own light, or the light of others reflected from them.

The fluid are only different kinds of æther, of which Hook makes ſeveral, ſome more fluid and ſubtile than others. *Hook*, Poſth. Works, p. 165. See ÆTHER, *Cycl.* and *Suppl.*

Spiritual or pneumatic BODY, that which is not palpable or groſs enough for our feeling, as the air, light, &c. *Bacon*, Nov. Org. l. 2. T. 1. p. 363.

Spiritual BODY is alſo uſed, by Hobbs, for the ſubſtance of angels, human ſouls, and the like, which he holds to be natural *bodies*, only too ſubtile to affect the ſenſes [c]. On this principle we have alſo *thinking bodies*, *reaſoning bodies*, &c. which, according to the generality of philoſophers, involve a contradiction [d].—[[c] *Hobbs*, Diſ. of Hum. Nat. c. 11. §. 4. p. 133. [d] *Verdr.* Phyſ. p. 546.]

Simple BODIES, thoſe which are not compounded of others: ſuch are the four elements, and the cœleſtial *bodies*, ſuppoſed to be. Vid. *Ozan.* Math. Dict. p. 139. & *Wolf.* Elem. Coſmol. §. 253. See SIMPLE, *Cycl.*

Mixt BODIES, thoſe formed of a mixture of the elements. Theſe are divided by philoſophers into perfectly and imperfectly mixt. See MIXT, *Cycl.*

Bodies imperfectly mixt are thoſe compoſed of one, two, or a few of the Ariſtotelian elements; ſo as they may eaſily, and without any great alteration, be reſolved into the ſame: ſuch are exhalations, effluvia, ſnow, and other meteors, ſuppoſed to be.

Bodies perfectly mixed are thoſe, to whoſe compoſition moſt or all of the elements concur; ſo as a firmer and more durable concretion ariſes: ſuch are ſtones, plants, and animals. *Verdr.* Phyſ. P. 2. c. 2. §. 5. p 285.

Others reject this diviſion as of little uſe, and divide mixt *bodies* into ſimple and organical mixts.

Inorganical or ſimply mixt BODIES, *mixta ſimpliciter*, are thoſe, whoſe properties, powers, and actions depend ſolely on the temperature of the elements they are compoſed of: ſuch are minerals.

Organical mixt BODIES, thoſe whoſe functions are performed by means of the mechanical ſtructure of the parts: ſuch are vegetables and animals. *Verdr.* ibid.

An organical *body*, according to Wolfius, is that which, by its compoſition or ſtructure, is fitted for ſome determinate action.

In which ſenſe, this philoſopher ſuppoſes all *bodies* to be organical, and ſubdivides them into ſimple and compound. *Wolf.* Coſmol. §. 274. p. 209.

Simple organical BODY, that which is not compoſed of any other organical *bodies* or parts.

Compound organical BODY, that whoſe component parts are organical *bodies*, being compound beings; and every compound being being a machine, it follows, that every *body* is a machine. On which principle is founded the modern mechanical philoſophy. *Wolf.* ibid. §. 75. p. 68, ſeq. & §. 120. p. 108.

We may add, that what the peripatetics call *mixt bodies*, ſome late writers, after Becker and Stahl, call *compound bodies*; which they ſubdivide into aggregates, mixts, and compounds, properly ſo called. *Stahl.* Phyſ. Princ. Chem. P. 1. §. 1. p. 3, ſeq. *Junck.* Conſp. Chem. tab. 1. p. 4, ſeq.

Mixt BODIES, according to theſe writers, are thoſe compoſed merely of principles.

Compound BODIES, thoſe formed immediately of mixts into any determinate ſingle things.

Aggregate BODIES, thoſe formed of ſeveral compounds into any intire parcel or ſyſtem. See AGGREGATE, *Cycl.* and *Suppl.*

Homogeneous BODIES. See HOMOGENEOUS, *Cycl.*

Heterogeneous BODIES. See HETEROGENEOUS, *Cycl.*

Inertia of BODY, that power whereby it reſiſts motion. For as to what is taught by philoſophers, that *bodies* are perfectly indifferent in reſpect of motion or reſt, muſt be take *cum grano ſalis*. A certain degree of force is required to put a *body* at reſt into motion; but a like force is alſo required to ſtop it when moving. Vid. *Wolf.* Coſmol. §. 129. p. 113. It. §. 304, ſeq. *Verdr.* Phyſ. P. 1. c. 1. §. 9. p. 58. See INERTIA.

Action of BODY—The mutual action of *bodies* on each other are by Bacon [e] reſolved into a principle of aſſimilation; by Hook, into congruity and incongruity; by Newton, into that of attraction and repulſion; and by others, into that of affinity [d], or ſimilarity and diſſimilarity, &c.—[[e] *Bacon*, Phil. Work. p. 170. [d] Vid. Mem. Acad. Scienc. ann. 1718. p. 256.]

Soft BODY, that whoſe parts ſlide over each other [e]; or that which readily loſes its former figure by ſome ſtroke or impulſe [f]: ſuch are wax, clay, tallow, &c.—[[e] *Newt.* Opt. p. 370. [f] *Wolf.* Elem. Mechan §. 370. Ed. 1. Ejuſd. Coſmol. §. 384. *s'Graveſande*, Inſt. Phil. Newt. n. 34]

Solid BODY, that whoſe particles cohere, or are ſome way connected to each other. *Wolf.* Elem. Hydroſt. §. 4. See SOLID, *Cycl.* and *Suppl.*

Fluid BODY, that whoſe particles eaſily ſlide over each other, and are of a fit ſize to be agitated by heat [g]; or that whoſe particles do not cohere, but are eaſily put in motion by the ſmalleſt force [h].—[[g] *Newt.* ibid. p. 370. [h] *Wolf.* ibid. §. 3. *s'Graveſ* ibid. n. 35.] See FLUID, *Cycl.* and *Suppl.*

Fixt BODY, that which will endure the force of an intenſe fire, without evaporating, or vaniſhing in ſmoke. See FIXT, *Cycl.*

Volatile BODY, that which riſes by the force of heat. *Quinc.* Pharm. P. 1. §. 14. p. 37, ſeq. Item, p. 41, ſeq. See VOLATILE, *Cycl.* and *Suppl.*

Humid BODY, that which is apt to adhere or ſtick to things. *Newt.* lib. cit. p 370. See HUMIDITY, *Cycl.*

Elaſtic BODY, that whoſe figure being changed by any external force, it returns to the ſame by its own force [i]; that is, according to Sir Iſaac Newton, by a force ariſing from the mutual attraction of its parts [k].—[[i] *Wolf.* Elem. Mechan. §. 371. Ejuſd. Coſmol. §. 380. *Ozan.* Dict. Math. p. 529. [k] *Newt.* Opt. qu. 31. p. 370.] See ELASTIC and ELASTICITY, *Cycl.*

Unelaſtic BODY, that which having aſſumed a new figure by means of ſome external force, retains or continues in the ſame; as wax, clay, or the like.

Rough BODY, *corpus asperum*, that whose surface is beset alternately with eminences and cavities, in contradistinction from a smooth *body*, *Wolf.* Elem. Mechan. §. 646.

Ductile BODIES, those which being stretched, do not break, but extend one way as much as they shrink another. Of these some are hard and malleable, as metals; others soft or viscid, as glues, gums, &c. Mem Acad. Scienc. ann. 1713. p. 268.

Flexible BODIES, those which admit of being bent without breaking: such are thread, wire, fibres, and even glass, when spun very fine. These are contradistinguished from brittle *bodies*. Vid. *Teichmy.* Inst. Phil. Nat. P. 1. c. 14. p. 89. *Quinc.* Pharm. §. 1. p. 6, seq.

Specific gravity of BODIES. See GRAVITY, *Cycl.*

Dense BODY. See DENSITY, *Cycl.*

Rare BODY. See RARE, *Cycl.*

Luminous or lucid BODY, that which emits its own rays, or shines by its own light. *Wolf.* Elem. Opt. §. 9.

Illuminated BODY, that which diffuses the light of another by reflexion, or which shines by borrowed light. Id. ibid. §. 10.

Opake BODY, that which intercepts the rays of light, or prevents their passage through it. Id. ibid. §. 12.

Transparent, diaphanous, or pellucid BODY, that which transmits the rays of light. Id. ibid. §. 12. See the article TRANSPARENCY, *Cycl.*

Human BODY—The height of the human *body* is said to be different in different parts of the day; ordinarily it is an inch more in the morning than at night [a]. The *body* ceases to grow in height, when the bones are arrived at a degree of firmness and rigidity, which will not allow of farther [b] extension by the effort of the heart, and motion of the blood.—[[a] Vid. Phil. Transf. N° 283. p. 87 & 89. [b] *Drake*, Anthrop l. 2. c. 8. p. 263. *Nent.* Fund. Medic. T. 2. P. 1. p. 184.]

BODY, among painters—A colour is said to *bear a body*, when it is capable of being ground so fine, and mixing with the oil so intirely, as to seem only a thick oil of that colour. This do white lead, lamp-black, vermillion, lake, indigo, &c. On the contrary, verditers, smalts, &c. will not imbody with the oil, but be still apt to separate from it in working. *Smith*, Art of Paint. c. 2. p. 28, seq. See COLOUR, *Cycl.* and *Suppl.*

BODY is also used in a figurative sense to denote bread.

It has been disputed among Romanists, whether the *body* of Christ in the eucharist be corruptible, or incorruptible. *Pfaf.* Inst. Hist. Eccles. sæc. 12. c. 3. §. 2. p. 566.

Bertram has a work on the *body* of Christ, wherein the doctrine of transubstantiation is fully refuted. Vid. *Fabric.* Bibl. Med. Æv. Lat. T. 1. p. 661. See TRANSUBSTANTIATION, *Cycl.*

BODY *of a piece of ordnance*, that part comprehended between the center of the trunnions and the cascabel. It ought always to be more fortified than the rest. *Moor*, Tr. of Artill. P. 1. c. 1. p. 3. See CANNON, *Cycl.* and *Suppl.*

BODY *of a pump*, the thickest part of the barrel or pipe of a pump, within which the piston moves.

BODY is also used for an assemblage of several different things collected into one; more particularly a number of persons united into a company or college.

A state or nation, under the administration of one sovereign, is called a *body politic*. All large empires are unnatural, in regard the relation between the head and limbs is here too remote [l]. No *body*, either natural or politic, can long remain sound without exercise [m].—[[l] *Shaftesb.* Char. T. 1. p. 113, seq. [m] *Bacon*, Works, T. 1. p. 247.]

BODY, in speaking of a horse, denotes the chest, but chiefly the flanks.

A horse is said to have a good *body*, when he is full in the flank; a light *body*, when he is thin or slender in the flank. If the last of the short ribs be at a considerable distance from the haunch-bone, though such a horse may have a tolerable *body* for a time, if he be much laboured, he will lose it. It is a general rule never to buy a horse that is light bodied and fiery, because he will presently destroy himself. Dict. Rust. in voc. *body.*

Congruous BODIES, those whose particles have the same magnitude and velocity, or at least harmonical proportions of magnitude and velocity.

Incongruous BODIES, those which have neither the same magnitude, nor the same degree of velocity, nor an harmonical proportion of magnitude and velocity. *Hook*, Lect. Cutl. de Potent. Restit. p. 7.

Hard BODY. See the article HARD.

BODY *of reserve*, in the military art, a draught or detachment of a number of forces out of an army, who are only to engage in case of necessity. *Ozan.* Dict. Math. p. 613. See the article RESERVE, *Cycl.*

BODY, in matters of literature, a name given to a collection of whatever relates to any particular science: thus we say, the *body* of the canon law [n]; the *body* of the Saxon law [o]: King James I. had a design to compile a *body* of the English law.—[[n] *Struv.* Bibl. Jur. c. 13. §. 10. p. 410. Bibl. Ital. T. 12. p. 130, seq. [o] *Struv.* lib. cit. c. 5. §. 5. p. 58.]

The *body* of the civil law consists chiefly of the institutes, pandects, code, and novels [p]. A glossated *body*, *corpus juris civilis glossatum*, is that to which glosses are added in the margin, composed by several lawyers [q].—[[p] *Hartung.* Exerc. Jur. Civ. 1. c. 5. p. 14. *Struv.* Bib. Jur. c. 3. §. 1. p. 21. [q] *Struv.* lib. cit. §. 14. p. 34.]

The chief editions of the *body* of the civil law are the Haloandrian, the Florentine, and the vulgar, which is that of Dion. Gothofred. Id. ib. §. 7. p. 25.

We have also *bodies* of poets, *bodies* of historians, &c. *Baill.* Jugem. des Scav. T. 3. P. 1. p. 440. *Boecl.* Bibl. Crit. c. 4. § 30. p. 135.

Divers other *bodies* are proposed by Mr. Wasse, to lessen the charge and trouble of collecting a multitude of small volumes; as, 1°. Of all the Greek orators, except Demosthenes. 2°. The rhetores, or such as have delivered the rules of writing. 3°. The epistles called Socratic. 4°. The grammarians. 5°. The opuscula mythologica. Bibl. Liter. N° 2. p. 34, seq.

F. Charlevoux the jesuit engaged in making a *body* of history of the new world, including all the countries unknown to the Europeans before the fourteenth century. Mem. de Trev. Jan. 1735. p. 160.

BODY *of doctrine* imports the same with system, *viz.* an orderly collection of principles and conclusions, containing the substance of what is to be said or known on a certain subject. Trev. Dict. Univ. T. 1. p. 257. See SYSTEM, *Cycl.*

In this sense, we say *bodies* of divinity, physic, &c.

The Lutheran church has four *bodies* of doctrine, *viz.* the Philippic, Prutenic, Thuringic, and Julian; all composed in the sixteenth century. *Pfaff.* Inst. Hist. Eccles. sæc. 16. c. 3. §. 6. p. 189. See LUTHERANISM, *Cycl.*

BOEDROMIA, Βοηδρομια, in antiquity, solemn feasts held at Athens, in memory of the succour brought by Ion to the Athenians, when invaded by Eumolpus son of Neptune, in the reign of Erectheus. *Harpocrat.* & *Suid.* in voc.

Plutarch gives another account of the *boedromia*, which, according to him, were celebrated in memory of the victory obtained by Theseus over the Amazons, in the month *Boedromion*. *Plut.* in Thes. *Potter*, Archæol. l. 2. c. 20. p. 374. *Schoet.* Lex. Ant. p. 224. Trev. Dict. Univ. T. 1. p. 1080.

BOEDROMION, Βοηδρομιων, in the antient chronology, the third month of the Athenian year. It consisted of thirty days, and answered to the latter part of our August and beginning of September. See MONTH.

It takes its name from the festival *boedromia*, kept in it. See BOEDROMIA.

BOERHAAVIA, in botany, the name of a plant, which, in the Linnæan system, makes a distinct genus. The characters of this are; that the cup is extremely small, and is only a foliaceous rim surrounding the seed-germen: the flower consists of a single petal, in form of a bell, placed erect, of a quinquangular figure, and divided into five segments, each surrounded with a rim: the stamina are three short filaments; and the antheræ are small: the pistillum has its germen within the receptacle: the style is thread-like, and erect; and the stigma obtuse: the fruit is a capsule, of a turbinated form, ridged on its surface, and containing only one single cell: the seed is single, one only succeeding each flower. The plant is very nearly related to the valerians. *Linnæus*, Gen. Plant. p. 8.

BOG (*Cycl.*)—*Boggy* lands upon levels are generally called *fens* with us; and what our farmers particularly understand by the term *bog-land*, is that sort of *bog* which lies among hills, or between two eminences, and has descent enough to drain it, if the water could get off.

These lands are fed by springs pent up by a weight of earth, which dams in the water, and causes it to spread in the ground so far as the land is soft. These are to be drained only one way, which is, by observing the lowest place where there is a proper descent; then there is to be made a cut in this place deep enough to take all the water out of the *bog*, and this must be somewhat deeper than the springs, or else the labour is all lost.

In rushy grounds, the springs are commonly found to lie within a foot or two of the surface, when any thing of stonyness or small gravel is to be found, and sometimes considerably lower in a hungry gravel; but it is always lower in *boggy* ground than in rushy, and is deep, according to the weight of earth that pens it in. The best way is to begin the drain at the lowest place, and so carry it in towards the spring-head, where there must be made such trenches, either round or cross the *bog*, as shall be found necessary to the draining of it thoroughly.

If it be necessary to make such large and deep drains, that there is danger of the cattle's falling into them, they may be filled up with stones or brick-batts, and these covered with boards, and the turf laid over them. The cavities among the stones will give passage to the water, and the turf will grow at top, as if nothing had been done.

It is a common practice to make a bank with the earth dug out of the trench, laying it on the side; but this is extremely wrong. If the trench be small, the earth dug out of it should be carried away in wheelbarrows; and if large, it should be spread upon the lowest places of the *bog*, where there is room for it. *Mortim.* Husband.

Another excellent method is to make the trenches about a yard deep, and two feet wide, laying at the bottom of them green black-thorn-bushes, and over these a stratum of large and round stones, or at least of such as cannot lie close; over these

lay

lay another ſtratum of thorn-buſhes, and then place a quantity of ſtraw, to keep the dirt from falling in, and filling them up. By this means the trench will be kept open, which otherwiſe will naturally ſwell, and fill up of itſelf. *Plott*, Nat. Hiſt. Oxfordſh. p 254.

Bog *moving*, or *migrating*. See Migrating *bog*.

Bog-*wood*. See Wood *ſubterraneous*.

BOGA, in zoology, a name given by many to a fiſh caught in the Mediterranean, and ſold at market at Naples and Meſſina, called among authors *boops*. It is a ſpecies of the *ſparus*. See Boops and Sparus.

BOHEMIAN *Brothers*, *fratres Bohemi* or *Bohemici*, is an appellation antiently given to the proteſtants of Bohemia.

Laſicius has a treatiſe *de geſtis fratrum Bohemicorum*. Camerarius has alſo given the hiſtory of the *Bohemian brothers*. Trev. Dict. T. 1. p. 1086.

Hæreſiographers derive a large train of ſects from the Bohemians, as the Huſſites, Adamites, Taborites, Calixtins, &c. *Pratæol.* Elench. Hæreſ. p. 102, ſeq. See alſo Bibl. Germ. T. 23. p. 2.

BOHEMICA *Bolus*, *Bohemian bole*. See Bolus *Bohemica*.

BOJA, in antiquity, a collar or chain faſtened about the necks of criminals, to prevent their eſcape. *Pitiſc.* Lex. Antiq. T. 1. p. 284. *Meurſ.* Gloſſ. Barb. p. 111. *Voſſ.* Etym. p. 73. The word is alſo written *boga*, *bodia*, and *baga*. *Du Cange*, Gloſſ Lat T. 1. p. 577.

BOICININGA, in zoology, a name by which the Braſilians call the rattleſnake. See Rattlesnake.

BOIGUACU, in zoology, the name of a ſpecies of ſerpent, called alſo *iiboia*, and by the Portugueſe *cobra de veado*.

This is the largeſt of all ſerpents, growing to twenty-four feet long, and preying on large animals. Maregrave declares, that he ſaw one which had ſwallowed a goat whole. It is very thick in the middle of the body, and ſmaller both at the head and tail. It is of a very beautifully variegated colour. All down the middle of the back there runs a chain of black ſpots, a hand's breadth diſtant from one another, each having a ſpot of white in its middle; and below theſe there are two other rows of ſmaller black ſpots towards the belly. It has in each jaw two rows of very ſharp teeth, white as pearl. Its head is very broad, and, over the eyes, riſes into two protuberances; and in ſome of this ſpecies there are two claws, like thoſe of birds, behind the anus, towards the tail.

This is a very terrible creature, and will ſeize on a man, and either lies in ambuſh in thickets, or on the branches of large trees, from which it throws itſelf on its prey. It has no venom in its bite; and its fleſh is eaten, and eſteemed a great delicacy. *Ray*, Syn. Anim. p. 325.

This ſerpent is common in the Braſils. Authors give ſurpriſing accounts of its ſize: Boritius preſerved the ſkin of one which himſelf had killed, which was twelve yards long; and relates, that there was once a ſerpent of this kind killed in Java, which was thirteen yards and a half long, and had, when killed, a boar in its belly. And De Laet relates, that in the Rio de la Plata, there are ſome of them ſo large, that they will ſwallow a ſtag whole, horns and all. The natives and the Hollanders make them a part of their food. *Grew*, Muſ. Reg. Societ. p. 50.

BOIL, in medicine. See Furuncle.

Gum Boils. See the article Gum.

BOILED or Boyled *Silks*, thoſe which have been put, while in the balls, into hot water, to make them wind or reele the better. *Savar.* Dict. Comm. T. 1. p. 1635. in voc. *cuit*. It. T. 2. p. 1584. in voc. *ſoye*.

In which ſenſe, *boiled ſilk* ſtands oppoſed to *raw*.

BOILER, or Boyler, a large copper veſſel, wherein things are expoſed over the fire to be boiled. Dict. Ruſt. in voc. See the article Boiling.

The *boyler* in the alum-works is a veſſel, in which the liquor is evaporated to a conſiſtence, and is made of lead. The general ſize is about eight feet ſquare, and they contain about twelve tuns each.

They make them in this manner: firſt they lay long pieces of caſt-iron, twelve inches ſquare, as long as the breadth of the *boyler*, and at about twelve inches diſtance from one another. Theſe are placed twenty-four inches above the ſurface of the fire. On theſe maſſy bars of iron they lay, croſs-wiſe, the common flat bars of iron, as cloſe as they can lie together, and then make up the ſides with brick-work. In the middle of the bottom of this *boyler* is laid a trough of lead, wherein they put at firſt about a hundred pound weight of the rock. They uſe Newcaſtle coals in the boiling; and if they find the liquor not ſtrong enough, they add more of the rock at times, as it boils. Phil. Tranſ. N° 142.

BOILERY, or Boilary, in the ſalt-works, denotes a ſalt-houſe, pit, or other place where ſalt is made. Vid. *Collins*, Diſc. of Salt and Fiſh. p. 32. See Salt.

BOILING (*Cycl.*)—We generally annex the idea of a certain very great degree of heat to the *boiling* of liquids; but this does not ſeem to be a connection of nature's making, but of our own. It is reported by many, that a veſſel of tar being ſet over the fire till it *boils*, a perſon may, while it is *boiling*, put his hand into it without any injury; and that the artificers who uſe and prepare this commodity, know this property of it ſo well, that they uſually take off the ſkum from their pots of it, while *boiling*, with no other inſtrument than their naked hands.

Water, in the receiver of an air-pump, when exhauſted, will *boil* without any great heat. The receiver ſhould, for this experiment, be one part full of water, and three empty: in this caſe, the flame of a candle being placed under the veſſel, the water will *boil* violently, while the glaſs itſelf is ſcarce warm; and when the water has been thus kept *boiling* a quarter of an hour, the glaſs will ſcarce be any thing the hotter for it. When the candle is taken away, the water will ſtill continue a great while *boiling*, and when it ceaſes firſt, will renew itſelf again from time to time to a very great ebullition. All the bubbles that riſe out of the water on this occaſion, do not raiſe the mercury in a gage to any ſenſible height.

Spirit of wine, in the ſame manner, *boils* much ſooner in vacuo than the water, and in this ſtate will raiſe the mercury in the gage to an inch higher than its former ſtandard. If the receiver containing it in this *boiling* ſtate, be plunged into cold water, the liquor, inſtead of becoming calm, *boils* more ſtrongly than before. It might be ſuppoſed, that this phænomenon was owing to a periſtaſis; but we have more ground to ſay it came from hence, that the vapours of the ſpirit were more condenſed, and ſo made the receiver more empty, which is ſufficient to make the ſpirit of wine *boil*, tho' it were not hot, as liquors uſually do when put into the engine, and the air exhauſted. In all theſe, and many other caſes, *boiling* is induced without that heat, which is ſuppoſed a neceſſary concomitant of it. Phil. Tranſ N° 122.

Alabaſter, in *boiling*, will ſwell a ſixth or eighth part above the top of the pot. *Hook*, Microgr. p. 41.

Different fluids require different degrees of heat to make them *boil*. Dr. Friend gives a table of the different times required to make ſeveral fluids *boil* by the ſame heat. Vid. *Friend*, Chem. Lect. p. 152.

Water, when once brought to *boil*, is not ſuſceptible of any further degree of heat, however the fire be increaſed. Hiſt. Acad. Scienc. ann. 1703. p. 31. See Water and Heat.

Boiling, in trade and manufactures, is a preparation given to divers ſorts of bodies, by making them paſs over the fire, chiefly in water, or other liquors.

In this ſenſe, we ſpeak of the *boiling* of ſalt [a]; *boiling* of ſugar [b], alum [c], copperas [d], and the like.—[[a] Vid. Phil. Tranſ. N° 53. p. 1064. *Ray*, Collect. loc. Word. p. 142. *Coll.* Salt and Fiſh. p. 32. [b] *Hought.* Collect. T. 2. p. 314. [c] Phil. Tranſ. N° 138. p. 1055. [d] Id. ibid. p. 1058.]

Boiling *of ſilk with ſoap* is the firſt preparation in order to dying it. Thread is alſo *boiled* in a ſtrong lixivium of aſhes, to prepare it for dying. *Savar.* Dict. Comm. T. 1. p. 1634. in voc. *cuire*. See Dying, &c.

Boiling, in the culinary art, is a method of dreſſing meats by coction in hot water, intended to ſoften them, and diſpoſe them for eaſier digeſtion. *Drake*, Anthrop. l. 1. c. 13. p. 79, ſeq. See Digestion, &c.

The effects of *boiling* are different, according to the kinds and qualities of the water. Puls *boiled* in ſea-water grow harder; mutton *boiled* in the ſame becomes ſofter and tenderer than in freſh-water; but taſtes ſaltiſh and bitter. Hiſt. Acad. Scienc. ann. 1710. p. 36.

Boiling *to death*, *caldariis decoquere*, in the middle age, a kind of puniſhment inflicted on falſe coiners, thieves, and ſome other criminals. Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 682. in voc. *caldariis*.

Boiling is alſo a method of trying or eſſaying the goodneſs or falſeneſs of a colour or a dye, by *boiling* the ſtuff in water with certain drugs, different according to the kind or quality of the colour, to try whether or no it will diſcharge, and give a tincture to the water. *Savar.* Dict. Comm. T. 1. p. 1655, ſeq. in voc. *debouille*.

With this intention, red crimſon ſilks are *boiled* with alum, and ſcarlets with ſoap, in quantity equal to the weight of the ſilk.

Boiling *well*, in natural hiſtory. See Spring.

BOIOBI, in zoology, the name of a ſpecies of ſerpent found in America, and called by the Portugueſe *cobra de verd*. It is about an ell in length, and of the thickneſs of a man's thumb, and is all over of a very beautiful and ſhining green. Its mouth is very large, and its tongue black. It loves to be about houſes, and never injures any creature unleſs provoked or hurt; but it will then bite, and its poiſon is very fatal. The natives take as a remedy againſt its poiſon the root *caa apia* bruiſed, and taken in water. *Ray*, Syn. Anim. p. 328. See Caa *apia*.

BIOQUIRA, in zoology, a name by which the natives of ſome parts of America call the rattleſnake. *Ray*, Syn. Anim. p. 291. See Rattlesnake.

BOITJAPO, in zoology, the name of a ſpecies of ſerpent found in America, and called by the Portugueſe there *cobra de cipo*. It grows to ſeven or eight feet long, and to about the thickneſs of a man's arm, and is very ſmall and taper towards the tail. Its back is of an olive colour, its belly yellow, and covered with very regular and elegant triangular ſcales. It feeds on frogs, &c. and is a very poiſonous and fatal kind. *Ray*'s Syn. Anim. p. 327.

BOLE, (*Cycl.*) in natural hiſtory, a kind of earth conſtituting a diſtinct genus of foſſils, and containing many different ſpecies, uſed principally in medicine. The characters of this genus are, that the earths of it are moderately coherent, ponderous, ſoft, not ſtiff or viſcid, but in ſome degree ductile, while moiſt; compoſed of fine particles, ſmooth to the touch, eaſily breaking between the fingers, readily diffuſible in water, and freely and eaſily ſubſiding from it. *Hill*'s Hiſt. of Foſſ. p. 1.

Boles are alſo called *bolar earths*, *terræ bolares* [a]; ſometimes ſimply *bolaria* [b]. The word is formed from the Greek βωλος, *gleba*, on account of the form wherein theſe earths are uſually brought to us, which is that of glebes, or ſmall clods [c].—[a *Vat.* Phyſ. Exper. P. 2. §. 5. c. 3. p. 410. b *Nent.* Fund. Med. P. 3. p. 469. c *Aſſalt.* Not. ad Mercat. Metalloth. p 12. *Voſſ.* Etym. p. 74.]

Boles bear a near affinity to marles, with which ſome will have them to be the ſame. *Stahl.* Phil. Elem. Chem. P. 1. §. 4. p. 75. See MARLE, *Cycl.* and *Suppl.*

Dr. Grew makes them the firſt matter of ſtone, metals, and divers ſalts, into which they are formed by concentration. *Grew*, Diſc. of Mixt. Lect. 2. c. 2. §. 2.

There are divers kinds of *boles* uſed in medicine, chemiſtry, painting, and other arts: ſuch are the Samian *bole*; the Lemnian *bole*, both red and white; the Armenian *bole*; the Hungarian or Toccavian *bole*; to which may be added others of leſs note found in Bohemia, England, Italy, New England, and other places. *Woodw.* Meth. of Foſſil. cl. 2. p. 2. Ejuſd. Nat. Hiſt. Engl. Foſſ. T. 2. p. 2. It. T. p. 63. It. Catal. For. Foſſ. p. 1. *Caſt.* Lex. Med p. 103.

The chief medicinal uſes of *boles* are as aſtingents to ſtop bleedings [d]. They are generally hurtful in fevers [e], eſpecially epidemical ones [f], and externally in the hæmorrhoids [g], *&c.*—[d *Grew*, Muſ Reg. Societ. P. 3. §. 3. c 3. p. 347. *Plott*, Nat. Hiſt. Staff. c. 3. §. 29. *Tourn.* Voyag. lett. 17. p. 94. e *Nent.* Fund. Med. P. 3. p. 469. f Id. ibid. 540. g Id. ibid. P. 2. p. 160.]

Their chemical uſes are for making crucibles, retorts, and other veſſels, and for fixing oils and ſulphurs; with which view they are uſed in the diſtillation of nitre, wax, turpentine, *&c.* to prevent their fuſing and boiling over. *Lancif.* ap. Mercat. Metalloth. p. 37. *Stahl.* loc. cit. See BOLUS.

BOLENIÆ, or BOLÆ, in natural hiſtory, a name given by antient writers to a ſort of ſtones of a roundiſh figure, and marked with ſeveral ridges and lines. They are ſuppoſed to be the ſame with thoſe called *brontiæ* and *ombriæ*, both being imagined to fall from the clouds in time of thunder ſtorms; but they are really no other than a common ſpecies of echinitæ. See BRONTIÆ and ECHINITÆ.

BOLETO *Lichen*, a name given by Mr. Juſſieu to a plant, which partakes of the nature of the moreille and of the liverwort, and which he has accurately deſcribed in the memoirs of the academy of ſciences at Paris. Its root conſiſts of a number of flatted fibres, of the colour of the earth in which they grow, and not eaſily diſtinguiſhed from it: its ſtalk is of a columnar ſhape, and is buried about an inch deep in the earth, and ſtands about four inches above it: it is largeſt at the root, and gradually tapers to the top, and is marked with irregular longitudinal furrows, divided by flat ridges: it is full of many irregular cavities alſo within, and is thence very brittle and very light: the moſt eminent of the ridges, when they are arrived at the top of the ſtalk, become expanded into a ſort of head, which is wrinkled and thin, and is of a fleſh-colour on the upper ſide, and yelloviſh underneath. This much reſembles the common lichen; and the pores of the ſtalk as much reſemble the moreille; whence its name.

The whole plant has the ſmell of the common muſhroom, and when young, has a viſcous liquid contained under the foldings of its head, which finally, when the plant is arrived at maturity, dries into the form of an extremely ſubtle yellow powder, which is the ſeed. Mem. Acad. Par. 1728. See LICHEN.

BOLETUS, in botany, a word uſed by Linnæus to expreſs a genus of funguſes, uſually comprehended by authors under the name of *agarics*, though very different from them. The agarics and *boleti* are both horizontal muſhrooms; that is, they have no pedicle, but grow to trees, *&c.* by their ſide; but the firſt are lamellated underneath, in the manner of the common muſhrooms. The *boleti* are all porous underneath. See the article AGARIC.

The ſpecies of *boletus*, enumerated by Mr. Tournefort, are theſe:

1. The rough, duſky-white, eſculent *boletus*, called the morel. 2. The yelloviſh, rugoſe, eſculent *boletus*. 3. The large orbicular, eſculent, rugoſe *boletus*. 4. The conic eſculent *boletus*. 5. The purple cancellated *boletus*. 6. The yelloviſh cancellated *boletus*. 7. The ſtinking phalloide *boletus*. *Tourn.* Inſt. p. 561.

The *boletus* is a kind of wood-muſhroom, almoſt round, of a white colour, ſpotted with yellow and brown marks; by ſome naturaliſts called *fungus nemorum*. *Voſſ.* Etym. p. 74. *Pitiſc.* Lex. Ant. T. 1. p. 285. *Bradl.* Dict. Bot. in voc.

The *boletus* is the moſt exquiſite of all the fungus-kind. *Fab.* Theſ T. 1. p. 361. *Pitiſc.* loc. cit.

The Roman epicures had it particularly in delight. Nero uſed to call it the food of the gods, *cibus deorum* [a]. The emperor Claudius is ſaid to have been poiſoned with a medicated *boletus*, given him by his wife [b].—[a *Suet.* in Ner. c. 33. b Id. in Claud. c. 44. *Plin.* Hiſt. Nat. l. 22. c. 22.]

BOLINTHOS, in natural hiſtory, a name given by Ariſtotle, and ſome of the other antient Greeks, to the *monops* of Ælian, that is, the *bonaſus*. See BONASUS.

BOLLITO, in the glaſs-works, the calcined materials for glaſs-making; the ſalt and tarſo burnt together, and prepared for running into glaſs. This is commonly called *frit*. *Neri*, Art of Glaſs, p. 7.

BOLLOS, in the mines of Peru, a denomination given to the ingots or bars of ſilver procured there from the ore by the operation of the fire, and uſe of aqua fortis. *Savar.* Dict. Com. T. 1. p. 400.

BOLOGNA *bottles*. See UNANNEALED *bottles*.

BOLONIAN *ſtone*. See LAPIS *Bononienſis*.

BOLSTER, among ſurgeons, a ſoft yielding ſubſtance, either laid under the head, or a broken limb.

BOLSTER is alſo uſed for a ſtuffing, intended to fill out or raiſe a flat, ſinking, or hollow part.

In which ſenſe, *bolſters* are contrived for crooked, bunched, and otherwiſe diſtorted backs, ſhoulders, *&c.*

By a conſtitution made under archbiſhop Burchier, the clergy are forbidden to wear *bolſters* about their ſhoulders, in their gowns, coats, or doublets. The occaſion of the prohibition is variouſly conſtrued: ſome ſay, that *bolſters* came in faſhion in the reign of king Richard III. who being neceſſitated, by his natural deformity, to pad, the courtiers, and even the clergy, did the ſame, out of complaiſance to their prince; ſo that every body, who had the misfortune to be born ſtreight, was obliged to wear a *bolſter* on his ſhoulders to be in the faſhion. Vid. *Johnſ.* Eccleſ. Law, an. 1464. §. 2.

But though it is probably true this practice prevailed in Richard the third's uſurpation, the conſtitution above-cited was made twenty years before that prince took poſſeſſion of the throne; ſo that it cannot be ſaid to have begun in his reign, though it might have been continued in complaiſance to him.

BOLSTERS *of a ſaddle*, in the manege, thoſe parts which are raiſed on the bows, both before and behind, to reſt the rider's thighs, and keep him in a poſture of withſtanding the diſorders which the horſe may occaſion.

Common ſaddles have no *bolſters* behind, or even before. *Guill.* Gent. Dict. in voc.

BOLT, (*Cycl.*) in building, an iron faſtening for a door, moved with the hand, and catching in a ſtaple or notch made to receive it. *Davil.* Explic. Term. Archit. p. 907. voc. *verrouil.* *Felib.* Princ. Archit. l. 1. c. 20. p. 168. Item, p. 535. voc. *verrouil.* *Neve*, Build. Dict in voc.

BOLT *of a lock* is the piece of iron, which entering the ſtaple, faſtens the door; being the part which is moved backwards and forwards by turning the key. *Felib.* Princ. Archit. p. 481. in voc. *pene*. See LOCK and KEY, *Cycl.*

Of theſe there are two ſorts; one ſhuts of itſelf by only putting to the door, and is called a *ſpring-bolt*; the other, which only moves when the key opens or ſhuts it, is called a *dormant bolt*. *Moxon*, Mech. Exer. p. 23.

BOLT is alſo uſed for a large iron pin, having a round head at one end, and at the other a key-hole or ſlit, wherein to put a pin or faſtening, ſerving to make faſt the bar of a door, window-ſhutter, or the like. *Savar.* Dict. Comm. T. 1. p. 440. voc. *boulon*. *Neve*, Build. Dict. in voc.

This is more particularly called a *round bolt*, or *window-bolt*.

BOLTS, in gunnery, are of ſeveral ſorts; thoſe which go betwixt the cheeks of a carriage to ſtrengthen the tranſoms, are called *tranſom-bolts*. The large iron *bolts* or knobs on the cheeks of a carriage, which keep the handſpike from ſliding when it is poiſing up the breech of the piece. The two ſhort *bolts*, that being put one in each end of an Engliſh mortar-carriage, ſerve to traverſe her, are called *traverſe bolts*. The *bolts* that go through the cheeks of a mortar, and, by the help of quoins, keep her fixed at the elevation given her, are called *bracket bolts*. And the four *bolts* that faſten the brackets or cheeks of a mortar to the bed, are called *bed bolts*. *Moor*, Artill. P. 3. c. 1. p. 45. *Guill.* Gent. Dict. in voc.

BOLTS, in carpentry, denote pieces of wood cleft with wedges, in order to be ſplit into laths. *Neve*, Build. Dict. in voc.

BOLT is alſo uſed for a meaſure or certain quantity of canvas, amounting to twenty-eight ells. *Ruſt.* Dict. in voc.

BOLT of ſilk or ſtuff denotes a long narrow piece, of indefinite meaſure. *Kenn.* Gloſſ. ad Paroch. Antiq in voc. *bulter-cloth*.

Peaſe BOLT, in Eſſex, denotes the peaſe-ſtraw, when the grain is thraſhed out of it. Id. ibid.

BOLTED *flour*, that which has paſſed through the bolter. See the article BOLTERS.

BOLTEL, in building, any prominence or jutting out, as of a piece of timber, end of a beam, or the like, advancing beyond the naked of the wall. Vid. *Kenn.* Gloſſ. ad Paroch. Antiq in voc. *bulter*.

BOLTERS, or BOULTERS, a kind of ſieves for meal, having the bottoms made of woollen, hair, or even wire. *Hought.* Collect. T. 1. N° 89. p. 238.

The word ſeems derived from the German *beutel*, a ſieve: whence alſo *beutelen*, to bolt. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *bulter*.

The bakers uſe *bolters* which are worked by the hand; millers have a larger ſort, wrought by the motion of the mill. *Savar.* Dict. Comm. T. 1. p. 375. voc. *bluteau.* See BOLTING.

BOLTING, or BOULTING, (*Cycl.*) the act of ſeparating the flour from the bran, by means of a ſieve or bolter. *Savar.* loc. cit. voc. *bluter.* *Skin.* Etym. in voc. *bolt.* See BOLTER.

BOLTING *cloth*, or BOLTER *cloth*, ſometimes alſo called *bulting cloth*, denotes a linnen or hair-cloth for ſifting of meal or flour. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *bulter.*

BOLTING *mill*, a verſatile engine for ſifting with more eaſe and expedition. The cloth round this is called the *bolter.*

BOLTING, or BOULTING, among ſportſmen, ſignifies rouſing or diſlodging a coney from its reſting place. *Cox*, Gent. Recr. p. 10.

They ſay to *bolt* a coney, *ſtart* a hare, *rouſe* a buck, *&c.*

BOLUC *baſſi*, in the Turkiſh affairs, denotes the chief of a company, or a captain who has the command of an hundred janizaries. Trev. Dict. Univ. T. 1. p. 1102.

BOLUS (*Cycl.*)—The *bolus* is a form much uſed in England, leſs abroad [a]. In general, it may be conſidered as a doſe of an electuary, from which it differs only in conſiſtence, as being ſomewhat ſtiffer, and in that being wrapped up for taking, it needs not to be ground to the nicety of ſmoothneſs required in an electuary. The bolar form obtains chiefly in things of great efficacy, which require their doſes to be nicely adjuſted [b].—[a *Quinc.* Diſpenſ. P. 4. §. 6. p. 629. b Id. Pharm. lect. 16. p. 176, ſeq.]

Boluſes are chiefly denominated from their intentions, as emetic *boluſes*, purgative *boluſes*, aſtringent, anodyne, anti-febrile, alexipharmic, *&c. boluſes.* *Quinc.* Diſpenſ. P. 4. §. 6. p. 629. *Barchuyſ.* Pharm. Synop. p. 43. *Boerh.* Lib. de Matt. Med. p. 63, 94, &c.

Whatever is fit for internal uſe, either by itſelf, or mixed with proper ingredients, and can be reduced into a ſoft coherent maſs, and have a ſufficient quantity in a ſmall doſe, is fit for this form of medicine.

All dry ſubſtances, which operate when exhibited in ſmall doſes, and ſuch as are proper only for forming powders, are called *excipienda*, and cannot make *boluſes* without the addition of ſome liquid, tenacious body; and the ſofter ſubſtances, which are more or leſs thick, as conſerves, electuaries, ſoft extracts, robs, pulps, ſoft confections, thick native and factitious balſams, potable ointments, and ſyrups, are ſome of them naturally of the conſiſtence of a *bolus* themſelves; but the moſt are too thin, and are proper to be mixed with the powders or *excipienda* before-mentioned, to conſtitute this form. Theſe are therefore called *excipientia.*

Liquid ſubſtances, which are to be given in ſmall doſes, ſuch as liquid balſams, oils, ſpirits, tinctures, eſſences, and elixirs, being of themſelves unfit for the form of a *bolus*, are to be received into other ſubſtances, or elſe to receive a proper proportion of other ſubſtances into them, before they can be given in this form.

The choice of the proper ingredients for a *bolus* is regulated by the following conſiderations: a due coheſion, ſoftneſs, and equable mixture, are eſſentially neceſſary to a *bolus*; for this reaſon, dry ſubſtances muſt be put to liquid ones, and liquid ones to dry, to produce the proper conſiſtence; but the thicker electuaries, conſerves, and robs, are themſelves naturally in form of a *bolus.*

Acrid ſubſtances, and ſuch as are offenſive either to the ſmell or taſte, or are of a very viſcid nature, are much more properly exhibited in form of *boluſes* than of powders; ſince their offenſive qualities are by this means concealed. The draſtic purges, and mercurial preparations, are therefore very properly given in *boluſes.*

Balſams, and other ſuch liquid ſubſtances, are beſt mixed into a *bolus* with ſugar, becauſe it not only is the means of their going down eaſily, but it aſſiſts their diſſolution in the ſtomach. The alkaline fixed and volatile ſalts, and all other ſubſtances which ſoon become liquid, are very improperly made ingredients in *boluſes* which are to ſtand any time; ſince they ſpoil the form of the medicine, and looſe their own virtues; and for the ſame reaſon, ſuch ſubſtances as will ferment when brought together, are very improper for *boluſes*, unleſs they are to be ſwallowed as ſoon as made up. To this it may be added, that the number of ingredients in a *bolus* ſhould never exceed three, or at the moſt four.

The doſe of a *bolus* may be extended from a dram to a dram and half, or even to two drams, if the ingredients are very heavy; ſince this quantity of ſuch will lie in as ſmall a compaſs as half as much of the lighter; and indeed, in the *boluſes* made of light ingredients, the quantity never ſhould exceed a dram. If the neceſſary quantity for a doſe cannot be comprehended in this ſize, it is better to divide the doſe into two *boluſes*, to be taken at ſhort intervals, than to load the patient with too large a morſel at once.

The number of *boluſes* made up at once ought only to be one, or at the utmoſt two; but the apothecaries have got an almoſt univerſal cuſtom at preſent of ſending in four at a time; by which means, the laſt which are taken, are uſually too hard to be ſwallowed, and often have loſt all their virtues.

When dry ſubſtances are ordered into the form of a *bolus*, their doſe may be from one ſcruple to two; and the moſt uſual excipient with us is ſyrup, which is left to the diſcretion of the apothecary as to its quantity. When robs, electuaries, or conſerves are uſed, the powders muſt be leſs in quantity; and the common uſe, indeed, of conſerves for *boluſes*, is in the mixture with the mercurial powders, very ſmall quantities of which are ſingle doſes: and it is a general rule, that when the doſe of the powder is ſmall, the excipient muſt be thick, and itſelf nearly of the conſiſtence of a *bolus.* When the doſe of the powder is large, the excipient muſt be no thicker than a ſyrup; and when any thing liquid is added to a *bolus*, as the eſſential oils, *&c.* the quantity in each *bolus* muſt not exceed three or four drops, and that muſt be added firſt to the dry powder, that the proper quantity of the ſyrup only be added afterwards. Some ſort of *boluſes* are naturally of too thin a conſiſtence, and to theſe it is neceſſary, according to the ſeveral natures of their ingredients, to add to them powder of ſugar, liquorice, *&c.*

It is the common cuſtom to wrap up *boluſes* in leaf-gold, or in a wafer; but ſome chooſe neither of theſe, but will diſſolve them in ſome liquor before they are taken. The ſignature on each *bolus* is to expreſs its nature and deſign, the liquor to be taken with or after it, and the regimen to be uſed; and it is highly neceſſary to give a convenient liquor after ſome of them, if we ſuſpect they are made of ingredients which will not eaſily diſſolve in the ſtomach; and this caution is to be regarded principally in thoſe of the terebinthinous and other balſamic kinds.

Boluſes are a form of medicines almoſt univerſally uſeful. All we have to conſider in regard to the taking them is, whether the patient is in a condition to ſwallow a ſolid morſel, or not; and from hence it is eaſily inferred, that they are not to be given in quinſies, or in ulcers of the fauces; apoplexies, epilepſies, and ſyncopes alſo render them very improper. Vid. *Hoffman*, *Quincy*, *James*, *Bate*, &c.

BOLUS *Armena*, *Bole Armenic*, a medicinal earth in frequent uſe in the ſhops, but almoſt always ſophiſticated.

The true hiſtory of this ſubſtance is this: there are three kinds of it; the white, the yellow, and the red, which have been all in repute in different ages of medicine, but of which the laſt only is now thought of. The firſt or white *bole Armenic* was in uſe very early in the world, tho' under a different name, the antients calling it the white *Eretrian earth.* This was uſed in the times of Dioſcorides. The ſecond or yellow was introduced by Galen, and given in the great plague at Rome in his time. The third or red kind is the *bole Armenic* of Avicenna, which we alſo pretend at this time to uſe; but very little of it is to be found genuine among us.

The white *bole Armenic*, called white Eretrian earth by Dioſcorides, to diſtinguiſh it from the grey earth of the ſame place, is a fine, ſoft, and pure earth, moderately heavy, and of a cloſe, compact texture, of a clear, bright-white colour, adhering firmly to the tongue, inſipid to the taſte, and melting, like butter, in the mouth. It burns to a ſtony hardneſs without changing colour, and makes no effervescence with acid menſtrua. This ſeems, of all foſſile ſubſtances, the moſt to approach the nature of pure earth. This is now dug in the eaſtern part of Armenia; but is found in no great plenty, there being only one ſtratum known of it, and that not very thick. This is eſteemed a ſudorific and aſtringent.

The yellow *bole of Armenia*, or the *bole Armenic* of Galen, is a very fine and beautiful earth, of a cloſe, compact texture, naturally of a ſmooth ſurface, and very hard. It is heavier than any other of the yellow earths, and is very ſoft to the touch. It is readily diffuſible in water, and remains long ſuſpended in it, adheres firmly to the tongue, melts ſlowly in the mouth, and is of a very manifeſtly aſtringent taſte. It ferments very briſkly with acid menſtrua, and does not become red on burning. There have been many diſputes about the place whence this excellent drug was brought: Aetius will have it to be from the mountain Bagonoſa in Armenia; Cardan only from the iſland of Samos; and others from other places: but it is found to this day in Armenia, to the north-eaſt of Erzeron, in vaſt abundance. It ſeems the moſt valuable of all the medicinal earths. Experience proves it to be a very noble aſtringent. Many authors extol it highly as a ſudorific and alexipharmic; and Galen reports of it, that it often ſuddenly cured the plague, and that thoſe whom it did not cure, were relieved by no other medicines. It would be extremely worth while to encourage the uſe of this drug, as it may be had in any quantities; for much of it is carried to Germany every year, and ſometimes a little of it ſtraggles to us; and when it does ſo, our druggiſts, not being uſed to a yellow *bole Armenic*, ſell it under the name of *bole* of Blois.

The red *bole of Armenia*, or *bole Armenic* of Avicenna, and of moſt authors ſince his time, is the hardeſt of all the earths of this kind. It is very pure and fine, and in colour is of a ſtrong, but ſomewhat yellowiſh red, much approaching to that of ſaffron in the cake. It is of a ſurface the leaſt ſmooth and gloſſy of all the *boles.* It ſtains the fingers in handling, is not readily diffuſible in water. It adheres firmly to the tongue, and melts but ſlowly in the mouth, and is of a very manifeſtly aſtringent taſte. It does not ferment with acids, and becomes

of a darker colour in burning. Theſe are the ſeveral characters, by which the *Armenian boles* may he diſtinguiſhed from all other earths of the ſame colours. This laſt ſpecies is what we now pretend to uſe. It is found in vaſt plenty in the north-eaſt parts of Armenia, and is ſometimes uſed in Germany; but ſcarce ever ſeen in England. What is called *bole Armenic* in our ſhops being no other than a villainous compoſition of no better materials than common tobacco-pipe-clay, and an ochre known among painters by the name of Spaniſh brown. Vid. *Hill*'s Hiſt. of Foſſ. p. 2, 8, 10.

The *Armenian bole* is uſed in diarrhæas, dyſenteries, catarrhs, &c. Some alſo give it an alexipharmic virtue, efficacious in peſtilential diſeaſes; but its uſe in this intention is at beſt dubious. Vid. *Lang.* Epiſt. Med. l. 1. ep. 18.

The Germans, for the *Armenian bole*, uſe that of Tocay, which Crato holds preferable to it. The French uſe a like clay, found in divers provinces of that kingdom; and the Engliſh fullers earth. *Crat.* Conſil. 79. It. Epiſt. 123, 130. *Caſt.* Lex. Med. p. 108. Phil. Tranſ. N° 1. p. 11. *Boyle*, Phil. Work. abridg. T. 1. p. 59.

BOLUS *Bohemica*, *Bohemian bole*, in the materia medica, a medicinal earth, dug in many parts of the kingdom whoſe name it bears, and uſed there, in Germany, and ſome other countries, as an aſtringent, and a valuable medicine in malignant fevers. It is a very pure and fine *bole*, conſiderably heavy, and of a ſomewhat deep yellow, with a ſlight admixture of rediſhneſs. It is naturally of a ſmooth ſurface, ſomewhat friable, and melting in the mouth, with an unctuous or fatty taſte. It does not efferveſce with acids, and will not burn to a redneſs, as the common clays and ochres readily do in a ſmall fire. *Hill*, Hiſt of Foſſ p. 9.

BOLUS *Gallica*, *French bole*, in the materia medica, an earth dug in many parts of France; but principally in the neighbourhood of Paris, and very much uſed there, and ſometimes in England. It is a very good aſtringent, and much better than the adulterated ſubſtance we commonly call *bole Armenic*. It is an irregular and rude ſubſtance, very heavy, and compact in ſome parts, and looſe and friable in others. It is of a pale-red colour, veined, and ſpotted with a pale yellowiſh-red earth, of a much looſer texture than the reſt, and properly a marle. It eaſily breaks between the fingers, and melts in the mouth, leaving an unctuous ſoftneſs on the tongue. *Hill*, Hiſt. of Foſſ. p. 11.

The apothecary ought to chooſe ſuch as is free from veins, or elſe to pick out the veins before the maſs is powdered, they being not at all of the nature of the reſt; and the beſt is that which melts moſt freely in the mouth, and is perfectly free from ſand.

BOLUS *Orientalis*, in the materia medica, a name by which ſome authors have called the *bole* Armenic. Moſt of them, however, underſtand by this name the red kind, which is the bole of Avicenna, not the yellow one of Galen.

BOLUS *Toccavienſis*, in the materia medica, an earth found in Hungary, reſembling bole Armenic, and of ſimilar virtues. *Crato*, ap. *Boyle*, Works fol. Edit. vol. 1. p. 501.

BOM, in zoology, the name of an American ſerpent, remarkable for its noiſe, which is like the ſound of the word uſed as its name. It grows to a vaſt ſize, and is perfectly harmleſs, never hurting any one. *Ray*, Syn. Anim. p. 329.

BOMARIN, in zoology, a name uſed by ſome for the *hippopotamus*, or river-horſe. *Grew*, Muſ. p. 14.

BOMB (*Cycl.*)—*Bombs* may be uſed without mortar pieces, as was done by the Venetians at Candia, when the Turks had poſſeſſed themſelves of the ditch, rolling down *bombs* upon them along a plank ſet ſloping towards their works, with ledges on the ſides to keep the *bomb* right forwards. They are ſometimes alſo buried under ground to blow up. Milit. Dict. in voc. See CAISSON.

A new ſort of *bombs* of vaſt weight have been lately invented by the French, called *comminges*. *Fæſch* Ing. Lex. p. 108.

Bombs came not into common uſe before the year 1634, and then only in the Dutch and Spaniſh armies. One Malthus, an Engliſh engineer, is ſaid to have firſt carried them into France, where they were put in uſe at the ſiege of Colliouſe, in 1642. *Aubin.* Dict. Mar. p. 99.

The art of throwing *bombs* makes a branch of gunnery, founded on the theory of projectiles, and the laws and qualities of gun-powder. See GUNNERY, PROJECTILE, GUN-POWDER, &c. *Cycl.* and *Suppl.*

Meſſ. Blondel [a], Guiſnee [b], de Reſſons [c], de la Hire [d], and others [e], have written expreſly on the art of throwing *bombs*.—[[a] L'Art de jetter des *bombes*, Par. 1683. [b] Theor. des Project. ou du jet des *bombes*, printed in Mem. Acad. Scienc. an. 1707. p. 181, ſeq. An extract of it is given by Fontenelle, in Hiſt. Acad. 1707. p. 150. [c] Meth. pour tirer les *bombes* avec ſucces, printed in Mem. de l'Acad. Scienc. ann. 1716. p. 101, ſeq. [d] Vid. Mem. Acad. Scienc. ann. 1700. p. 257. Hiſt ibid. p. 183. [e] Bibl. Ital. T. 9. p. 198. *Reyn.* Anal. Demont. l. 8. ſec. 2. §. 321, ſeq.]

Water-BOMB. See WATER-*bomb*.

BOMB-*veſſels* are ſaid to be the invention of M. Reyneau, and to have been firſt uſed at the bombardment of Algiers. Till then, it had been judged impracticable to bombard a place from the ſea. Hiſt. Acad. Scienc. 1719. p 128.

BOMBARD (*Cycl.*)—*Bombards* can hardly be ſuppoſed to have been of metal, nor charged with gun-powder. They were rather a ſort of baliſtæ for throwing ſtones, and were played with ropes. *Froiſſart*, T. 2. c. 103. *Du Cange*, Gloſſ. Lat. T. 1. p. 579.

BOMBARDING, the art or act of attacking a city or fortreſs, by throwing bombs into it, in order to ruin or ſet on fire the houſes and magazines, and do other miſchiefs. *Fæſch.* Ing. Lex. p. 107, ſeq. *Aubin.* Dict. Mar. p. 99. See BOMB, *Cycl.* and *Supp.* *Bombarding* is not reckoned the moſt honourable method of making war, as it rather tends to do miſchief to the inhabitants than to the works.

BOMBASINE, in commerce, a kind of ſilk-ſtuff manufactured at Milan, and thence ſent into France and other countries. *Savar.* Dict. Comm. T. 1. p. 401.

The French alſo uſe the word *bombaſine* for ſtuff made of cotton, more properly called dimitty.

BOMBAST, in matters of diction, a ſtyle too high and pompous for the ſubject and occaſion; or words too big and ſounding for the ſenſe and meaning. *Werenf.* Treat. of Logomach. p. 187. *Bouh.* Man. de bien Penſer, dial. 3. p. 241, ſeq. Item, dial. 4. p. 342, ſeq. See STYLE, *Cycl.*

BOMBAX, a term uſed to ſignify the cotton-tree. See COTTON, *Cycl.*

The word is alſo written *bambax*, and doubtleſs came originally, by corruption, from the word βομβυξ. *Du Cange*, Gloſſ. Græc. T. 1. p. 580, ſeq. See BOMBYX.

BOMBUS, in muſic, an artificial motion with the hands, imitating, in cadence and harmony, the buzzing of bees.

The word is originally Greek, βομβος, where it ſignifies the buz or noiſe of bees, gnats, and the like. *Pitiſc.* Lex. Antiq. T. 1. p. 286. *Voſſ.* Etym. p. 74.

In this ſenſe, *bombus* made one of the ſpecies of applauſe uſed by the antient auditories. Vid. *Suet.* in Ner. c. 20. ap. Hiſt. Acad. Inſcr. T. 1. p. 142.

BOMBUS, in medicine, denotes a murmuring noiſe, as of wind breaking out of a narrow into a larger cavity, frequently heard in the thick inteſtines.

The *bombus* heard in the ears, in acute diſeaſes, is laid down by Hippocrates as a ſign of death. *Hippoc.* Coac. t. 135. ap. *Caſt.* Lex. Med. p. 108.

BOMBYCINUM, in antient writers, properly denoted a ſpecies of ſilk, brought from Aſſyria and the iſland of Cos.

In which ſenſe, it ſtood diſtinguiſhed from *ſericum*, another ſort of ſilk brought from the Indies. Mem. Acad. Inſcr. T. 7. p. 344. See SERICUM.

BOMBYLIUS, in natural hiſtory, the name of the common *humble bee*, of which we have a great variety of ſpecies, many of them very beautiful.

Mr. Ray, in his hiſtory of inſects, mentions no leſs than nineteen kinds, all wholly different from one another. 1. The great black *humble bee*; which is all over black, except that the two laſt rings of the body are rediſh. This ſpecies is very hairy. 2. The ſmall *humble bee*, with a black back, and an orange-coloured tail and belly. 3. The common honey-making *humble bee*. This is of a middle ſize; its back is covered with long rediſh hairs, and it uſually builds its neſt in the graſs. 4. The middle-ſized black *humble bee*, with a yellow down on the middle of its legs. 5. The great black *humble bee*, with a double ſtreak of yellow on the neck, and on the body. 6. The great black *humble bee*, with a yellow tail, and a yellow line on the back. 7. The middle black *humble bee*, with a red tail, and a yellowiſh green line on the ſhoulders. 9. The white-haired great *humble bee*, with a rediſh tail. 10. The middle-ſized black *humble bee*, with three lines of a rediſh yellow on the back. 11. The great black *humble bee*, with a white tail, and three lines of yellow on the back. 12. The middle ſized *humble bee*, with a black ſhining body, and white line round the neck. 13. The middle-ſized *humble bee*, covered all over with rediſh hair. 14. The great black *humble bee*, with a body intirely ſmooth and ſhining. The wings of this ſpecies are of a beautiful bluiſh purple colour. 15. The great black *humble bee*, with a white tail, and with two ſtreaks of yellow on the back. The belly of this ſpecies is wholly black. 16. The great black *humble bee*, with a white tail, and with two rows of a rediſh yellow on its back. The lower variegation is rather a large ſpot than a line. 17. The great *humble bee*, with two lines on its back; the upper of a duſky yellow, and conſiderably broad; the other narrower, and white. 18. The great *humble bee*, with a broad yellow collar, and with the hinder part of the body covered with fine white hairs. 19. The ſmall black *humble bee*, with a white collar, and a white rein round both its ſides, from the breaſt to the tail. *Ray*, Hiſt. Inſ. p. 246. See BEE.

BOMBYLOPHAGES, *humble bee-eater*, in natural hiſtory, the name of a fly of the *tipula* or father-long-legs kind, which is larger and ſtronger than the common kinds; and loving honey, without knowing how to extract it from the flowers, it ſeizes on the humble bees, and deſtroys them, in order to get at the bag of honey which they contain. It is of a blackiſh colour in the body; its head is of a bright red, and the eyes very large and prominent. It is chiefly found in mountainous places.

BOMBYLUS *Teredo*, in natural hiſtory, the name of a ſpecies of humble bee, which eats its way into wood, and there makes its neſt. Mr. Baniſter mentions one of theſe neſts, which he found

found in a beam of a houſe; the timber of which was ſo tough, that a piercer would ſcarce make its way into it. The hole was juſt large enough for the body of the bee. This hole went perpendicularly two inches into the wood, and then turned horizontally, and was of a capacity to hold ſeveral of theſe creatures. There were only three found in it; but others were about the entrance, and many more might have lived comfortably in it.

BOMBYX, in natural hiſtory, a name given by ſome authors to a ſpecies of winged inſect, endowed with a ſting in the manner of the bees and waſps. It is of the ſhape of a waſp, but all over black in colour; it ſtings very ſeverely, always leaving the ſting in the wound. It builds its neſt of clay, which it works up to a very hard conſiſtence, and finally faſtens to a ſtone.

BOMBYX is alſo a name given to the *ſilk-worm*. See the article SILK-WORM.

BOMBYX, βομβυξ, in the antient muſick, a kind of inſtrument, which, in Ariſtotle's time, was made of a reed, *calamus*; and, by reaſon of its length, was difficult to play on. V. *Barthol.* de Tibiis Veterum, c. 4. p. 27.

The word ſeems alſo to have been uſed for a contrivance of horn, for ſhutting and opening the holes of wind inſtruments. *Malc.* Treat. of Muſ. c. 14. §. 2. p. 470.

BOMBYX, in the antient naturaliſts, ſignifies indifferently either ſilk or cotton. *Plin.* Hiſt. Nat. l. 19. c. 1. Mem. Acad. Inſcript. T. 7. p. 339.

According to Montfaucon, *bombyx*, in Pliny and the antients, denoted only ſilk; it being not till the middle age that the word firſt came to ſignify *goſſipium*, or cotton. *Montfauc.* Palæog. Græc. l. 1. c. 2. p. 17. *Voſſ.* Etym. p. 75.

BOMONICA, in antiquity, an appellation given, at Sparta, to the children, who, in the ſacrifices of Diana, ſtrove who ſhould receive the greateſt number of ſtripes with rods, which they ſometimes continued to do the whole day, and even, as Plutarch relates, to death itſelf. V. *Meurſ.* Græc. Ferial. l. 2. Trev. D. Univ. T. 1. p. 1104.

The word is formed from βωμος, altar, and νικη, victory; importing as much as *victor ad aras*, or conqueror at the altars.

BON, or BAN, in botany, a name given by ſome authors to the tree, the kernel of whoſe fruit is the coffee. The fruit is, by the ſame authors, called *buna*. *Park.* Theat. 1622.

BONA *fides*, or BONA-*fide*, is uſed in ſpeaking of things done with an honeſt intention, in oppoſition to thoſe done with a deſign of fraud and deceit, ſaid to be *mala fide*. Stat. 13. Eliz. c. 5. 12 Car. II. c. 18. *Jac.* Law Dict. in voc.

In this ſenſe, we ſay, a grant, a conveyance, *bona fide*. *Wood*, Inſt. Engl. Law, l. 2. c. 3. p. 221.

In many caſes, in the civil law, the *bona fide* of an action excuſes the want of ſome of the cuſtomary forms. *Briſſ.* de Verb. Signif. p. 83. *Calv.* Lex. Jur. p. 119.

Contracts *bonæ fidei*, among civilians, ſtand contradiſtinguiſhed from thoſe *ſtricti juris*; the former being gained by plain honeſty and conſcience, which ſometimes includes ſeveral things not expreſsly mentioned; whereas the latter are reſtrained to the expreſs terms of the deed. *Wood*, l. 3. c. 1. p. 207.

A buyer *bonæ fidei*, is he who really believed the thing to belong to the ſeller at the time when he purchaſed it.

A poſſeſſor *bonæ fidei*, he who is in poſſeſſion of a thing belonging to another, but which he truly believes is his own. *Calv.* Lex. Jur. p. 121.

To be entitled to the benefits of next acceſſion, it is requiſite the perſons have poſſeſſed the thing *bona fide*, or really thought themſelves the proprietors. *Wood*, Inſt. Imper. Law, l. 2. c. 3. p. 161.

Preſcription cannot ariſe from acts done *mala fide*; ſince what was unjuſt in its origin, can never be made juſt by time and continuance. Id. ibid. l. 1. c. 1. p. 105. Item, l. 2. c. 4. p. 164. See PRESCRIPTION, *Cycl.*

Actions BONÆ *fidei*, thoſe wherein, for further light, the judge might take cognizance of things not mentioned between the parties. *Calv.* ubi ſupr. p. 120. *Briſſ.* loc. cit.

Judgment BONA *fide*, that wherein the parties are obliged to pay each other what is due *bona fide*, i. e. juſtly and equitably; and the judge has a power of eſtimating what is thus due to the actor or plaintiff; a power given him by the formula of the Prætor, viz. *Ex fide bona*, *vel quantum æquius melius*.

BONA *gratia*, a phraſe antiently uſed in ſpeaking of divorces, which were brought amicably about for ſome juſt reaſon, with the conſent of both parties, and without any crime on the part of either, as in caſe of old age, diſeaſe, barrenneſs, monachiſm, captivity, or the like. *Calv.* Lex. Jur. p. 120. *Du Cange* Gloſſ. Lat. T. 1. p. 582.

BONASUS, in natural hiſtory, the name of a ſpecies of wild-ox, of the ſize of the tame kind common with us, but of a thicker body, and having on its neck a mane like that of a horſe, and horns very ſhort and crooked, ſo as to be of no uſe to him in fighting.

When he is urged, he is able to throw out his dung a great way, and it is then of a hot and corroſive nature, though not ſo at other times; and this is his method of defending himſelf: a thing hardly credible, as Mr. Ray juſtly obſerves, if we had not inſtances of other animals, which are capable of the like things. *Ray*'s Synop. Quad. p. 71. See the article ELAPHOCAMELUS.

BOND, (*Cycl.*) in maſonry and bricklaying, is when bricks or ſtones are, as it were, knit and interwoven; that is, the joints are not made over, or upon other joints; but reach at leaſt ſix inches, both within the wall and on the ſurface, as the art of building requires. *Davil.* Explic. Term. Architect. p. 662. voc. *Liaiſon*. *Neve*, Build. D. in voc. See MASONRY, *Cycl.*

Among carpenters, when they ſay, make *good bond*, they mean, faſten the two or more pieces of timber well together, either with tenanting, mortiſing, dove-tailing, &c.

BONDMAN, *Bondus*, in the Engliſh law, is uſed for a villain, or tenant in villenage. *Du Cange*, Gloſſ. Lat. T. 1. p. 582. voc. *Bondus*. See VILLAIN and VILLENAGE, *Cycl.*

The Romans had two kinds of *bondmen*; one called *ſervi*, who were thoſe either bought for money, taken in war, left by ſucceſſion, or purchaſed by ſome other lawful acquiſition; or elſe born of their *bondwomen*, and called *vernæ*. Both are called in our law *villains in groſs*, as being immediately bound to the perſon and his heirs. We may add a third kind of *bondmen* mentioned by Juſtinian, called *adſcriptitii glebæ*, or *agricenſiti*; who were not bound to the perſon, but to the ground or place, and followed him who had the land. Theſe, in our law, are called *villains regardants*, as belonging to the manor or place. *Smith*, de Republ. Anglor. l. 9. c. 10.

In the Engliſh as well as Scottiſh laws, thoſe called by the Romans *vernæ*, are ſometimes alſo denominated *nativi*, as being born on the land. *Sken.* de Verb. Signif. p. 22. voc. *Bondagium*. *Spelm.* Gloſſ. voc. *Nativus*, p. 426.

The word is formed from the Saxon *bond*, ſignifying a fetter.

BONDAGE properly denotes a ſtate of ſervitude or ſlavery.

BONDAGE, *Bondagium*, in Engliſh law writers, the ſame with *villenage*. *Du Cang.* Gloſſ. Lat. T. 1. p. 582, ſeq. See VILLENAGE, *Cycl.*

Tenants in *bondage* paid heriots, and did fealty; they were not to fell trees in their own garden, without licence of the lord [a]. The widow of a *tenant in bondage* held her huſband's eſtate, *quamdiu vixerit ſine marito* [b].—[a V. *Kenn.* Paroch. Antiq. p. 456. b Id. ibid. p. 458. It. in Gloſſ. ad voc.]

BONDAGE *by the forelock*, or *Bondagium per anteriores crines capitis*, was when a freeman renounced his liberty, and became ſlave to ſome great man; which was done by the ceremony of cutting off a lock of hair on the forehead, and delivering it to his lord; denoting, that he was to be maintained by him for the future.

Such a *bondman*, if he reclaimed his liberty, or were fugitive from his maſter, might be drawn again to his ſervitude by the noſe; whence the origin of the popular menace, to pull a man by the noſe. *Sken.* de Verb. Signif. p. 22.

BONDUC, in botany, the name given by Plumier to a genus of plants, afterwards characterized by Linnæus under the name of *guilandina*. See GUILANDINA.

BONDUCH, in the materia medica, a name by which many authors have called the Molucca, Marſao, or Bezoar nuts. *Dale*, Pharm. p. 336.

BONE (*Cycl.*) — The origin and formation of *bones* is generally traced from cartilages, which all *bones* are ſuppoſed once to have been [a]; or, according to others, membranous tendons [b]. Some deduce theſe further from gellies [c]; and others from mere fluids [d]; which ſucceſſively ariving at greater and greater conſiſtency, become firſt gelatinous, then tendinous, then cartilaginous, and laſtly bony.—[a *Monro*, Oſteol. p. 34, ſeq. *Veſling.* Synt. Anat. c. 8. p. 124, ſeq. Phil. Tranſ. N° 54. p. 1096. Item, N° 71. p. 2136. Item, N° 81. p. 4023. b *Caſp. Barth.* Specim. Hiſt. Anat. ap. *Chauv.* Lex. Phil. p. 464. voc. *Os*. c *Monro*, loc. cit. d *Chauv.* l. c. p. 14.]

Hence the different ſtates of the *bones* in different ages, ſexes, and the like; which, in children, are found ſoft, moiſt, and cartilaginous; in aged people, hard, dry, and inflexible; the very cartilages in theſe frequently becoming bony. *Blaſ.* Comm. ad Veſling. c. 2. p. 14.

Dr. Niſbet, in his human oſteology, undertakes to demonſtrate, that the notion of all, or any *bones*, being originally cartilaginous, is without foundation in nature.

Some conſider the membrane wherewith the *bones* are lined, as a kind of *perioſteum internum*, if the expreſſion may be allowed; which, according to Havers, takes its origin from the muſcular coat of the medullary artery. Be this as it will, it is contiguous with the whole internal ſurface of the *bones*, and enters the tranſverſe pores, as the external perioſteum does the ſinuoſities of the *bones*; though it does not adhere ſo cloſe thereto as the external does. *Monro*, lib. cit. p. 19.

The *bones* are uſually capped at the ends with cartilages, and to them are alſo annexed ligaments. See CARTILAGE and LIGAMENT, *Cycl.* and *Suppl.*

The doctrine of the *bones* makes a particular branch of anatomy, under the denomination of *oſteology*, or *oſteography*. See OSTEOLOGY, *Cycl.* and *Suppl.*

The formation or geneſis of the *bones* is called *oſſification*, or *oſteogony*. See OSSIFICATION, *Cycl.* and *Suppl.*

A ſyſtem of the ſeveral *bones* of a body, dried, whitened, and joined together in their natural order by art, is called a *ſkeleton*. See SKELETON, *Cycl.* and *Suppl.*

Animals without *bones*, are ſaid to be *anoſtei*; ſuch are all the ſpecies of reptiles, inſects, &c.

Bartholin

Bartholin alſo gives an inſtance of an anoſteus, or boneleſs child, ſhewn at Briſtol, whoſe arms and legs were flexible like a glove. *Barthol.* Act. Med. Hafn. T. 5. Obſ. 103. p. 275. See alſo *Blaſ.* Comm. ad Veſling. c. 2. p. 15.

In a *bone* we conſider divers things; the body, which is the middle or greater part, called by Galen *diaphyſis*; the heads, which are the great protuberances at the ends [c]; the neck, the part immediately under the head; ſupercilia, the extremities of the ſides of a cavity at the end of a *bone*; ridges, the prominent, ſalient parts in the length of the body of the *bone* [f].—[[e] *Gagliard.* Anat. P. 1. c. 1. Obſ. 2. *Heiſt.* Comp. Anat. §. 45, ſeq. [f] *Le Clerc*, Comp. Surg. p. 10.]

Some cavities are formed for articulation, called *cotyles* and *glews*, which contain a mucilaginous humour, ſeparated from the glands of that name; others, not ſubſervient to articulation, receive different names, according to their figures; ſome being called *foramina*, or holes; others, *foſſæ*, or trenches; others, *ſulci*, or furrows, &c. *Heiſt.* lib. cit. §. 56, ſeq. p. 21. *Vat.* Phyſ. Exper. p. 660. *Horn.* Micro. p. 7, ſeq.

Bones, with regard to their form and ſtructure, may be divided into flat or broad, which have thin ſolid ſides, and a thick intermediate ſpongy part; and round, which are more hollow, having thicker and ſtronger walls. *Monro*, lib. cit. p. 26.

Bones may be divided with regard to their conſiſtence, 1. Into rocky, *oſſa petroſa*, which are hardeſt of all; as the temple *bones*, thoſe of the ear, the thigh *bone*, tibia, &c. 2. Soft *bones*, *oſſa mollia*; as the ethmoides, vertebræ, carpus, tarſus, and the epiphyſes. 3. Solid *bones*, *oſſa ſolida*, thoſe without any cavities; as the omoplata, iſchion, the teeth, &c. Trev. Dict. Univ. T. 4. p. 378. voc. *Os*.

The *bones*, in reſpect of their internal ſtructure, may be divided into thoſe which have a notable cavity within, filled with marrow, as the *bones* of the arms and legs; and thoſe which have no ſuch cavity, or marrow, as the *bones* of the ſkull and ribs, &c. *Drake*, Anthrop. l. 3. c. 16. p. 363.

Little *bones* are denominated *officles*. See OSSICLE.

Bones are alſo divided according to the parts wherein they are found, into the *bones* of the head, the feet, the thorax, &c. From their offices, figures, &c. many have likewiſe proper names, as the os ſacrum, jugale, lacrymale, coccendix, pubis, &c. Spongeous *bones*, *oſſa ſpongeoſa*, thoſe full of large pores, formed like honey-combs.

All the *bones* are full of pores [g], except perhaps the teeth: whence it is that ſkeletons imbibe the moiſture of the air, and increaſe in weight, as the atmoſphere does in humidity [h].—[[g] *Boyle.* Phil. Work. Abr. T. 1. p. 448. [h] Id. ibid. T. 2. p. 382, & T. 1. p. 449.]

Bones have their veſſels and circulating fluids, and, in ſhort, the ſame general texture which other parts have; ſolidity, and the ſtronger coheſion of parts, are the only evident diſtinguiſhing characters of the compoſition of *bones*. *Monro*, ap. Med. Eſſ. Edinb. Vol. 5. Art. 24.

There is at leaſt one artery for each *bone*, ſeveral having more, for the conveyance and ſecretion of the medullary matter. After the ingreſs of the artery into the *bone*, it divides into a number of branches, which are diſtributed *quaqua verſum* on the internal membrane [i]. The blood, which remains after the ſecretion of the marrow, is returned by proper veins, ſome of which paſs out of the *bone* either at the ſame hole whereby the artery entered it, or very near it [k].—[[i] *Niewent.* Relig. Philoſ. Cont. 11. ſect. 10. §. 13. p. 114. [k] *Monro*, lib. citat. p. 22. See alſo *Lemery*, in Hiſt. Acad. Scienc. An. 1704. p. 44. *Veſling.* lib. cit. c. 2. p. 16. & *Blaſ.* Comm. ad eund. ibid. *Junck.* Conſp. Phyſiol. Tab. 25. p. 363, ſeq. Hiſt. Acad. Scienc. An. 1700. p. 19.]

The *bones*, Mr. Hales obſerves, do not grow in the joints or articulations, which would deſtroy their motion: but this, we doubt, would be difficult to make out. Phil. Tranſ. N° 398. p. 324.

It is demonſtrable, that of whatever figures *bones* are, and in whatever manner their fibres are diſpoſed, their ſtrength muſt always be in a ratio compounded of their quantity of bony matter, and of the diſtance of their center of gravity from the center of motion. *Monro*, lib. cit. P. 1. p. 28. Med. Eſſ. Edinb. T. 1. Art. 10. p. 112, ſeq. Hiſt. Acad. Scienc. An. 1702. p. 157.

Hence, on a double account, the part of a *bone*, formerly fractured, muſt be ſtronger than any other part of that ſame *bone*, becauſe the diameter is enlarged, and the quantity of matter is increaſed. *Monro*, ib. p. 29.

The human *bones* have been ſometimes known to grow ſoft and flexible, ſo as to bend any way with leſs difficulty than the muſcular parts of a healthy perſon's leg. See Phil. Tranſact. N° 470. ſect. 3.

Bones have ſometimes been found incruſted with ſtone, which has given riſe to accounts of ſkeletons petrified. See Philoſ. Tranſact. N° 477. p. 557, ſeq.

By diſtillation in a retort, the *bones* reſolve into phlegm, ſpirit, volatile ſalt, fetid oil, and caput mortuum, which, calcined in an open fire, leaves a white earth, without any fixed ſalt. This laſt appears to be the proper conſtituent part of the *bones*, ſince, after the other principles are ſeparated, the earth ſtill retains the former ſhape of the *bone*, though it be ſo brittle, that, on the leaſt touch, it moulders into duſt. When moiſtened with a little water or oil, it recovers ſome degree of tenacity again; but cannot be reſtored to its former firmneſs. *Monro*, lib. cit. P. 1. p. 18, ſeq. *Heiſt.* Comp. Anat. §. 41. See alſo *Grew*, Diſc. of Mixt. ſect. 2. c. 3. §. 18.

BONES *microſcopically examined*. On viewing the *bones* with the aſſiſtance of good glaſſes, their ſuperficial part is found to conſiſt of a great many ſmall veſſels, and ſome few of a larger ſize: which laſt, when they come to the ſurface of the *bone*, appear inveſted with either a membrane or a bony ſubſtance, perfectly tranſparent. The inſide of the *bone* is a ſpongy or cellular ſubſtance, conſiſting of long particles, cloſely united; and theſe are compoſed of numberleſs ſmall veſſels, cloſely united, and ſome running lengthways, others taking their courſe toward the ſide of the bony fibres; which, notwithſtanding their great number of apertures, are extremely hard, and lie ſome parallel, and others perpendicular to the length of the *bone*. Mr. Lewenhoeck diſcovered once, in a ſmall bit of a ſhin *bone*, four or five veſſels, with apertures large enough for a ſilk to paſs through, each whereof ſeemed furniſhed with a valve, diſpoſed in ſuch a manner as to let out what was contained in the veſſel, but ſuffer nothing to return into it.

The way to examine the *bones*, is to ſhave off, with a very ſharp penknife, extremely thin pieces, lengthwiſe, croſſwiſe, and obliquely, and theſe from the outſide, inſide and middle of the *bone*, and apply theſe, ſome dry, others moiſtened with water, to the focus of the double microſcope; and thus the veſſels will be ſeen in all directions: but the beſt way of ſeeing the bony ſtructure, is by putting the *bones* in a very clear fire till they are red hot, and then taking them out carefully, you will find the bony cells, though tender, perfect and entire; and, being now quite empty, they may be viewed with eaſe and pleaſure. *Baker's* Microſcope, p. 143.

Diſeaſes of the BONES.—The diſeaſes to which the *bones* are ſubject, are fractures [l], luxations, fiſſures, caries [m], cancers, nodes, rickets, tophi, exoſtoſes [n] or excreſcences [o], &c. To which may be added other leſs uſual diſorders, as preternatural hardneſſes, almoſt to a degree of petrefaction [p], and ſtiffneſſes to the condition of wax [q], unions or coalitions of all the *bones* of the body into one [r], creaking of the *bones* in ſcorbutic caſes [s], worms in the cavities of the *bones* [t], &c. Mr. Petit gives an inſtance of the carnification of the *bones*; wherein, by a change contrary to that of their firſt formation, they were reconverted from *bones* to fleſh, or cartilages [u].—[[l] *Gorr.* Med. Defin. p. 212. voc. κάλαγμα. *Horn.* Microl. ſect. 1. §. 11. p. 32. [m] *Boerh.* Aph. §. 542, ſeq. [n] Mem. Acad. Scienc. An. 1706. p. 318. *Gorr.* lib. cit. p. 145. voc. ἐξοστώσις. Phil. Tranſact. N° 251. p. 140. [o] Vid. *Le Clerc*, Comp. Anat. c. 8. p. 23. ſeq. *Boerh.* Aph. §. 512, ſeq. [p] *Vat.* Phyſ. Exper. P. 2. ſect. 5. c. 6. *Blaſ.* Comm. ad Veſling. c. 2. p. 14. [q] *Barthol.* Act. Med. Hafn. T. 3. Obſ. 24. p. 38. *Blaſ.* ubi ſupra, p. 15. [r] Phil. Tranſ. N° 216. p. 21. [s] Mem. Acad. Scienc. An. 1699. p. 238. [t] Phil. Tranſ. N° 379. p. 429. [u] Mem. Acad. Scienc. An. 1720. p. 311. Item, Hiſt. p. 19.]

The operations practiſed in diſeaſes of the *bones*, are exciſion, amputation, perforation, trepanation, ſetting or replacing, exfoliation, ſhaving, filing, &c. Mem. Acad. Scienc. An. 1718. p. 392. *Horn.* Microl. p. 40, ſeq.

BONES, *wounds of*.—As blunt inſtruments uſually make fractures of the *bones*, ſo ſharp ones, ſuch as ſwords, ſpears, &c. do, properly ſpeaking, ſometimes wound them; and theſe wounds cannot be ſuffered, without a great variety of ſymptoms, which are often very dangerous, according to the ſize and depth of the wound, and the nature of the wounded part. Such ſlight wounds as do not penetrate deep into the *bone*, are often attended with no great danger, eſpecially if proper care be taken in the dreſſing of them, and the injured *bone* be as much as poſſible kept covered with its integuments, from the injuries of the external air. All fat and oily medicines muſt be wholly rejected in wounds of this kind, as great enemies to the *bones*. But when wounds of this kind penetrate deep, and wholly divide the *bone* and its adjacent parts, or violently affect any of the organs neceſſary to life, in the head, neck, back-*bone*, or breaſt, with a puncture or diviſion of the longer veins, arteries, nerves, and tendons of the upper and lower limbs, the danger is always great, the cure difficult, and death too often the conſequence. Petit has adviſed, that, in wounds of the *bones*, if the ſolution be inflicted lengthwiſe, the lips of the wound are to be cloſed and united by the uniting bandage; but if the wounds are very oblique, or wholly tranſverſe, then they are to be joined together by future, and the eighteen-headed bandage; but this is certainly a wrong method in many caſes of this kind. Indeed, in the firſt kind of theſe wounds, and when they are very ſlight, as when the ſkull is not wholly, nor indeed very deeply penetrated, and that without contuſion, nor the brain much hurt, this method may do very well; but when the contrary of theſe mild ſymptoms are the caſe, a very different method of cure is to be attempted; the wound is to be kept open with lint, and not healed up till thoroughly cleanſed; for, by a too ſpeedy cloſure of ſuch wounds, the very worſt ſymptoms, and even death very often, are brought on.

So alſo, in ſlight, oblique, or tranſverſe wounds of the *bones*, the future, or the eighteen-headed bandage, may be uſed with ſafety and ſucceſs; but theſe are ſeldom neceſſary; and oblique wounds of the head, forehead, and cranium, if not violent

ones,

ones, the parts may be much eaſier cloſed and retained by a common bandage and plaſter, than by ſutures with the needle, or the eighteen-headed bandage; but when the divided part hangs down, the ſuture may indeed be neceſſary.

If the *bones* of the fingers are thus wounded, or wholly divided by a ſword, they may be happily cured without the ſuture, by the following method. Firſt, accurately replace the divided *bone*, then ſecure it in its place, by winding round a ſlip of plaſter, and, over this, applying a compreſs dipped in ſpirit of wine, and laying over all little ſlips of paſteboard, by way of ſplints; then binding up the whole with a proper narrow bandage, and hanging the arm in a ſling from the neck. Once, in about three days, the dreſſing is to be removed, and the wound treated with a vulnerary eſſence, and in a month the cure will be perfected.

If either of the *bones* of the cubitus be divided, it uſually is the ulna, as that is moſt expoſed to the ſword in fighting. This caſe requires neither the ſuture nor eighteen-headed bandage; but the wound being cleanſed, is to be treated with ſome vulnerary eſſence or balſam, and with lint dipped in the ſame eſſence; after which are to be laid on, in order, the plaſter, compreſs, and paſteboard ſplints, wetted with ſpirit of wine, which are to be bound round the thick part of the cubitus near the wound, with a long bandage, that, as they dry, they may accommodate themſelves the better to the figure of the part; and, laſtly, the arm is to be ſuſpended in a ſling hung round the neck: after this, the wound is to be dreſſed every day, or every other day, in proportion to the diſcharge, and a cure without the help of the ſuture will be eaſily effected; the ſuture, in ſuch caſes, being not only unneceſſary but pernicious. But if both *bones* are divided, then indeed the eighteen-headed bandage may be neceſſary, and uſed with advantage; but, even in this caſe, the ſuture is much better let alone: for it is always to be avoided, except when perfectly neceſſary, from the dangers of inflammation, convulſions, and other bad ſymptoms that too naturally attend it.

If the thigh-*bone*, however, ſhould be cut with a ſword, in that caſe the bloody ſuture will be of ſervice, and is even neceſſary to cloſe and retain thoſe very ſtrong muſcles: the wound is, in this caſe, to be carefully treated, and the limb laid up in a caſe of ſtraw, as in other fractures: ſo alſo, if the *bone* of the humerus, or arm, ſhould be penetrated with a ſword, that wound alſo ſhould, for the ſame reaſon, be treated by the ſuture; but then it is not to be dreſſed with the eighteen-headed bandage, but with the common long and narrow bandage uſed in other fractures of the arm; the limb is afterwards to be ſupported by a ſhort napkin, faſtened about the neck, by which means the muſcles will be brought to a more ready union, and the cure ſooner perfected.

If it ſhould happen that both *bones* of the cubitus or leg ſhould be divided by a ſword, ſo as to leave the limb hanging only by the fleſh, ſkin and blood-veſſels, which is a caſe that very rarely happens, without wholly amputating the limb, then alſo the ſuture, with the eighteen-headed bandage, are the neceſſary applications; the ſuture, however, can be of no ſervice in a caſe of this kind, when the fleſh and blood-veſſels are divided, and the limb ſo far cut off, as to hang only by a ſkin, eſpecially when the part is ſo conſiderable as the leg or arm; for, in theſe caſes, the limb muſt be taken off, and the ſtump dreſſed as in other amputations.

When the lower jaw is ſo cut by a ſword, that the piece ſeparates, and cannot be otherwiſe retained, then alſo the ſuture may be uſed, adding a proper compreſs, plaſters, and the ſuitable bandage. If the clavicle, or acromion ſcapulæ, ſhould in like manner, be wounded by a ſword, the treatment and bandage are to be of the ſame kind, gently unbending, cleanſing and dreſſing the part either every day, or every other day, as the diſcharge ſhall require, till the cure is perfected. *Heiſter's* Surg. p. 138.

No medicines ſo effectually prevent the corruption of *bones* laid bare, and aſſiſt to cover them ſo ſoon with fleſh, as ointments, balſams, and dreſſing ſeldom, to have the aſſiſtance of the moſt effectual balſam of all, *pus*. With theſe we ſee the extremities of amputated *bones* covered over with fleſh, part of the ſkull, tibia, and other ſolid *bones*, covered in a little time with granulated fleſh, after they had been laid quite bare by wounds made even with bruiſing inſtruments; and likewiſe after their carious ſurface had been cut off, and a complete cure made, without the leaſt exfoliation. *Monro*, in Med. Eſſ. Edinb. Vol. 5. Art. 24.

Boiling and whitening of BONES, is a neceſſary operation in the making of ſkeletons; the method of doing which is thus deſcribed by Simon Pauli. They muſt firſt be well boiled, and afterwards expoſed day and night in the open air for a conſiderable time. The beſt ſeaſon for this operation is in wet ſtormy weather, eſpecially in the months of January, February, March, &c. the air being then impregnated with a nitrous ſalt, which contributes much to give them a bright white colour. If it does not rain, they muſt be ſprinkled with a bruſh dipt in rain-water; and even rubbing them gently with the bruſh may be of uſe.

In expoſing them, care muſt be taken to place them on a fir-board, by no means an oak-one, which ſhould be covered with a ſtratum of ſlate-ſtone, firſt well ſoaked in water; next, fine ſea-ſand is to be ſprinkled on, an inch or two deep. The uſe of the ſand is to imbibe what marrow or fat remains in the *bones* after boiling. Vid. *Barthol.* Act. Med. T. 2. obſ. 18. p. 42. Item, obſ. 113. p. 279.

Extraneous, or preternatural BONES have been found in the meninges [w], the duplicatures of the dura mater [x], between the cerebrum and cerebellum [y], in the matrixes of women, does, hares, cows [z], omentum of ſows [a], &c.—[[w] Hiſt. Acad. Scienc. ann. 1711. p. 36. [x] *Blaſ.* Comm. ad Veſling. c. 14. p. 211. [y] Hiſt. Acad. Scienc. ann. 1713. p. 28. *Pitt*, Nat. Hiſt. Anim. p. 125. [z] *Plott*, Nat. Hiſt. Staff. c. 7. §. 74. Item, §. 63, ſeq. [a] Idem, ibid. §. 56.]

BONES, *in the funeral ſolemnities of the antients.*—Divers uſages and ceremonies relating to the *bones* of the dead, have obtained in different ages; as gathering them from the funeral pile, waſhing, anointing, and depoſiting them in urns, and thence into tombs [b]; tranſlating them, which was not to be done without the authority of the pontiffs [c]; not to ſay worſhipping of them, ſtill practiſed to the *bones* of the ſaints in the Romiſh church. Among the antients, the *bones* of travellers and ſoldiers, dying in foreign countries, were brought home to be buried, till, by an expreſs S. C. made during the Italic war, it was forbid, and the ſoldiers *bones* ordered to be buried where they died: the reaſon was, leaſt the melancholy ſight ſhould diſcourage the people from venturing their lives [d].—[[b] *Salmaſ.* ad Pancirol. P. 1. Tit. 62. p. 335. *Potter*, Archæol. T. 2. l. 4. c. 6. p. 215. *Hought.* Collect. T. 2. p. 366. *Pitiſc.* Lex. Ant. T. 2. p. 341, ſeq. voc. *oſſilegium*. Item, p. 342. voc. *oſſuarium*. [c] *Pitiſc.* T. 2. p. 611. voc. *reliquiæ*. [d] *App.* de Bell. Civ. l. 1. p. 377. *Pitiſc.* Lex. Ant. T. 2. p. 340.]

Antiquaries are divided as to the manner of diſtinguiſhing the *bones* of the deceaſed, from thoſe of the beaſts and ſlaves who were ſacrificed at his funeral, and thrown into the ſame fire: probably it was done by diſpoſing the body of the dead in the middle of the pile, and the others towards the ſides. *Potter*, Archæol. T. 2. l. 4. c. 6. p. 214. See alſo *Pitiſc.* Lex. Ant. T. 2. p. 341.

The Romans had a peculiar deity, under the denomination *oſſilago*, to whom the care of the induration and knitting of the human *bones* was committed; and who, on that account, was the object of the adoration of all breeding women. *Pitiſc.* Lex. Ant. T. 2. p. 341.

BONES, in medicine.—The *bone* of the cuttle-fiſh is uſed as an abſorbent [e] and dentifrice [f]; that of a ſtag's heart as a cardiac [g]; the *bones* of ſnakes [h], and thoſe *bones* ſnatched from hungry bitches [i], have been uſed as philtres to excite love. Some have ranked human *bones*, half putrefied, as a ſpecific againſt the plague [k]. Divers ſorts have alſo been hung about the neck as amulets [l].—[[e] *Junck.* Conſp. Therap. Tab. 16. p. 452. [f] *Quinc.* Diſp. P. 2. §. 567. p. 227. [g] Idem, ibid. §. 444. p. 179. *Junck.* Conſp. Ther. Tab. 20. p. 510. [h] *Potter*, Archæol. l. 4. c. 10. p. 250, ſeq. [i] Idem, ibid. p. 252. [k] *Nent.* Fund. Med. T. 2. P. 3. p. 646. [l] *Caſt.* Lex. Med. p. 550. voc. *os*.]

BONE, in commerce.—The *bone* of the cuttle-fiſh is uſed by goldſmiths for making moulds; thoſe of bullocks for painters black; alſo, in lieu of ivory, for toys and cutlers work; where, if they be leſs white than ivory at firſt, they do not ſo ſoon turn yellow. *Savar.* Dict. Comm. T. 2. p. 933. voc. *os*.

Papin has given a method of turning *bones* to food. Phil. Tranſ. Nº 187. p. 329.

The Turks are ſaid to have applied *bones* to building, and to have built a wall with the *bones* of the chriſtians killed at the ſiege of Philadelphia.

A piece of this *bone* wall was ſent to Dr. Woodward, who found the tradition to be an error; the ſubſtance not being *bone*, but a looſe, ſoft, porous earth, formed in an old aqueduct, now in the wall; or rather, an incruſtation of ſeveral bodies, chiefly vegetable, cemented together by ſparry and ſtony matters, found in the ſpring. *Woodw.* Cat. For. Foſſ. p. 11.

BONE-*ſetting*, the art or act of replacing diſlocated *bones*, and the parts of fractured ones. Vid. Mem. Acad. Scienc. ann. 1718. p. 392.

The Spaniards call their *bone*-ſetters *algebriſts*. Trev. Dict. Univ. T. 1. p. 801. voc. *Bailleul*.

Bone-ſetting, by ſome called συνθλιſμος, *ſynthetiſmus*, includes the four operations of extenſion, coaptation, deligation, and reduction or repoſition. *Bohn.* ap. Caſt. Lex. Med. p. 703. voc. *ſynthetiſmus*.

Fractures and diſlocations of *bones* are ſo frequent, that it ſeems ſurpriſing the ſetting them ſhould ſo long have been left to quacks and perſons ignorant. 'Tis about 150 years ſince the methodical ſurgeons have applied themſelves to this art; which they have carried to a degree of perfection beyond what it ever arrived at among the Greeks.

To a *bone*-ſetter are required a perfect knowledge of anatomy, and mechanics; the former, to inform of the ſtate and ſituation of the fractured or diſlocated *bones*; the latter, to furniſh machines, whereby to reinſtate them. The famous bench of Hippocrates was once held the moſt perfect engine of this kind. See the article AMBE.

M. Petit has contrived another, which not only ſeems more handy and portable, but more powerful, as well as leſs painful to the patient. By means of it, the operator is fully maſter of the powers that pull it, and may proportion them to the ſtrength

and weakneſs of the ſubject, and that of the muſcles or tendons which are to be replaced. Add, that as it is neceſſary, the power which retains the body be equal to that which pulls the diſlocated member: in this machine, the ſame rope which pulls the limb, repels the body; and that the machines hitherto contrived, have only ſerved for luxations of the ſhoulder, and that of the hip, which are made upwards, and where the members are ſhortened; whereas this ſerves for fractures as well as luxations, and not only where the members are ſhortened, but where they are longer. Mem. Acad. Scienc. ann. 1716. p. 330, ſeq.

The replacing a diſlocated *bone* of a horſe, is a work of much difficulty, and requires great force: they uſually caſt the beaſt on a ſoft place, put four ſtrong paſterns on his feet, and draw him from the ground, that his whole weight may, in a manner, reſt on the disjointed member. Some tie a leathern thong about the paſtern, faſtening the other end of it to a yielding ſhrub, and thus whip the creature to make him ſtrain with all his force, till the *bone* fly into its place.

Foſſile, or petrified BONES, are thoſe found in the earth, frequently at great depths [m], in all the ſtrata, even in the bodies of ſtones [n], and rocks [o].—[[m] Vid. *Hook*, Poſthum. Works, p. 313, 436, 438, 444: [n] *Woodw.* Nat. Hiſt. Earth, P. 2. p. 77. [o] Hiſt. Acad. Scienc. ann. 1719. p. 30.]

There are divers ſorts of foſſile *bones*; ſome of a huge ſize, uſually ſuppoſed to be the *bones* of giants [p], but more truly of elephants [q], or hippopotami [r]; other ſmaller, as vertebræ, teeth [s], and the like.—[[p] Vid. *Kirch.* Mund. Subterr. T. 2. l. 8. ſect. 2. c. 4. §. 1. p. 53. *Plott*, Nat. Hiſt. Oxford. c. 5. §. 157. Ejuſd. Nat. Hiſt. Stafford. c. 8. §. 109. Phil. Tranſ. N° 6. p. 111. Item, N° 168. p. 880. Item, N° 261. p. 488. Hiſt. Acad. Inſcript. T. 2. p. 268. [q] Vid. *Kirch.* lib. citat. p. 59. Phil. Tranſ. N° 274. p. 924. Item, N° 327. p. 513. Item, p. 171, 141. Item, N° 234. p. 757. Item, N° 403. p. 457, and p. 497. [r] Mem. Acad. Scienc. ann. 1724. p. 309. [s] *Woodw.* Cat. For. Foſſ. p. 22.]

It has been diſputed whether theſe be really animal ſubſtances, or mineral; that is, ſtones thus figured [t]. Modern naturaliſts generally allow them to be animal, not merely on account of their figure and reſemblance, but of their chemical principles, which are found to be wholly of the animal kind [u]. 'Tis ſuppoſed they were repoſited in thoſe ſtrata at a time when all things were in a ſtate of ſolution, and that they incorporated and petrified with the bodies where they happened to be lodged [w].—[[t] *Kirch.* lib. cit. p. 60, ſeq. *Plott*, Nat. Hiſt. Oxford. c. 5. §. 142, ſeq. p. 127. [u] *Junct.* Conſp. Chem. Tab. 10. p. 283. Item, p. 292. *Verdr.* Phyſ. P. 2. c. 6. §. 8. p. 485. [w] *Woodw.* loc. cit. Item, Nat. Hiſt. Eng. Foſſ. P. 2. p. 3, & p. 111, &c. See alſo, concerning Foſſile *Bones*, Phil. Tranſ. N° 272. p. 883. Item, N° 360. p. 964. *Grew*, Muſ. Reg. Societ. P. 3. ſect. 1. c. 1. p. 254. *Aſſalt.* Not. ad Mercat. Metalloth. Arm. 9. c. 65. p. 327.]

BONE is alſo applied abuſively in ſpeaking of other matters which bear ſome analogy either in reſpect of ſtructure or office, to the *bones* of animals.

In this ſenſe, rocks are ſometimes called the *bones* of the earth [x]. Divers ſpecies of figured ſtones, as the cephalites, cardites, &c. are denominated mineral *bones*, enoſta, oſteocolla [y], &c. Some naturaliſts conſider ſhells as a ſpecies of *bones*. The lobſter, according to Fontenelle, is an animal which carries its *bones* on its outſide [z].—[[x] *Kirch.* Mund. Subterr. l. 2. c. 18. T. 1. p. 108. [y] *Plott*, Nat. Hiſt. Oxford. c. 5. §. 142. *Kirch.* ubi ſupra, l. 8. ſec. 2. c. 4. T. 2. p. 60. [z] Hiſt. Acad. Scienc. ann. 1709. p. 20, & 22.]

Giants BONES. See GIANTS *bones*.

Mammout BONES. See MAMMOUT.

BONE-*fire*. See *Bone*-FIRE.

BONGO *pala*, in botany, a name by which ſome authors have called the tree which produces the nutmeg. *Piſo*, Mant. Arom. p. 173.

BONIFACIA, in botany, a name uſed by John Bauhine, and ſome others, to expreſs the broad-leaved *ruſcus*, or butcher's-broom, commonly called the Alexandrian bay. See the article RUSCUS.

BONITO, in zoology, the name of a fiſh, of the tunny or trachurus-kind, and called by ſome *curvata pinima*. It is a large ſea-fiſh, with a long, broad, and thick body: its eyes are large, as are alſo its gills, and the greater part of its body is free from ſcales. It is a fiſh of very great beauty; its ſkin is ſmooth in the intermediate ſpaces, but it has a number of ſcaly and very elegant lines. One broad ſtreak, covered with ſcales, and of a fine gold-colour, runs along the middle of each ſide, from the gills to the tail. Near the origin of this, there begins alſo another line, which runs parallel with it for two thirds of the length of the body; then it cuts obliquely the former line, and, after this, is again continued parallelly with it to the tail. This ſecond line, from its origin to the place where it cuts the firſt, has a double ſeries of extremely ſmall ſcales, and is very ſmooth; but, from this part to the tail, it has a double row of larger ſcales, and is rough, as if made of a ſeries of the teeth of ſome fiſhes. It is of a greeniſh colour on the back and ſides, and of a ſilvery whiteneſs, and very bright on the belly. It has ſeven fins, two oblong ones behind the gills, two others below theſe in the lower part of the body, one in the middle of the belly, and another oppoſite to it on the middle of the back, and another between that and the head, and from the laſt back and belly-fin. It has others narrow and continuous, reaching to the tail, which is forked. It is an extremely common fiſh in ſome ſeas; our Eaſt-India ſhips uſually fall in with immenſe ſhoals of them. *Willughby*, Hiſt. Piſc. p. 179.

BONNA, in natural hiſtory, a name given by Pliny, and ſome other of the antient Latin writers, to the *bonaſus*. See the article BONASUS.

BONNET (*Cycl.*)—A *bonnet*, among mariners, denotes an addition of a piece to a ſail; ſo that when they ſay, the ſhip has her courſe and *bonnet* abroad, the meaning is, that ſhe has a piece of ſail added to her courſe, that is, to her ſail, which before ſhe had not, or ordinarily has not. *Eotel.* Sea Dial. 4. p. 158, ſeq.

Bonnets are commonly one third of the depth of the ſails they belong to. *Manw.* Seam. Dict. *Aubin.* Dict. Mar. p. 100. What the *bonnet* is to the courſe, that is the drabler to the *bonnet*; being only in uſe when the courſe and *bonnet* are too ſhallow to cloath the maſt: there are alſo *bonnets* in form of ſheaths, being ſmall ſails faſtened by the narrow end to each extremity of the yards, wider at bottom than at top, of good uſe when the ſea is ſmooth. *Aubin*, Dict. Marin. p. 101.

The words are, *lace on the bonnet*, that is, faſten it to the courſe; *ſhake off the bonnet*, that is, take it off the courſe.

BONNY, in mineralogy, a name given by our miners to a bed of ore found in many places in hills, not forming a vein, nor communicating with any other vein, nor terminating in ſtrings, as the true veins do: it is a bed of ore of five or ſix fathom deep, and two, or ſomewhat leſs than that, in thickneſs, in the largeſt ſort; but there are ſmaller, to thoſe of a foot long. They have their trains of ſhoad-ſtones from them, and often deceive the miners with the expectation of a rich lead vein. They differ from the ſquats only in being round beds of ore, whereas thoſe are flat. Philoſ. Tranſact. N° 69. p. 2098. See SQUAT.

BONOSIANI, or BONOSIACI, an antient branch of *Adoptiani*, in the fourth century, denominated from their leader *Bonoſus*, a biſhop of Macedonia. *Prateol.* Elench. Hæret. p. 103.

The *Bonoſiani* were prior to the *Feliciani*, and even to Neſtorius; whence ſome rather conſider them as a branch of Arians. They allowed Chriſt to be no otherwiſe the ſon of God than by adoption. Vid. *Forbes*, Inſtruct. Hiſt. Theol. l. 6. c. 1. *Iſid.* Orig. l. 8. c. 5. *Ireland.* Diſſ. de Felice Urgel, ſect. 1. §. 9. *Vogt.* Bibl. Hiſt. Hæreſ. T. 1. p. 363, ſeq.

BONPOURNIKEL, a denomination given to a coarſe kind of bread uſed in Weſtphalia. See BREAD.

BONS-*hommes*, or BON-*hommes*, a ſort of hermits of St. Auguſtin, found by F. de Paula, of whom there were three colleges in England; the firſt was ſettled at Aſhridge in Bucks, by Edmund earl of Cornwal, in 1283. See *Kenn.* Paroch. Antiq. p. 300, 302. *Steph.* Suppl. to Dugd. T. 2. p. 276, ſeq.

The name is ſaid to have ariſen from Lewis XI. of France, who uſed to call F. de Paula, prior of the order, *le bon homme*. Till then they had been called the *Minimi*, or the order of Grammont. *Menag.* Orig. p. 110. *Skin.* Etym. in voc. *Du Cange*, Gloſſ. Lat. T. 1. p. 584. voc. *Bons-hommes*.

BON-*hommes*, *Boni-homines*, was alſo an appellation given to the Albigenſes, or at leaſt to a ſect in the county of Tholouſe, condemned in 1176. *Du Cange*, Gloſſ. Lat. T. 1. p. 584. voc. *Boni-homines*. Trev. Dict. Univ. T. 1. p. 1109. See the article ALBIGENSES.

BONT-*viſch*, in zoology, the name given by the Dutch to an Eaſt-Indian fiſh, ſeeming to approach to the nature of the European *turdus*, but that it has no ſcales. It is about a foot long, and conſiderably thick; its colour is a duſky brown, and the tail and fins are of this hue, as well as the body, and the whole fiſh is variegated with blue ſpots; its mouth is ſmall, and it is ſtreaked with blue lines under the belly. It is a well taſted and extremely valued fiſh, but it is ſaid to have ſomething poiſonous about it; which is carefully to be taken out. *Ray*'s Ichthyogr. Append. p. 6. See Tab. of fiſhes, N° 64.

BONTIA, in botany, the name of a genus of plants, the characters of which are theſe: the perianthium conſiſts of one leaf, divided into five obtuſely pointed ſegments; it is erect, very ſmall, and permanent; the flower conſiſts of one petal, and is of the labiated kind; the tube is long and cylindric, and the mouth open; the upper lip is erect and emarginated, and the lower is turned back, and lightly divided into three ſegments, and is of the ſame ſize with the upper; the ſtamina are four ſubulated filaments, of the length of the flower, placed under its upper lip, and bent into its ſhape; two of them are ſomewhat ſhorter than the others; the antheræ are ſimple; the germen of the piſtil is oval; the ſtyle is ſimple, and of the length of the ſtamina; and the ſtigma bifid and obtuſe; the fruit is a large *drupa* of an oval figure, and the ſeed a ſingle nut of an oval figure, with only one cell. *Linnæi* Gen. Plant. p. 290.

BONZES, or BONZUS, a name given to the prieſts and religious of China, Japan, and Tonquin.

The *bonzes* are the great adverſaries of the miſſionaries; and to their influence are attributed the perſecutions which have been raiſed in thoſe countries againſt the chriſtians. *Fabric.* Lux. Evang. c. 39. p. 668.

They generally live in a ſort of community, in places apart,

or consigned wholly to them. The island Pou-to, near Chusan, is a famous seat of *bonzes*, being wholly inhabited by them, to the number of 3000, all of the sect of Hoshang, or unmarried *bonzes*.

They live a kind of Pythagorean life, and have not less than 400 Pagods, or temples in this little island. They have also female *bonzes*, a sort of nuns. Phil. Trans. N° 280. p. 1204.

The Japaneze *bonzes* are divided into several sects, which however different among themselves, are agreed in denying the providence of God, and immortality of the soul; doctrines which they however only teach in private to the grandees, having other matters to entertain the populace withal, viz. heaven, hell, and the punishments of another life. They are under a sovereign *bonza*, or high priest; and have several universities, the chief whereof is that of Frenoiama, near Meaco, which is said to have antiently contained no less than 3800 temples and convents of *bonzes*; the direction whereof was only trusted to the nearest relations of the emperor. The *bonzes* belonging to it were masters of a third part of the kingdom of Voma. In time the number of the temples was reduced to 800; and the *bonzes* quitting study for arms, entered Meaco in 1535, burnt the city, and continued other violences till the year 1551, when the emperor attacked their mountain, put a number of them to the sword, and demolished half their temples. *Voss.* de Idol. l. 1. c. 25. *Miræi* Polit. Eccles. l. 2. c. 29. Trev. Dict. Univers. T. 1. p. 1118. seq. *Corn.* Dict. des Arts, T. 1. p. 121. seq.

BOOBY, in natural history, the name of a bird common about Jamaica, and in several other parts of the world. It is described by sir Hans Sloan in his history of Jamaica under the name of *avis fusca anseri bassano affinis*. It feeds upon fish, and dives under water after them, but is often robbed of its prey by another voracious bird, called the *albitrosse*, or the Man of War bird. The frequent contests between these two birds are very diverting, the one being as unwilling to part with the prey it has so dearly earned, as the other resolute to have it; but the *albitrosse* generally succeeds.

BOOKS (*Cycl.*)—The importation of *books* first printed in this kingdom, and reprinted abroad, is prohibited. Vid. Stat. 12 *Georg.* 2. c. 36. Sect. 1.

There was a clause in the statute of the 8th of Q. Anne, ch. 19. impowering the chancellor, and some other great officers of state, to set the price of *books*; but this is now repealed by 12 *Georg.* 2. ch. 36. Sect. 2.

Everlasting-BOOK.—We find in signior Castaguo's account of the asbestus, a scheme for the making a *book*, which from its imperishable nature, he is for calling the *book of eternity*. The leaves of this *book* were to be of the asbestus paper, the covers of a thicker sort of work of the same matter, and the whole sewed together with thread spun from the same substance. The things to be commemorated in this *book* were to be written in letters of gold, so that the whole matter of the *book* being incombustible and everlastingly permanent against the force of all the elements, and subject to no changes from fire, water, or air, must remain for ever, and always preserve the writing committed to it.

He carried this project so far towards execution, as to find a way of making a sort of paper from the asbestus, which was so tractable and soft, that it very well resembled a thin parchment; this, by the same process, was capable of being thickened or thined at pleasure, and in either state equally resisted the fire. The covering of the thinest paper of this kind only makes it red hot and very clear, the fire seeming only to pass thro' it without wasting or altering any part of it. Copper, iron, or any other metal, except gold or silver, exposed to the same degree of fire, in the same thin plates, would be found not to bear it in this manner, but to scale and burn into scoriæ at the surface, tho' this stone does not. Vid. Phil. Trans. N 71.

BOOM (*Cycl.*) is used to denote a cable stretched a-thwart the mouth of a river, or harbour, with yards, top-masts, battling or spars of wood, lashed to it, to prevent an enemy's entering. Such a *boom* M. Chateau Renault had with diligence and art prepared at Vigo, for the defence of the plate fleet lying there in 1702; but how strong soever, it was forced by sir Thomas Hobson. *Guill.* Gent. Dict. P. 3. in voc.

BOOMING, in the sea-language, the application of a *boom* to the sails.

Booming of the sails is never used but in quarter winds, or before a wind. By a wind, studding sails, and *booming* the sails is not proper.

When a ship is said to come *booming* towards us, it imports as much, as that she comes with all the sail she can make. *Manw.* Seam. Dict. in voc.

BOOMITES, a term used by some authors to express a kind of agate, of a very remarkable brightness and transparence, which represents the figures of shrubs, trees, mosses, &c. in the manner of the Dendrachates, a common mocoa-stone. This is however very different in the degree of transparence and brightness.

BOOPHTHALMUS, *Oxeye-stone*, in natural history, a name given by Scheuchzer to a peculiar agate, in which there frequently appear circles of considerable size, resembling some large animals eyes. The ground colour of the stone is grey, and the circles of a deep bluish black. See AGATE.

BOOPS, in zoology, the name of a fish caught in the Mediterranean, and sold at Naples, Messina, and Genoa. It is a small fish, seldom exceeding five inches in length, and very remarkable for the largeness of its eyes. It is of a rounded, not flat shape, and its scales are large. Its back is of a changeable colour, appearing olive-coloured, if viewed from above; and yellow if viewed sideways. Its side-lines are dotted, and are nearer the back than the belly; and below these there are four or five other slender yellow lines on each side. Its belly is white, its mouth is of a moderate size, its teeth are but small, and its back-fin has several of its anterior rays rigid, but not prickly, the hinder ones are all soft. *Gesner*, de Pisc. p. 147. See Tab. of fishes, N° 56.

Beside this, which is the common species of the *Boops*, there are two other kinds, the one commonly called *bouge-ravel*. See BOUGE-*ravel*.

The other a small kind, not above three inches in length, and without scales. Its mouth is small, and its eyes extremely large. Its tail is broad and thick. This in the taste and consistence of its flesh no way differs from the common *boops*.

BOOR-*Worm*, in natural history, a name given by Rumphius to the *solen lignorum*, a sea-worm, which bores the bottoms of ships.

BOOT, (*Cycl.*) a leathern cover or defence for the leg, used on horse-back, both to keep the body more firm, and defend the part from the injuries of the weather.

Boots seem to have been called thus, from their resemblance to a sort of jacks, or leathern bottles, formerly in use, and called *bottæ* [a], in the old French *bouts* [b]. Borel derives the name from the antient French word *bot*, a stump, by reason the *boot* gives the leg this appearance [c].—[a *Menag.* Orig. Franc. b *Kenn.* Gloss. ad Paroch. Antiq. in voc. *Bothagium.* c Trev. Dict. Univ. T. 1. p. 1132.]

It is not long that the *boots* used on horse-back have been called by this name. In the reign of Charles VII. of France, they were called *houses*, hose. *Monstrel.* T. 3. *Casen.* Orig. Franc. p. 26.

Fishing-BOOTS are a thick strong sort used in dragging ponds, and the like.

Hunting-BOOTS, a thinner kind, used by sportsmen.

Jack-BOOTS, a kind of very strong *boots* used by the troopers.

The antient monks usually wore *boots*, that is, the denomination *bottæ*, or *botti*, was given to their buskins. *Du Cange* Gloss. Lat. T. 1. p. 594. in voc. *botta*.

The Chinese have a kind of *boots* made of silk, or fine stuff, lined with cotton, a full inch thick, which they always wear at home. This people are always *booted*; and when a visit is made them, if they happen to be without their *boots*, their guest must wait while they put them on. They never stir out of doors without *boots* on; and their scrupulousness in this point is the more remarkable, as they are always carried in their chairs. Trev. Dict. Univ. T. 1. p. 1132. seq.

There are also chirurgical *boots*, for the cure of vari & valgi, or crooked and distorted legs. *Paræus*, Chirurg. l. 22. c. 11. *Cast.* Lex. Med. p. 535. voc. *Ocrea*.

The *boot* was much used among the antients, by the foot, as well as horsmen. Vid. *Pitisc.* Lex. Ant. Rom. T. 2. p. 309. in voc. *Ocrea*.

The *boot* is the same with what was called by the antient Romans *Ocrea*, in middle-age writers, *greva* [a], *gamberia* [b], *bainberga* [c], *bembarga*, or *benberga*. — [a *Du Cange*, Gloss. Lat. T. 2. p. 654. voc. *Greva*. b Id. ibid. p. 579. voc. *Gamberia*. c Id. ibid. T. 1. p. 433. voc. *Bainberga*.]

The *boot* is said to have been the invention of the Carians [a]: it was at first made of leather, afterwards of brass and iron, and was proof both against cuts and thrusts. It was from this that Homer calls the Greeks *brazen-booted* [b].— [a *Plin.* Hist. Nat. l. 7. c. 56. b *Hom.* Il. 7. ver. 41.]

The *boot* only covered half the leg; some say only the right leg [a]; which was more exposed than the left, it being advanced forwards in an attack with the sword; but in reality it appears to have been used on either leg, and sometimes on both.

Those who fought with darts, or missive weapons, advanced the left leg foremost; so that this only was *booted* [b].— [a *Veget.* l. 1. c. 20. *Pitisc.* Lex. Ant. T. 2. p. 309. seq. b Vid. *Aquin.* Lex. Milit. T. 2. p. 102. voc. *Ocrea*.]

BOOTES (*Cycl.*)—This constellation is called by divers other names, as *Arctophylax*, *Bubulcus*, *Bubulus*, *Thegnis*, *Clamator*, *Vociferator*, *Plorans*, *Plaustri-Custos*, *Philometus*, *Arcas*, *Icarus*, *Lycaon*, and *Arcturus-Minor*; by others, *Septentrio*, *Lanceator*, *Ceginus*; by Hesychius, *Orion*; by others, *Canis-Latrans*; by the Arabs, *Aramech*, or *Arcamech*. Schiller, instead of *bootes*, makes the figure of St. Sylvester; Schickhard, that of Nimrod; and Weigelius, the three Swedish crowns. Vid. *Wolf.* Lex. Math. p. 266.

BOOTH, *Botha*. See the article BOTHA.

BOOTY, the moveables taken from an enemy in war.

Among the Greeks, the *booty* was divided in common among the army, the general only claiming a larger share. Trev. Dict. Univ. T. 1. p. 1294. voc. *Butin*.

By the military discipline of the Romans, spoils taken from the enemy belonged to the republic, particular persons had no right to them. The generals who piqued themselves on their probity, carried it wholly to the public treasury. Sometimes, indeed,

indeed, they divided it among the ſoldiery, to animate them, and ſerve in lieu of reward. But this diſtribution depended on the generals, who were to conduct themſelves herein with great equity and moderation; otherwiſe it became a crime of peculate to lay hands on the pillage, as regularly belonging only to the ſtate. The conſuls Romulius and Veturius, were condemned for having ſold the *booty* taken from the Æqui. Vid. *Liv.* l. 8.

Among the Jews, the *booty* was divided equally between the army and the people, though under the kings a different kind of diſtribution obtained. Numb. c. 31. v. 27.

Among the Mahometans, two thirds of the ſpoils are allowed to the army; the other third to God, to Mahomet and his relations, and to the orphans, the poor, and the pilgrims. *Calmet*, Dict. Bibl. T. 1. p. 321.

Among us, formerly, the *booty* was ſometimes divided among the ſoldiery. If the general be in the field, every body takes what he can lay hold on: If the general be abſent, the *booty* is diſtributed among the ſoldiery, two parts being allowed to the cavalry, and one to the infantry. A captain is allowed ten ſhares, a lieutenant ſix, and a cornet four. *Cruſo*, Milit. Inſtruct. for Caval. P. 1. c. 16. p. 8. See PRIZE.

BOQUINII, a ſort of ſacramentarians, who aſſerted that the body of Chriſt was preſent only in the euchariſt to thoſe for whom he died, that is the elect. *Lindan*, dubit. dial. 2. *Prateol* Elench. Heræt. l. 2. p. 104.

They took the denomination from one *Boquinus*, a Lutheran divine, who was one of the chief of the party.

BORA, in natural hiſtory, the name of the *Buſonite*, in ſome authors; theſe are ſuppoſed by many to be real ſtones, but are truly the teeth of a fiſh.

BORAGO, *Borrage*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, of a rotated form; the cup is divided into ſeveral ſegments, and from it there ariſes a piſtil, which is fixed in the manner of a nail to the middle part of the flower, and ſurrounded with four embryos, which are afterwards changed into as many ſeeds. Theſe are of the ſhape of the head of a ſnake, and are contained in the cup, which becomes much inlarged, till they are perfectly ripe.

The ſpecies of *borrage* enumerated by Mr. Tournefort are theſe: 1. The common blue-flowered *borrage*. 2. The white-flowered *borrage*: and 3. The pale-red flowered *borrage*. *Tourn.* Inſt. Bot. p. 133.

BORAGO, according to Linnæus, is characterized thus: the cup is the perianthium, divided into five ſegments, and remaining when the flower is fallen. The flower is compoſed of a ſingle petal, of the length of a cup, in form of a cylindric tube, with a flat rim divided into five ſegments, and its opening crowned with five obtuſe prominences, with rims round their edges. The ſtamina are five tapering filaments converging towards one another. The antheræ are oblong, and are affixed to the middle of the inner ſide of the ſtamina, and converging, like them, one towards another. The piſtil has four germina, the ſtyle is ſlender and longer than the ſtamina, and the ſtigma is ſimple: the cup becomes larger and inflated, and ſerves in the office of a fruit, containing four roundiſh rough ſeeds, hollowed externally near their extremity, globoſe at the bottom, and inſerted into a hollowed receptacle. *Linnæi* Genera Plant. p. 59. See Tab. of Botany, Claſs 2.

The common *borrage* has long held its rank as a cordial of the firſt claſs, though perhaps it would not be eaſy to ſay on what foundation. Its flowers are of the number of the four cordial ones of the ſhops, and it has been recommended as a medicine of great efficacy in malignant and peſtilential fevers, and againſt the bites of poiſonous animals.

BORAK, among mahometans, a fabulous animal, ſuppoſed to be of a middle kind, between an aſs and a mule, whereon their prophet was carried in his nocturnal flight from Jeruſalem into the Heavens.

This animal, the Arabs called *Al Borak*. q. d. ſhining. The night when the journey was performed is called *Leilat al Meerage*, i. e. the night of aſcenſion; and the flight itſelf *Al Meſra*; concerning which, there are a multitude of traditions. *D' Herbel.* Bibl. Orient. p. 211. voc. *Borak*.

BORASSUS, in botany, the name of a genus of plants deſcribed by Linnæus, and called in the Hortus Malabaricus *ampana*, and *carimpana*. The characters are theſe: The male and female flowers grow on ſeperate plants, and give the plant ſuch a different figure, that they are called by the two names before mentioned: the male being the *ampana*, and the female the *carimpana*. The male, or *ampana*, has for the cup of its flower, the whole compound ſpatha, which is amentaceous and imbricated: the flower is divided into three ſegments, the petals being hollowed and of an oval figure: the ſtamina are ſix thick filaments, and the antheræ are thick and ſtriated. In the female, the cup is the ſame as in the male, but the petals of the flower, which is divided into three parts, in the manner of the male, are very ſmall, of a roundiſh figure, and remain when the piſtil, &c. fall off. The germen of the piſtil is roundiſh; the ſtyles are three in number and ſmall, and the ſtigmata are ſimple: The fruit is a roundiſh obtuſe berry, of a rigid ſtructure, and containing only one cell: The ſeeds are three in number, and are of an oval compreſſed figure. Vid. *Linnæi* Gen. Plant. p. 514.

BORATELLO, in zoology, a name given by ſome authors to the eel while ſmall, and erroneouſly ſuppoſed a different ſpecies from the common eel.

BORAX *(Cycl.)*—The word *Borax* is formed from the modern Greek, βοραχιον; and that apparently from the Arabic, *bauracon*, nitre, as being reputed a ſpecies of that ſalt [e]. The antient Greeks called it Χρυσε Κολλα, q. d. glue of gold; the Romans *chryſocolla* & *ſanterna*; the Arabs *tincar* or *tincal* [f]. —[[e] *Vater*. Phyſ. Exper. P. 2. Sec. 5. c. 4. p. 240. [f] *Mercat*. Metalloth. Arm. 2. c. 8. p. 43. ſeq. *Aſſalt*. Not ad Eund. p. 44. *Du Cange* Gloſs. Gr. T. 1. in voc. βοραχνη.]

This ſalt is naturally found in a fluid ſtate, ſuſpended in certain waters, and diſcoverable in them by a ſweetiſh mixt with a bitteriſh and brackiſh taſte: it is readily ſeparable by evaporation, and appears where ſeparated, in a ſolid, bright and tranſparent form, and in large and ſomewhat regularly figured bodies, affording, on a nice ſolution and evaporation, octohædral cryſtals. *Hill*'s Hiſt. of Foſ. p. 395.

In ſeveral parts of the dominions of the great Mogul, in Perſia, and in ſome parts of Tartary, and other places in the eaſt, there ouzes out of the ſides of hills, which contain metals, and particularly copper, a thick turbid water, of a bluiſh grey colour, and of a brackiſh bitter, and very diſagreeable taſte. This, where it runs in ſufficient quantity, is generally taken care of for uſe, being directed in its courſe into wide and ſhallow pits, lined with a ſtiff clay: in theſe it is left expoſed to the ſun, in order to evaporate; but the people who have the care of it, daily mix among it, the grey fine mud left in its paſſage; and when it is brought to the conſiſtence of a ſoft pap, they throw into it, in the middle of a hot day, a large quantity of ſome animal fat melted over the fire. This is all well ſtired together; and then covered with ſticks and branches of trees; and over theſe is thrown a cruſt of any common clay. Thus it is left till perfectly dried up; then the covering is taken off, and the whole ſifted to ſeparate the earth and dirt; and in the ſieves is found, what is ſent to us under the name of *rough borax*; which is in rude irregular maſſes, but ſomewhat approaching to a priſmatic figure, very foul earthy and fattiſh, of a duſky greeniſh colour, and having a particular rank and diſagreeable ſmell.

This is afterwards refined for uſe, by diſſolving it ſeveral times in large quantities, and cryſtalizing it while the liquor is hot and kept cloſe covered from the air; and finally being diſſolved in a lixivium of quick-lime and potaſhes, and cryſtalized in the ſame manner, it is what we call *refined borax*.

It requires two and twenty times its own weight of water to diſſolve it perfectly. Expoſed to the fire, it ſwells and bliſters, and after it has ſtood on the fire ſome time, ſubſides into a fine white gloſſy ſubſtance, which is with difficulty ſoluble in water. It vitrifies all earths and ſtones mixed with it, and expoſed to a proper degree of heat; and is of great uſe in ſoldering metals, particularly gold. The antients uſed for this laſt purpoſe, a green arenaceous ſubſtance, which, from its uſe, they called *chryſocolla*, or gold ſolder; and the moderns have from this ſimilar uſe of *borax*, called it by the ſame name.

It yields nothing in diſtillation, but an inſipid phlegm, and makes no effervecence, either with acids or alkalies; yet it turns ſyrup of violets green, and a ſolution of ſublimate coroſive to a reddiſh yellow; and mixt with ſal armoniac in fuſion, gives a plainly urinous ſmell: whence it is evident that it has ſome of the properties of the alcaline ſalts, tho' it wants their great character, the fermenting with acids. *Hill*'s Hiſt. Foſſ. p. 97. 396.

Borax is of great uſe in the collecting the particles of any metal over the fire, and running them into a maſs; and this, with very little diminution of their weight. Dirt or aſhes, tho' in ever ſo ſmall a quantity, will certainly hinder ſome ſmall particles of gold or ſilver from running together into a maſs over the fire; but if they are ſo diſpoſed by a very ſtrong fire as to meet into a regulus, a great part of the metal will always adhere to the dirt that is thrown away. The leſs perfect metals not only ſuffer the above-mentioned accidents, but their ſurfaces being greatly increaſed, copper and iron turn entirely into ſcoriæ, and are deſtroyed, and lead and tin are ſo in great part. It is therefore very detrimental when theſe baſer metals are mixed in any, even in ever ſo ſmall a quantity, with gold or ſilver; for in the melting, there come upon the ſurfaces, light ſcoriæ, in which part of the gold or ſilver are retained, as in the pores of a ſponge, and prevented from running into a regulus.

To remedy this miſchief, *borax* is added, becauſe as it helps the melting of metals and of all bodies by fire, its bringing the whole maſs into a quick fuſion, gives the metals an opportunity to ſink together in a maſs to the bottom, and vitrifies the lighteſt ſcoriæ, throwing them off to the ſurface; and this uſe of this ſalt is not reſtrained to gold and ſilver, but takes place as well in regard to iron as copper.

This ſalt alſo cauſes metals to melt in a much leſs fire than they otherwiſe would, and is of very ſingular uſe in preſerving the leſs perfect metals while in fuſion. It flows over them and covers their ſurface while tortured in the fire, as if it were with a kind of very thin glaſs, which defends them againſt the combined force of the fire and air, ſo deſtructive of the imperfect metals.

The assayers have a custom of rubbing with *borax* the insides of vessels, in which the more precious metals are to be melted, which always fills up the small cavities in their sides, that might otherwise take in a part of the metals. When gold is melted with *borax* alone, it makes it pale; but this is obviated by the adding a small quantity of nitre, or of sal armoniac. Care must be taken, however, not to add both these salts together, because they would cause a detonation. The abovementioned use of *borax* has caused it to be reckoned, by some writers, among the reducing bodies; that is, such bodies as restore metals, however destroyed, to their pristine form: but this is an error; for *borax* does not reduce the destroyed metals, but only the scattered particles of them, while they yet retain their true metallic form. *Cramer*'s Art of Assaying, p. 42.

BORAX, in medicine, is used to promote delivery. V. Medic. Ess. Edinb. Vol. 1. p. 341.

The use of *borax* is that of an incisive and aperient salt, by virtue of which it is effectual against diseases which proceed from an inspissation of the humours, and obstructions thence arising. The dose is a dram.

Its stimulus, however, is too weak to be depended upon for present relief in a difficult birth, unless it be joined with other ingredients of more efficacy. For this reason, *borax* is commonly given in powder mixed with saffron, myrrh, oil of cinnamon, castor, the volatile salt of amber, and the like.

Some advise a few grains of it to be taken in a poached egg, as a provocative to venery.

Borax calcined, is reckoned of specific virtue in fluxes of the belly, or the semen, as being a kind of styptic earth. The dose is from a scruple to half a dram. V. *James*'s Med. Dict. in voc.

BORAX is also used in making *Glauber's salt*. See the article GLAUBER's *salt*.

BORAX is also a name given by some to the *bufonites*, or toadstone; a kind of bezoard said to be found in the head of that vermin. *Savar.* Dict. Comm. T. 1. p. 410. See the articles BUFONITES, and BEZOAR.

BORBONIA, in botany, the name of a genus of plants, the characters of which are these; the perianthium is composed of one leaf, of a turbinated form, of about half the length of the flower, and lightly divided into five segments; these are nearly of a size, and are pointed, rigid, and prickly; the flower is of the papilionaceous kind, and is composed of five petals; the vexillum is short, obtuse, and reflex; the alæ are lightly cordated at the ends, and are shorter than the vexillum; the carina is lunated, obtuse, and composed of two petals; the stamina are nine filaments, which grow together into a sort of cylinder which runs longitudinally into two parts; the antheræ are small; the germen of the pistil is subulated; the style is very short, and the stigma is obtuse and emarginated; the fruit is a roundish pointed pod, containing only one cell, and terminated by a spine; the seed is kidney-shaped. *Linnæi* Gen. Plant. p. 345.

BORBONIA *Astra*, a denomination formerly given by some writers to the *solar faculæ*, on a supposition that they were satellites, or secondary planets. See FACULÆ, *Cycl.*

Fromundus mentions a Frenchman, named *Tarde*, who had written a book express under the title *Astra Borbonia*. Philos. Transact. N° 330. p. 287.

BORBORITÆ, or BORBORIANI, a branch of the antient Gnostics, who, to the other errors of that sect, added this, of denying a future judgment.

The word comes from the Greek Βορβορος, *cænum*, dirt; a denomination which was not given them on account of the filthiness of their life or manners, but because of a custom which obtained among them, of smearing their faces with dirt and mire, in order, as 'tis said, to deface the image of God. *Joseph.* Hypomn. l. 5. c 140. *Fabric.* Cod. Pseudep. Vet. Test. T. 2. p. 307. Trev. Dict. Univ. T. 1. p. 1120. *Calv.* Lex. Jur. p. 126. *Briss.* de Verb. Signif. p. 86. *Du Cange*, Gloss. Græc. T. 1. p 211. voc. Βορβοριανοι. Ejusd. Gloss. Lat. T. 1. p. 588. *Pratæol.* Elench. Hæret. p. 104.

Some have also given this appellation, by way of reproach, to the Mennonites. *Bos.* Diss. de Stat. Europ. §. 26.

BORBOTHA, in ichthyology, a name given by some authors to the *mustela fluviatilis*, or eel-pout. See the articles MUSTELA and GADUS.

BORDAGE, the condition or service of the Bordarii. *Spelm.* Gloss. p. 85. voc. *Bordarii.* *Du Cange*, Gloss. Lat. T. 1. p. 588.

BORDARII.—The *Bordarii*, often mentioned in the Domesday inquisition, were distinct from the *servi* and *villani*, and seem to be those of a less servile condition, who had a *bord* or cottage, with a small parcel of land, allowed to them, on condition they should supply the lord with poultry and eggs, and other small provisions for his board and entertainment [a]. Tho', according to Spelman, the *bordarii* were inferior to *villani*, as being limited to a small number of acres [b].—[[a] *Kenn.* Gloss. ad Paroch Antiq. in voc. [b] *Spelm.* Gloss. p. 85.]

BORDARII also denote servants, or workmen, employed about the house in the necessary offices of fetching wood, drawing water, grinding corn, cleaning yards, and the like: by which they stand distinguished from *villani*, employed in the tillage of the lands. *Spelm.* loc. cit. See VILLAIN, *Cycl.*

BORDER, (*Cycl.*) in gardening, denotes a narrow bed adjoining to a walk, serving to bound and inclose the parterres, and prevent their being injured by the feet. *Bradl.* Bot. Dict. T. 1. & *Mill.* Gard. Dict. in voc.

The use of *borders* is to inclose parterres. They ought always to be laid with a rising in the middle, by which they will have a better effect to the eye than if quite flat, and their breadth should be between four and six feet.

Borders are properly of four sorts; the first are those which are continued about parterres without any interruption, and are wrought with a sharp rising in the middle, like an ass's back, and planted with low shrubs and flowers.

The second sort of *borders* are those which are cut into compartments, at convenient distances, by small passages; these are raised in the middle, and planted as the former with shrubs and flowers.

The third sort are such as are laid even and flat without flowers, and have only a verge of grass in the middle, being edged with two small paths, raked smooth and sanded; these are sometimes adorned with vases of flowers, of large growth, or flowering shrubs, along the middle verge of grass.

The fourth sort are quite plain, and are only sanded, as in the parterres of orangeries; and are filled with cases ranged in regular order along those *borders*, which are edged with box on the sides next the walks, and on the other with verges, and grass-work next the parterre. Sometimes a yew is planted between each case, which makes the *border* appear richer, and the parterres handsomer during the winter season.

Borders are made either strait, circular, or in courts; and are turned into knots, scrolls, volutes, and other compartments.

The florists make *borders* in any part of their gardens, which they usually edge with green boards; and this gives them a very neat look: in large parterres, all that is to be expected, is to stock them well with flowers, that will succeed one another during the summer-season. *Mill.* Gardn. Dict. in voc.

BORE.—The *bore* of a gun or piece of ordinance is used for the chase or barrel; though it seems rather to denote the diameter of the chase. *Moor*, Treat. of Artill. P. 2. c. 1. p. 26.

Square-BORE, in smithery, denotes a square steel point, or shank well tempered, fitted into a square socket in an iron wimble, serving to widen holes, and make them truly round and smooth within. *Moxon*, Mechan. Exerc. p. 51.

BOREAL *Signs*, in astronomy, the first six signs of the zodiac, or those on the northern side of the equinoctial.

BOREAS (*Cycl.*)—Vitruvius gives the name *Boreas* to a different wind from that mentioned in the *Cyclopædia*, viz. that which blows from the point which is 60 degrees from the north, towards the east. *Vitruv.* Architect. l. 1. c. 6. *Wolf* Lex. Math. p. 267.

The Greeks erected an altar to *Boreas* [a]. The qualities allowed by naturalists to this wind are coldness and dryness [b].—[[a] *Voss.* de Idolol. l. 3. c. 1. [a] *Cast.* Lex. Med. p. 109.]

M. Spierlingius has a treatise in praise of *Boreas* [c]; wherein he shews the honours paid to him by antiquity. *Boreas*, according to this author, purifies the air, renders it calm and salubrious, preserves buildings from decay, drives away the plague and other diseases, expels locusts and other vermin noxious to the grounds [d].—[[c] *Boreas*, ejusque Laudes. Hafn. An. 1707. [d] Trev. Dict. Univ. in voc.]

BOREASMI, Βορεασμοι, in antiquity, a festival at Athens held in honour of Boreas, or the north wind, to pacify and prevail on him to be quiet, and suffer the south wind to blow. *Meurs.* Attic. Lect. l. 2. c. 1. Ejusdem Græc. Ferial. *Schott.* Lex. Antiq. p. 226, seq.

Others assign a different reason for the honour paid to Boreas by the Athenians, *viz.* that, in a sea-fight, a great number of the enemy's ships had been destroyed by the north wind, which that people imputed to the kindness Boreas had for his wife's native country, having married Orithya daughter of king Erectheus. *Pausan.* in Attic. *Pott.* Archæol. Græc. l. 2. c. 20. p. 374.

BORING, the act of perforating a solid body, or making a hole throughout its whole length or thickness.

Surgeons speak of *boring* the bones of the skull, properly called *trepanning*. V. *Junck.* Consp. Chir. p. 325. See TREPANNING, *Cycl.* and *Suppl.*

BORING *birch*, and other trees, is practised in the spring for their juice, called also *tapping* and *bleeding*. Phil. Transact. N° 44. p. 880. See TAPPING, *Cycl.* and *Suppl.*

BORING *of masts*, from top to bottom, is proposed by Dr. Hook as a means of strengthening and preserving them; as this would make them dry and harden the better, and prevent their cleaving and cracking: for want hereof, the outside drying, when the inside does not, the former shrinks faster than the latter can keep it company; the consequence of which is easy to foresee. *Hought.* Collect. T. 3. N° 413. p. 33.

BORING *of water-pipes*.-The method of *boring* alder poles for water-pipes is thus: being furnished with poles of a fit size, horses, or trussels, are procured of a due height, both to lay the poles, and rest the auger on in *boring*; they also set up a lath, whereby to turn the lesser ends of the poles, and adapt them to the

cavities of the greater ends of others, in order to make the joint ſhut each pair of poles together. The outer or concave part is called the female, and the other, or inner, the male part of the joint. In turning the male part, they make a channel or ſmall groove in it, at a proper diſtance from the end; and, in the female part, bore a ſmall hole to fit over this channel; they then bore through their poles, ſticking up great nails at each end, to guide them right; but they commonly bore a pole at both ends; ſo that if it be crooked one way, they can nevertheleſs bore it through, and not ſpoil it *Neve*, Build. Dict. in voc. *Alder*.

BORING, in farriery, an operation ſometimes practiſed for the cure of horſes whoſe ſhoulders are wrenched. The method is thus: they cut a hole through the ſkin in the middle of the ſhoulder, and, with the ſhank of a tobacco-pipe, blow it as a butcher does a ſhoulder of veal; then they run a cold flat iron, like a horſeman's ſword-blade, eight or ten inches up, between the ſhoulder-blade and the ribs, which they call *boring*; after that, they burn him round his ſhoulder with a hot iron. *Burd.* Gent. Farr. p. 31.

BORING, in mineralogy, a method of piercing the earth by a ſet of ſcooping irons, made with joints ſo as to be lengthened at pleaſure. The skilful mineraliſt will often be able to gueſs where a vein of ore may lie, though there are none of the common outward ſigns of it upon the ſurface of the earth; and, in this caſe, he has recourſe to *boring*, the ſcooping irons are drawn back at proper times, and the ſamples of earth and mineral matter they bring up, are examined; and hence it is known whether it will be worth while or not to open a mine in the place. *Shaw*'s Lectures, p. 242.

BORITH, in the holy ſcriptures, an herb thought to be the *kali* or ſaltwort; of the aſhes of which ſome make ſoap, and a very good lye to waſh linen withal. It is mentioned in *Jeremiah* xi. 22.

BOROLYBICUS, the wind which blows in the middle between the north and weſt points; called alſo the north-weſt wind. *Wolf.* Lex. Math. p. 267. *Vital.* Lex. Math. p. 88.

BOROUGH, or BOROW (*Cycl.*)—The antient Saxons, according to Spelman, gave the name *burgh* to thoſe called, in other countries, cities [a]. But divers canons being made for removing the epiſcopal ſees from villages and ſmall towns to the chief cities, the name *city* became attributed to epiſcopal towns, and that of *borough* retained to all the reſt; tho' theſe too had the appearance of cities, as being governed by their mayors, and having laws of their own making, and ſending repreſentatives to parliament, and being fortified with a wall and caſtle, and the like [b].—[a Term. de Ley, f. 39. b. *Cow.* Interpr. in voc. *borow*. b *Spelm.* Gloſſ. p. 93.] See CITY, *Cycl.*

Royal BOROUGHS, in Scotland, according to Chamberlayne, have the ſole power of trade and merchandize, excluſive of all others, a power of holding courts, exerciſing the juriſdiction of ſheriffs, making by-laws, *&c.* Preſent State of Brit. P. 2. l. 2. p. 429, ſeq. See JURISDICTION.

The company of merchants in a *royal borough* make what is called a gild; the chief of which is a dean of gild, who is next magiſtrate to the bailiff. See GILD, *Cycl.*

The *royal boroughs* are not only ſo many diſtinct corporations, but do alſo conſtitute one entire body, governed by, and accountable to one general court, antiently called *the court of four boroughs*, held yearly to treat and determine concerning matters relating to the common advantage of all *boroughs*.

The four *boroughs* which compoſed this court were, Edinburgh, Stirling, Roxburgh, and Berwick; which two laſt falling into the hands of the Engliſh, Linlithgow and Lanerk were put in their places; with a ſaving to the former, whenever they ſhould return to their allegiance.

But this court not being ſufficient to anſwer the neceſſities of the *royal boroughs*, they were all empowered, under James III. in 1487, to ſend commiſſioners to a yearly convention of their own, which was then appointed to be held at Inverkeithing, and is now held at Edinburgh, under the denomination of the convention of *boroughs*, veſted with great power.

BOROUGH *Engliſh*.—The reaſon aſſigned by Littleton for the cuſtom of *Borough Engliſh*, is, that the youngeſt ſon is leaſt able to ſhift for himſelf; and, in ſupport of this, other uſages in favour of the youngeſt are alleged, as that in Kent, where the lands being equally divided among all the ſons, the youngeſt is to have the privilege of aſtre or hearth in the manſion-houſe, in his ſhare, as being ſuppoſed the tendereſt, and more in need of warming Others, notwithſtanding, ſuſpect a different reaſon for the riſe of *Borough Engliſh*, viz. the places where this cuſtom now obtains, were antiently liable to that cuſtom granted the lords of manors in Scotland by K. Eugenius, who had the privilege of enjoying the firſt night of their tenants brides; ſo that the eldeſt ſon being preſumed to be the lord's, they uſually ſettled their lands on the youngeſt ſon, whom they thought their own; which being practiſed a long time, grew at length into a cuſtom.

Borough Engliſh obtains only in ſome antient boroughs and copyhold manors. *Plott*, Nat. Hiſt. Staffordſh. c. 8. §. 20. p. 278.

BOROUGH-*holder*, in antient law-writers, the head man or chief pledge of a tithing, choſen by the reſt to ſpeak and act in their common behalf. *Johnſ.* Eccl. Law, ann. 693. §. 6. Not. *Spelm.* Gloſſ. p. 86. voc. *Borſholder*.

The word is formed from *boroe-ealder*, as being the ſenior man of the borough or tithing.

Borough-holders are the ſame with what are otherwiſe written, *borſholders*, *burſholders*, *boſholders*, *borow-holders*, *borghealders*, *burgheſaldi*, and *borgeſaldrii*; of later days, *borough-heads*, and *head-boroughs*. *Du Cange*, Gloſſ. Lat. T. 1. p. 591. voc. *Borghealder*. *Cow.* Interpr. voc. *Borough-holder*. Item, voc. *Borough-head*. *Skin.* Etym. voc. *Borſholder*. *Spelm.* l. c. See HEADBOROW, *Cycl.*

BOROUGH, or *Borgh*, denotes a pledge of ſecurity for another's keeping the peace, and conforming to the laws. *Sken.* de Verb. Signif. p. 22, ſeq. *Skinn.* Etym. For in voc.

The word is Saxon, and is ſometimes alſo written *borough*; in Latin writers, *borgha* and *burgha*. *Du Cange*, Gloſſ. Lat. T. 1. p. 590. voc. *Borgha*.

BORGH-*breach*, *Borgi fractura*, in antient law-writers, denotes a breaking of the pledge or ſecurity given by the members of tithings for the behaviour of each other. *Du Cange*, Gloſſ. Lat. T. 1. p. 591. *Skinn.* Etym. in voc.

This is the ſame with what is otherwiſe called *borg-brege*, *borgh-brege*, *burg breche*, and *borghi-fractura*.

Law-BOROUGHS, or *Borrows*, in the law of Scotland, the ſame with what in England is called *binding to the peace*. See the article PEACE, *Cycl.*

In caſe of a contravention of *law-borrows*, the ſurety or cautioner is equally liable with the principal for the penalty ſpecified therein; the one half to the king, and the other to the complainer. V. *Mackenz.* Inſtit. Law of Scotl. l. 4. tit. 1.

BOROW-*holes*, the holes wherein the female rabbits depoſite their young, in the remoteſt corner thereof they can find, to prevent the males from eating them. Trev. Dict. Univ. T. 4. p. 970. voc. *Rabouilliere*.

BORRAGE, *Borago*, in botany. See BORAGO.

BORRELISTS, a ſect or ſort of anabaptiſts in Holland, who allow of no uſe of ſacraments, public prayers, or other external worſhip, nor of any human gloſs or explication of ſcripture; but profeſs to adhere to the faith and Manners of the New Teſtament times in all their ſimplicity. See ANABAPTIST, *Cycl.* and *Suppl.*

They took their denomination from their founder, *Borrel*, a perſon of great learning in the Hebrew, Greek and Latin tongues, and brother of M. Borrel, ambaſſador of the States to the French king.

The *Borreliſts* reject all churches and communions, as holding them all to have ſwerved from the pure doctrine of the apoſtles, and to have ſuffered themſelves to be guided by their doctors and teachers, who have ſubſtituted their own ſyſtems, confeſſions, catechiſms, ſermons, and the like, for the true word of God. In other reſpects, the life and manners of the *Borreliſts* are ſevere and irreproachable; the greater part of their ſubſtance is expended in alms. Vid. *Corn.* Dict. des Arts, T. 1. p. 124. Trev. Dict. Univ. T. 1. p. 1127.

BORROWING, the act of receiving a thing to enjoy the uſe of it, on condition of returning it.

BORSELLA, in the glaſs-works, an inſtrument wherewith they extend or contract the glaſſes at pleaſure; alſo ſmoothen and levigate them. *Merret*, Append. to *Neri*, p. 437. ap. *Caſt.* Lex. Med. p. 110.

BORYSCHITES, in natural hiſtory, the name of a ſtone mentioned by Pliny and other antient writers, and ſaid to have been greatly eſteemed for its virtue and its beauty. It was of a black colour, and was beautifully variegated with ramifications, in the manner of the Dendritæ or Mocoa ſtones; but theſe figures were partly in white, partly in a blood red. We know no ſtone at preſent that anſwers to this remarkable deſcription.

BOS, the *ox*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of animals of the order of the *pecora*; the characters of which are, that the horns are hollow and turned forward, bent like creſcents; and not ſcabrous, but ſmooth and even on their ſurface. Of this genus, beſides the common ſpecies kept with us, there are four naturally wild ones, which are the *urus*, *biſon*, *bubalus*, and *Bonaſus*; all which ſee under their ſeveral heads. *Linnæi* Syſtem. Nat. p. 43.

BOS *Africanus*, the *African ox*, in natural hiſtory, the name of a ſmall wild bull, common in that part of the world, and ſuppoſed to be the true *bubalus* of the antients. At its utmoſt growth it is ſmaller than the common deer, but ſomething larger than the goat, and of a ſtouter make and thicker body; his hair is of a lion tawny colour, and is very bright and gloſſy; his horns are bent into a half-moon. *Bellon.* Obſ. l. 2. c. 50.

BOS *Camelita*. See CAMELITA *Bos*.

BOS *Marinus*, in ichthyology, a name given by the old authors, both Greek and Latin, Ariſtotle, Elian, Pliny, Ovid, and the reſt, to that ſpecies of the ray fiſh, which has ſince been called *raia oxyrynchus* by writers. Artedi has accurately diſtinguiſhed this ſpecies by the name of the *variegated ray*, with ten tubercles, armed with prickles, and placed on the middle of the back. See the article RAIA.

BOS, Βοῦς, in antiquity, was peculiarly uſed for an antient Greek ſilver coin, which was didrachmus, or equivalent to two drachms.

Pollux. Onomaſt. l. 9. *Hoſt.* Hiſt. Rei Num. T. 1. l. 3. c. 3. p. 24. ſeq. See DRACHM, *Cycl.*

It was ſo called, as having on it the impreſſion of an ox, and chiefly obtained among the Athenians and Delians; being ſometimes alſo ſtruck of gold.

From this aroſe the phraſe, *bos in lingua*, applied to thoſe who had taken bribes to hold their tongue. *Eraſm.* Chiliad. I. VII. 18.

BOSA, in the Egyptian medicine, denoted a maſs prepared of the flower of the lolium, hemp-ſeed and water; of the ſame inebriating virtue with the aſſis, or opium. *Alpin.* de Medic. Egypt. l. 4. c. 2. p. 121. *Caſt.* Lex. Med. p. 110.

BOSCAGE (*Cycl.*) ſometimes denoted a tax or duty laid on wood brought into the city. *Du Cange*, Gloſſ. Lat. T. 1. p. 593.

BOSCHAS, in zoology, the name of our common wild duck, called alſo by ſome *anas torquata minor*, or the ſmaller ring-duck. See the article DUCK.

BOSCOI, or BOSCI, in eccleſiaſtical hiſtory, denotes a ſpecies or tribe of monks in Paleſtine, who fed on graſs like the beaſts of the field.

The word is Greek, Βοσκοι, *q. d.* grazers; formed from βοσκω, *paſco*, I feed.

The *Boſcoi* are ranked among the number of Adamites, not ſo much on account of their habit, as food. They took no care about proviſion; but when eating-time came, or any of them was hungry, went into the fields, with each his knife in his hand, and gathered and eat what he could find. *Evagr.* Hiſt. Eccleſ. l. 1. c. 21. *Sozom.* Hiſt. Eccleſ. l. 6. c. 33. *Du Cange*, Gloſſ. Græc. T. 1. p. 211. Bibl. Ger. T. 21. p. 139. *Bingh.* Orig. Eccleſ. l. 7. c. 2. §. 11.

BOSCUS, in antient law writers, ſignifies a wood of any kind.

The word is alſo written corruptly *buſcus*, *buſcaria*, and *buſcale* [a]. It is formed from the Greek, βοσκω, I feed, as ſerving for paſture [b]. In which ſenſe, *boſcus* amounts to the ſame with the Italian *boſco*, and French *bois* —[[a] *Du Cange*, Gloſſ. Lat. T. 1. p. 592. [b] *Caſſeneuve*, Orig. p. 25. voc. *Bois.* Trev. Dict. Univ. T. 1. p. 1128. voc. *boſquet.*]

Boſcus is divided into high wood, or timber, called alſo *ſaltus*, and *haut bois*; and *coppice*, or underwood, *ſub-boſcus*, or *ſub-bois.* *Caſſeneuve*, Orig. p. 25. voc. *bois.*

BOSPHORICUM *Marmor*, a name given by the antients to a ſpecies of marble, of a yellowiſh white colour, with beautiful veins of a ſomewhat darker hue; called alſo, from its tranſparence, *phengites.* See PHENGITES.

BOSPHORUS, or BOSPORUS (*Cycl.*)— Modern geographers define *Boſphorus*, in general, a long narrow ſea running in between two lands, or ſeparating two continents, and by which, two ſeas, or a gulph and a ſea, are made to communicate with each other. *Ozan.* Dict. Math. p. 358.

In which ſenſe, *boſphorus* amounts to the ſame with what we otherwiſe call an arm of the ſea, channel, or ſtraight; the Italians, *faro*; the Latins, *fretum*; the French, *pas*, *manche*; the Turks, *bogaz*, &c. *Fæſch.* Lex. Milit. p. 545. voc. *Meer.* *Aubin.* Dict. Mar. p. 110. *D'Herbel.* Bibl. Orient. p. 210. in voc. *Bogaz.*

Authors are much divided as to the reaſon of the denomination of the *Boſphorus* of Thrace; for as to the Cimmerian *Boſphorus*, it ſeems to be ſo called from its reſemblance to the Thracian. Pliny indeed aſſures us, they were both ſo denominated, as being narrow enough to be ſwam over by cattle [a]. He adds, that men might hear one another talk, cocks crow, and dogs bark, from one ſide of the Thracian *Boſphorus* to the other, which was not above 500 paces over [b]; or, according to Agathemerus, 750 [c]; inſomuch that Darius threw a haſty bridge over it for the paſſage of his army.—[[a] *Plin.* Hiſt. Nat. l. 6. c. 1. [b] Idem, l. 4. c. 12. [c] *Agathem.* Geogr. l. 1. c. 3. *Hard.* Not. ad Plin.]

But others aſſign other origins. See the CYCLOPÆDIA.

Some late writers rather ſuppoſe *Boſphorus* to have been ſo called, becauſe here was antiently the beaſt-market. *Tournef.* Voyag. Let 12. T. 2. p. 6. See alſo Let. 14. p. 61.

BOSQUETS, in gardening, a term for groves included in gardens.

The word is derived from the Italian, *boſchetto*, which is a diminutive of *boſco*, a wood or grove.

Theſe are ſmall compartments of gardens, which are formed of trees, ſhrubs, and tall flowering plants, ſet in quarters, and either placed regularly in rows, or diſpoſed in a more irregular manner. Theſe quarters ſhould be ſurrounded with evergreen hedges, and the entrances made into porticos with yews. In the inſide there muſt be ſome walks, either ſtrait or winding. Theſe, if the quarters are large, ſhould be eight foot wide, and laid with turf, and kept well mowed and rolled. The hedges of theſe quarters ſhould be kept low, that the heads of the ſhrubs may be ſeen from the outſide. There is a great deal of fancy to be employed in the planting theſe *boſquets*, which ſhould be ſhewn in ſetting to view at once ſuch ſhrubs as have the moſt differently ſhaped, and differently coloured leaves that may be, as the long, the round, and the jagged, and the various ſhades of deep and lighter green, and the mealy or hoary white leaves. Beſides this, there is alſo a very great variety of beautiful fruits, which theſe ſhrubs produce in autumn, which give a very elegant and pleaſant proſpect even after the leaves are fallen.

The ſhrubs which produce theſe, are, 1. the euonymus, or ſpindle-tree. 2. the opulus, or water-elder. 3. the cockſpur-hawthorn; and, 4. the flowering-aſh, as it is called; beſides an innumerable parcel more. But it is a good rule in this, never to mix the evergreen-trees with thoſe which loſe their leaves in winter. Theſe *boſquets* are only fit for large gardens. *Mill.* Gard. Dict. in voc.

Boſquets are generally laid out into ſome regular figure, as a circle, ſquare, polygon, or the like, and make a conſiderable article in the decoration of a fine garden. *Davill.* Explic. Term. Architect. p. 429. See GARDEN.

BOSS, or BOSSE, in ſculpture, ſignifies relievo, or prominency. See RELIEVO, *Cycl.*

The word is French, *boſſe*, which ſignifies the ſame; whence alſo *to emboſs.* V. *Skinn.* Etym. in voc. See the article EMBOSSING, *Cycl.*

Boss *of a buckler*, among the antients, the *umbo*, or ομφαλος, which juts out in the middle. *Potter*, Archæol. l. 3. c. 4. T. 2. p. 33.

Boss, among bricklayers, denotes a wooden utenſil wherein the labourers put the mortar to be uſed in tyling. It has an iron hook, whereby it may be hung on the laths, or on a ladder. *Moxon*'s Mechan. Exerc. p. 248.

BOSTANGI-*Baſchi*, in the Turkiſh affairs, an officer in the grand ſignior's houſhold, who has the ſuperintendence of all the gardens, water-works, and houſes of pleaſure, with the workmen employed therein. The poſt of *boſtangi-baſchi*, or chief gardener, is one of the moſt conſiderable in the Turkiſh court. He has the emperor's ear, and, on that account, is much courted by all who have buſineſs depending at the Port; he is governor of all the villages on the channel of the Black ſea, and has the command of above ten thouſand *boſtangis*, or gardeners, in the ſeraglio, and other places about Conſtantinople. But that which gives him the greateſt eclat, is the honour he ſure on holding the rudder whenever the ſultan takes his pleahas of the water. *Tourneſ.* Voyag. Let. 13. T. 2. p. 26. Trev. Dict. Univ. T. 1. p. 1130.

BOSTRYCHITES *Lapis*, in natural hiſtory, a name given by ſome to a ſtone ſuppoſed to contain womens hair included in it: ſome have underſtood by it, thoſe pieces of cryſtal which have accidental foulneſſes in them, reſembling hair, or pieces of hair, cauſed by earthy or metalline matter; others call by this name thoſe German agates, which contain either the confervas or other capillary water-plants, or other foulneſſes running into their form: the firſt of theſe very frequently have the confervæ of a great length, and variouſly undulated and turned about, ſo as very elegantly to repreſent a looſely flowing lock of hair.

BOSTRYCHITES is alſo a name given by ſome authors to a ſpecies of pyrites, whoſe irradiations were ſuppoſed to imitate hair.

BOTABOTA, in natural hiſtory, a name given by ſome writers to that ſpecies of ſea-ſwallow, whoſe neſts are ſo famous n ſoups in China, and in ſome parts of Europe. The neſts are ſuppoſed to be reſtorative, and greatly provocative to venery; for which laſt quality it is that the eaſtern nations in general are ſo fond of them.

BOTAGIUM, in middle age writers, a fee paid for wine ſold in *botæ*, or *butts.* *Du Cange*, Gloſſ. Lat. T. 1. p. 661.

Wine that taſtes of the cask is called *vinum botatum.* Id. ibid.

BOTALE *Foramen*, in anatomy, an aperture in the heart of a fœtus, whereby the blood is enabled to circulate, without going into the lungs, or the left ventricle of the heart. Trev. Dict. Univ. T. 1. p. 1131. See FOETUS, HEART, CIRCULATION, *&c. Cycl.* and *Suppl.*

BOTANIST, a perſon who underſtands the nature, hiſtory, and diſtinctions of vegetables, on ſettled and certain principles, and can call every plant by a diſtinct, proper and intelligible name. *Linnæi* Fundam. Botan. p. 1.

BOTANOPHILI, among the writers on the ſubject of vegetables, thoſe who have treated of them, not as botaniſts, on their natural and eſtabliſhed diſtinctions, but in regard to different operations, as gardeners, phyſicians, *&c. Linnæi* Fundam. Bot. p. 3.

BOTANY (*Cycl.*)—Authors are divided about the preciſe object and extent of *botany*, which ſome will have to include the whole province of plants, in all their ſtates, uſes, and relations: others reſtrain it to the knowledge of the claſſes, genera, ſpecies, external figures and deſcriptions of plants, excluſive of their virtues, which are left to the conſideration of phyſic and pharmacy [a]; of their origin and generation, which are left to phyſiology; and of their culture and propagation, which are left to gardening and agriculture [b].—[[a] Vid. Bibl. Ital. T. 11. p. 206, ſeq. [b] *Du Hamel*, Hiſt. Acad. Scienc. l. 1. ſec. 1. c. 3. p. 11. It. l. 4. ſec. 5. c. 1. p. 346, ſeq.]

Terreſtrial BOTANY, that employed about the plants growing on the ſurface of the earth.

Marine BOTANY, that concerned in the conſideration of ſea-plants, as fucuſes, alcyonia, algæ, *&c.*

Subterranean BOTANY, that about the plants under ground, as the *tubera terræ*, or truffles, *&c.*

Some call the knowledge of the virtues of plants practical *botany* [a]. The antient *botany* has been much hurt by the Arabs, by bad verſions, and comments on the Greek naturaliſts [b]; partly hence, but more from the corrupt ſtate of antient copies

and

and manuſcripts, the names of plants have been terribly confounded; a diſorder which Salmaſius [c], Plukenet [d], and ſeveral Engliſh botaniſts [e], have endeavoured to retrieve.—[[a] V. *Ch mel.* Botanique Pratique. Bibl. Ital. T. 11. p. 208. [b] *Friend*, Hiſt. of Phyſ. T. 2. p. 25. [c] *Salmaſ.* de Homon. Hyl. Jatr. Ejuſd. Exerc. ad Solin. [d] Phil. Tranſ. N° 196. p. 618. [e] Id. ibid. N° 236. p. 29.

Botany is arrived at a degree of perfection among the moderns, which the antients were ſtrangers to; not only as to the method of plants, *i. e.* of claſſing, diſtributing, and characterizing them, which is rendered more exact, and conſequently the arriving at a knowledge of them more eaſy; but alſo as to the copia or number of plants known and deſcribed; which is ſuch, that ſcarce a new plant is now to be heard of. Not but that there are ſtill deſiderata in the ſcience, to employ the diligence of future botaniſts, both as to the virtues and deſcriptions, figures, genuſes and names of many plants, which ſtill need much reformation. V. Mem. Acad. Scienc. an. 1713. p. 92. Phil. Tranſ. N° 198. p. 682.

The learned Linnæus has of late endeavoured to claſs and denominate all plants from their parts of generation or fructification. See the article FRUCTIFICATION.

But this method, highly extolled by many, has nevertheleſs met with ſevere cenſures. *Buſon.* Hiſt. Nat. T. 1. p. 18, ſeq.

We have many ſpecies of plants brought to light, eſpecially natives of the Indies, which the antients, for any thing that appears in their writings now extant, were ignorant of; in which particular, Cluſius, Columna, Bauhinus, Loccone, and others, have performed much. Add, that their deſcriptions, places, and ſeaſons, are with good diligence and preciſeneſs ſet before us; likewiſe their order and kindred. For the adjuſting whereof, our learned countrymen, Mr. Ray and Dr. Moriſon, have both taken laudable pains. The like may be ſaid as to the ordering of plants, in reſpect of their alimental or mechanic uſes; for which, amongſt others, Mr. Evelyn and Dr. Beal have deſerved great praiſe. *Grew*, Idea of Philoſ. Hiſt. of Plants, §. 1. p. 1.

The virtues of moſt plants are, with much uncertainty, and too promiſcuouſly, aſcribed to them; ſo that, if we turn over an Herbal, we ſhall find almoſt every herb good for every diſeaſe; though of the virtues of many they are altogether ſilent. The deſcriptions likewiſe of many are yet to be perfected, eſpecially as to their roots; thoſe who are moſt curious about the other parts, being here too remiſs. And for their figures, it were to be wiſhed they were all drawn by one ſcale, or, at moſt, two; one for trees and ſhrubs, and another for herbs. Many, likewiſe, of their ranks and affinities are yet undetermined, and a great number of names, both Engliſh and Latin, not properly given. Thus what we call goat's rue, is nothing akin to the plant whoſe generical name it bears; and the like may be ſaid of wild tanſey, ſtock july-flowers, horſeradiſh, and many more: ſo when we ſay bellis major and minor, theſe names would intimate, that the plants to which they are given, differ only in bulk; whereas they are two ſpecies of plants. The like holds of centaurium majus and minus, chelidonium majus and minus, and many others, which are diſtinct ſpecies, and of very different tribes. *Grew*, Idea of Philoſ. Hiſt. of Plants, §. 2. p. 2.

For the general ſtructure and laws of vegetation in plants, it has been ſupplied by Grew and Malpighi. See PLANT, VEGETATION, GENERATION, SAP, *&c.*

BOTARGO, or BOUTARGA, is a kind of ſauce made of the eggs or ſpawn of the *mujon*, a large fiſh, not unlike a pike, common in the Mediterranean; it is dried in the ſun, ſalted, and uſed much after the manner of cavear. *Savar.* Dict. Com. T. 1. p 456. Id. Suppl. p 87. *Skin.* Etym. in voc. See the article CAVEAR, *Cycl* and *Suppl.*

The people of Provence call it *bou-argues*. The beſt is brought from Alexandria and Tunis. There is alſo a manufacture of it near Marſeilles. It is much uſed throughout all the Levant.

BOTATRISSA, in ichthyology, a name given by Bellonius, Geſner, and other authors, to that ſpecies of the gadus called by authors the *lota*, and *muſtela fluviatilis*; by us, the *eel-pout*. It is diſtinguiſhed from the other gadi, by having two fins on the back, and the two jaws of equal length, with beards at the mouth. See GADUS.

BOTAURUS, in zoology, a name by which ſeveral have called the bird known among us by the name of *butter-bump*, *bittern*, or *mire-drum*. It has this name from the Latin, *boatus*, bellowing, and *taurus*, a bull, as ſuppoſed to imitate the loud roaring of a bull. *Ray*'s Ornith. p. 207. See BITTERN.

BOTE (*Cycl*)—This old law word comes from the phraſe, *to boot*, ſpeaking of ſomething given by way of compenſation. Hence,

Man-BOTE ſignifies the ſatisfaction due for a man ſlain.

Kin-BOTE, that for the ſlaughter of a kinſman. Vid. *Spelm.* Gloſſ. p. 86. *Du Cange*, Gloſſ. Lat. T. 1. p. 594. in voc. *Bot.*

Theft-BOTE, is when a man agrees or compounds with the thief, and ſecures him from the law. *Sken.* de Verb. Signif. p. 24.

Houſe-BOTE, *Hay*-BOTE, and *Plough*-BOTE, denote privileges granted to tenants, of cutting hay, *&c.* on the land. *Kenn.* Paroch. Antiq. p. 497.

BOTELESS, a criminal incapable of making comſation; or a crime not to be attoned for. *Du Cange*, Gloſſ. Lat. T. 1. p. 596, voc. *Botolos*. See BOTE.

No judgment or ſum of money ſhall acquit him who commits ſacrilege; for that he is *boteleſs*, i. e. *ſine emendatione*, or without amendment. Whence alſo the modern Engliſh, *bootleſs*, for a thing vain or impoſſible to be done. Chart. Hen. I. ad Archiepiſc. Ebor. *Jac.* Law Dict. in voc.

BOTESCART, in antient Engliſh writers, the ſame with *boatſwain*. *Skinn.* Etym. For. in voc. See BOATSWAIN.

BOTHAGIUM, *Bothage*, or *Boothage*, cuſtomary dues to the lord of the market, for the liberty of pitching and ſtanding of booths. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

BOTHNA, *Buthna*, or *Bothena*, in the Scotch law, a park or field wherein cattle are incloſed, and fed.

The word is alſo written *barthena*; formed from the antient Scottiſh, *buth*, a flock of ſheep.

BOTHENA is alſo uſed for a barony, lordſhip, or ſheriffdom. In which ſenſe, it is ordained by ſtatute, that the king's mute, or court of each *bothena*, that is, each ſheriffdom, ſhall be held within forty days. *Sken.* de Verb. Signif. p. 23, ſeq.

BOTHRION, Βοθριον, denotes the alveolus or ſocket of a tooth. *Gal.* de Oſſib. c. 5. in fine. *Caſt.* Lex. Med. p. 110. See the article ALVEOLI.

BOTHRION is alſo uſed to denote a ſmall, narrow, but deepiſh ulcer of the cornea of the eye, reſembling a round puncture. *Gal.* Introd. c. 15. *Æginet.* l. 3. c. 22.

The word is alſo written by Erotion, βοθριας, *bothrias*; by others, corruptly, *botryon* [a]. In Latin writers it is ſometimes called *foſſula* [b].—[[a] *Foreſt.* Obſerv. l. 11. Obſ. 17. in Schol. [b] *Capivac.* Pract. l. i. c. 33. *Caſt.* Lex. Med. p. 110.]

BOTIA, *Bocia*, or *Botus*, among chymiſts, a glaſs veſſel with a round belly and long narrow neck, otherwiſe called egg, *ovum ſublimatorium*, *cucurbita*, and *urinale*. *Lagn.* in Harm. Chym. Theatr. Chym. T. 4. p. 769. *Caſt.* Lex. Med. p. 108. voc. *Bocia*. It. p. 110. voc. *Botus*.

BOTIA, in medicine, the ſame with *ſtrumæ*, or *ſcrophulæ*. *Ruland.* Lex. Alch. p. 106. voc. *Botium*. See STRUMÆ, and SCROPHULÆ, *Cycl.*

BOTIN, or *Butine*, among alchemiſts, denotes turpentine, or balſam of turpentine, when gathered under the proper influence. *Ruland.* Lex. Alch. *Caſt.* Lex. Med. p. 110.

BOTONOMANCY, Βοτονομαντεια, an antient ſpecies of divination, by means of plants; eſpecially ſage, and fig-leaves.

The manner of performing it was thus: the perſons who conſulted, wrote their own names, and their queſtions, on leaves, which they expoſed to the wind; and as many of the letters as remained in their own places, were taken up, and being joined together, contained an anſwer to the queſtion. *Potter*, Archæol. Græc. l. 2. c. 18. T. 1. p. 353. *Buling.* de Divin. l. 3. c. 24.

BOTONTINI, in middle age writers, denote mounts or hillocks, raiſed to ſerve as land-marks or boundaries of grounds.

The word is alſo written *botontones*, *botones*, and *bodones*. *Du Cange*, Gloſſ. Lat. T. 1. p. 586.

BOTOTOE, in natural hiſtory, a name given by the people of the Philippine iſlands to a very beautiful bird of the parrot kind; it is ſomewhat ſmaller than the common parrot, and is all over of a fine deep blue colour.

BOTRYITES, in natural hiſtory, a ſtone of the gem kind, reſembling a branch of young grapes. *Plin.* Hiſt. Nat. l. 37. c. 10. *Fab.* Theſ. T. 1. p. 373.

The word is Greek, βοτρυιτης, formed from βοτρυς, a grape. In Engliſh writers it is ſometimes called the *grape-ſtone*. *Grew*, Muſ. Reg. Societ. P. 3. ſec 1. c. 5. p. 304.

BOTRYITES, or *Botrites*, alſo denotes a ſort of burnt cadmiæ, found ſomewhat in the form of a bunch of grapes adhering to the upper parts of furnaces where that mineral is calcined. *Gorr.* Def. Med. p. 76. *Caſt.* Lex. Med. p. 110. See the article CADMIA, *Cycl.* and *Suppl.*

It differs from the *placites*, which is that gathered on the lower part of the furnace [a]; though Schroder gives a different diſtinction, *viz.* into *botrites*, found in the middle of the furnace, *placites* in the upper, and *oſtracites* in the loweſt part [b].——[[a] *Gorr.* loc. cit. [b] *Schrod.* Pharm. l. 3. c. 19.]

BOTT, among bone-lace weavers, a kind of round cuſhion of light matter placed on the knee, whereon they work or weave their lace with bobbins, *&c.* See LACE.

Among the French, the *bott*, called *oreiller*, is a little ſquare wooden frame or deſk, covered ordinarily with green ſtuff. *Savar.* Dict. Comm. T. 2. p. 923. voc. *Oreiller*.

BOTTS, in zoology, a ſpecies of worms which infeſt horſes and other cattle; having large heads and little tails; generally found in the ſtraight gut, near the fundament. Ruſt. Dict. T. 1. in voc. *Skin.* Etym. in voc.

The name is alſo given to a ſort of grubs which deſtroy the graſs in bowling-greens, *&c.*

BOTTLE, a ſmall veſſel proper for holding liquors.

The word is formed from *butellus*, or *botellus*, uſed in barbarous Latin writers, for a leſſer veſſel of wine; being a diminutive of *bota*, which denoted a butt or caſk of that liquor [a]. It is alſo written *buticula*, a diminutive of *buta* [b], and in the barbarous Greek, βατιον [c].—[[a] *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *bothagium*. [b] *Du Cange*, Gloſſ. Lat. T. 1. p. 658. voc. *buticula*. *Menag.* Orig. Franc. p. 122. *Caſſeneuve*, Orig.

p. 28. voc. *Bouteille*. *Meurſ.* Gloſſ. p. 120. voc. βατιον. See alſo *Skinn.* Etym. in voc.]

We ſay a glaſs *bottle*, a ſtone *bottle*, a leathern *bottle*, a wooden *bottle*, a ſucking *bottle* [c]. Grew gives a deſcription of the Arabian balſam *bottle* [d].—[c V. *Crouch*'s View of Brit. Cuſt. T. 1. p. 122. d *Grew*, Muſ. Reg. Societ. P. 4. ſec. 3. p. 368.]

The antient Jewiſh *bottles* were cags made of goats or other wild beaſts ſkins, with the hair on the inſide, well ſewed and pitched together; an aperture in one of the animal's paws ſerving for the mouth of the veſſel. *Calm.* Dict. Bibl. T. 1. p. 323.

Glaſs *bottles* are better for cyder than thoſe of ſtone. Foul glaſs *bottles* are cured by rolling ſand or ſmall ſhot in them; muſty *bottles*, by boiling them. *Hought.* Collect. T. 1. N° 55. p. 156, ſeq.

Bottles are chiefly made of thick coarſe glaſs.

Fine glaſs *bottles* covered with ſtraw or wicker, are called *flaſks* or *bettees*.

The quality of the glaſs has been ſometimes found to affect the liquor in the *bottle*. There were two new manufactures of glaſs *bottles* erected ſome years ago in France; all the *bottles* of which ſpoiled the wine put in them; ſome in twenty-four hours, others much ſooner. The proprietors ſuſpected witchcraft in the caſe, and had recourſe to the Academy. Mem. Acad. Scienc. an. 1704. p. 547. Hiſt. p. 57.

BOTTLE is alſo a meaſure at Amſterdam, the ſame with the *mingle*. *Savar.* Dict. Comm. T. 1. p. 457. See MINGLE.

BOTTLE-*Noſe*, in zoology, a name by which the people in ſome parts of England call the *anas arctica Cluſii*. Vid. *Ray*'s Ornithol. p. 244.

BOTTLING, or BOTTELING, the operation of putting up liquors in bottles corked, to keep, ripen, and improve.

The writers on good huſbandry give divers rules concerning the *bottling* of beer, cyder, and the like. The virtues of Spaw, Pyrmont, Scarborough, and other waters, depend on their being well bottled and corked, otherwiſe they looſe both their taſte and ſmell. To preſerve them, it is neceſſary the bottles be filled up to the mouth, that all the air may be excluded, which is the great enemy of bottled liquors [a]. The cork is alſo further ſecured by a cement. Some improve their bottled beer, by putting cryſtals of tartar and wine, or malt ſpirits; in others, ſugar boiled up with the eſſence of ſome herb, and cloves, into each bottle [b].—[a *Hoffm.* Obſerv. on Min. Wat. p. 22. b Dict. Ruſt. T. 1. in voc.]

Cyder requires ſpecial precautions in the *bottling*; being more apt to fly, and burſt the bottle, than other liquors. The beſt way to ſecure them, is to have the liquor thoroughly fine before it be bottled. For want of this, ſome leave the bottles open a while, or open them after two or three days *bottling*, to give them vent. If one bottle break through fermentation, it is beſt to give them all vent, and cork them up again. Mean cyder is apter to break the bottles than rich. Some ſoak the corks in ſcalding water, to render them more pliant and ſerviceable.

Another obſervance is, to lay the bottles ſo as that the liquor may always keep the cork wet and ſwelled. Something alſo depends on the place where the bottles are ſet, which ought to be ſuch as expoſes them as little as poſſible to the alterations and impreſſions of the air: the ground is better for this purpoſe than a frame, ſand better than the bare ground, and a running water, or a ſpring often changed, beſt of all.

To haſten the ripening of bottled liquors, they are ſometimes ſet in a warm place, or even expoſed to the ſun, when a few days will bring them to maturity. *Hought.* Collect. T. 1. N° 56. p. 158. It. N° 61. p. 165. *Mortim.* Art of Huſb. T. 1. p. 349.

For the *bottling* mineral water, ſee TUBULATED *Corks*.

BOTTOM (*Cycl.*)—The loweſt part of a thing, as contradiſtinguiſhed from the top.

Hydroſtatical writers ſpeak of the preſſure of fluids on the *bottoms* of veſſels [a]; in which caſe, the law of gravitation is, that the altitude remaining the ſame, the preſſure will be as the *bottom* [b]. M. Leibnitz has aſſerted, that a body in falling through a fluid, does not preſs on the *bottom*, that is, does not encreaſe the preſſure on it; which is found to be falſe [c].—[a V. *Herman.* Phoron. l. 2. c. 1. §. 249. p. 128. b Mem. Acad. Scienc. an. 1692. p. 16. c Phil. Tranſact. N° 351. p. 572, ſeq.]

When water boils, the *bottom* of the veſſel is found conſiderably colder than it was ſome time before boiling; inſomuch that the hand may bear it in the former caſe, not in the latter. Hiſt. Acad. Scienc. an. 1703. p. 29.

BOTTOM, in navigation, denotes the ground or ſurface of the earth under the water. *Aubin.* Dict. Mar. p. 422, ſeq. voc. *Fond.* *Ozan.* Dict. Math. p. 230.

They ſay, a rocky, ſandy, gravelly, clayey *bottom*; a *bottom* with good hold, with a bad hold, &c.

The *bottom* of the ſea, Ray obſerves, is level, *i. e.* the deſcent from the ſhore to the deep is equable and uniform [a]: but the *bottoms* of ſome ſeas are found higher than of others [b]. Count Marſigli has made divers enquiries into the ſtructure of the *bottom* of the ſea, and its beds of ſtone, ſalt, bitumen, &c. [c]—[a *Ray*, Wiſd. of Creat. P. 1. p. 84. b *Plott*, Nat. Hiſt. Stafford. c. 2. §. 87. p. 82. c Hiſt. Acad. Scienc. an. 1710. p. 31.] See the article SEA.

Over the natural *bottom* of the ſea is formed an accidental *bottom*, by the mixture of different matters, ſand, ſhells, mud, &c. ſtrongly compacted by the glutinous quality of the ſea-waters, almoſt to a degree of petrefaction. Theſe incruſtations being neceſſarily formed in ſtrata, there are ſome places wherein the fiſhermen can diſtinguiſh the annual augmentations. *Marſigli*, in Hiſt. Acad. Scienc an. 1710. p. 32. Item, an. 1712. p. 166.

BOTTOM *of a ſhip*.—Merchant ſhips are much broader *bottomed* than frigates; men of war are in a middle between the two [a]. Sir William Petty preſented the model of a double *bottomed* ſhip [b].—[a *Aubin.* Dict. Mar. p. 423, ſeq voc. *Fond.* b *Grew*, Muſ. Reg. Societ. P. 4. ſect. 2. p. 363.]

BOTTOM is alſo uſed to denote the whole ſhip, or other veſſel. In this ſenſe, we ſay, Engliſh *bottoms*, foreign *bottoms*. By the act of navigation, certain commodities imported in foreign *bottoms*, pay a duty called petty cuſtom; from which they are exempt, if imported in Engliſh *bottoms*. *Crouch*, View of Brit. Cuſt. T. 1. p. 6.

BOTTOM is alſo uſed for what remains at the *bottom* of a veſſel. In this ſenſe, Paracelſus calls the ſediment of urine, *fundus urinæ*. *Paracelſ.* de Urin. Judic. l. 1. T. 1. c. 3. *Caſt.* Lex. Med. p. 351. voc. *Fundus*.

BOTTOM-*Stone*, a kind of iron-ſtone, or ore, in the Staffordſhire mines. *Plott*, Nat. Hiſt. Stafford. c. 4. §. 16. p. 159.

BOTTOMRY (*Cycl.*) is the ſame with what is otherwiſe called *bottomage*; by the Dutch, *bodmery*; by the French, *bomerie* [a]; *bodinerie* [b], and *groſſe avanture*. Some alſo make it the ſame with the *fœnus nauticum* of the antients [c]; though others, not without reaſon, make theſe to be different things [d].—[a *Savar.* Dict. Comm. T. 1. p. 401. b Ejuſd. Suppl. p. 74. voc. *Bodinerie*. c *Molloy*, de Jur. Marit. l. 2. c. 11. §. 9. p. 293, ſeq. d Treat. of Domin. and Laws of Sea, in Pref. p. 3.]

The rate or intereſt of money, taken on *bottomry*, follows that of inſurance. In Q. Anne's war, when inſurance to the Eaſt Indies and back was 16 *per cent.* *bottomry* was 45 *per cent.* And in king William's war, when inſurance to the ſame place was 22 *per cent.* *bottomry* was 55. Treat. of Domin. and Laws of Sea, App. p. 10, ſeq.

Bottomry, if conſidered only as hiring money, would be illegal, and fall under charge of uſury, on account of the exceſſive intereſt: but it is not a mere hiring of money, ſince the lender likewiſe ſtands to the hazard of the voyage. The money here advanced is called *pecunia trajectitia*, as being carried on the lender's hazard, or adventure, beyond the ſeas; ſo that if the ſhip be loſt, the lender loſes all; whereas, when money is lent at intereſt, it is delivered at the peril of the borrower. And the profit here, is merely the price of the loan; but the profit of the other is a reward for the danger and adventure of the ſea, which the lender takes on himſelf, and makes the intereſt lawful. Id. ibid. p. 206, ſeq. Lex Merc. c. 1. p. 37.

Bill of BOTTOMRY is a contract between two perſons, the one borrowing, and the other lending a ſum of money, by which the borrower ſetting forth his intention to make a voyage in a certain ſhip therein named, acknowledges the receipt of a certain ſum of money from the lender, on this condition, that if the ſhip does happily perform her voyage, without any diſaſter by enemies or otherwiſe, then he is to reſtore that ſum to the lender, with an additional ſum, therein expreſſed, for the intereſt, within a certain time after his return; but that if the ſhip be loſt, or taken by enemies or pirates, then the perſon of the borrower to be for ever diſcharged, and the lender to bear the loſs. Treat. of Domin. and Laws of Sea, p. 617. Item, p. 580, ſeq.

BOVATA *Terræ*, in antient law-writers, ſignifies an oxgate of land, or ſo much as may be ploughed in a year with one ox; by ſome reckoned at fifteen acres [a], by others at eighteen [b], by others at twenty [c], and by others at thirteen or twenty ſhillings yearly rent [d].—[a *Dugd.* Monaſt. T. 3. p. 91. b *Du Cange*, Gloſſ. Lat. T. 1. p. 597, ſeq. c *Dugd.* Monaſt. T. 1. p. 657. *Du Cange*, loc cit. d *Sken.* de Verb. Signif. p. 24.]

This is otherwiſe called *bovatus*, and *bovariata terræ*. *Spelm.* Gloſſ. p. 87.

BOUCHE *of Court* (*Cycl.*) was properly an allowance of diet, or belly-proviſion, from the king, or ſuperior lord, to their knights, eſquires, and other retinue, who attended them in any military expedition. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *Bowge*.

Thomas earl of Lancaſter retained Sir John de Ewre, to ſerve him with ten men at arms in time of war, allowing them *bowge of court*, with livery of hay and oats, horſe-ſhoes and nails. Sir Hugh Merrill had the ſame privilege for life, on condition of ſerving king Edward II. Idem ibid. p. 378.

BOUGE-*Ravel*, in zoology, the name of a fiſh of the boops kind, caught in the Mediterranean, and brought to ſome of the Italian markets. Its noſe is long and pointed; its back is of a rediſh blue, its tail red, and its belly of a fine ſilvery white. Its whole body is ſhorter and broader than the common kind of boops. *Willughby*, Hiſt. Piſc. p. 317. See BOOPS.

BOUGH, in antiquity.—Green *boughs* made part of the decoration of altars and temples, eſpecially on feſtival occaſions.

Oaken *boughs* were offered to Jupiter; thoſe of laurel to Apollo; of olive to Minerva; myrtle to Venus; ivy to Bacchus; pine to Pan, and cypreſs to Pluto. *Pitiſc.* Lex. Antiq p. 819. voc. *Frondibus.*

Some make them the primitive food of mankind, before acorns were invented. *Senec.* de Ira, 3. 20.

BOUILLON, among farriers, a lump or excreſcence of fleſh, growing either on or juſt by a horſe's fruſh, and making him halt. *Guill.* Gent. Dict. P. 1. in voc.

BOVINA-*Affectio*, a worm creeping between the ſkin and the fleſh, eating its way, ſaid to be frequently found in black cattle. *Sylv.* Med. p. 928. *Ceſt.* Lex. Med. p. 110.

BOVISTA, in botany, a term uſed by ſome authors to expreſs puff-ball, or duſty muſhrooms.

BOULCOLACA, among the modern Greeks, denotes the ſpectre of ſome wicked perſon who died excommunicated by the patriarch, reanimated by the devil, and cauſing great diſturbance among the people.

The word is Greek, βελκολακα, ſometimes alſo written βρικολακος, *broucolacos*. It is ſuppoſed to have been formed from βορβορος, or βορκα, mud, and λακκος, ditch, on account of the filthineſs of the ſight.

The bodies of thoſe who die under the cenſures of the church, according to the traditions of the Greeks, do not putrify or turn to duſt in the grave, but grow harder, tumid, and ſtiff; ſo that when beaten they ſound like a drum. In this ſtate, the devil enters into them, and, carrying them out of their tombs, walks about in this guiſe through the city in the night-time, playing a thouſand tricks with the poor people, knocking at doors, and calling them out by their name; if they happen to anſwer, they certainly die the next day. All their ſafety conſiſts in keeping ſtill and holding their tongues. *Allat.* de quorund. Græc. Opin. n. 12. *Du Cange*, Gloſſ. Græc. T. 1. p. 217.

This, it is to be obſerved, is one of the ſtanding miracles of the Greek church, to which they generally appeal as an abundant proof of the divinity of their faith. Some Romiſh controverſiſts have been terribly gravelled to account for the poſſibility of miracles being wrought in a ſchiſmatical church: it is not quite ſafe for them, abſolutely to deny the miracles of the *boulcolaca*, as fictitious, ſince many of their own, no leſs ridiculous, nor half ſo ſtrongly atteſted, would be hereby endangered. Mem. de Trev. an. 1734. p. 407, ſeq.

BOULIMY, in medicine. See BULIMY.

BOULINIS, or BOULIGNIS, a copper coin ſtruck at Bologna in Italy, equivalent to the *baiocco*. *Savar.* Dict. Comm. T. 1. 440. See BAIOCCO.

BOULUKE, in the military orders of the Turks, a body of the janizaries, with an officer in the place of a colonel at their head, ſent upon ſome particular enterprize; they are ſelected out of the body for this, and, as ſoon as the buſineſs is over, are received again into their former companies. *Pocock*'s Egypt, p. 169.

BOUNCE, in ichthyology, a name given by the people of the weſtern parts of England to a ſpecies of the ſqualus, diſtinguiſhed by Artedi by the name of the rediſh variegated ſqualus, with the pinna ani in the middle ſpace between the anus and tail. This is the fiſh called *ſcymnos* and *ſcylius* by the old writers, and *catulus major* by the later writers. The Italians call it *ſcorzone*. See CATULUS and SQUALUS.

BOUND, in dancing, a ſpring from one foot to the other; by which it differs from a hop, where the ſpring is from one foot to the ſame. It alſo differs from a half coupée, as, in the latter, the body always bears on the floor, either on one foot or the other; whereas, in the *bound*, it is thrown quite from the floor. *Weaver*, Lect. on Dancing, p. 140.

BOUNTY, in commerce, denotes a premium paid by the government to the exporters of certain commodities, on their taking oath, or, in ſome caſes, giving bond, not to reland the ſame in England. See EXPORTATION, *Cycl.*

There are divers *bounties* ſettled by act of parliament, as a *bounty* of one penny *per* ell on the exportation of Britiſh ſail-cloth [a]; and the like on ſilk ribbands and ſtuffs, on ſilk ſtockings, on fiſh and fleſh, on gold and ſilver lace of Britiſh manufacture [b]; and on ſeveral ſpecies of corn, when not exceeding certain prices, at the port of exportation.—[[a] Stat. 12 Ann. 16. §. 2. 5 Geo. I. c. 25. §. 2. [b] V. *Crouch*, View of Brit. Cuſt. T. 1. p. 88, ſeq.]

Queen Anne's BOUNTY, for augmenting poor livings under 80 *l. per annum*, conſiſts of the produce of the firſt-fruits and tenths, after the charges and penſions payable out of the ſame are defrayed. A corporation for management of the ſame was ſettled, *&c.* in 1704. New View of London, ſec. 5. T. 2. p. 641, ſeq.

BOURDIN, with the epithet *grand*, a name given by Bellonius to a genus of univalve ſhell fiſh, commonly known among authors by the name of *auris marina*. See AURIS *Marina*.

BOURDONNE', in heraldry, is underſtood of a croſs, whoſe extremities are turned round like the ends of a pilgrim's ſtaff; more frequently called *pommeté*, *globatus*. Trev. Dict. Univ. T. 1. p. 1169.

BOURGUIGNOTTE, a defenſive weapon wherewith to cover the head; being a kind of caſk open before, and proof againſt either pike or muſket: its name aroſe from the *Bourguignons*, who firſt introduced it. Trev. D. Univ. T. 1. p. 1176.

BOURIGNONISTS, a name given the followers of Antoinette Bourignon, who ſet up a kind of Quietiſm in the Low countries; pretending to be guided by immediate revelation, and contending much for toleration and indifferentiſm in matters of religion. V. Nouv. Rep. Lett. ann. 1685. Apr. p. 423, ſeq. Trev. Dict. Univ. T. 1. p. 1175. See QUIETISM, and MYSTICS, *Cycl.*

BOUSTROPHEDON, in literature, is uſed in ſpeaking of the antient method of writing among the Greeks, wherein the lines were continued forwards and backwards, like the furrows in ploughing. V. *Montfauc.* Palæograph. Græc. p. 554. Mem. Acad. Scienc. T. 3. p. 327. *Fabric.* Bibl. Græc. l. 1. c. 27. T. 1. p. 161.

The word is Greek, βουστροφηδον, compounded of βους, bullock, and στρεφω, I turn.

Pauſanias mentions ſeveral antient inſcriptions written in this manner: the laws of Solon are alſo ſaid to have been thus written; which, as the author laſt cited explains it, is when the ſecond line is turned on the contrary ſide, beginning at the end of the former, thus:

ΕΚ ΔΙΟΣ ΑΡ
ΧΟΣΔΕΥΟΣ

Potter, Archæol. Græc. l. 1. c. 26. T. 1. p. 144.

BOUTADE, in muſic, an irregular flight or movement, without art or ſtudy. *Walth.* Lex. Muſ. p. 110.

The word was alſo formerly uſed for a ſolo on the viol di gamba, thus called as being ſuppoſed to be extemporary.

Richelet ſpeaks of a dance called *boutade*, invented by the famous Bocan, in the reign of Lewis XIII. ſo called from the briſk humorous manner of its beginning; but now out of uſe.

BOUTAEL, in zoology, the name of an Eaſt Indian fiſh, of the lamprey kind, called alſo *neegen oogen*, and, by Mr. Ray, *lampetra Indica*. It grows to above a foot in length, and is ſmooth and ſlippery to the touch, like the eel; from which it differs, however, in the figure of its body. It is of a duſky brown colour, variegated on its back and ſides with yellow ſpots; its belly-fins are purple, and its head is like that of a ſnail, having horns of the ſame kind with thoſe of that inſect. It is caught in lakes, ponds, and other ſtanding waters, and is a very wholeſome and well taſted fiſh.

Its general deſcription ſeems to make it rather of the *muſtela* than the *lampetra* kind; but if, as its name expreſſes, it has ſeveral apertures for the gills, its Dutch name ſignifying nine eyes, it is abſolutely a new genus of fiſhes. *Ray*'s Ichthyogr. Append. p. 4.

BOUVIERA, in zoology, a name given by ſome to a ſmall broad and flat freſh-water fiſh, called more uſually *bubulca*. *Willughby*, Hiſt. Piſc. p. 267. See BUBULCA.

BOW (*Cycl.*)—The art of uſing *bows* is called *archery*, and thoſe practiſed therein, *archers*, or *bowmen*.

The two ends or extremities of a *bow*, to which the ſtring is faſtened, are called its horns, *cornua*. Trev. Dict. Univ. T. 1. p. 531. in voc. *Arc.*

The ſtrength of a *bow* may be calculated on this principle, that the power whereby it reſtores itſelf to its natural poſition, is always proportionate to the diſtance or ſpace it is removed therefrom. *Hook.* Lect. Cutl. de Pot. Reſtit. p. 4, ſeq *Chauv.* Lex. Phil. p. 54 voc. *Arcus*. See SPRING.

The moſt barbarous nations often excel in the fabric of the particular things which they have greateſt neceſſity for in the common offices of life. The Laplanders, who ſupport themſelves almoſt entirely by hunting, have an art of making *bows*, which we, in theſe improved parts of the world, have never arrived at.

Their *bow* is made of two pieces of tough and ſtrong wood, ſhaved down to the ſame ſize, and flatted on each ſide; the two flat ſides of the pieces are brought cloſely and evenly together, and then joined by means of a glue made of the skins of pearch, which they have in great plenty, and of which they make a glue ſuperior in ſtrength to any that we have.

The two pieces, when once united in this manner, will never ſeparate, and the *bow* is of much more force to expel the arrow, than it could poſſibly have been under the ſame dimenſions, if made of only one piece. *Scheffer*, Hiſt. Lapon.

Among the antients, the *bow*-ſtring, called τριχωσις, was made of horſes hair, and hence alſo called ἱππεια; though Homer's *bow*-ſtrings are frequently made of hides cut into ſmall thongs; whence τοξα βοειa. The uppermoſt part of the *bow* to which the ſtring was faſtened, was called κορωνη, being commonly made of gold, and the laſt thing towards finiſhing the *bow* [a]. The Græcian *bows* were frequently beautified with gold or ſilver; whence we have mention of *aurei arcus*; and Apollo is called Αργυροτοξος. But the matter of which they were ordinarily compoſed, ſeems to have been wood; though they were antiently, Scythian like, made of horn, as appears from that of Pandarus in Homer [b].—[[a] *Potter*, Archæol. T. 2. c. 4. p. 43. [b] Iliad, δ. v. 105. *Pott.* loc. cit. p 42.]

There are two kinds of *bows*, different in ſtructure and manner of uſe, *viz.* 1. The common or long *bow* among us, beſt made of Spaniſh or Engliſh yew, ſometimes of withen or elm, which is inferior to the former; the ſhaft is made of birch or brazil,

brazil, with grey or white feathers. 2. The croſs-*bow*, chiefly uſed when, through any imbecillity of the arm or back, the former cannot be managed. School Recr. p. 126, ſeq.

The invention of the *bow* is uſually aſcribed to Apollo, and was firſt communicated to the primitive inhabitants of Crete, who are ſaid to have been the firſt of mortals who underſtood the uſe of *bows* and arrows. And hence, even in latter ages, the Cretan *bows* were famous, and preferred by the Greeks to all others. Some, however, rather chooſe to honour Perſes, the ſon of Perſeus, with the invention of the *bow*; while others father it on Scythes, ſon of Jupiter, and progenitor of the Scythians, who were excellent at this art, and by many reputed the firſt maſters of it. From them it was derived to the Grecians, ſome of whoſe antient nobility were inſtructed by the Scythians in the uſe of the *bow*, which in thoſe days paſſed for a moſt princely education [c]. It was firſt introduced into the Roman army, in the ſecond Punic war [d].—[[c] *Potter*, Archæol. T. 2. l. 3. c. 4. p. 41. [d] *Aquin.* Lex. Milit. T. 2. p. 260. voc. *Sagittarii.*]

Among the later nations, the Engliſh formerly excelled in the uſe of the *bow*. See ARCHERY, *Cycl.*

The Indians ſtill retain the *bow*. In the repoſitory of the Royal Society, we ſee a Weſt Indian *bow* two yards long. *Grew*, Muſ. Reg. Societ. P. 4. ſec. 2. p. 367.

The Scythian *bow* was famous for its incurvation, which diſtinguiſhed it from the *bows* of Greece and other nations; being ſo great as to form an halfmoon, or ſemicircle: whence the ſhepherd in Athenæus, being to deſcribe the letters in Theſeus's name, and expreſſing each of them by ſome appoſite reſemblance, compares the third to the Scythian *bow*; meaning not the more modern character Σ, but the antient C, which is ſemicircular, and bears the third place in ΘΗCΕVC. *Pott.* l. c. p. 42.

BOW, in muſic, denotes a machine that ſerves to play, or give the ſound to viols, violins, and other inſtruments of that kind, by drawing it gently over the ſtrings thereof. See VIOL, VIOLIN, *&c. Cycl.*

The *bow* conſiſts of three parts; the firſt is the ſtick, or wood, to which the hair is faſtened; the ſecond is compoſed of about eighty or an hundred horſe-hairs, or filaments of ſilk; the third is the nut, a ſort of half-wheel, which ſerves to keep the hairs in the due degree of tenſion. *Playf.* Treat. of Muſ. p. 72. It. p. 88. Trev. Dict. Univ. T. 1. p. 539. voc. *Archet.*

The antients do not appear to have been acquainted with *bows* of hair: in lieu hereof they ſtruck their inſtruments with a plectrum; over which our *bows* have great advantage, for giving long and ſhort ſounds, and other modifications, which a plectrum cannot produce. *Malc.* Treat. of Muſ. c. 14. ſec. 2. p. 473. See PLECTRUM.

BOW, in trade and manufactures, denotes a flexible inſtrument, conſiſting of a piece of ſteel or iron, to the two ends of which is faſtened a cat-gut, uſed by ſmiths, watchmakers, and other artificers, for the piercing and turning of divers ſorts of works. *Felib.* Princ. Archit. l. 1. c. 20. p. 176. It. p. 343. *Mox.* Mech. Exer. P. 1. p. 6. It. p. 217. *Savar.* Dict. Com. T. 1. p. 130. voc. *Arbet.*

This is more peculiarly called a *drill-bow*. See DRILL, and DRILLING.

It is ſometimes alſo made of wood, whalebone, and the like. Operators in moſaic have a ſort of *bow* made of a piece of elaſtic wood, with a braſs wire faſtened to the ends of it, which ſerves to ſaw hard and precious ſtones withal. *Felib.* ubi ſup. l. 3. c. 12. p. 317. *Savar.* loc. cit.

Letter-caſters have alſo a *bow*, wherewith to keep the matrix even. See FOUNDERY, *Cycl.*

Bow *of the Gills*, a term uſed by ſome ichthyologiſts, to expreſs the convex part of each gill, each being a long ſemicircle, terminated by many laminæ, which form what is called the leaf. See the article GILLS.

Bows *of a Saddle*, are two pieces of wood laid archwiſe, to receive the upper part of a horſe's back, to give the ſaddle its due form, and to keep it tight.

The fore-*bow*, which ſuſtains the pommel, is compoſed of the withers, the breaſts, the points or toes, and the corking. See the article WITHERS, *&c.*

The hind-*bow* bears the trouſſequin, or quilted roll. See TROUSSEQUIN, *Cycl.*

The *bows* are covered with ſinews, that is, with bulls pizzles beaten, and ſo run all over the *bows*, to make them ſtronger. They are likewiſe ſtrengthened with bands of iron, to keep them tight. It is on the lower ſide of the *bows* that the ſaddle-ſtraps are nailed; the uſe of which is to make faſt the girths. Vid. *Guill.* Gent. Dict. P. 1. in voc.

Bow *of a Ship*.—The proportioning of the *bow* is of great importance to the ſailing of the ſhip; it being this part that firſt breaks off the ſea, and on which is, in a manner, all the bearing of the ſhip. If the *bow* be too broad, the veſſel will not make her way eaſily through the water, but carry a great load of dead water before her; and if it be too lean or thin, ſhe will pitch or beat much into a hollow ſea, for want of breadth to bear her up. *Manwayr.* Sea D. p. 13.

Bow-*Dye*, a new kind of ſcarlet red, ſuperior to madder, but inferior to the true ſcarlet grain for fixedneſs and duration. *Boyle*, Phil. Works abr. T. 1. p. 136. *Hought.* Coll. T. 2. p. 369.

Bow-*Grace*, in the ſea language, a frame or compoſition of old ropes, or juncks of cables, uſed to be laid out at the *bows*, ſtems, and ſides of ſhips, to preſerve them from great flakes of ice, chiefly when they ſail northwards or ſouthwards. *Botel.* Sea Dial. 4. p. 195.

Bow-*Cap*, among botaniſts, one of the forms or poſitions of the leaves of flowers, wherein the leaves are laid ſomewhat converſely over each other, but not plaited. *Grew*, Anatomy of Plants, l. 1. c. 9. §. 16. p. 31. See FLOWER, and LEAF.

Bow-*Net*, or *Wheel*, an engine for catching fiſh, chiefly lobſters and crawfiſh, made of two round wicker-baſkets, pointed at the end, one of which is thruſt into the other; at the mouth is a little rim, four or five inches broad, ſomewhat bent inwards [a]. It is alſo uſed for catching ſparrows [b].—[[a] *Savar.* Dict. Com. T. 2. p. 842. voc. *Naſſe.* [b] Trev. Dict. Univ. T. 4. p. 31. voc. *Naſſe.*

Bow-*ſprit*, or BOLT-*ſprit*.—To the *bolt*-ſprit is faſtened all the ſtayes belonging to the fore-maſt, fore-top-maſt, and fore top-gallant, *&c.* with their bowlings and jacks, beſides the riggings which belong to its own ſails.

If a ſhip ſpend her *bolt*-ſprit, or, as the term is, if the *bolt-ſprit drop by the board*, the fore-maſt will quickly follow, if it be a rough ſea, eſpecially in ſailing by a wind. *Manwayr.* Seam. D. p. 11.

BOWELLING, *Exenteratio*, the act of pulling out the intrails of an animal. *Du Cange*, Gloſſ. Lat. T. 2. p. 315. in voc. *Exenteratio.*

Bowelling makes part of the proceſs of embalming. See EMBALMING, *Cycl.* and *Suppl.*

BOWELLING is alſo a part of the puniſhment of traitors in England, who are to have their *bowels* ripped open, torn forth, and burnt before them [a]. *Fractioni, ſuſpendio, decollationi, exenterationi, & quaterizationi adjudicavit. Knyght. ſub Edw.* II. in the ſentence of Hugh Spencer [b].—[[a] *Walſingh.* in Rich. II. [b] *Du Cange*, Gloſſ. Lat. T. 1. p. 315. voc. *Exenteratio.*]

BOWER, (*Cycl.*) in gardening, a ſhady place, under covert of trees, or branches interwoven.

A *bower* differs from an arbour, in that the latter is always built long and arched, but a *bower* either round or ſquare at the bottom, and made with a ſort of dome or cieling at the top. See ARBOUR, *Cycl.*

BOWET, or BOWESS, among falconers, denotes a young hawk when ſhe draws things out of her neſt, and covets to clamber on the boughs. Dict. Ruſt. T. 1. in voc.

BOWGE *of Court*. See BOUCHE *of Court.*

BOWLDER-*Stones*, a ſpecies of ſmall ſtones, of an indeterminate texture and figure, generally roundiſh, found on the ſhores of the ſea and banks of rivers. *Woodw.* Meth. of Foſſ. c. 2. p. 13.

Bowlders, or *bowlder*-ſtones, are only lumps and fragments of ſtones or marble, broken from the adjacent cliffs, and rounded, by being bowled, and tumbling to and again by the action of the water; whence the name *bowlder*-ſtones, as being formed by an action like that of a bowl, and thereby reduced to the ſhape of one.

Neither the *bowlders* nor rubble-ſtones are ever inveſted with an exterior ſtrong cruſt or ſkin: 'tis plain from the manner of their formation they cannot. This is one mark by which they are diſtinguiſhed from flints, pebbles, or the other native nodules, which were formed before the ſubſiding of the matter of the ſtrata, and are always covered with ſuch a cruſt or ſkin, unleſs it have been worn off. *Woodw.* Meth. of Foſſils, c. 2. p. 13.

BOWLINE, or BOWLING, (*Cycl.*) in ſea-affairs.—The antients appear to have been unacquainted with the uſe of the *bowling*; which is the reaſon they always ſailed before the wind. *Manwayr.* Sea. Dict. p. 14.

By means of this rope, a ſail may be drawn away, and the wind, when received ſideways, prevented from ſwelling it too much, which would hinder the ſhip's run inſtead of forwarding it: it alſo ſerves to hinder the wind from eſcaping or blowing by on the ſide they are drawn on. *Aubin*, Dict Marin. p 114. voc. *Bouline. Ozan.* Dict. Math. p. 300. *Fæſch.* Lex. Milit. p. 104, ſeq. voc. *Boelinen.*

The phraſes peculiar to this rope are; *ſharp the bowline*, i. e. hale it taught, or pull it hard; *hale up the bowline*, i. e. pull it harder forward on; *check*, *eaſe*, or *run up the bowline*, i. e. let it be more ſlack.

BOWLINE *Bridles*, are the ropes by which the *bowline* is faſtened to the leech of the ſail. *Botel.* Sea. Dial. 4. p. 159. *Guill.* Gent. Dict. P. 3. voc. *Sail.*

BOWLING, among gameſters, the act or art of throwing bowls.

Bowling, among us, is chiefly the name of a game or exerciſe, practiſed either in open places, as bares and *bowling*-greens, or in cloſe *bowling*-alleys.

The ſkill of *bowling* depends much on a knowledge of the ground, and the right choice of a bowl ſuitable to it: for cloſe alleys the flat bowl; for green ſwards plain and level, the bowl as round as a ball, are preferred. Sportſman's Dict. T. 1. in voc.

The terms uſed in *bowling*, are, to *bowl wide*, which is when the bias does not hold, or is not ſtrong enough; *narrow*, when it is too ſtrong, or holds too much; *finely bowled*, is when the ground is well choſen, and the bowl paſſes near the block, even

though

though it go much beyond it; *bowling through*, or a *yard over*, is done in order to move the block; an *over-bowl*, that which goes beyond it; a *bowl laid at hand*, is that put down within the gameſter's reach, to be in the way of the next bowler, and hinder his having the advantage of the beſt ground; *bowling at length*, neither bowling through nor ſhort; a *dead length*, a juſt or exact one; *throwing* or *flinging*, is diſcharging a bowl with a ſtrength purpoſely too great for a length, in order to carry off either the block or ſome near bowl; *bowl-room*, or *miſſing-wood*, is when a bowl has free paſſage, without ſtriking on any other; *get off*, is when a bowl being narrow, is wanted to be wider; *bowl beſt at block*, that neareſt the block; *drawing a caſt* or *bowl*, is to win it by *bowling* nearer, without ſtirring either the bowl or block; a bowl is ſaid to *rub*, when it meets with ſome obſtacle in the ground, which retards it motion, and weakens its force; *it is gone*, when far beyond the block.

Block, ſignifies a little bowl laid for a mark.

Mark, is a proper *bowling* diſtance, not under ſo many yards; and being at leaſt a yard and half from the edge of the green.

Ground, a bag or handkerchief laid down to mark where a bowl is to go.

Lead, the advantage of throwing the block, and *bowling* firſt.

Caſt, is one beſt bowl at an end.

End, a hit, or when all the bowls are out.

The *game*, or *up*, is five caſts, or beſt bowls.

BOWLING-*Green*, in gardening, a kind of parterre in a grove, laid with fine turf, requiring to be frequently mowed, laid out in compartments of divers figures, with dwarf-trees, and other decorations. Theor. & Prat. du Jardin, P. 1. c. 7. p. 59, ſeq. *Wolf.* Lex. Math. p. 268. voc. *Boulingrin.*

Bowling-greens are of Engliſh origin, but have been adopted by the French and Italians, who have them only for ornament; being unacquainted with, or not fancying the exerciſe, on account of which they were firſt made in England.

BOWLING, (*Cycl.*) in ſea-affairs. See BOWLINE.

BOWSE (*Cycl.*) is chiefly uſed by the gunners when they hale upon their tackles, to thruſt a piece out of a port; in which caſe they cry, *bowſe hoa*, i. e. pull more upon the tackle; alſo when there is occaſion to pull more on the tackle than otherwiſe, they ſay, *bowſe upon the tackle. Manwayr.* Sea. Dict. p. 14.

BOWYERS, artificers whoſe buſineſs is to make bows. See the article BOW, *Cycl.* and *Suppl.*

In which ſenſe, *bowyers* ſtand diſtinguiſhed from fletchers, who made arrows.

The *bowyers* company was incorporated in 1622, and conſiſts of a maſter, two wardens, twelve aſſiſtants, and thirty-two on the livery. New View of Lond. ſec. 3. T. 2. p. 598.

BOX, *Buxus*, in botany. See BUXUS.

Box is alſo uſed to denote a caſe for holding things; of which there are ſeveral kinds, as a ſalve *box*, *pyxis unguentaria*, that uſed by ſurgeons to carry with them. *Hildan*, in Ciſt. Milit. p. 1041. *Caſt.* Lex. Med. p. 622. voc. *Pyxis.*

Strong Box, a coffer of iron, or of thick wood, ſecured with iron plates, and a lock with ſeveral bolts, difficult either to be opened or forced; chiefly uſed for putting money in. Trev. Dict Univ. T. 1. p. 1897. voc. *Coffre.*

Dice-Box, a narrow deep cornet, channelled within, wherein the dice are ſhaken and thrown.

This anſwers to what the Romans called *fritillus*; whence *crepitantes fritilli*, and, in Seneca, *reſonante fritillo.* The ſame author alſo uſes *concutere fritillum*, figuratively for playing. V. *Hyde*, Hiſt. Nerdilud. ſec. 5. p. 27. *Pitiſc.* Lex. Ant. T. 1. p. 818 voc. *Fritillus.*

Beſides the *fritillus*, the Romans, for greater ſecurity, had another kind of *dice-box*, called *pyrgus*, πυργος, and ſometimes *turricula.* It was placed immoveable in the middle of the table, being perforated or open at both ends, and channelled alſo within: over the top was put a kind of funnel, into which the dice were caſt out of the *fritillus*; whence deſcending, they fell through the bottom on the table; by which all practiſing on them with the fingers was effectually prevented [a]. For want of ſome contrivance of this kind, our ſharpers have opportunities of playing divers tricks with the *box*, as palming, topping, ſlabbing, &c. [b] — [[a] *Hyde*, lib. cit. p. 28, ſeq. *Pitiſc.* T. 2. p. 573. voc. *Pyrgus.* [b] Comp. Gameſt. p. 12.]

Box-*Money*, at hazard, is that which is paid the box-keeper, or him who furniſhes the *box* and dice. Betters have the advantage over caſters, as they have no *box*-money to pay, which at long run would beggar the moſt fortunate player. Hence ſome gameſters will never caſt, to ſave the expence of *box*-money. Myſt. of Mod. Gam. p. 22, and 24.

Coach-Box, a place under the coachman's ſeat, wherein he puts what may be wanted for the ſervice of the coach or horſes. Trev. Dict. Univ. T. 1. p. 1897. voc. *Coffre.*

Box *and Needle*, in navigation, is the ſame with the compaſs. See COMPASS, NEEDLE, &c. *Cycl.*

Box *of a Watch*, the outer caſe or cover. See WATCH, *Cycl.*

Box *of a Wheel*, the aperture wherein the axis turns. *Savar.* Dict. Com. T. 1. p. 378. voc. *Boeſte.*

Box is ſometimes alſo uſed for a kind of meaſure, though variable according to the commodity. Thus the *box* of quickſilver contains from one to two hundred weight; of prunellas, about fourteen hundred; of rings for keys, two groſs, &c. Dict. Ruſt. T. 1. in voc.

Boxes in a playhouſe, are little apartments behind and aſide of the pit. We ſay, the front-*boxes*, the ſtage-*boxes*, &c.

Box-*Iron*, a kind of caſe wherein the heaters are incloſed for ironing linen.

Box, in zoology, a name given by ſome authors to a ſmall fiſh caught in the Mediterranean, and more uſually known by the name of *boops*, from the largeneſs of its eyes. See the article BOOPS.

Box *of a Plow*, a name by which the farmers call that croſs piece in the head of the plough, through which the ſpindle of the two wheels paſſes, and to which are faſtened the two crow-ſtaves, ſerving, by their holes, to regulate the height of the beam, the tow-chain below, the ſtake which ſupports the bridle-chain above, and the gallows behind, into which are fixed the wilds with the crooks of iron, for the drawing the whole plough along. This part of the plough is placed croſs-wiſe with the beam, and ſtands much below it, and not far from the ground. *Tull*'s Huſbandry. See the article PLOUGH, *Cycl.* and *Suppl.*

Box-*Galls*. See GALLS *of the box.*

Box-*Puceron*. See GRUB *of the box.*

BOXERS, a kind of athletæ, who combat or contend for victory with their fiſts.

Boxers amount to the ſame with what, among the Romans, were called *pugiles*. *Voſſ.* de Quat. Art. Popul. c. 3. n. 80. *Pollux*, p. 30.

The antient *boxers* battled with great force and fury, inſomuch as to daſh out each other's teeth, break bones, and often kill each other. *Aquin.* Lex. Milit. T. 2. p. 209. voc. *Pugil. Voſſ.* de Quat. Art. Popul. c. 3. n. 83. p. 31. *Tournef.* Voy. du Levant, T. 2. l. 15. p. 70.

The ſtrange diſfigurements theſe *boxers* underwent were ſuch, that frequently they could not be known, and rendered them the object of many railleries. In the Greek anthology, there are four epigrams of the poet Lucilius, and one of Lucian; wherein their diſfigurements are pleaſantly enough expoſed. Anthol. Græc. l. 2. ep. 1, 2, 3, 10, 14. Mem. Acad. Inſcr. T. 4. p. 361, ſeq.

BOXING, the exerciſe of fighting with the fiſts, either naked, or with a ſtone or leaden ball graſped in them.

In which ſenſe, *boxing* coincides with the πυγμικη of the Greeks, the *pugillatus* of the Romans, and what, on our amphitheatres, is ſometimes called *trial of manhood.* When the champions had σφαιραι, or balls, whether of lead or ſtone, it was properly denominated σφαιρομαχια. *Potter*, Archæol. Gr. l. 2. c. 21. vol. 1. p. 443.

The antient *boxing* differed from the *pugna cæſtuum*, in which the combatants had leathern thongs on their hands, and balls to offend their antagoniſts [a]; though this diſtinction is frequently overlooked, and fighting with the cæſtus ranked as a part of the buſineſs of pugiles: in which view, we may diſtinguiſh three ſpecies of *boxing*; the firſt, where both the hands and the head were abſolutely naked, as is practiſed among us; the ſecond, where the hands were armed with ſpheræ, but the head naked; the third, where the head was armed with a kind of cap or cover, called *amphotides*, chiefly to defend the ears and temples, and the hands alſo furniſhed with cæſtuſes [b].— [[a] *Aquin.* Lex. Milit. T. 2. p. 209. voc. *Pugil.* [b] *Voſſ.* de Quat. Art. Popul. c. 3. n. 81, ſeq. p. 31. Mem. Acad. Inſcr. T. 4. p. 366.]

Boxing is an antient exerciſe, having been in uſe in the heroic times, before the invention of iron or weapons. *Tournef.* Voy. T. 2. Lett. 15. p. 70.

Thoſe who prepared themſelves for it, uſed all the means that could be contrived to render themſelves fat and fleſhy, that they might be better able to endure blows; whence corpulent men or women were uſually called *pugiles*, according to Terence; *Siqua eſt habitior paulo, pugilem eſſe aiunt. Pott.* l. c. *Aquin.* ubi ſupra, p. 210.

M. Burette has given the hiſtory of the antient pugilate, or *boxing*, with great exactneſs. V. Mem. Acad. Inſcr. T. 4. p. 353, ſeq.

BOXING, among ſailors, is uſed to denote the rehearſing the ſeveral points of the compaſs in their proper order.

BOXING is alſo uſed for the tapping of a tree, to make it yield its juice. See BLEEDING, SAP, &c.

The *boxing* of maple is performed by making a hole with an ax or chiſſel into the ſide of the tree, about a foot from the ground; out of it flows a liquor from which ſugar is made. V. Phil. Tranſact. N° 364. p. 27. See SUGAR.

BOXUS, in natural hiſtory, a name given by ſome authors to the common miſletoe. See the article MISLETOE.

BOYER, in navigation, a kind of Flemiſh ſloop, or ſmall veſſel of burden, having a boltſprit, a caſtle at each end, and a tall maſt; chiefly fit for the navigation of rivers, and, in many of its parts, reſembling a ſmack. Vid. *Aubin*, Dict. Mar. p. 120, ſeq.

The *boyer* has a double bottom, and a forked maſt, that it may run the better with the bowling-line, without driving. *Fæſch.* Lex. Milit. p. 116. *Ozan.* Dict. Math. p. 274.

BOYES, an order of American prieſts, or magicians, uſed by the ſavages for calling up their gods, either to be revenged on thoſe who have done them any injury, or to be cured of ſome diſeaſe,

diſeaſe, wherewith they are infeſted, or to drive out ſome devil.

The *boyes* are alſo conſulted with regard to the event of their wars; in which view, they are much on the footing of the antient augurs and Pythians. Each *boye* has its peculiar deity, whom he invokes by certain forms of words, ſung in a quaint tone, accompanied with the fumes of tobacco, which is burnt on this occaſion as a perfume, whoſe ſcent will draw the very gods out of their holds.

When the *boyes* are conſulted concerning any diſorder which a perſon labours under, they tell him it is the god of this perſon or that, who has brought it on him: which is the ſource of infinite quarrels for revenge. *Corn.* Dict. des Arts, T. 1. p. 134.

BOYEUPECANGA, in zoology, the name of a very large ſerpent, diſtinguiſhed by this name on account of certain prominences on its back. It is a very large and remarkably thick ſerpent, and of very fatal poiſon. *Ray*'s Syn. An. p. 330.

BOYUNA, in zoology, the name of an American ſpecies of ſerpent. It is very long and ſlender, and all over of a black colour. It has exactly the ſmell of a fox, but that ſo ſtrong, that no body can endure to be near it. *Ray*'s Syn. An. p. 330.

BRABANCIONES, in middle age writers, a kind of Netherland ſoldiery, infamous for rapine, being little better than commiſſioned banditti, who hired themſelves to fight for whoever could pay them beſt. *Aquin.* Lex. Milit. p. 135, ſeq. Trev. Dict. Univ. T. 1. p. 1195. voc. *Brabancon.*

The word is variouſly written in the hiſtorians of thoſe days; as *Brabanconii* [a], *Brabanciones*, *Brebantiones*, *Brebantini*, *Brebiciones*, *Brebenzones*, *Brabanceni*, and *Braibanceni* [b]. Denominations all given them from the country of Brabant, which was the chief nurſery of thoſe troops. They are alſo frequently confounded with the *Routiers*, *Roturiers*, *Ruptarii*, *Rutarii*, *Coteraux*, &c.—[a *Daniel*, Hiſt. de la Mil. Franc. l. 3. c. 8. *Richel.* T. 1. p. 233. b *Du Cange*, Gloſſ. Lat. T. 1. p. 599.]

BRABE, an herb mentioned by Oribaſius; the deſcription he gives of which is, that it grows a cubit high, ſhooting forth branches on each ſide, with leaves reſembling thoſe of the lepidium in ſhape, but ſofter and whiter, and at the top bearing an umbel of flowers like the elder. *Oribaſ.* Med. Coll. l. 11.

BRABEJUM, in the Linnæan ſyſtem of botany, a genus of plants, the characters of which are theſe: there is no calyx; the flower is compoſed of four ſtrait obtuſe petals, in their lower part ſtanding erect, and forming together a ſort of tube, and in their upper bending back; theſe all fall before the ripening of the ſeed; the ſtamina are four capillary filaments, inſerted on the bottoms of the petals ſomething ſhorter than the flower, and terminated by ſmall antheræ, which open ſideways; the germen of the piſtillum is extremely ſmall and hairy; the ſtyle is ſlender, of the ſame length with the ſtamina, and ſomewhat thicker in its upper than in its lower part; the ſtigma is ſimple; the fruit is a dry, oval, hairy drupe; the ſeed is an oval nut. *Linnæi*, Gen. Plant. p. 52.

BRABEUTES, or BRABEUTA, in antiquity, an officer who preſided at the public games, and decreed the prizes to the victors. *Suet.* in Ner. c. 53. *Lipſ.* de Amphitheat. c. 20. *Fab.* Agoniſt. l. 1. c. 23.

The word is Greek, Βραβευτης, formed from βραβειον, prize or reward. The Latins called him *deſignator* and *munerarius*. *Ulp.* Lex. Athlet. 4 D. de his qui notantur infamia. *Fab.* Theſ. p. 373. *Pitiſc.* Lex. Antiq. T. 1. p. 292. *Aquin.* Lex. Milit. T. 1. p. 136. *Calv.* Lex. Jurid. p. 126. *Suic.* Theſ. Eccleſ. T. 1. p. 707. voc. Βραβειον.

The generality of writers confound the *Brabeutes* with the *Agonotheta*, between whom there however appears to have been this difference, that the former preſided at the gymnic combats, the latter at the ſacred ones. *Pollux*, Onomaſt. l. 3. c. ult. *Briſſ.* de Verb. Signif. p 86. See AGONOTHETA.

BRACE, in writing, a term uſed to ſignify a certain crooked ſtroke or figure of a pen, made at the end of two or more lines in an account, which expreſs two or more articles charged with one and the ſame ſum at the end, which is uſually placed at the end, and in the center of the *brace*, and expreſſes that the ſum there ſpecified is the joint price of both the articles mentioned in the lines connected by the *brace*; as in the following example.

Debts due to me, ſome of which are good, others dubious.

Good Debts.			*Bad Debts.*		
From Mr. James *	300	} 500	From Mr. John * *	400	} 900
From Mr. Peter *	200		From Mr. Nicolas *	500	

Savar. Dict. Comm.

BRACE (*Cycl.*) is alſo uſed for a meaſure taken from the length of the arm, when extended; and is uſed in divers cities of Italy, in lieu of the foot or yard. Its length is various; the *brace* of Bergamo, according to Scamozzi, is nineteen Paris royal inches and a half; according to M. Petit, ſixteen inches two thirds; the *brace* of Boulogna is fourteen inches; that of Breſſe, ſeventeen inches ſeven lines and a half, according to Scamozzi; and according to M. Petit, ſeventeen inches five lines; the Mantuan *brace* is ſeventeen inches four lines; that of Milan, twenty-two inches; thoſe of Parma, twenty inches one third; of Sienna, twenty-one inches two thirds; of Florence, twenty inches two thirds, according to Maggi; twenty-one inches four lines and a half, according to Lorini; twenty-two inches two thirds, according to Scamozzi, and twenty-one inches one third, according to Picart. *Davil.* Explic. Term. Archit. p. 434. voc. *Braſſe*. *Savar.* Dict. Comm. T. 1. p. 648. *Aubin.* Dict. Mar. p. 123. voc. *Braſſe*

BRACELET, an ornament uſually worn around the wriſt.

The word is French, *bracelet*; which Menage derives further from *braceletum*, a diminutive of *bracile*, a word occurring in writers of the Juſtinian age; all formed from the Latin *brachium*, arm. Vid. *Menag.* Orig. p. 124.

Bracelet amounts to the ſame with what was called by the antients, *armilla*, *brachiale* [a], *occabus*, ψαλλιον, χειρικον [b], in the middle age, *boga*, *bauga*, *armiſpatha* [c], βραχιαλιον, βραχιαριον [d], &c.—[a *Fab.* Theſ. p. 374. *Pitiſc.* Lex. Antiq. T. 1. p. 293. voc. *Brachiale*. b Mem. Acad. Inſcr. T. 4. p. 140. c *Du Cange*, Gloſſ. Lat. T. 1. p. 511. voc. *Bauga*. d Id Gloſſ. Græc. T. 1. p. 225. *Meurſ.* Gloſſ. Græc. Barb. p. 121.]

Among the antient Romans, the men as well as the women wore *bracelets*; but the latter, it is to be obſerved, never wore them till they were betrothed. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 179. *Calv.* Lex. Jur. p. 90. voc. *Armilla*.

Bracelets were at firſt properly military ornaments or rewards, frequently conferred among the antients, by generals and princes, on thoſe who behaved gallantly in fight [e]. They became afterwards arbitrary decorations, aſſumed at pleaſure; and are ſometimes ſaid to have been worn for health as well as ornament [f]; and particularly as amulets, to break the force of charms and faſcinations [g].—[e *Kenn.* Rom. Ant. Not. P. 2. l. 4. c. 16. p. 221. *Aquin.* Lex. Milit. T. 1. p. 136. voc. *Brachialia*. It. p. 84. voc. *Armilla*. f *Suet.* in Galb. c. 3. *Keuch.* Not. ad Seren. p. 272. *Caſt.* Lex. Med. p. 354. voc. *Galbeum*. g *Scribon.* n. 16. *Caſt.* Lex. Med. p. 742. voc. *Verua*. *Du Cange*, Gloſſ. Lat. T. 1. p. 337. voc. *Armillam*.]

See the article AMULET.

The northern people uſed alſo to ſwear on their *bracelets*, to render contracts more inviolable.

The matter whereof the antients made their *bracelets* was different, as it ſtill remains; the moſt uſual among the Romans was gold or ſilver, which we ſometimes find further enriched with gems [h]. The antient Danes and Saxons chiefly uſed iron or braſs *bracelets* [i].—[h *Calv.* Lex. Jurid. p. 949. voc. *Viriola*. i *Plott*, Nat. Hiſt. Oxford. c. 10. §. 107. p. 353, ſeq.]

They were put on divers parts of the garments, moſt commonly from the ſhoulder to the fingers, either on the right or left arm, ſometimes even about the neck; though theſe are not ſo properly denominated *bracelets* as *collars*. *Caſt.* Lex. Med. p. 41. voc. *Amphidion*.

Capitolinus aſſures us, that Maximin had a thumb ſo large, that he wore his wife's *bracelet* on it as a ring.

Among the Romans we meet with divers ſpecies and denominations of *bracelets*; as the *brachiale*, which covered the whole length of the arm; the *dextrale*, or *dextrocherium*, only the wriſt [k], and that only of the right arm; *viria*, or *viriola*, peculiar to the male ſex [l]; *ſpinther*, to the women, being worn on the left arm [m]; *verua*, uſed as an amulet [n]; *amphidion*, worn either on the arm or about the neck [o]; *calbeum*, or *galbeum*, worn by generals in their triumphs, [p] &c.—[k *Pitiſc.* loc. cit. *Du Cange*, Gloſſ. Lat. T. 2. p. 73. voc. *Dextrale*. It. p. 76. voc. *Dextrocherium*. l *Pitiſc.* T. 2. p. 1098. voc. *Viriæ*. m Id. ibid. p. 829. voc. *Spinther*. n *Caſt.* Lex Med. p. 742. voc. *Verua*. o *Caſt.* p. 41. voc. *Amphidion*. p *Pitiſc.* T. 1. p. 320. voc. *Calbei*.]

Bartholin has a treatiſe expreſs on the *bracelets* of the antients. *Tho. Barthol.* Sched. de Armillis Veterum, Amſt. 1675. 12mo. *Bracelets* are ſtill much uſed by the ſavages of Africa and America, made of metal, glaſs-beads, ſhells, and the like [q]. The negroes on the coaſt of Guinea uſe a ſort of *bracelets* made of ſhells called *bouges*, and in Aſia *cauris*; of which they are ſo exceſſive fond, as not only to give the richeſt commodities in exchange for them, but ſometimes even their fathers, wives, or children [r].—[q Vid. *Grew*, Muſ. Reg. Societ. P. 4. ſect. 3. p. 370, and p. 373. *Crouch*, View of Brit. Cuſt. T. 1. p. 122. r *Savar.* Dict. Com. T. 1. p. 464.]

BRACELET is alſo uſed in anatomy, to denote the circular ligament which inveſts the carpus, called alſo *ligamentum annulare*.

BRACELETS, in ſome antient law books, denote beagles, or hounds of the ſmaller kind. Pat. Rich. II. p. 2. m. 1. Rex conſtituit J. L. magiſtrum canum ſuorum vocatorum *bracelets*. *Jac.* Law Dict. in voc.

BRACHERIUM, or BRACHERIOLUM, a kind of ſteel bandage worn about the hips, and uſed for the retention and cure of ruptures. *Caſt.* Lex. Med. p. 111. *Du Cange*, Gloſſ. Lat. T. 1. p. 602. voc. *Bracheriolum*. Trev. Dict. Univ. T. 1. p. 1214. voc. *Brayer*.

BRACHITÆ, an antient branch of Manichees, who appeared in the third century. *Prateol.* Elench. Hæreſ. l. 2. n. 33. Trev. Dict. Univ. T. 1. p. 1198. See MANICHEES, *Cycl.*

BRACHIÆUS, (*Cycl.*) in anatomy, a name given by Spigelius, and others, to a muſcle of the arm, generally known at this time under the name of *brachialis internus*.

BRACHIALIS, in anatomy, an oblong, thick, and broad muscle, lying immediately on the anterior part of the lower half of the os humeri; the upper part of it is forked, or sloped, and, at the bending of the joint of the elbow, the lower part of it contracts. It is fixed to the surface of the os humeri by a great number of fleshy fibres, from the lower insertion of the deltoides almost down to the two fossæ at the lower extremity of the bone, and from one edge of the foreside of this lower extremity to the other. The fibres are for the most part longitudinal; those nearest the surface of the muscle being longest, the more internal growing gradually shorter.

The lateral fibres are a little oblique, and this obliquity increases as they descend lower. These lateral fibres are partly fixed in the intermuscular ligaments of the os humeri; of which ligaments, that which lies toward the internal condyle, is longer and broader than that toward the external. The lowest of these fibres are very oblique, and form on each side a kind of small separate fasciculus. In passing over the joint, all these fibres contract in breadth, and afterwards end in a strong flat tendon, inserted in the muscular impression, which is directly below the coronoide apophysis of the ulna.

The sloped or forked extremity of this muscle embraces the large tendon of the deltoides; the internal part of the fork meets the inferior insertion of the coraco-*brachialis*, and the foreside of the whole muscle is covered by the two fleshy bodies of the biceps. *Winslow*'s Anatomy, p. 187.

BRACHIUM, in anatomy, a bone more usually called *humerus*. *Heist.* Comp. Anat. §. 337. p. 190. *Cast.* Lex. Med. p. 111. *Gorr* Med. Defin. p. 79. voc. Βραχιον. See the article HUMERUS.

BRACHIUM *moventium secundus*, in anatomy, a name given by Vesalius, and other of the old writers, to the muscle now generally called *deltoides*.

BRACHIUM *movens quartus*, in anatomy, the name by which Vesalius calls the muscle now generally known under the name of *latissimus dorsi*. Fallopius, and many others, have also called it *quartus humeri*.

BRACHII *tertius*, in anatomy, a name given by Vesalius and others to a muscle since called, from its shape, *teres major* and *rotundus major*.

BRACHMANS (*Cycl.*) are also called *bragmanes* by Palladius. *Pallad.* de Gent. Ind. & Brachman. ap. *Lehman.* Observ. ad Budd. Philos. c. 4. p. 223.

They differ from the *Germanes*, as Strabo calls them [a], or the *Sarmanæ*, as Clemens Alexandrinus [b], or *Samanæi*, as Porphyry calls them [c], who were another branch or species of gymnosophists, who had ceremonies and opinions peculiar to themselves.—[[a] *Strabo*, Rer. Geogr. l. 15. p. 1038. [b] *Clem. Alex.* Strom. l. 1. p. 359. [c] *Porph.* de Abstin. l. 4. §. 17. p. 167.

There appear still some remains of the antient *brachmans* in the East, under the denomination of *bramins*. See BRAMINS.

Palladius [d], Ambrosius [e], and Fabricius [f], have discourses express on the *brachmans*.—[[d] *Pallad.* de Gent. Ind. & Brachmanibus, Gr. Lat. Lond. 1668. 4°. [e] *Ambros.* de Morib. Brachman published with the former by Ed. Bisse, together with another anonymous piece concerning the *brachmans*. [f] *Alb. Fabric.* de Brachmanibus. Hamb. 1703. 4°. *Budd.* Comp. Hist Philos. c. 3. §. 20. p. 61. See also *Struv.* Bibl. Phil. c. 3. §. 3. p. 79, & 81. *Stoll* Introd. ad Hist. Liter. P. 2. c. 1. §. 21. p 429, seq.]

BRACHYCOLON, is when one member of a period is shorter than another.

In which sense, the word stands contradistinguished from *isocolon*, where the members are equal, or consist of the same number of syllables. *Micræl.* Lex. Phil. p. 222.

BRACHYLOGY, Βραχυλογια, in rhetoric, the expressing any thing in the most concise manner. This, so far as consistent with perspicuity, is a virtue and beauty of style; but if obscurity be the consequence, which is often the case, it becomes a blemish and inexcusable defect. Vid. *Voss.* Rhet. l. 4. c. 1. §. 12. p. 34.

Quintilian gives us an instance of *brachylogy* from Sallust: *Mithridates corpore ingenti perinde armatus*; Mithridates, as it were, armed with the hugeness of his stature. *Quint.* Instit. Orat. l. 8. c. 3. *Bouhours*, Man. de bien Pens. Dial. 4. p. 379. See BREVITY.

BRACHYPOTÆ, or BRACHYPOTI, those who drink but little and at long intervals.

The word is Greek, βραχυποται, or βραχυποτ-τι, and sometimes also signifies those who drink seldom, though in greater quantity. *Cast* Lex. Med. p. 111.

BRACHYPTERA, in zoology, the name of a genus of birds, of the class of the hawks, distinguished by the shortness of their wings.

The word is derived from the Greek, βραχυς, short, and πτερον, a wing.

The hawks of this genus have their wings so short, that, when folded, they do not reach nearly to the end of the tail. Of this genus are the goss hawk, the sparrow hawk, and the three kinds of the butcher bird. *Willughby*, Ornithol. p. 36.

BRACHYTELOSTYLA, in natural history, the name of a genus of crystals.

The word is derived from the Greek, βραχυς, short, τελειος, perfect, and στυλος, a column, and expresses a perfect crystal, with a short intermediate column.

The bodies of this genus are crystals composed of a short hexangular column, terminated at each end by an hexangular pyramid.

Of this genus there are only six known species. 1. A bright colourless one, with long pyramids; this is found on the shores of rivers, and lodged in the strata of stone, but no where adhering to them, and is not yet known to be found anywhere but in Bohemia. 2. A bright brown one, with short pyramids and an extremely short column; this is found on the shores of rivers in the East Indies, and in Germany, in the sides and bottoms of hills. 3. A yellow very bright one, with regular pyramids, and a short column; this is very common in Silesia and Bohemia, and is found in some parts of England and in Ireland. 4. A bright colourless one, with a short column, gibbous in the middle; this is common on the shores of rivers in Germany, and is often found in the earth on the sides of hills. 5. A dull kind, with large pyramids and an extremely short and depressed column; this is a rare species in England, but is common in the German cabinets, being found in many parts of that country, in the strata of stone, and lying in clusters of forty or more specimens together, though no where cohering either to one another, or to the stone. And, 6. A small bright and blackish kind, with regular pyramids; this also is common in Germany, and is found lodged among dust in the cavities of a black fissile stone. *Hill*'s History of Fossils, p. 162.

BRACKET, in building, denotes a kind of wooden stay, in form of a knee or shoulder, serving for the support of shelves, &c. *Skin.* Etym. in voc. *Neve*, Build. Dict. in voc

The word is also written *braget*, and seems derived from the Italian *brachetto*, a diminutive of *bracchio*, arm.

Modillions are a sort of *brackets* to the corona of an entablature. *Evel.* Architect. p. 36. See MODILLIONS, *Cycl.*

BRACKETS, in a ship, are small knees usually carved, and serving to support the galleries. See GALLERY, *Cycl.*

The timbers which support the gratings in the head, are also called *brackets*. *Botel.* Sea Dial. 4. p. 124. *Manwayr.* p. 24. *Guill.* P. 3. in voc.

BRACTEA, a thin flake or spangle of any substance; it is used by many authors in the same sense with the word *lamina*, but usually in a sort of diminutive sense, expressing a small plate.

BRACTEARIA, in natural history, the name of a genus of fossils, of the talc class; the characters of which are, that they are composed of small plates in form of spangles, and each of these, naturally very thin or fissile, into very thin ones.

The word is derived from the Latin *bractea*, a spangle, or small and thin glittering particle of any thing, the constituent parts of these bodies very much resembling gold or silver spangles.

Of this genus are the common Venetian talc of the shops, the *lapis odore violarum*, or violet stone of authors, and a number of other species, called by them *mica aurea*, and *mica argentea*, or gold and silver *glimmer*, and the latter *cat-silver*. *Hill*'s History of Fossils, p. 76.

BRACTEATED, among antiquaries, denotes a coin covered over with a thin plate, or leaf of some richer metal See MEDAL. *Bracteated* coins, or medals, *nummi bracteati*, are usually made of iron, copper, or brass, plated over and edged with gold or silver leaf, and then stamped with the hammer or mill. Trev. Dict. Univ. T. 2. p. 1972. voc. *Fourrer*.

Medalists find some *bracteated* pieces even among the truly antient coins. The French call them *Fourrées*.

BRADYPEPSIA, in the medical writings of the antients, the name of a distemper, which consisted in a slow, weak and languid concoction of the food.

It is caused by a diminution of the force or heat of the stomach, or a defect in the gastric liquors. *Cast.* Lex Med. p. 111. *Gorr.* Med. Defin. p. 79. voc. Βραδυπεψια. See the article DIGESTION.

BRADYPUS, in zoology, the name by which Linnæus calls the animal known by the name of the *sloath*, the *ai*, or *ignavus*.

This, in the Linnæan system of nature, is also a distinct genus of animals; the character of which are, to have a mouth without teeth, feet adapted to climbing, and only two paps upon the breast. *Linnæi*, Systema Nat. p. 34.

BRAGET, in building. See BRACKET.

BRAGGOT, a sort of drink made in some parts of England, of malt, with honey, spices, and other ingredients.

It is derived from the old British word *brag*, which signifies malt, and *gots*, a honeycomb. *Ray*'s Engl. Words, p. 7.

BRAIN (*Cycl.*) —The *brain* is by some considered as a chemical laboratory, every part of which has its office in the distillation of animal spirits. Hist. Acad. Scienc. an. 1707. p. 20, seq. *Junck.* Consp. Physiol. Tab. 13. p. 248.

The generality make wit and genius to depend on the conformation, magnitude, and qualities of the *brain* [a]. Des Cartes supposes the pineal gland, Vieussens the centrum ovale, to be the part of the *brain* where the soul more immediately resides [b]. Dr. Hook endeavours to shew how all ideas may be disposed and mechanically laid up in the *brain*, for the use of the memory [c].—[[a] *Charl.* Disc. diff. Wits, Art. 2. p. 40, seq. Phil. Trans.

Transf. N° 67. p. 2061. [b] Hift. Acad. Scienc. an. 1709. p. 14. [c] *Hook*, Poſthum. Works, p. 140. See MEMORY.

We find great diverſities in reſpect of figure, ſtructure, bulk, *&c.* in the *brains* of different animals. The *brains* are divided into two parts, with an interval between, as is well known to mountebanks, who, in virtue thereof, ſometimes raiſe an opinion of their ſkill in the vulgar, by running a pin through the middle of a cock's head, without damage to the bird. Mem. Nat. Hiſt. Anim. p. 237.

Through the whole bird kind, the cortical part of the *brain* is extremely over-proportioned to the medullary; ten times more in proportion than in men; add, that it is uſually alſo ſmooth, and without ſinuoſities [d]. Dr. Willis, who diſſected a great variety of *brains*, obſerved a near reſemblance between the *brains* of men and quadrupeds, and between thoſe of birds and fiſhes [e]. [[d] Id. ibid. [e] *Willis*, Anat. Cerebr. c. 5. *Blaſ.* App. ad Veſling. P. 21. c. 5. p. 510.]

In man, the *brain* bears a larger proportion to the body than in other animals [f]; being ſometimes found to weigh four or five pounds [g].—[[f] *Vater*. Phyſ. Exper. P. 2. ſec. 7. c. 14. p. 599. [g] *Blaſ.* Not. ad Veſling. c. 14. p. 214.]

Veſalius obſerves, that the human *brain* exceeds in bigneſs three oxens *brains*; whence he infers, that as animals excel in the largeneſs of the *brain*, ſo they do likewiſe in the principal faculties of the ſoul: but this inference will hardly hold good [h]. The French academiſts, from the ſmallneſs of the *brain* of a lion, and largeneſs of that of a calf, infer, that a ſmall *brain* is rather a mark of cruelty and fierceneſs than ſtupidity, and a large *brain* a mark of mildneſs, ſociality, and, if we may ſo call it, humanity, rather than of wit [i].—[[h] *Ray*, Wiſd. Creat. P. 2. p. 365. [i] Vid. Mem. for Nat. Hiſt. Anim. p. 7, ſeq. Phil. Tranſ. N° 28. p. 537.]

In reality, the *brain* of a ſea fox, for all its cunning, is found exceedingly little [k]; and that of the camelion ſcarce half ſo big as the globe of the eye [l]. The *brain* of a bear is found four times as big as that of a lion [m]; yet we doubt, whether the rule laid down by the academiſts will every where hold; the chamois, or rupicapra, has a large *brain* [n], but the dromedary, a patient and peaceful beaſt, a very ſmall one; the whole cerebrum and cerebellum ſcarce meaſuring ſix inches [o].-[[k] Mem. for Nat. Hiſt. Anim. p. 72. [l] Id. ibid. p. 26. [m] Id. ibid. p. 46. [n] Id. ibid. p. 144. [o] Id. ibid. p. 41.]

The *brain* is ſubject to divers diſorders, as wounds, contuſions, depreſſions [p], conſtipations [q], inflammations [r], petrifactions [s], diſruptions, *&c.* — [[p] Vid. Phil. Tranſact. N° 228. p. 533. *Boerh.* Aphor. §. 268. [q] Hiſt. Acad. Scienc. an. 1710. p. 52. [r] Id. ibid. an. 1722. p. 41. [s] Id. ibid. an. 1703. p. 32.]

In the Med. Eſſ. Edinb. T. 2. p. 245. we have an account of two ounces of the *brain* thrown by the force of coughing through a cicatrix of the ſkull.

A watery *brain* appears to be the cauſe of the epilepſy [u]; and an extremely dry or rigid one, of the phrenzy [w]: at leaſt, theſe have been found to be the ſtates of the *brain*, in diſſections of perſons affected with thoſe diſeaſes. Paracelſus even attributes leproſies, conſumptions and jaundices, to diſorders of the *brain* [x].—[[u] Hiſt. Acad. Scienc. an. 1705. p. 63, 70. [w] Mem. Acad. Scienc. an. 1706. p. 662. [x] *Caſt.* Lex. Med. p. 159.

Bartholin ſpeaks of divers extraneous bodies found in the *brain*; particularly a point of a dart, an inch long, which remained there, without much inconvenience, fourteen years, and was at length expelled by ſuppuration at the fauces. *Barthol.* Act. Med. Hafn. T. 2. Art. 132.

Anatomiſts, in their figure and deſcriptions of the *brain*, only repreſent the cavities which are ſeen upon ſeparating the hemiſpheres, and taking away the corpus calloſum, without obſerving that the crura fornicis ſink down, and then turn forwards on each ſide of the medulla oblongata, in cavities which are extended far forwards, under the commonly known anterior ventricles. In theſe inferior cavities, the crura fornicis are of a beautiful form, reſembling a white ſilk worm, or ſea-horſe; on which account they were called *hippocampi* by Julius Cæſar Arantius, who is the only author that has given any deſcription of them, till lately Mr. Du Vernoy has revived them, by an exact deſcription and delineation. He obſerves likewiſe, that the ſeptum lucidum between the anterior ventricles, has a cavity between the two lamellæ of which it is compoſed, in which he has often found water; and that the internal ſide of the ſeptum is made rough, by a great many ſmall grains and papillulæ. See Comment Acad. Petrop. T. 4. p. 130.

Some are of opinion, that the motion of the *brain* is owing to the air entering by the olfactory nerves into the ventricles of the *brain*; which air, rarefied by the heat, loſes its ſpring, and is expelled by the elaſtic contracting dura mater. Med. Eſſ. Edinb. Abr. Vol. 2. p. 481.

See further concerning the *brain* in anatomical and medical writers, particularly Steno, Ridley, Willis, and Vieuſſens, who have treatiſes expreſs on this ſubject. Phil. Tranſact. N° 215. p. 32. Item, N° 51. p. 1034. *Caſt.* Lex. Med. p. 159.

Some, with Diemorbroeck, conteſt all poſſibility of life without a *brain*; alleging, that, in the inſtances of the contrary given by anatomiſts, the *brain*, which is ſometimes ſmall and obſcure enough, had been overlooked [y]. In reality, a ſmall portion of *brain* is ſufficient for the purpoſes of life. M. Du Verney gives an inſtance of an ox, whoſe *brain* was wholly petrified, except in ſome few places where it ſtill remained ſoft; yet the beaſt was fat and vigorous. Bartholin gives a ſimilar caſe, of an ox in Sweden, whoſe whole *brain* was petrified, but the beaſt was weak and lean. The difference we may ſuppoſe to have ariſen from that ſmall part, which, in the former, retained its natural ſtate, and ſupplied the office of the whole. In this view, Fontenelle takes the bulk of *brain* in animals for a wiſe proviſion of nature againſt accidents of this kind. The medulla oblongata alſo appears to be lodged there, as a reſource in caſe of defects of *brain* [z].—[[y] Vid. Phil. Tranſact. N° 105. p. 120. [z] Vid. Mem. Acad. Scienc. an. 1703. p. 314. Hiſt. p. 32, ſeq.]

The *brains* of birds were a great delicacy among the antients, who yet never touched thoſe of other animals [a]. Some vainly preſcribe hares *brains*, as a remedy againſt difficult dentition [b]. Among the Greeks, calves *brains* were uſed as a ſort of charm to excite love [c].—[[a] *Pitiſc.* Lex. Antiq. T. 1. p. 405. voc. *Cerebella*. [b] *Junck.* Conſp. Med. Tab. 116. p. 750. [c] *Pott.* Archæol. l. 4. c. 10. p. 250.]

BRAINS *microſcopically examined*.—The accurate Mr. Lewenhoek examined, on ſeveral occaſions, the *brains* of different creatures by his microſcope; as that of the Indian hen, the ſheep, the ox, the ſparrow, *&c.* He could there always diſtinguiſh multitudes of veſſels ſo extremely ſmall, that if a globule of blood (a million whereof exceed not a grain of ſand in bigneſs) were divided into five hundred parts, thoſe parts would be too large to paſs into ſuch veſſels. He obſerved alſo, that theſe veſſels in the *brain* of a ſparrow, were as large as in that of an ox; and argues from thence, that there is really no other difference between the *brain* of a large animal and that of a ſmall one, but only that the one contains a much greater number of theſe veſſels than the others, and that the globules of the fluid paſſing through them, are in all animals of the ſame ſize. *Baker's* Microſcope, p. 146.

In examining the *brain* of ſeveral ſorts of fowls, particularly the turky, what is commonly called the cortical part of the *brain*, conſiſts of a very clear and tranſparent oily matter, which would be much better denoted by the term vitreous than cortical, but a great number of ſmall blood-veſſels are found ſpread through every part of this; and where a ſmall parcel of it is cut for a microſcopic examination, there flows a ſmall globule of a pellucid fluid from it. The particles of the fluid which circulates through theſe veſſels muſt be extremely minute; and Mr. Lewenhoek thinks, that if one of the ſmall globules of our blood were divided into five hundred parts, each part would be too big to paſs; yet there is a circulation carried on through them, and that of a red fluid; for wherever they lie three or four together, without any intervening matter, the congeries of them always appears red.

The medullary part of the brain of the ſame animal appears like a fiſher's net, between all the meſhes of which there is placed a very pliable ball-like ſubſtance, which changes its figure into a round or oval, according as the meſhes happen to be pulled or relaxed: theſe balls ſeemed to conſiſt of a clear and watery fluid, contained in a caſe or capſule of a membranous matter. Philoſ. Tranſ. N° 168. p. 884.

Abſceſs of the BRAIN. See IMPOSTHUMATION.

Fungus of the BRAIN. See FUNGUS.

BRAKE, in the country language, denotes a place where female fern grows; and ſometimes the fern itſelf. Ruſt. Dict. T. 1. in voc. See FERN.

BRAKE is alſo uſed for a farrier's inſtrument, otherwiſe called *barnacles*. See BARNACLES.

The word alſo occurs for a baker's treading trough.

BRAKE, in the hempen manufacture, denotes a wooden toothed implement, wherewith to bruiſe and break the bun of hemp, and ſeparate it from the rind.

There are two kinds of *brakes* uſed in the dreſſing of hemp, *viz.* an open and wide toothed, or nicked *brake*, and a cloſe and ſtraight *brake*; the firſt ſerving to cruſh the bun, the latter to beat it forth. When the hemp is *braked*, they proceed to ſwingle it. *Hought.* Collect. T. 2. N° 348. p. 392. Dict. Ruſt. T. 1. voc. *Drying*.

BRAKE *of a Pump*, ſignifies the handle whereby it is wrought. *Guill.* P. 3. in voc. *Botel.* Sea Dial. 4. p. 96.

BRAMA, *Bream*, in ichthyology, a river fiſh of the leather-mouthed kind, eſteemed a ſpecies of carp, and called by the generality of authors *cyprinus latus*.

It is a very broad and thin fiſh; the head is ſmall, the back of it broad and flat, and the back riſing from the head and tail toward the middle, like that of a hog; the ſide-lines are turned into a ſort of arched figure near their origin at the gills, and run much nearer the belly than the back. When the fiſh is full grown, its ſides are of a yellowiſh hue, and its belly reddiſh; the ſcales are large, and ſtriated downwards; the mouth is very ſmall for the ſize of the fiſh, and has no teeth. It lives in ponds, and rivers of ſlow current, and ſometimes grows to more than two feet in length, and is not accounted a delicate or fine flavoured fiſh. *Willughby*, Hiſt. Piſc. p. 248. *Geſner.* de Piſc. p. 376.

BRAMA *Saxatilis*, in zoology, the name of a ſea-fiſh, reſembling the common freſh-water *bream* in ſhape, but growing to three or four feet long. Its eyes are large; its ſnout of a pale red,

red, as are alſo its belly-fins and its tail. It is caught among the rocks in deep water, and ſeldom is taken any other way than by hooks, and is a very well taſted fiſh. It is found only in the Eaſt Indies. *Ray*'s Ichthyogr. Append. p. 1.

BRAMBAS, in natural hiſtory, a name given by the people of Guinea, and ſome other parts of Africa, to a peculiar ſpecies of lemon tree. The leaves of this are of a deep green, and of an admirable fragrancy, when rubbed between the hands. The fruit is very ſmall, and has a remarkable thin ſkin. The juice is uſed in dyeing. Phil. Tranſ. N° 108.

BRAMBLE, or BRAMBLING, in zoology, the common Engliſh name of the *montifringilla*, or *oroſpiza*, called in ſome places the mountain-finch; a ſmall bird, ſomewhat reſembling the chaffinch. *Ray*'s Ornith. p. 189. See MONTIFRINGILLA.

BRAMBLE *Galls*. See GALLS *of the bramble*.

BRAMICIDE, the crime of killing a bramin, reputed in the Eaſt Indies one of the five moſt enormous ſins. Lett. Edif. T. 10. p. 22.

BRAMINS, a ſect of divines and philoſophers in the Eaſt Indies, deſcended from the antient brachmans.

The name is alſo by ſome written *brames*, by others *bremens* [a]; the moſt ſuitable orthography is that of Burnet, who calls them *bramani*; the name being apparently formed from the antient *brachman*, or from *brama*, the name of their particular deity [b]. [a Lett. Edif. T. 9. p. 288. It. T. 10. p. 31. b *Burnet*, Archæol. P. 2. App. p. 266.]

The *bramins* are found in Siam, Malabar, China, Coromandel, and moſt other eaſtern nations anyways civilized; but their chief ſeat is in Indoſtan, or the Mogul's country; the heathens of which conſiſt of three caſts or tribes, *viz.* the *bramins*, who are their prieſts and doctors; the *banians*, their merchants; the *cuttery*, their ſoldiery: the origin of each of which they trace from the creation of the world *Lord*, Diſcov. of Banian Religion, c. 1. Mem. de Trev. an. 1731. p. 466.

The firſt and moſt honourable is the tribe of *bramins*, ſuppoſed to have been founded by *Brahma*, the firſt of the three beings created by God, and by whom he made the reſt of the world. *D'Herbel.* Bibl. Orient. p. 212. voc. *Brahma*.

Their chief ſtudy is of God, the world, the origin of things, the ſeveral periods of the univerſe, the firſt ſtate of nature, and the changes it has undergone. *Roger*, Janua Apert. ad Arcan. Gentiliſm. Trev. Dict. Univ. T. 1. p. 1200.

In all which F. Bouvet pretends to find the traces or remains of the Moſaic hiſtory, creation, paradiſe, deluge, Abraham, the paſchal lamb, *&c.* even the Trinity and euchariſt are ſuppoſed to be found among the *bramins*. Vid. Mem. de Trev. 1731. p. 469. *Fabric.* Pſeudop. Vet. Teſt. T. 1. §. 120. p. 405.

The *bramins* hold all things to be an efflux or emanation from the Deity, and that the concluſion of things is only their retraction and return into him; to explain this, they repreſent the firſt cauſe of all things as an immenſe ſpider, which, with wonderful art, ſpun the world out of her bowels, and then ſeated herſelf in a poſture to obſerve every part and motion of this its creation, and govern it accordingly; and that when ſhe ſhall have ſufficiently entertained herſelf in adorning and contemplating the work ſhe has done, ſhe is to ſwallow all again, and ſo diſſolve the univerſal frame of nature. *Burnet*, lib. cit. p. 269, ſeq.

On the *bramin* principles, God, or the ſovereign Being, whom they call *Achar*, and who is immoveable and unchangeable, not only produced human ſouls from his own ſubſtance, but every thing that is material and corporeal in the univerſe; and that this production was not made merely after the manner of efficient cauſes, but after the manner of a ſpider, which ſpins a web out of her own bowels, and reſumes it again when ſhe pleaſes. The creation then, ſay theſe doctors, is only an extraction or extenſion of the ſubſtance of God, drawn forth like a web, *&c.* *Bernier*, Suite des Memoir. ſur l'Empire du Grand Mogul, p. 202. *Gundling*. Hiſt. Phil. Mor. c. 5. §. 7. p. 42, ſeq.

Some attribute principles to the *bramins*, nearly bordering on quietiſm. They aſſert, that the world is only an illuſion or dream; and for bodies to exiſt truly, they muſt ceaſe to exiſt in themſelves, and be confounded with nothing, which, by reaſon of its ſimplicity, makes the perfection of all beings. They add, that a wiſe man ought not only to be without paſſion, but even without deſire; and that he is to be continually endeavouring not to will any thing, not to think of any thing, nor perceive or feel any thing; but to baniſh from his mind all ideas even of virtue and piety itſelf, that nothing may be left in him inconſiſtent with perfect quietude of ſoul. *Gobien*. Hiſt. de l'Empire de la Chin. in Pref. *Gundling*. Hiſt. Philoſ. Moral. c. 5. §. 7. p. 42.

They have a language peculiar to themſelves, which they call *hanſchrit*; in which they have ſeveral antient books, written, as is alleged, by their great prophet Brahma; as the *ſhaſtram*, which is their bible, and *porane*, a hiſtory which they eſteem ſacred, and pretend to have been dictated by God himſelf. *Burn.* Archæol. T. 2. App. p. 267, ſeq. *D'Herbel.* loc. cit.

They own a Supreme Being, who created *Brahma*, and gave him a power to create the world. They have alſo their ſubaltern deities, their pagods or temples, and idols, whom they fan to defend from flies, dancing before them, *&c.* *Wolf.* Bibl. Hebr. T. 2. ſec. 1. c. 3. p. 634. Phil. Tranſ. N° 243. p. 275.

They hold a feaſt in honour of the ſun, conſidered as the ſource of light and heat, whereby all nature is fecundified. Mem. de Trev. 1731. p. 467.

BRAN (*Cycl.*) is held detergent, and, on that account, is of ſome medicinal uſe in gargariſms and glyſters [a]. It is alſo a chief ingredient in the compoſition of cataplaſms [b]. Some apply it hot againſt the pleuriſy; boiled, it purges ſcurf and dandriff, and cleanſes the hands in lieu of ſoap [c]. Among the antients, it was alſo uſed as an erotic, to excite love [d].—[a *Caſt.* Lex. Med. p. 251. voc. *Furfur*. b *Quinc.* Diſpenſ. P. 2. ſec. 12. n. 550. *Junck.* Conſp. Therap. tab. 13. p. 367. c *Hought.* Collect. T. 1. N° 78. p. 211, 238, 251, ſeq. d *Pott.* Archæol. l. 4. c. 10. T. 2. p. 253.]

Dyers rank *bran* in the number of non-colouring drugs; becauſe it yields no colour of itſelf. It ſerves for the making of their ſour waters, uſed in preparing ſtuffs to take the dye. *Sav.* Dict. Comm. T. 2. p. 1559.

This water is made by boiling wheaten *bran*, and into the decoction putting a little leaven.

BRANCA, in middle age writers, the paw, or extreme part of the foot of a wild beaſt, or bird of prey. *Du Cange*, Gloſſ. T. 1. p. 607.

BRANCA, or BRANCHIA, alſo denotes a right of lopping, or cutting off the branches of trees in the foreſt for firing. *Du Cange*, loc. cit. p. 608.

BRANCH (*Cycl.*)—Antiently *branches* were carried in the hands at the proceſſions and ceremonies of the gods; whence the *thallophori*, or *branch*-bearers. Trev. Dict. Univ. T. 4. p. 1002. voc. *Rameau*.

The Theſpians adored a *branch* [a]. The olive-*branch* was the ſymbol or enſign of peace [b].—[a *Arnob.* Adverſ. Gent. lib 6. b *Sil. Ital.* l. 13. v. 68. *Pitiſc.* Lex. Ant. T. 2. p. 595. voc. *Rami*.

——— *Tum pignora pacis*
Prætendit dextra ramum canentis olivæ.

Branches do not ſpring out of the mere ſurface of the trunk, but are profoundly rooted therein, ſo as not only to penetrate the cortical, but alſo the woody ſubſtance, and even the pith. *Grew*, Anat. of Veget. l. 1. c. 4. §. 3. p. 28. *Chauv.* Lex. Phil. p. 553. voc. *Ramus*.

The conſtituent parts therefore of a *branch* are the ſame as of the trunk, *viz.* ſkin, bark, wood, and pith. *Grew*, lib. cit. p. 107, & 119.

M. Dodart's obſervations claſh with the obſervation mentioned in the *Cyclopædia*, of the *branches* of trees ſhooting from the trunk at an angle of 45 degrees; according to him, the *branches* generally ſprout out of the trunk horizontally, or at right angles with the trunk [c]: but, in their aſcent, they affect perpendicularity as much as poſſible, though not in the ſame degree with trunks [d].—[c Hiſt. Acad. Scienc. an. 1710. p. 85. d *Dodart*, in Mem. Acad. Scienc. an. 1700. p. 61, & 77.]

Branches of trees bear a near analogy to limbs of animals [e]; and, in certain caſes, the amputation of them is found neceſſary [f]. — [e Vid. Mem. Acad. Scienc. an. 1707. p. 366. f *Bac.* Hiſt. Vit. & Mort. ap. Works, T. 2. p. 116.] See the article PRUNING.

Some conſider *branches* as a ſort of roots in the air: in reality they are only prolongations of the roots; but, being united in the trunk, are redivided in the *branches* [g]. What ſhews the conformity between the two ſpecies of roots, is, that the end of *branches* being ſet in the ground, while yet adhering to the mother-tree, they will take root, grow on their own bottom [h]; and what is more, there are divers trees, which, if planted upſide down, the roots turn to *branches*, with leaves and fruit, and the *branches* to roots and fibres: but whether the *branches*, while ſuch, do the office of roots, and receive any fine kind of nutriment from the air, as Mr. de la Hire [i], Mr. Brotherſon [k], and others, have aſſerted, is a queſtion not yet fully decided. M. Perrault ſuppoſes the *branches* to convey a ſap for the nouriſhment of the root, as the root does for the reſt of the plant. [g *Teichmey.* Elem. Phil. Nat P. 2. c. 9. p. 313. h Philoſ. Tranſact. N° 43. p. 854, 858. i Mem. Acad. Scienc. an. 1708. p. 297. Hiſt. p. 81. k Phil. Tranſ. N° 187. p. 113.]

BRANCH is alſo applied to the parts or ramifications of divers other bodies, which, in reſpect hereof, are conſidered as ſtems. Thus chemiſts ſpeak of the *branches* of their metalline vegetations, *branches* of the arbor Dianæ, arbor Martis, *&c.* Phil. Tranſact. N° 286. p. 1430. Mem. Acad. Scienc. an. 1692. p. 215. Item, an. 1710. p. 558.

BRANCH, in anatomy, denotes a diviſion of a vein, artery, or nerve. All the veins in the body are only *branches* of the vena cava.

BRANCH is alſo uſed in the military art, in ſpeaking of mines, and their ſeveral ducts, ways, returns, and the like, between one well and another. *Felib.* Princ. de l'Architect. p. 501. voc. *Rameau*.

BRANCH is alſo uſed in ſpeaking of the veins in mines of gold, ſilver, or other metals, which divide like the veins in the body.

BRANCH, in genealogy, is applied to the ſeveral lines or ſucceſſions ariſing out of the ſame ſtock or origin.

In which ſenſe, *branches* amount to much the ſame with cadets. *Nish.* Eſſ. of Armor. c. 2. p. 28.

BRANCH, in ſcripture, is an appellation peculiarly given to the Meſſiah, as being of the *branch* or houſe of David. *Calm.* Dict. Bibl. T. 1. p. 324, ſeq.

BRANCHES *of Vaults*, are ſometimes uſed to denote the arches thereof. *Felib.* loc. cit. p. 361.

BRANCHES *of Arches*, denote ſeveral portions of arches ſpringing all from the ſame ſummer. *Davil.* Expl. Term. Archit. p. 434.

BRANCH *of a Bridle*—That part of the *branch* of a bridle, whereby we judge of its effects, and which diſcovers its ſtrength or weakneſs, is called the *line of the banquet*.

A ſtrong and hardy *branch*, is that whoſe ſevil-hole, at the lower end of it, is placed on the outſide of the line of the banquet.

A gentle *branch* is that, the ſevil-hole of which is ſet on the inſide of the ſaid line.

A rude and hardy *branch* will bring in a horſe's head, proportionably as it is more or leſs hardy; whereas a gentle *branch*, by diminiſhing the effect of the bit-mouth, makes a horſe more eaſily to bear the preſſure thereof, who before could hardly endure it. Ruſt. Dict. T. 1. in voc.

BRANCH alſo denotes a complex metalline kind of candleſtick, contrived for the reception of a number of candles.

Theſe, in antient writers, are called *phari* [a], *cantharæ* [b], *jeſſe* [c]; when made of glaſs, *luſtres*; the richer ſort, *girandoles* [d].—[a Vid. Mem. Acad. Inſcr. T. 9. p. 288. [b] *Du Cange*, Gloſſ. Lat. T. 1. p. 674. [c] Id. T. 3. p. 15. voc. *Jeſſe*. [d] Trev. Dict. Univ. T. 3. p. 216. voc. *Girandole*.] See JESSE.

BRANCH *of the Trenches*, in fortification. See BOYAU, *Cycl.*

BRANCH-*Stand*, in falconry, ſignifies to make a hawk leap from tree to tree, till the dog ſprings the partridge. Dict. Ruſt. T. 1. in voc.

BRANCHER, among fowlers and falconers, denotes a young bird well fledged, which having quitted the neſt, is not yet in a condition to fly far, or ſhift for itſelf, but ſtill keeps in the buſhes and branches about its native dwelling, where it is fed by the dam.

The *branchers* of hawks are alſo called *ramage falcons*; thoſe of nightingales, *puſhers*; becauſe, as ſome ſay, they are thruſt out of the neſt by the old ones; Canary birds of the firſt year are called *branchers*; when juſt flown, and unable to feed themſelves, *puſhers*. *Cox*, Gent. Recr. P. 2. p. 71, 74. It. P. 3. p. 55, ſeq. *Hought.* Collect. T. 3. N° 569. p. 347. *Cox*, lib. cit. P. 2. p. 60.

BRANCHERY, in the anatomy of vegetables, denotes the vaſcular parts of divers fruits, as apples, pears, plumbs, and berries.

In which ſenſe, the *branchery* ſtands diſtinguiſhed from the acetary, ſkin, pulp, &c.

The *branchery* of an apple is only the ramifications of the ligneous body through all the parts of the parenchyma; the greater branches being likewiſe, by the inoſculations of the leſſer, united together. The main branches are uſually twenty; ten of which are diſtributed through the parenchyma, moſt of them enarching themſelves towards the cork or ſtool of the flower; the other ten, running from the ſtalk in a directer line, meet the former at the cork, and are there inoſculated with them. Of theſe latter, five are originated from one; which running along the center of the ſtalk, and part of the parenchyma of the fruit, is therein at laſt divided. To theſe the coats of the internal kernels are faſtened. So that whereas moſt of theſe branches were originally extended even beyond the fruit, and inſerted into the flower for the due growth thereof, the fruit afterwards growing to ſome head, and ſo intercepting and preying on the aliment of the flower, ſtarves that, and therefrom ſuperſedes the ſervice of the ſaid branches to itſelf, fifteen for its parenchyma, and five for its ſeed. *Grew*, Anat. of Plants, l. 1. c. 6. §. 2. p. 40, ſeq.

BRANCHIÆ, in ichthyology, (*Cycl.*)—See GILLS.

BRANCHIALE, in natural hiſtory, a name given by Mr. Lhuyd to a peculiar ſpecies of fungites, which being of a deeply ſtriated texture, is ſuppoſed to reſemble the gills of a fiſh. See the article FUNGITES.

BRANCHIARUM *Foramina*, in ichthyology, a term uſed to expreſs the apertures of the gills of fiſhes, for their uſe in reſpiration. Scarce any fiſhes want theſe foramina, but they differ greatly in the various genera, in their number, ſituation and form. As to number, they are generally only two; one placed on each ſide of the head. Examples of this we find in almoſt every common fiſh. They are ſometimes ten in number, five placed on each ſide; this is the caſe in the greater part of the cartilaginous fiſhes; and finally, they are in ſome fourteen in number, ſeven being placed on each ſide, as in the petromyza. The cetaceous fiſhes, as they have lungs, have none of theſe apertures of the *branchiæ*; and in all thoſe fiſh that have them, the larger they are, the ſooner the fiſh dies, on being taken out of the water. *Artedi*, de Piſcibus. See GILLS.

BRANCHIDÆ, in antiquity, prieſts of Apollo ſerving in his temple at Didyma in Miletus; which was famous for its oracle.

The denomination is taken from *Branchus*, or *Branchides*, an epithet given to Apollo as worſhipped here; though on what account the title was given, is not agreed on.

In the time of the Perſian war, the *Branchidæ* betrayed the temple and its oracle into the hands of the Perſians, who pillaged it. They tranſported themſelves into the fartheſt parts of Aſia, to be out of the reach of puniſhment from the Greeks; which yet they are ſaid to have met with from Alexander, who demoliſhed their city, and put all the inhabitants to the ſword. *Strab.* l. 14. *Suid.* Lex. in voc. Βραγχίδη. *Potter*, Archæol. Græc. l. 2. c. 9. p. 285, ſeq.

BRANCHING. See BRANCH, and RAMIFICATION.

The *branching* or ſprouting of the horns of deer, &c. bears an analogy with the vegetation of plants. Philoſ. Tranſact. N° 227. p. 494. See HORN, *Cycl.* and *Suppl.*

The hair at the ends is apt to *branch*, or ſplit, and divide into whole bruſhes, which are eaſily viſible by a microſcope. *Drake*, Anthrop. l. 3. c. 1. p. 169. See HAIR, *Cycl.*

BRANCHIOSTEGI, in natural hiſtory, a term uſed to expreſs one of the general claſſes of fiſhes; the characters of which are, that the rays of the fins are of a bony ſubſtance; but theſe fiſh have no bones or officula at the branchiæ, as the malacopterygious and acanthopterygious fiſhes all have.

The word is derived from the Greek βραγχια, gills, and οστεον, a bone.

BRANCHUS, Βραγχος, in medicine, a ſpecies of catarrh, affecting chiefly the jaws, throat, and aſpera arteria. *Gorr.* Med. Defin. *Caſt.* Lex. Med. p. 111. *Quinc.* Lex. Phyſ. Med. p. 60. See CATARRH.

Branchus amounts to the ſame with what is called by the Latins, *raucedo*, *raucitas*, ſometimes alſo *ravis*. See the article HOARSENESS, *Cycl.* and RAUCEDO, *Suppl.*

BRANCHUS, or *Branchæ*, alſo denotes a kind of glandular tumor in the fauces, reſembling two almonds, which render the breathing and hawking difficult. *Roland.* Meth. Med. l. 2. c. 16. *Caſt.* Lex. Med. p. 111.

BRAND-*Sunday*, *Dimanche des Brandons*, in French eccleſiaſtical writers, denotes the firſt Sunday in Lent; which is thus called on account of an antient practice in the Lyonnois, where the peaſants, in the night of this day, walked about their orchards, gardens, &c. with torches lighted, or fire-*brands* in their hands; in which plight they viſited every tree, and addreſſing themſelves to them one after another, threatned that if they did not bear fruit well the enſuing ſeaſon, they ſhould be cut down to the ground, and burnt. This is evidently a relict of paganiſm; the like of which was practiſed by the antient idolaters in the month of February; hence called *Februarius*, *à februando*. *Meneſtr.* Hiſt. de Lyon. p. 379. Trev. Dict. Univ. T. 1. p. 1205. *Menag.* Orig. p. 126. voc. *Brandon*. *Du Cange*, Gloſſ. Lat. T. 1. p. 610. voc. *Brando*.

BRANDEUM, in eccleſiaſtical writers, a linen cloth or veil put over the tombs of the apoſtles St. Peter and St. Paul, and left there for ſome time; by which it is ſuppoſed to acquire a degree of ſanctity, ſo as to be worſhipped as a relick; and for that purpoſe frequently ſent by the pope as a preſent to ſome prince. *Fleur.* Hiſt. Eccleſ. l. 35. p. 93. Trev. Dict. Univ. T. 1. p. 1204. *Spelm.* Gloſſ. p. 87. *Du Cange*, Gloſſ. Lat. T. 1. p. 609.

In this ſenſe, *brandeum* amounts to the ſame with what was otherwiſe called *ſanctuarium*, *ſudarium*, *orarium*, and *velum*.

The uſe of *brandea* was introduced as a means of diffuſing and propagating the virtues and influences of relicks, without moving or any way impairing the ſubſtance of them; the tranſlation of relicks in early days being forbidden. *Magr.* Not. Vocab. Eccleſ. p. 37. See RELICKS, *Cycl.*

BRANDRITH, denotes a trevet or other iron ſtand, whereon to ſet a veſſel over the fire. Dict. Ruſt. T. 1. in voc. *Skin.* Etym. For. voc. *Brander*. *Du Cange*, Gloſſ. Lat. T. 1. p. 609.

BRANDRITH, among builders, denotes a fence or rail about the mouth of a well. *Neve*, Build. Dict. in voc.

BRANDY. See SPIRITS.

BRANLIN, an Engliſh name for a ſpecies of fiſh of the ſalmon kind, called alſo in ſome places *fingery*.

They obtained this laſt name from ſome ſingular marks they have which are five or ſix tranſverſe black ſtreaks upon each ſide, looking as if made by the impreſſion of ſo many figures, and each marked with a ſingle red ſpot. The tail of this fiſh is forked like that of the common ſalmon, and it is ſuppoſed they are all males; they ſeem to impregnate the ſpawn of the common ſalmon, and are found in waters of ſo rapid a current, that ſcarce any other fiſh could live in them. They never grow to any great ſize. *Willughby*, Hiſt. Piſc. p. 193.

BRASEM, in zoology, a name by which ſome have called an American fiſh of the ſmaris kind, more commonly known among authors by its Braſilian name of *acaropeba*. *Ray*'s Ichthyogr. p. 333. See the article ACAROPEBA.

BRASIDIA, Βρασιδεια, in antiquity, anniverſary feaſts held at Sparta in honour of Braſidas, the ſon of Tellis, famous for his great atchievements in favour of that ſtate.

The *Braſidia* were celebrated with ſacrifices and games, at which none were allowed to contend but free-born Spartans. To be abſent from theſe ſolemnities, is ſaid by ſome to have been held criminal, and puniſhed with fines. Vid. *Meurſ.* Græc. Ferial. *Foſold.* de Feſt. Græc. l. 2. c. 5. *Potter*, Archæol. Græc. l. 2. c. 20.

BRASILETTO, or BRAZILETTO. See BRAZIL, *Cycl.*

BRASMA, in the medical writings of the antients, a name given by Dioſcorides and others to a light, empty, and good for nothing kind of black pepper. This was no peculiar ſpecies of pepper, but, as John Bauhine has well obſerved, it was the ſame with the pepper we now frequently meet with, which has decayed upon the plant. *Dioſcorid.* l. 2. c. 189.

BRASS (*Cycl.*)—The word *braſs* ſeems to have been formed from *bracium*, a cant term among alchemiſts for copper. *Rul.* Lex. Alch. p. 106. voc. *Bracium.*

Braſs amounts to the ſame with what is otherwiſe called *latten*, or *latton*; by the French *leton*, or *laiton*, and ſometimes *cuivre jaune*, or yellow copper [a]; by the Greeks, ορειχαλκον, and the Latins, *orichalcum* [b], or *aurichalcum* [c].—[a *Savar.* Dict. Com. T. 2. p. 502. voc. *Leton.* Trev. Dict. Univ. T. 3. p. 1390. [b] Vid. *Caſt.* Lex. Med. p. 547. voc. *Orichalcum.* [c] Id. ibid. p. 93. voc. *Aurichalcum.*]

Braſs is made in divers manners; the moſt uſual is that mentioned in the *Cyclopædia.* See alſo *Neri*, Art. Vitriar. l. 1. c. 20. *Merr.* Obſerv. on *Neri*, p. 299, ſeq. *Hought.* Collect. T. 2. N° 258. p. 190. *Felib.* Princ. Archit. l. 2. c. 5. p. 240. *Junck.* Conſp. Chem. tab. 42. p. 1058. *Kirch.* Mund. Subterr. l. 10. ſec. 4. c. 9. T. 2. p. 218. Phil. Tranſ. N° 260. p. 474. It. N° 200. p. 735.

The calamin does not enter the copper under its earthy ſtate, but is firſt converted by the phlogiſton into the form of a metal: Henkel, it is true, imagined that only the mercurial part of the calamin was added to the copper, without any of the ſulphur; but this opinion later chemiſts ſeem to have ſufficiently refuted. Vid. *Junck.* Conſp. Chem. tab. 42. p. 1061, ſeq.

Braſs may be cleanſed, firſt, by rubbing it with a cloth dipped in equal quantities of aqua-fortis and common water; then with an oily cloth, and laſtly with a dry one dipped in lapis calaminaris.

Braſs is tinged of a gold colour, firſt, by burning, then diſſolving it in aqua-fortis, and, laſtly, reducing it to its metalline ſtate. It may be whitened by heating it red hot, and quenching it in water diſtilled from ſal-armoniac and egg-ſhells. It is ſilvered, or coloured ſuperficially white, by rubbing it with balls made of ſilver diſſolved in aqua-fortis, with powder of white tartar, ſufficient to abſorb all the moiſture thereof.

BRASS, in a more extenſive ſenſe, includes copper, and all the mixtures or alloys thereof with other minerals.

In which ſenſe, *braſs* amounts to the ſame with the Roman *æs*, and the French *airain.*

Inſtead of calamin, *braſs* is ſometimes made of copper with zink; which is the fineſt ſort, and that which, on account of its beautiful golden colour, is called *bath-metal*, or *princes-metal* [a]. M. Homberg has even contrived a method of making *braſs* without either calamin or zink, by amalgamating the copper, which at the ſame time diſpoſes the metal to receive gilding, which, in the uſual method, it is not eaſily ſuſceptible of [b]. — [a *Boyle*, Philoſ. Works, Abr. T. 2. p. 100. *Stahl.* Phil. Princ. Chem. P. 2. ſec. 4. p. 335. [b] *Du Ham.* Hiſt. Acad. Scienc. l. 6. ſec. 6. c. 4. p. 371.]

BRASS, in antiquity.—*Braſs* having been in uſe before iron, arms, in the primitive times, were made of it; which, according to Tzetzes, they ſo tempered, as to render extremely hard. Heſiod ſays expreſsly, that armour and other utenſils were then of *braſs*, becauſe iron was not yet in uſe. *Heſiodi* Εργ. l. 1.

Macrobius ſays, that the antients employed *braſs* in many of their ſacrifices; and that when the Tuſcans deſigned to build a new city, they marked out the circumference thereof with a plough-ſhare made of *braſs*; and that the Sabin prieſts cut their hair with *brazen* ſciſſars. Servius, in his remarks on the firſt book of the Æneid, affirms, that the prieſt of Jupiter was never ſhorn but with ſciſſars of the ſame metal. The antients alſo, according to the Scholiaſt on the ſecond Idyl of Theocritus, employed *braſs* in all their expiations, as eſteeming this metal very pure; on which M. de Meziriac makes this reflexion, that if the Scholiaſt's reaſon be juſt, the method of our antient druids was better, who ſhore their holy locks with golden hooks, according to Pliny; for that doubtleſs gold is purer, nobler, and more perfect than *braſs.* *Plin.* Hiſt. Nat. l. 16. cap. 44.

Of late days, ſince ſearches have been made in the north, and eſpecially Jutland, many antient monuments have been diſcovered, in which were found *brazen* armour, as may be ſeen by the Diſſertations of M. Mellem, Sperlingius, Rhodius, Schachtius [a], *&c.* M. Sperlingius, indeed, does not take them for armour, but for the figures of arms, which, according to this antiquary, the antient Goths always bequeathed to their heirs. M. Mellem and Rhodius maintain, on the contrary, that theſe are the arms themſelves; which opinion Tacitus alſo countenances [b]: and though ſome of theſe arms be of ſtone, particularly hatchets and knives, we may gather from the inhabitants of America, who arm their darts with ſharp ſtones, and uſe them as our workmen do inſtruments of ſteel, that the barbarians of the north had formerly arms and inſtruments both of ſtone and braſs, before iron was known, or at leaſt common among them. We may add, that the Scriptures mention mirrors of *braſs*, uſed by the women even in Moſes's time [c].—[a Vid. Nouv. Liter. Mar. Balt. 1699. p. 88. an. 1700. p. 14, 24, 333. [b] *Tacit.* de Morib. German. cap. 27. *Bartholin.* Antiq. Dan. l. 2. cap. 13. *Hart.* Diſſ. 13. Rer. Pruſſ. 11. 6. *Disburg*, P. 3. Chron. Pruſſ. cap. 5. [c] Trev. Dict. Univ. p. 244. voc. *Airain.* Phil. Tranſ. N° 322. p. 394. *Pott.* Archæol. Græc. l. 3. c. 4. T. 2. p 20, ſeq.]

We meet with divers antient ſpecies and denominations of *braſs*; as,

Cyprian BRASS, *Æs Cyprium*, a copper produced in the iſland of Cyprus.

Dodonean BRASS, *Æs Dodoneum*, that uſed in the ſacred caldrons in the temple of Apollo at Dodona.

Corybantic BRASS, *Æs Corybantium*, denotes the brazen rattles uſed by the Corybantes in the myſteries of Cybele.

Caſt BRASS, *Æs Caldarium*, that only melted, otherwiſe called *pot-braſs*, *æs olarium*, and not malleable; being that whereof pans and kettles were made.

Hammered BRASS, *Æs Regulare*, that capable both of being caſt and hammered; by which it ſtood oppoſed to *æs caldarium.*

Wrought BRASS, *Æs factum*, that manufactured into veſſels and other works. Vid. *Pitiſc.* Lex. Antiq. in voc. *Æs.*

Unwrought BRASS, *Æs infectum*, that ſtill in the maſs, unformed.

Hepatic BRASS, *Æs Hepatizon*, that which is of a liver colour, or approaching thereto. Some confound this with the *Æs Corinthium*; others, with more probability, take it to be the ſame with what the moderns call *bronze.*

White BRASS, *Æs Candidum*, a purer and whiter kind of metal, ſaid to be found under the veins of ſilver, bearing ſome analogy to the Venetian talc. *Pitiſc.* ibid.

It is plain that the antients were acquainted with ſome way of making copper white, as well as yellow. Virgil mentions *orichalcum album*, and the Greeks λευκον χαλκα; both which phraſes exactly expreſs white *braſs.* We have ſeveral ways of rendering copper white, at preſent as in our alchymy metal; but they ſeem inferior to the antient way. See CRAMA.

Yellow BRASS, *Æs Flavum*, was our common *braſs*, prepared with cadmia, or lapis calaminaris.

Glittering BRASS, *Æs Pyropum*, a ſort which ſhone or appeared firy, ſo as to reſemble a carbuncle. *Pitiſc.* Lex. Ant. T. 1. p. 48. voc. *Æs.*

Some ſuſpect the tradition of the origin of Corinthian *braſs*, from the burning of Corinth, as a fable; which they account for, by ſuppoſing that the firſt diſcovery of the art of making copper into *braſs* was made by the people of Corinth, who found the calamin ſtone in the plains of Peloponneſus; at leaſt, that if it were known to others, it was the Corinthians who made it in the greateſt perfection. Atlas Marit. p. 78.

BRASS, in the glaſs trade.—Thrice calcined *braſs* is a preparation which ſerves the glaſſmen to give many very beautiful colours to their metal. The manner of preparing it is this: Place thin plates of *braſs* on tiles on the feet of the furnace near the occhio; let it ſtand to be calcined there for four days, and it will become a black powder ſticking together in lumps. Powder this, and ſift it fine, and recalcine it four or five days more; it will then not ſtick together, but remain a looſe powder, of a ruſſet colour. This is to be calcined a third time, in the ſame manner; but great care muſt be taken, in the third calcination, that it be not over-done, nor underdone; the way to be certain of making it right, is to try it ſeveral times in glaſs while melting. If it makes it, when well purified, to ſwell, boil, and riſe, it is properly calcined; if not, it requires longer time. This makes, according to the different proportions in which it is uſed, a ſea green, an emerald green, or a turquoiſe colour. *Neri*'s Art of Glaſs, p. 42.

Braſs, by a long calcination alone, and without any mixture, affords a fine blue or green colour for glaſs; but they have a method of calcining it alſo with powdered brimſtone, ſo as to make it afford a red, a yellow, or a chalcedony colour, according to the quantity, and other variations in the uſing it. The method of making the calcination is this: Cut thin plates of *braſs* into ſmall pieces with ſheers, and lay them ſtratum ſuper ſtratum, with alternate beds of powdered ſulphur, in a crucible; calcine this for twenty-four hours in a ſtrong fire, then powder and ſift the whole; and, finally, expoſe this powder upon tiles, for twelve days, to a reverberating furnace; at the end of this time, powder it fine, and keep it for uſe. *Neri*'s Art of Glaſs. p. 37.

The glaſs-makers have alſo a method of procuring a red powder from *braſs*, by a more ſimple calcination, which ſerves them for many colours. The method of preparing it is this: They put ſmall and thin plates of *braſs* into the arches of the glaſs-furnaces, and leave them there till they are ſufficiently calcined, which the heat in that place, not being enough to melt them, does in great perfection. The calcined matter, powdered, is of a dusky red, and requires no farther preparation. *Neri*'s Art of Glaſs. p. 41.

BRASS *Lumps*, in mineralogy, a common name given by the miners and diggers of coal, *&c.* to the globular pyrites. This ſtone, when kept in the air, often ſends forth its efflorescences of ſalt, in form of ſmall and ſlender fibres, perfectly tranſparent, and ſometimes of near an inch long. The place where theſe ſtones are expoſed to the air, will greatly alter the figures and colours of their efflorescences; if they are laid in a cellar, the ſhoots will be ſhorter, and green, like the common copperas; and if laid in the way of the ſunſhine, they will be white and duſty.

Both are the same salt, which is true green vitriol or copperas, and both will, in the same manner, turn a decoction of galls into ink. The white salt is only the green powdered and calcined by the sun's heat. The figure of the fibres of these efflorescences is not easy to be determined; sometimes they seem round, sometimes angular. These, however, are the natural figures of the salts of these stones; and the other shoots into which they form themselves after solution, and bringing them together in a body by water, are rather their accidental forms, tho', under a like course of accidents, they generally appear the same. Philos. Transact. N° 110.

BRASSATELLA, BRASSADELLA, or BRASSIDELLA, in botany, a name given by many authors to the plant more usually known by that of *ophioglossum*, or adder's tongue. See OPHIOGLOSSUM.

BRASSICA, in botany, the name of a genus of plants, the characters of which are these; the flower consists of four leaves, and is of the cruciform kind; the pistil arises from the cup, and at length becomes a long cylindric pod, divided, by an intermediate membrane, into two cells, and filled with roundish seeds. To these marks it is to be added, that the leaves are usually large and wrinkled.

The species of *brassica* enumerated by Mr. Tournefort are these: 1. The white-headed *cabbage*. 2. The headed *cabbage*, with a white, long, and somewhat open head. 3. The white or great *cabbage*. 4. The white open *cabbage*. 5. The white curled *cabbage*. 6. The white *cabbage* made up of many small heads. 7. The red-headed *cabbage*. 8. The knotty-stalked *cabbage*, or the cole-rape. 9. The *cauliflower*. 10. The common red *cabbage*. 11. The turnep-rooted *cabbage*. 12. The curled asparagus *cabbage*. 13. The long-leaved rough *cabbage*. 14. The fimbriated *cabbage*. 15. The largest fimbriated *cabbage*. 16. The dwarf fimbriated *cabbage*. 17. The jagged white *cabbage*. 18. The jagged red *cabbage*. 19. The smallage-leaved *cabbage*, with broader leaves. 20. The smallage-leaved *cabbage*, with narrower leaves. 21. The little red field *cabbage*. 22. The great, tall, branched sea *cabbage*. 23. The musk *cabbage*. 24. The field white-flowered *cabbage*, with perfoliate leaves, called by some the podded thoroughwax. 25. The purple-flowered perfoliate field *cabbage*. 26. The perennial Alpine *cabbage*. *Tournef.* Inst. p. 219.

Authors have improperly added some other plants to this genus; as, 1. The single-seeded sea *cabbage*; which is truly a crambe. 2. The succory-leaved field *cabbage*, which is a turritis; as are also the branched and the single-stalked *brassica*, with hairy rough leaves, described by Caspar Bauhine. See CABBAGE.

BRASSIDELIC-*Art*, a term used by Paracelsus, to denote a method of curing wounds by the application of the herb brassidella, or ophioglossum, on the fresh wound. *Paracels.* de Vit. long. l. 2. c. 14. *Cast.* Lex. Med. p. 112. *Rul.* Lex. Alchem. p. 106.

BRAURONIA, Βραυρωνια, in antiquity, a feast held every fifth year in honour of Diana, surnamed *Brauronia*, from *Brauron* a village near Athens, where the famous statue of that goddess, brought from Scythia Taurica, was preserved.

The ceremony of the *Brauronia* was managed by ten men, from their office called Ιεροποιοι; the victim offered was a goat, and it was customary for certain men to sing one of Homer's Iliads, during the service: other ministers at the solemnity were young virgins, from five to ten years of age, habited in yellow, and consecrated to Diana, under the denomination of Αρκλοι. Vid. *Meurs.* Græc. Ferial. *Fasold.* de Fest. Græc. c. 6. *Potter*, Archæol. Græc. l. 2. c. 20.

BRAWN, in the culinary art, signifies the flesh of a boar, boned, rolled up, or collared, boiled, and, lastly, pickled, for a winter's cate.

Brawn is made only of the flitches, without the legs; the oldest boars are chosen for this use, it being a rule that the elder the boar, the more horny the *brawn*.

There is also *brawn* of pig, which is made by scalding, drawing, and boning the beast whole, except the head; then cutting it in two collars, soaking it in brine, seasoning, rolling, putting it into a cloth, binding it up, boiling it, and, when boiled, hooping it up in a frame. Rust. Dict. T. 1. in voc.

BRAZED, in heraldry, is used in speaking of three cheverons clasping or folding each other. *Coats*, Dict. Her. p. 57.

The word is doubtless formed by corruption from the French word *bras*, arm.

BRAZEN *Age*, *Seculum æreum*, is used by the poets to express the third age of the world. See AGE.

What Hesiod and the Greeks call the *brazen*, the northern nations called the *rocky* or *stony* age. Phil. Transact. N° 301. p. 2071.

BRAZEN *Dish*, among miners, is the standard by which the other dishes are gauged, and is kept in the king's hall. *Hought* Compl. Miner, in the Explan. of the Terms.

BRAZIER, an artificer who makes and sells pans, pots, kettles, and other kitchen utensils and brass ware.

Itinerant *braziers*, who go about with their tools and knapsacks, are called *tinkers*; by the French, *braziers of the whistle*, *chauderonniers au sifflet*. *Savar.* Dict. Comm. T. 1. p. 705.

The implements used by *braziers* are, a forge, wherein they burn only charcoal to heat their metal; a twibil, wherewith to hold their work to the fire; divers sorts of anvils, and hammers, wherewith to beat; also pans, ladles, sheers, and punches of divers sorts, soldering irons, borax box, lath for turning, *&c.*

BRAZIL (*Cycl.*)—*Brazil* wood is of some use in medicine; being reputed a species of the sanders, and possessed of the same physical virtues, though rarely prescribed. *Quinc.* Dispensat. P. 2. sect. 2. §. 168. See the article SANDERS.

Carnation is dyed with *brazil*, and violets are raised with *brazil*. Acids turn *brazil* yellow, but, by adding an alkali, it becomes purple; so that if we put lemon-juice, or spirit of vinegar, in a decoction of *brazil* wood, it becomes yellow, and, if we add oil of tartar, violet. Trev. Dict. Univ. T. 1. p. 1220. voc. *Brefil.*

BRAZIL *Ink*. See the article INK.

BRAZILING, or BRAZEELING, in dying, signifies the giving a dye with brazil wood. *Savar.* Dict. Comm. T. 1. p. 478. See BRAZIL, *Cycl.* and *Suppl.*

The French dyers of the grand teint are forbid *braziling*.

BREACH, (*Cycl.*) in a general sense, denotes a break or rupture in some part of a fence or inclosure, whether owing to time or violence.

The word is formed from the French *breche*, which signifies the same; formed of the German *brechen*, to break. *Menag.* Orig. p. 128. voc. *Breche*.

Inundations, or overflowings of lands, are frequently owing to *breaches* in the dikes, or sea banks [a]. Dagenham *breach* is famous; it was made in 1707, by a failure of the Thames wall, in a very high tide. The force wherewith it burst in upon the neighbouring level, tore up a large channel or passage for water 100 yards wide, and in some places 20 feet deep; by which a multitude of subterranean trees, which had been buried many ages before, were laid bare [b].—[a *Mortim.* Art of Husb. T. 1. l. 1. c. 2. §. 5. p. 29. b Philos. Trans. N° 335. p. 478.]

BREACH, in fortification.—A *breach* is said to be practicable, when it is wide and low enough to enter men, and make a lodgment.

When a *breach* in the rampart is practicable, the governor usually capitulates, to prevent the effects of a storm. *Feuq.* Mem. sur la Guerre, sect. 91. p. 369, seq.

Before they mount the *breach*, they frequently widen or enlarge it with fourneaux, and render the access to it practicable, even for cannon, which it is sometimes necessary to plant on the *breach*, in order to ruin the enemies retrenchments on the gorge and epaules of the bastions.

BREAD (*Cycl.*)—When *bread* is too stale, baking it a second time will make it eat like new; but then it must be spent quickly. *Hought.* Collect. T. 1. N° 89. p. 239.

Bread is made of the flower or meal of some farinaceous vegetable, ground, and kneaded with water and yeast. *Shaw*, Schem. Chem. p. 27.

The *bread*-corns chiefly used in Europe are wheat and rye; in some places and seasons, where these are scarce, oats also and barley. In divers parts of Asia, Africa, and America, *bread* is also made of maize. Vid. *Becman*, Hist Orb. Terrar. c. 10. §. 2. p. 418. *Cast.* Lex. Med. p. 349. voc. *Frumentum*. Philos. Transact. N° 142. p. 1068.

Bread made of good wheat, well leavened, and thoroughly baked, with a little salt, is the best [a]; that which is not thoroughly baked, ill kneaded, and without salt, is hurtful and unwholesome, especially in smoaky cities; so are unleavened *bread* and cakes baked under the ashes [b].—[a *Bacon.* Hist. Vit. & Mort. ap. Works, T. 2. p. 169. b Rust. Dict. in voc.]

In general, the lighter the *bread*, the better and more delightful it is; coarse and barley *bread* is detersive, and gently purgative [c], at least to those not used to it. Some recommend it for persons in the gout [d].—[c *Quinc.* Dispens. P. 2. sect. 13. n. 599. p. 237. It. sect. 4. §. 241. d *Junck.* Consp. Therap. tab. 9. p. 277.]

Bread is usually made of the seeds, sometimes also of the roots, and even the piths of plants [e]. The Greeks attribute the invention of *bread* to Ceres, the Egyptians to Isis, others to Menes. The first *bread* is supposed to have been made of the plant lotus [f]. In the northern parts there were three sorts of *bread* in use before Ceres taught the culture of corn; the first made of the sappy parts of the pine, and other trees, dried and pounded; the second of acorns, and the third of the roots of the filipendula [g]. The poor Tartars, near Sherazoul, still live upon acorn *bread* [h].—[e *Bacon*, lib. cit. ap. Works, T. 2. p. 161. f *Reimman*, Idea Antiq. Liter. Ægypt. p. 139. g *Rudbeck*, Atlant. ap. Philos. Transact. N° 300. p. 2033. h Phil. Transact. N° 138. p. 943.] See ACORN.

In the islands of Banda and Amboina, they make a kind of *bread* called *saegem*, or *sagoe*, of the pith of a farinaceous tree, whose trunk is the thickness of a man's thigh, ten foot high, and having a round head a-top like a cabbage; in the middle whereof is a white mealy substance, which being kneaded with water, fermented and baked on the coals, serves the poorer sort for *bread*. *Clus.* Erot. l. 1. c. 3. *Becman.* Hist. Orb. Terr. P. 1. c. 10. §. 1. p 419. Bibl. Raison. T. 12. p. 366. Phil. Transact. N° 26. p. 485.

In the Caribbee islands, they make *bread* of the root of a poisonous plant called *manioc* [i]; probably the same with the cassada

or caſſary *bread*, which is made of the root of the Yucca Mexicana [k].—[[i] Philoſ. Tranſact. N° 33. p. 635. [k] *Worm.* Muſ. l. 2. c. 12. *Becm.* loc. cit. *Grew*, Muſ. Reg. Societ. P. 4. ſec. 3. p. 371. Philoſ. Tranſact. N° 311. p. 2434.] See the article YUCCA.

In Benzoni's time, all the ſhips bound from Spain to Mexico, when they returned, were victualled with caſſary *bread*, inſtead of biſcuit. *Benzon.* Hiſt. Americ. l. 4. cap. 28. *Grew*, loc. cit.

To the claſs of *breads* made of roots may alſo be added potato-*bread*, frequent in Ireland, and turnep-*bread*, uſed in ſome parts of England. It is made by boiling the roots, and expreſſing the juice, till they become dry, then beating them in a mortar, and adding wheat-flour, aniſeeds, and yeaſt, moulding up the dough in the uſual form, and baking it. It looks and taſtes like other *bread*, and is by ſome uſed againſt conſumptions. Philoſ. Tranſact. N° 205. p. 970.

Among us, *bread* is chiefly divided into white, wheaten, and houſhold [k]; differing only in degrees of purity. In the firſt, all the bran is ſeparated; in the ſecond, only the coarſer; in the third, none at all: ſo that fine *bread* is made only of flour; wheaten *bread*, of flour, with a mixture of the finer bran; and houſhold, of the whole ſubſtance of the grain, without taking out either the coarſe bran, or fine flour [l].—[[k] Stat. 8 Ann. c. 18. Abr. 8°. T. 1. p. 118. [l] *Hought.* Collect. T. 1. N° 89. p. 238.]

We alſo meet with ſymnel *bread* [m], manchet or roll *bread* [n], and French *bread*; which are only ſo many denominations of the fineſt or whiteſt *bread*, made of the pureſt flour; except that in roll *bread* there is an addition of milk [o], and, in French *bread*, of eggs and butter alſo [p]. To which may be added, ginger-*bread*, made of white *bread*, with almonds, liquorice, aniſeed, roſe-water, and ſugar [q]; and maſliſi-*bread*, panis mixtus, made of wheat and rye, or ſometimes of wheat and barley [r].—[[m] Affiſ. Pan. ann. 51 Hen. III. *Spelm.* Gloſſ. p. 515. [n] *Hought.* lib. cit. N° 90. p. 242. [o] Id. ibid. p. 245. [p] Dict. Ruſt. T. 1. in voc. *French.* [q] Id. in voc. *Ginger.* [r] *Hought.* Collect. T. 1. N° 90. p. 242. *Du Cange*, Gloſſ. Lat. T. 4. p. 124.]

In Lancaſhire, and ſeveral of the northern counties of England, the people have ſeveral ſorts of oaten *bread*; as, 1. The *bannock*, which is an oat cake, kneaded only with water, and baked in the embers. 2. *Clap-bread*, which is made into thin hard cakes. 3. *Bitchineſs-bread*, which is made of thin batter, and formed into thin ſoft oat cakes. 4. *Riddle-cakes*, which are thick and ſour, and very little different from the hand-hover *bread*, which has but little leaven, and kneaded ſtiff; and, 5. *Jannock*, which is oaten *bread* made up into loaves. *Ray*'s Words, p. 5.

In the ſtatute of aſſize of *bread* and ale, 51 Hen. III. mention is made of waſtel-*bread*, cocket-*bread*, and *bread* of treet; which anſwers to the three ſorts of *bread* now in uſe, called white, wheaten, and houſhold *bread*.

In religious houſes, they heretofore diſtinguiſhed *bread* by the names, eſquires *bread* [s], *panis armigerorum*; monks *bread*, *panis conventualis*; boys *bread*, *panis puerorum*; and ſervants *bread*, *panis famulorum*, called alſo *panis ſervientalis* [t].—[[s] *Du Cange*, Gloſſ. Lat. T. 4. p. 119. [t] *Jac.* Law Dict. in voc. *Du Cange*, Gloſſ. Lat. T. 4. p. 126.]

A like diſtribution obtained in the houſholds of nobles and princes; where, however, we find ſome other denominations, as, meſſengers *bread*, *panis nuncius*, that given to meſſengers as a reward of their labour [u]; court *bread*, *panis curialis*, that allowed by the lord for the maintenance of his houſhold [w]; eleemoſynary *bread*, that diſtributed to the poor in the way of alms [x].—[[u] *Du Cange*, lib. cit. p. 123. [w] Id. ibid. p. 120, ſeq. [x] Id. ibid. p. 121.]

Among the antients we meet with divers other denominations of *bread*; as, 1. *Panis ſiligineus*, called alſo *mundus*, *athleticus*, *ifungia* [y], *coliphius* [z], and *robys* [a], anſwering to our white *bread*; being made of the pureſt flour of the beſt wheat [b], and only uſed by the richer ſort; whence the ſatyriſt, *Sed tener & niveus mollique ſiligine factus ſervatur domino* [c]. 2. *Panis ſecundus*, or *ſecundarius*, called alſo *ſimilaceus*, or *ſimilagineus*, the next in purity; being made of fine flour, only all the bran not ſifted out [d], and probably the ſame with the *panis cibarius*, out of which the bran was not carefully, but only ſlightly taken [e]. 3. *Autopyrus* [f], Αυτοπυρος, called alſo *ſyncomiſtus* [g], συγκομιστος, and *confuſaneus* [h]; made of the whole ſubſtance of the wheat, without either retrenching the finer flour, or coarſer bran; anſwering to our houſhold *bread*. 4. *Cacabaceus*, apparently the ſame with what was otherwiſe denominated *ſordidus*, as being given to dogs [i]; *furfuraceus*, *furfureus*, or *furfurativus*, becauſe made in great part of bran [k]; and, in the middle age, *biſſus*, on account of its brownneſs [l]; ſometimes alſo *leibo* [m]. — [[y] *Du Cange*, Gloſſ. Lat. T. 3. p. 15. voc. *Ifungia*. [z] *Lang.* Epiſt. Medic. l. 1. Epiſt. 55. p. 257. *Caſt.* Lex. Med. p. 194. voc. *Coliphius*. [a] *Caſt.* lib. cit. p. 641. voc. *Robys*. [b] *Pitiſc.* Lex. Antiq. T. 2. p. 368. voc. *Panis*. [c] *Juv.* Sat. 5. v. 70. [d] *Pitiſc.* loc. cit. [e] *Du Cange*, lib. cit. T. 4. p. 126. voc. *Panis*. [f] *Caſt.* lib. cit. p. 175. voc. *Cibarium*. *Pitiſc.* lib. cit. p. 366. [g] *Gorr*, Med. Defin. p. 55. voc. Αρτος. *Caſt.* Lex. Med. p. 95. voc. *Autopyrus*. *Pitiſc.* loc. cit. *Du Cange*, lib. cit. p. 119. *Gorr.* lib. cit. p. 436. voc. Συγκομιστος. *Caſt.* lib. cit. p. 701. voc. *Syncomiſtos*. [h] *Pitiſc.* ubi ſup. p. 367. *Caſt.* lib. cit. p. 206. voc. *Confuſaneus*. [i] *Pitiſc.* loc. cit. [k] Id. ibid. p. 369. [l] Id. p. 367. *Du Cange*, Gloſſ. Lat. T. 4. p. 123. [m] Id. ibid. p. 120. Id. T. 3. p. 249. voc. *Leibo*.]

There were other ſorts of *bread*, denominated from the manner in which they were made, or the uſes they were applied to; as, 1. The *militaris*, which was prepared by the ſoldiers and officers in camp, with their own hands; for which purpoſe ſome had hand-mills, others pounded the corn in a mortar, and baked it on the coals [o]. 2. *Clibanites*, that baked in an oven, by way of contradiſtinction from that baked on the hearth, or under the embers [p]. 3. That called *ſubcineritius*, or *ſub cinere coctus*; ſometimes alſo *reverſatus*, becauſe it was to be turned in the baking [q]. 4. *Nauticus*, anſwering to our ſea biſcuit, and denominated accordingly *bis coctus* [r], becauſe baked ſeveral times over, to make it keep the longer. See BISKET. 5. *Buccellatus*, much of the ſame kind, only for land uſe [s]. See BUCCELLATUM. 6. *Civilis*, called alſo *gradilis* and *fiſcalis*; that diſtributed among the common people in lieu of corn, at certain ſtated times, in the emperor's name, not only to the poor, but alſo to thoſe of better condition [t].—[[o] *Lipſ.* de Milit. Rom. l. 5. Dial. 16. *Pitiſc.* lib. cit. p. 368. [p] *Pitiſc.* lib. cit. p. 367. *Du Cange*, lib. cit. p. 120. [q] *Iſid.* Orig. l. 20. c. 2. *Pitiſc.* lib. cit. p. 369. [r] *Pancirol.* de Reb. Memor. P. 1. tit. 53. p. 274. *Salmuth.* ad loc. *Pitiſc.* p. 368. *Du Cange*, p. 124. *Caſt.* p. 105. voc. *Biſcoctus*. [s] *Du Cange*, lib. cit. p. 123, ſeq. *Pitiſc.* 366, ſeq. [t] *Salmuth.* ad Pancirol. p. 273. *Pitiſc.* lib. cit. p. 299.]

Not only the ſoldiery, but even the officers, and the general himſelf, frequently made their own *bread*. The emperor Caracalla, affecting to be ſtrong and hardy, and to do every thing in the military way, ground wheat, mixed and baked *bread* for his own uſe, in the aſhes. *Herod.* l. 4. c. 7, & 9. *Pitiſc.* loc. cit.

Other kinds of *bread* were denominated from their qualities and accidents; as, 1. The *panis ſiccus*, ξηρος αρτος, that which had been long baked; ſuch as were the *biſcoctus*, naval, and buccelated *bread*. 2. *Madidus*, a ſort made of rye or beans, ſometimes alſo of fine flour, wherewith they ſmeared their faces by way of a coſmetic, to render them ſmooth [u]. 3. *Acidus*, οξυλεπης, or ſour *bread*, which was acidulated with vinegar [w]. 4. *Azymus*, that unleavened or unfermented [x].—[[t] *Suet.* in Othon. c. 12. n. 4. *faciem quotidie panę madido linere conſueverat*. *Pitiſc.* lib. cit. p. 368. [u] *Gorr.* Med. Defin. p. 339. voc. Οξυλεπης. [w] *Pitiſc.* lib. cit. p. 366.]

The French have alſo a great variety of *breads*; as, queen's *bread*, alamode *bread*, *bread* de Segovie, de Gentillay, quality *bread*, &c. all prepared in peculiar manners by the bakers of Paris. They put milk in the *bread* alamode, &c. ſalt and yeaſt in the queen's *bread*, butter in the *bread* de Gentillay; and, in all theſe ſorts, the paſte is ſofter, and more raiſed or puffy than ordinary. The *bread* de Goneſſe excels all others, on account of the waters at Goneſſe, a town three leagues from Paris. It is light and full of eyes, which are the marks of its goodneſs. *Pain de menage*, is that which each family bakes for itſelf. Trev. Dict. Univ. p. 433, ſeq. *Savar.* Dict. Com. T. 2. p. 951, ſeq. voc. *Pain*.

Spice bread, *Pain d'epice*, denotes *bread* baked and iced over with the ſcum taken off ſugar in the refining-houſes; it is ſometimes alſo made with honey and other ſorts of ſeaſonings; and anſwers to what the antients called *panis mellitus*. *Savar.* lib. cit. p. 592. Trev. Dict. Univ. p. 434.

The quantity of *bread* allowed a ſoldier for his day's ſubſiſtence, is called a ration. See RATION, *Cycl.*

For armies the *bread* is either baked in the park of proviſions in the camp, or in the town neareſt the army; for the conveniency of ovens, an army ought always to have at leaſt four days *bread* before-hand. In ſome caſes, the diſtance of the places, from whence *bread* is to be had, or the army's march from one country to another, obliges the general to diſtribute *bread* for ſix or even for eight days; a thing never done without abſolute neceſſity, by reaſon of the abuſe which ſome ſoldiers make of it, who ſell their *bread* without regard to future ſubſiſtence. For long marches through an enemy's country, they ſometimes make biſket inſtead of *bread*. *Feuq.* Mem. ſur la Guer. ſect. 33. p. 87, ſeq. See BISKET.

There are alſo certain medicated *breads*, appropriated to the intentions of phyſic [a]; as, aniſeed *bread* [b], turnep *bread*, and vipers *bread*; which laſt is made of the fleſh of that animal, with wheat flour, yolks of eggs, ſarſaparilla, yeaſt, and milk; commended in ſcorbutic habits [c]. Some direct acorn *bread*, dipped in red wine, to be thruſt up the anus, in prolapſuſes of that part [d].—[[a] *Junck.* lib. cit. [b] *Nent.* Fund. Med. T. 2. P. 3. p. 761. [c] *Quinc.* Diſpenſ. P. 4. ſect. 14. p. 693. [d] *Nent.* lib. cit. p. 456.

Horſe-BREAD is made of wheat, oats and beans; to which ſometimes are added aniſeed, gentian, liquorice, fenugreek, eggs and ale; and ſometimes rye and white wine are uſed.

For race-horſes, three ſorts of bread are uſually given with ſucceſs, for the ſecond, third and fourth fortnights feeding; they are all made of beans and wheat, worked with barm; the difference conſiſting chiefly in the proportion of the two former. In the firſt kind, three times the quantity of beans is uſed to one of

wheat; in the second, equal quantities of both; in the third, three times the quantity of wheat to one of beans. Ruſt. Dict. T. 1. in voc. *Bread.*

Euchariſtic or *Sacramental* BREAD, in the proteſtant churches, is common leavened *bread*, agreeable to the antient practice [a]. In the Romiſh maſs, azymus, or unleavened *bread*, is uſed, particularly in the Gallican church, where a ſort is provided for this purpoſe, called *pain a chanter*, made of the pureſt wheaten flour, preſſed between two iron plates, graven like wafer-moulds, being firſt rubbed with white wax, to prevent the paſte ſticking [b]. — [a *Bingh.* Orig. Eccleſ. l. 15. c. 2. §. 5. *Bayle*, Dict. Crit. T. 2. p. 686. b. b *Durant.* de Ritib. Eccleſ. l. 2. c. 38. p. 638. *Savar.* lib. cit. p. 951.]

The Greeks obſerve divers ceremonies in the making their euchariſtic *bread*. 'Tis neceſſary the perſon who bakes it, have not lain with his wife the day before; or if it be a woman, that ſhe have not converſed with her huſband.

The Abyſſinians have an apartment in their churches, on purpoſe for this ſervice, being a kind of ſacriſty. F. Sirmond, in his diſquiſition on azymus *bread*, ſhews, from the council of Toledo, that antiently there were as many ceremonies uſed in the Latin church, in the preparation of their unleavened *bread*, as are ſtill retained in the eaſtern churches. He cites the example of queen Radegonda, who diſtributed with her own hands, in the church, the *bread* which ſhe herſelf had made. It appears alſo from the diſpute of cardinal Humbert againſt the Greeks, that, in the Latin church, no *bread* was uſed for the euchariſt, but what was taken out of the ſacriſty, and had been made by the deacons, ſubdeacons, and even prieſts, who rehearſed ſeveral pſalms during the proceſs. *Johnſ.* Eccleſ. Law, ann. 994. §. 5. *Durant.* ubi ſupra, p. 640. Trev. lib. cit. p. 432, ſeq.

Eccleſiaſtical writers enumerate other ſpecies of *bread*, allotted for purpoſes of religion; as, 1. *Calendarius*, that antiently offered to the prieſt at the calends [c]. 2. *Prebendarius*, the ſame with *capitularis*, that diſtributed daily to each prebendary or canon [d]. 3. *Benedictus*, that antiently given to catechumens before baptiſm, in lieu of the euchariſtic *bread*, which they were incapable of partaking of. The *panis benedictus* was called alſo *panagium* and *eulogium*, being a ſort of *bread* bleſſed and conſecrated by the prieſt, whereby to prepare the catechumens for the reception of the body of Chriſt. The ſame was afterwards uſed not only by the catechumens, but by believers themſelves, as a token of their mutual communion and friendſhip [e]. Its origin is dated from the 7th century, at the council of Nantz [f]. In the Gallican church we ſtill find *panis benedictus*, *pain benit*, uſed for that offered for benediction, and afterwards diſtributed to pious perſons, who attend divine ſervice in chapels [g]. 4. Conſecrated *bread* is a piece of wax, paſte, or even earth, over which ſeveral ceremonies have been performed with benedictions, &c. to be ſet in an agnus dei, or a relick box, and preſented for veneration [h]. 5. Unleavened *bread*, *panis azymus*. See AZYMUS, *Cycl.* The Jews eat no other *bread* during their paſſover; and exact ſearch was made in every houſe, to ſee that no leavened *bread* was left. The uſage was introduced in memory of their haſty departure from Egypt, when they had not leiſure to bake leavened [i]. 6. Shew-*bread* was that offered to God every ſabbath-day, being placed on the golden table, in the holy of holies [k].—[c *Durand.* Ration. l. 4. c. 30. n. 40. d *Du Cange*, p. 126. Trev. lib. cit. p. 433. e *Johnſ.* Eccleſ. Law, an. 1236. §. 4. *Durant.* de Ritib. l. 2. c. 58. n. 1. p. 861, ſeq. *Du Cange*, lib. cit. p. 119. f Dict. Trev. loc. cit. g *Savar.* lib. cit. p. 952. h Dict. Trev. loc. cit. p. 433. i *Calm.* Dict. Bibl. T. 1. p. 325. k Exod. xxv. 30. *Calm.* lib. cit. p. 326.]

BREAD *of St Hubert*, *St. Genevieve*, *St. Nicholas*, &c. denote cakes ſanctified with certain prayers and invocations of thoſe ſaints, held by the ſuperſtitious to be of great efficacy in the cure of hydrophobias, agues, and other diſeaſes.

BREAD is alſo uſed to denote certain foods made of animal, or even mineral matters, ſerving to ſupply the place of *bread*.

In divers parts of the north we read of fiſh-*bread*, particularly in Iceland, where dried cod is uſed for *bread*, being firſt beaten to powder [a], and made up into cakes. The like obtains among the Laplanders [b], whoſe country affords no corn; and even among the Crim Tartars [c].—[a *Collins*, Diſc. of Salt and Fiſh. p. 82, ſeq. b Phil. Tranſ. N° 102. p. 35. *Scheff.* Hiſt. Lappon. c. 13. c *Olear.* Itin. l. 4. c 10.]

BREAD, in a more extenſive ſenſe, includes all the neceſſaries of life, as food, raiment, lodging, &c. *Calv.* Lex. Jur. p. 668. voc. *Panis.*

BREAD is more particularly uſed to denote the euchariſt, eſpecially the body of Chriſt therein. *Du Cange*, Gloſſ. Lat. T. 4. p. 118. voc. *Panis.*

In which ſenſe, many of the antients underſtand that article in the Lord's prayer, *Give us this day our daily bread.* By αρτον επιουσιον, Tertullian, St. Ambroſe, Chryſoſtom, Cyril, and others of the antient fathers, underſtood the body of Chriſt broken in the euchariſt for the nouriſhment of our ſouls: others, with Damaſcenus, of that *bread* of heaven, which the bleſſed are to be fed with hereafter in paradiſe. Some render the word of that text, επιουσιον, by ſuperſubſtantial, or tranſubſtantial; others, by quotidian or diurnal, agreeable to our and the vulgate verſion. The difference ariſes from the different acceptations which the Greek word ουσια is capable of; which has been the occaſion of much diſpute. Vid. *Durant.* de Rit. l. 2. c. 48. n. 26. p. 776, ſeq. *Du Cange*, lib. cit. voc. *Panis.*

Hence alſo the ſabbath is ſometimes called, in antient writers, the *day of bread*, by reaſon the euchariſt was then adminiſtred every Lord's day. *Bingh.* Orig. Eccleſ. l. 20. c. 2. §. 1.

Swine-BREAD, *Panis porcinus*, a denomination given to truffles. See the article TRUFFLE.

Sow's-BREAD is alſo applied to the herb cyclamen. See the article CYCLAMEN.

Aſſize of BREAD.—The price and weight of *bread* is regulated by the magiſtrates according to the price of wheat [a]. We have divers tables of the weights of the loaves both of wheat, wheaten, and houſhold *bread*, at every price of wheat [b]. If *bread* want one ounce in thirty-ſix, the baker formerly was to ſuffer the pillory; now to forfeit five ſhillings for every ounce wanting; and for every defect leſs than an ounce, two ſhillings and ſix-pence; ſuch *bread* being complained of, and weighed before a magiſtrate within twenty-four hours after it is baked or expoſed to ſale, within the bills of mortality, or within three days in any other place [c]. It is to be obſerved, *bread* loſes weight by keeping; in ſome experiments recited by Bartholin, the diminution was near one-fourth in ſix months [d]. The ſame author aſſures us, that, in Norway, they make *bread* which keeps thirty or forty years; and that they are there fonder of their old hard *bread*, than elſewhere of new or ſoft; ſince the older it is, the more agreeable it grows. For their great feaſts, particular care is taken to have the oldeſt *bread*; ſo that, at the chriſtening of a child, they have uſually *bread* which had been baked perhaps at the chriſtening of his grandfather. It is made of barley and oat-meal, baked between two hollow ſtones [e].—[a Stat. 8 Ann. c. 18. b Id. ibid. *Moor*, Math. Compend. c. 2. p. 17, ſeq. c Stat. 1 Geor. I. c. 26. ſect. 5. Abr. 8°. T. 5. p. 70. d *Barthol.* Act. Med. Hafn. T. 4. Art. 57. p. 161. e Trev. Dict. Univ. T. 4. p. 442. voc. *Pain.*

BREAD, in medicine.—Beſides the alimentary, *bread* has alſo medical qualities; decoctions, creams and gellies of *bread*, are directed in ſome diſpenſaries. Vid. *Boerh.* de Mat. Med. p. 2, ſeq. *Junck.* Conſp. Therap. tab. 13. p. 364. *Schrod.* Pharm. l. 4. c. 1. n. 316. *Hoffm.* Clav. ad loc.

Averſions for *bread* are rare; yet we meet with inſtances of them. *Caſt.* Lex. Med. p. 559. voc. *Panis.*

Bread has alſo medical virtues applied externally, as is vulgarly known. Vid. *Boyle*, Phil. Work. Abr. T. 3. p. 572.

Mr. Boyle aſſures, he drew a menſtruum from *bread* ſtronger than aqua-fortis, and which would act even upon glaſs itſelf. Id. ibid. T. 1. p. 34, 49. Vid. infra.

See further concerning *bread* in the writers on foods and cookery; eſpecially in Hen. Nicolaus, who has a treatiſe expreſs on *bread*. Hen. Nicolai Tract. de Pane. Dantiſc. 1651. *Fabric.* Bibl. Antiq. c. 19. §. 6. p. 570. where other writers concerning *bread* are enumerated.

The making of *bread* is the office of bakers. See the articles BAKER, and BAKING.

The Jews, as well as Romans, we have already obſerved, frequently baked their *bread* under the aſhes; the Arabs did the ſame between two flow fires, made of cows dung. Among divers oriental nations we meet with an extraordinary kind of oven, being an earthen pitcher, within which fire was put, and the paſte applied on the outſide [a]. Antiently each family at Rome baked its own *bread*; Trajan firſt erected a college of public bakers [b].—[a *Calm.* Dict. Bibl. T. 1. p. 325. b *Pitiſc.* Lex. Antiq. T. 2. p. 366. voc. *Panis.*]

Among the Jews, travellers were to carry their *bread* with them; by reaſon there were neither inns nor bakers in Paleſtine: and hence it is, that we find in the New Teſtament Chriſt and his diſciples are often ſpoke of as having *bread* with them. *Calm.* lib. cit. p. 327.

The proceſs of making houſhold *bread* among us, is thus; to a peck of meal they add an handful of ſalt, a pint of yeaſt, and three quarts of water, cold in ſummer, hot in winter, and temperate between the two; the whole being kneaded in a bowl or trough by the fire in winter, from it in ſummer, will riſe in about an hour; they then mould it into loaves, and put it into an oven to bake. *Hought.* Collect. T. 1. N° 89. p. 238, ſeq.

For leavened *bread*, part of the flour intended for it, being made into dough with warm water and a little ſalt, is laid in the reſt of the flour an hour or more, in which time it riſes to three times the bulk; then they mix and knead the whole with more water, till it be brought into a ſtiff dough; which being formed into loaves, is baked in the oven: tho' the more uſual way is to take a piece of dough kneaded, and leave it in the tub till next time, when they break it ſmall, and mix it with the meal, adding ſome yeaſt. *Hought.* Collect. T. 1. N° 90. p. 241.

For French *bread*, they take half a buſhel of fine flour, ten eggs, and a pound and an half of freſh butter, into which they put as much yeaſt, with a manchet; and tempering the whole maſs with new milk, pretty hot, let it lie half an hour to riſe; which done, they make it into loaves or rolls, and waſh it over with an egg beaten with milk: care is taken the oven be not too hot. Ruſt. Dict. T. 1. in voc. *French.*

BREAD, in chemiſtry.—The chemiſts art can extract from ſo mild a ſubject as *bread*, an acid, which is a powerful menſtruum. It is done in this manner: Put two pounds of coarſe *bread*, cut into ſmall pieces, into a glaſs retort; place this in a ſand-heat, and, luting on a receiver, diſtil with a gentle fire, and there will be produced a liquor appearing like water, with a ſmall quantity of oil; ſeparate the oil, and filtre and rectify the liquor by a ſecond diſtillation in balneo mariæ, and afterwards diſtil it again in a ſand-heat, and there will be produced a moderately ſtrong, clear, acid liquor. This is a menſtruum capable of extracting the red colour from coral, and even from garnets. Common *bread* affords it, but coarſe rye-*bread* yields the greateſt quantity. *Shaw*'s Lectures, p. 104.

Oil of vitriol, poured upon crumbs of *bread*, will excite a ſurpriſing degree of heat. *Boyle*'s Works, Abr. Vol. 1. p. 569.

BREAD *for Horſes*. See HORSE-*bread*.

Bonpournickel BREAD, the name of a very coarſe *bread* eaten in Weſtphalia, and many other places.

This *bread* of the Weſtphalians ſtill retains the opprobrious name once given it by a French traveller, of *bonpournickel*, good for his horſe *Nickel*; but is by no means a contemptible kind.

It is far from being peculiar to this age or country; it has been known in diſtant places, and in different ages, and was called by the antients *panis furfuraceus*, or *panis impurus*, from its not being ſo thoroughly cleanſed from the huſk or bran, as the fine ſorts of *bread* are. Athenæus calls it *ſyncomiſton*, prepared of unſifted meal; and *coliphium*, or ſtrength of the joints, becauſe of its great ſtrengthening quality; and it has been called by Cælius Rhodiginus *panis gregarius*, and by Terence, *panis ater*.

It has ever been highly eſteemed for nouriſhing the body, and rendering it robuſt and ſtrong, and was called by the Greeks *polytropheros*, as conveying much nouriſhment; they, in diſtinction, called the fine *bread*, *oligotropheros*, ſignifying its carrying but a ſmall ſhare of nouriſhment. The wreſtlers of old eat only this ſort of *bread*, to preſerve them in their ſtrength of limbs; and we may learn from Pliny, that the Romans, for three hundred years, knew no other *bread*: unqueſtionably, this coarſe *bread* nouriſhes more, aſſuages hunger better, and generates humours leſs ſubject to corruption, than the white.

The inhabitants of Weſtphalia, who are a hardy and robuſt people, and capable of enduring the greateſt fatigues, are a living teſtimony of the ſalutary effects of this ſort of *bread*; and 'tis remarkable, that they are very ſeldom attacked by acute fevers, and thoſe other diſeaſes which ariſe from an ebullition of the humours, and a malignant colliquation of the blood, and of the humours of which it is compoſed: it ſeems extremely probable, that the maſterly turn of genius, and evenneſs of temper, and that happy judgment in tranſacting buſineſs, for which the Weſtphalians are peculiarly remarkable, are circumſtances as much to be aſcribed to their manner of living, as to their education. They are all qualified for induſtry, to which they are habituated from their infancy; and their method of living enables them to continue it.

It cannot be objected, that this groſs food of the Weſtphalians generates groſs ſpirits; ſince the labour or exerciſe to which the ſpirit it gives prompts thoſe who eat it, ſufficiently divides its viſcid particles.

It is certain, that a leſs ſtrong diet is more proper to weakly conſtitutions, and people of ſedentary lives, than this; but for thoſe who will uſe the neceſſary exerciſe with it, it is eaſy to ſee that it is preferable to all other kinds of *bread*; ſince it remarkably reſtores ſtrength, and has another ſalutary effect, which is, that it renders the belly ſoluble: this was a quality remarked in coarſe *bread*, and highly commended in it, ſo early as in the days of Hippocrates.

The Germans make two ſorts of waters by diſtillation from this *bread*; the one with, the other without the addition of a ſpirituous liquor: to both which great virtues are aſcribed. That without any thing ſpirituous, is made of the juice of craw-fiſh, may-dew, roſe-water, nutmegs and ſaffron, diſtilled from a large quantity of this *bread*. This is eſteemed a great reſtorative, and given in hectic habits. The other is diſtilled from this *bread* and Rheniſh wine, with nutmegs and cinnamon. This is given in all the diſorders of the ſtomach, vomiting, and loſs of appetite, and other complaints of the ſame kind; and beſides theſe, there is a ſpirit diſtilled from it by the retort, in the dry way, which, when ſeparated from its fetid oil, is eſteemed a powerful ſudorific, and very valuable medicine, in removing impurities of the blood. *Hoffm.* Obſervat. Chem.

Caſſada or Indian BREAD. See YUCCA.

BREAK. See BREACH, and BREAKING.

A *break*, in Norfolk, denotes land ploughed or broke up the firſt year, after it has lain fallow in the ſheep-walks. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *Briga*.

BREAK, in architecture, denotes a receſs, or giving back of a part behind its ordinary range or projecture.

In which ſenſe, they ſay, a *break* of a pediment [a]. A *break* of entablatures, whereby it ſhrinks, as it were, between the columns, is reputed a fault [b]. —[[a] *Oakl.* Magaz. Archit. p. 69. [b] Id. ibid. p. 63.] See the articles PEDIMENT, and ENTABLATURE, *Cycl.*

BREAK-*in*, among carpenters, is when they cut a hole in brick-walls with their ripping-chiſſel. *Neve*, Build. Dict. in voc.

BREAK-*neck*, *Briſe-cou*, in building, a fault in a ſtair-caſe, as when a ſtep is made higher or lower than the reſt, and landing-place too narrow, or the like. *Davil.* Explic. Term. Archit. p. 426

BREAKING, (*C cl*) in agriculture, denotes the ploughing up of grounds, eſpecially ſuch as have lain ſome time fallow. Vid. *Calv.* Lex. Jur. p. 629. voc. *Novalem*. *Du Cange*, Gloſſ. Lat. T. 2. p. 548. It. T. 4. p. 639. voc. *Rumpere*.

BREAKING *ground*, in the military art, is the firſt operation of a ſiege; it is uſually done in the night-time, by the advantage of ſome riſing ground, hollow way, or other matter, which may cover the men from the fire of the enemy.

BREAKING *the angles of a battalion*, denotes a military evolution, whereby the four angles turn, and make ſo many fronts towards the enemy; ſo that the battalion, which before was only a ſquare, becomes an octangle, and can fire on all ſides. *Fæſch.* Ing. Lex. p. 121.

This is otherwiſe called *blunting the angles of a battalion*; by the French, *emouſſer les angles d'un bataillon*.

BREAKING *of meaſure*, in fencing, denotes a moderate retiring, or giving of ground, in order to avoid the adverſary's thruſt. *Breaking* of meaſure differs much from going back, and loſing or yielding of ground; the latter being reputed a great reproach, the former a mark of judgment and adroitneſs. Some pretend, that a man retiring is obliged to forbear, if his adverſary call him to ſtand.

BREAKING *of the ſea*, BREAKING *of a wave*, or the like, on a rock, a bank, or the like.

The waves which *break* in ſuch a bay, are a ſufficient indication to the pilots, that it is not ſafe mooring there. *Aubin*, Dict. Mar. p. 127. voc. *Briſer*.

Divers machines and ſtructures have been contrived for *breaking* the force of the wind, the ſtream of water, and the like.

BREAKING is alſo uſed for the taming of animals, or reducing them from a wild to a tractable ſtate.

In this ſenſe, we ſay, to *break* an elephant [a]; the centaurs in Theſſalia firſt invented the art of *breaking* horſes [b].—[[a] Vid. Phil. Tranſ. N° 326. p. 67. [b] Hiſt. Acad. Inſcr. T. 2. p. 27.

BREAKING *a horſe to the ſaddle*. See the articles HORSE, BACKING, and TRAVICE.

To *break* a horſe for hunting, is to ſupple him, and make him acquire the diſpoſition and habit of running. 'Tis a terrible fatigue to run horſes at full ſpeed before they are *broken*. *Guill.* Gent. Dict. P. 1. in voc.

BREAKING *herd*, among ſportſmen, denotes a deer's quitting the herd, and running by itſelf.

In which ſenſe, the word ſtands oppoſed to *herding*.

A deer, when cloſe purſued, is loth to *break* herd [a]. When a hart *breaks* herd, and draws to the thickets or coverts, he is ſaid to *harbour* or take hold.—[[a] *Cox*, Gent. Recr. P. 1. p. 72. [b] Id. ibid. p. 13.]

BREAKING *up a deer*, ſignifies the opening or cutting it up.

BREAKING *of priſon*. See PRISON.

BREAKING *the legs*, *Crurifragium*, was an appendage of crucifixion, uſed no where but among the Jews. *Pitiſc.* Lex. Ant. T. 1. p. 598. voc. *Crurifragium*. See the article CROSS, *Cycl.*

BREAKING *bulk*, in the ſea language, ſignifies taking part of the ſhip's loading or cargo out of the hold. Dict. Ruſt. T. 1. in voc.

BREAKING *of hemp*. See the article BRAKE.

BREAKING *of bread*, κλασις αρτου, is ſometimes uſed, in eccleſiaſtical writers, for celebrating the euchariſt. Vid. *Bingh.* Orig. Eccleſ l. 15. c. 3. §. 34. *Du Cange*, Gloſſ. Lat. T. 4. p. 122. voc. *Panis*. See the article EUCHARIST, *Cycl.*

BREAKING *of wine*, among vintners.—Wine is ſaid to *break*, when being left ſome time in the air, in an open glaſs, it changes colour; an indication that it will not keep. *Savar.* Dict Comm. T. 2. p. 1414. voc *Rompre*. Trev. Dict. Univ. T. 4. p. 1336.

This is the uſual method of trying the goodneſs of wine, among the merchants and vintners of Paris.

BREAKING is alſo uſed in trade, for a perſon's failing or ſtopping payment.

In which ſenſe, *breaking* differs from becoming bankrupt. *Savar.* Dict. Comm. T. 1. p. 263. voc. *Banqueroute*. See the article BANKRUPT, *Cycl.* and *Suppl.*

Breaking by times, while there is ſomething left to pay withal, is a mark of ingenuity; and, generally, both entitles the unhappy perſon to compaſſion and gentler uſage from his creditors, ſaves his credit of an honeſt man, and facilitates his retrieving. A late ſenſible writer on trade takes great pains to inculcate this precept, *Break early*. Vid. Compl. Engl. Trad. T. 1. p. 77. It. p. 80, 963 162, 174.

BREAM, in ichthyology, the Engliſh name of the *Cyprinus latus*, or broad cyprinus. See the article CYPRINUS.

This is but a coarſe fiſh for the table, but it affords great ſport to the angler. The method of taking it is this: Procure about a quart of large worms, put them into ſome freſh moſs, well waſhed

washed and dried; let this be changed every three days, and let there be put, at the bottom of the vessel, some good black mould, with some fennel chopped small among it. This will clean them perfectly; and, in about three weeks, they will be fit to use. The lines must be silk alone, or silk and hair, and the floats large goose or swan quills; a plummet must be prepared of a piece of lead, of the shape of a pear, with a ring at the small end; the lead must be fastened to the line, and the line-hook to the lead; about ten or twelve inches space will be enough between the lead and the hook; and the lead must be heavy enough to sink the float. The hook is to be baited with a strong and vigorous worm, which will draw it up and down at the bottom, and provoke the *bream* to bite more greedily. It will be best to fit up three or four rods in this manner, and set them all at once. Find the exact depth of the water, if possible, that the float may just lie even with the surface, directly over the lead; then provide the following ground bait.

Take a peck of sweet gross ground malt, boil it a little, strain it hard through a bag, and take it to the water-side; throw in this malt by handfuls, squeezed hard together, that the water may not separate it before it gets to the bottom; it should be thrown in about a yard above the place where the hook is to lie. This is to be done about nine o'clock at night, and, about three in the morning, go again to the place, approaching cautiously, so as to keep out of sight of any fish that may be at the top of the water, while the rest are feeding at the bottom; then throw in the line, with the hook nicely baited, and the others at about a yards distance above and below the first, and one another; let the rods lie on the ground, and when one is taken, there is no occasion to run up hastily; but the fish may be left to tire himself a little, and then be taken up.

If there be any carp in the place, the same method usually takes them too; and if there be pike, they are usually drawn about the ground-bait; not that they will touch it, but the resort of small fish brings them to the place; in this case, they must be attempted first. The best bait is a gudgeon, bleak, or small roach; and let this be baited with a worm, hanging at the point of the hook. The pike will seldom miss this bait. When the enemy is thus removed, the carp and *bream* will come and bite freely. The sport will last till about nine in the morning; or, if the day be gloomy, all day long.

BREAST (*Cycl.*)—Anatomists sometimes divide *breasts* into perfect, which are composed of a multitude of glands, interwoven with veins, arteries, and nerves; such as are those of women; and imperfect *breasts*, composed chiefly of fat, with a few glands; such as are those of men. Trev. Dict. Univ. T. 3. p. 114. voc. *Mamelle*.

When men's *breasts* grow large and turgent, like the *breasts* of women, it is considered as something preternatural, and gives men the denomination, γυναικομαστοι [a], *q. d.* woman-*breasted*; though others apply this denomination to the *breasts* of women, when at their utmost growth and prominency [b].—[a *Cast.* Lex. Med. p. 376. voc. *Gynæcomastos.* b *Gorr.* Med. Defin. p. 97. voc. Γυναικομαστον.]

The *breasts* are usually two; though we also meet with instances of *trimammiæ*, or women with three *breasts* [c], and even some with four, all yielding milk alike [d].—[c *Barthol.* Act. Med. Hafn. T. 3. Art. 93. p. 171. *Cast.* Lex. Med. p. 728. voc. *Trimammiæ.* d *Cabrol.* Observ. 7. *Blas.* Comm. ad Vesling. c. 9. p. 133.]

The antients represented Diana of Ephesus with many *breasts*, as appears from several medals of that city; whence she had the epithet *Mammosa*, *q. d.* having many *breasts*; an appellation which is also given to Isis and to Ceres. Trev. Dict. T. 3. p. 114. voc. *Mamelle*.

The *breasts* have their particular figure, consistence, complexion and dimensions, requisite to render them beautiful. Women with huge *breasts* are called μεγαλομασθαι, in Latin, *mammosæ*. *Cast.* Lex. Med. p. 480.

In the island of Anabon, the women have their *breasts* so long, that they suckle their children over their shoulders. Trev. Dict. loc. cit.

In France, the punishment alloted women, who conspire against the king's life, is to have melted lead injected into their *breasts*. Trev. Dict. ubi supra.

The office of the *breasts* is to secrete the milk from the arteries in their glandulous substance, to collect it in their lacteal tubes, and, at proper seasons, to yield it to the infant through the nipple. *Heist.* Comp. Anat. §. 250. p. 115. *Vesling.* lib. cit. Some, however, assert, that the milk is not formed from the blood, but from the chyle, which is immediately conveyed thither by the thoracic, or Pecquet's ducts [a]. And what confirms the suggestion, is the quick supply of milk in nurses, after a draught of cow's milk [b]. The difficulty is, to prove, that the thoracic duct reaches to the *breasts*, which some absolutely deny [c].—[a Phil. Transf. N° 65. p. 1357. b Id. N° 40. p. 805. c *Blas.* ad Vesling. c. 18. p. 380.]

Swelling *breasts*, especially if there be milk found in them, is generally judged a mark of the loss of virginity, and a proof that a woman has been with child; tho', 'tis said, it does not hold universally. *Teichmey* Inst. Med. Leg. c. 5. qu. 2. p. 35, seq. See VIRGINITY, *Cycl.* and *Suppl.*

The swelling of the *breasts* during the time of gestation, is owing to the consent between the *breasts* and the uterus; there being so near a communication between the mammary vessels, and the hypogastric vessels of the womb, that a dilatation in the latter is attended with a similar one in the former. Id. ib. p. 36. See UTERUS, PREGNANCY, &c.

The *breasts*, especially after delivery, are liable to divers diseases; as inflammations, excoriations, indurations, tumefactions, nodes, abscesses, schirrhuses, and cancers [a]; to which may be added, certain peculiar disorders, as the sparganosis [b], strangalides [c], and gynæcomaston [d].—[a *Shaw*, New Pract. of Phys. p. 525, seq. *Nent*, Fund. Med. T. 1. P. 1. p. 215, seq. Item, T. 2. P. 3. tab. 198. c. 4. p. 921, seq. *Junck.* Consp Med. tab. 15. p. 735. b *Cast.* Lex. Med. p. 676. voc. *Sparganosis.* c Id. p. 689. voc. *Strangalides.* d Id. p. 376. voc. *Gynæcomaston.*] See CANCER, SCHIRRUS, &c.

BREAST is also applied to the correspondent parts of other animals; more properly called *udders*, *dugs*, *ubera*, &c.

The opossum is usually said to have its *breasts*, or teats, in the marsupium or pouch: but Dr. Tyson finds this a popular error. Phil. Transf. N° 239. p. 122. See OPOSSUM.

BREAST also denotes a large cavity or region of the body, by anatomists more frequently called thorax. See THORAX.

Though, in propriety, the *breast* is rather restrained to the anterior part of the thorax where the ribs meet; called also *sternum*, στερνον, στηθος, and *pectus*; in English, popularly, the *bosom*. *Gorr.* Med. Defin. p. 186. voc. στερνον. *Cast* Lex. Med. p. 569. voc. *Pectus.* *Blas.* Comm. ad Vesling. c. 9. p. 130.

We say, a flat, a narrow, or straight *breast* [a]; a broad *breast*, not high, is ranked among the signs of longevity [b]. Defluxions on the *breast* and lungs are dangerous.—[a *Cast.* Lex Med. p. 649. voc. *Saniodes.* b *Bac.* Hist. Vit. & Mort. ap. Works, T. 2. p. 139.]

Smiting the *breast* is one of the expressions of penitence [c]. In the Romish church, the priest beats his *breast* in rehearsing the general confession at the beginning of mass [d].—[c *Durant.* de Ritib. Eccles. c. 48. n. 38. p. 789. d Id. ibid. c. 12. n. 5. p. 445.]

Coughs, catarrhs, asthmas, phthises, peripneumonies, &c. are diseases of the *breast*. See COUGH, ASTHMA, &c. *Cycl.* and *Suppl.*

Physicians also speak of a dropsy of the *breast*, *hydrops pectoris*. See DROPSY, *Cycl.* and *Suppl.*

Medicines for disorders of the *breast* are called *pectorals*. See the article PECTORAL, *Cycl.*

BREAST-*bone*. See STERNUM.

Tumors of the BREAST. See MAMMARUM *Tumores.*

BREAST *of a chimney*, denotes the fore-part under the mantle or chimney-piece, commonly made inclined. Vid. *Gaug.* Fire's Improvem. P. 1. c. 1. p. 10. It. P. 3. c. 2. p. 61. It. c. 5. p. 102. See CHIMNEY, *Cycl.*

BREAST-*fast*, or BREST-*fast*, denotes a rope fastened to some part of a ship forward on, to keep her head fast to a wharf, or the like. *Botel.* Sea Dial. 4. p. 197. *Manwayr.* Seam. Dict. p. 16. *Guill.* Gent. Dict. P. 3. in voc.

BREAST-*hooks*, the compassing timbers before in a ship, which help to strengthen her stem, and all her fore-part. *Guill.* Gent. Dict. P. 3. in voc.

BREAST-*pain*, called by the Italians *grandezza di petto*, is a distemper in horses, proceeding from superfluity of blood and other gross humours, which being dissolved by some extreme and disorderly heat, resort downward to the *breast*, and pain him extremely.

The signs of the *breast*-pain are, a stiff, staggering, and weak-going with his fore-legs; besides, that he can hardly, if at all, bow his head to the ground. Rust. Dict. T. 1. in voc.

BREAST-*plate*, a piece of defensive armour, wherewith to cover the *breast*.

The *breast*-plate is said to be the invention of Jason. It was originally made of leather, afterwards of mail, and lastly of a brazen or iron-plate [a]. When made of this last matter, it is more particularly called *clibanus* [b], by the moderns *cuiras*; when made of brass, with a Gorgon's head in the middle, it is denominated *ægis* [c].—[a *Pitisc.* Lex. Ant. T. 2. p. 102, seq. voc. *Lorica.* b *Du Cange*, Gloss. Lat. T. 1. p. 1024. voc. *Clibanus.* c *Pitisc.* Lex. Antiq. T. 1. p. 41. voc. *Ægis.*] See CUIRASS, and ÆGIS, *Cycl.*

The *breast*-plate, called also by the Romans *pectorale*, by the Greeks καρδιαφυλαξ [d], is frequently confounded with the thorax and lorica; from both which it ought to be distinguished, as being properly a Ἡμιθωρακιον, half-thorax, or half-lorica, covering only the *breast*; whereas the thorax, Θωραξ, invested the body [e]. —[d *Pitisc.* ibid. T. 2. p. 397. voc. *Pectorale.* e *Pott.* Archæol. Græc. l. 3. c. 4. T. 2. p. 29, seq.]

As the whole thorax might be a temptation to the soldiery to turn their backs, when equally guarded with their *breasts*, the thorax was thrown away, and the *hemi-thoracion*, or *breast*-plate, only retained. *Polyæn.* Stratag. l. 7.

BREAST-*plate*, in the manege, denotes a leathern strap running from one side of the saddle, cross the horse's *breast*, to the other; intended to keep the saddle from slipping backwards, in mounting up rising-grounds. It is otherwise called *tee*; sometimes the *poitrail*. *Guill.* Gent. Dict. P. 1. in voc. *Du Cange*, Gloss. Lat. T. 4. p. 219. in voc. *Pectorale.*

BREAST-*plate*, among artificers, denotes a drill-plate, againſt which to ſet the blunt end of the drill. *Moxon*, Mechan. Exercis. P. 1. p. 7.

BREASTS *of a ſaddle*, are part of the bow, being the two ſides of it down from the arch or upper part. See the article BOW.

BREAST-*work*, in the military art. See the articles PARAPET, and LORICA, *Cycl.*

BREATH, the wind or air which is received and expelled by the mouth and noſtrils, in the act of reſpiration. See AIR, WIND, RESPIRATION, *Cycl.* and *Suppl.*

In which ſenſe, the word amounts to the ſame with the Greek πνευμα, and Latin *ſpiritus*. *Caſt.* Lex. Med. p. 595. voc. *Pneuma.*

The *breath* of a leper is ſaid to be infectious. See the article LEPROSY, *Cycl.*

It has been generally held, tho' without foundation, that the *breath* of a menſtruous woman had a malignity in it. *Junck.* Conſp. Phyſiol. tab. 24. p. 343. See the article MENSES, *Cycl.* and *Suppl.*

Charas, and ſome others, attribute the poiſon of the viper to a malignity in its *breath*, which they call *halitus teter*, and *afflatus malignus*. Philoſ. Tranſact. N° 77. p. 3014.

A ſtinking *breath*, called ὀζη, or *fœtor oris*, is one of the ſymptoms uſually preceding the acceſs of an intermitting fever. *Celſ.* l. 3. c. 11. *Caſt.* Lex. Med p. 554. voc. *Oze.*

In ſome perſons, a ſtinking *breath* is an indication of the menſes being at hand. *Goel.* Hiſt. Anat. p. 221, ſeq.

'Tis diſputed among the civilians, whether a ſtinking *breath*, called *ſcabro*, owing to rotten teeth or gums, be to be reputed a diſeaſe. *Calv.* Lex. Jur. p. 831. voc. *Scabro.*

BREATH is more particularly uſed to denote a ſtrength of lungs, whereby a man is enabled to hold out without taking wind ſo often.

In this ſenſe, we ſay, a long, a ſhort *breath*. The ordinary term of holding the *breath* does not exceed one third of a minute. *Bac.* Hiſt. Life and Death, ap. Works, T. 2. p. 176.

For the pearl fiſhery they chuſe ſlaves who have the beſt *breath*, or can continue longeſt under water without fetching their *breath*. Pechlin has a diſſertation expreſs on living long without *breathing*. *J. Nic. Pechlin* de Aeris & Alimenti Defectu & Vita ſub Aquis diuturna, Meditatio ad Joel Langelot, 1676. Trev Dict. Univ. T. 3. p. 466. voc. *Haleine.*

The antients were very watchful over the laſt *breath* of dying perſons; which the neareſt relations, as the mother, father, brother, or the like, received in their mouths. *Pitiſc.* Lex. Antiq. T. 2. p. 830. voc. *Spiritus.*

BREATH is alſo ſometimes extended to the odorous effluvia of plants, and even exhalations of minerals. See EFFLUVIA, *Cycl.* and *Suppl.*

BREATHING, *Exſufflatio*, a ceremony in baptiſm. See BAPTISM, and BLOWING.

Difficulty of BREATHING, in medicine, a diſeaſe called by phyſicians *dyſpnæa*. See the article DYSPNÆA.

Fighting a cock to *breathe* him, is called *ſparing*. See the article SPARING.

To *breathe* a running horſe, and bring him to his wind, they give him heats. See the article HEAT, *Cycl.*

BREDEWITE, in antient law-writers, an amercement ariſing from ſome default in the aſſize of bread. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

BREECHES, a garment worn by males, reaching from the girdle to the knees, and ſerving to cover the hips, thighs, &c.

The antient Romans had nothing in their dreſs anſwering to our *breeches* and ſtockings; inſtead of which, under their lower tunics and waiſtcoats, they ſometimes bound their thighs and legs round with ſilken ſcarves, or faſciæ, called *tibialia* and *femoralia*. *Salmuth.* ad Pancirol. P. 1. p. 161. *Pitiſc.* Lex Ant. T. 1. p. 292, ſeq. *Kenn.* Rom. Antiq. Not. P. 2. l. 5. c. 8. p. 219.

Breeches appear to be a habit peculiar to the barbarous nations, eſpecially thoſe inhabiting the colder countries of the north; whence Tacitus calls them *barbarum tegmen* [a]. We find mention made of them among the antient Getæ, Sarmatæ, Gauls, Germans and Britons; they alſo obtained among the Medes [b] and Perſians [c], as being a people of Scythian origin: they alſo afterwards got footing in Italy, ſome pretend as early as the time of Auguſtus; but without much foundation, that emperor's *breeches*, mentioned by Suetonius, being apparently only ſwaths tied over his thighs [d]. — [a *Tacit.* Hiſt. l. 2. c. 20. [b] *Perſ.* Sat. 3. v. 51. [c] *Ovid.* Triſt. l. 5. Eleg. 11. [d] *Suet.* in Auguſt. c. 82. n. 1.]

However this be, *breeches* were at length received into Italy, and grew ſo highly into faſhion, that it was thought neceſſary, under Honorius and Arcadius, to reſtrain them by law, and expel the *braccarii*, or *breeches*-makers, out of the city; it appearing a thing unworthy, that a nation, which commanded the world, ſhould wear the habit of barbarians. Vid. *Caſaub.* ad Suet. c. 82. n. 1. *Salmaſ.* in Lamprid. Alex. Sever. c. 40. *Cluver.* l. 1. c. 16. Ant. Germ. p. 70, & 140. *Rhodig.* Lect. Ant. l. 18. c. 21. *Fab.* Theſ. p. 373, ſeq. voc. *Bracca. Pitiſc.* Lex. Antiq. T. 1. p. 293. voc. *Braccarii.*

We find frequent mention of *bracæ*, *braccæ*, or *bracchæ*, in claſſic writers; but the form of this habit is not agreed on: ſome will have it to have been a rough party-coloured coat, with a long nap; others repreſent the *braca* as a coat, with *breeches* annexed, or covering both the breaſt, hips and legs; ſuch as that ſtill in uſe among the peaſants of Suabia; and what ſeems to confirm this conjecture is, that Orpheus is repreſented in ſome antient monuments in the Roma Subterranea, in ſuch a habit; agreeing well enough to Ovid and Mela's deſcription. *Aquin.* Lex. Milit. T. 1. p. 136. voc. *Bracciæ. Mela* de Situ Orbis, l. 2. c. 1. *Ovid.* Triſt. l. 3. Eleg. 10.

BREECH *of a gun*, among engineers, denotes the end next the touch-hole.

The *breech* contains the touch-hole, plat-band, and bottom, or caſcabel. It is of ſolid metal, and ſerves to terminate and defend the extremity of the chaſe. *Moor.* Treat. of Artill. P. 1. c. 1. p. 2.

For braſs guns, the *breech* has been uſually allowed to be as thick as the diameter of the bullet. *Manwayr.* Sea Dict. p. 15 voc. *Breech.*

Engineers have contrived a ſort of cannons, which are charged by the *breech*. Trev. Dict. Univ. T. 2. p. 439. voc. *Culaſſe.*

BREECHINGS, in the ſea language, thoſe ropes with which the great guns are laſhed, or faſtened to the ſhip's ſide. *Guill.* Gent. Dict. P. 3. in voc.

They are thus called, becauſe brought about the *breech* of the piece, and are not uſed in fight, but chiefly in foul weather. *Manwayr.* Sea Dict. p. 15. voc. *Breechings.*

BREEDING (*Cycl.*) is uſed for the care of rearing or bringing up the young of divers animals.

We find divers inſtructions for the *breeding* of horſes [a], kine [b], ſheep [c], dogs [d], cocks [e], chickens [f], turkeys [g], ſilkworms, ſpiders [h], oyſters [i], and the like.—[a *Mortim.* Art of Huſbandry, l. 6. c. 2. T. 1. p. 205. *Cox*, Gent. Recr. P. 4. c. 2. p. 7, 11, ſeq. [b] *Hought.* Collect. T. 4. p. 362. It. T. 1. N° 105, ſeq. p. 278, & 285, ſeq. [c] *Mortim.* lib. cit. p. 240. [d] *Cox*, lib. cit. P. 1. p. 25, & p. 40. [e] Compl. Gam. p. 200. [f] Dict. Ruſt. T. 1. in voc. [g] Phil. Tranſact. N° 5. p. 87. [h] Mem. Acad. Scienc. an. 1710. p. 507. [i] *Hought.* Collect. T. 3. N° 528. p. 265, and 268.]

Among the Mahometans, there are certain privileges and rewards allotted to ſheep or camels, after having *bred* a certain number of young: they are called *bahira*, *ſaiba*, *waſila*, and *hami*. *Sale*, Prelim. Diſc. to Koran, ſec. 5. p. 128, ſeq. See BAHIRA, &c.

BREEDING, in a moral ſenſe, denotes a perſon's deportment or behaviour in the external offices and decorums of ſocial life.

In this ſenſe, we ſay, well-*bred*, ill-*bred*, a man of *breeding*, &c. Good *breeding* is hard to define; none can underſtand the ſpeculation, but thoſe who have the practice [a]. Good *breeding* amounts to much the ſame with what is otherwiſe called *politeneſs*, among the antient Romans, *urbanity* [b].—[a *Shaftsb.* Charact. T. 1. p. 64, ſeq. [b] Hiſt. Acad. Inſcr. T. 1. p. 84.]

Good-*breeding* is near to virtue, and will of itſelf lead a man a great part of the way towards the ſame; it teaches him to rejoice in acts of civility, to ſeek out objects of compaſſion, and be pleaſed with every occaſion of doing good offices. *Shaftesb.* Charact. T. 2. p. 242.

Lord Shafteſbury compares the well-*bred* man with the real philoſopher: both characters aim at what is excellent, aſpire to a juſt taſte, and carry in view the model of what is beautiful and becoming. The conduct and manners of the one is formed according to the moſt perfect eaſe, and good entertainment of company; of the other, according to the ſtricteſt intereſt of mankind; the one according to his rank and quality in his private ſtation, the other according to his rank and dignity in nature [c]. Horace ſeems to have united both characters [d].

Quid verum atque decens curo & rogo, & omnis in hoc ſum.

[c *Shaftesb.* Charact. T. 3. p. 161, ſeq. Item, T. 1. p. 129, ſeq. [d] *Hor.* l. 1. ep. 1. v. 11.]

BREEDING-*ſtone*, in mineralogy, a ſort of maſs of pebbles, joined by a ſparry cement; frequent in divers parts of Hertfordſhire. *Woodw.* Nat. Hiſt. Engliſh Foſſils, T. 2. p. 66. See PEBBLE.

BREEDING *of fiſh*.—The neceſſary qualities for a pond, in order to its ſerving well for *breeding* fiſh, are very different from thoſe which are to make it ſerve for the feeding of them; inſomuch that ſome particular ponds ſerve only for one of theſe purpoſes, and others for the other; and ſcarce ever the ſame pond is found to ſerve for both. In general, it is much more rare to find a good *breeding* pond than a good feeding one. The beſt indications for a *breeding* pond are theſe; that there be a good quantity of ruſhes and graſs about its ſides, with gravelly ſhoals, ſuch as horſe-ponds uſually have: when a pond has this property, and takes to the *breeding* of fiſh, it is amazing what a progreſs will be made in a little time. The ſpawn of fiſh is prodigious in quantity, and where it ſucceeds, one is able to produce many millions: thus, in one of theſe *breeding* ponds, two or three melters, and as many ſpawners, will, in a very little time, ſtock the whole country. When theſe ponds are not meant entirely for *breeding*, but the owner would have the fiſh grow to ſome ſize in them, the method is to thin the numbers, becauſe they otherwiſe ſtarve one another, and to put in other fiſh that will prey upon the young, and thin them in the quickeſt manner. Eels and pearch are the moſt uſeful on this account; for they prey not only upon the ſpawn itſelf, but on the young fry, from the firſt hatching to the time

that they are of a conſiderable ſize. Some fiſh are obſerved to *breed* indifferently in all ſort of waters, and that in conſiderable plenty; of this nature are the roach, pike, and pearch. See the article FISH.

BREEDING *of horſes*. See the article HORSE.

BREEF-*Cards*, denote a kind of falſe cards, either longer or broader than the reſt, whereby they may be known and diſtinguiſhed. Myſt. of Mod. Gaming, p. 95. It. p. 103.

BREEZE (*Cycl.*)—*Breezes* differ from *eteſiæ*, or trade-winds, as the former are diurnal, or have their periods each day, and, beſides, are only perceived near the ſhore or coaſt; whereas the latter are anniverſary, and blow at a diſtance from land. Phil. Tranſact. N° 183. p. 158. *Caſt.* Lex. Med. p. 318. voc. *Eteſiæ*. See TRADE-*Wind*, *Cycl.*

The ſea *breezes* rule by day, and the land *breezes* by night; ſo that, dividing their empire, they remain conſtant as the ſeaſons of the year, or courſe of the ſun, on which they ſeem alone to depend; not but that they appear ſooner or later, ſtronger or weaker, in ſome places than others, and vary the alternative according to the ſeveral latitudes, ſituations, ſoils, mountains, valleys, woods, and other circumſtances of the countries where they are found. *Halley*, in Phil. Tranſ. loc. cit. *Bohun*, Diſc. of Winds, p. 92, ſeq. *Becm.* Hiſt. Orb. Terr. c. 2. §. 9. p. 22.

Deſcartes and his followers hold the ſea *breezes* to be generated from the ſea vapours during the preſence of the ſun, and the land *breezes* by the heat which the ſun leaves behind him in the earth; arguing, that tho' fluids evaporate moſt in the day, yet a ſolid, as the earth, being once thoroughly heated, retains its warmth the longeſt: ſo that, after ſun-ſet, the terreſtrial fumes may ſtill afford ſufficient matter for the land *breezes*. *Cart.* Princ. Phil. p. 159. *Bohun*, lib. cit. p. 93, ſeq.

In ſome countries, the ſea *breezes* appear only to be efforts of the general or trade-wind, as at Barbadoes, and in many places between the tropics, where the general wind, if not impeded by mountains or iſlands, blows freſh in the day time, but, after ſun-ſet, the terreſtrial exhalations becoming precipitated, beget a new wind, which is not only able to make head againſt the trade-wind, but to repel it from their coaſts.

The ſea *breezes* do not all come from the ſame point of the compaſs, but from different points, as the land lies. On the coaſt of Carthagena they blow from the eaſt; on the iſland of Trinidad, from the north; at Jamaica, on one ſide of the iſland, from the ſouth, and on the other from the north. In Guinea, they begin at nine or ten in the morning, and continue till ten, eleven, or twelve at night, blowing a freſh gale, extremely cheriſhing to the inhabitants; at ten, eleven, or twelve at night, they ceaſe, and give place to the land *breezes*, which continue till the morning, from the north to the north-weſt points. On the coaſt of Malabar, from September to April, their ſummer, the eaſterly *breezes* blow off the land about twelve at night, and continue till twelve at noon, reaching ten miles into the ocean; then the weſtern *breezes* make to ſhore, as if it were the former reflected back again.

In Brazil, and many of the Caribee iſlands, they have no land *breeze*, eſpecially if the ſhores lie low, as at Barbadoes, where the general or eaſtern wind blows from one end of the iſle to the other, and ſerves inſtead of the land *breeze*. In other places they want the ſea *breeze*, eſpecially between the tropics, in coaſts which lie weſterly, as in the weſtern kingdoms of Africa. If either the eaſterly or weſterly winds blow freſh, they hinder both the land and ſea *breezes* in the Mediterranean; of which thoſe are always found the weakeſt which riſe lateſt. In England, in very hot days, and when no other winds are ſtirring, the like alternation of land and ſea *breezes* may be obſerved on our coaſts, tho' with little certitude, anywhere to the northward of Portugal.

Breezes are more conſtant in ſummer than in winter, and more between the tropics than in the temperate zones. *Bohun*, lib. cit. p. 103—110.

BREEZE-*fly*. See OESTRUM.

BREGMA, (*Cycl.*) in anatomy, properly denotes the middle and fore-part of the head, ſituate over the forehead, and extending on both ſides to the temples. *Gorr.* Med. Defin. p. 80. voc. Βρεγμα. *Caſt.* Lex. Med. p. 112.

The word is Greek, Βρεγμα, ſometimes alſo written Βρεχμα. Its origin is obſcure, and has been much controverted between Hoffman and Lindenius. *Hoffm.* Inſt. l. 2. c. 59. §. 2. *Linden.* Phyſiol. l. 2. c. 8. §. 16.

BREHONS, the provincial judges among the antient Iriſh, by whom juſtice was adminiſtred, and controverſies decided.

Theſe ſages were a diſtinct tribe or family, to whom competent lands were allowed in inheritance. In criminal caſes, the *brehon* had the eleventh part of all fines; which could not but be conſiderable, at a time when murders, rapes, robberies, and the like offences, were only ſubject to pecuniary commutations. *Nichols.* Iriſh Hiſt. Libr. c. 7. p. 133, ſeq.

BREHON-*Laws*, *Leges Brehonicæ*, denote the general maxims, or rules of law obſerved by the *brehons*, and having the force of laws throughout all the provinces of Ireland.

Several fragments of the *leges brehonicæ* are ſtill extant in public and private libraries. The moſt compleat collection is that belonging to the duke of Chandos, containing twenty-two ſheets and an half cloſe written, full of abbreviated words, and not very legible. The publication of theſe laws has been much wiſhed for. Id. ibid. p. 134.

By the ſtatute of Kilkenny, made under Edward III. it is enacted, that no Engliſh ſubject ſhall ſubmit to a trial by the *brehon* law, on the penalty of high-treaſon. Notwithſtanding which, many were ſtill under a neceſſity of being concluded by the Iriſh laws and cuſtoms, till the whole kingdom was ſettled on an Engliſh bottom under King James I. Id. ibid. p. 135.

BRENNAGE, *Brennagium*, in middle age writers, a kind of tribute paid in lieu of bran, or bran itſelf, which the tenants were obliged to furniſh for ſupport of the lord's hounds. *Du Cange*, Gloſſ. Lat. T. 1. p. 612.

The word is alſo written *brenage*, *brenagium*, and *brenaige*, *bernagium*, *brenaticum*, and *brennaticum*.

BRENTA, in zoology, the name of a fowl of the gooſe-kind, known among us by that of the *Brent-gooſe*, and, by ſome, ſuppoſed to differ from the barnacle no other way than in ſex; but this is erroneous. It is ſomewhat larger than the barnacle, and is longer bodied; the head, neck, and upper part of the breaſt, are black; the neck, however, is ornamented on each ſide with a ſort of chain of white. Its back is of a browniſh grey, but ſomewhat blackiſh toward the tail; the feathers immediately over the tail are white; it is white alſo on the belly, and of a browniſh grey on the breaſt. *Ray*'s Ornith. p. 276. See Tab. of Birds, N° 49.

BREPHOTROPHIUM, an hoſpital for foundlings, or a place wherein children, expoſed by their parents, are brought up at the public charge. Leg. 19. Cod. de Sacroſanct. Eccleſ. *Fabri* Theſ. p. 376. *Suic.* Theſ. Eccleſ. T. 1. p. 711. *Du Cange*, Gloſſ. Lat. T. 1. p. 613. Ejuſdem Gloſſ. Græc. T. 1. p 227. voc. Βρεφοτροφειον. See the article FOUNDLING.

The word is Greek, Βρεφοτροφειον, which ſignifies the ſame.

BRESMA, in ichthyology, a name given by Hildegard, and ſeveral other writers on fiſhes, to the bream, a ſpecies of cyprinus. See BREAM, and CYPRINUS.

BRET, a name the people on the coaſts of Lincolnſhire give to the common turbut, a fiſh extremely plentiful with them, and taken in vaſt abundance. The way of catching them is in a net, trailed on the ground by two horſes; the one going up to the middle of his body in the water, the other on the ſhore. *Willughby*, Hiſt. Piſc. p. 93.

BRETACHIÆ, in middle age writers, denote wooden towers or caſtles, wherewith towns or camps were defended. *Du Cange*, Gloſſ. Lat. T. 1. p. 613.

BRETESSE, in heraldry, a term uſed to expreſs a line in ſome coats of arms, of the ſame nature with what is uſually called the *crenelle*, or *embattled line*; except that this laſt is only embattled on one ſide, and the *breteſſe* or *crenelle* on both ſides. Some authors ſeem, however, to have underſtood the terms *breteſſe* and *crenelle* as ſynonimous words, and when they would expreſs ſuch a line, they call it, if embattled on both ſides, *contre-breteſſe*. *Nisbet*'s Heraldry. See EMBATTLED *Line*.

BRETOYSE, or BRETOIS, the law of the marches of Wales; in uſe among the antient Britons.

BREVE (*Cycl.*) is uſed in the civil law for a ſhort note or minute. L. ult. Cod de conveniend. Fiſc. Debit. l. 10. Tit. 2. Inter chartulas confiſcati brevis quidam adſervatur inventus, qui nomina continebat debitorum. *Cowel*, Interpret. voc. *Brief*. *Spelm.* Gloſſ. p. 87.

In which ſenſe, the word is alſo written *brevis* (ſubaude *libellus*) and in Engliſh *brief* or *breve*; amounting to much the ſame with what is otherwiſe called *ſchedula* and *brevicula*. *Skin.* de verb. Signif. p. 24, ſeq. See BRIEF.

BREVE more particularly denotes a liſt or regiſter of the names of the ſoldiers under the command of a general. *Aquin.* Lex. Milit. T. 1. p. 137. *Fab.* Theſ. p. 376.

BREVE is more particularly uſed in common law for a writ or brief. See WRIT, and BRIEF.

Fitzherbert has given a new *natura brevium*; thus called by way of diſtinction from an old *natura brevium*, compoſed about the time of Henry III. *Nichols.* Engl. Hiſt. Libr. c. 5. p. 231.

BREVET, in the French laws, denotes an act iſſued by a ſecretary of ſtate, importing a grant of ſome favour or donation from the king. Trev. Dict. Univ. T. 1. p. 1226.

The word is formed from the middle age Latin, *brevettum*, of *breve*, ſhort. Vid. *Menag.* Orig. p. 130.

In which ſenſe, *brevet* amounts to much the ſame with our warrant. See WARRANT, *Cycl.*

They ſay, a *brevet* of nomination, a duke by *brevet*; ſuch a perſon had a *brevet* of a marſhal of France

BREVET more particularly denotes the commiſſion of a ſubaltern officer, being only written on parchment, and without ſeal. *Aubin.* Dict. Mar. p. 125.

BREVET, in the ſea language, is ſometimes uſed for a bill of loading. *Savar.* Dict. Comm. T. 1. p. 480. See the article BILL, *Cycl.*

BREVIARE, to abbreviate or reduce a thing into a ſhorter compaſs. *Du Cange*, Gloſſ. Lat. T. 1. p. 619.

This is otherwiſe called *abbreviare* and *inbreviare*.

BREVIARY (*Cycl.*) is an epitome or ſhort ſtate of a thing. See ABRIDGEMENT.

The word is Latin, *breviarium*, though not pure, as appears from Seneca, who obſerves, that the antients, in lieu of it, uſed *ſummarium*. *Senec.* Epiſt. 29. p. 301. in Princ. *Reinman.*

Bibl. Acroam. Pref. §. 54. p. 92. *Salmaſ.* Exerc. ad Solin. in Pref.

BREVIARIUM is more particularly uſed among Roman writers, to denote a book introduced by Auguſtus, containing the accounts of the empire.

The *breviarium* was the ſame with what was otherwiſe called *rationarium*[a], and differed from the *notitia imperii*[b].—[a *Fabric.* Bibl. Ant. c. 16. §. 4. p. 513. b *Pitiſc.* Lex. Antiq. T. 1. p. 294. *Calv.* Lex. Jur. p. 127.] See the article NOTITIA *Imperii*, *Cycl.*

The deſign of it was for giving an account to the people how the monies levied on them were applied. The emperor Tiberius laid aſide the *breviarium*, but it was reſumed by Caligula. *Pitiſc.* loc. cit.

BREVIARY was alſo uſed among the antients for the place where the briefs, or what was written abbreviately, were preſerved. *Du Cange*, Gloſſ. Lat. T. 1. p. 620. Trev. Dict. Univ. p. 1237.

Hence, probably, might the denomination *breviarium* be given to an abridgment of the church-ſervice. Some even maintain, that originally the *breviary* only contained the rubrics, from which the name was afterwards extended to the whole ſervice.

BREVIARY has alſo been ſometimes improperly applied to the miſſal, or maſs-book. Act. Sanct. Jun. T. 2. p. 498. Trev. Dict. Univ. p. 1237. See the article MISSAL, *Cycl.*

The machſor is by ſome called the Jewiſh *breviary*, as containing the ſervice for the ſabbath, feaſt-days, &c. *Wolf.* Bibl. Hebr. l. 8. n. 353. T. 2. p. 1334.

Some deduce the appellation *breviary* hence, that when the popes reſided in the Lateran palace, the office read in the papal palace was much ſhorter than that ſaid in the other churches of Rome; which office, thus abbreviated, was compiled by Innocent III. and called *officium capellare*, till ſuch time as the Franciſcan friars adopting the ſame, in conformity to the papal chapel, it became denominated *breviarium*, and ſhortly after was in general uſe. *Magr.* Vocab. Eccleſ. p. 38. *Menag.* Orig. Franc.

The firſt time the word *breviary* occurs in the ſenſe of a church-book, is in a letter of the archbiſhop of Lyons to the biſhop of Langres, in 1099; or rather by Micrologus, who lived in 1080. Trev. Dict. Univ. loc. cit. *Magr.* ubi ſupra.

BREVIATE, is ſometimes uſed for an abridgment, or ſhort extract of a book or paper. Philoſ. Tranſact. N° 73. p. 2212. See ABRIDGMENT.

BREVIER, among printers, is the denomination of a ſmall ſpecies of letters between nonpareil and long-primer. *Hought.* Collect. T. 2. N° 365. p. 429. See LETTER, *Cycl.*

BREVITY, in a general ſenſe, that which denominates a thing brief or ſhort. See the article BRIEF.

BREVITY is more particularly uſed in ſpeaking of the ſtyle or compoſition of diſcourſe. *Brevity* of diſcourſe is by ſome called *brachylogia*, and *breviloquentia*; ſometimes *laconiſmus*. Tacitus and Perſius are remarkable for the *brevity* of their ſtyle.

There are two kinds of *brevity*, one ariſing from dryneſs, poverty, and narrowneſs of genius; the other from judgment and reflexion; which latter alone is laudable. *Brevity* is ſo eſſential to a tale, a ſong, and an epigram, that, without it, they neceſſarily languiſh and become dull.

Rhetoricians make *brevity* one of the principal marks or conditions of eloquence; but the rules they preſcribe for attaining it, are difficult to apply, ſo as ſtill to keep the due medium between too much and too little. The maſters, ſays Cicero, require that the diſcourſe be brief; and they make *brevity* conſiſt in retrenching whatever is ſuperfluous: If it be *brevity* to be ſparing of words, and only to employ thoſe which are abſolutely neceſſary, ſuch a reſtraint may ſometimes have a good effect, but it will frequently alſo have an ill one; eſpecially in a narration, which will hereby become obſcure, and both loſe that elegancy which ought to pleaſe, and the ſtrength which ought to perſuade. Vid. *Cic.* de Orat. l. 2.

Quintilian explains himſelf more clearly: The narration, ſays he, will have the neceſſary *brevity*, if, in the firſt place, you lay down whatever is neceſſary, to give the judges a general idea of the queſtion; in the ſecond place, intermix nothing that is foreign to the matter in queſtion; and, in the third place, retrench nothing that is neceſſary for underſtanding the point in queſtion, and facilitating the deciſion of it: *brevity*, in fine, does not conſiſt in ſaying leſs than we ought, but in ſaying preciſely what we ought; and, of the two, it is a leſs fault to ſay too much than too little. *Quint.* Inſt. Orat. l. 4. c. 2.

A juſt *brevity*, then, is attained by uſing all the words which are neceſſary, and none but thoſe which are neceſſary. Sometimes it may alſo be had, by chuſing a word which has the force of ſeveral. 'Tis this laſt kind which Quintilian admires ſo much in Salluſt[a]; and the imitation of which by other writers, has cauſed ſo much obſcurity[b].—[a *Quint.* Inſt. Orat. l. 8. c. 3. b *Bouh.* Man. de Bien Penſ. Dial. 4. p. 379.] See OBSCURITY, *Cycl.*

BREWER, an operator who profeſſes the art of brewing. See BREWING, *Cycl.* and *Suppl.*

Brewers are called, in middle age writers, *braſiatores*, *braciatores*, *braxionarii*, *braſiatrices*, *braxatrices*[a], and *cambarii*[b].—[a *Spelm.* Gloſſ. p. 87. voc. *Braſium.* *Du Cange*, Gloſſ. Lat. T. 1. p. 602. voc. *Braciator.* b Id. ibid. p. 97. voc. *Camba.*]

The *brewers* of London make a company, incorporated by Henry VI. in 1427, conſiſting of a maſter, three wardens, 24 aſſiſtants, and 90 liverymen, beſides yeomenry. New View of London, T. 2. ſect. 3. p. 598.

At Paris, they have a company of *brewers*, which is one of the oldeſt in the city, having ſtatutes as early as 1268. *Savar.* Dict. Comm. T. 1. p. 470, ſeq. voc. *Braſſeur.*

The apparatus and utenſils of a *brewer*, or a brewhouſe, are a furnace made cloſe and hollow for ſaving fuel, and with a vent for the paſſage of the ſmoke, leſt it taint the liquor; a copper, which is preferable to lead; a maſk-fat near the head, a cooler near the maſk-fat, and a guile-fat under the cooler; adjoining to all, are ſeveral clean tubs, to receive the worts and liquors. Dict. Ruſt. T. 1. in voc.

BREWING (*Cycl.*) amounts to the ſame with what is called in middle age writers, *braciare*, *braſiare*, *braſſicare*, and *braxare*. In a charter of King Henry III. given by Matthew Paris, we meet with *Domos competentes & neceſſarias ad braxicandum*, and, in the *Leges burgorum* of Scotland, *Quæcumque fœmina braſicare voluerit, cerviſiam venalem braſiet.* *Caſen.* Orig. Franc. p. 28. *Du Cange*, Gloſſ. Lat. T. 1. p 601.

Brewing is an art depending on chemiſtry[a], and capable of being improved various ways, both with regard to the preparation of the malt, the uſe of hops, and the management of the working or fermentation[b]. Some have introduced the uſe of vegetable ſaps, as birch and ſycamore waters, to good purpoſe into the art of *brewing*[c]. Honey, treacle, and ſugar, are alſo capable of being applied to advantage in *brewing*[d].—[a *Junck.* Conſp. Chem. tab. 1. p. 11, and 13. b *Shaw*, Eſſays for advancing Chem. §. 2. p. 28. c Philoſ. Tranſact. N° 68. p. 2071. Item, N° 46. p. 917. d *Shaw*, lib. cit. p. 49.]

BREWING, among diſtillers, denotes the method of extracting the more ſoluble parts of vegetables with hot water, and thus procuring a ſolution or decoction fitted for vinous fermentation.

In which ſenſe, *brewing* is a neceſſary ſtep towards diſtillation. See DISTILLATION.

A fermentable ſolution, fit for yielding a ſpirit, or brandy, is obtainable from any vegetable, under proper management; but the more readily and perfectly the ſubject diſſolves, the better it is diſpoſed for fermentation, and the production of brandies. Thus, ſugar, honey, treacle, manna, and other inſpiſſated vegetable juices, which totally unite with water, into a clear and uniform ſolution, are more immediate, more perfect, and better adapted ſubjects of fermentation, than roots, fruits or herbs, in ſubſtance, the grains, or even malt itſelf; all which diſſolve but very imperfectly in hot water.

Yet malt, for its cheapneſs, is generally preferred in England, and *brewed* for this purpoſe much after the common manner of *brewing* for beer; only the worſt malt is uſually choſen for diſtillation; and the tincture, without the addition of hops, and the trouble of boiling, is here directly cooled and fermented. *Shaw*, Eſſay on Diſtill. ſect. 1. p. 57.

The grain intended for *brewing* is previouſly malted, to prepare it for diſſolving more eaſily and copiouſly in the water, ſo as to afford a richer tincture or ſolution, which, after due fermentation, will yield about one half more of proof ſpirit than the tincture of an equal weight of unmalted corn. Idem, ibid. See MALT, *Cycl.* and *Suppl.*

Brewing is alſo uſed, in an ill ſenſe, for the counterfeiting and compounding eſpecially of wines. Vintners and wine-coopers are ſuſpected of *brewing* wines, or mixing divers inferior ſorts, to imitate ſome better kind. The neceſſity of accommodating their liquors to the palates of their gueſts, is another cauſe of *brewing*; inſomuch that ſome have confeſſed they commonly draw out of two or three caſks for every pint. *Charlt.* Myſt. of Vint. p. 195. *Hought.* Collect. T. 2. N° 390. p. 486.

The ſap or juices of trees is a very valuable article in *brewing*, and not only improves malt liquor, but renders it much cheaper. The ſycamore is the beſt tree for tapping for this purpoſe; it yields a great quantity, and that without any other trouble than boring a hole properly, and placing a veſſel under it. One buſhel of malt *brewed* with this juice, will make as good beer as four buſhels in the ordinary way. The beſt way of procuring the ſap is this: Take a large augre, and with it bore two holes on the oppoſite ſides of the tree, each ſo deep as to the pith. Each hole is to be bored ſloping upwards, and the beſt place for it is immediately under a large arm of the tree near the ground; and if the arm be pierced through with the augre in the way to the tree, it will be ſo much the better: in this manner, there needs no ſpigot or ſtone to keep open the hole, or to direct the courſe of the liquor, for it will of itſelf run down into a veſſel placed to receive it; and one tree will thus, in a few days, yield a ſufficient quantity of liquor to *brew* with.

In order to preſerve the ſap in a proper condition for *brewing*, what is firſt gathered muſt be inſolated by a conſtant expoſition of it to the ſun, in proper glaſſes, till the reſt be obtained; otherwiſe the firſt will contract an acidity that will ſpoil it. When a ſufficient quantity of the ſap is thus collected, as much rye-bread muſt be put into it, cut thin and well toaſted, but not burnt, as will ſerve to ferment it; when it works well, the bread is to be taken out, and, at a convenient time, it is

to

to be bottled up, and will thus afford a pleaſant liquor, of conſiderable ſtrength, without malt or any other addition. Some people add ſage to this liquor, baking it in their cruſts of rye-bread, till thoroughly dry, and then adding it with the bread to the working liquor. If a few cloves be tied up in a rag, and put into the veſſels into which the ſap is received from the tree, they will preſerve it the year round, without any fermentation: they are very apt to give a taſte to the liquor; but if it be ſo contrived that they are taken out before they give this taſte, the liquor will keep as well without any flavour of them. The adding a few drops of oil of ſulphur, will have the ſame effect; and ſo will the fuming with ſulphur itſelf. A little ſpirit of wine, poured on the top of the juice in every bottle, will alſo be very inſtrumental in the preſerving it.

Many people, inſtead of adding malt, and *brewing* the ſap of the ſycamore or birch into ale, uſe raiſins, and make a ſort of wine of it; and ſome add ſugar. Some have uſed the rye-toaſts with very good ſucceſs, tho' they were not put into the liquor, but only hung over it, at ſuch a diſtance as to give a warmth and motion to the ſurface. Common ale yeaſt has been tried by ſome to ferment the juice of the birch; but it uſually ſpoils it, turning the liquor into a very bad ſmall beer. The Flemiſh wheat ferment would probably in time excellently mature the bottled juice of the birch or ſycamore; but it would require a conſiderable time for it. Cinnamon is worthy to be tried in the ſtead of cloves, as of an infinitely more greeable flavour. Honey has no effect on cyder at all; for it will not mix with it, tho' boiled in it, to make mead; but, after a time, the cyder lets fall the honey, and becomes ſimple cyder again: It is a queſtion whether it would mix with theſe juices; but if it will, it will probably make a great improvement in them. The tops and young leaves of birch boiled in the ſap, are ſaid by ſome to preſerve it. Phil. Tranſ. N° 146.

Water for BREWING. See WATER.

BREYNIA, in botany, the name of a genus of plants deſcribed by Plumier and Linnæus, the characters of which are theſe: The perianthium is very ſmall, and conſiſts of one leaf; it is of a coriaceous texture, and is divided into four ſegments of an oval figure, which ſtand expanded; the flower conſiſts of four oval expanded petals, ſomewhat larger than the leaves of the cup; the ſtamina are numerous capillary filaments, longer than the flower; the antheræ are oblong and erect; the germen of the piſtil is very ſmall, but long and of a clavated figure, and obtuſe at the end; there is no ſtyle, and the ſtigma is obtuſe; the fruit is a very long pod, it is fleſhy, ſoft, bivalve, and of a clavated figure; it contains only one cell, and in that are a number of fleſhy ſeeds, kidney-ſhaped, and ranged in longitudinal rows. *Linnæi* Gen. Plant. p. 230. *Plumier*, Gen. p. 16.

BRIBE, denotes money or other gratification received by a perſon in office or authority, as an inducement for doing ſomething contrary to duty or inclination. Vid. *Calv.* Lex. Jur. p. 807. voc. *Repetundarum.* See BRIBERY, *Cycl.*

The word is French, *bribe*, which originally denotes a bit, fragment, or relick of meat taken off the table [a]; on which footing, *bribe* imports as much as *panis mendicatus*, and ſtill keeps up the idea of the matter whereof *bribes* antiently conſiſted. Hence alſo the Spaniards uſe *bribar* and *brivar* for begging, and *brivia*, *brivoneria*, and *brivoniſmo*, for beggary [b].—[[a] Trev. Dict. Univ. T. 1. p. 1238. [b] *Menag.* Orig. Franc. p. 131. *Skinn.* Etym. in voc.]

In middle age writers, a *bribe* given a judge is called *quota litis*, and the receiver, *campi particeps*, or *cambi particeps*; in regard the ſpoils of the field, *i. e.* the profits of the cauſe, were thus ſhared with the giver. *Du Cange*, Gloſſ. Lat. T. 4. p. 504. voc. *Quota.* Id. ibid. T. 1. p. 727. voc. *Campi-particeps.*

BRICIANI, *Knights of St. Bridget*, a military order, reſembling that of Malta, eſtabliſhed by St. Bridget, princeſs of Sweden, in 1366, and approved of by pope Urban V. who gave it the rule of St. Auguſtine.

The arms of the *briciani* were a croſs azure, like that of the knights of Malta; under which was a tongue of fire, to expreſs the ardour of their zeal: their office was to fight againſt heretics, bury the dead, aſſiſt widows and orphans, *&c.* *Giuſt.* Hiſt. di tutti gli Ord. Milit. T. 2. c. 59. p. 685. Trev. Dict. Univ. T. 1. p. 1238. voc. *Briciani.* Item, p. 1243. voc. *Brigide.*

BRICK (*Cycl.*) —The word *brick* comes from the French *brigue*, which Menage derives from *brica*, uſed in the middle age Latin to denote the ſame, and which ſome ſuppoſe formed from *imbricare*, to cover with tiles; others from *fabrica*, as being a ſtone cut and faſhioned. *Menag.* Orig. p. 133. Trev. Dict. Univ. T. 1. p. 1247. voc. *Brique.*

Brick-work is found ſtronger and more durable than ſtone-work; and eſpecially better fitted to reſiſt the force of guns and engines of war [a]. The Greeks are ſaid to have carried *brick*-makers with them in their armies, to be in readineſs for camp-works and fortifications [b]. The Romans intermixed *brick* with their ſquare ſtone, in order to ſtrengthen it [c]. In reality, *brick*-buildings were generally conſidered by the antients as perpetual; ſo that, in Rome, abatement was always made for the age of ſtone-building, none for that of *bricks* [d]. *Brick*-walls are alſo found warmer and wholeſomer than thoſe of free-ſtone and marble, as not being liable to ſweat, or collect humidities on their ſurface, which they rather imbibe [e]. We may add, that *bricks* are found the beſt materials for vaults and edifices under ground, not only for their durableneſs, but the eaſineſs of their expence, and ſafety from fire [f].—[[a] *Aquin.* Lex. Milit. T. 1. p. 535. voc. *Lateritium.* [b] *Plut.* in Ageſil. [c] *Vitruv.* lib. 2. c. 8. [d] Phil. Tranſ. N° 149. p. 238, ſeq. [e] Item, N° 93. p 6011. N° 149. p. 239. [f] *Davil.* Cours d'Archit. T. 1. p. 251.]

Bricks ſerve either for the inſides of walls, which are faced or incruſtated with ſtone, and for the outſides of edifices, which being of timber within, are faced with *bricks* [g]. In modern Rome, the walls of the houſes are uſually of *brick*, to which are afterwards added divers ornaments and projectures, by way of incruſtation, faſtened with cramp-irons [h].—[[g] *Davil.* Expl. Term. d'Archit. p. 435. [h] Idem, Cours d'Archit. P. 1. p. 130.]

The *brick* chiefly uſed among the Romans was the *didoron*, or, as other copies have it, *lydion*; which, according to the dimenſions given by Pliny, was a foot and a half long and a foot broad [i]: which meaſures agree with thoſe of ſeveral Roman *bricks* in England, which are about ſeventeen inches long and eleven broad of our meaſure [k].—[[i] *Plin.* Hiſt Nat. l. 35. c. 14. *Harduin.* Not. ad loc. [k] Philoſ. Tranſact. N° 149. p. 240.]

Sir Henry Wotton ſpeaks of a ſort of *bricks* at Venice, of which ſtately columns were built; they were firſt formed in a circular mould, and cut before they were burnt, into four or more quarters or ſides; afterwards, in laying, they were jointed ſo cloſe, and the points concentred ſo exactly, that the pillars appeared one entire piece. *Wotton*, Elem. of Archit. l. 2. *Neve*, Build. Dict. in voc.

The ordinary Paris *brick* is eight inches long, four broad, and two thick, French meaſure, which makes ſomething more than ours. But this ſmallneſs is an advantage to a building, the ſtrength and firmneſs of which conſiſts much in the multitude of angles and joints [l], at leaſt if well laid, and in good bond. The Romans were guilty of a great overſight in this reſpect; their *bricks* being above double of the French ones; tho' they had a better ſort, called *lateres beſſales*, only meaſuring eight inches in length [m]: but theſe were properly only their half-*bricks*. In England, we alſo ſometimes make *bricks* of an unuſual length, meaſuring twenty-two inches long, and only ſix broad, ſerving to ſupply the office of laths or ſpars in malt-kilns [n].—[[l] *Liſter*, in Phil. Tranſ. N° 149. p. 239. [m] *Pitiſc.* Lex. Ant. T. 1. p. 272. voc. *Beſſales.* [n] *Plott*, Nat. Hiſt. Oxf. c 9. §. 90.]

Bricks may be made of any earth that is clear of ſtones, even ſea-owſe; but all earth will not burn red [o], a property peculiar to earths which contain ferrugineous particles [p]. In England, *bricks* are chiefly made of a hazely yellowiſh coloured fatty earth, ſomewhat reddiſh, vulgarly called loam. The earth, according to Leibourn, ought to be dug before winter, but not made into *bricks* till ſpring [q].—[[o] Dict. Ruſt. in voc. [p] *Woodward*'s Nat. Hiſt. Engl. Foſſ. T. 1. p. 1. *Mortim.* Art of Huſbandry, l. 3. c. 3. T. 1. p. 72. *Moxon*'s Mechan. Exer. p. 238, ſeq. [q] *Neve*, Build. Dict. in voc.]

Bricks are uſually diſtinguiſhed into crude and burnt.

Crude BRICKS, *lateres crudi*, thoſe only dried in the ſun without burning; theſe are much uſed in hot countries, where it rains rarely, particularly throughout all Egypt [r]. The Romans had likewiſe their crude or unburnt *bricks*, made of whitiſh earth, reſembling chalk, left to dry ſome five years ere they were uſed. The like was alſo made of a fatty earth, mixed and baked with chopped hay, the compoſition of which was called *torchis* [s].—[[r] *Savar.* Dict. Comm. T. 1. p. 481. [s] *Vitruv.* Archit. l. 2. c. 3. *Perrault*, Not. ſur Vitruv. p. 124.]

Burnt BRICKS, *lateres teſtacei*, or *cocti*, thoſe baked either in a kiln, or with clamp-fire. *Sturm.* Math. Juv. T. 2. c. 3.

In burning *bricks*, much depends on the alternate raiſing and abating the fire. *Brick*-burners, who continue the heat without intermiſſion, uſually make their lower ware extreme hard and good, but the upper quite naught: nay, and which is worſe, the lower ones will ſometimes run ſo with the exceſſive heat, as alſo to unite into one body. Then, for cooling kilns of ware, ſome unwiſe burners, as ſoon as the *bricks* are burnt, immediately ſtop up the reſt of the mouth of the kiln, which was left open above the ſhin-lag, by which means the air being ſhut out, it is long in cooling; ſo that ſuch burners are commonly a fortnight, or almoſt three weeks, in ſetting, burning, and drawing of a kiln of ware; all which may be done in one week.

In all kilns or clamps there are uſually three ſorts or degrees of *bricks* in goodneſs, *viz.* 1. *Clinkers*, which are the firſt and beſt for laſting, being thoſe which lie next the fire; having, as it were, a gloſs on them, owing to the ſaltpetre inherent in them, which, by the violence of the fire, runs and glazes them. 2. Common *bricks*, thoſe which lie next in the kiln, or clamp; and, 3. Samel or ſandal *bricks*, which are the third and worſt ſort, being thoſe which lie on the outſides of the kilns or clamps, where the ſaltpetre is not digeſted for want of due heat. Theſe, when they come to be expoſed to the weather for ſome time, will moulder away like dirt. 'Tis an obſervation, that whilſt *bricks* are burning, thoſe on the windy ſide of a clamp are the worſt of all. *Neve*, Build. Dict. in voc.

Dutch or Flemiſh *bricks* are of a yellowiſh colour, and chiefly uſed for paving of yards and ſtables; alſo for ſoapboilers vats and ciſterns. They make a very durable pavement, and, when laid edgeways, a very handſome one, eſpecially if laid herring-bone faſhion. *Moxon*'s Mechan. Exerc. p. 238.

Brique de Chantignole, or *Demibrique*, is that only an inch thick, but otherwiſe of the ſame dimenſions as the whole *brick*; uſed in paving between borders of ſtones, and alſo for the making hearths and chimney backs. *Felib.* Princ. de l'Archit. l. 1. c 17. p. 124. *Davil.* Explic. Term. de l'Archit.

Worlidge, and others after him, have laboured to excite *brick*-makers to try their ſkill in making a new ſort of *brick*, or a compoſition of clay and ſand, whereof to form window-frames, chimney-pieces, door-caſes, and the like. It is to be made in pieces faſhioned in moulds, which, when burnt, may be ſet together with a fine red cement, and ſeem as one entire piece, by which may be imitated all manner of ſtone-work.

The thing ſhould ſeem feaſible by the earthen pipes made fine, thin, and durable, to carry water under ground at Portſmouth, and by the earthen backs and grates for chimneys, formerly made by Sir John Winter, of a great bigneſs and thickneſs.

In reality, much might be done towards making chimney-pieces, ſtone-mouldings, architraves, faſcias for fronts of buildings, and the like, if men of this profeſſion had a little tincture of chemiſtry, which would enable them to contrive ſome good compoſition of earth, and a proper way to manage it in the moulding, burning, &c. Might not even a compoſition, ſomething like common crockers earth, in ſome meaſure anſwer the deſign? It is apparent, that into whatever form the crockers put their earth, it retains it after drying and burning, altho' their crocks be formed very thin. If chimney-pieces, thus made in moulds, and dried and burnt, were not found ſmooth enough, they might be poliſhed with ſand and water: or were care taken, when they were half dry, in the air, to have them poliſhed with an inſtrument of copper or iron, then leave them till they were dry enough to burn, 'tis likely they would not want much poliſhing afterwards. The work might even be glazed, as potters do their fine earthen ware, either white or of any other colour; or it might be veined in imitation of marble, or be painted with figures of various colours, which would be much cheaper, and perhaps equally durable, and as beautiful as marble itſelf. *Neve*, Build. Dict. in voc.

Making of BRICK.-With regard to the manner of making *bricks*, we have place-*bricks*, generally made in the eaſtern part of Suſſex; ſo called becauſe of a level ſmooth place juſt by where they are ſtruck or moulded. In this place, the bearer-off lays the *bricks* ſingly down in ricks or rows, as ſoon as moulded, where they are left till they are ſtiff enough to be turned on their edges, and dreſt, *i. e.* till their inequalities are cut off; when they are dry, they carry them to ſtacks, or places where they row them up, like a wall of two *bricks* thick, with ſome ſmall intervals betwixt them, to admit the wind and air to dry them. When the ſtack is filled, they are covered with ſtraw on the top, till they be dry enough to be carried to the kiln to be burnt. *Neve*, Dict. ibid.

Stock-*bricks* are of the ſame form with place-*bricks*, though different in the quality of their earth, and manner of making. They are made on a ſtock, that is, the mould is put on a ſtock, after the manner of moulding or ſtriking of tiles; and when one *brick* is moulded, they lay it on a piece of board, a little longer than the *brick*, and on that *brick* they lay another like piece of board, and on this another *brick*, till after this manner they have laid three *bricks* on one another; and ſo they continue to ſtrike and place them on the ſtage, as they do tiles, till the ſtage is full, and then they take each three ſucceſſively, and carry them to the ſtacks, and turn them down on the edges, ſo that there will be the thickneſs of a thin piece of board betwixt each *brick*. When the ſtack is filled with one height of *bricks*, from one end to the other, they begin to ſet them upon thoſe firſt laid on the ſtack; by that time they will be a little dried, and will bear the others; for they are moulded of a very ſtiff earth. When they come to ſet a ſecond, third, &c. height or courſe, they cater them a little, as they call it, to prevent their reeling. When the ſtack is as high as they think fit, they cover them with ſtraw, as they do place-*bricks*, till they be dry enough to burn. This way is more troubleſome than that of making place-*bricks*; but they are forced to have recourſe to it in many places, where, if they laid their *bricks* abroad in a place to dry, as they do place-*bricks*, the nature of the earth is ſuch, that they would burſt to pieces. *Neve*, Dict. ubi ſupra.

The ſeveral ſteps in the proceſs of our *brick*-making, are, caſting the clay or earth; treading or tempering the ſame with water; ſanding the *brick*, which is to riddle or caſt dry ſand on the wet *brick* lying on the ground; raiſing the *bricks* on one ſide, that they may dry the better and ſooner; walling the *brick*, is to lay one upon another, after the manner of a wall, to keep them from foul weather, and that they may dry thoroughly; ſodding the *bricks*, is to cover them up with turf; ſetting the *bricks* in the kiln, is the laying of ſlack or ſmall-coal between every courſe or row of *bricks*; dawbing the kiln, is the claying of it all about the top, to keep the fire in, and ſecure the kiln from weather; firing, is to ſet the fuel put into the arches on fire; earthing implies to put earth about it, to ſtop the arches, that the fire may take upwards to the top of the kiln; cooling the kiln after it has done burning; breaking the kiln; counting of the *bricks*; carrying the *brick*, which is to bring them to the place where they are to be uſed, either on horſeback or in tumbrels. Dict. Ruſt. in voc.

The arches of a kiln of *bricks*, are the hollow places at the bottom where the fire is; pigeon-holes are apertures in the fire-arches; checker courſe, denotes the lower row of *bricks* in the arch; tying courſe, thoſe which cover the top of the arch; binding courſe, is the laying of *bricks* over the joints of the under courſe; dividing courſe, is the diviſions or parts of a kiln; flatting courſe, is the top of all the kiln; the wheeler is he who carries the clay from the pit to the moulding board foot, and there turns it off the wheelbarrow; ſtaker, he who puts the clay off the ground upon the board; moulder, he who works the clay into the *brick*-moulds, and ſtrikes the ſuperfluous clay off the top of the moulds; breaker off, he who takes the mould, with the clay in it, from the moulder, and lays it on the ground to dry; moulder, he who parts off the clay from the mould; off-bearer, he who pulls off the empty mould into the tub of water or ſand; taker up of the *brick* has his work alſo to dreſs and ſmooth them from irregular edges. Dict. Ruſt. T. 1. Art. *Brick-making*.

After caſting the clay, the next ſtep is to tread or temper it, which ought to be performed doubly of what is uſually done; ſince the goodneſs of the *bricks* depends chiefly upon this firſt preparation. The earth itſelf, before it is wrought, is generally brittle and duſty; but, adding ſmall quantities of water gradually to it, and working and incorporating it together, it opens its body, and tinges the whole with a tough, glewy, ſtrong band or ſubſtance. If, in the tempering, you over-water them, as the uſual method is, they become dry and brittle almoſt as the earth they are made of; whereas, if duly tempered, they become ſmooth and ſolid, hard and durable. A *brick* of this laſt ſort takes up near as much earth as a *brick* and a half made the contrary way; in which the *bricks* are ſpongy, light, and full of cracks, partly through want of due working, and partly by mixing of aſhes and light ſandy earth, to make it work eaſy, and with greater diſpatch; as alſo to ſave culm or coals in the burning. We may add, that for *bricks* made of good earth, and well tempered, as they become ſolid and ponderous, ſo they take up a longer time in drying and burning than the common ones; and that the well drying of *bricks*, before they be burned, prevents their cracking and crumbling in the burning. *Neve*, Dict. ubi ſupra.

Brick-making, among the Romans, was conducted with great care and choice; by which means their *bricks* were rendered of much longer duration than ours [a]. In this reſpect moſt of our neighbours excel us; the *bricks* which we import from Holland, Denmark, &c. being better than our own [b].—[a Philoſ. Tranſact. N° 351. p. 563. b *Hought.* Collect. T. 2. N° 168. p. 26.]

For making *bricks*, the uſual rates paid, excluſive of the earth, are five or ſix ſhillings per thouſand; of which the moulder has ſixpence, the bearer-off, fourpence, he that tempers the earth, fourpence, and he that digs it, ſixpence. Dict. Ruſt. in voc.

With reſpect to the poſition, or manner in which *bricks* are laid, we meet with

BRICKS *in bond*, *Briques en liaſon*, thoſe laid flatwiſe, and ſo as to over-reach each other by half their length.

Floor-BRICKS, *Briques de champ*, thoſe laid edgewiſe, to ſerve as a pavement. *Davil.* lib. cit. p 436.

Spicated BRICKS, *Briques en epi*, thoſe placed diagonalwiſe, after the manner of Hungarian point. Such is the pavement of Venice. *Davil.* ibid. See BRICK-*laying*.

BRICKS, in medicine and chemiſtry, are not only uſed in the preparation of the oil, which takes its denomination from them; but heated *bricks* are frequently added in diſtillation, to increaſe the fervour of bodies in boiling [c]. Some adulterate the ſoda, or kali aſhes, for glaſs, with *brick*-duſt [d]. — [c *Junck.* Conſp. Chem. tab. 6. p. 170. d Id. Conſp. Med. tab. 29. p. 589.]

Oil of BRICKS.—Some extol it as a ſeptic, excellent for taking away calluſes, cleanſing and removing ulcers, &c. It is now fallen much into diſuſe. *Junck.* Conſp. Chirurg. tab. 39. p. 252. Item, tab. 41. p. 258. Item, tab. 42. p. 262. Item, tab. 43. p. 265.

BRICK is alſo uſed in ſpeaking of divers other matters made in the form of *bricks*.

In which ſenſe we ſay, a penny *brick*, or *brick*-bread. Some alſo mention *brick*-tin, a ſort of tin in that ſhape brought from Germany; and *brick*-ſoap, made in oblong pieces, from a pound and a half to three pounds. *Savar.* Dict. Comm. T. 1. p. 481. See the articles TIN, BREAD, SOAP, &c.

BRICKS, or BRIQUES, in heraldry, are figures or bearings in arms, reſembling a building of *bricks*; being of a ſquare form, like billets and tablets; from which they only differ in this, that they ſhow their thickneſs, which the others do not. *Coat.* Dict. Herald p. 58.

BRICK, in zoology, the name of a ſort of lamprey, called by the writers on theſe ſubjects, *lampetræ medium genus*; and diſtinguiſhed from the other lampreys, by having a number of black tranſverſe ſpots, very narrow and long. *Willugh.* H. Piſc. p. 106.

BRICK-*dust*.—It is a cuſtom with ſome perſons to reduce this ſubſtance to a very fine powder, and give it, inſtead of chalk, in the heart-burn. Many of the lozenges, ſo much famed for the cure of this diſorder, and ſold under the pompous names of coral lozenges, are only made of a mixture of this uncouth medicine, and ſugar made into the conſiſtence of a paſte, with gum tragacanth reduced to a mucilage, with roſe-water. But it is to be obſerved, that this, as well as chalk, is a very dangerous remedy. It has grown into an opinion, that the ſole cauſe of this complaint was an acid humour in the ſtomach, and thence an abſorbent was judged alone ſufficient for a cure: chalk was the firſt ſubſtance pitched upon for this purpoſe; but ſome miſchievous events having happened from the taking it, recourſe was had by ſome to this odd medicine. But ſuch ſhould have obſerved, that as chalk did all its miſchief by being an aſtringent, this new medicine was qualified to do much more harm, on the ſame principle; it being a much more powerful one. *Junck*. Med. Conſp. p. 589.

BRICK-*earth*, in agriculture. See the article *Brickiſh* SOIL.

BRICK-*kiln*, a place to burn bricks in. See the article BRICK.

BRICK-*layer*, an artificer whoſe buſineſs is to build with bricks, or make brick-work. See the articles BRICK, and BRICK-*laying*.

Brick-layers work or buſineſs, in London, includes tyling, walling, chimney-work, and paving with bricks and tyles. In the country, it alſo includes the maſons and plaiſterers buſineſs. *Neve*, Build. Dict. in voc.

There is ſome diſpute, as to the point of priority, between the white maſon, or hewer of ſtone, and the red maſon, or hewer of bricks: Scripture, it ſeems, favours the latter, making mention of making bricks, before any account of digging or hewing of ſtones. *Moxon*'s Mechan. Exerc. p. 237. See the article MASON, *Cycl.*

The materials uſed by *bricklayers*, are bricks, tyles, mortar, laths, nails, and tyle-pins.

Their tools are, a brick-truel, wherewith to take up mortar; a brick-ax, to cut bricks to the determined ſhape; a ſaw, for ſawing bricks; a rub-ſtone, on which to rub them; alſo a ſquare, wherewith to lay the bed or bottom, and face or ſurface of the brick, to ſee whether they be at right angles; a bevel, by which to cut the under-ſides of bricks to the angles required; a ſmall trannel of iron, wherewith to mark the bricks; a float-ſtone, with which to rub a moulding of brick to the pattern deſcribed; a banker, to cut the bricks on; line-pins, to lay their rows or courſes by; plumb-rule, whereby to carry their work upright; level, to conduct it horizontal; ſquare, to ſet off right angles; ten foot rod, wherewith to take dimenſions; jointer, wherewith to run the long joints; rammer, wherewith to beat the foundation; crow and pick-ax, wherewith to dig through walls. *Moxon*, lib. cit. p. 245, ſeq.

The London *brick-layers* make a regular company, which was incorporated in 1568, and conſiſts of a maſter, two wardens, twenty aſſiſtants, and ſeventy-eight on the livery. New View of London, ſect. 3. p. 598.

BRICK-*laying*, the art of framing edifices of bricks.

Brick-laying is one of the arts ſubſervient to architecture.

Moxon has an exerciſe expreſs on the art of *brick-laying*, wherein he deſcribes the materials, tools, and methods of working uſed by *brick-layers*. *Moxon*, Mechan. Exerc. p. 237, ſeq.

Great care is to be taken, that bricks be laid joint on joint in the middle of walls, as ſeldom as may be; and that there be good bond made there, as well as on the outſides. Some brick-layers, in working a brick and half wall, lay the header on one ſide of the wall, perpendicular on the header on the other ſide, and ſo all along through the whole courſe; whereas, if the header on one ſide of the wall were toothed as much as the ſtretcher on the other ſide, it would be a ſtronger toothing, and the joints of the headers of one ſide would be in the middle of the headers of the courſe they lie upon of the other ſide. *Moxon*'s Mechan. Exerc. p. 260, ſeq. *Neve*, ubi ſupra.

If bricks be laid in winter, let them be kept as dry as poſſible; if in ſummer, it will quit coſt to employ boys to wet them, for that they will then unite with the mortar better than if dry, and will make the work ſtronger. In large buildings, or where it is thought too much trouble to dip all the bricks ſeparately, water may be thrown on each courſe after they are laid, as was done at the building of the Phyſicians college in Warwick-lane, by order of Dr. Hooke.

If bricks be laid in ſummer, they are to be covered; for if the mortar dries too haſtily, it will not bind ſo firmly to the bricks, as when left to dry more gradually. If the bricks be laid in winter, they are alſo to be covered well, to protect them from rain, ſnow and froſt; which laſt is a mortal enemy to mortar, eſpecially to all ſuch as has been wetted juſt before the froſt aſſaults it. *Boyle*, Philoſ. Works abr. T. 1. p. 608, ſeq.

A *brick-layer* and his labourer will lay in a day about a thouſand bricks, in whole work on a ſolid plane. *Neve*, ubi ſup.

For the number of bricks required in a building, it is impoſſible exactly to determine, even though the bricks were all made in the ſame mould, and burnt in the ſame clamp or kiln. The reaſons are, that the *brick-layer*'s hand may vary in laying his mortar; that many of the bricks are warped in burning; that ſome are ſpoiled in every carriage; that the tale is generally ſhort, if not well looked to; beſides all which, when bricks are dear, and lime cheap, if work be put out by the great, or by meaſure, and the workman be to find materials, he will uſe the more mortar, and make great joints, which is a defect in building.

Brick walls are ſometimes wrought part of the way two inches thicker than the reſt of the work, to ſerve for a water table to the wall.

BRICKING popularly ſignifies building a thing up with brick; but, more properly, the act or art of counterfeiting of brick on plaiſter, by ſmeering it over with a red oker colour, and marking the joints with an edged inſtrument. *Davil*. Expl. Term. d'Architect. p. 436. voc. *Briqueter*. Ejuſd. Cours d'Architect. p. 337.

This anſwers to what the French call *briqueter*, which is ſometimes alſo performed by uſing a layer of plaiſter, mixed with red oker, and, while it is freſh laid on, drawing deep lines for joints, and then filling them with fine plaiſter. Some even ſmeer bricks themſelves with a red colour, and repair the joints with plaiſter, to make an antiquated building look freſh. Id. ibid.

BRIDE, a woman juſt married, or a wife in the firſt days of her matrimonial ſtate. See the article MARRIAGE, *Cycl.* and *Suppl.*

Among the Romans, the maid eſpouſed remained a *bride*, *ſponſa*, till ſhe entered the huſband's houſe; from which time ſhe commenced a wife, *uxor*. *Pitiſc*. Lex. Antiq. T. 2. p. 833. voc. *Sponſa*.

The bridegroom was attended by a brideman, *paranymphus* [a]; the *bride* by a *pronuba*, προμνηστρια, or bridemaid [b], whoſe buſineſs was to inſtruct her young miſtreſs in the duties of the genial bed, and to prepare every thing for a proſperous copulation [c].—[[a] Trev. Dict. Univ. T. 4. p. 2058. *Du Cange*, Gloſſ. Lat. T. 4. p. 150. *Pitiſc*. Lex. Ant. T. 2. p. 375. *Calv*. Lex. Jurid. p. 670. voc. *Paranymphus*. [b] *Pitiſc*. lib. cit. p. 546. Trev. Dict. ubi ſup. [c] *Caſt*. Lex. Med. p. 609. voc. *Pronuba*.]

The antient ceremonies practiſed in reſpect of a *bride* were numerous; moſt of them emblematical, or ſignificant of ſome part of her duty: as, dreſſing her hair after a peculiar manner, and parting it with a ſpear; putting on her a crown; girding her with a girdle, which the bridegroom was to looſen; putting a yoak on her neck; dreſſing her in yellow ſocks; veiling her with the flammeum. She was to ſeem to be raviſhed or torn by force from her mother, in memory of the rape of the Sabines under Romulus; ſhe was to be carried home in the night-time to the bridegroom's houſe, accompanied by three boys, called *patrimi* and *matrimi*; one whereof carried a torch, and the other two, called *paranymphi*, led the *bride* [d]; a ſpindle and a diſtaff being carried with her: ſhe brought three pieces of money, called *aſſes*, in her hand to the bridegroom, whoſe doors, on this occaſion, were adorned with flowers and branches of trees: being here interrogated who ſhe was, ſhe was to anſwer, *Caia*, in memory of Caia Cæcilia, wife of Tarquin the elder, who was an excellent *lanifica*, or ſpinſtreſs [e]; for the like reaſon, before her entrance, ſhe lined the door-poſts with wool, and ſmeered them with greaſe [f].—[[d] *Potter*, Archæol. l. 4. c. 11. T. 2. p. 286. [e] *Val. Max*. 10. *Plut*. Quæſt. Rom. 30. [f] *Serv*. ad Æn. l. 4. v. 450.]

Fire and water being ſet on the threſhold, ſhe touched both; but, ſtarting back from the door, refuſed to enter, till at length ſhe paſſed the threſhold, being careful to ſtep over, without touching it: here the keys were given her; a nuptial ſupper was prepared for her, and minſtrels to divert her; ſhe was ſeated on the figure of a Priapus, and here the *patrimi* and *matrimi* reſigned her to the *pronubæ*, who brought her into the nuptial chamber, and put her into the genial bed; this office was to be performed by matrons who had only been once married, to denote that the marriage was to be for perpetuity. When the bridegroom was brought to her, to drown the cries and ſqualling of a coy maid at the firſt conflict, epithalamia were ſung by the women, who were divided for that purpoſe into two bands, one whereof ſung in the evening, the other the next morning; and, for the like purpoſe, nuts were alſo thrown about for the boys to ſcramble for. *Salmuth*. ad Pancirol. P. 1. tit. 59. p. 316. *Kenn*. Rom. Ant. P. 2. l. 5. c. 9. p. 327, ſeq. *Pitiſc*. Lex. Ant. T. 2. p. 292, ſeq. voc. *Nupta*. *Fabric*. Bibl. Ant. c. 19. §. 5. p. 577.

BRIDEGROOM, the ſpouſe or mate of a bride.

Among the Romans, the *bridegroom* was decked to receive his bride; his hair was combed and cut in a peculiar form; he had a coronet or chaplet on his head, and was dreſſed in a white garment. *Pitiſc*. Lex. Antiq. T. 1. p. 836. voc. *Sponſus*.

By the antient canons, the *bridegroom* was to forbear the enjoyment of his bride the firſt night, in honour of the nuptial benediction given by the prieſt on that day. *Johnſ*. Eccleſ. Law, an. 740. §. 88.

In Scotland, and perhaps alſo ſome parts of England, a cuſtom called *marchet*, obtained, by which the lord of the manor was entitled to the firſt night's habitation with his tenants brides. *Spelm*. Gloſſ. p. 397. voc. *Marchet*. *Menag*. Orig. p. 483. voc. *Marquette*. See the article MARCHET, *Cycl.*

BRIDEMIF, in the Perſian tables, the conſtellation Lupus, or the wolf. *Wolf.* Lex. Math. p. 272. *Vital.* Lex. Math. p. 88. See the article LUPUS, *Cycl.*

BRIDEWELL, in our cuſtoms, denotes a work-houſe, partly for the correction of vagrants, and partly for the employment of the pariſh poor.

Bridewell, near Fleet-ditch, is a foundation of a mixt and ſingular nature, partaking both of the hoſpital, the priſon, and work-houſe; it was founded in 1553 by Edward VI. who gave the place where king John had formerly kept his court, and which had been repaired by Henry VIII. to the city of London, with 700 merks of land, bedding, and other furniture. Vid. New View of London, ſec. 6. T. 2. p. 733, 734.

BRIDGE (*Cycl.*)—Among the Romans, the building and repairing of *bridges* was firſt committed to the pontifices, or prieſts; then to the cenſors, and curators of the roads; laſtly, the emperors took the care of *bridges* into their own hands. Thus Antoninus Pius built the Pons Janiculenſis of marble; Gordian reſtored the Pons Ceſtius; and Hadrian built a new one, denominated from him. *Pitiſc.* Lex. Ant. T. 2. p. 460. In the middle age, *bridge*-building was ranked in the number of acts of religion; and a regular order of hoſpitallers was founded by St. Benezet, towards the cloſe of the twelfth century, under the denomination of *pontifices*, or *bridge-builders*; whoſe chief object was to be aſſiſtant to travellers, by making *bridges*, ſettling ferries, and receiving ſtrangers in hoſpitals, or houſes built on the banks of rivers. But the order was too good to thrive. We read of one hoſpital of the kind at Avignon, where the hoſpitallers dwelt under the direction of their firſt ſuperior, St. Benezet. The jeſuit Raynaldus has a treatiſe expreſs on St. John the *bridge*-builder. See *Helyot.* Hiſt. des Ord. Monaſt. T. 2. c. 42. Trev. Dict. Univ. T. 4. App. p. 22. voc. *Pontife.*

The building and repairing of *bridges*, was one of thoſe ſervices to which all orders and ranks were ſubject [a]; though the clergy have ſometimes got exemptions from it [b].—[[a] *Du Cange*, Gloſſ. Lat. T. 4. p. 344. voc. *Pons.* [b] *Bingh.* Orig. Eccleſ. l. 5. c. 3. §. 9.] See the article PONTAGE, *Cycl.*

The ſtructure of the Roman *bridges* is beſt deſcribed by Bergier; they conſiſted of *pilæ*, or piers; *fornices*, or arches; *ſublices*, or butments; *pavimenta*, and *aggeres*; the roads over them in the middle for carriages; on each ſide whereof *decurſoria*, or banquettes, ſomewhat higher than the reſt for foot-paſſengers, and ſeparated from it by a *ſponda*, or rail, and ſometimes even covered over, to ſhelter paſſengers from the rain, as in the Pons Ælius. *Berg.* Hiſt. des Chem. l. 4. ſect. 35. §. 1, 10, 11. *Pitiſc.* Lex. Antiq. T. 2. p. 460. voc. *Pontes.*

The Trajan *bridge* over the Danube, was the moſt magnificent of all the works of this kind in the world [c]. It was erected by that emperor for the conveniency of ſending ſuccours to the Roman legions on the other ſide the Danube, in caſe they ſhould be ſuddenly attacked by the Daci; but demoliſhed by the next ſucceſſor Hadrian, for fear the Barbarians, overpowering the guards ſet to defend it, ſhould, by means of it, pour into Mœſia, and cut off the garriſons there; or rather, as ſome think, out of envy, as deſpairing ever to do any thing like it himſelf. The ruins of it are ſtill ſeen in the middle of the Danube, near the city Warhel in Hungary [d]. It conſiſted of twenty arches, each one hundred and fifty feet from pier to pier, and one hundred and fifty feet high, and the piers fifty feet thick; its whole length was ſeven furlongs; which is more than four times the length of London *bridge* [e].—[[c] *Dio* l. 68. p. 776. [d] *Berg.* l. 4 ſect. 38. §. 8. *Caſal.* de Urb. & Imper. Roman. Splend. P. 1. c. 15. *Lipſ.* de Magn. Rom. l. 3. c. 13. *Thyſ.* de Magnit. Rom. l. 3. p. 306. *Pitiſc.* loc. cit. p. 464. [e] *Hawkſm.* Hiſt. London Bridge, p. 29, ſeq.]

Modern architects are abſolutely at a loſs to conceive how the foundations of ſuch a *bridge* could be laid in ſo vaſt and rapid a river, and ſo deep a channel as the Danube. Scamozzi imagines that the river muſt have been turned out of its courſe. But to divert the Danube ſeems impoſſible. That author conjectures, that choice was made of ſome ſhort bend of the river, where it made almoſt a peninſula, and a canal was cut croſs the iſthmus or neck thereof, through which the river took its courſe; ſo that the *bridge* was built on dry land, and, when finiſhed, the river was returned to its antient channel. Id. c. 30.

In France, the Pont de Garde is a very bold work; the piers being only thirteen feet thick, yet ſerving to ſupport an immenſe weight of a triplicated arcade, and ſerves to join two mountains. It conſiſts of three *bridges* one over another; the uppermoſt of which is an aqueduct. *Berg.* l. 4. ſect. 57. §. 2.

The *bridge* of Avignon was begun in the year 1176, and finiſhed in 1188; conſiſting of eighteen arches, meaſuring 1340 paces in length, or about 500 fathoms; divers of its arches have been ſince demoliſhed by the ice, *&c.* ſo that only part of it now ſubſiſts.

The *bridge* of St. Eſprit is the fineſt and boldeſt in France, conſiſting of nineteen great arches, beſides ſeven ſmaller ones, the apertures of the arches being from fifteen to twenty fathoms, which makes the length of the *bridge* upwards of four hundred fathoms. *Hawkſm.* lib. cit. p. 34, ſeq.

The Trajan-*bridge*, at Salamanca, over the river Formus, popularly attributed to the giants, by ſome to Hercules, appears rather to be a Roman work, though when and by whom erected, is not known; but it was repaired by Trajan, whoſe denomination it ſtill bears; it is 1500 feet long, conſiſts of 26 arches, each 72 feet wide, the piers that ſuſtain them being 23 feet thick, and 200 high. *Berg.* l. 4. ſec. 38. §. 2. *Pitiſc.* lib. cit. p. 464.

In England are London *bridge*, the *bridge* at York, whoſe maſter arch in the middle is 82 feet and a half in the clear wide, and 27 feet high. Rocheſter *bridge* is built in the ſame ſtyle with that of London, only better, in that the arches are wider, and that there are no houſes on it; it is 550 feet long, and conſiſts of 11 arches, the biggeſt of which is more than 40 feet. The *bridges* at Durham and Biſhop-Awkland, whoſe largeſt arches are near 90 feet in the clear. The *bridge* at Berwick is an admirable work, begun under queen Elizabeth; it conſiſts of 17 arches, the largeſt upwards of 80 feet. The *bridge* at Newcaſtle, lately built, having one bold arch, 120 feet in the clear. That of Blenheim conſiſts of three arches, the chief of which ſpans 101 feet and a half. *Hawkſm.* lib. cit. p. 41, ſeq.

The longeſt *bridge* in England is that over the Trent at Burton, built by Bernard abbot of Burton, in the 12th century; it is all of ſquared free-ſtone, ſtrong and lofty, 1545 feet in length, and conſiſting of 34 arches [f]. Yet this comes far ſhort of the wooden *bridge* over the Drave, which, according to Dr. Brown, is at leaſt five miles long [g]. — [[f] *Plott*, Nat. Hiſt. of Stafford. c. 9. §. 72. p. 372. [g] *Brown*, Trav. Hung. p. 5. *Plott*, loc. cit.]

London *bridge* conſiſts of 20 locks or arches, whereof 19 are open, and one filled up or obſcured; it is 900 feet long, 60 high, and 74 broad, having a draw-bridge in the middle, and almoſt 20 feet aperture in each arch [h]. It is ſupported by 18 piers or ſolids, from 34 to 25 feet thick; ſo that the greateſt water-way, when the tide is above the ſterlings, is 450 feet, ſcarce half the width of the river; and below the ſterlings, the water-way is reduced to 194 feet. Thus a river 900 feet wide, is here forced through a channel of 194 feet [i].—[[h] New View of London, ſect. 7. T. 2. p. 790. [i] *Hawkſm.* ubi ſupra, p. 9.]

London *bridge* was firſt built of timber, ſome time before the year 994, by a college of prieſts, to whom the profits of the ferry of St. Mary Overy's had deſcended; it was repaired, or rather new built of timber, in 1163 [k]. The ſtone-*bridge* was begun by king Henry II. in 1176, and finiſhed under king John in the year 1209. The architect was Peter of Colechurch, a prieſt [l].—[[k] *Stow*, ap. New View of Lond. ſect. 7. p. 790. [l] *Hawkſm.* ubi ſupra, p. 6.]

For the charge of keeping it in repair, a large houſe is allotted, with a great number of offices, and a vaſt revenue in land, *&c.* The chief officers are two *bridge*-maſters, choſen yearly out of the body of the livery. *Chamberl.* Pref. State Gr. Br. P. 1. l. 3. c. 10. p. 271.

The foundation is ſaid to be on a ſoft oozy ground. Stow alleges, that, during the time of building, the river was turned from Batterſea to Rotherhith; but this is not warranted. Some imagine, that the tide did not then riſe ſo high at the *bridge* as it does now, by which the work would be facilitated. However this be, the piers were erected on wooden piles driven under water, over which planks were laid, and the feet of the piers on the planks. The defects of this *bridge* are the narrowneſs and irregularity of the arches, and the largeneſs of the piers, which, together with the ſterlings, turn the current of the Thames into many frightful cataracts, which much obſtruct and endanger the navigation through the *bridge*; to which may be added, the narrowneſs of the *bridge* above, occaſioned by the houſes built on it. 'Tis pretty certain, there were no houſes on the *bridge* for upwards of 200 years; ſince we read of a tilt and tournament held on it in 1395. *Hawkſm.* lib. cit. p. 10.

The ſterlings have been added, to hinder the piers from being undermined by the rotting of the piles upon which they are built; for, by means of theſe ſterlings, the piles are kept conſtantly wet; and thus the timber is kept from decaying, which always happens when it is alternately wet and dry.

One of the nobleſt *bridges* known is that at Weſtminſter. The breadth of the river Thames, between the Wool-ſtaple dock and the oppoſite ſhore, the place where the *bridge* is built, is about 1220 feet. The *bridge* conſiſts of 13 large arches, and two ſmaller ones, the 14 intermediate piers, and two abutments.

The length of each abutment is 76 feet; the ſpan or opening of each of the ſmall arches of the abutments is 25 feet; the opening or ſpan of the firſt of the large arches from each ſhore is 52 feet; the ſpan of the next arch is 56 feet, and ſo on, increaſing by four feet in every arch to the middle arch, the ſpan of which is 76 feet. The tranſverſe ſection, or breadth of the two firſt piers on each ſide, is 12 feet; of the next 13, and ſo on, to the piers ſupporting the middle arch, the ſection of each of which is ſeventeen feet. Thus the length of the two abutments being 152 feet, the ſection of the 14 piers 198 feet, and the ſpan or opening of the 15 arches

870 feet, the whole length of the *bridge*, including abutments, is 1220 feet, which is the breadth of the river.

The arches are ſemicircular, and ſpring from about the height of 2 feet above low water mark.

Theſe arches give, as has been ſaid, a water-way of 870 feet; the proportion of the water-way being ſo conſiderable with reſpect to the breadth of the piers, it follows that the fall of water under this *bridge* muſt be very ſmall. And, in effect, thoſe who attempted to calculate it before the *bridge* was built, after making all poſſible allowances, could never find the perpendicular height of this fall to exceed three inches and three fourths; but, in truth, it now appears by experience, that the height of the greateſt fall is ſcarce half an inch; whereas the height of the fall at London *bridge* is from four feet and nine inches to five feet.

The foundations of the piers of Weſtminſter *bridge* are laid on a ſtrong grating of timber, planked underneath. This grating was made of the bottom of a veſſel, ſuch as the French call *Caiſſon*; the ſides of which were ſo contrived, that they might be taken off after a pier was finiſhed. The bed of the river was dug to a ſufficient depth, and made level, in order to lay the bottom of the *Caiſſon*, and the bottom of the piers, out of all danger; the ground, by all trials that could be contrived, ſeemed ſo good, being every where a bed of gravel, that piling was thought unneceſſary. Whether there be any ſofter ſtratum under this or not, we cannot pretend to determine; neither does it appear from experience, that piling is an abſolute ſecurity againſt all accidents. By what Gaultier ſays, it would ſeem otherwiſe; for he aſſures us, that let the architect of a *bridge* do his beſt, yet he can no more be ſure of the ſucceſs of his work than a phyſician is. And, in effect, we find, that notwithſtanding the care that was taken in examining the ground on which Weſtminſter *bridge* was built, yet one of the piers ſunk conſiderably. This damage is now repaired, and the *bridge* was opened for paſſengers and carriages, in November 1750. Its beauty and convenience is juſtly admired; and it were to be wiſhed, that we had a detail of all the arts uſed in building it.

BRIDLE (*Cycl.*)—In lieu of a *bridle*, the maſters frequently uſe the word *hand*: thus, for Pull the *bridle*, they ſay, Bear the hand. To cleave to, or hold by the *bridle*, is the fault of a bad horſeman, who, when a horſe is diſorderly, inſtead of ſlacking his hand, clings to it, as if it were to the mane or pummel of the ſaddle; wanting the habit, or ſtrength, to keep himſelf faſt by clinging with his thighs. *Guill.* Gent. Dict. P. 1. in voc.

Checks of the *bridle* are called *ebrillades* and *ſaccades*. See the articles EBRILLADE, *Suppl.* and SACCADE, *Cycl.*

Pliny aſſures, that one Pelethronius invented the *bridle* and ſaddle [a]; though Virgil [b] attributes the invention to the Lapithæ, to whom he gives the epithet *Pelethronii*, from a mountain in Theſſaly named *Pelethronium*, where horſes were firſt begun to be broken.—[[a] *Plin.* Hiſt. Nat. l. 7. c. 56. *Frenos & ſtrata equorum Pelethronius.* Hardouin makes this Pelethronius the king of the Lapithæ, which reconciles the two opinions. Vid. Not. ad loc. [b] *Virg.* Georg. l. 3. v. 115. *Turneb.* Adverſ. l. 21. c. 9. Trev. Dict. Univ. T. 2. p. 2018. voc. *Frein.*]

Others aſcribe the invention to Minerva, who is ſaid to have firſt *bridled* Pegaſus. *Pitiſc.* Lex. Antiq. T. 1. p. 818. voc. *Frena.*

The firſt horſemen being unacquainted with the art of governing horſes by *bridles*, managed them only with a rope, or a ſwitch, and the accent of the voice. This was the practice of the Numidians, Getulians, Libyans, and Maſſilians. *Potter*, Archæol. Græc. l. 3. c. 3. T. 2. p. 11.

The Roman youth alſo learned the art of fighting without *bridles*, which was an exerciſe or leſſon in the manege; and hence it is, that, on the Trajan column, ſoldiers are repreſented riding at full ſpeed, without any *bridles* on. Vid. Phil. Tranſact. N° 322. p. 406.

BRIDLE, in anatomy. See the article FRÆNUM, *Cycl.* and *Suppl.*

BRIDLE, among ſurgeons, is a kind of bandage contrived for retaining the lower jaw in its place. *Le Clerc*, Compl. Surgeon, p. 98. See the article BANDAGE.

Scolding BRIDLE.—In Staffordſhire they have a *bridle* for correcting ſcolding women. It is put in the mouth, and takes particular hold of the tongue, which it effectually keeps from ſtirring: thus harnaſſed, the offender is led in triumph through the ſtreets. A figure and deſcription of this Staffordſhire *bridle* is given by Dr. Plott, who ſeems to wiſh the uſe of it more univerſal. *Plott*, Nat. Hiſt. Staffordſh. c. 9. §. 97.

BRIDLE-*hand* ſignifies the horſeman's left-hand, in reſpect of which the right-hand is called the ſpear or ſword-hand. *Guill.* Gent. Dict. P. 1. in voc.

BRIDLE-*chain*, in huſbandry, a name given by our farmers to a part of the ſtructure of their plough. This is an iron chain of ſeveral links, faſtened at one end to the beam of the plough, near that part where the collar receives the tow-chain, and faſtened at its other end to the ſtake of the plough, or to that upright piece which runs parallel to the left crowſtaff, and at its bottom pins in the tow-chain; this ſtake is faſtened to the crowſtaff, ſometimes by the end of this *bridle-chain*, and ſometimes by a wythe or cord. *Tull*'s Huſbandry. See the article PLOUGH.

BRIDON, or BRIDOON, in the manege, properly denotes a ſnaffle, in contradiſtinction from a bit or bridle. *Guill.* Gent. Dict. P. 1. in voc. *Snaffle.* See the articles SNAFFLE, BIT, BRIDLE, *&c.*

The French ſay, that the Engliſh uſe no bridles, but only *bridoons*, except in the army: a horſe never goes ſo well nor ſure with a *bridoon*, unleſs he have been firſt broke to the bit. *Newcaſt.* ap. Trev. Dict. Univ. T. 1. p. 1240. voc. *Bridon.*

BRIEF, (*Cycl.*) a thing of ſhort extent or duration.

The word is formed from the French *bref*, of the Latin *brevis*, which ſignifies the ſame.

BRIEF is more particularly uſed for a ſummary or ſhort ſtate of a thing. *Du Cange*, Gloſſ. Lat. T. 1. p. 614. voc. *Brevis. Calv.* Lex. Jur. p. 771. See the article BREVIARY.

BRIEF is alſo uſed for an act or writing drawn up by a notary. *Du Cange*, ibid. p. 15. voc. *Brevis.*

Atteſted BRIEF, *Breve teſtatum*, a public inſtrument cloathed with the proper formalities. Ibid. p. 616.

BRIEF *of deviſing*, *Brevis diviſionalis*, denotes a laſt will or teſtament. See the article DEVISE, *Cycl.*

BRIEF *of an oath*, *Breve ſacramenti*, an inſtrument made on oath, and authenticated by the ſubſcription of witneſſes.

BRIEF is alſo uſed for a judicial epiſtle, directed by a lord or other ſuperior, to his ſubjects or dependents, enjoining ſomething to be done or forborn. *Du Cange*, Gloſſ. Lat. T. 1. p. 616. voc. *Brevis.*

In which ſenſe, we ſay, the lord's, king's, biſhop's or pope's *brief.*

BRIEF alſo denotes the territory or diſtrict within which the lord's *brief* had courſe. In which ſenſe, we meet with the biſhop's *brief*, *breve epiſcopi*, the count's *brief*, *breve comitis*, &c. Idem, ib. p. 615.

BRIEF alſo denotes the yearly revenue ariſing out of the lands uſually deſcribed in *briefs*. Id. ibid.

BRIEF is alſo uſed for a letter written by the pope to ſome prince or magiſtrate, relating to ſome public affairs. Theſe are more peculiarly denominated *papal briefs*, *apoſtolical briefs*, &c. The officers in the pope's court, who compoſe *briefs*, are called *breviators*, or rather *abbreviators*. See the article ABBREVIATOR.

A *brief* differs from a bull, in that the latter is more ample and formal, always written on parchment, and ſealed with lead or green wax. *Briefs* diſpatched from the datary or ſecretary's office, are ſometimes on parchment, and ſealed with red wax, ſtamped with the *annulus piſcatoris*, or fiſherman's ſeal, repreſenting St. Peter in his bark in the habit of a fiſherman, which is only affixed in the pope's preſence.

Briefs are ſubſcribed by the ſecretary, not by the pope: on the top is the pope's name, in a line apart, afterwards *Dilecto filio ſalutem & apoſtolicam benedictionem*, &c. After which, without other preamble, it proceeds to a ſimple detail of what the pope is pleaſed to ſignify or grant. Trev. Dict. Univ. T. 1. p. 1217. voc. *Bref. Magr.* Not. Voc. Eccleſ. p. 37. voc. *Breve.*

BRIEFS *of the dead*, *Brevia mortuorum*, were letters ſent by the monks of one monaſtery to thoſe of another, with whom they were in fraternity, to inform them of the deaths or obits of their monks, for whom they were to ſay the ſtated and cuſtomary prayers and maſſes.

Theſe were alſo called *literæ currentes*, a formula of which we have in the book of the uſages of the Ciſtercian order. Vide *Du Cange*, Gloſſ. Lat. T. 1. p. 615.

BRIEF *of remembrance*, *Breve recordationis*, or *rememoratorium*, or *memorabile*, denotes a charter, otherwiſe called *notitia. Du Cange*, ibid. p. 615. See the article NOTITIA.

BRIG-*bote*, BRIGGE-*bote*, or BRIGH-*bote*, in antient law-writers, ſignifies a being freed from contributing to the reparation of bridges. *Flet.* l. 1. c. 47. *Seld.* Tit. of Hon. p. 622. *Cow.* Interpr. in voc. *Du Cange*, Gloſſ. Lat. T. 1. p. 623. See the article PONTAGE, *Cycl.*

The word is formed from the Saxon, *brig*, a bridge, and *bote*, compenſation. It is ſometimes alſo written *brugh-bote* [a], or *bruch-bote* [b].—[[a] Term. de Ley, 41. voc. *Brugh-bote.* [b] *Cow.* Interpr. voc. *Bruch-bote.*]

BRIGADE (*Cycl.*)—Charier gives another etymon of *brigade*, *viz.* from the Celtic *brig*, or *briga*, which not only ſignify a city, but a company or troop of perſons. In the middle age Latin we alſo meet with *brigata*, in the like ſenſe with our *brigade*. In the ſtatutes of the city of Nancy, it is uſed for running at the ring; and, in the acts of the ſaints, for the troop or *brigade* which each quarter of the city ſent out to this exerciſe. Act. Sanct. Maii, T. 1. p. 396. Trev. Dict. Univ. T. 1. p. 1242. *Aquin.* Lex. Milit. T. 1. p. 138. *Caſeneuv.* Orig. Franc. p. 28. voc. *Brigans.*

BRIGADE-*major*, in the military art, an officer choſen from among the moſt ingenious and expert captains. *Brigade-majors* are to wait, at proper times, to receive the word and orders which they carry firſt to their brigadier, and afterwards to the adjutants of regiments at the head of the *brigade*, where they regulate together the guards, parties, detachments, and convoys, and appoint them the hour and place of rendezvous at the head of the brigade, where the *brigade-major* takes and marches them to the place of the general rendezvous. A *major of brigade* ought to keep a roll of the colonels, lieutenant-colonels, majors,

jors, and adjutants, belonging to the *brigade*. When a detachment is to be made, the major-general of the day regulates with the *brigade-majors*, how many men and officers each *brigade* ſhall furniſh; and they again with the adjutants of the regiments, how many each battalion is to ſend, which the adjutants divide among the companies. The complements each regiment is to furniſh, are taken by the adjutant at the head of each regiment, at the hour appointed, who delivers them to the *brigade-major* at the head of the *brigade*, who again delivers them to the major-general of the day, and he remits them to the officer who is to command the detachment. Vide *Bland*'s Milit. Diſcipl. c. 16. Art. 3. p. 233. Item, c. 19. Art. 1. p. 281, ſeq. *Guill.* Gent. Dict. P. 2. in voc.

BRIGADIERS (*Cycl.*) are only general officers in their reſpective corps. They have no particular command out of their brigades, nor any place or vote in councils of war; they have no aids de camp to carry their orders, but only a major of brigade, to ſee their orders executed, within the extent only of their own brigade. See the article BRIGADE-*major*.

Brigadiers of the horſe-guards command as youngeſt captains.

Sub-BRIGADIER of a troop of horſe-guards, an aſſiſtant of the brigadier. *Fæſch.* Ing. Lex. p. 122.

BRIGANDINI, BRIGANTINI, BRIGANDINARII, or BRIGANCII, in middle age writers, military thieves, or highwaymen, who infeſted France and the Netherlands. *Caſeneuv.* Orig. Franc. p. 28. voc. *Brigans*. *Du Cange*, Gloſſ. Lat. T. 1. p. 622. voc. *Brigancii*. See the article BRABANCIONES.

BRIGGS's *Logarithms*. See the article LOGARITHM.

BRIGITTINS, or BRIDGETINS, more properly BIRGITTINS, a religious order denominated from their foundreſs St. *Bridgit*, or *Birgit*, a Swediſh lady in the fourteenth century, whom ſome repreſent as a queen; but Fabricius, on better grounds, as a princeſs, the daughter of king Birgerus, legiſlator of Upland: ſhe is famous for her revelations. *Fabric.* Bibl. Med. Æv. Latin. T. 1. l. 2. p. 764. voc. *Brigitta*.

The *Brigittins* are ſometimes alſo called the *Order of our Saviour*; it being pretended that Chriſt himſelf dictated the rules and conſtitutions obſerved by them, to St. Bridget. In the main, the rule is that of St. Auguſtin; only with certain additions ſuppoſed to have been revealed by Chriſt; whence they alſo denominate it the *Rule of our Saviour*.

The firſt monaſtery of the *Bridgetin* order was erected by the foundreſs, about the year 1344, in the dioceſe of Lincopen; on the model of which all the reſt were formed. The conſtitution of theſe houſes were very ſingular: though the order was principally intended for nuns, who were to pay a particular honour to the holy Virgin, there are alſo friars of it, to miniſter to them ſpiritual aſſiſtance. The number of nuns is fixed at ſixty in each monaſtery, and that of friars to thirteen, anſwerable to the number of the apoſtles, of whom St. Paul made the thirteenth; beſides which there are to be four deacons, to repreſent the four doctors of the church, St. Ambroſe, St. Auguſtin, St. Gregory, and St. Jerom, and eight lay-brothers; making together, ſays our authors, the number of Chriſt's ſeventy-two diſciples.

The order being inſtituted in honour of the Virgin, the direction is committed to an abbeſs, who is ſuperior not only of the nuns, but alſo of the friars, who are obliged to obey her. Each houſe conſiſts of two convents, or monaſteries, ſeparately incloſed, but one church in common; the nuns being placed above, and the friars on the ground.

The *Bridgetins* profeſs great mortification, poverty, and ſelf denial, as well as devotion; and they are not to poſſeſs any thing they can call their own, not ſo much as a halfpenny, nor even to touch money on any account. See *Stev.* Supplem. to Dugd. Monaſt. T. 2. p. 230—233. *Walſingh.* ap. Reyn. Apoſt. Bened. p. 166.

This order ſpread much through Sweden, Germany, the Netherlands, &c. In England we read but of one monaſtery of *Brigittins*, and this built by Henry V. in 1413, oppoſite to Richmond, now called Sion-houſe; the antient inhabitants of which, ſince the diſſolution, are ſettled at Liſbon. The revenues were reckoned at 1945 *l. per annum*. *Dugd.* Monaſt. T. 2. p. 360. Abr. p. 155.

BRIGNOTES, or BRUGNOTES, a kind of dried prunes, brought from Provence, chiefly from the town of Brugnote, from which the denomination is given to them all. *Savar.* Dict. Comm. T. 1. p. 492. *Menag.* Orig. p. 137.

BRIM, the utmoſt edge of a thing, as of a glaſs, plate, or the like.

The *brims* of veſſels are made to project a little over, to hinder liquors, in pouring out, from running down the ſide of the veſſel.

The *briming*, or *brimming* of veſſels, was contrived by the antient potters, in imitation of the ſupercilium or drip of the cornices of columns; it is done by turning over ſome of the double matter when the work is on the wheel. *Evel.* Account of Archit. p. 38.

Among floriſts, the *brim* of a flower denotes the outward edge of the petala, or that part thereof which turns. See the article FLOWER.

A ſow is ſaid to *brim*, or go to *brim*, when ſhe takes the *boar*. Ruſt. Dict. T. 1. in voc.

The hart goes to *rut*, the roe to *tourn*, the boar to *brim*. *Cox.* Gent. Recr. P. 1. p. 11.

BRIMSTONE. See the article SULPHUR.

BRIMSTONE *Marble*, a preparation of brimſtone in imitation of marble.

To do this, you muſt provide yourſelf with a flat and ſmooth piece of marble; on this make a border or wall, to encompaſs either a ſquare or oval table, which may be done either with wax or clay. Then having provided ſeveral ſorts of colours, as white-lead, vermilion, lake, orpiment, maſticot, ſmalt, Pruſſian blue, &c. melt on a ſlow fire ſome brimſtone, in ſeveral glazed pipkins; put one particular ſort of colour into each, and ſtir it well together; then having before oiled the marble all over within the wall, with one colour quickly drop ſpots upon it, of larger and leſs ſize; after this, take another colour and do as before, and ſo on, till the ſtone is covered with ſpots of all the colours you deſign to uſe. When this is done, you are next to conſider what colour the maſs or ground of your table is to be; if of a grey colour, then take fine ſifted aſhes, and mix it up with melted brimſtone; or if red, with Engliſh red oaker; if white, with white-lead; if black, with lamp or ivory black. Your brimſtone for the ground muſt be pretty hot, that the coloured drops on the ſtone may unite and incorporate with it. When the ground is poured even all over, you are next, if judged neceſſary, to put a thin wainſcot board upon it: this muſt be done whilſt the brimſtone is hot, making alſo the board hot, which ought to be thoroughly dry, in order to cauſe the brimſtone to ſtick the better to it. When the whole is cold, take it up, and poliſh it with a cloth and oil, and it will look very beautiful. *Smith*'s Laboratory, p. 248, ſeq.

BRIMSTONE *Medals*, *Figures*, &c. may be caſt in the following manner: Melt half a pound of *brimſtone* over a gentle fire; with this mix half a pound of fine vermilion, and when you have cleared the top, take it off the fire, ſtir it well together, and it will diſſolve like oil; then caſt it into the mould, which muſt firſt be anointed with oil. When cool, the figure may be taken out; and, in caſe it ſhould change to a yelloviſh colour, you need only wipe it over with aqua-fortis, and it will look like the fineſt coral. Vid. *Smith*, lib. cit. p. 111.

BRINDONES, in natural hiſtory, the name of a fruit of the Eaſt Indies, called by John Bauhine, and ſome other botanical authors, *Indici fructus rubentes acidi*. Garcias ſays, that it grows plentifully in Goa, and that it is of a rediſh colour on the outſide, and extremely red within, and of an acid taſte; and that it grows black on the outſide as it mellows, and then becomes much leſs ſour to the taſte. It is by many accounted a delicious fruit, notwithſtanding its great ſharpneſs, and is uſed by the dyers, and in making vinegar. *Ray*'s Hiſt. Plant.

BRINE (*Cycl.*) amounts to the ſame with the Latin *muria* [a], *Jalſedo* [b], *Jalſilago*, and the Greek ἅλμη [c].—[[a] *Caſt.* Lex. Med. p. 513. *Calv.* Lev. Jur. p. 602. *Pitiſc.* Lex. Ant. T. 2. p. 238. voc. *Muria*. [b] *Caſt.* lib. cit. p. 648. voc. *Salſedo*. [c] *Gorr.* Med. Defin. p. 22. *Caſt.* ubi ſup. p. 380. voc. *Halme*.]

Brine is either native, as the ſea-water, which by coction turns to ſalt; or factitious, formed by diſſolving ſalt in water. *Coll.* Diſc. Salt, p. 1, 4, 18, 29. *Rul.* Lex. Alch. p. 340. voc. *Muria*. *Kirch.* Mund. Subter. l. 6. ſect. 1. c. 5. T. 1. p. 302. In the ſalt-works at Upwick in Worceſterſhire, there are found, at the ſame time, and in the ſame pit, three ſorts of *brine*, each of a different ſtrength. They are drawn by a pump, and that in the bottom, firſt brought up, is called *firſt man*, the next *middle man*, the third *laſt man*. Phil. Tranſ. N° 142. p. 1061.

Leach-BRINE, a name given to what drops from the corned ſalt in draining and drying, which they preſerve and boil again; being ſtronger than any *brine* in the pit. *Hought.* Collect. T. 2. N° 211. p. 81.

There is ſand found in all the Staffordſhire *brines* after coction; but naturaliſts obſerve, it did not pre-exiſt in the water, but rather is the product of the boiling. Philoſoph. Tranſ. N° 145. p. 96.

The *brine* at Northwich is found to ſtink of ſulphur [a], *Brine* freezes with great difficulty [b]. Some ſteep their ſeed-wheat in *brine*, to prevent the ſmut [c]. *Brine* is alſo commended as of efficacy againſt gangrenes [d].—[[a] Phil. Tranſ. N° 156. p. 489. [b] *Junck.* Conſp. Chem. tab. 18. p. 426. [c] *Bradl.* New Improv. Gard. P. 3. p. 68. [d] *Junck.* lib. cit. tab. 9. p. 88.]

BRINE alſo denotes a pickle pregnant with ſalt, wherein things are ſteeped to keep. *Caſt.* Lex. Med. p. 380. voc. *Halme*.

Dutch beef, before it is hung up, is ſteeped in a *brine* made of ſalt and nitre boiled, and when cold, vinegar added. *Hought.* Collect. T. 1. N° 167. p. 437.

BRINE-*pans*, the pits wherein the ſalt-water is retained, and ſuffered to ſtand, to bear the action of the ſun, whereby it is converted into ſalt.

There are divers ſorts of ſalt-pans, as the water-pan, ſecond pan, ſun-pan; the water being transferred orderly from one to another. *Coll.* Diſc. of Salt and Fiſh. p. 29, ſeq.

BRINE-*pit*, in ſalt making, the ſalt ſpring from whence the water to be boiled into ſalt is taken. There are of theſe ſprings in many places; that at Namptwich in Cheſhire, is alone ſufficient

cient, according to the account of the people of the place, to yield ſalt for the whole kingdom; but it is under the government of certain lords and regulators, who, that the market may not be overſtocked, will not ſuffer more than a certain quantity of the ſalt to be made yearly. *Ray*'s Engl. Words, p. 42. See the article PIT.

BRINE-*ſalt*. See the article SALT.

BRINEK, or BRINETI, in aſtronomy, the bright ſtar in the conſtellation Lyra; more frequently called *Lucida Lyræ*. *Wolf.* Lex. Math. p. 272. *Vital.* Lex. Math. p. 88.

BRINGER-*up*, in the military art, is uſed for the laſt man of a file. See the article FILE, *Cycl.*

BRINGING *in a horſe*, in the manege, is the keeping down his noſe, when he boars, and toſſes it up to the wind. A horſe is *brought in* by a ſtrong hard branch. *Guill.* Gent. Dict. P. 1. in voc.

BRISKET, that part of a horſe extended from the two ſhoulders to the bottom of the cheſt.

In which ſenſe, the word amounts to the ſame with the French *poitral*, or *poitrail*. Trev. Dict. Univ. T. 4. p. 727. voc. *Poitral.*

BRISSOIDES, in natural hiſtory, the name of one of the genera of the echini marini; the diſtinguiſhing characters of theſe are, that they are of an oval figure, and have their backs ſtriated, not furrowed, and their rays ſmooth, not marked with ridges. Of this genus there are two known ſpecies; 1. A flat one, called by ſome the cranium. 2. A high one, called by ſome the amygdala, and uſually found foſſile, and immerſed in flint. *Kleins*, Echin. p. 36.

BRISSUS, in natural hiſtory, the name of a genus of the echini marini; the characters of which are, that they are of an oval figure, and have the aperture for the anus on one of the ſides of the ſuperficies; their back is ſmooth and even, not furrowed, but on the vertex they have ſeveral very elegant crenated and dotted lines. Their baſe is as if cut off on the end neareſt the mouth, and is not flat as in the ſpatangi, but raiſed in the manner of a cuſhion. *Kleins*, Echin. p. 34.

BRISTLE, a thick gloſſy kind of hair, wherewith the ſwine kind more eſpecially are covered.

The name is ſometimes alſo applied to the quills of porcupines [a], and the muſtaches or whiſkers of cats [b].—[a Mem. Nat. Hiſt. Anim. p. 147. b *Hook.* Microg. p. 157.]

Hogs *briſtles* are hard, tranſparent, horny ſubſtances, of a priſmatical figure, without any appearance of cavities or pores in them, diſcoverable even by the microſcope. Cats *briſtles* have a large ſolid pith in the middle. *Hook*, lib. cit. Obſ. 20. p. 157.

BRISTLE *Dice*, a ſort of falſe dice, furniſhed with a piece of hog's *briſtle* ſtuck in the corners, or other places, to hinder their falling on certain ſides, and make them run high or low at pleaſure. Compl. Gameſt. p. 11.

BRISTOL *Water*. See the article WATER.

BRITANNIC *Plague*, a name given by ſome writers to the ſweating ſickneſs. *Lang.* Epiſt. Med. l. 1. ep. 19. p. 83. See the article SUDOR, *Cycl.*

BRITANNICA, in the materia medica of the antients, the name of a plant deſcribed as having leaves of a dark colour, very large, and in ſhape reſembling thoſe of the common wild-dock, but ſomewhat hairy and of an aſtringent taſte; the root ſmall and ſlender, and the ſtalk not large. This is the deſcription of Dioſcorides [a], who attributes to its inſpiſſated juice great virtues as an aſtringent, and a remedy for ulcers of the mouth and tonſils; and Pliny [b] acquaints us of its prodigious efficacy in a diſtemper attending the army of Germanicus, who, when they had croſſed the Rhine, encamped in a place where there was only one ſpring of water, the drinking of which affected them in a terrible manner in their mouths, and made their teeth drop out, and that the phyſicians, who called the diſeaſe *ſtomacace* and *ſcelotyrbe*, were at length directed to a remedy by the Friſians who were in their camp, which was the herb *britannica*.—[a *Dioſcor.* l. 4. c. 2. b *Pliny*, l. 25. c. 3.]

The virtues attributed to this plant are obſerved by the later phyſicians, to agree very well with thoſe of the hydrolapathum majus, or great water-dock, a plant produced very abundantly with us, but at preſent neglected in the practice of phyſic; and Muntingius, who has written profeſſedly of the *britannica* of the antients, is perſuaded that this is the true and genuine plant. He by no means countenances the opinion of its having its name from the iſland of *Britain*, but deduces it from a very expreſſive phraſe in the Friſian language, in which *brit* ſignifies to conſolidate, *tan* a tooth, and *ica* looſe; ſo that it plainly had its name from its virtues of faſtening the teeth, when looſened in the mouth by diſtemperature.

Every part of the herb is powerfully aſtringent, and the root, which is its moſt efficacious part, is very ſerviceable in hæmorrhages of all kinds, and in whatever diſorders the cold aſtringents are required in. It is ſaid alſo to be very uſeful in nervous complaints; and is very powerful in the cure of quinſeys, inflammations of the tonſils, and almoſt all the diſorders of the mouth and throat, and is by ſome eſteemed a ſpecific in the ſcurvy.

Its leaves are ſtyptic, and bitter to the taſte, and ſtrike a ſtrong red upon blue paper; the root has the ſame effect, but in a more remiſs degree. The bark of it is of a fleſh-colour, and ſtreaked, and the heart of a pale yellow. Experience confirms its efficacy in ſome diſorders of the mouth; the chewing it in a morning having been found an effectual remedy for the bleeding of the gums. *Muntingius* de vera Herba Britan.

There is no doubt but that the real plant is our water-dock; but the commentators on the Greek phyſicians, and the authors who have written ſince, and have borrowed the greateſt part of their knowledge from them, have occaſioned great perplexities to their readers, by ſuppoſing that the *britannica* and *betonica* were the ſame plant; whereas one was a dock, and the other the plant we call *ferratula*, or ſaw-wort; this being, according to Pliny, the name given in Italy to the plant called *betonica* by the Gauls. Apuleius ſays, that the *ceſtrum* of the Greeks is the ſame with the *betonica* or *britannica*, called alſo *penthroorophos* and *priorites*; and Neophytus, in his Herbal, has collected together an account under the article *betonice*, which being partly taken from Dioſcorides's account of the *betonica*, partly from his deſcription of the *britannica*, and partly from ſome other authors accounts of the *ſerrata* or *ſerratula*, is a medley hiſtory that contradicts itſelf, and can be applied to no plant at all. Pliny ſays, that the *betonica* has leaves very large, and like the dock. Every one may ſee how little this agrees with the character of the true *betonica*, which the ſame author ſays is the *ſerrata*; and that it is plain, that he took this part of his account from Dioſcorides's deſcription of the *britannica*.

BRITE, or BRIGHT, in huſbandry; wheat, barley, or other grain, is ſaid to *brite*, when it grows over ripe and ſhatters. Dict. Ruſt. in voc.

BRITISH *Language*, the ſame with the Welch.

The antient *Britiſh*, or *Cambro-Britiſh*, is a dialect of the Celtic [a]. Some pretend, but with no probability, that the *Britiſh* is formed immediately from the Teutonic [b]. Cooper abſurdly enough calls the Engliſh language the *Britiſh* [c].—[a Vid. *Rowl.* Mon. Ant. ſect. 6. p. 33, & 42. b *Skin.* Etym. in Pref. p. 12, & 18. c *Verteg.* Reſtit. Dec. Intell. pref. 73.]

BRITTLE *Bodies*. See the article BRITTLENESS.

BRITTLENESS, in natural philoſophy, that quality of bodies by which they are ſoon and eaſily broken by preſſure or percuſſion. It ſtands oppoſed to tenacity. Mem. Acad. Berlin. 1745. p. 47. See the article TENACITY.

Brittle bodies are extremely hard; the leaſt percuſſion exerts a force on them equivalent to the greateſt preſſure, and may conſequently eaſily break them. This effect is particularly remarkable in glaſs ſuddenly cooled, the *brittleneſs* of which is thereby much encreaſed. Ibid. See the article PHIAL.

Tin, though in itſelf tough, gives a *brittleneſs* to all the other metals when mixed therewith. *Boyle*, Phil. Works, Abr. T. 3. p. 428. See the article TIN.

The *brittleneſs* of glaſs ſeems to ariſe from the heterogeneity of the parts whereof it is compoſed, ſalt and ſand, which can never bind intimately together. Hiſt. Acad. Scienc. an. 1708. p. 26. See the article GLASS.

In timbers, *brittleneſs* ſeems to be connected with durableneſs; the more *brittle* any ſort of wood is, the more laſting it is found. Thus it is, oak is of ſo long duration, while beech and birch, as being tough, preſently rot, and are of little ſervice for building. *Grew*, Anat. of Veget. l. 3. c. 7. §. 10. p. 139. See the article TIMBER.

BRITTLENESS *of the hoof*, in horſes. See the article HOOF.

BRIZA, in the Linnæan ſyſtem of botany, the name of that kind of graſs called the *tremula*, or quaking graſs, by other authors. This makes a diſtinct genus of plants, the characters of which are, that the glume contains many flowers, and is bivalve and open; the flowers are collected in it into a ſmall heart-faſhioned two rowed ſpike; the valves are all heart-faſhioned, concave, and equal in ſize. The flower is bivalve; the inferior valve is of the ſame ſize and ſhape with the cup; the upper is extremely ſmall, plain, flat, and roundiſh, and ſhuts up the boſom of the others. The ſtamina are three filaments; the antheræ are oblong; the germen of the piſtillum is roundiſh; the ſtyles are two in number, bent, and very ſlender; the ſtigmata are plumoſe, or feathered. The flower contains the ſeed, which, at a proper time, it afterwards gaping open ſuffers to fall to the earth. The ſeeds are ſingle, or one to each flower; they are of a roundiſh figure, compreſſed, and very ſmall.

BRIZA, in the materia medica, a name uſed for the grain of the zea monococcos, or St. Peter's corn. *Dale*'s Pharm. p. 261.

BRIZE, in the country language, a ſort of ground which has lain long untilled. Dict. Ruſt. T. 1. in voc.

BRIZE, or BRISE, in navigation. See the article BREEZE.

BRIZE-*vents*, or BRISE-*vents*, a kind of ſhelters uſed by gardiners, who have not walls on the north-ſide, to keep the cold winds from damaging their melon beds.

Brize-vents are incloſures ſix or ſeven feet high, and an inch thick, made of ſtraw, ſupported by ſtakes fixed into the ground, and props acroſs both inſide and outſide, faſtened together with willow-twigs or iron-wire. Dict. Ruſt. T. 1. in voc.

BROACH, *Brocha*, in middle age writers, denotes an awl or bodkin. Among us, *broach* is chiefly uſed for a ſteel inſtrument wherewith to open holes in metals. It is ſometimes alſo applied to a ſtick on which thread or yarn is wound; and, in the north, to a ſort of wooden needles uſed in knitting certain coarſe things. *Savar.* Dict. Comm. T. 1. p. 486.

In ſome parts of England, a ſpit is ſtill called a *broach*.

Hence alſo to *broach* a barrel, is to tap it. The antient lords received from their tenants a fee or tribute, called *pertuſagium*, for the liberty of *broaching* a cag of ale. *Du Cange*, Gloſſ. Lat. T. 4. p. 253. voc. *Pertuſagium*.

BROAD (*Cycl.*)—The French weavers are not left to make their ſtuffs *broad* or narrow at diſcretion; having laws to regulate the width at which their looms are to be ſet, and the quantity of threads of warp for each ſort. *Savar.* Dict. Com. T. 2. p. 488. voc. *Large*.

BROAD *Pulſe*. See the article PULSE.

BROAD-*worm*, *Lumbricus latus*, a name given to the tænia, or tape-worm. See the articles TÆNIA, WORM, *&c.*

BROAD-*ſide*, in the ſea language, a diſcharge of all the guns on one ſide of a ſhip at the ſame time.

A *broad ſide* is a kind of volley of cannon, and ought never to be given at a diſtance from the enemy above muſket-ſhot at point-blank. *Botel.* Sea Dial. 6. p. 362.

BROAD-*piece*, a denomination given to certain gold coins *broader* than a guinea; particularly Caroluſes and Jacobuſes.

BROAD-*ſtone*, in building, a ſpecies of free-ſtone, thus denominated by reaſon it is raiſed *broad* and thin out of the quarries; or not exceeding two or three inches in thickneſs; chiefly uſed for paving. *Neve*, Build. Dict. in voc.

BROCARDICS, *Brocardica*, denote maxims or principles in law; ſuch as thoſe publiſhed by Azo, under the title of *Brocardica Juris*. Trev. Dict. Univ. T. 1. p. 1252. voc. *Brocard*.

Voſſius derives the word from the Greek πρόλαρχια, *q. d.* firſt elements. Others, with more probability, from *Burchard*, or *Brochard*, biſhop of Worms, who made a collection of canons, called from hence *Brocardica*; and as this work abounded much in ſentences and proverbs, the appellation *brocardica* became hence extended to every thing. *Fabric.* Bibl. Med. Lat. T. 1. p. 827. *Heuman.* Via ad Hiſt. Liter. c. 4. §. 33. p. 100.

BROCATELL, called by the French *brocadel*, an ordinary kind of ſtuff made of cotton, or coarſe ſilk, in imitation of brocade; chiefly uſed for tapeſtry and other furniture. That manufactured at Venice is the moſt eſteemed. *Savar.* Dict. Com. T. 1. p. 483. See the article BROCADE, *Cycl.*

BROCCOLI, among gardiners, the ſhoot of a ſort of cabbage. There are ſeveral ſorts of it, as the Roman, the Neapolitan, and the black; but the Roman is far the beſt, and is therefore the only ſort now in uſe.

The ſeeds of this ſhould be ſown about the middle of May, in a looſe moiſt ſoil; when the young plants have eight leaves, they are to be tranſplanted, and ſet at three inches diſtance; and when they have grown there till the middle of July, they will be fit to plant out for ſtanding. They muſt be now ſet in ſome well ſheltered ground, but not under the drip of trees, and at a foot and half diſtance from one another. The ſoil ſhould be light, and about the beginning of December they will begin to ſhew their heads, which look ſomewhat like a cauliflower; from this time they will continue eatable to the end of March. When the heads divide, and begin to run up, they are to be cut, with about four inches of the ſtem to them; and when theſe are cut off, about a month's time furniſhes a freſh crop from the ſame ſtock. They are to be ſtripped of their outer ſkin, and boiled; and when perfectly fine, they are very little inferior to aſparagus. The beſt way to have them fine, is to get freſh ſeed every year from Italy; for they are very apt to degenerate. *Miller*'s Gardn. Dict.

BROCHOS, in ſurgery, a name uſed by ſome writers for bandages in general: in ſome of the old writers, the ſame word is alſo uſed to expreſs a perſon who has a very prominent upper lip, or very prominent teeth, and a thick mouth. *Caſt.* Lex. Med. in voc.

BROCK, among ſportſmen, ſometimes denotes a badger, otherwiſe called a grey *brock*. *Cox*, Gent. Recr. P. 1. p. 101. See the articles TAXUS, and MELES.

BROCK is alſo uſed to denote a hart of the ſecond year. Idem, ibid. p. 6.

BRODIATORES, in the middle age, a kind of *librarii*, or copiſts, who did not write the words and letters plain, but variouſly flouriſhed and decorated after the manner of embroidery. *Du Cange*, Gloſſ. Lat. T. 1. p. 624.

BRODIUM, a term uſed by ſome writers in pharmacy, for a liquor in which any ſolid ſubſtance has been boiled, is to be preſerved, or with which a medicine too ſtrong for uſe alone is to be diluted. *Caſt.* Lex. Med. in voc.

BROGLING, a method of fiſhing for eels, otherwiſe called *ſniggling*. *Cox*, Gent. Recr. P. 4. p. 39. School. Recr. p. 112. See the article SNIGGLING.

BROKEN (*Cycl.*)—Among horſe-jockies, *broken* knees are a mark of a ſtumbler. A *broken* wind is diſcovered by a horſe's blowing at the noſe in the ſtable, and his flanks beating quick, double and irregular, eſpecially after motion [a]. There are divers ways of concealing a *broken* wind. A quart of new milk given a horſe on an empty ſtomach, will elude it for an hour [b]. A bruſhing gallop diſcovers it; no medicine can prevent his coughing and wheezing in that caſe, if his wind be *broken*.—[a *Burd.* Gent. Farr. p. 12. b *Brack.* Not. Burd. p. 13, ſeq.]

Among painters, a colour is ſaid to be *broken*, when it is taken down or degraded by the mixture of ſome other. Trev. Dict. Univ. T. 4. p. 1337. voc. *Rompu*.

BROKEN *Ray*, in dioptrics, the ſame with *ray of refraction*. It is thus called, becauſe in croſſing the ſecond medium, the ray of incidence changes its rectitude, and is, as it were, *broken* and bent into another direction.

BROKER (*Cycl.*)—The origin of the word is conteſted; ſome derive it from the French *broier*, to grind [a]; others from *brocarder*, to cavil, or triggle [b]; others deduce *broker* from a trader *broken*, and that from the Saxon *broc*, misfortune; which is often the true reaſon of a man's breaking. In which view, a *broker* is a broken trader by misfortune; and 'tis ſaid none but ſuch were formerly admitted to that employment [c].—[a Term. de Ley, p. 40. b *Cow.* Interpr. in voc. c *Jac.* Law Dict. in voc.

Brokers amount to the ſame with what the civilians call *proxenetæ* [d], *pararii* [e], *mediatores*, *licitatores* [f], and *propolæ* [g]; in our old law books, *brocarii* [h], *broccarii* [i], and *broggers* [k].—[d *Calv.* Lex. Jur. p. 762. voc. *Proxeneta*. *Pitiſc.* Lex. Ant. T. 2. p. 553. e *Calv.* lib. cit. p. 671. voc. *Pararius*. f *Cowel*, Interpr. in voc. g *Pitiſc.* lib. cit. p. 546. voc. *Propola*. *Calv.* p. 756. h *Du Cange*, Gloſſ. Lat. T. 1. p. 623. *Spelman.* Gloſſ. p. 88. voc. *Brocarius*. i *Skin.* de Verb. Signif. voc. *Broccarii*. k Stat. 10. Rich. II. c. 1.]

The Jews, Armenians, and Banians, are the chief *brokers* throughout moſt parts of the Levant and the Indies.

The French diſtinguiſh two kinds of *brokers*; one for the ſervice of merchants, the other of manufacturers, artificers, and workmen. The buſineſs of the former is to facilitate the ſale of goods in the wholeſale or mercantile way; that of the other, to procure the goods wanted for manufacturers, artificers, *&c.* or to ſell their goods when made. At Paris there is ſcarce a company of tradeſmen, or even mechanics, but have their *brokers*, who are uſually taken out of their body, and make it their ſole buſineſs to negotiate in the particular kinds of goods to which ſuch company is by its ſtatutes reſtrained. There are *brokers* for drapery, *brokers* for grocery, *brokers* for mercery, *&c.* There are even *brokers* for tanners, curriers, cutlers, and the like. *Savar.* Dict. Comm. T. 1. p. 1571, ſeq.

Cloth-BROKER.—At Paris they have a regular company of theſe *brokers*, or *frippiers*, who are governed by ſtatutes firſt given them under Francis I. in 1544; having, for officers, a ſyndic and four jurats. Each member is obliged to keep an exact regiſter of all cloths, old or new, which he buys, with the perſon's name he bought them of, and even, in certain caſes, to take ſureties. They are not ſuffered to make any thing new. *Savar.* lib. cit. T. 2. p. 168, ſeq. voc. *Frippier*.

Piece-BROKERS, a ſort of petty dealers in drapery, who ſell fragments or remnants of cloths, ſtuffs, ſilks, and the like, at under-price.

BROMUS, in botany, a name uſed by ſome authors for that kind of graſs, called by others *feſtuca* and *ægilops*, or *oat-graſs*. This, in the Linnæan ſyſtem of botany, makes a diſtinct genus of plants; the characters of which are, that the cup is a many-flowered glume, open, compoſed of two valves, and contains the flowers collected into an oval and oblong ſpike; the ſeveral valves are all oblong, oval, and pointed, and without beards; the under one being always alſo the ſmalleſt: the flower is compoſed of two valves, the lower, large, and of the ſhape and ſize of the cup, and the upper, ſmall and pointed: the under-valve of the flower is concave and obtuſe, and ſends out an awn or beard from a little below its point; the upper is naked: the ſtamina are three capillary filaments, ſhorter than the flower; the antheræ are oblong; the germen is of a turbinated figure; the ſtyles are two, ſhort, reflex, and hairy; the ſtigmata are ſingle; the flower-valves cloſely ſhut in the ſeed, which is ſingle and oblong, convex on one ſide, and ſulcated on the other. *Linnæi* Gen. Plantarum, p. 15.

BRONCHIAL (*Cycl.*)—The *Bronchial* glands are a ſoft, ſucculent, blackiſh ſort of glands, adhering externally to the lower part of the trachea, the greater diviſions of the bronchia and the oeſophagus, ſome larger, ſome ſmaller; ſaid to be diſcovered by Verheyen.

Their uſe is uncertain [a]; the generality hold them to furniſh an unctuous liquor, to moiſten and line the inſide of the bronchia [b]. Verceillon will rather have them ſecrete a juice for the ſervice of digeſtion, conveyed by minute ducts to the oeſophagus and ſtomach; which, however, is called in queſtion by Heiſter [c].—[a *Drake*, Antrop. l. 2. c. 6. p. 207, ſeq. *Heiſt.* Comp. Anat. §. 259. p. 122. b *Drake*, lib. cit. c *Heiſt.* lib. cit. T. 2. §. 388. p. 26, ſeq.

Verheyen is of opinion, that the hoarſeneſs which ariſes from a cold taken, may proceed from an obſtruction of theſe glands; and that the benefit which accrues from taking oil of almonds, or other ſmooth medicaments, may proceed from their ſupplying the defect of this juice, and lubricating artificially the inſide of the bronchia. But it ſhould rather ſeem, that the humidity furniſhed the trachea and bronchia, comes from the miliary glands of thoſe parts, which are only lymphatics, and become tumid in morbid caſes, inſomuch that they frequently preſs the wind-pipe, or ſome of its branches, and cauſe an aſthma. *Drake*, lib. cit. p. 208, ſeq.

BRONCHOCELE, Βρογχοκηλη, in medicine, the ſame with what is otherwiſe called *hernia gutturalis* [a], *gutteria* [b], *gongrona* [c], &c. —[[a] *Celſ.* l. 7. c. 13 *Lang.* Epiſt. Med. l. 1. ep. 43. *Caſt.* Lex. Med. p. 113. *Gorr.* Def. Med. p. 80. [b] *Du Cange*, Gloſſ. Lat. T. 2. p. 677. voc. *Gutteria.* [c] *Caſt.* Lex. Med. p. 370. voc. *Gongrona.*]

Some confound it with the ſtruma, ſcrophula, or king's evil: from which, in propriety, it differs; as the *bronchocele* is ſeated in the muſcles of the throat, between the ſkin and aſpera arteria [d]; the ſtruma in the thyroid glands, or the *parotis conglobata.* Some make the *bronchocele* only a ſpecies of ſtruma [e]. [[d] *Lang.* loc. cit. p. 196. [e] Phil. Tranſ. N° 265. p. 631.]

See the article STRUMA, *Cycl.*

Albucaſis defines the *bronchocele* as a rupture in the fore-part of the neck, owing to iced waters [f]. It is better defined by others an encyſtic humour, ariſing in the throat, and diſtending it exceedingly, being filled with a groſs phlegmy humour, mixed with a little blood [g].—[[f] *Freind*, Hiſt. of Phyſ. T. 2. p. 145. [g] *Le Clerc*, Treat. Chir. Diſ. c. 3. art. 3. p. 119.]

It is of the oedematous kind, like the atheroma, meliceris, and ſcrophula; from which it is chiefly diſtinguiſhable by the place it poſſeſſes, and by its being of a ſomewhat harder conſiſtence, and not altering the ſkin. *Le Clerc*, lib. cit. c. 4. p. 125, ſeq

The *bronchocele* is common in Lombardy, Savoy, and about the Alps; whence Horace,

Quis tumidum guttur miratur in Alpibus.

It is commonly ſuppoſed to derive its origin from the Alpine waters, which being impregnated and chilled with ice and ſnow, cauſes a lentor of the lympha, about the muſcles of the throat, whereby the veſſels are contracted, and the circulating humors thickened, whence an obſtruction, &c. Tho' there are ſome ſpecies of it ſuppoſed alſo to ariſe from ſtrains, bruiſes, and other accidents. *Lang.* Epiſt. Med. l. 1. ep 43. p. 190. Phil. Tranſ. N° 265. p. 631. *Du Cange*, lib. cit. *Freind*, Hiſt. Phyſ. T. 2. p. 145, ſeq.

BRONCHOTOMY (*Cycl.*) is an antient operation, tho' never much in uſe. Paulus deſcribes the manner of it after Antyllus [a]. Among the Arabs, Avenzoar is the only writer who gives any countenance to it [b]. It is never to be uſed except in caſes of the utmoſt neceſſity and danger [c]; as in deſperate inflammations of the muſcles of the larynx, which hinder reſpiration, and in inveterate and dangerous bronchoceles.—[[a] Vid. *Freind*, Hiſt. of Phyſ. T. 1. p. 203, ſeq. [b] Id. ibid. T. 2. p. 94. [c] *Boerh.* Aphor. §. 812. *Horn.* Microt. ſect. 2. §. 17. *Caſt.* Lex. Med. p. 725. voc. *Tracheiotomia.*] See the articles QUINSEY, BRONCHOCELE, &c.

BRONCHUS, in anatomy, properly denotes the lower part of the aſpera arteria, dividing into *bronchiæ*, or branches. *Lang.* Epiſt. Med. 53. l. 2. *Quinc.* Lex. Phyſ. Med. p. 61.

In which ſenſe, *bronchus*, βρογχος, or βρογχη, ſtands contradiſtinguiſhed from *larynx*, λαρυγξ. See the article LARYNX, *Cycl.*

The name *bronchus* is alſo extended to the whole aſpera arteria, or trachea. *Gorr.* Defin. p. 80. in voc. Βρογχος. See the article TRACHEA, *Cycl.*

BRONCHUS alſo denotes a perſon afflicted with a bronchocele, or tumor of the throat, called by Ulpian *gutturoſus.* *Caſt.* Lex. Med. p. 112. voc. *Bronchus.* See the article BRONCHOCELE.

BRONCINI, in zoology, a name given by ſome to the lupus, or ſea-wolf, called in Engliſh the *baſſe.* *Willughby*, Hiſt. Piſc. p. 272. See the article BASSE.

BRONTEUM, Βροντειον, in antiquity, that part of the theatre underneath its floor, wherein brazen veſſels, full of ſtones and other materials, to imitate the noiſe of thunder, were kept. *Potter*, Archæol. Græc. l. 1. c. 8. p. 42.

BRONTIÆ, among naturaliſts, a kind of figured ſtones, commonly hemiſpherical, and divided by five pointed zones.

The word is formed from the Greek βροντη, thunder; alluding to the popular tradition, that thoſe ſtones fall in thunder-ſhowers [a]: whence they are alſo denominated thunder-ſtones, ſometimes polar ſtones, fairy-ſtones, and alſo ombriæ, by naturaliſts.—[[a] *Plot*, Nat. Hiſt. Stafford. c. 5. §. 5. [b] Id. Nat. Hiſt. Oxford. c. 5. §. 32.

Pliny repreſents the *brontia* as a ſpecies of gem, ſhaped tortoiſe-like [c]; by which it ſhould ſeem, the *brontia* of the antient naturaliſts was different from that of the moderns, which is but a yellowiſh opake pebble or flint [d].—[[c] *Plin.* Hiſt. Nat. l. 37. c. 10. [d] Mercat. Metalloth. Arm. 9. loc. 13. c. 17. *Grew*, Muſ. Reg. Societ. P. 3. ſec. 1. c. 1. p. 258.]

Brontiæ are a ſort of ſolid irregular hemiſpheres, ſome of them a little oblong, or inclined to be oval; others more elevated or depreſſed on their baſes; all of them divided into five parts, generally unequal, tho' ſometimes equal, by five rays iſſuing from an umbilicus or center, deſcending from it down the ſides of the body, and terminating again ſomewhere in the baſe: their inward texture, tho' ſeemingly only a coarſe rubble ſtone, is caſed over with a fine laminated ſubſtance, much like the *lapis judaicus*, of a colour generally yellow, and the rays formed of a double rank of tranſverſe lines, with void ſpaces between the ranks, viſible enough on the top of the ſtone, though not ſo diſtinguiſhable on the bottom; the whole body of the ſtone, as well as the ſpaces included within the rays, being elſewhere filled with annulets, curiouſly wrought by nature's own hand. The center of the rays, called by Ariſtotle *umbilicus*, by Pliny *modiolus*, is never placed on the top of the ſtone, but always inclining to one ſide, as that at the bottom does to the other, the axis lying obliquely to the plane of the ſtone: two of them clapped together, make a globe, with meridians deſcending to the horizon, and the pole elevated, nearly correſpondent to the real elevation of the pole of the place where the ſtones are found, which gave occaſion to their being denominated polar ſtones. *Plot.* Nat. Hiſt. Oxford. c. 5. §. 30. p. 91, ſeq.

Brontiæ are never found in beds together, like ſome other formed ſtones, nor in any great number in any one place, unleſs perhaps about Burford in Oxfordſhire, where it might be eaſy to find a cart-load of them. Id. ibid.

Plot deſcribes divers ſorts of *brontiæ* found in Oxfordſhire; few of them taken notice of by other naturaliſts. Ubi ſupra, §. 30, 37. p. 91. See alſo *Rul.* Lex. Alch. p. 290. voc. *Lapides.*

Some take the *brontiæ* for the petrified ſhells of the *echinus ſpatagus*, or *briſcus*, of Ariſtotle. Dr. Woodward rather ſuppoſes them to have been formed, and received their ſhape, in the ſhell of the *echinus ſpatagus* [e]; on which footing they are alſo ranked in the number of *echinites.* Dr. Plott conteſts both [f]. [e] *Woodward*, Method of Foſſils, p. 10, ſeq. *Aldrovand.* Muſ. Metall. l. 4. c. 1. [f] Ubi ſupra, §. 37. p. 94.] See the article ECHINITES.

BRONTIÆ are ſometimes alſo uſed in England for a kind of figured ſtones, ſhaped like arrow-heads, leſs properly called *belemnites*, and popularly thunder-bolts. *Plot.* Nat. Hiſt. Oxf. c. 5. §. 38. p. 34. See the article BELEMNITES.

Dr. Woodward takes theſe not for natural ſtones, but ſuppoſes them to have been faſhioned thus by art, to ſerve as weapons before the invention of iron. *Woodw.* Catal. For. Foſſ. p. 51. Some alſo give the denomination *brontia* to the *batrachites* and *chelonites.* *Nicols*, Lapid. P. 2. c. 36. p. 159. Id. ib. c. 46. p. 264. See the articles BATRACHITES, *Cycl.* and *Suppl.* and CHELONITES, *Cycl.*

BRONTOLOGY, Βροντολογια, books containing the doctrine of thunder, and of the preſages drawn therefrom. *Meurſ.* Gloſſ. Græc. Barb. p. 122. *Du Cange*, Gloſſ. Græc. T. 1. p. 227.

BRONZE, a factitious metal, chiefly uſed for the caſting of ſtatues and figures.

The word is French, where it is uſed more extenſively, ſo as to include all the compoſitions of braſs or copper, as for guns, bells, pots, or the like. *Menag.* Orig. p. 136. *Caſeneuv.* Orig. p. 29.

It is formed from the Italian *bronzo*, which ſignifies the ſame. Copper medals are frequently called medals of *bronze.* Medaliſts diſtinguiſh the large, middle, and little *bronze.* Trev. Dict. Univ. T. 1. p. 1257.

The compoſition of *bronze* is different: for the fineſt ſtatues, the mixture is half copper, and half braſs, or latten [a]. The Egyptians, whom ſome make the inventors of the art, uſed two thirds braſs, and one third copper [b].—[[a] *Felib.* Princ. de l'Archit. l. 2. c. 5. p. 240. [b] *Savar.* Dict. Comm. T. 1. p. 489.]

BRONZE alſo denotes a colour prepared by the colourmen of Paris, wherewith to imitate *bronze.*

There are two ſorts, the red *bronze*, and the yellow or golden. The latter is made ſolely of copper duſt, the fineſt and brighteſt that can be had: in the former is added a little quantity of red oker, well pulverized. They are both applied with varniſh [a]. To prevent their turning greeniſh, the work muſt be dried over a chaffing-diſh, as ſoon as *bronzed* [b].—[[a] *Davil.* Cours d'Archit. T. 1. p. 230. [b] *Savar.* Dict. Comm. T. 1. p. 490.]

BRONZING, the art or act of imitating bronze, which is done by means of copper duſt, or leaf, faſtened on the outſide, as gold leaves are in gilding. See the article BRONZE.

BROOD (*Cycl.*)—Malpighi had the curioſity to break ſeveral times all the eggs of a *brood*, one half an hour after another, and obſerve with a microſcope the ſucceſſive alterations produced therein, till the moment of hatching; of all which he has given figures, curiouſly engraven. Trev. Dict. Univ. T. 2. p. 352. voc. *Couvre.*

The word is alſo uſed for a ſet of any young: In which ſenſe we ſay, a *brood* of vipers, a *brood* of oyſters [a]. A *brood* of pheaſants is more properly called an *eye* [b].—[[a] Philoſ. Tranſ. N° 369. p. 251. [b] School. Recr. p. 79.]

BROODING, the act of a hen or other bird ſitting on a number of eggs, to keep them warm till they hatch or produce young ones. See the article HATCHING, *Cycl.*

In which ſenſe, the word amounts to the ſame with incubation.

Inſects have alſo a method of *brooding* on their ova [a]. Some even pretend, that ſnakes lye on their eggs; which ſeems without foundation [b].—[[a] Mem. Acad. Scienc. an. 1692. p. 15. [b] Phil. Tranſ. N° 8. p. 138.]

'Tis a vulgar error that the tortoiſe *broods* with its eyes, by looking on the eggs: ſhe only covers her eggs in the ſand, and leaves the ſun to hatch them.

There is a difference between the *brooding* of ſnakes and vipers; the former being oviparous, and the latter bringing forth their young alive. See the articles SNAKE, and VIPER.

BROOK-*lime*, the ſame with *anagallis aquatica*, or *beccabunga*. See the article ANAGALLIS.

BROOM, a medicinal plant, growing plenteouſly on heathy grounds, and producing a yellow flower; reputed to be nephritic, hepatic, and ſplenetic, and, as ſuch, uſed to bring away gravel, and againſt cachexies and dropſies. *Ray*, Synopſ. Stirp. Brit p. 314. *Quinc.* Diſpenſ. P. 2. ſect. 4. n. 309.

Broom is the ſame with what botaniſts call *geniſta*, or *geneſta*. Caſp. Bauhin, *geniſta anguloſa & ſcoparia*. Tournefort, *cytiſo, geniſta ſcoparia, vulgaris, flore luteo*. There are other ſpecies of it, as the *Hiſpanica ſpinoſa*, &c. unknown in medicine. *Alleyn*, Diſpenſ. P. 2. ſect. 2. c. 26. §. 1.

Broom-flowers make a principal ingredient in divers medicated ales. Their aſhes are extolled for purging off waters in dropſies; in which reſpect, however, Dr. Quincy aſſures us, they are no better than any other lixivious aſhes. See the article ASHES.

Some pickle the yellow buds with vinegar and ſalt, *&c.* after the manner of capers, from which they are then ſcarce to be diſtinguiſhed.

Among huſbandmen, *broom* is conſidered as a weed very pernicious to the culture of lands; and, on that account, to be grubbed up and deſtroyed. *Mortim.* Art of Huſband. T. 1. p. 309.

It roots deep, and, ſhedding no leaves, is continually ſucking the moiſture from the earth. The beſt method of deſtroying it, is the burning the land, then plowing it deep, and manuring it very well with dung and aſhes; the ſpreading on the land chalk or marle, or the manuring it with urine. If the ground be deſigned for paſture-land, it is beſt to cut it cloſe to the ground in May, when the ſap is ſtrong in it. By this artifice, the roots are deſtroyed; whereas, in the common way of pulling up the young plants, ſome ſtrings will be left, and the leaſt of theſe will grow. Foddering of cattle upon *broomy* land, is one very good way of deſtroying the *broom*, their urine killing the roots, and their treading the land making it leſs proper for the roots of this plant; for the *broom* is never obſerved to grow in trodden places. This troubleſome and pernicious plant is not, however, without its uſe to the farmer; for, when well laid, it will make an excellent and laſting kind of thatch for barns. Id ubi ſup.

BROOM, in botany. See the article GENISTA.

BROOM-*flower*, gives the denomination to an order of knights inſtituted by St. Lewis of France, on occaſion of his marriage. The motto was, *Exaltat humiles*, and the collar of the order made up of *broom-flowers* and husks, enamelled and intermixed with flower-de-luces of gold, ſet in open lozenges, enamelled white, chained together, and at it hung a *croſs florence* of gold. This anſwers to what the French call *Ordre de la Geneſte*, from the name of a ſpecies of *broom* ſo called; different from the common *broom*, as being lower, the ſtalk ſmaller, and leaf narrow; the flower is yellow, and bears a long huſk. *Giuſt.* Iſt. de gli Ord. Mil P. 2. p. 592. Trev. Dict. Univ. T. 3. p. 144. voc. *Geneſte*. *Cart.* Anal. of Hon. p. 194. *Coats*, Dict. Her. p. 59.

Some alſo ſpeak of another order of the *Geneſte*, or *broom*, eſtabliſhed by Charles Martel, or rather Charles VI. Trev. Dict. Univ. T. 3. p. 145. voc. *Geneſte*.

BROOM alſo denotes a well known houſhold beſom, or implement wherewith to ſweep away dirt, duſt, and the like.

We ſay, a birch-*broom*, a hair-*broom*, a ruſh-*broom*, a heath-*broom*. The primitive kind of *brooms*, from whence the denomination is given to all the reſt, was made of the *geniſta*, or wild *broom*, growing on commons.

BROOM-*gall*, in natural hiſtory, a name given by authors to a remarkable ſpecies of galls found on the *geniſta vulgaris*, or common broom. This is occaſioned, like all other galls, by the puncture and eating of an inſect, and, when opened, is found to contain a ſmall oblong worm, of a red colour, but whoſe ſize requires the uſe of a glaſs in order to ſee it diſtinctly. This gall is of a very ſingular kind; it is round and prickly: the ſtalk of the broom always grows directly through it, as if thruſt through its middle; and, when nicely examined, the whole gall appears to be formed of a congeries of leaves much larger than thoſe of the broom naturally are, and twiſted into a ſort of horns or cornets, ending in a point; theſe leaves are all hollowed in the middle, and are ſo thick-ſet and nicely fixed to one another, that they make up the ſubſtance of the gall, which is nevertheleſs a conſiderably hard one, and their points make the appearance of ſpines, or prickles, on the outſide. Sometimes there is a ſort of fleſhy or pulpy ſubſtance within it, which ſupports the leaves, and the worms are ſometimes found in this, ſometimes in the hollows of the leaves, and ſometimes between them: they are ſo numerous, that there are often ſome hundreds of them in one gall. The origin of this gall is not from the eggs of the parent animal lodged in the tree, but they are depoſited on the ſurface of the branches, and the young worms, while very ſmall, almoſt as ſoon as hatched from them, go in company to ſome bud on the ſide of the branch; they get into the folds of this bud, and wounding it in ſeveral parts, cauſe a wrong derivation of the juices into it, the conſequence of which is, that, inſtead of forming a branch ſhooting out from the other, it only yields a congeries of leaves, which every way ſurround it. Theſe galls are of various ſizes, the largeſt ſeldom exceeding that of a nut; and there are often three or four of them ſeen on one branch, placed at an inch or a little more diſtance from one another. *Reaumur*, Hiſt. Inſect. Vol. VI. p. 191, ſeq.

BROSSÆA, in botany, the name of a genus of plants, the characters of which are theſe: The cup is an one-leaved perianthium, divided into five ſegments, each of which terminates in a long point, of the ſame length with the petals; the flower is monopetalous, of the ſhape of a truncated cone, and undivided at the edge; the germen is divided into five parts; the ſtyle is pointed, not ſo long as the flower, and its ſtigma ſimple. The fruit is a roundiſh capſule, divided by fine deep furrows into five cells; it is covered with a large cup, which cloſes over its top; it is ſucculent and fleſhy; and, finally, opening at the ſides, it diſcharges a great number of minute ſeeds. *Linnæi* Gen. Plant. p. 520. *Plumier*, p. 17.

BROTHEL. See the article STEWS, *Cycl.*

BROTHER *Cycl.*—By the civil law, *brothers* and ſiſters ſtand in the ſecond degree of conſanguinity; by the canon law, they are in the firſt degree. *Calv.* Lex. Jur. p. 384 voc. *Frater*.

By the Moſaic law, the *brother* of a man who died without iſſue, was obliged to marry the widow of the de ceaſed. *Deuter.* xxv. 7. *Calm.* Dict. Bibl. T. 1. p. 329.] See LEVIRATE.

Foſter-BROTHERS, thoſe which ſucked the ſame nurſe. The French call them *freres du lait*, or *brothers by milk*; which is moſt properly uſed in reſpect of a perſon who ſucked a nurſe at the ſame time with the nurſe's own child. Trev. Dict. Com. T. 2. p. 2023. voc. *Frere*.

BROTHER was alſo uſed, in middle age writers, for a *comes*, or governor of a province. *Du Cange*, Gloſſ. Lat. T. 2. p. 526. *Pitiſc.* Lex. Ant. T. 1. p. 818.

BROTHER is applied in a leſs proper ſenſe, to denote a perſon of the ſame profeſſion. In which ſenſe, judges, biſhops, prieſts, *&c.* call each other *brothers*.

Conſcript BROTHERS, *Fratres conſcripti*, denote laymen and others entered in the catalogue of the *brothers* of a monaſtery, or rather poſſeſſed of the fraternity thereof. *Du Cange*, Gloſſ. Lat. T. 2. p. 527.

BROTHER *in Chriſt*, *Frater in Chriſto*, the ſame with ſpiritual *brother*, a perſon admitted into a monaſtic ſociety or fraternity. Id. ibid. p. 528.

Outer BROTHER, *Frater exterior*, ſometimes denotes a lay-*brother*. Id. ibid.

Strange BROTHER, *Frater adveniens*, a hoſt or gueſt belonging to another monaſtery. Id. ibid. p. 526.

Foreign BROTHER, *Frater externus*, either a monk, prieſt, or canon of ſome other monaſtery, to whom the prayers of the ſociety are granted. Id. ibid. p. 528.

Mature BROTHER, *Frater maturus*, one diſtinguiſhed by his age, gravity, or probity, above the reſt.

Spiritual BROTHERS, laymen admitted into a monaſtic fraternity. The name was alſo given to thoſe otherwiſe called *mature brothers*, and ſometimes alſo to a ſort of adopted *brothers*, or perſons who commenced a kind of *brotherhood*, with the ceremony of breaking bread together in the church before the prieſt. Id. ibid. p. 529.

Lay-BROTHER, *Frater laicus*, or *converſus*, is a religious appointed to ſerve or attend on the reſt, who, in reſpect hereof, are called *brothers of the choir*.

The order of *lay-brothers* was inſtituted for performance of the laborious and manual offices belonging to the convent. They are properly the ſervants of the houſe, and the uſual method is only to admit perſons of ſome trade, who have a deſign to retire from the world. In ſome orders they are only retained by a civil contract, which however binds them for life: in other orders they are to paſs through four years of probation, as among the Jacobins; or ſeven, as among the Feuillants. The Capuchins admit none before nineteen years of age. The Jeſuits call them *coadjutors*.

Given BROTHER, *Frater donatus*, among the Carthuſians, denotes a young perſon dreſſed in minim cloth, and wearing a hat, whoſe office is to ſerve in the houſe, anſwering to what in other orders is called an *offered brother*, *frater oblatus*. Trev. Dict. Univ. T. 2. p. 2024.

BROTHER is alſo an appellation more peculiarly given to certain orders of religious: thus, the

BROTHERS *of St. Alexis*, in the Low Countries, were an order of perſons who attended on thoſe who lay dying, and took care of the burial of the dead. Id. ibid.

BROTHERS *of Ave Maria*. See the article SERVITES, *Cycl.*

BROTHERS *of Charity*, a ſort of religious hoſpitallers, founded about the year 1297, ſince denominated *Billetins*. They took the third order of St. Francis, and the Scapulary, making three uſual vows, but without begging.

BROTHERS *of Charity* alſo denote an order of hoſpitallers ſtill ſubſiſting in Romiſh countries, whoſe buſineſs is to attend the ſick, poor, and miniſter to them both ſpiritual and temporal ſuccour.

They are all laymen, except a few prieſts for adminiſtring the ſacraments to the ſick in their hoſpitals; which prieſts, by the rules of the ſociety, are incapable of being elected to any dignity in the order, leſt the hoſpitality, which is the chief end of their inſtitution, ſhould ſuffer thereby. The *brothers of charity* uſually cultivate botany, pharmacy, ſurgery, and chemiſtry, which they practiſe with ſucceſs. In

In Italy, they are called *fate ben fratelli*, or, abbreviately, *ben-fratelli*, becauſe antiently, in begging alms, they uſed that formula; ſignifying as much as, Do well, or do good, my brethren. In Spain, they are called *brothers of hoſpitality*; in France, *freres de la charité*.

They were firſt founded at Granada by St. John de Dieu: a ſecond eſtabliſhment was made at Madrid, in the year 1553. The order was confirmed by pope Gregory XIII. in 1572, and ſeveral privileges given to it, which have been increaſed by ſucceeding popes. Gregory XIV. forbad them to take holy orders, or to make ſolemn profeſſion; ordering, that, for the future, they ſhould only make a vow of poverty and hoſpitality, and be governed by a major, and ſubject to the biſhop: but he afterwards reſtored them to the right of erecting a general. In 1609, leave was granted by pope Paul V. that a few of the *brothers* might be admitted into orders; and, in 1611, that they might make the ſolemn vows of monks, with the addition of a fourth, that they would wait on the ſick. In 1619, the ſame pope exempted them from the juriſdiction of the biſhop, which his ſucceſſor Urban VIII. reſtrained to thoſe hoſpitals wherein there were at leaſt twelve religious.

The *brothers of charity* in Spain have been ſince ſeparated from the reſt, and have their general apart; and thoſe of France, Germany, Poland, and Italy, have the like, who reſide at Rome.

The *brothers of charity* were firſt introduced into France in 1601, by Mary of Medicis, who gave them a houſe in the faux bourg St. Germain, where they have ſince built a fine hoſpital. Vid. *Helyot*. Hiſt. des Ord. Monaſt. T. 4. c. 18. Trev. Dict. Univ. T. 2. p. 2024, ſeq.

BROTHERS *of charity of St. Hippolytus*, a religious congregation firſt ſet on foot by Alvarez, a citizen of Mexico, in 1585, who aſſociated with him ſeveral other pious perſons, to attend on the ſick, and founded an hoſpital without the wall of that city; which being approved of by the pope, and the number of like hoſpitals increaſing, a congregation was formed under the title of *the charity of St. Hippolytus*, by reaſon the firſt hoſpital had been dedicated to that ſaint, on whoſe feaſt-day the city firſt fell into the hands of the Chriſtians. Clement VIII. in 1594, granted them all the privileges of the *brothers of the charity* of St. John de Dieu.

At firſt they only made two vows, one of charity, the other of poverty; quitting the congregation when they pleaſed. To tye them faſt, Clement VIII. ordered them to make vows of perpetual hoſpitality and obedience. In 1700, Innocent XII. admitted them to make the ſolemn vows of chaſtity, poverty, obedience, and hoſpitality, under the rule of St. Auguſtin, and erected their congregation into a religious order, under the protection of the holy ſee. Vid. *Bonan.* Catal. Ord. Relig. P. 1. *Helyot*. Hiſt. des Ord. Monaſt. T. 4. c. 19. Trev. loc. cit.

BROTHERS *of Death*, a denomination uſually given to the religious of the order of St. Paul, the firſt hermit. See the article HERMIT, *Cycl.*

They are called *brothers of death*, *fratres a morte*, on account of the figure of a death's head, which they were always to have with them, in order to keep perpetually before them the thoughts of death.

Their origin is not well known; by their conſtitutions, which were made in 1620, it ſhould ſeem they had not been eſtabliſhed long before pope Paul V. who approved of theſe conſtitutions; and Lewis XIII. by letters patent, in 1621, permitted them to ſettle in France. But it is probable, this order of *brothers of death* was ſuppreſſed by pope Urban VIII. *Helyot*. ubi ſupr. T. 3. c. 44. Trev. loc. cit.

BROTHERS *of penitence*, or of *the penitence of Jeſus Chriſt*, a name given at Thouloufe to the religious of the third order of St. Francis, called alſo *Beguini*; and to a fraternity of penitents held in the chapel of the church of the third order, under the direction of the Beguini. Trev. Dict. Univ. T. 2. p. 2025. See BEGUINS, *Cycl.*

Pyed BROTHERS, *Fratres pii*, a denomination given to all monks, whoſe habit was partly white, partly black; they were otherwiſe called *Agaches*. *Du Cange*, Gloſſ. Lat. T. 2. p. 529. Trev. Dict. ubi ſupr. p. 2026.

BROTHERS *of St. Gregory the Illuminator*, a religious order eſtabliſhed in Armenia, in the 14th century, which being much reduced and decayed by the conqueſts of the Turks and Perſians, was, in 1356, united to the order of St. Dominic. Trev. Dict. ibid.

Joyful BROTHERS, *Fratres gaudentes*, in Italy, denote the knights of the order of the Virgin Mary, firſt inſtituted at Bologna in 1261, for whom a rule was preſcribed by pope Urban IV. *Du Cange*, Gloſſ. Lat. T. 2. p. 528.

The ſame name was alſo given to divers of the Minorites, who lived in a looſer manner than the reſt; ſometimes alſo called *Beguini*. See the article BEGUINS, *Cycl.*

Poor BROTHERS, in the Charter-houſe, a denomination given to decayed gentlemen, to the number of 80, who are ſubſiſted with diet, cloathing and lodging, on the eſtabliſhment. See the article CHARTER-HOUSE, *Cycl.*

The *poor brothers* are to be gentlemen by deſcent, come to poverty, or decayed merchants, ſoldiers, or officers of the king's houſhold. The conditions of admiſſion are, that they have no eſtate for life worth 200 l. nor coming in, *viis & modis*, 24 l. *per annum*; and that they be fifty years old, unleſs they have been maimed in the public ſervice; in which caſe, the age of forty ſuffices. They wear a livery-gown within doors. New View of Lond. T. 2. ſect. 6. p. 772.

White BROTHERS, the name of a ſect which appeared in Ruſſia towards the beginning of the 14th century; ſo called from their white cloaks, on which was a St. Andrew's croſs, of a green colour. They pretended to immediate revelation, whereby God had enjoined them to recover the Holy land out of the hands of the infidels; but they were of no long duration.

BROTHERS *of Arms*, an appellation given thoſe who contract a kind of fraternity in war, obliging themſelves to the mutual ſervice and aſſiſtance of each other.

Lame or maimed BROTHERS, among alchemiſts, denote the imperfect metals which are to be cured of their lameneſs by the perfect elixir; *i. e.* are to be purified and ſeparated from their droſs, *&c.* by the philoſopher's ſtone. Trev. Dict. Univ. T. 2. p. 2026.

BROWS, or EYE-BROWS, *Supercilia*, are two hairy arches above the orbits of the eyes, bunching out by means of ſome fat under the ſkin in this place.

That end next the noſe is called the head, *caput*, the other the tail, *cauda*, of the *eye-brow*.

The uſe of the *eye-brows* is partly to break the rays of light deſcending from above, that they may not dart too ſtrongly into the eyes; and partly to be a ſkreen to the eyes from ſweat, duſt, or other matters deſcending from the forehead. *Heiſt.* Comp. Anat. §. 276. p. 213. *Keil*, Comp. Anat. c. 4. §. 4. p. 191.

BROW-*poſt*, in carpentry, a beam which goes acroſs or overthwart a building. *Neve*, Build. Dict. in voc

BROW-*antler*, the firſt branch of the horn of a hart or buck, ſhooting out from the beam or main horn next the head. *Cox*, Gent. Recr. P. 1. p. 12.

BROWALLIA, in botany, the name of a genus of plants, the characters of which are theſe: The perianthium is very ſhort; it conſiſts of one leaf of a tubular form, divided into five ſegments at the edge, and remains after the flower is fallen; its ſegments are ſomewhat unequal in ſize; the flower conſiſts of one petal, and is of a funnel-ſhape; the tube is cylindric, and of twice the length of the cup; the verge is even and divided into five roundiſh ſegments, the upper one being a little larger than the others; the ſtamina are four filaments, placed in the upper part of the tube of the flower, and hid by the umbilicus of the verge; they are all ſhort, but particularly two of them are much ſhorter than the others; the antheræ are ſimple, crooked, and conniving together; the germen of the piſtil is oval; the ſtyle is capillary, of the length of the tube of the flower; the ſtigma is thick, obtuſe and emarginated; the fruit is an obtuſe oval capſule, containing only one cell, and opening at the top into four parts, when ripe; the ſeeds are ſmall, and very numerous, and the receptacle large. *Linnæi* Gen. Plant. p. 301.

BROWN, a duſky kind of colour, inclining ſomewhat towards redneſs.

Dyers diſtinguiſh divers ſhades and gradations of *brown*, a *ſad brown*, *London brown*, *clove brown*, *purple brown*, *walnut-tree brown*, *&c.*

Spaniſh brown is a dull red colour, uſed by houſe-painters, chiefly for priming, as being cheap and eaſy to work. *Smith*, Art Paint. c. 2. p. 22. *Neve*, Build. Dict. in voc.

BROWN *bay*, in the manege, is underſtood of horſes of a very dark cheſnut colour. *Savar.* Dict. Comm. T. 1. p. 493. See the article BAY, *Cycl.* and *Suppl.*

BROWNISTS (*Cycl.*)—Lipſenius and Konig, by a groſs miſtake, make Sir Thomas Brown the founder of the ſect of *Browniſts* [a]. Biſhop Hall wrote againſt the *Browniſts*. Robinſon compoſed an apology for them [b].—[*Struv.* Introd. Hiſt. Liter. c. 1. §. 4. p. 12. [b] *Pfaff.* Introd. Hiſt. Theol. l. 3. ſect. 11. p. 384.]

Pagit aſſures, that the *Browniſts* were extinguiſhed early; Robert Brown himſelf renouncing his errors, died parſon of Aychurch in Northamptonſhire, and his followers were ſoon ſwept away; inſomuch that, according to the teſtimony of George Johnſon, not one of them, then alive, continued faithful [c]. But this muſt be taken *cum grano ſalis*. The defection of their founder, and the diviſions among themſelves, made them aſſume new names, and adopt peculiar tenets, from their reſpective chiefs; as the *Browniſts*, who held the church of England to be Sodom, Babylon, and Egypt; the Wilkinſonians, who affirmed themſelves apoſtles, as much as Peter or Paul; the Johnſonians, who pretended to be the true antient *Browniſts*; the Ainſworthians, who arrogated this honour to themſelves, treating the former as apoſtates; the Robinſonians, who accuſed both the former of being renegadoes and ſchiſmatics. Some even rank the Anabaptiſts in the number of *Browniſts* [d].—[[c] *Pagit*, Hæreſiogr. p. 55. [d] Id. ibid. p. 75, ſeq.] See the article ANABAPTIST, *Cycl.* and *Suppl.*

BROWSE, the tops of the branches of trees, whereon beaſts feed. This is ſometimes alſo called brouce, and bruttle; probably from the French *brout*, which ſignifies the ſame. Dict. Ruſt. T. 1. in voc.

BROWSE more properly denotes the food which deer find in young copſes, continually ſprouting anew.

Beasts of BROWSE, *or* BROWSING *beasts*, a denomination including all of the fallow kind, as the deer, roe-buck, rupicapra, *&c.*

BROWSE-*wood*, the same with spray or brushwood.

BROWTING, *Brouter*, among the French gardners, signifies breaking off the tips of the slender branches of trees, when too long in proportion to their strength. Trev. Dict. Univ. T. 1. p. 1261. voc. *Brouter*.

BRUISING, in pharmacy, signifies the operation of breaking or pounding a thing coarsely, or by halves; frequently practised on roots, woods, and other hard bodies, to make them yield their juice or virtue more freely than they would do whole.

BRUMALIA, (*Cycl.*) in antiquity, a religious feast celebrated on the day of the winter solstice; from which indications were taken of the felicity of the remaining part of the winter.

The word is also written *broumalia*, and *bromalia*; being formed from *bruma*, the shortest day [a]; or, as others pretend, from *Bromius*, a surname of Bacchus, in whose honour the generality of writers mistakenly suppose this feast to have been held [b]. [a Vid. *Voss.* Etym. p. 297. Trev. Dict. Univ. T. 1. p. 1256. voc. *Bromales*. b *Meurs.* Gloss. Græc. p. 123. *Du Cange*, Gloss. Græc. T. 1. p. 228, seq. voc. Βρωμαλια.]

The *brumalia* were also called *hiemalia*. *Pitisc.* Lex. Ant. T. 1. p. 297.

BRUNELLA. See the article PRUNELLA.

BRUSH, an assemblage of hairs or hogs bristles, fastened in the holes of a wooden handle or board, pierced for that purpose, serving to cleanse divers bodies by rubbing therewith. Trev. Dict. Univ. T. 1. p. 1258. voc. *Brosse*.

We say a round, a flat, or a square *brush*, clothes-*brush*, head-*brush*, horse-*brush*, beard-*brush*, comb-*brush*, weavers-*brush*, and the like. *Crouch*, View of Brit. Cust. p. 124.

Sheermens BRUSH, is made of wild boars bristles, and serves to lay the wool or nap of cloths, after sheering it for the last time. *Savar.* Dict. Comm. T. 1. p. 490.

The flesh-*brush* is of use in medicine, especially in case of rheumatisms, and certain cutaneous disorders. See the article FRICTION, *Cycl.*

The *brush* is also applied to the soles of the feet of new-born infants, when fainting, to find whether they be alive or dead. *Davent.* Midwif. c. 26. *Cast.* Lex. Med. p. 658. voc. *scopula*.

The manner of making *brushes* is by folding the hair or bristle in two, and bringing it by means of a pack-thread, which is engaged in the fold, through the holes wherewith the wood is pierced all over, being afterwards fastened thereon with glue. When the holes are thus all filled, they cut the ends of the hair, to make the surface even. *Savar.* Dict. Comm. T. 2. p. 1878. voc. *Vergette*.

BRUSH, among painters, a larger and coarser kind of pencil, made of hogs bristles, wherewith to lay the colours on their large pieces. See the article PENCIL, *Cycl.*

Brushes for painters are of divers shapes and sizes, some round, others flat; the latter chiefly used for drawing lines, and in imitating olive and walnut work. *Smith*, Art of Painting, c. 1. p. 5.

The Chinese painters *brush* consists of the stalk of a plant, whose fibres being fretted at both ends, and tied again, serve for a *brush*. Phil. Transact. N° 250. p. 72.

Plasterers have three kinds of implements wherewith they apply their plaster and white-wash on walls, *viz.* stock *brushes*, round *brushes*, and pencils. *Moxon*, Mechan. Exerc. p. 249. See the article PLASTERING.

Brushes are also used by glaziers, to clean their glass [a]; by gilders, to lay on their size [b], and by workers in stucco [c], *&c.* [a *Felib.* l. 1. c. 21. p. 192. b Idem ibid. c. 22. p. 208. c Id. ibid. l. 2. c. 6. p. 247.]

Wire-BRUSHES, are used by silver-smiths, and gilders, for scrubbing silver, copper, or brass pieces, in order to the gilding them. *Parkins.* Treat. of Japann. c. 22. p. 65.

There is a method of dying or colouring leather, performed by only rubbing the colour on the skin with a *brush*. This the French leather-gilders call *brouissure*; being the lowest of all the sorts of dye allowed by their statutes.

BRUSH *of a fox*, among sportsmen, signifies his drag or tail, the tip or end of which is called the chape. *Cox*, Gent. Recr. P. 1. p. 11.

BRUSH *iron-ore*, signifies a kind of ore full of striæ, resembling the hair of a brush. *Grew*, Mus. Reg. Societ. P. 3. sec. 2. c. 2. p. 330, seq. *Woodw.* Hist. Engl. Foss. T. 1. p. 226. See the articles ORE, and IRON.

BRUSH is also used in speaking of a small thicket, or coppice. See the article COPPICE.

In this sense, the word is formed from the middle age Latin *bruscia*, *bruscus*, which signifies the same.

BRUSH-*wood* denotes small slender wood or spray. See the article BROWSE.

BRUSHING. Among jockies, a *brushing* gallop denotes a brisk one: a horse should have his *brushing* gallop in a morning before watering. *Brack.* Not. ad Burd. Gent. Farr. p. 33.

BRUTE, an animal destitute of the faculty and use of reason. See the articles ANIMAL, and REASON, *Cycl.* and *Suppl.*

In which sense, *brute* amounts to the same with beast. See the article BEAST, *Cycl.* and *Suppl.*

Among *brutes*, the monkey kind bear the nearest resemblance to man; and this, both in the external shape and internal structure [a], though more in the former than the latter [b]. In the monkey-kind, the highest and the nearest approaching the likeness of man, is the *oran outang*, or *homo sylvestris* [c].—[a Vide *Boyle*'s Phil. Works Abr. T. 1. p. 146. b Phil. Trans. N° 189. p. 373. c Id. N° 256. p. 339.]

The structure and oeconomy of *brutes* make the object of what is called comparative anatomy. See the article ANATOMY.

Philosophers are much divided about the essential characters of *brutes*. Some define *brute* an animal not risible, or a living creature incapable of laughter; others, a mute animal, or a living thing destitute of speech; the Peripatetics, an animal endowed with a sensitive power, but without a rational one [d]. The Platonists allow reason and understanding, as well as sense, to *brutes*, though in a degree less pure and refined than that of men. Lactantius allows every thing to *brutes* which men have, except a sense of religion [e]. Some sceptics [f] have ascribed religion and virtue to *brutes*; and Solomon seems to assure us, that the souls of men have no pre-eminence over those of *brutes* [g].—[d Vid. *Thom.* Phil. Instrum. c. 38. p. 182. *Chauv.* Lex. Phil. p. 78. voc. *Bestia*. e *Lactant.* Inst. Div. l. 3. c. 10. It. de Ira Dei, c. 7. f *Stanl.* Hist. of Philos. P. 12. c. 13. p. 780, seq. g Vid. *Budd.* Exerc. de Error. Stoicor. 1. §. 6. Anal. Hist. Phil. p. 100, seq. Eccles. iii. 18, seq.]

Some speak as if they held *brutes* to be moral beings, and under the obligation of the law of nature. Ulpian [h], and other civil lawyers, are supposed to be of this opinion; as also the Stoics, from whose school this tenet is said to have been first borrowed [i]. It is alleged on the other hand, that *brutes* cannot be subject to a law, unless they have a power of knowing him that made the law, judging whether he have a right to command them, and what is contained in the law, that they may direct themselves accordingly [k]; which seem all to be things out of the reach of *brutes*. But Ulpian's definition of the law of nature, *Jus naturale est quod natura omnia animalia docuit*, when fairly interpreted, does not imply, that *brutes* have reason and reflexion, but may be understood of that natural instinct common to man and *brute*, by which they are impelled to self-defence, propagation of their species, *&c.* See a Vindication of Ulpian, and the Roman lawyers, in *Wolfii Horæ subsec.* Marpurg. an. 1729. — [h *Ulp.* de Just. & Jur. Inst. l. 1. tit. 1. i *Puffend.* de Jur. Nat. & Gent. l. 2. c. 3. §. 2. *Schilt.* Manud. Philos. Moral. ad Jurisprud. c. 6. p. 227. *Budd.* Analect. Hist. Philos. p. 101. *Seld.* de Jur. Nat. & Gent. juxta Disciplin. Ebræor. l. 1. c. 5. k Vid. *Grot.* de Jur. Bell. & Pac. l. 1. c. 1. *Seld.* lib. cit. *Puffend.* de Jur. Nat. & Gent. l. 2. c. 3. *Budd.* Anal. Hist. Phil. p. 100, seq.]

In antiquity, we find *brute* animals deified, and divine honours paid to them, especially among the Hyperborean nations [l]; among the Egyptians, who worshipped crocodiles [m]; the Indians, serpents and vipers; the Siamese, elephants and the like. Hence also images [n], and tombs, epitaphs, *&c.* [o] in honour of *brutes*.—[l Mem. Acad. Inscr. T. 7. p. 326, seq. m *Banier*, Diss. ap. Mem. Acad. Inscr. T. 4. p. 116. n *Pitisc.* Lex. Ant. T. 1. p. 247. o *Lipsius* Cent. 3. Ep. 89.]

Albertus [p] and Schmidius [q] have dissertations express on the divine honours paid to *brutes*. — [p *Albert.* Disp. Hist. de Cultu Idolatra. Bestiar. Lipsi. 1669. q *Schmid.* Diss. Hist. Mor. de Honore Brutis non competente. Lipsi. 1686. *Walc.* Exerc. de Fabul. Hist. Semiram. §. 3. p. 9, seq.]

There are different faculties and degrees of knowledge in different species. Some have only the motive and sensitive faculties, as worms; others have also memory, and some imagination and invention, as monkeys and elephants [r]: besides that in the same species, some in docility and ingenuity exceed others; and that the climate, air, and food, have their influence on the *brute* kind, as on men; so that those of the same species, in different countries, are found to have different qualities; of which English horses, dogs, cocks, *&c.* are a sufficient proof [s]. 'Tis hard therefore to define any thing universally concerning *brutes*. What agrees to the oyster or the star-fish, which differ little from inanimate, will it agree to the oran-outang, which scarce differs, except as to speech, from some species of men? They who agree in ascribing reason to *brutes*, do not all ascribe to them the same species or degree of reason: Galen, for instance, allows *brutes* only internal reason; Porphyry also enunciative; Lactantius only allows them practical reason or prudence; the Stoics also speculative reason or sapience; Anaxagoras only active reason, exclusive of passive; Pythagoras, reason on the second act, exclusive of the first. There is no talent, no virtue belonging to man, but what we see the resemblance of among *brutes*, except perhaps curiosity; they only seem to want speech and curiosity [t]: curiosity, whereby they might be stirred to make inquiries, and speech, by which they might communicate their discoveries [u]. — [r *Rhodig.* Phys. Div. l. 3. c. 16. sect. 2. §. 7. s Vid. *Evel.* Disc. of Medals, c. 9. p. 314, seq. t *Thomas.* Philos. Instrum. l. 38. §. 14. p. 184. *Chauv.* Lex. Phil. p. 78. u *Hobb.* Disc. of Hum. Nat. c. 9. §. 18. p. 111.]

They are incapable of science, for want of names and signs whereby to denote abstract ideas. *Hobb.* lib. cit. c. 5. §. 4. p. 64.

They have sensible knowledge, but want intellectual knowledge; they have apprehension, but not reflexion [w]; are capable

pable of prudence, which is only a great pitch of experience, but not of ſapience, which can only be the fruit of evidence [x]. [[w] *Pardies*, ap. Philoſ. Tranſact. N° 82. p. 4054, and 4071. [x] *Hobb.* lib. cit. c. 6. §. 4. p. 64.]

The chief operation of a rational ſoul is judgment, by which we diſtinguiſh true from falſe; to which the memory and imagination are ſubſervient. But this cannot be aſcribed to *brutes*, ſince they do not make propoſitions. *Walc.* ubi ſupra. *Hobb.* lib. cit. c. 5. §. 13. p. 55.

As for ſpeech or enunciative reaſon, to many it does not ſeem ſo neceſſary, ſince many of the philoſophers condemn it as a vice, and enjoin abſolute ſilence: in reality, ſuppoſing a man naturally dumb, does it follow, that he is void of reaſon? Is it any objection then to the reaſoning of *brutes*, that they have not the uſe of ſpeech, tho', as a late author expreſſes it, they have all the organs neceſſary for that purpoſe? *Budd.* Anal. Hiſt. Philoſ. p. 102, ſeq.

Plato ſeems to allow, that, in the reign of Saturn, *brutes* converſed; and St. Baſil himſelf reckons it as one of the beauties of the terreſtrial paradiſe, that *brutes* ſpoke.

Some have pretended, that they ſtill have a jargon intelligible to one another; and Porphyry relates, that Tireſias and Apollonius Tyanæus underſtood their language. There is at leaſt a ſimilitude of ſpeech in *brutes*, for they know each other by their voices, and have their ſigns whereby they expreſs anger, joy, and other paſſions: thus a dog aſſaults in one ſtrain, fawns in another, howls in another, and cries when beaten in another. 'Tis true, their ſpeech to us appears rude and inarticulate; but perhaps ours is the ſame in their ears [y]. And if the voice of *brutes* be unintelligible to us, does not the ſame hold of the language of our own kind, till we have been inſtructed in it? The language of foreigners, what does it appear to us, but a confuſed unmeaning heap of ſounds [z]. In fine, if laughter be peculiar to man, we ſee the image of it in *brutes*, ſignified by the motion of their ears, eyes, mouth, tongue, &c. Laſtly, what is ſo peculiar to man as foreſight of futurity, but have not beaſts this, which lay up ſtores with great care in their cells, as the ant, bee, &c [a]. — [[y] *Chauv.* Lex. p. 79. [z] *Sext. Empir.* Pyrrhon. Hypot. p. 781. Trev. Dict. loc. cit. *Pitiſc.* Lex. Ant. T. 1. p. 279. [a] *Chauv.* Lex. p. 79.]

'Tis known, the antients allowed birds not only the knowledge of things preſent, but of futurity likewiſe, which they were ſuppoſed to diſcover, among other ways, by their voice. *Sext.* loc. cit. Mem. Acad. Inſcrip. T. 2. p. 376. See the articles AUGURY, BIRD, &c. *Cycl.* and *Suppl.*

Divers moderns have aſſerted, that *brutes* were created immortal, and that they would not have died if Adam had not ſinned; that they will ſtill riſe again at the laſt day, and be taken up with man to heaven. *Thomaſ.* lib. cit. p. 185.

The generality of the antient philoſophers thought that *brutes* reaſoned: this, among the heathens, was the opinion of Anaxagoras, Plato, Porphyry, Celſus, Galen, Plutarch, and others. Among chriſtians, Lactantius, and the whole body of Manichees and Gnoſtics [b]. Among the moderns, Valla, Sonnertus, Arriaga [c], Tho. Campanella [d], Gaſendus [e], F. Daniel, and others, aſſert the ſame. Plutarch has a dialogue under this title, that *brutes* uſe reaſon. All the ſect of Pythagoras ſhould be of the ſame ſentiment, becauſe the metempſychoſis imports that human ſouls paſs into the bodies of *brutes*. Can any perſon, ſays Lactantius, deny that *brutes* have reaſon, when they often outwit man himſelf? *Poteſt aliquis negare brutis ineſſe rationem, quum hominem ipſum ſæpe deludant?* [f]. — [[b] *Maurit.* Specim. de Princip. Jur. Publ. p. 53. *Thomaſ.* lib. cit. p. 186. [c] Diſput. Phyſ. 7. ſect. 6. ſubſ. 2. [d] De Senſu Rerum, l. 2. c. 23. [e] Phyſ. ſect. 3. Membr. Poſter. l. 8. c. 4. p. 409. [f] *Lactant.* Inſt. Divin. l. 3. c. 10.]

The Stoics, holding that the Divine Being is diffuſed through all creatures, were neceſſitated to maintain the ſouls of *brutes* to be divine, and conſequently that they had reaſon. *Walc.* loc. cit.

The Sceptics paralleled *brutes* with men. Sextus, more particularly, gives a compariſon between dogs and the human kind. The former excels the latter as to ſenſe; it has a quicker ſcent, whereby to purſue beaſts unſeen; it diſcovers them ſooner by the eye, and is more acute of hearing. *Sext. Empir.* Pyrrhon. Hypotyp. l. 1. c. 13. *Stanl.* Hiſt. Philoſ. P. 12. p. 780.

A dog is not deſtitute of logic, as appears from Chryſippus's famous inſtance, who obſerved, that a hound coming into a road which divides into three, makes choice of the third by virtue of an induction or ſyllogiſm: for that having ſcented the two ways by which the beaſt did not paſs, he runs ſtraight upon the third without ſcenting it: where the reaſoning is obvious: the beaſt paſſed either that way, or that way, or this way; but he neither paſſed that way, nor that way, and therefore this way. *Stanley*, lib. cit. p. 780.

Hierom Rorarius has attempted to ſhew, that the *brutes* reaſon better than men, *Quod animalia bruta ratione melius utantur homine.* Par. 1645. Amſt. 1666.

J. And. Schmidius has a diſcourſe expreſs on the logic of *brutes*. De Logica Brutorum.

That a dog is poſſeſſed of what they call internal reaſon, appears from his chuſing things convenient, flying the hurtful, purſuing his food, and running away from the whip: add, that, when wounded, he ſeeks for a remedy, by continually licking the part; if a ſplinter be got into his foot, he ſtrives to pull it out with his teeth; ſtrictly obſerving Hippocrates's rule, to keep the part affected, as much as may be, at reſt; and therefore holding it up in walking. When ſick, or troubled with ill humours, he eats graſs, which makes him puke [g]. Of how many medicines, how many arts do we owe the invention to *brutes* [h]? It was from the ſpider, that man learned the art of weaving; from the ſwallow we borrowed architecture; from the gooſe ſwimming, from fiſhes navigation, from ſilk-worms ſowing; to omit many other inſtances of the like kind alleged by Plutarch [i], Voſſius [k], and others [l]. — [[g] *Stanl.* loc. cit. [h] Vid. *Fabric.* Bibl. Græc. l. 4. c. 29. T. 4. p. 334, ſeq. [i] Vid. *Plut.* de Solert. Animal. p. 974. [k] *Voſſ.* de Orig. Idolat. l. 3. c. 67. [l] *Wolf.* Not. ad Caſaubon p. 262.]

How many actions are obſerved of *brutes*, not to be accounted for without reaſon and argumentation? As that commonly noted of a dog, which, running before his maſter, will ſtop at a divarication of the way, till he ſee which hand his maſter takes. Or that when having got a prey, which they fear will be taken from them, they run away and hide it, and afterwards return to it. What account can be given, why a dog, being to leap on a table, which he ſees too high for him to reach, if a ſtool or chair happen to ſtand in the way, firſt mounts up that, and from thence the table? If he were a machine, or piece of clock-work, and this motion cauſed by the ſtriking of a ſpring, there is no reaſon imaginable, why the ſpring, being ſet on work, ſhould not carry the machine in a right line toward the object that put it in motion, as well when the table is high as when it is low; whereas the firſt leap the creature takes up the ſtool, is frequently not directly toward the table, but in a line oblique, and much declining from the object that moved it [m]. Who can but admire the ſagacity and cunning of a hound, in purſuing a hare through all her windings and doublings; of a hare in flying the hounds, with all her ſhifts and devices; of beaſts that lay ſnares for others, as foxes, or cats for mice? What numerous arts and ſtratagems do ſpiders practice in watching flies [n]? Nor is this addreſs only found in beaſts which live by prey, but in the more timorous kind, as deer, ſquirrels, and the like. That all theſe are owing to inſtinct or machinery, without any knowledge or ſenſe, is ſcarce conceivable. Tho' a dog, a fox, or a wolf, may be driven to hunt by inſtinct, or a blind impulſe of nature, yet unleſs there were alſo docility in him, would he, on ſmelling or ſpying the partridge, give notice to his maſter by wagging his tail? You ſay, that dogs, by long habit, and by force of rewards and puniſhments, may be taught many things: but do not this teaching, docility, and remembrance of blows, argue memory, fear and deſire, which cannot ſubſiſt without knowledge, ſenſe, pleaſure and pain? But if *brutes* have knowledge, 'tis allowed they muſt alſo have judgment, and reaſon, and a ſcience of univerſals; ſince a beaſt that hunts, eſpecially the firſt time, can only have a general idea or perception of the prey or enemy it is to purſue; that is, a fox or a cat, in hunting the firſt time for a bird or a mouſe, and, on the contrary, the bird or the mouſe which are hunted for the firſt time, do not the one perceive the prey, or the other the enemy, in this very place or time, and with theſe particular circumſtances, but only perceive prey or enemy in the general? Elephants, when they have once eſcaped the trap, become extremely diſtruſtful ever after; they will not budge a foot without a great bough of a tree, with which they examine every ſtep before they ſet down their feet, to try whether there be any hole in the way. When they march in troops, if any of them perceives an herb whereon a man has trod, he plucks it up, and delivers it to the next, who, having ſmelled it, tranſmits it to a third, and ſo on to the laſt; who hereupon raiſing a huge noiſe, they all betake themſelves to flight; retiring to the hills, woods and other places, not frequented by men [o]. — [[m] *Ray*, Wiſdom of Creat. P. 1. p. 54. [n] *Chauv.* Lex. Phil. p. 377. voc. *Machina.* [o] *Tavern.* Trav. Ind. ap. Phil. Tranſact. N° 326. p. 65.]

Further, whatever imagines or opines, muſt neceſſarily judge, ſince opinion itſelf is only a ſort of judgment; ſo that a ſheep, which fears a wolf that ſhe never ſaw, muſt neceſſarily judge a wolf in the general an enemy to her; add, that the arts which foxes or dogs make uſe of to catch hens or partridges, and thoſe arts which the latter make uſe of to eſcape their hunters, cannot be grounded on any knowledge, excepting that general knowledge which is derived from particular things, whereby, from ſingulars perceived, we infer others not perceived; which is direct reaſoning. *Chauv.* Lex. p. 378.

Now admitting this knowledge of *brutes*, muſt we not alſo admit, that they have thought or conſciouſneſs, and liberty, which are attributes peculiar to ſpiritual beings? Thought muſt be allowed them, ſince all knowledge, even that called ſenſe in man, and conſequently in *brutes*, is thought. Nor can any reaſon be alleged, whereby a man ſhould be judged conſcious of what he perceives by ſenſe, and a beaſt not conſcious; if both have knowledge of what they feel, we muſt alſo allow them liberty, both of contrariety and contradiction; ſince otherwiſe how ſhould the hope of reward, or fear of puniſhment, work on them? Was not the cat at full liberty either to hunt or not hunt? eſpecially in ſuch caſes, where ſhe takes the purſuit without any neceſſity either of preſerving her life, or propagating her kind. And 'tis known that thoſe beaſts are then

moſt ſtudious and active after prey, when they are beſt fed; and that hunting, with them, is rather a kind of recreation, as among our ſportſmen, than a work of neceſſity. On the whole, *brutes*, if they have knowledge, ſince they act as perfectly for the attainment of their ends as man, are of conſequence as liable to praiſe or cenſure, reward or puniſhment, as man. From whence will alſo follow, that their ſouls are immortal, and conſequently there muſt be a future ſtate, and proper manſions reſerved for them in another world, according as they have behaved in this. *Chauv.* lib. cit. p. 378.

In reality, if the ſouls of *brutes* be ſpiritual, they muſt neceſſarily alſo be indiviſible, and therefore immortal; ſince there is no argument deducible from the light of reaſon, in proof of the immortality of human ſouls, more than of *brutes*. And, laſtly, allowing the ſouls of *brutes* to have knowledge, they muſt alſo have religion; ſince an intelligent creature without a duty to God is a contradiction. Certainly, if a *brute* knows any thing truly, it muſt know itſelf in the firſt place, from which knowledge it will naturally be carried to the knowledge of its Creator; ſince one of the firſt and eaſieſt things it can know, is that it did not make itſelf: from all which it will follow, that *brutes* are alſo ſubject to the ſtings of conſcience, *&c.* *Chauv.* lib. cit. p. 79.

Mechaniſm of BRUTES.—The Carteſians, on the other hand, adopt that ſtrange paradox, of the mechaniſm of *brutes*; and aſſert them not only void of all reaſon and thought, but of all perception. This ſyſtem is much older than Des Cartes; it was borrowed by him from Gomez Pereira, a Spaniſh phyſician, who employed thirty years in compoſing a treatiſe, which he entitles *Antoniana Margarita*, from the chriſtian names of his father and mother. It was publiſhed in 1554. But his opinion had not the honour either of gaining partiſans, or even of being refuted; ſo that it died with him. Vid. *Voſſ.* de Orig. Idolol. l. 3. c. 41. where Pereira's tenet is thus repreſented from his own apology: *Illos motus brutales, quicunque in brutis viſuntur, non fieri a brutis videntibus, audientibus aut guſtantibus, ſeu per quemcumque alium ſenſum exteriorem vel interiorem—Sed vel ab ſpeciebus objectorum inductis in eorum organis noſtris ſenſitivis ſimilibus, cum præſentia ſunt ſequenda vel fugienda: vel a phantaſmatis, cum hæc abſunt.*

This was revived by Des Cartes [a], and further aſſerted by Le Grand [b], D'Armaſon [c], and others of his followers, who were led to adopt this doctrine, from that principle of his philoſophy, that the eſſence of the ſoul conſiſts in thinking; ſo that, ſuppoſing knowledge and thought in *brutes*, they muſt have ſouls like thoſe of men; the ſenſitive ſoul of the Ariſtotelians being held by him a mere chimera.—[[a] Vid. *Cart.* P. 2. Ep. 40. *Quod ad bruta attinet, adeo aſſueti ſumus credere quod illa non ſecus quam homines ſentiant, ut facile non ſit opinionem hanc deponere, ſed ſi æque aſſueti eſſemus videre automata, quæ actiones noſtras omnes imitarentur, quas quidem imitari poſſunt, atque illa pro automatis habere, neutiquam dubitaremus, quin animalia ratione deſtituta forent quoque automata.* [b] *Le Grand*, Inſt. Philoſ. P. 7. c. 18. n. 5. Ejuſd. Diſſ. de Carentia Senſus atque Cognitionis in Brutis. [c] *D'Armaſon*, La Bête transformée en Machine, 1684. p. 19, ſeq. *Thomaſ.* Diſſert. Proem. Juriſpruden. Div. §. 40.]

But Pereira does not appear to have been the firſt inventor of the doctrine; ſomething like it having been held by ſome of theantients, as we find from Plutarch [d], and St. Auguſtin [e]. The latter of which reaſoned thus: Miſery being the conſequence of ſin, it follows, that *brutes* which have not ſinned, ſhould not be miſerable. Now they would be miſerable, if they had perception. Therefore they have none. Beſides if *brutes* had a ſoul, God would not have given ſinful man an abſolute power over them, and a right to kill them for nouriſhment. Mr. Du Rondel, profeſſor at Maeſtricht, has proved from Plutarch, that, before the Stoics, Diogenes the Cynic had maintained, that *brutes* had neither perception nor knowledge, and were mere machines. So that Pereira has been unjuſtly taxed for broaching a novelty [f].—[[d] *Plutarch*, de Placit. Philoſ. l. 5. c. 20. [e] *Auguſt.* de Quantit. Animæ. [f] Vid. *Paſch.* Invent. Nov. Antiq. c. 3. *Walc.* Lex. Philoſ. p. 224. voc. *Beſtie.* Trev. Dict. Univ. T. 1. p. 1002. voc. *Beſte.*]

'Tis argued by the retainers to this ſyſtem, that the ſoul of *brutes* is altogether corporeal, and conſequently void of knowledge, which all body, in their ſyſtem, is abſolutely incapable of; that their ſoul is only their blood, or ſome of the purer and finer parts thereof, as frequently expreſſed by Moſes; that *brutes* have indeed life, but that this conſiſts only in an aptitude or diſpoſition of the body for certain motions. In which reſpect alſo they may be ſaid to have ſenſe, as they do many things by inſtinct the ſame as men by reaſon; but that their motions are all ſudden, and blind, not ariſing from any knowledge or perception of the ſoul, but from the fabric and connection of their parts, as the motion of Archytas's wooden dove, Regiomontanus's iron fly, or of innumerable other contrivances of man are known to be [g]. That *brutes* exceed men in their operations, no otherwiſe than as a watch can keep time, and tell the hour better than the artiſt himſelf that made it. And if weak man can make machines to perform things ſeemingly ſo extraordinary, how eaſy was it for an infinitely wiſe Being to make automata, to exhibit all the phænomena which we ſee of *brutes*, without any either ſenſitive or rational ſoul? That the actions of *brutes* may be well accounted for, and are no more indications of knowledge than the action of a vine, which, preſaging that it ſhall not be able to ſupport its own weight, ſeeks out and clings to the elm; or of the ſenſitive plant, which, upon the approach of a hand, ſhrinks or contracts itſelf. How many even of man's actions are reſolvable into the ſame principle of mechaniſm? Is it by knowledge or deſign, or by inſtinct, that we wink when any thing ſuddenly approaches our eyes? that when we ſtumble with one foot, the other preſently flies to its aſſiſtance? that, in falling, we naturally ſtretch out our hands? that a man under torture cries out whether he will or no? that we continue to walk? that an artificer can proceed in his work, and a muſician to play on, when our thoughts are turned to ſomething elſe? How is it we breathe, our heart beats, the limbs are moved, and the ſtomach and inteſtines make a due ſeparation of the food, rejecting what is uſeleſs, and conveying the reſt into the blood [h]? Is the flight of a bird from a gun, or a ſcare-crow, owing to a higher cauſe than that of a man, who, on any ſudden noiſe or danger near him, inſtantly flinches back, or diſpoſes himſelf for flight.—[[g] *Chauv.* Lex. Phil. p. 79. [h] Id. ibid. p. 378. *Walc.* Lex. p. 228, ſeq.]

Thus do the Carteſians reaſon, till they have almoſt brought men to be machines, as well as *brutes*. So near is the affinity between the ſpecies of animals, that one ſect of philoſophers cannot extol man without elevating *brutes* together with him; nor another degrade *brutes*, but that man muſt keep them company. But no direct argument, it is to be obſerved, is alleged in ſupport of the automatiſm of *brutes*. The doctrine is only maintained by what logicians call preſumptions, or prejudices, drawn from the inconveniences ariſing from the ſuppoſition of the contrary. The only ſhadow of an argument is, that God could have created machines to perform every thing that is done by *brutes*. They do not go ſo far as to prove that he has done it. Their fallacy lies in not diſtinguiſhing the poſſible from the probable; but from the poſſibility of a thing inferring its probability. Morhoff, and ſome others, allow of truth on both ſides of the queſtion; and conclude, that the difficulty will never be decided. *Morhof.* Polyhiſt. T. 2. l. 2. P. 2. c. 45. n. 4. p. 437.

Perhaps the beſt argument againſt the ſyſtem of machines is, that it is contrary to the common ſenſe and apprehenſions of all mankind. Ought not thoſe, who deny that *brutes* have ſenſe, to be combated with the ſame weapons that are uſed againſt the Sceptics, who deny all truth and certitude, and againſt the Immaterialiſts, who deny the exiſtence of bodies? God has certainly made fools of men, if *brutes* be machines. *Du Hamel*, de Corp. Animal. l. 3. c. 1. Opp. Phil. T. 2. p. 609. *In eadem vel ſimili cauſa ii mihi videntur eſſe, qui beſtias omni cogitatione privant, ac ſceptici, qui omne veritatis lumen nobis eripiunt. Utrique ſatis validis utuntur rationibus, nec facile refelli poſſunt: ſed ipſa naturæ voce cui obſiſti non poteſt, communi omnium ſenſu, experientia, & ipſa rerum evidentia ita revincuntur, ut ea dicant quæ omnino non ſentiunt.*

Henry More, in his Enchiridicon Metaphyſicum [i], F. Daniel, in his Nouvelles Difficultés, publiſhed in 1693, and in his Voyage du Monde de Deſcartes, as alſo F. Pardies, in a treatiſe of the knowledge of *brutes*, have preſſed the Carteſians hard. Paſchius has alſo a diſputation on the ſenſe and knowledge of *brutes* [k], and Willis [l] a treatiſe on the ſouls of *brutes*.—[[i] c. 24. [k] De Brutorum Senſibus & Cognitione. [l] *Willis*, de Anima Brutorum. Oxon. 1672. 4°. an extract of which is given in Phil. Tranſ. N° 83. p. 4071.]

But to ſay the truth, we are not much wiſer for the labours of theſe learned gentlemen. The common opinion of the untaught and unprejudiced part of mankind ſeems to be, that *brutes* have ſenſe, imagination, memory, and paſſion, but that they are void of underſtanding and reaſon; that is, in the language of philoſophers, they have the inferior faculties of the ſoul, but not the ſuperior. Nor will the diſtinction appear groundleſs to thoſe who attend to the difference between the objects of the mind, and its acts about theſe objects; as alſo to the difference between the confuſed and the diſtinct comprehenſion of any thing.

After all that has been ſaid about the faculties of *brutes*, what a difference between them and even a child, who can ſpeak, reckon, and perform the operations of arithmetic! Some philoſophers gravely tell us, that *brutes* want ſpeech to expreſs themſelves; and aſſign this as a cauſe of their ſeeming want of underſtanding. But will not a parrot, brought up in a nurſery with children, learn to pronounce words ſooner than they? but will he therefore alſo learn to expreſs his thoughts, reckon, *&c?* Ought we not therefore to ſay, that *brutes* cannot ſpeak, or make uſe of general ſigns, which is implied in ſpeech, becauſe they have no underſtanding; inſtead of ſaying, they ſeem to be without underſtanding, becauſe they cannot ſpeak? It is true, *brutes* do many things, from ſome principle incomprehenſible to us, although there are inſtances of a like principle in man; but it does not follow, that this principle is underſtanding and reaſon. A bee does not make honey, nor does an infant ſuck from reaſon. The like may be ſaid of many other actions of *brutes*, as building their neſts, *&c.* What the true principles of ſuch actions is, may perhaps be beyond the power of the human faculties to comprehend. But whatever it be, it is far from putting *brutes* on a level with man. The difference

is immenſe; and thoſe who, in other reſpects, admit of inſenſible gradations from one order of beings to another, muſt own there is a vaſt chaſm between man and the moſt perfect *brutes*. See Mr. *Buffon*, Hiſt. Natur. Vol. 2. p. 443.

BRUTIA, in the medical writings of the antients, a word uſed to expreſs the fatteſt and moſt reſinous kinds of pitch, and ſuch as was propereſt for making the oil of pitch, called *oleum picinum*.

The word *brutia* ſeems to have been an adjective of diſtinction given to this kind of pitch by the antients, from their common cuſtom of naming things from the places whence they were brought; *Brutia* being the name of a country in the extreme parts of Italy. *Plin.* l. 15. c. 7. See the article PITCH.

BRYGMOS, a kind of convulſion, affecting the lower jaw, and ſtriking the teeth together; moſt frequently obſerved in children affected with worms. *Caſt.* Lex. Med. p. 113. *Quinc.* Lex. Phyſ. Med. p. 61.

The word is Greek, βρυγμος, formed from βρυκειν, or βρυχειν, frequently uſed by Hippocrates for chattering of the teeth. *Fæſ.* Oecon. Hippoc. p. 129. See alſo *Suic.* Theſ. Eccleſ. T. 1. p. 714. voc. Βρυγμος.

The *brygmos*, or chattering of the teeth, is a ſymptom of the acceſs of an ague, or intermitting fever.

BRYON, in the botanical writings of the antient Greeks, an abbreviation of the word *bryonia*. Wherever this word occurs in Dioſcorides, Theophraſtus, &c. it means only the white bryony; the later Greek authors, who have copied after the writings of theſe, have called it *bryonia*, always writing it at length; and the virtues aſcribed to it are every where thoſe properly belonging to the white bryony. Yet the Latin tranſlators of the works of Dioſcorides and Theophraſtus, and many among the late botanical writers in general, have given us the word *lupulus* as the tranſlation of *bryon*; and are agreed in the opinion of that word's meaning the hop which we uſe in brewing.

This is a miſtake owing to a too haſty reading; for it is evident to thoſe who enquire deeper into the writings of the antients, that their *cumele*, κυμελη, was our hop; that being deſcribed as a twining plant, as well as the *bryon*, and having all the virtues of the hop, though the other has not. The later Greeks have called this κυμελοβοτανη, *cumelobotane*.

BRYONIA, in botany, a name uſually made to take in two different genera of plants, under the names of *alba* and *nigra*, the white and black kind. Mr. Tournefort, however, has determined this word to expreſs only what we call the *white bryony*, making *tamnus* the name of the black.

BRYONIA *alba*, *white bryony*, is a genus of plants, the characters of which are theſe: The flower is compoſed of only one leaf, which is of the ſhape of a bell, wide open at the mouth, and divided into ſeveral ſegments; and this is uſually ſo nicely ſurrounded by, and firmly incloſed in the cup, that it is not eaſily ſeparated from it. Of the flowers of this plant, which are very numerous, ſome are ſterile, having no embryo of fruit; others have the embryo. The firſt kind are called male flowers, the ſecond female. The embryo in the female flowers ripens into a berry, of a round or oval figure, which contains a number of roundiſh ſeeds. To theſe marks it may be added, that the *bryonies* are all climbing plants, and have tendrils to faſten themſelves to whatever is near them.

The ſpecies of *bryony* enumerated by Mr. Tournefort, are theſe. 1. The rough-leaved white *bryony*, with red berries, called the wild vine. 2. The black-berried white *bryony*; this is called by Dodoneus *black bryony*. 3. The large fruited white *bryony* of Ceylon, with leaves very deeply divided, called by ſome *balſamina ſcandens*, and the ſtinking *momordica*. 4. The ſmaller-berried white *bryony* of Ceylon, with deeply jagged leaves. 5. The yellow-flowered African white *bryony*, with ſmooth and very deeply divided leaves. 6. The tuberoſe-rooted African white *bryony*, with green flowers. 7. The fig-leaved cluſtered white *bryony*. 8. The American white *bryony*, with red berries, reſembling olives. 9. The creeping American white *bryony*, with a ſmooth angular leaf. 10. The creeping American white *bryony*, with rough angular leaves; and, 11. The Canada white *bryony*, with angular leaves and black berries. *Tournef.* Inſt. p. 202.

There has been a ſtrange confuſion among the Greek authors of later date, from the old way of writing the name of this plant; this having been done by abbreviation, *bryon*, βρυον, for *bryonia*, βρυωνια. Commentators have miſtaken *bryon* for the name of another plant, and have rendered it by the word *lupulus*, the hop. See the article BRYON.

Mr. Boulduc, in his examinations of ſeveral purgative medicines, very juſtly obſerves, that *white bryony* is a plant of the ſame nature with the *mechoacan*; its root is the only part of it uſed in medicine. It was once in great eſteem, but has of late loſt its credit, and become diſuſed. However, it is found to be a very briſk purge; ſometimes alſo it operates by vomit, and uſually very ſtrongly by urine. Hence many have celebrated it as a remedy in all dropſical caſes. In its analyſis, it appears to be very different from *mechoacan*, in this, that it contains only a ſaline principle, and no reſinous one.

The root of this plant purges much more ſtrongly in ſubſtance than in any preparation. This is alſo obſerved to be the caſe in all the other vegetable purges; but as this is apt to be too rough in its operation, the ſeveral preparations of infuſions, decoctions, and extracts, are to be preferred to the ſubſtance.

It is, when freſh, full of an uſeleſs and redundant moiſture, and its doſe in infuſion in white wine, which is the beſt menſtruum, is a dram of the dried root, or half an ounce of the green, which is about equivalent in ſtrength. Hiſt. Acad. Par. 1712.

Black BRYONY, *Bryonia nigra*. See the article TAMNUS.

BRYONIA *Indica*, or *Mechoacanna*, a denomination given by ſome to the *mechoacanna*, or white jalap; on a falſe ſuppoſition, that it is a ſpecies of *bryony*. *Quinc.* Diſpenſ. P. 2. ſect. 8. §. 465. *Caſt.* Lex. Med. p. 487. voc. *Mechoacanna*. See the article MECHOACAN, *Cycl.*

BRYONIA *Peruviana*, a denomination given by ſome to jalap, on account of its reſemblance to our *bryony*. *Quinc.* Diſpenſ. P. 2. ſect. 8. §. 478. See the article JALAP, *Cycl.* and *Suppl.*

Wild BRYONY, Βρυωνια Αγρια, is uſed by Dioſcorides for the herb *chamepitys*. *Gorr.* Med. Defin. p. 81. voc. Βρυωνια.

BRYTIA, Βρυτια, among the antient naturaliſts, denotes the maſk or ſolid part of grapes, which remain after expreſſing the juice. *Galen.* de Alim. Fac. l. 2. c. 9. *Caſt.* Lex. Med p. 114.

BRYUM. See the article WALL-*moſs*.

BRYUM *lactucæ folio*, a name given by ſome to the oyſter-green. See the article TREMELLA.

BUBALINUS *ſerpens*, in zoology, a name given by authors to the Anacandaya of the Ceyloneſe, a very terrible ſerpent, common in that part of the world, and very miſchievous among their cattle; whence its Indian name, which ſignifies as much. *Ray*, Syn. Anim. p. 332. See the article SERPENT.

BUBALUS, the *buffalo*, a ſort of wild bull, very common in many parts of Europe, and, in the pope's territories, kept tame, for the ſake of the milk of the female, of which the famous cheeſes, called *caſe di cavallo*, are made. They are alſo commonly employed in the affairs of huſbandry, and have, for this purpoſe, a braſs or iron ring put through their noſes, and, by means of a rope, or thong of leather, put through this, they are managed at pleaſure; though, if ever ſo well tamed, they uſually keep ſomething of their native fierceneſs.

The *buffalo* is ſomewhat larger than the common bull; his body alſo is thicker, and his horns very large, thick, and black; the toughneſs of his skin, of which buff-leather is made, is well known. *Ray*'s Syn. Quad. p. 72. See Tab. of Quadr. N° 12.

BUBO, in zoology, a name uſed by ſome for the owl in general, but, by the more accurate naturaliſts, appropriated to the great horn-owl, called alſo, in ſome places, the eagle-owl. Some authors have deſcribed three ſpecies of this bird; but they ſeem to be only varieties of the ſame ſpecies, according to the differences of age, ſex, and other accidents.

The horn-owl is of the bigneſs of a gooſe, and has large wings, capable of extending to a ſurpriſing breadth. Its head is much of the ſize and figure of that of a cat, and has cluſters of black feathers over the ears, riſing to three fingers height; its eyes are very large, and the feathers of its rump long, and extremely ſoft; its eyes have yellow iriſes, and its beak is ſhort, black, and crooked; it is all over mottled with white, rediſh, and black ſpots. Its legs are very ſtrong, and are hairy down to the very ends of the toes, their covering being of a whitiſh brown. It builds in high and inacceſſible rocks, and feeds on birds, hares, rabbets, and every thing it can lay hold upon. It is as daring as the eagle in this reſpect; and, as it preys in the night, gathers a vaſt quantity of proviſion together, eſpecially at the time of feeding its young. See Tab. of Birds, N° 7. *Ray*'s Ornithol. p. 63.

BUBO, Βουβων, (*Cycl.*) in anatomy, is ſometimes uſed to denote that part otherwiſe called *inguen*, or groin. *Barthol.* l. 1. Anat. in Proem. Dieter. p. 159. *Caſt.* Lex. Med. p. 114. See the article INGUEN, *Cycl.*

Galen, and ſome others after him, alſo give the denomination *bubo* to tumors in the glands of the head, neck, arm-pits, and other parts; but the more exact writers reſtrain the denomination to tumors in the glands of the inguen, on either ſide of the pubis. *Junck.* Conſp. Chir. tab. 21. p. 149.

BUBOES, *venereal*, are tumors ariſing principally in the groin, after contracting the venereal diſeaſe, and they are ſometimes attended with the other ſymptoms of that diſorder, ſometimes they are themſelves the only ſymptoms of it. Theſe ariſe ſometimes ſooner, ſometimes later after contracting the infection. The tumor firſt appears with hardneſs, redneſs, and pain either in one or both the groins, and ſometimes in the arm-pits. Great care is to be taken to diſtinguiſh, in theſe caſes, whether the *bubo* be of a benign kind, or be really from a venereal infection; for miſtakes of this matter are on both ſides very dangerous. If a benign *bubo* be miſtaken for a venereal one, the patient is uſually treated in too harſh a method, and has more trouble and pain than are neceſſary; and, on the other hand, if a venereal *bubo* be miſtaken for a benign one, he is uſually treated ſo improperly as to be brought into a confirmed lues.

The *buboes* are known to be venereal, when they are the conſequences of impure embraces, or are accompanied with or preceded by gonorrhæas, chancres, and other ſymptoms of the venereal diſeaſe. When from theſe attendant ſymptoms, and from the patient's confeſſion, we find the *bubo* to be venereal, a

cure is immediately to be ſet about; for though there is no great difficulty or danger in theſe caſes when taken in time, yet there are few in which delays are of worſe conſequence; for, from theſe, from an irregular courſe of life, or from an improper method of treatment, the cure often becomes extremely difficult, and the patient too frequently gets into a confirmed lues.

It is much diſputed whether the cure of theſe tumors by diſcuſſion be ſafe; many are of opinion, it is by no means to be allowed in theſe any more than in peſtilential *buboes*, ſince in both caſes, by that means, the poiſon is driven back into the blood. But the caſe is not parallel, and the truth is, that, in theſe tumors, the cure by ſuppuration, is ſlow, tedious, and attended with many inconveniences, and that much better effects may be produced, and that with the greateſt ſafety, by purging and mercurial medicines, with the decoctions of the woods, and other purifiers and ſweetners of the blood.

The beſt method, whether the *bubo* be attended with a gonorrhæa or not, is to purge frequently, and give proper doſes of calomel; for *buboes* can never be ſafely cured till the body is perfectly freed from the venereal venom; and, by this means, if there be a gonorrhæa in the caſe alſo, that is cured at the ſame time When there is a great inflammation, and the patient is of a robuſt plethoric habit, it is always neceſſary to bleed; while this method is followed, diſcutient plaſters ſhould be applied externally to the tumor, as the mercurial plaſter or the like, and the patient ſhould be kept to a regular courſe of life, and a proper diet. By this method, venereal *buboes*, which are not become inveterate, may be cured with great eaſe and ſafety.

But if the ſurgeon be called in too late, if the *bubo* will not give way to theſe methods, or if, for any other reaſon, he determines to bring it to ſuppuration, the maturation is in this caſe to be promoted as faſt as poſſible; and one great method to bring on ſuppuration with ſpeed, is to order the part to be rubbed ſtrongly, and for a conſiderable time, either with the fingers wetted with a little oil, or with linen rags, till it look very red and inflamed, and this is to be often repeated, applying after each time a plaſter of diachylon, with the gums, or ſome other of the maturating kind. While the patient is able to go abroad, violent exerciſes of all ſorts, as dancing and the like, are extremely proper, and do ſervice in haſtening a ſuppuration. When the pain will not ſuffer him to walk any longer, then it is proper to keep to the uſe of cataplaſms, inſtead of the plaſter; theſe are indeed ever much more ſerviceable to promote ſuppuration than plaſters, and the beſt on this occaſion are thoſe made of onions, roaſted under the aſhes, or of flour, honey, and yeaſt, or that of crumbs of bread boiled in milk, with the addition of a little ſaffron; theſe are to be applied warm to the parts, and frequently renewed, and it is always beſt to rub the parts till they look very red, before the application of them. During the uſe of theſe external remedies, the patient ſhould be continually taking decoctions of the woods, and ſmall doſes of calomel; for theſe greatly attenuate the blood, drive it toward the skin, and correct the venereal venom. When theſe methods have brought the ſwelling to a perfect ſuppuration, the ſcalpel is to be taken in hand, to make the opening. Great caution is to be uſed in making the inciſion, not to hurt the larger blood-veſſels, which might occaſion very dangerous hæmorrhages. To avoid theſe miſchiefs, the protuberant part of the *bubo* is to be preſſed outward by the fingers, before the ſcalpel is introduced to make the inciſion. Great caution is alſo neceſſary as to the time of opening theſe tumors; for the doing this either too ſoon, or too late, are of very bad conſequence; the firſt brings on violent pains and inflammations, and other bad ſymptoms, and, by the latter, the venom has time given it to mix itſelf with the blood, and bring on a confirmed lues.

If the patient dreads the knife, the *bubo* may be opened with a cauſtic; and by whatever means it is done, it muſt be afterwards well cleanſed. The proper dreſſing on this occaſion is the common digeſtive ointment, with a ſmall quantity of Venice treacle, and a little red precipitate mixed in it; over this is to be applied a plaſter of diachylon, with the gums, or the like; by which means the lips of the *bubo* will be ſufficiently ſoftened: and when ſufficiently deterged in this manner, it may be healed by ſome vulnerary balſam applied on lint. It ſometimes happens, that the ulcerated *bubo* becomes ſo ſtubborn, that it will neither incarn nor cicatrize by the help of any medicines, but always diſcharges a copious quantity of matter. If, in this caſe, burnt alum and red precipitate prove of no ſervice, the actual cautery ought to be applied, and the lymphatics will by this means have their communications for ever cut off. *Heiſter*'s Surgery, p. 207.

BUBOES, *peſtilential*. See PESTILENTIAL *buboes*.

BUBONOCELE (*Cycl.*)—Some make two kinds of *bubonoceles*; the one owing to a deſcent of ſome of the viſcera, as the omentum, or inteſtines, ſtopping in the groin, and not falling ſo far as to the ſcrotum [a]; the other a collection or ſtagnation of excrementitious humours in the inguinal glands; which latter is more properly called *bubo*, and differs little, except in ſeat, from the *bronchocele* [b].—[[a] *Æquet.* l. 3. c. 53. *Gal.* de Tum. Præt. Nat. c. 16. [b] *Caſt.* Lex. Med. p. 114.] See the articles BUBO, and BRONCHOCELE, *Cycl.* and *Suppl.*

BUBONIUM, in botany, a name given by ſome authors to the *aſter atticus*. Ger. Emac. Ind. 2. See the article ASTER.

BUBONIUS *lapis*, a figured ſtone, in ſhape reſembling an owl's head, of a flinty ſubſtance, black within, and cineritious without. It was thus denominated by Dr. Plot, having not been before named by naturaliſts. *Plot*, Nat. Hiſt. Oxfordſh. c. 5. §. 45.

BUBULCA, in zoology, a ſmall freſh-water fiſh, called by ſome *bouviera* and *petenſe*; it is ſmall, flat, and very ſhort, approaching to a round rather than a long ſhape, and of a fine ſilvery whiteneſs. It ſeldom exceeds two inches in length. It has one ſmall fin upon the back, and is covered with large and broad ſcales; its mouth is very ſmall, and has no teeth, and its eyes are of a fine and perfect black. Its gall is ſo large, that it is impoſſible to take out its guts without breaking it; and thus the fiſh gets a diſagreeable bitterneſs in its taſte, which makes it little regarded. *Bellonius* de Piſcib.

BUCA, in natural hiſtory, a name by which ſome authors call the *buccinum*.

BUCAO, in natural hiſtory, a name given by the people of the Philippine iſlands to a ſpecies of ſcreech owl, which is of the ſize of a peacock. It is very common in thoſe iſlands, but wholly unknown to us, and is a very beautiful bird, but makes a hideous noiſe in the night.

BUCARDITES, or BUCARDIA, in natural hiſtory, a name given by many authors to a ſtone, in ſome degree reſembling the figure of an ox's heart. See Tab. of Foſſils, claſs 9.

It is uſually of the ſubſtance of the coarſer ſtones, and is no other than a quantity of the matter of ſuch ſtone received while moiſt into the cavity of a large cockle, and thence aſſuming the figure of the inſide of that ſhell, the depreſſion of the head of the cockle, where the cardo or hinge of this ſhell is, makes a long and large dent in the formed maſs, which gives it a heart-like ſhape.

Theſe, and caſts of a like kind, of the matter of various ſorts of ſtones and other foſſils, of which the common pyrites is not the leaſt common, are very frequent in many parts of the kingdom; the ſtone-pits of Glouceſterſhire, Northamptonſhire, and Oxfordſhire, afford them in great quantities in ſtone; and our own tile clay-pits about London produce great numbers, formed of the matter of the common pyrites. Theſe laſt are principally of the buccinum or nautilus kind, but are caſt in the ſhell, exactly in the ſame manner as the *bucardites*. *Hill*'s Hiſt. of Foſſ. p. 646.

The *bucardites* are the larger ſtones of the ſpecies of cardites; they are generally of a whitiſh colour, ſmooth and plain; tho' there are ſome ribbed on each ſide. Plot mentions a *bucardites*, which he found at Stretford in Staffordſhire, which weighed twenty pounds, tho' broken half away, curiouſly reticulated, with a white ſpar-coloured ſtone. *Plot*, Nat. Hiſt. Oxfordſh. c. 5. §. 145. p. 128. *Grew*, Muſ. Reg. Societ. ſect. 1. c. 1. p. 263.

BUCARDIUM, in natural hiſtory, a name given by authors to a kind of heart-ſhell, reſembling an ox's heart in ſhape; it is of the genus of the cordiformes, or heart-ſhells, and differs from the other kinds, in being of a more globular figure.

The cabinets of the curious afford us ſeven ſpecies of this ſhell: 1. A yellow-furrowed one. 2. A grey ſpinoſe one. 3. A white furrowed one. 4. A thicker narrow one. 5. The thick one, with a cardo ſeparated from the apex. 6. The thick kind, with the cardo at the apex; and, 7. The baſtard Noah's ark-ſhell. See HEART-*ſhells*.

BUCCA FERREA, in botany, a name given by Micheli to a genus of plants, called ſince by Linnæus *Ruppia*. *Michel.* p. 35. See the article RUPPIA.

BUCCÆ *muſculus*, in anatomy, a name given by ſome to the muſcle more uſually called the *buccinator* and *contrahens labiorum*.

BUCCALES *glandulæ* (*Cycl.*)—Steno, and ſome other writers, confound the *buccal* with the maxillary glands [a]; from which they are really diſtinct [b]. — [[a] *Sten.* Obſerv. Anat. p. 14. [b] Phil. Tranſ. N° 304. p. 6, ſeq.] See the article MAXILLARY, *Cycl.* and *Suppl.*

BUCCANEERS (*Cycl.*) are uſually confounded with freebooters, from whom, in ſtrictneſs, they ought to be diſtinguiſhed. The antient inhabitants of Hiſpaniola, and the other Caribee iſlands, after their conqueſt by the Europeans, conſiſted of four ranks or orders of perſons, *viz. buccaneers*, or bull-hunters, who ſcoured the woods; freebooters, who ſcoured the ſeas as pyrates; huſbandmen, who tilled the lands; and ſlaves. Of theſe, the two firſt diſtinguiſhed themſelves moſt, by their military diſpoſition, and the ravages they made, eſpecially among the Spaniards. Their hiſtory, given by Oexmelin, under the title of *The hiſtory of the freebooters and* buccaneers, *from the year* 1670 *to* 1689, is full of the moſt daring reſolute enterprizes, but intermixed with horrible cruelties. Vid. *Charlev.* Hiſt de l'Iſle Eſpagn. T. 3. p. 7, ſeq. Bibl. Raiſon. T. 11. p. 130, ſeq. *Savar.* Dict. Comm. T. 1. p. 417, ſeq. Atlas Marit. p. 320, ſeq.

BUCCEA, or BUCCELLA, a term uſed by medicinal writers in different ſenſes; ſome uſe it to expreſs a fragment of any thing, and others make it the name of what we uſually call a polypus of the noſe. Vid. *Caſt.* Lex. Med. p. 114. *Du*

Cange, Gloſſ. Lat. T. 1. p. 631. *Paracelſ.* de Ulcer. c. 20.

BUCCELLATIO, a word uſed by ſome chirurgical writers for the ſtopping the bleeding of an artery or vein, by applying lint to it.

BUCCELLATON, in the antient medical writers, the name of a medicine, in which ſcammony was the principal ingredient.

They uſed to mix pepper, and the ſeeds of ſmallage, aniſe, and fennel, with ſcammony, and then mixing up the whole with honey into a thick electuary, they ſent it to be baked in an oven. This is the *buccellatum* of Ægineta; but Aetius deſcribes it as made of ſcammony, with its correctives, put into fermented flour, and baked in the oven into a ſort of loaf. *Aetius*, l. 3. c. 100. *Ægineta*, l. 7. c. 5. *Caſt.* Lex. Med. p. 114.

BUCCELLATUM, in antient military writers, denotes camp-bread, or biſcuit baked hard and dry, both for lightneſs and keeping. *Ammian. Marcellin.* l. 17. *Du Cange*, Gloſſ. Lat. T. 1. p 633. *Spartian.* in Nig. c. 10. *Calv.* Lex. p. 127. See the articles BREAD, and BISKET.

The word is formed from *buccea*, or *buccella*, a morſel, or mouthful of meat.

Soldiers always carried with them enough for a fortnight, and ſometimes much longer, during the time that military diſcipline was kept up. *Aquin.* Lex. Milit. T. 1. p. 139. *Pitiſc.* Lex. Ant. T. 1. p. 299. *Briſſ.* de Verb. Signif. p. 87. *Du Cange*, Gloſſ. Græc. T. 1. p. 213. voc. Βουκελατ. ν.

BUCCINA (*Cycl.*) — This inſtrument was in uſe among the Jews, to proclaim their feaſt-days, new-moons, jubilees, ſabbatic years, and the like [a]. At Lacedæmon, notice was given by the *buccina* when it was ſupper-time; and the like was done at Rome, where the grandees had a *buccina* blown both before they ſat down to table and after [b].—[a *Bartoloc.* Bibl. Rabbin. P. 2. p. 186, ſeq. b *Schel.* ad Polyb. p. 1183. *Buleng.* de Imp. Rom. l. 2. c. 33. *Schoetg.* Ant. Lex. p. 235.]

The ſound of the *buccina* was called *buccinus*, or *bucinus*, and the muſician who played on it, *buccinator*. *Du Cange*, Gloſſ. Lat. T. 1. p. 633.

BUCCINA alſo denotes the ſpace or extent to which the ſound of the *buccina* may be heard. *Du Cange*, loc. cit.

BUCCINA *auris*, in middle age writers, denotes the tympanum or drum of the ear. Vid. *Frid.* Imper. de Venat. l. 1. c. 25. *Du Cange*, loc. cit.

BUCCINATOR, Βυκανητης, (*Cycl.*) he that ſounds or winds the buccina. *Aquin.* Lex. Milit. p. 140. *Pitiſc.* Lex. Ant. T. 1. p. 300. *Calv.* Lex. Jur. p. 127.

Among the Romans there was a public ſlave, denominated *buccinator nominum*, whoſe office was to attend the public crier. Trev. Dict. Univ. T. 1. p. 1274. *Pitiſc.* loc. cit.

BUCCINUM, in botany, a name given by ſome authors to the lark-ſpur. *Ger.* Emac. Ind. 2.

BUCCINUM is alſo uſed for the *trumpet-ſhell*. See TRUMPET-*ſhell*.

BUCCO, in anatomy, a name given by Riolanus, and ſome others, to the muſcle more uſually called *buccinata*, and *contrahens labiorum*.

BUCCULA, in anatomy, the fleſhy part under the chin. *Barthol.* Anat. l. 3. c. 11. p. 532. *Caſt.* Lex. Med. p. 114.

Some extend the name farther to the whole lower part of the face, comprehending the under part of the lower lip, with the chin and the fleſhy part under it. Trev. Dict. Univ. T. 1. p. 1275.

BUCCULA, in antiquity, denotes the umbo of a ſhield, or the part prominent in the middle thereof. *Aquin.* Lex. Milit. T. 1. p. 141.

It is thus called, becauſe uſually made in the form of a mouth or face, either of a man or ſome animal. The like figures were ſometimes alſo found on other parts of armour, eſpecially on the loricæ and thoraces. *Du Cange*, Gloſſ. Lat. T. 1. p. 634. Item, Gloſſ. Græc. T. 1. p. 215. voc. Βουκολον.

The generality of writers, after Turnebus, have miſtaken the *buccula* for the vizor [a], or that part of the helmet which covers the mouth. In which ſenſe they interpret that of Juvenal, *Lorica & fracta de caſſide buccula pendens* [b]. But that paſſage quadrates equally well with the former acceptation.—[a *Turneb.* Adverſ. l. 9. c. 16. *Pitiſc.* Lex. Ant. T. 1. p. 300. *Briſſon.* de Verb. Signif. p. 87. *Calv.* Lex. Jur. p. 128. *Kenn.* Rom. Ant. Not. P. 2. l. 4. c. 9. p. 201. b *Juv.* Sat. 10. v. 134.]

BUCHNERA, in botany, the name of a genus of plants, the characters of which are theſe: The perianthium is tubular, conſiſting of one leaf, divided into five ſegments at the edge, and remaining after the flower is fallen. The flower conſiſts of one petal, which forms a very long and capillary arched tube, and its verge is plain and ſhort, and is divided lightly into five ſegments, which are ſmall at the baſe, and broader, and figured like a heart at the top. The ſtamina are four very ſhort filaments; the antheræ are oblong and obtuſe; the germen of the piſtil is oblong and oval; the ſtyle is very ſlender, and of the length of the tube; and the ſtigma is obtuſe. The fruit is a capſule of an oblong oval figure, pointed at the end, containing two cells, and opening at the top into two parts. The ſeeds are numerous, and of an angular figure. *Linnæi* Gen. Plant. p. 302. Hort. Cliff. p. 501.

BUCK, (*Cycl.*) a male horned beaſt of venery or chaſe, whoſe female is denominated a *doe*.

A *buck* the firſt year is called a *fawn*, the ſecond a *pricket*, the third a *ſorel*, the fourth a *ſore*, the fifth a *buck of the firſt head*, and the ſixth a *great buck*. *Cox*, Gent. Recr. P. 1. p. 8.

BUCK is alſo applied to the males of the hare and rabbet kind. Hares commonly go to *buck* in January, February, and March, and ſometimes all the warm months; ſometimes they ſeek the *buck* ſeven or eight miles from the place where they ſit. *Cox*, lib. cit. p. 86.

The *buck* rabbet is ſaid to kill all the young he can come at; on which account the doe is careful to hide her offſpring in ſome remote corner, out of his way.

The doe coney goes to *buck* as ſoon as ſhe has kindned. She cannot ſuckle her young till ſhe have been with the *buck*.

When he has bucked, he uſually falls backward, and lies as in a trance half dead, at which time he is eaſily taken. *Cox*, ib. p. 92.

BUCK-*maſt*, is uſed by ſome for the maſt or fruit of the beech-tree. Dict. Ruſt. T. 1. in voc.

BUCK-*bean*. See TRIFOLIUM *paluſtre*.

BUCK-*ſkins*. See the article SKINS.

BUCK-*ſtall*, in our antient law books, a toil wherein to take deer. *Dugd.* Monaſt. T. 2. p. 827. *Du Cange*, Gloſſ. Lat. T. 1. p. 635.

By an antient ſtatute, no perſon is allowed to keep a *buck-ſtall*, who has not a park of his own. Stat. 19 Hen. 7.

BUCKET, in hydraulics, a kind of veſſel or recipient chiefly of uſe for the raiſing and conveyance of water from wells, and other places.

The word is formed from the French *bacquet*, a pail or tub. *Savar.* Dict. Comm. T. 1. p 209. voc. *Bacquet*.

In an army, *buckets* are carried with the artillery, in the fire-workers ſtores. *Guill.* Gent. Dict. P. 2. in voc.

Town *buckets*, for extinguiſhing fires, are made of thick leather, ſtrongly ſoaked and boiled. Trev. Dict. Univ. T. 4. p. 1589. voc. *Eau*.

One method of raiſing water, deſcribed by hydraulic writers, is by the means of a chain of *buckets*. *Wolf.* Elem. Hydraul. §. 96.

BUCKING, an operation performed on linnen cloth and yarn, to render them ſomewhat white, by working them with lye made of aſhes. Dict. Ruſt. T. 2. voc. *Whitening*.

Bucking of cloth is the firſt ſtep or degree of whitening it.

To drive a buck of yarn, they firſt cover the bottom of the *bucking* tub with fine aſhes of the aſh-tree, then ſpread the yarn thereon, then cover it again with aſhes, and thus ſtratum ſuper ſtratum, till the yarn is all in; when they cover the whole with a *bucking* cloth, and lay on it more aſhes, and pour in warm water, till the tub be full, and let it ſtand all night. Next morning they let the lye run into another veſſel, and, as it waſtes, fill up the tub with warm water from a kettle, and, as this waſtes, fill it up with the lye that runs from the *bucking* tub; ſtill obſerving to make the lye hotter and hotter, till it boils. Thus are both the tub and kettle to be ſupplied for at leaſt four hours, which is called *driving a buck of yarn*. *Hought.* Coll. T. 2. N° 350. p. 397, ſeq.

BUCKLE, in matters of trade, a little metalline machine, whereby to retain and keep faſt certain parts of the habit, as well as of the harneſs of horſes, *&c.*

The word is formed from the French *boucle*, and that, according to Caſſeneuve, from the barbarous Latin *pluſcula*, which ſignified the ſame [a]. According to Menage, from *bucula*, the anſa or handle of a buckler [b].—[a *Caſen.* Orig. Franc. p. 26. b *Menag.* Orig. p. 113. voc. *Boucle*. See alſo *Du Cange*, Gloſſ. Græc. p. 215. voc. Βουκλα.]

The *buckle* is a part of modern dreſs, correſponding to the περονη, and fibula, among the antients.

Buckles are of divers ſorts, as ſhoe and garter *buckles*; ſome round, others ſquare, or oval, or cut, each of which have their reſpective artificers by whom they are made.

The like may be ſaid of the great variety of *buckles* belonging to the pack and hackney-ſaddles, ſuch as ſetts, black or oiled *buckles*, ſanguine *buckles*, crupper *buckles*, breaſtplate *buckles*, and ſurcingle *buckles*: and to theſe may be added divers other *buckles*, made promiſcuouſly with the former, as the heſter *buckle*, plain and knobbed, for the white bridles, and the open and plain crown *buckles* for the black; and ſo the Poland *buckle*, the peaſe *buckle*, chaſed *buckles*, Dutch and Iriſh *buckles*, which are braſs, and made by the copper-ſmith. *Plot*, Nat. Hiſt. Staffordſh. c. 9. §. 80. p. 377.

Girth-BUCKLE, among ſadlers, is a four ſquare hood, with a tongue, which is made ſteady, by going through a hole of leather, and faſtened with narrow thongs. Dict. Ruſt. in voc.

BUCKLER (*Cycl.*) is the ſame with what we otherwiſe call ſhield or target; and by the one or the other we indifferently render what among the antients were denominated ασπις, *clypeus*, *ſcutum*, and *parma* [a]; though the three latter were different from each other [b].—[a Philoſ. Tranſact. N° 241. p. 206. b *Salmuth.* ad Pancirol. P. 1. tit. 54. p. 285. *Pott.* Archæol. l. 3. c. 4. T. 2. p. 32, ſeq. *Kenn.* Rom. Antiq.

Not.

Not. P. 2. l. 4. c. 9. Philoſophical Tranſactions, loc. citat.

The antients were particularly ſolicitous to preſerve their *bucklers* in fight; it being highly infamous, and even penal, to return without them [c]. It was on their *bucklers* that they carried off the bodies of their ſlain, eſpecially thoſe of diſtinction [d].—[c *Pott.* Arch. Att. l. 3. c. 13. p. 115. [d] Id. ibid. c. 4. p. 34, ſeq.]

BUCKLER *of a caſk*, denotes a moveable head, whereby to compreſs the contents of it.

In this ſenſe we ſay, a *buckler* of pilchards. *Pett.* Diſc. Duplic. Proport. p. 114. See the article PILCHARD.

BUCKRAM, a thick ſort of linnen or hempen cloth, ſtiffened with gum, chiefly uſed in the linings of cloaths, to ſuſtain and make them keep their form.

The word is formed from the French *bougram*, which ſignifies the ſame; and this perhaps from the old French word *bouqueran*, a ſort of ſtuff ſuppoſed to be made of goats hair, called *poil de bouc*. Trev. Dict. Univ. voc. *Bouqueran*. *Menage*, Orig. p. 114. *Caſen.* Orig. p. 27.

Buckrams are chiefly made of old cloth, eſpecially ſheets; tho', for want of this, they are frequently alſo made of new linnen, gummed, ſtiffened, callendared, and dyed. *Hought.* Collect. T. 2. p. 409. N° 355. *Savar.* Dict. Comm. T. 1. p. 432. voc. *Bougram*.

BUCKTHORN *berries*, the fruit or ſeed of a thorny tree, called by botaniſts *rhamnus*, or *ſpina cervina*. See the article RHAMNUS.

They are larger than the elder berries, round and black, yielding a bitter purple juice, tinged with green, and holding three or four cornered ſeeds.

The tree grows in woods and hedges, having its branches ſet with long ſtiff thorns.

The ſyrup is the only preparation of thoſe berries now in phyſical uſe.

It is a ſtrong purgative, and effectual in evacuating watery and flatulent humors; on which account it is eſteemed in dropſies, rheumatiſms, and even the gout. *Quinc.* Diſpenſ. P. 2. ſect. 8. n. 472. p. 196, ſeq.

Of *buckthorn* berries are made three ſeveral ſorts of colours; being gathered green, and kept dry, they are called *ſap-berries*; which being ſteeped in alum-water, give a fair yellow colour, uſed by painters, book-binders, and leather-dreſſers; who alſo make a green colour, called *ſap-green*, taken from the berries when they are black. Theſe being bruiſed, and put into a braſs kettle, and there ſuffered to remain for three or four days, with ſome beaten alum put to them, they are afterwards preſſed, and the liquor uſually put into bladders, and hung up till it be dry: this is afterwards diſſolved in water or wine, but Canary is the beſt, to preſerve the colour from ſtarving. The third is of a purpliſh colour, made of the berries, ſuffered to grow upon the buſhes till the middle or end of November, when they are ready to fall of themſelves. Vid. *Boyle*, Phil. Works abr. Vol. 2. p. 76, 77.

BUCOLICA, Βουκολικη, is by ſome uſed for the art of managing, feeding, and breeding cattle. *Micræl.* Lex. Philoſoph. p. 222.

BUCOLIC *poetry* is by ſome called *Aſtrabic*, as being ſuppoſed to have firſt commenced among the antient herdſmen in riding a ſort of waggons called *aſtrabes*.

It is uſually divided into *monoproſopium*, wherein only a ſingle perſon ſpeaks, and *amœbæum*, or dialogue wherein are ſeveral interlocutors.

Theocritus's Idyllia, and Virgil's Eclogues, are the chief of the antient *bucolics* now extant.

Some aſcribe the invention of *bucolic* poetry to the herdſmen of Laconia, who, not being able to hold the cuſtomary feaſt of virgins in honour of Diana Caryatis, by reaſon of the war with Xerxes, inſtituted βεκολιασμοι, or *bucolic* exerciſes, in lieu thereof. *Scal.* Poet. l. 1. c. 4. p. 17, ſeq. *Pott.* Archæol. l. 2. c. 20. T. 1. p. 408.

Hence alſo the origin of a ſort of poetical champions, called βεκολιασται, by the Latins *luctiones*, who went about the country contending for the prizes frequently propoſed for the conquerors in this kind of combat. Of which rank Daphnis was the moſt diſtinguiſhed. They not only rehearſed their verſes, but plaid on a kind of fiſtula or pipe, called *ſyrinx*. *Scal.* loc. cit. p. 17, ſeq.

The abbot Goulley has a diſſertation expreſs on the antient *bucolic* poetry of Sicily; wherein there is a particular enquiry into the birth-place and adventures of Daphnis. Hiſt. Acad. Inſcript. T. 3. p. 123, & 131, ſeq.

BUCTON, a word uſed by Severinus and ſome others, as a name for that part of the pudendum muliebre, commonly called the *hymen*. *Caſt.* Lex. Med. p. 115. See the article HYMEN, *Cycl.*

BUD (*Cycl.*) primarily denotes that part of a ſeed which firſt begins to ſprout or germinate. See the articles SEED, VEGETATION, &c.

In which ſenſe, *bud* amounts to the ſame with germ, germen, gem, or gemma.

In moſt ſeeds is found a true *bud*, conſiſting of perfect leaves, only differing in bigneſs from thoſe which grow on the ſtalk. In many ſeeds this *bud* is very apparent, in others it lies ſo deep between the lobes, as to be almoſt indiſcernible. In ſome plants the leaves of the *buds* are but two, in others four, in others ſix, and in ſome more. *Grew*, Anat. Veget. l. 4. c. 5. §. 3, ſeq. p. 206, ſeq.

BUD is alſo uſed to denote the beginning of a bloſſom, or young ſprout, whether of a branch, foliage, or flower.

The *buds* of flowers and fruits are formed at the ſame time as the branches themſelves on which they ariſe. Mem. Acad. Scienc. an. 1711. p. 59, ſeq.

The *bud* of a branch has its origin from the inner part of the ligneous body next the pith; by which it differs from a thorn, which has its origin from the outer and leſs fruitful part, and ſo produces no leaves, being as it were only the male of a *bud*. *Grew*, ubi ſup. l. 1. c. 4. App. p. 33.

Every *bud*, beſides its proper leaves, wherein it is couched or folded up, is covered with divers leafy pannicles or ſurfoils, which ſerve as a defence to the leaves themſelves. Idem, ib. c. 4. §. 17. p. 32. Item, l. 4. c. 1. §. 2. p. 145, ſeq.

The *buds* or knots on branches ariſe from the inmoſt part of the branches, the ſtructure of the ligneous fibres and little bladders of the branch being ranged ſo nicely in this form, that, upon the putting out of the branch, the *bud*, which is compoſed of the ſame parts, may likewiſe ſhoot with it. *Malpig.* Anat. Plant. P. 26, ſeq. Phil. Tranſact. N° 118. p. 404.

Leewenhoeck aſſures us, that in the *bud* of a curran tree, even in winter, he could diſcover not only the ligneous part, but even the berries themſelves, appearing like ſmall grapes. *Niew.* Relig. Philoſ. p. 374, ſeq.

BUDDLE, (*Cycl.*) in mineralogy, a name given by the Engliſh dreſſers of the ores of metals, to a ſort of frame made to receive the ore after its firſt ſeparation from its groſſeſt foulneſs.

The ore is firſt beaten to powder in wooden troughs, through which there runs a continual ſtream of water, which carries away ſuch of it as is fine enough to paſs a grating, which is placed at one end of the trough; this falls into a long ſquare receiver of wood, called the *launder*: the heavieſt and pureſt of the ore falling at the head of the launder, is taken out ſeparately, and requires little more care or trouble; but the other part, which ſpreads over the middle and lower end of the launder, is thrown into the *buddle*, which is a long ſquare frame of boards, about four feet deep, ſix long, and three wide; in this there ſtands a man bare-footed, with a trambling ſhovel in his hand, to caſt up the ore about an inch thick, upon a ſquare board placed before him as high as his middle; this is termed the *buddle*-head; and the man dexterouſly, with one edge of his ſhovel, cuts and divides it longwiſe, in reſpect of himſelf, about half an inch aſunder, in theſe little cuts; the water coming gently from the edge of an upper plain board, carries away the filth and lighter part of the prepared ore firſt, and then the metalline part immediately after; all falling down into the *buddle*, where, with his bare feet, he ſtrokes it and ſmooths it, that the water and other heterogeneous matter may the ſooner paſs off from it.

When the *buddle* by this means grows full, the ore is taken out; that at the head part, being the fineſt and pureſt, is taken out ſeparate from the reſt, as from the launder. The reſt is again trampled in the ſame *buddle*; but the head, or, as it is called, the forehead of this *buddle*, and of the launder, are mixed together, and carried to another *buddle*, and trampled as at firſt. The foreheads of this laſt *buddle*, that is, that part of the ore which has fallen at the head, is carried to what they call a drawing *buddle*, whoſe difference from the reſt is only this, that it has no tye, but only a plain ſloping board, on which it is once more waſhed with the trambling ſhovel. Tin-ore, when it is taken from this, is called black tin, and this is found to be completely ready for the blowing-houſe. Phil. Tranſ. N° 69.

BUDDLING *of calamine*, denotes the operation of cleanſing it from filth, by waſhing and picking it, preparatory to the baking it in the oven. Philoſ. Tranſact. N° 198. p. 675. See BUDDLE and CALAMINARIS *lapis*, *Cycl.* and *Suppl.*

BUDDLING *diſh*, a ſmall ſhallow veſſel, like the baſons of a pair of ſcales, for the waſhing of ores of metals by the hand. *Shaw*'s Lect. p. 8.

BUDGE-*barrels*, are ſmall barrels well hooped, with only one head, the other end having nailed on it a piece of leather, to draw together upon ſtrings, like a purſe.

Budge-barrels are uſed for carrying powder along with a gun or mortar; as being leſs dangerous, and alſo eaſier than whole barrels. They are alſo uſed upon batteries of mortars, for holding meal-powder. *Guill.* Gent. Dict. P. 2. in voc.

BUDLEIA, in the Linnæan ſyſtem of botany, the name of a diſtinct genus of plants, the characters of which are theſe: The calyx is an extremely ſmall perianthium, divided into four at the end; placed erect, and remaining after the flower is fallen. The flower conſiſts of a ſingle petal, which is ſlightly divided into four ſegments, placed erect, and is of three times the ſize of the cup; the ſegments are of an oval figure, and acute. The ſtamina are four extremely ſhort filaments, ſituated at the notches of the flower. The antheræ are very ſhort and ſimple. The germen is of an oval figure, the ſtyle is ſimple, of but half the length of the flower, and the ſtigma is obtuſe. The fruit is an oval oblong capſule, marked with two furrows, and containing two cells. The ſeeds are very numerous, and extremely ſmall. *Linnæi* Gen. Plant. p. 26.

BUFETAGE, *Bufetagium*, or *bufetaria*, a duty paid to the lord for the drinking, or rather ſelling of wine in taverns.

The word is formed from *buvetage*, or *buveterie*, of the French *boire*, to drink. *Du Cange*, Gloſſ. Lat. T. 1. p. 635.

BUFF (*Cycl.*)—The ſkin of the American mouſe deer, when well dreſſed, makes excellent *buff*. The Indians make their ſnow-ſhoes of them. Their way of dreſſing it, which is reckoned very good, is thus: After they have haired and grained the hide, they make a lather of the mouſe's brains in warm water, and, after they have ſoaked the hide for ſome time, they ſtretch and ſupple it. Phil. Tranſ. N° 368. p. 168. See the article SKIN.

BUFFALO, *Bubalus*, in zoology. See BUBALUS.

BUFFET-*ſtool*, a little portable ſeat, without back or arms. *Neve*, Build. Dict. in voc.

BUFFOONS, (*Cycl.*) are the ſame with what we otherwiſe find denominated *ſcurræ* [a], *gelaſiani* [b], *mimilogi* [c], *miniſtelli* [d], *goliardi* [e], *joculatores* [f], &c. whoſe chief ſcene is laid at the tables of great men.—[a *Pitiſc.* Lex. Ant. T. 2. p. 713. voc. *Scurræ*. b Id. T. 1. p. 845. voc. *Gelaſiani*. c *Du Cange*, Gloſſ. Lat. T. 3. p. 551. voc. *Mimilogi*. d Id. ibid. p. 558. voc. *Miniſtelli*. e Id. T. 2. p. 637. voc. *Goliardi*. f Id. T. 1. p. 636. voc. *Buffones*.]

Gallienus never ſat down to meat without a ſecond table of *buffoons* by him [g]; Tillemont alſo renders pantomimes by *buffoons* [h].—[g *Pitiſc.* loc. cit. h *Tillemont*, Hiſt. des Emper. T. 2. p. 144. Trev. Dict. Univ. T. 1. p. 1665.]

In which ſenſe he obſerves, the ſhews of the *buffoons* were taken away by Domitian, reſtored by Nerva, and finally aboliſhed by Trajan. However commendable the firſt abolition of them was, it became odious, becauſe done by Domitian. See the article PANTOMIME.

BUFO, in zoology, the name by which many authors call the common toad, denominated by others *rubeta*. See the article RUBETA.

BUFONITÆ, foſſile teeth of the wolf fiſh. See the article LYCODONTES.

Pulvis BUFONUM. See TOAD-*powder*.

BUGA *marble*, in natural hiſtory, a name given by the Spaniards to a ſpecies of black marble, called by our artificers the Namur-marble, and known among the antient Romans by the name of *marmor Luculleum*. It is common in many parts of Europe, and is uſed by the Spaniards in medicine as well as in building; the powder of it being ſaid to be an excellent ſtyptic, applied to freſh wounds. *Hill*'s Hiſt. of Foſſils. See the article *Luculleum* MARMOR.

BUGEE, in zoology, a ſpecies of monkey, which we ſee ſometimes brought over for a ſhew. It is an Indian animal, and a very rare one even there. It is about the ſize of a beaver, and much of the ſame colour, but its tail and claws wholly of the monkey kind.

BUGELUGEY, in zoology, the name of a large ſpecies of lizard, called by Cluſius, and ſome other authors, by the indeterminate name of *Lacertus Indicus*. It grows to four feet long, and will then meaſure nine inches round; the tail is very long, and ends in an extremely ſlender point. It is of a brown colour, but oddly variegated with a blueiſh white in regularly figured ſpots, ſome of them being ſquare, and others of a rhomboidal figure; theſe are irregularly ſcattered over the whole body. The ſkin is covered with ſmall ſcales; thoſe about the head and neck are round, thoſe on the back ſquare, and thoſe on the tail oblong, and diſpoſed in a circular ſeries. Its mouth opens to a great width; its teeth are very ſharp before, but large and blunt behind; and the hinder legs are much longer than the fore ones, and twice as thick, though thoſe are by no means ſlender. Its toes are very long, and the claws long, yellow, and very ſharp. The ſcales which cover the belly are four or five times larger than thoſe on the back. *Ray*'s Synop. Animal. p. 270.

BUGG-*caterpillar*, in natural hiſtory, a name given by Mr. Bonnet to a ſmall ſpecies of caterpillar, which ſmells exactly like a bug. This is not the only ſpecies which yields a ſenſible ſmell, for there is one of the middle-ſized ſmooth kind, which, at the time of the change into the chryſalis ſtate, yield a very pleaſant roſe-like ſcent, and their caſes, which are made of earth and ſilk, retain that ſmell for a long time together, even for ſeveral years. There is another, which ſmells ſtrongly of muſk. Phil. Tranſ. N° 469. p. 467.

BUGGERS, *Bulgarii*, antiently ſignified a kind of heretics, otherwiſe called *Paterini*, *Cathari*, and *Albigenſes*.

The word is formed of the French *Bougres*, which ſignified the ſame, and that from *Bougria* or *Bulgaria*, the country where they chiefly appeared. *Du Cange*, Gloſſ. Lat. T. 1. p. 636. voc. *Bulgari*.

The *Buggers* are mentioned by Matthew Paris, in the reign of Henry III. under the name of *Bugares* [a]. *Circa dies autem illos invaluit hæretica pravitas eorum qui vulgariter dicuntur* Paterini *&* Bugares, *de quorum erroribus malo tacere quam loqui* [b]. They were ſtrenuouſly refuted by Fr. Robert, a dominican, ſurnamed the *Bugger*, as having formerly made profeſſion of this hereſy. Froiſſart, ſpeaking of Don Pedro king of Caſtile, ſays he was excommunicated and declared *bugger* and infidel [c]. He adds, that one Betiſach, the duke of Berry's treaſurer, was burnt alive at Beziers, for having owned himſelf a heretic, and that he maintained the opinion of the *Buggers*, who denied the Trinity and Incarnation [d]. —[a Vid. *Matth. Paris*, in Vit. Hen. III. b *Caſen.* Orig. Franc. p. 26, ſeq. voc. *Bougre*. c *Froiſſart*, l. 1. c. 227. *Et fut en plein conſiſtoire en Avignon & en la chambre des excommuniez, publiquement declare & repute pour* Bougre *& incredule*. d Id. T. 2. l. 7. *Aubert*, Not. ad Richel. T. 1. p. 224.]

BUGGER, or BUGGERER, came afterwards to be uſed for a Sodomite; it being one of the imputations laid, right or wrong, on the Bulgarian heretics, that they taught, or at leaſt practiſed, this abominable crime. *Caſen.* Orig. p. 27. *Menag.* Orig. p. 114. Trev. Dict. Univ. T. 1. p. 1149. voc. *Bougre*. *Du Cange*, Gloſſ. Lat. T. 1. p. 637. voc. *Bulgari*.

BUGGER, *Bulgarius*, is alſo a denomination given to uſurers, a vice to which the ſame heretics are ſaid to have been much addicted. *Du Cange*, Gloſſ. Lat. T. 1. p. 637.

BUGLE, *Bugula*, in botany. See the article BUGULA.

BUGLOSS, *Bugloſſum*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, of a rotated form, and divided into many ſegments at the edges; the cup is divided into ſegments even to the baſe, and from this there ariſes a piſtil, which is fixed in the manner of a nail to the lower part of the flower, and is ſurrounded by four embryos, which afterwards become as many ſeeds, ſhaped like a viper's head, and ripening in the cup, which becomes greatly enlarged to receive them.

The ſpecies of *bugloſs* enumerated by Mr. Tournefort, are theſe: 1. The broad-leaved ever-green *bugloſs*. 2. The great narrow-leaved blue-flowered *bugloſs*. 3. The great narrow-leaved white-flowered *bugloſs*. 4. The great narrow-leaved *bugloſs*, with red or variegated flowers. 5. The great *bugloſs*, with ſinuated leaves. 6. The taller and rougher common *bugloſs*. 7. The great black wild *bugloſs*. 8. The great *bugloſs* of Crete, with a blue or purple flower. 9. The great Cretic *bugloſs*, with a red flower. 10. The great Cretic *bugloſs*, with a white flower. 11. The Portugal *bugloſs*, with undulated leaves, like thoſe of vipers *bugloſs*. 12. The ſmaller narrow-leaved *bugloſs*. 13. The leſſer wild *bugloſs*. 14. The ſmall ſweet Cretic *bugloſs*, with a beautifully variegated flower. 15. The warty or pearled Cretic *bugloſs*. 16. The narrow-leaved *bugloſs*, with echinated ſeeds. 17. The red-rooted *bugloſs*, commonly called the ordinary blue-flowered alkanet. 18. The red-flowered, red-rooted *bugloſs*, or alkanet. 19. The white-flowered red-rooted *bugloſs*, or alkanet, with white flowers. 20. The narrow-leaved indented *bugloſs*. 21. The roſemary-leaved ſhrubby *bugloſs*. 22. The gromwell-leaved Portugal ſhrubby *bugloſs*. 23. The gromwell-leaved annual field *bugloſs*. 24. The ſmalleſt annual yellow-flowered *bugloſs*, called yellow alkanet. 25. The Portugal *bugloſs*, with long, rough, and curled leaves. 26. The Portugal *bugloſs*, with leaves beſet with ſmall ſharp granules. 27. The blue-flowered hoary ſea *bugloſs*.

The flowers of the common *bugloſs* ſtand recommended for the ſame virtues with thoſe of borrage; they are ſuppoſed to be cordials of the very firſt rank, and to be of great uſe in hypochondriac and melancholic caſes. But theſe virtues are not well warranted. *Tournefort*, Hiſt. Plant. p. 133.

BUGLOSSUS, in zoology, a name uſed by many authors for the ſoal fiſh. *Geſner*, p. 785.

BUGULA, *Bugle*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, which is formed into a ſingle lip, and divided into three ſegments; the middle one of theſe is bifid, and the ſmall jaggs ſeem to occupy the place of an upper lip. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower, and is ſurrounded by four embryos, which afterwards ripen into four roundiſh ſeeds; theſe are contained in a capſule, which was before the cup of the flower. To theſe marks it is to be added, that the flowers of *bugle* are placed verticillately.

The ſpecies of *bugle* enumerated by Mr. Tournefort are theſe: 1. The common blue-flowered *bugle*. 2. The greyiſh or white flowered *bugle*. 3. The greateſt Alpine *bugle*. 4. The hairy wild *bugle*, with beautifully red flowers; and, 5. The white-flowered hairy *bugle*. *Tourneſ.* Inſt. p. 209.

Bugle is a noted vulnerary, much uſed in potions of that intention, and alſo in plaſters, eſpecially among the French, with whom it is a proverb, that the perſon who has *bugle* and ſanicle, has no occaſion for a ſurgeon.

It is uſed both internally and externally for all bruiſes, wounds, and contuſions; for ſores and ulcers, ſpitting of blood, and hæmorrhages from any part; alſo for the dyſentery, fluor albus, diſeaſes of the throat, and thruſhes in the mouth. Vid. *James*, Med. Dict. in voc.

BUILDING (*Cycl.*)—The perfection of *building* conſiſts in its adequate agreement with the intention of the founder [a]; its decoration in the aſſemblage of ſuch things as are proper to attract the attention of perſons paſſing by [b]; its ſtrength or firmneſs, in being free from the danger of coming ſhortly to ruin or decay [c]; its utility or conveniency, that diſpoſition of the whole, and each part, which renders its uſe to the owner moſt perfect [d]; its beauty, in the true or apparent perfection of it, conſidered as ſeen [e].—[a *Wolf.* Elem. Archit. §. 8. b Id. ib. §. 14. c Id. ib. §. 6. d Id. ib. §. 7. e Id. ib. §. 9.]

Some will have the proportions of the parts of *buildings* to have been originally taken from thoſe of the parts of the human body. *Perrault*, Treat. Five Ord. in Pref p. 1.

Authors diſtinguiſh two kinds of proportion to be obſerved in *buildings*, viz. ſymmetry, and eurythmy. *Sturm.* Mathem. Compend. p. 52.

There are three ſorts of draughts or repreſentations of a *building* neceſſary to be made before the conſtruction be begun, *viz.* an ichnography or plan, an orthography or profile, and a ſcenography or perſpective. *Sturm.* ubi ſupra, p. 62. See the articles ICHNOGRAPHY, ORTHOGRAPHY, and SCENOGRAPHY, *Cycl.*

We ſay a Doric, a Corinthian edifice, not only in ſpeaking of thoſe which have entire orders, but of ſuch as have only ſome part or characteriſtic of an order; as an entablature, pediment, chambranle, or the like. *Davil.* Cours d'Archit. p. 5. See ORDER, DORIC, CORINTHIAN, *&c. Cycl.*

'Tis a miſtake that *buildings* are to be made loftier in proportion as they are larger. *Perrault*, ubi ſupra, P. 2. p. 127.

The modern *buildings* are much more commodious, as well as beautiful, than thoſe of former times. Of old they uſed to dwell in houſes, moſt of them with a blind ſtair-caſe, low ceilings, and dark windows; the rooms built at random, without any thing of contrivance, and often with ſteps from one to another; ſo that one would think the people of former ages were afraid of light and freſh air: whereas the genius of our times is altogether for light ſtair-caſes, fine ſaſh-windows, and lofty ceilings. And ſuch has been our builders induſtry in point of compactneſs and uniformity, that a houſe after the new way will afford, on the ſame quantity of ground, almoſt double the conveniencies which could be had from an old one. *Davil.* Cours d'Archit. T. 1. in Pref. *Neve*, Build. Dict. in voc.

Public BUILDINGS, according to Daviler, include thoſe belonging to religion, as temples, churches, hoſpitals, moſques, tombs, *&c.* thoſe erected for ſecurity, as walls, towers, baſtions, and other parts of fortification; thoſe ſerving for utility or convenience, as bridges, cauſeways, ports, aquæducts, courts, markets, bazars, caravanſeras; and laſtly, thoſe erected for magnificence, as triumphal arches, obeliſks, amphitheatres, porticos, *&c.* See *Davil.* loc. cit. p. 417. *Schot.* Itin. Ital. l. 2. p. 131. Phil. Tranſ. N° 200. p. 769. Hiſt. Acad. Inſcript. T. 1. p. 119, ſeq. *Hought.* Collect. T. 4. p. 341, ſeq.

Private BUILDINGS, thoſe intended for habitation, ſuitable to the ſtate and condition of perſons, as palaces, hotels, ſeats, convents, houſes of citizens, *&c.* *Davil.* ubi ſupra, p. 417. *Pancirol.* de Reb. Memor. P. 1. tit. 23. p. 70. *Salmuth.* ad eund. ibid. p. 73. Item, ad tit. 51. p. 251. *Briſſ.* Select. Antiq. l. 1. c. 1, ſeq.

Ruſtic or Country BUILDINGS, thoſe which compoſe farm-houſes, granges, menageries, mills, baſſecours, ſtables, *&c.*

Hydraulic BUILDINGS, thoſe wherein are incloſed machines for the moving or raiſing of water, either for uſe or entertainment, as pumps, fountains, reſervoirs, caſcades, *&c.*

Marine BUILDINGS, thoſe wherein ſhips and other veſſels are made or preſerved; ſuch are arſenals, docks, ſtore-houſes, and the like. *Davil.* lib. cit. p. 417, ſeq.

Subterraneous BUILDINGS, thoſe framed under ground, as labyrinths, grottos, caves, temples cut out of rocks, *&c.*

Some take theſe to be of the greateſt antiquity, and to have given occaſion to the firſt erecting of ſuperterranean edifices: the primitive *buildings* ſeem rather to have been intended as ſhelter againſt the ſcorching heats of the climate and ſeaſons in Æthiopia, where the mid-day was ſcarce tolerable without ſome defence. Phil. Tranſ. N° 144. p. 341.

BUILDING is alſo applied to the works of brutes. The caſtor is, by his make, particularly fitted for *building*. With his teeth he can cut wood, and with his feet work the clay; his tail does the office of a trewel in applying, and likewiſe of a hod for carrying mortar. Mem. Acad. Scienc. an. 1704. p. 81.

BUL, in the Hebrew calendar, the eight month of the eccleſiaſtical and ſecond of the civil year, ſince called *marſhevan*; it anſwers to our October, and is compoſed of nine and twenty days.

BUL, in ichthyology, an Engliſh name for the common flounder.

BULATWÆLA, in botany, a name by which ſome authors have called the *betle*, an herb the people of the Eaſt Indies are fond of chewing. *Herm.* Muſ. Zeyl. p. 34.

BULB (*Cycl.*)—The antients divided *bulbs* into eſculent, as the onion and leek; emetic, as the narciſſus; and wild, as the hermodactyl. Nothing, Pliny obſerves, is more prolific than the lilly, a ſingle root often producing no leſs than fifty *bulbs*. *Plin.* Hiſt. Nat. l. 2. c. 5. *Fabr.* Theſ. p. 383.

Modern botaniſts diſtinguiſh two kinds of *bulbs*, *tunicated* and *ſquammous*.

Tunicated BULBS, are thoſe compoſed of ſeveral coats or tunics laid over each other; ſuch are the roots of onion, tulip and jonquil.

Squammous BULBS, are thoſe compoſed of ſeveral ſcales, laid in like manner over each other; ſuch is that of the white lilly.

Some alſo extend the name *bulb*, abuſively, to thoſe more properly called tuberoſe roots [a], which with them conſtitute a third ſort of *bulbs*, called the *cloſe bulb*; ſuch is that of the crocus or cyclamen [b].—[[a] *Mart.* Lect. Bot. p. 4. [b] *Bradl.* Dict. Bot. T. 1. in voc.]

Some conſider the *bulb* as a real plant, out of which a new ſtalk is yearly produced; the ſtalk itſelf withering and falling away with the flower and leaves. In reality, as the leaves which fall yearly, are not neceſſary to the integrity of the plant; ſo neither does the ſtalk ſeem to be, which ſprings out of the bulb, and withers away, the *bulb* itſelf ſtill remaining entire [c]. We may add, that the very leaves and flowers, *e. gr.* of a tulip, have been diſtinctly perceived to be contained in its *bulb* [d].—[[c] *Chauv.* Lex. Philoſ. p 85. [d] *Du Hamel*, Hiſt. Acad. Scien. l. 2. ſect. 3. c. 1. p. 165, ſeq.]

BULBS are alſo taken for the round ſpired beards of flowers. Dict. Ruſt. T. 1. in voc.

BULBOCASTANUM, *Earth-nut*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is umbelliferous, and of the roſaceous kind, being compoſed of ſeveral leaves, arranged in a circular form. The cup finally becomes a fruit, compoſed of two ſmall ſeeds, which are ſometimes ſmooth, ſometimes ſtriated on their gibboſe ſides, and ſmooth on their flat ones. To this it is to be added, that the roots are tuberous and fleſhy.

The ſpecies of *earth-nut*, enumerated by Mr. Tournefort, are theſe. 1. The great broader-leaved *earth-nut*. 2. The leſſer narrow-leaved *earth-nut*. 3. The great Alpine parſnep-leaved *earth-nut*. 4. The Portugal *earth-nut*, with finely divided leaves. *Tournef.* Inſt. p. 307.

BULBOCODIUM, in botany, a name uſed by ſome authors for *pſeudo-narciſſus Anglicus*, or common wild yellow daffodil. *Chabræus*, p. 212.

BULBONACK, in botany, the name by which ſeveral authors call the *viola lunaris*, known in our gardens by the names of *ſatin* and *honeſty*.

BULBOUS, or BULBOSE *plants*, thoſe which have a bulb, or round head in their root. See BULB and ROOT.

Such are tulips, leeks, onions, garlicks, daffodils, hyacinths, crocuſes, *&c.* *Ray*, Synopſ. Stirp. Britan. Gen. 21. p. 228, ſeq. See the article PLANT.

Ray diſtinguiſhes another genus of plants, by their affinity to the *bulbous* kind; ſuch as are the iriſes, orchides, arums, *&c.* Id. ibid. Gen. 22. p. 233, ſeq.

Bulbous roots have a motion of aſcent and deſcent, whereby they obtain different places in the earth, being ſometimes deeper, and ſometimes higher, ſo as to appear in ſome meaſure above ground, as is frequently the caſe of turneps. *Grew*, Anat. Veget. l. 2. P. 1. c. 1. §. 11. p. 59.

Bulbous roots bear an affinity to the perennial ones, and are renewed like them. *Du Hamel*, Hiſt. Acad. Scien. l. 2. ſect. 5. c. 1. p. 177.

The ſeveral rinds or ſcales, whereof bulbs chiefly conſiſt, ſucceſſively periſh, and ſhrink up into ſo many dry thin skins, between which and their center other leaves and ſhells are formed, by which means the bulb is perpetuated. *Grew*, ubi ſupra, p. 61. See PERENNIAL, *Cycl.*

Flowering of BULBOSE *plants*. See the article FLOWERING.

BULBUS *vepictorius*, in the materia medica, the name uſed for the root of the muſcari or muſk-grape plant. *Dale*, Pharm. p. 244.

BULCARD, an Engliſh name for the *galcetta*, or *alauda non criſtata*, of Rondeletius; a ſmall ſea-fiſh caught among the rocks on the Corniſh and other ſhores. *Willughby*, Hiſt. Piſc. p. 133.

BULEF, in botany, a name by which ſome authors call the willow. *Ger.* Emac. Ind. 2.

BULEPHORUS, in the court of the eaſtern emperors, was the ſame officer with *ſummæ rei Rationalis*. *Pancirol.* Notit. Imp. Orient. c. 75. *Schoet.* Ant. Lex. p. 238. See the article RATIONALIS, *Cycl.*

BULEUTÆ, Βουλευται, in the cities of Greece and Aſia, were the ſame with *decuriones* at Rome. *Calv.* Lex. Jur. p. 128. See the article DECURIO, *Cycl.*

The word has been ſometimes alſo uſed to denote ſenators. *Calv.* loc. cit. See the article SENATOR.

BULGARIAN *language*, the ſame with the *lingua Heneta*, or Sclavonic. Vid. *Vogt.* Bibl. Hiſt. Hæreſ. T. 1. p. 135. See the article SCLAVONIC, *Cycl.*

BULGOLDA *lapis*, the name of a ſtone taken out of the head of an animal in America, called by the natives *bulgoldalf*. We have no account of this, but that it poſſeſſes the virtues of the bezoar, as a cordial and reſiſter of poiſons.

BULIMY (*Cycl.*) ſeems the ſame with what is otherwiſe called *furcilla*. Some alſo confound it with the *fames canina*, from which others diſtinguiſh it, in that the canine appetite is attended with vomiting, which the *bulimy* is free from, and the latter is attended with a ſinking of the ſpirits and coldneſs, not perceived in the former. Vid. *Linden.* Exerc. Med. 13. §. 74. *Caſt.* Lex. Med. p. 115. *Quinc.* Lex. Phyſ. Med. p. 61. *Shaw*, New Pract. of Phyſ. p. 177. See the article CANINE.

The *bulimy* is a diſorder of the ſtomach, ſeated either in the fibres thereof, or in the gaſtric liquor. It is incident chiefly to travellers, and is occaſioned by chilling colds, eſpecially in ſevere froſt and ſnow. It begins with a vehement hunger, which going

going off, is ſucceeded by ſwoonings, &c. The beſt remedy againſt it is ſaid to be the ſmell of bread. *Lang.* Epiſt. Med. l. 2. ep. 28. p. 618, ſeq.

Fromundus, relating how he himſelf, by walking long on the ſnow, was ſurprized with the *bulimia*, takes notice, that the chief cauſe of the fainting was in the ſtomach, and that he found, by his own experience, that part diſcompoſed, twitched, and provoked to reachings. He adds, that he thinks the chief cauſe of the *bulimia* to conſiſt in certain ſteams that peculiarly affect the ſtomach, which they gnaw and diſtend. The ſame author notes, that ſtraining to fetch deep coughs, is a preſent remedy in this diſtemper, by diſcharging the ſtomach and lungs of theſe ſnowy ſpirits, which were either attracted in reſpiration, or had ſome other way inſinuated themſelves into thoſe parts. By this it ſeems to appear, that, beſides the cold abſtractedly conſidered, the ſtomach may be peculiarly affected by other attendants of the frigorific corpuſcles, that grow powerful in froſty weather. To this it well agrees, that ſeveral have been ſubject to a *bulimia* in our climate, who endure nothing near ſo great a cold, nor are ſo much diſordered by it, as multitudes of others, who, in Nova Zembla and other frozen regions, never complained of having contracted, even in the midſt of winter, any ſuch diſeaſe. *Boyle*, Philoſ. Works abr. T. 1. p. 696.

BULIMY is alſo leſs properly uſed by modern writers, for any appetite craving and voracious beyond what is natural to the conſtitution. See the article OREXIS.

Dr. Plot mentions a ſtrange *bulimy*, or rather pica, which ſeized one Brian Careſwell of Forton in Staffordſhire, who would gnaw and eat both linnen and woollen; nay, to that height of habit was he brought at length, that he would eat ropes, and the very blankets of the bed whereon he lay; and this not only waking, but the very ſheets and the ſhirt from his back while he ſlept. *Plot*, Nat. Hiſt. Staffordſh. c. 8. §. 62. p. 301.

BULITHOS, Βουλιθος, *Lapis bovinus*, a calculus or ſtone found in the gall-bladder, kidneys, or urinary bladder of oxen.

Inſtances hereof are given by Bromell [a], the Academy Naturæ Curioſorum [b], and other naturaliſts; by which it appears that Ariſtotle was miſtaken in aſſerting, that man alone is ſubject to the ſtone, and enquiring ſolicitouſly into the reaſons hereof [c].—[[a] *Bromell.* Lithograph. Suec. Specim. 1. ſect. 1. c. 2. art. 3. Act. Liter. Suec. an. 1725. p. 74, ſeq. [b] Ephem. Acad. Nat. Cur. Dec. 2. an. 6. [c] *Ariſtot.* Probl. ſect. 10. n. 42. *Caſt.* Lex. Med. p. 115.]

BULKER, a local word, uſed in Lincolnſhire for a beam or rafter. See the article BEAM, *Cycl.* and *Suppl.*

BULL, *Taurus*, in zoology. See the article TAURUS.

One *bull* ſuffices for fifty cows, ſome ſay ſixty. His beſt age is about two, or from one to three, before he arrives at his full growth, when he grows heavy and ſluggiſh. Hence that old rule among countrymen,

He that will have his farm full,
Muſt have an old cock and a young bull.

From that time, being of no further uſe in breeding, he is uſually gelt, and makes what they call a *bull-ſtag*, in the North corruptly a *bull-ſeg*, to be fatted for the market. *Hought.* Collect. T. 1. N° 106. p. 285, ſeq.

Among the antients, thoſe who triumphed, ſacrificed a *bull*, when they arrived at the Capitol. *Bulls* were offered to Apollo and Neptune. It was held a crime to ſacrifice them to Jupiter, tho' we do not want inſtances of that practice. *Pitiſc.* Lex. Antiq. T. 2. p. 904, ſeq.

Bulls were ranked by the Romans in the number of military rewards. *Aquin.* Lex. Milit. T. 2. p. 347. voc. *Taurus.* *Liv.* l. 7 & 26.

Perillus's BULL was a hollow brazen engine of torture, in the ſhape of that quadruped; wherein perſons being ſhut up, and fire applied, their cries imitated the roaring of a *bull*. *Salmuth.* ad Pancirol. P. 1. tit. 48. p. 225.

BULLS *blood*, freſh drawn, is a powerful poiſon, as coagulating in the ſtomach. See the article BLOOD.

BULLS *gall* is an intenſe bitter, more pungent and acrimonious than that of any other animal; whence it is ſometimes uſed to deſtroy worms. *Junck.* Conſp. Therap. tab. 11. p. 339. See the article GALL.

Bannal BULL, denotes a *bull* kept by a lord, who has a right to demand all his tenants to bring their cows to be ſerved by him. See the article BANNALIS.

Free BULL, according to Du Cange, ſignifies the ſame with *bannal bull*. Hence *tauri liberi libertas*; which, however, ſhould rather ſeem to denote a privilege of keeping a *bull* independent of the lord. *Du Cange*, Gloſſ. Lat. T. 4. p. 1075. voc. *Taurus.*

Wild BULLS. The wild *bulls*, now ſo numerous on the continent of America, are ſaid to have ſprung from one *bull* and ſeven cows, which were carried thither by ſome of the firſt conquerors.

In the iſland of Hiſpaniola, the French buccaneers purſue *bulls* with dogs, and kill them with fire-arms. At Buenos Ayres, the Spaniſh tauradors chaſe them on horſeback, armed with a long lance, at the end of which is a half-moon of ſharp ſteel. Having drawn a number of the horned kind together, they let the cows eſcape, but dexterouſly take the *bulls* with their half-moons on the hind legs, by which, diſabling them from flight, they are eaſily diſpatched. *Savar.* Dict. Comm. T. 2. p. 1685, ſeq. voc. *Taureau.*

BULL-*fighting*, a ſport or exerciſe much in vogue among the Spaniards and Portugueze, conſiſting in a kind of combat of a cavalier or torador againſt a wild *bull*, either on foot or on horſeback, by riding at him with a lance.

The Spaniards have *bull-fights*, *i. e.* feaſts attended with ſhews, in honour of St. John, the Virgin Mary, &c. *Beem.* Hiſt. Orb. Terr. P. 2. c. 1. §. 18. p. 468, ſeq.

This ſport the Spaniards received from the Moors, among whom it was celebrated with great eclat. Some think, that the Moors might have received the cuſtom from the Romans, and they from the Greeks. Dr. Plot is of opinion, that the Ταυροκαθαψιων ἡμεραι amongſt the Theſſalians, who firſt inſtituted this game [a], and of whom Julius Cæſar learned and brought it to Rome [b], were the origin both of the Spaniſh and Portugueſe *bull-fighting*, and of the Engliſh *bull*-running [c].—[[a] *Prid.* Not. ad Marmor. Ταυροκαθαψιων, inter Marmor. Oxon. [b] *Plin.* Hiſt. Nat. l. 8. c. 45. *Suet.* in Claud. c. 21. n 8. *Pitiſc.* Lex. Ant. T. 2 p. 904, ſeq. voc. *Taurus.* [c] *Plot*, Nat. Hiſt. Stafford. c. 10. §. 76. p. 440.]

The practice was prohibited by pope Pius V. under pain of excommunication, incurred *ipſo facto* But ſucceeding popes have granted ſeveral mitigations in behalf of the toradors. Trev. Dict. Univ. T. 5. p. 723. voc. *Toreador.*

BULL-*running*, denotes a feudal cuſtom obtaining in the honour of Tutbury in Staffordſhire, where antiently, on the day of the aſſumption of our Lady, a *bull* is turned looſe by the lord to the minſtrels, who, if they can catch him before he paſſes the river Dove, are to have him for their own, or, in lieu thereof, to receive each forty pence; in conſideration of which cuſtom they pay twenty pence yearly to the ſaid lord. *Plot*, lib. cit. p. 439, ſeq.

BULL, in aſtronomy, the conſtellation *Taurus*. See the article TAURUS, *Cycl.*

BULL's-*eye*, in meteorology, a little dark cloud, rediſh in the middle, chiefly appearing about the Cape of Good Hope; thus denominated by the Portugueſe, who, on the appearance of it, inſtantly take down their ſails, as knowing that a terrible ſtorm of thunder, lightning, and a whirlwind, is at hand. *Chauv.* Lex. Phil. p. 454. voc. *Oculus Tauri.*

BULL-*finch*.—This is a very pernicious bird in gardens and orchards. They feed on the young buds of trees in ſpring, which contain the bloſſoms for the ſummer's fruit. The black-thorn, or ſloe-tree, is the great favourite of the *bull-finch*, and keeps him employed in the hedges in mild weather; but if the latter end of the winter have been ſevere, and theſe ſhrubs are backward of their buds in February, he then comes into the gardens, the trees growing there being forwarder than thoſe in the field in a cold ſpring; they will ſometimes come in ſuch numbers as to take off all the buds from the currants, plums, &c. in the gardens of a whole town in a few days.

He is ſo bold a bird, that no ſcarecrow, or other means that can be deviſed, can deter him; his great favourite in the garden is the damſon tree, and he will feed upon this while a perſon comes almoſt cloſe up to him. It is very eaſy to ſhoot theſe birds; but the buds and young branches are uſually much injured by this method, and the beſt way ſeems to be to dawb over the twigs in many places with bird-lime. *Mortim.* Huſb. p. 324.

BULL-*head*, the Engliſh name given to a ſmall fiſh of the cottus kind, found very frequently in ſhallow running waters, and called by the antients *bætus* and *cætus*.

Bellonius, and many others, have called it ſimply *cottus*, and ſome others *cottus capitatus*, the headed cottus, from the bigneſs of the head in proportion to the body; but its moſt uſual name, though a very improper one, is *gobius capitatus*, and Geſner has called it *gobius fluviatilis*, the name of the common gudgeon. It is diſtinguiſhed by Artedi by the name of the ſmooth cottus, without ſcales, and with two ſpines upon the head. *Artedi* Gen. Piſc. p. 34. See the articles COTTUS, and GOBIUS *capitatus*.

BULL-*trout*, an Engliſh name for a fiſh of the ſalmon kind, caught in many of the rivers of England, and more uſually called the *ſcurf*. *Willughby*, Hiſt. Piſc. p. 193. See the article SCURF.

BULL, BULLA, is alſo uſed, in middle age writers, for a ſeal hung to the letters, eſpecially of a prince. *Montfauc.* Palæogr. l. 6. Prol. p. 378. *Du Cange*, Gloſſ. Lat. T. 1. p. 638. *Suic.* Theſ. Eccleſ. T. 1. p. 706. voc. Βελλα. See the article BULL, *Cycl.* and *Suppl.*

Hence alſo the word *bullare*, uſed for ſealing, and *doctores bullati*, for thoſe admitted to the degree, by virtue of diplomata of princes, without undergoing the regular exerciſes and examination. *Du Cange*, Gloſſ. Lat. T. 1. p. 643.

We meet with four kinds of theſe *bulli*, or *bullæ*, golden, ſilver, waxen, and leaden, all in uſe among the emperors and kings of the middle and barbarous ages [a]. In ſome, the impreſſion is made on the ſolid metal itſelf; in others on wax, and only incloſed in a metalline box, or caſe [b].—[[a] *Kirchman.* de Annal. c. 8. p. 51, ſeq. *Nicol.* de Sigill. c. 43. §. 2. *Pitiſc.* Lex. Ant. T. 1. p. 302. in voc. *Fabr.* Theſ. p. 384. [b] *Spelm.* Gloſſ. p. 90.]

Sealing with metals is an illuſtrious privilege, belonging only to princes, tho' aſſumed alſo by prelates, as princes of the church. The doges of Venice durſt not arrogate this honour, till leave was given them by pope Alexander III. about the year 1170, to ſeal their diplomata with lead. Id. ibid. p. 91.

BULL, *Bulla*, is alſo a denomination given to the letters patents and diplomata themſelves, on account of the large ſeal of wax, ſometimes incloſed in a golden, ſilver or leaden box, faſtened to the ſame. *Du Cange*, Gloſſ. Lat. T. 1. p. 638.

Golden BULLS, Χρυσοβεῦλλαι, were in uſe among the eaſtern emperors for a conſiderable time, leaden ones being confined to matters of ſmaller moment. Spelman mentions a golden *bull*, in a treaty of alliance between our Henry VIII. and Francis I. of France; and there are other inſtances in Du Cange and Altaſerra. We alſo find them in uſe among the kings of Italy, Sicily, Spain, *&c.* but they chiefly obtained among the emperors of Germany. On ſome occaſions the popes alſo ſealed their letters with golden *bulls*. Rainaldus aſſures, this was never done but in the confirmation of an emperor of Germany; yet Spelman relates, that the inſtrument whereby Clement VII. gave king Henry VIII. the title of defender of the faith, had a golden *bulla* affixed to it. Vid. *Spelm.* Gloſſ. p. 89. *Du Cange*, lib. cit. p. 639, ſeq. Ejuſd. Gloſſ. Græc. T. 1. p. 217. *Montfauc.* ubi ſupra.

Silver BULLS, Αργυροβεῦλλαι, were not in ſo frequent uſe, though we do not want inſtances of them.

Leaden BULLS, Μολιβδοβεῦλλαι, were ſent by the emperors of Conſtantinople to deſpots, patriarchs and princes; and the like were alſo uſed by the grandees of the imperial court [a], as well as by the kings of France, Sicily, *&c.* and by biſhops, patriarchs, and popes [b]. It is to be obſerved, the leaden *bulls* of theſe latter had on one ſide the name of the pope or biſhop inſcribed [c].—[[a] *Spelm.* ibid. p. 90. *Du Cange*, Gloſſ. Græc. p. 218. [b] *Montfauc.* ubi ſupra, p. 379. [c] Vid. *Fiodoard.* Hiſt. Remenſ. Eccl. l. 3. c. 17. *Spelm.* p. 89. *Du Cange*, Gloſſ. Lat. T. 1. p. 642.]

Polydore Virgil makes pope Stephen III. the firſt who uſed leaden *bulls*, about the year 772. But others find inſtances of them as early as Silveſter, Leo I. and Gregory the Great. The later popes, beſides their own names, ſtrike the figures of St. Peter and St. Paul on their *bulls*; a practice firſt introduced by pope Paſchal II. But why, in theſe *bulls*, the figure of St. Paul is on the right, and that of St. Peter on the left ſide, is a queſtion which has occaſioned many conjectures and diſputes. Vid. *Matth. Paris*, an. 1237. *Leo Allat.* de Conſenſu utriuſque Eccleſ. l. 1. c. 6. *Aleman.* de Læva & Dextra. *Du Cange*, loc. cit. p. 643.

Waxen BULLS, Κηρυβεῦλλαι, are ſaid to have been firſt brought into England by the Normans [a]. They were in frequent uſe among the Greek emperors [b], who thus ſealed letters to their wives, mothers, and ſons. Of theſe there were two ſorts, one red, the other green [c].—[[a] *Du Cange*, Gloſſ. Lat. T. 1. p. 643. [b] *Montfauc.* ubi ſupra. [c] *Spelm.* ib. p. 90. *Du Cange*, Gloſſ. Græc. T. 1. p. 218.]

BULLA, (*Cycl.*) in antiquity, a golden ornament, of a globular figure, and hollow within, wherein was contained ſome amulet, to ſerve as a preſervative from witchcraft and envy, hung about the neck by thoſe who triumphed among the Romans; and alſo by the children of the patricians, and even ingenui, as a badge of their hereditary nobility and freedom, by which they might be animated to behave themſelves worthy of their birth. *Kenn.* Rom. Ant. Not. P. 2. l. 5. c 8. p. 309. *Pitiſc.* Lex. Ant. T. 1. p. 301. *Aquin.* Lex. Milit. T. 1. p. 142. *Calv.* Lex. Jur. p. 128.

The word is Latin, originally ſignifying a bubble of water; to which theſe ornaments bore a reſemblance in figure [a]. Juvenal calls the *bulla*, *Etruſcum aurum*, by reaſon it had been firſt borrowed from the Hetrurians [b].—[[a] *Iſid.* Orig. l. 19. c. 31. *Dictæ bullæ quod ſint ſimiles rotunditate bullis quæ in aqua vento inflantur.* [b] *Juven.* Sat. 5. v. 164. *Fab.* Theſ. p. 384.]

Pliny refers the original of this ornament to the elder Tarquin, who gave the *bulla* to his ſon, on ſome extraordinary courage he had ſhewn at fourteen years of age, in the war againſt the Sabines [c]; in imitation of whom it was afterwards aſſumed by the patricians. Others maintain, that the *bulla* was given by that king to the ſons of all the patricians who had born civil offices [d]. Laſtly, others allege, that Romulus firſt introduced the *bulla*, and gave it to Hoſtus Hoſtilius, the firſt child born of the rape of the Sabines [e].—[[c] *Plin.* Hiſt. Nat. l. 23. c. 1. [d] *Macrob.* Saturn. l. 1. c. 6. [e] *Pigh.* Annal. l. 1. p. 44. *Voſſ.* Etym. in voc. *Pitiſc.* loc. cit. *Kenn*, ubi ſupra.]

As to the figure of the *bulla*, it ſeems to have been flat in the ſide next the breaſt, and round, or emboſſed on the other. Plutarch compares it to the figure of a half-moon [f]; Macrobius indeed ſeems to make it of the figure of a heart [g], tho' his words may bear another ſenſe. Danet aſſures, it was ſometimes flat like a medal, and ſometimes in the form of the privy parts of men, as well as beaſts [h]. But this ſeems to be, to confound the *bulla* with other περιαπτα. What puts their form beyond doubt, is a golden *bulla* lately found in a mauſoleum in the ruins of the city Tibur; of which we have figures given by M. de la Chauſſe, and Sig. Ficoroni, in his *Muſeum Romanum*, in a diſſertation expreſs *della bolla d'or* [i]. 'Tis ſuppoſed to have been a triumphal *bulla*, which ſeems to have been larger than that worn by children.—[[f] *Plut.* Quæſt. Rom. 99. [g] *Macrob.* Saturn. l. 1. c. 6. [h] *Pitiſc.* Lex. Ant. T. 1. p. 301. [i] Hiſt. Acad. Inſcr. T. 2. p. 350, ſeq.]

The *bulla* was not allowed to the children of ſlaves, or even of *liberti*, who, in lieu thereof, wore a leather collar round the neck, much after the manner of the purple ſtring to which the *bulla* was hung. But the great veſtal, and the Roman ladies, wore a *bulla*; the former by way of diſtinction, the latter as a piece of dreſs [k]. We may add, that *bullæ* were ſometimes allowed to ſtatues; whence the phraſe, *ſtatuæ bullatæ*. M. Lepidus, having killed an enemy, and ſaved a citizen, even when a boy, had a *bullated* ſtatue erected to him in the capitol, in memory of the exploit [m]. The Roman youth laid aſide the *bulla* together with the *prætexta*, and conſecrated it to the *Lares*, when they arrived at their fifteenth year, as appears from the Satyriſt [n],

Cum primum pavido cuſtos mihi purpura ceſſit,
Bullaque ſuccinctis Laribus donata pependit.

[[l] Hiſt. Acad. Inſcr. T. 2. p. 352. [m] *Valer. Max.* l. 3. c. 1. *Tigrell.* de Stat. Rom. c. 20. [n] *Perſ.* Sat. 5. v. 30.]

M. Baudelot takes the *bulla* to have been a taliſman, inſcribed with characters and figures under certain conſtellations. The conjecture ſeems ſupported by the account given by Macrobius, *Bulla geſtamen erat triumphantium, quam in triumpho præ ſe gerebant, incluſis infra eam remediis, quæ crederent adverſus invidiam valentiſſima.* The like may be ſaid of the *bullæ* worn by children, to defend them from evil genii, and other dangers, or, as Varro expreſſes it, *Ne quid obſit.* Hence Aſconius, on a paſſage in Cicero's firſt Verrina, where mention is made of it, aſſures that theſe *bullæ*, on the breaſts of children, are as a rampart which defends them, *ſinus communiens, pectuſque puerile.* Mem. Acad. Inſcript. T. 3. p. 476, ſeq.

BULLA was alſo a denomination given to divers other metalline ornaments made after the form of *bullæ*.

In which ſenſe, *bullæ* ſeem to include all golden and ſilver ornaments of a roundiſh form, whether worn on the habits of men, the trappings of horſes, or the like [a]. Such were thoſe decorations uſed by the antients on their belts and doors [b]. Virgil [c], ſpeaking of Pallas's belt or girdle, ſays,

Notis fulſerunt cingula bullis
Pallantis pueri.

[[a] *Aquin.* Lex. Milit. T. 1. p. 142. *Du Cange*, Gloſſ. Lat. T. 1. p. 637, ſeq. [b] *Sagittar.* de Januis Veterum, p. 175. *Taubman.* ad Plaut. Aſinar. Act. 2. Sc. 4. v. 20. *Fabr.* Theſ. p. 384. [c] *Virg.* Æn. l. 12. v. 942.]

The *bullæ* of doors were a kind of large headed nails faſtened on the doors of the rich, and kept bright with great care. The doors of temples were ſometimes adorned with golden *bullæ* [d]. Mr. Baudelot takes the *bullæ* worn by ſoldiers on their belts, as ſomething more than mere ornaments. They ſeem to have been conſidered as preſervatives from dangers and diſcaſes, and even means of acquiring glory, and other advantages [e]. And the like may perhaps be extended to the *bullæ* on doors, which were probably placed there as a ſecurity to them from being broken or violated.—[[d] *Pitiſc.* Lex. Ant. T. 1. p. 302. voc. *Bulla*. [e] Mem. Acad. Inſcr. T. 3. p. 477.]

BULLA alſo denoted a table hung up in the public courts, to diſtinguiſh which days were *faſti* and which *nefaſti*; anſwering in ſome meaſure to our calendar. *Petron.* c. 30. *Lotich.* ad eund. *Pitiſc.* Lex. Ant. T. 1. p. 302. See the article CALENDAR.

BULLARII, in the court of Rome, the makers or drawers of bulls or conſtitutions. *Du Cange*, Gloſſ. Lat. T. 1. p. 644. See the the article BULL.

BULLARY, *Bullarium*, a collection of papal bulls. See the article BULL, *Cycl.* and *Suppl.*

We have extant divers kinds of *bullaries*; ſome containing only the bulls of particular popes; ſuch are the *bullaries* of Innocent XII. and Clement XI. Others contain the bulls granted to particular communities; ſuch is the *bullary* of the order of Cluny, *&c.* *Fabric.* Bibl. Lat. Med. Æv. l. 2. p. 816—822.

Arrhenius has given a Sueco-Roman *bullary*, or collection of all the bulls ſent into Sweden. Maracci promiſed a *Bullarium Marianum*, or collection of bulls in honour of the worſhip of the Virgin Mary.

A general *bullary* of all the papal conſtitutions from Gregory VII. to Sixtus Quintus, was compiled by order of pope Sixtus Quintus, in 1586 [a]; ſince which has been publiſhed a great *bullary*, by Laert. Cherubin, containing the bulls of all the popes from Leo the Great, in 440, to Paul V. in 1559 [b]; ſince continued by Ang. Cherubin to the year 1644 [c], and by Ang. a Lantuſca and Jo. Paulus to the year 1676 [d]; and, laſtly, by an anonymous editor to the time of Benedict XIII. under the title of *Bullarium magnum Romanum* [e]. We have the ſame digeſted in a new method by Bouchardus; a commentary on it begun by Vinc. Petra, and a ſummary of it by Novarias [f].—[[a] Rom. 1586. fol. cum Rubr. Laert. Cherub. [b] Rom. 1617. fol. 3 vol. [c] Rom. 1638. 4 vol. fol. & Lugd. 1655. fol. It. Rothom. in 6 vol. additis Conſtit. Innocent. X. [d] Rom.

1672. 6 vol. fol. & Lugd. 1697. fol. in qua nonnulla omiſſa. [e] Luxemb. 1728. 8 vol. fol. cui poſtea acceſſit nonum volum. ſupplementorum omiſſorum in omnibus edit. [f] Vid. *Fabric.* Bibl. Med. Ævi Lat. l. 2. T. 1. p. 816—822.]

BULLET (*Cycl.*)—*Bullets* ſhot into the water undergo a refraction; ſeveral experiments concerning which are given by Mr. Carré. Vid. Mem. Acad. Scienc. an. 1705. p. 277.

Bullets are caſt in iron-moulds. See BULLET-*mould*, and BULLET-*bore*, *infra*.

The extraction of *bullets* from wounds is an operation deſcribed by chirurgical writers [a]. *Bullets* ſometimes remain eaſy in the body during many years [b]. Agricola aſcribes great virtues to the *bullet* wherewith a deer has been killed, which is repreſented as a ſpecific againſt the parotides [c], ganglia [d], *&c.*—[[a] *Junck* Conſp. Chirurg. tab. 80. p. 544, ſeq. [b] Id. ibid. p. 543 [c] *Joh. Agric.* Chirurg. Parv. ap. Junck. lib. cit. tab. 20. p. 147. [d] *Junck.* ib. tab. 24. p. 165.]

Swallowing of muſket-*bullets* is ſometimes practiſed to remove iliac and colic pains. Mr. Young gives a caſe wherein this had a terrible effect: the *bullet* happening to miſs its way down, and, inſtead of the oeſophagus, got into the trachea [e]. Mr. Chirac has a diſſertation expreſs on the queſtion, which of the two is ſafer in iliac caſes, to ſwallow leaden *bullets*, or crude mercury? He gives the preference to the *bullets* [f].—[[e] Vide *Hook.* Cutl. Lect. 2. Com. p. 105. [f] Phil. Tranſ. N° 263. p. 567.] See the article ILIAC, *Cycl.*

BULLET-*moulds* conſiſt of two concave hemiſpheres, with a handle whereby to hold them; and between the hemiſpheres is a hole, called a gate, at which to pour in the melted metal. The chaps or hemiſpheres of *bullet-moulds* are firſt punched, being blood-red hot, with a round ended punch, of the ſhape and nearly of the ſize of the intended bullets. To cleanſe the inſides, they make uſe of a *bullet-bore*.

BULLET-*bore*, is a ſteel ſhank, having a globe at one end, wherewith to bore the inſide of a mould clean, of the ſize intended. *Moxon.* Mechan. Exerc. P. 1. p. 52—55.

BULLET-*iron*, a denomination given by ſome to Spaniſh or Swediſh bars of iron. *Hought.* Collect. N° 275. T. 2. p. 229. See the article IRON.

BULLIMENTA, is uſed by ſome chemiſts for the waſhings and ſcourings of gold, or ſilver veſſels, in proper liquors, to render them brighter. *Libav.* Synt. Arc. Chem. l. 1. c. 24. *Caſt.* Lex. Med. p. 115.

BULLIMONY, BULLIMONG, BOLLIMONY, or BOLLIMONG, denotes a mixture of ſeveral ſorts of grain, as oats, peaſe, and vetches, called alſo *maſlin* or *mong-corn*. *Kenn.* Gloſſ. ad Paroch. Antiq. voc. *Bulter.* Dict. Ruſt. T. 1. in voc.

BULLION (*Cycl.*)—The word is apparently formed from the French *billon*, a maſs of gold or ſilver below ſtandard, which Du Cange derives further from *billa*, as being *aurum aut argentum in maſſam ſeu billam*, i. e. *baculum conflatum*. Trev. Dict. Univ. T. 1. p. 1044, ſeq. voc. *Billon.*

Silver *bullion* is ſometimes alſo denominated plate. See the article PLATE, *Cycl.* and *Suppl.*

By the Scottiſh laws, the cuſtoms in the exportation of goods were to be paid in *bullion*. Skene gives an A, B, C, of *bullion*, expreſſing the quantities thereof which the merchants were to pay for goods exported out of the realm. *Sken.* de Verb. Signif. p. 32.

BULLITION, is uſed for the effect ariſing upon the mixture of different liquors, which often is a quantity of bubbles, or froth. *Grew*, Diſc. of Mixt. Lect. 2. c. 1. §. 6.

BULTEL, the bran or refuſe of meal after dreſſing.

The word is formed from the barbarous Latin, *bultellus*, or *bultellum*, a ſearce or boulter. *Matth. Paris*, an. 1202. p. 145. *Du Cange*, Gloſſ. Lat. T. 1. p. 636. voc. *Buletellum.* Item, p. 644. voc. *Bultellus.*

BULTEL alſo denotes a bag wherein meal is dreſſed, called alſo a *bulter*, or rather *boulter*.

BULTER-*cloth*, a linnen or hair-cloth for ſifting or ſearching of meal or flour. See the articles BOLTER, and BOLTING.

BUMBUNNY, in botany, a name given by the people of Guinea to a plant common in that place, which ſerves them as an emetic; they boil a few of the leaves in water, and drink this liquor, which vomits very eaſily. Phil. Tranſact. N° 232.

BUN, the dry kexe, or ſtalk of hemp, ſtripped of its rind. *Hought.* Collect. N° 347. T. 2. p. 391. See HEMP.

BUN is alſo a denomination by ſome given to coffee. *Houghton*, ibid. N° 458. T. 3. p. 126. See COFFEE, *Cycl.*

BUNCH, a cluſter or aſſemblage of certain things, as of grapes.

BUNCH alſo denotes a tumour, or protuberance, natural or preternatural, either on an animal or vegetable body. See the article TUMOUR, *Cycl.* and *Suppl.*

The *bunch* growing about the graft of a plant is a ſort of callus formed by the extravaſated ſap. Mem. Acad. Scienc. an 1705. p. 453. See the article ENGRAFTING, *Cycl.* and GRAFTING, *Suppl.*

Camels have one *bunch* on their backs, dromedaries two [a]; though we are told of a ſort of camels in Turkeſtan, which have two *bunches* each, one before the other, the foremoſt being about half a foot high, and the hindmoſt leſs [b].—[[a] Trev. Dict. Univ. T. 1. p. 1129. voc. *Boſſe.* [b] Mem. Acad. Scienc. an. 1693. p. 315.]

Bunches of camels are not formed by the curvity of the ſpina dorſi, which is no higher in this than in other parts, but is a mere fleſhy excreſcence, of a glandulous ſubſtance, much like the udders of other animals, or the tails of thoſe ſheep in Barbary, which weigh from twenty to twenty-five pounds. Mem. Acad. Scienc. an. 1693. p. 316.

BUNCH, in chirurgery, denotes an elevation of the back, ariſing from an exterior luxation of the vertebræ thereof.

The cure is begun by keeping emollients a long time on the vertebræ, whereby to looſen the ligaments, and finiſhed by wearing an iron boddice, which compreſſing the vertebræ, by degrees drives them back to their natural ſituation. *Le Clerc*, Treat. Oper. Luxat. c. 6. Comp. Surg. p. 262. *Van-horn*, Microt. §. 19. p. 63.

Naturaliſts ſpeak of a kind of *bunch*, or *hump-backed* whale, different from that which yields the *ſperma ceti*. Phil. Tranſ. N° 387. p. 258. See the article WHALE.

We are alſo told of *bunch-backed* kine at Quivira, having large prominences on their fore-ſhoulders. *Hought.* Coll. N° 106. T. 1. p. 283.

BUNCHES in horſes, called alſo *knobs*, *warts*, and *wens*, are diſeaſes ariſing from foul meat, bruiſes, hard labour, or the like; whereby the blood becoming putrefied and foul, occaſions ſuch excreſcences. Dict. Ruſt. in voc.

BUNCHED *cods*, among floriſts, are thoſe which ſtand out, and wherein the ſeed is lodged. Dict. Ruſt. T. 1. in voc.

BUNCHED *roots*, thoſe round roots which have knobs or knots in them. Dict. Ruſt. T. 1. in voc. See ROOT, and BULB.

BUNG, the ſtopple of a caſk, barrel, or the like. See the article CASK, *Cycl.*

The *bung* is a wooden plug, ſerving to ſtop the hole left in the top of a veſſel to be filled by. It anſwers to what, among the antients, was called *epiſtomium*, and in the middle age *ſigillus*, the ſeal of a veſſel, by reaſon in thoſe days it was uſually ſealed. *Du Cange*, Gloſſ. Lat. T. 4. p. 856. voc. *Sigillus.*

The name *bung* is alſo given to the hole itſelf, otherwiſe called *bung-hole*.

After tonning new wine, or cider, the *bung* is uſually left open for ſome time, that when the liquor comes to work, there may be vent for the froth or ſcum, and that the hoops may not be in danger of being burſt by the violence of the fermentation. Yet, in ſome caſes, they leave wines to ferment, without giving them vent by the *bung*, in order to render them more briſk and ſpirituous: in which caſe, it is neceſſary the veſſel be hooped with iron, and other precautions taken that the *bung* do not fly. *Savar.* Dict. Comm. T. 1. p. 401. voc. *Bondon.*

BUNK, or BUNKEN, a word frequently occurring in the writings of the Arabian phyſicians. We do not at this time certainly know what it was; but ſo far is plain, that it was an aromatic root uſed in cardiac, ſtomachic, and carminative compoſitions.

BUNT (*Cycl.*)—If a ſail have too much *bunt*, it will hang too much to the leeward-wind, as they call it, and hold much leeward-wind, which will hinder the ſhip's ſailing, eſpecially by the wind: on the contrary, if it have too little, it will not hold wind enough, and ſo not give the ſhip ſufficient way [a]. Seamen all agree, that a bellying or *bunting* ſail carries a veſſel faſter to the windward than a ſtrait or faſt ſail: the contrary of which is aſſerted by Dr. Hooke, who has a diſcourſe expreſs, to ſhew the preference of ſtrait to *bunting* ſails [b].—[[a] *Manwayr.* Seam. Dict. p. 17. [b] Vid. *Hooke*, Poſthum. Works, p. 563, ſeq.]

BUNTING, in zoology, the common Engliſh name of the *emberiza alba*, called by others *calandra*, *conchramus alaudæ congener*, and *ſtrozello*, or *ſtrillozzo*. It is of the hortulanus kind, having a very large tubercle, or hard prominence on the upper chap. Its hinder-toe is long, but the claw of it is more crooked and ſhorter than in the lark. It is all over of a pale brown on the back, and of a ſomewhat yelloviſh hue on the breaſt and belly; the throat is variegated with ſome longiſh black ſtreaks. It feeds on corn and other ſeeds, and ſings very ſweetly, uſually ſitting on the top branches of trees. *Ray's* Ornithology, p. 195.

BUONACCORDO, a ſmall ſtringed muſical inſtrument, reſembling a ſpinet, uſed by children to learn to play on, by reaſon of the ſhortneſs of their fingers. *Galil.* Dial. dell. Muſ. Ant. & Mod. p. 61, ſeq. *Walch.* Muſ. Lex. p. 119.

The word is Italian, where it properly denotes a harpſichord. Vocab. Cruſc. T. 2. p. 248. See the article HARPSICHORD, *Cycl.*

BUOYANT, denotes a thing floating, or apt to float. Hence alſo to *buoy up a cable*, is to make faſt a piece of floating wood, barrel, or the like, to it, ſomewhere near the anchor, that the cable may not touch the ground, when that is ſuſpected to be foul or rocky, for fear of fretting and cutting the cable. *Botel.* Sea. Dial. 4. p. 242.

BUPHONIA, Βυφονια, in antiquity, an Athenian feaſt or ceremony, denominated from a bullock ſlain therein, with quaint formalities.

The *buphonia* was properly a part or appendage of the ceremony of the *diipolia*. See the article DIIPOLIA.

For the origin of the *buphonia*, we are told it was forbidden by the laws of Attica to kill an ox: but it once happened, at the feaſt of the *diipolia*, that an ox eat the corn, others ſay the cakes, which had been dreſſed for the ſacrifice. Thaulon the

prieſt, enraged hereat, preſently killed him, and fled for it. On which the Athenians, fearing the reſentment of the gods; and feigning themſelves ignorant who had committed the fact, brought the bloody axe before the judges, where it was ſolemnly arraigned, tried, found guilty, and condemned. And, in memory of this event, a feaſt was inſtituted under the denomination of *buphonia* [a]. In which it was ſtill cuſtomary for the prieſt to fly, and judgment to be given about the ſlaughter of the ox [b].—[[a] *Suid.* Lex. T. 1. p. 450. *Meurſ.* Attic. Lect. l. 6. c. 22. *Schoettg.* Lex. Ant. p. 244. [b] *Potter*, Archæol. Græc. T. 1. l. 2. c. 20. p. 381.]

Pauſanias relates, that the axe was brought in not guilty [c]. Ælian, on the contrary, reports, that the prieſt and people preſent at the ſolemnity (for they alſo were accuſed as being acceſſary to the fact) were acquitted, but the axe condemned [d].—[[c] *Pauſan.* in Attic. c. 28. p. 70. [d] *Ælian.* Var. Hiſt. l. 8. c. 3. Vid. *Pott.* loc. cit.]

In the *buphonia*, certain cakes, of the ſame ſort with thoſe uſed at ſacrifices, were placed on a table of braſs; round this they drove a ſelect number of oxen, of which he that eat any of the cakes was preſently ſlaughtered; three families were peculiarly retained in this ceremony; they whoſe duty it was to drive the oxen, were called βουτυποι; they who knocked him down, βουτυποι, being deſcended from Thaulon; and thoſe who ſlaughtered and cut him up, δαιδοχοι, butchers or cooks. *Lakemak.* Antiq. Græc. Sacr. P. 4. c. 2. §. 8. p. 599, ſeq. *Pott.* ubi ſupra.

BUPHTHALMUM, *Ox-eye*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the radiated kind; its diſk is compoſed of a number of floſcules, which are ſeparated from one another by ſmall imbricated leaves; the outer circle is compoſed of ſemifloſcules; all theſe are placed upon the embryo-ſeeds, and all contained in one general cup, of a ſquammoſe ſtructure. The embryos finally ripen into long and ſlender ſeeds, of an angular figure. To this it is alſo to be added, that the whole plant has its peculiar appearance, which readily diſtinguiſhes it from all the others of the radiated claſs.

The ſpecies of *buphthalmum*, enumerated by Mr. Tournefort, are theſe. 1. The tawny-leaved *buphthalmum*. 2. The tawny-leaved *buphthalmum*, with white flowers. *Tournefort*'s Inſtit. p. 495.

An infuſion of the flowers of this plant is ſaid to be an excellent diuretic, and the leaves are eſteemed vulnerary; but neither are now in uſe.

BUPHTHALMUS, in botany, a name given by ſome of the antients to the common great houſeleek, or *ſedum majus*, from the manner of its growing in cluſters, reſembling the eyes of large animals.

BUPRESTES, a ſort of oblong cantharides, of a ſtinking ſmell, and very ſevere bite; it is of the ſame nature with the common cantharides, or Spaniſh fly, and is ſaid to do great injury to the cattle, which, feeding, chance to eat it.

BURACO *de velta*, in zoology, the name of a fiſh caught on the ſhores of the Braſils, and more uſually known among authors by its Braſilian name *guaibi coara*. *Ray*'s Ichthyology, p. 315. See the article GUAIBI *coara*.

BURBARUS, in ichthyology, a name given by Paul Jovius, and ſome other writers on fiſhes, to the common carp. See the article CYPRINUS.

BURBER, an Egyptian piece of money. It is a thick piece of copper, about as broad as a ſixpence; twelve of theſe make a *medine* there. *Pocock*'s Egypt, p. 175.

BURBOT, the Engliſh name of the *muſtela fluviatilis*; a fiſh common in the Trent, and many other of our rivers, and called in other places the eel-pout. *Willughby*'s Hiſt. Piſc. p. 125.

BURCA, among the Turks, the name of the rich covering of the door of the houſe at Mecca; it is ten feet long, and five wide; and there are ſeveral figures and Arabic letters on it, very richly embroidered in gold, on a ground of red and green. This is carried about in their ſolemn proceſſions, and is often made to ſtop, that the people may touch it.

BURDA, in ſome middle age writers, denotes a garment made of ruſhes. *Du Cange*, Gloſſ. Lat. T. 1. p. 645.

BURDACK, an Ægyptian veſſel, which ſheep uſually drink out of at Cairo. They are made of a peculiar ſort of earth, which is ſuppoſed to cool the water, and are always ſet out to the north, to keep the cooler, and covered with a ſtrainer, to prevent any thing falling into the water; they are of ſo porous a ſtructure, that the water put into them will get through them in a few days. *Pocock*'s Egypt, p. 186.

BURDEN (*Cycl.*)—The uſual rule whereby a ſhip's *burden* is diſcovered, is, that it will commodiouſly bear a weight equal to that of half the water which would fill its capacity. But this rule is not demonſtrative, and ſome depart from it as unexact, allowing only two fifths, or even one third of the water, for the ſhip's *burden*. Mem. Acad. Scienc. an. 1721. p. 125, ſeq.

Ships of BURDEN, denote thoſe of the larger and heavier ſort, carrying 500 tons, or upwards.

BURDO, in phyſiology, a mongrel beaſt of burden, produced by a horſe and a ſhe-aſs, by which it is diſtinguiſhed from the mule, which is that produced of a male aſs by a mare. *Briſſ.* de Verb. Signif. p. 87. *Calv.* Lex. Jur. p. 128. *Pitiſc.* Lex. Ant. T. 1. p. 302. See the article MULE, *Cycl.* and *Suppl.* The liver and teſticles of the *burdo* are greatly commended by Aldrovand, and ſome other authors, as medicines, but now never uſed. *Aldrovand.* de Quadr.

BURDO, or BURDON, in middle age writers, denotes a pilgrim's long ſtaff, as doing the office on that occaſion of a mule, or other vehicle. Vid. *Caſeneuv.* Orig. p. 27. voc. *Bourdon.* *Du Cange*, Gloſſ. Lat. T. 1. p. 646. voc. *Burdo.*

BURDONARII, an appellation ſometimes given to pilgrims, or thoſe who went out of devotion to the holy land. *Du Cange*, lib. cit. p. 647.

The word is formed from *burdo*, an appellation given the ſtaff wherewith they travelled. See the article BURDO.

BURDUNCULUS, in botany, a name given by ſome to the plant known among moſt of the botanical writers by the name of *bugloſſum echioides capitulis cardui benedicti.*

BURGH-*bote*, is chiefly uſed for an aid or contribution levied for the repairing of a town or caſtle. *Spelm.* Gloſſ. p. 92. *Du Cange*, Gloſſ. Lat. T. 1. p. 649.

By the law of king Athelſtan, the caſtles and walls of towns were to be repaired, and *burgh-bote* levied every year, within a fortnight after rogation days [a]. No perſon whatever was exempt from this ſervice; the king himſelf could not diſpenſe a man from *burgh-bote*: yet, in after-times, exemptions appear to have been frequently granted; inſomuch that, according to Cowel, the word *burgh-bote* came to be chiefly uſed to denote, not the ſervice but the liberty or exemption from it [b].—[[a] Leg. Athelſt. c. 13. *Spelm.* Gloſſ. p. 92. [b] *Cow.* Interpr. in voc. *Du Cange*, loc. cit. p. 650.]

BURGH-*breche*, or *brech*, a fine impoſed on the community of a town, or *burgh*, for the breach of peace among them. Leg. Canut. c. 55. *Spelm.* Gloſſ. p. 92. *Du Cange*, Gloſſ. Lat. T. 1. p. 650. See the article BOROUGH.

BURGH-*maſter*, an officer in the tin-mines, who directs and lays out the meers for the workmen, &c. otherwiſe denominated *bailiff* and *bar-maſter*. *Pett.* Hiſt. Roy. Mines, p. 83, 85, ſeq. See the articles BAR-*maſter*, and TIN.

BURGAGE (*Cycl.*) is ſometimes uſed to denote the rent, or quit-rent paid to the chief lord for the houſes and tenements in a town or borough. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

BURGAGE alſo obtains in the laws of Normandy; ſome imagine, that it had its firſt riſe here, and was brought into England by William the Conqueror; others are of opinion, that Rollo, when driven out of England, carried it thence into Normandy. *Aubert*, ap. Richel. T. 1. p. 227.

Free BURGAGE, *Burgagium liberum*, denotes a tenure, whereby the tenants, after having paid their rent to the ſuperior lord, were exempted from the ſervice. *Du Cange*, Gloſſ. Lat. T. 1. p. 647.

BURGAU, in natural hiſtory, the name of a large ſpecies of ſea ſnail, of the lunar or round-mouthed kind; it is very beautifully lined with a coat, of the nature of the mother of pearl, and the artificers take this out, to uſe under the name of mother of pearl, though ſome call it after the name of the ſhell they take it from, *burgaudine.*

BURGAUDINE, the name given by the French artificers to what we call mother of pearl. In their works, they do not uſe the common nacre ſhell for this, but the lining of the American burgau. Hence ſome call all the mother of pearl *burgaudine*, and ſome call the *burgaudine* mother of pearl.

BURGEON, in gardening, a knot or button put forth by the branch of a tree in the ſpring. *Bradl.* Dict. Botan. T. 1. in voc.

The word is formed from the French *bourgeon*, which ſignifies the ſame, formed from the Latin *burrio*, of *burra*. *Menag.* Orig. Franc. p. 119. voc. *Bourgeon.*

Bourgeon amounts to the ſame with what is otherwiſe called *eye*, *bud*, or *germ.*

Froſts are chiefly dangerous when the *burgeons* begin to appear. The *burgeons* have the ſame skin, ſame pith, ſame ligneous body, and ſame inſertions as the ſtalk; that is, all the parts are the ſame in both; only more contracted in the former; the juice which enters them receiving an extenſion like that of gold in paſſing through a wire-drawer's iron, and the parts unfolding much after the manner of the draws of a teleſcope. Trev. Dict. Univ. T. 1. p. 1169.

BURGESS (*Cycl.*)—Antiently *burgeſſes* were held in great contempt; being reputed ſerviſe, baſe, and unfit for war; ſo that the gentry were not allowed to intermarry in their families, or fight with them; but, in lieu thereof, were to appoint champions [a]. A *burgher*'s ſon was reputed of age, when he could diſtinctly count money, meaſure cloth [b], &c.—[[a] *Spelm.* Gloſſ. p. 92. [b] *Glanvil.* l. 7. c. 9.]

King's BURGESS, *Burgenſis regis*, was he who, though reſiding in another's juriſdiction, was exempt therefrom, and only ſubject to the juriſdiction of the king, unleſs the lord alſo enjoyed royal juriſdiction. Vid. Leges Burgor. Scot. c. 2. p. 53. *Du Cange*, Gloſſ. Lat. T. 1. p. 649.

In a ſtatute under Rich. II. *viz.* 5 Rich. II. c. 4. where the ſeveral claſſes of perſons in the commonwealth are enumerated, we meet with count, baron, banneret, chivaleer de countee, citizein de citie, and *burgeſs* de burgh. *Spelm.* Gloſſ. p. 92. No man is qualified to be a *burgeſs* in parliament, who hath not

a freehold eſtate of 300 l. a year, clear of all incumbrances. Stat. 9 Ann. c. 7.

BURGMOTE (*Cycl.*)—The word is alſo written *burgemotus*, *burgimotus*, *burgmotus*, and *burgemote*, from *burgh*, *oppidum*, and *mote*, or *gemote*, *conventus*. *Du Cange*, Gloſſ. Lat. T. 1. p. 648. *Spelm.* Gloſſ. p. 92. voc. *Burgemotus*.

The *burgmote*, by the laws of king Edgar, was to be held thrice in the year [a]. By thoſe of Henry I. twelve times [b].—[[a] Leg. Edgar. Reg. c. 10. ap. *Brompt.* [b] Leg. Hen. I. c. 7. Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 648.]

BURGOMASTER *of Greenland*, in zoology, a whimſical name given by the Dutch ſailors to a ſpecies of larus or ſea gull, common on that and many other coaſts. 'Tis known among authors by the name of *martinezze*. See the article MARTINEZZE.

BURGOO, a ſea-faring diſh, made of whole oatmeal, or greets, boiled in water till they burſt; then mixed with butter. Dict. Ruſt. T. 2. voc. *Oatmeal*.

Burgoo, otherwiſe called *loblolly*, is held by Cockburn very proper to correct that thickneſs of humours and coſtiveneſs to which the other diet of ſailors much diſpoſes them. Yet the *burgoo* victualling is the leaſt liked of all their proviſions, by reaſon of the ſcanty allowance of butter to it. The ſame author thinks it might be worth the conſideration of thoſe to whom the care of the ſeamen is committed, to contrive to render this food more agreeable to them. *Cockburn*, Treat. of Sea Diſ. §. 17. p. 32, ſeq.

BURGRAVE (*Cycl.*)—The *burgraves* were originally the ſame with what we otherwiſe call *caſtellans*, or *comites caſtellani*; but their dignity was conſiderably advanced under Rudolph of Hapſburgh; before his time they were ranked only as counts, and below the princes, but under him began to be eſteemed on a footing with princes. *Schurzfl.* Epiſt. 37. Act. Erud. Lipſ. Supp. T. 3. p. 510.

In ſome parts, the dignity is much degenerated, eſpecially in the Palatinate. There were formerly, according to Leti, fifteen families who enjoyed the title of *burgraves*, thirteen of which are now extinct [a]. But this is differently repreſented by others [b].—[[a] *Leti*, Leterre, &c. P. 1. p. 74, & 251. Mem. de Trev. Sept. 1702. p. 74. [b] Vid. *Corn.* Dict. des Arts, T. 1. p. 147. *Limn.* Jur. Imp. l. 4. c. 4. Trev. Dict. Univ. T. 1. p. 1289.]

In Bohemia, the title *burgrave* is given to the chief officer, or he that commands in quality of viceroy.

In Pruſſia, the *burgrave* is one of the four chief offices of the province.

In Guelderland, the *burgrave* of Nimeguen is preſident of the ſtates of the province.

BURGRAVIATE, the office or dignity of burgrave. See the article BURGRAVE, *Cycl.* and *Suppl.*

The word is alſo uſed to denote the territory or diſtrict of a burgrave.

BURGWARD, *Burgwardus*, or *burgwardium*, in middle age writers, the ſame with bulwark. *Du Cange*, Gloſſ. Lat. T. 1. p. 652. See the article BULWARK, *Cycl.*

The name is alſo extended to the town, and even the country about ſuch a fortreſs. It is formed from the Teutonic *burg*, town, and *ward*, cuſtody, keeping.

BURIAL, the act of interring a dead body, and depoſiting it in the ground.

Burial and baptiſm are parochial rights, and belong not to chapels of eaſe, unleſs by uſurpation. *Kenn.* Paroch. Antiq. p. 590, ſeq.

Weſtminſter abbey is the *burial*-place of moſt of our Engliſh kings [a]. Mabillon has a diſcourſe on the *burial* of the antient kings of France [b].—[[a] *Dugd.* Monaſt. Abr. p. 15, ſeq. [b] Mem. Acad. Inſcr. T. 4. p. 369.]

The deſire of *burial* has been ſtrong in moſt ages [c], and the denial of it reputed the laſt and ſevereſt of puniſhments; yet the Cynics appear to have deſpiſed it; and Pliny ranks the concern for it in the number of weakneſſes peculiar to man [d]. —[[c] *Potter*, Arch. Græc. l. 4. c. 1. T. 2. p. 161, ſeq. [d] *Plin.* Hiſt. Nat. l. 7.]

Yet it is ſaid, we find ſomething like it in ſome ſpecies of brutes. Naturaliſts aſſure us, that elephants, paſſing by the corpſe of others, gather graſs, and break branches off trees with their trunks, wherewith they cover the dead [e]. Diogenes the Cynic being asked on his death-bed, how he would be buried, anſwered, Throw me naked into a ditch. His friends repreſented, that he would be liable to be dragged out and devoured by the beaſts and birds: Lay a good ſtick by me then, anſwered the philoſopher, that I may drive them away. This, it was told him, could be of no ſervice, ſince he would not have ſenſe to uſe it: Then, ſaid he, I ſhall have no ſenſe of their devouring me [f].—[[e] Phil. Tranſ. N° 326. p. 64. [f] *Cic.* Tuſc. Quæſt. l. c.]

Burial is an office or a debt of humanity. Some found this obligation on the law of nature, others on the law of nations, and others on the divine law [g]. 'Tis certain it is warranted by them all. One of the ſeven corporal works of mercy, recited by antient divines, is *burying* the dead. The primitive chriſtians ventured on it at the hazard of their lives: they never ſcrupled it either in times of perſecution, or of the plague, when the greateſt dangers attended it [h]. [[g] Vid. *Vitriar.* Inſt. Jur. Nat. l. 2. c. 19. qu. 3, ſeq. *Budd.* Inſt. Phil. Pract. c. 4. ſect. 9. §. 12, ſeq p. 324, ſeq. [h] *Bingh.* Orig. Eccleſ. l. 23. c. 3. §. 1.]

The heathens believed, that the ſouls of thoſe who lay unburied, remained in a wandering ſtate the ſpace of an hundred years. The invention of *burial* among the Greeks is aſcribed to Pluto, who, on this account, was deified, and made to preſide over the world of ſhades [i]. The Rabbins pretend, that the firſt hint was taken from birds: Adam and Eve, ſay they, being utterly at a loſs what to do with the body of Abel killed by his brother; under this perplexity, a crow was ſeen to throw earth and leaves over the body of one of its dead companions. This was enough for the patriarch: he went preſently and did the ſame to his ſon [k]. The Egyptians carried their dead for *burial* over a certain lake; for the paſſage of which, one Charon, a farmer under one of the Pharoahs, procured a toll to be impoſed, by which he was ſpeedily enriched [l]. Whence the whole tradition of the ferryman of hell. Cicero refers the origin of the vulgar opinion concerning hell to the antient manner of *burying* the dead by interment: for from hence the earth became to be conſidered as the laſt habitation of mankind, who were here ſuppoſed to lead a new life under ground [m].—[[i] *Diod. Sicul.* l. 5. c. 15. [k] Vid. *Fabric.* Cod. Pſeudop. Vet. Teſt. T. 1. §. 38. p. 113, ſeq. [l] Hiſt. Acad. Inſcr. T. 2. p. 10. [m] Idem, ibid. p. 38.]

Among the Greeks, drowning was no *burial*; for which reaſon, it was a cuſtom to faſten to ſome part of their bodies a reward for him that ſhould take them up, and *bury* them in caſe they were caſt aſhore [n]. Among us, however, thoſe who die at ſea are uſually *buried* there, unleſs they be near land: The ceremony is ſhort; the corpſe being ſewed up in its hammock, or quilt, is thrown over from the ſtar-board, under the diſcharge of a gun. 'Tis a great diſgrace to be thrown over the lar-board [o].—[[n] *Hought.* Collect. N° 330. T. 2. p. 353. [o] *Aubin.* Dict. Mar. p. 569. voc. *Mort.*]

The Arwaces, a people of Guiana, pulverize the bones of their great men, and drink them in their liquor.

Some nations among the Braſilians are ſaid to eat their dead, not out of hunger, much leſs deſpight, but affection and reverence [p]. We are told of a great controverſy held before king Darius of Perſia, on the queſtion, which was the moſt honorable kind of *burial*; that of the Greeks, who burnt their dead to preſerve their aſhes; or that of the Calatians, a people of India, who eat the bodies of their parents, that they might in ſome meaſure be revived in themſelves [q]. — [[p] *Hought.* ibid. p. 340. [q] Trev. Dict. Univ. T. 4. p. 1661. voc. *Sepulture.*]

See the article ANTHROPOPHAGIA.

At the ſame time that the Romans uſed to burn the bodies of their dead, the cuſtom was, to avoid expence, to throw thoſe of the ſlaves to rot in holes dug perpendicularly, called *puticuli*. Phil. Tranſ. N° 265. p. 645.

Among the antient Saxons, the bodies of thoſe ſlain in the field, were not laid in graves, but on the ſurface of the ground, and covered over with turfs or clods of earth; and the more in reputation the perſons had been, the greater and higher were the turfs raiſed. *Verſteg.* Reſtit. Dec. Intellig. c. 7. p. 165. See the article BARROW.

The Danes and northern nations, in their ſecond age, *buried* their dead under earthen hillocks [r]. Sometimes huge pyramids of ſtone were raiſed over their bodies, many of which are ſtill remaining in divers parts of England [s].—[[r] *Ol. Worm.* Monum. Dan. l. 1. c. 7. [s] *Plot*, Nat. Hiſt. Staff. c. 10. §. 63.]

In Japan, Peru, Pegu, Mexico, Tartary, Siam, and the Great Mogul's dominions, they burn their dead. For the great ones, the fires are made with aromatic woods, gums, balſams, and oils [t]. The like method obtained among the Jews as early as Saul's time, whoſe body was burnt at Jabeſh, and his bones afterwards *buried* [u]. Aſa was burnt in the bed which he had made for himſelf, filled with ſweet odours, and divers kinds of ſpices [w].—[[t] *Hought.* Collect. N° 325. p. 338. [u] 1 Sam. xxxi. 11, ſeq. [w] 2 Chron. xvi. 14.]

They who thought human bodies were compounded of earth, inclined to have them committed to the earth: Heraclitus and his followers, imagining fire the firſt principle of all things, preferred burning. *Potter*, Archæol. l. 4. c. 6. p. 207.

Euſtathius aſſigns two reaſons for the prevalency of burning in Greece; the firſt, that bodies being thought to be unclean after the ſoul's departure, were to be purified by fire: that the ſoul, or purer part, being ſeparated by the flames from the groſs inactive matter, might take its flight to the heavenly manſions with more freedom [x]. This latter opinion obtained ſo much, that the Indian philoſophers had not patience to wait for burning till after death; they had recourſe to it in their life-time; erecting themſelves piles for the purpoſe, to looſen their ſouls from confinement. Calanus, who followed Alexander out of India, finding himſelf indiſpoſed, obtained that prince's leave to prevent the growth of his diſtemper, by committing himſelf to the flames; and Hercules, before his reception into heaven, was purified from the dregs of earth by the ſame means [y].—[[x] *Quintil.* Declam. 10. [y] *Potter*, Archæol. Gr. l. 4. c. 6. p. 208.] See the article BURNING.

The antients *buried* by day, as deeming the night of ill omen, on account of the evil ſpirits then abroad: only perſons who died in the flower of their days, were *buried* in the morning before ſun-riſe. *Potter*, ibid. l. 4. c. 4. p. 191, ſeq.

Some nations *bury* in linnen; the Braſilians *bury* in ſilk, the Engliſh *bury* in woollen, by virtue of a ſtatute made under king Charles II. *Hought.* Collect. T. 2. p. 340.

Among the Romans, we find two kinds of *burial*, mentioned in the Theodoſian code; one, the *burying* of whole bodies in coffins under ground; the other, *burying* the bones and aſhes in urns above ground. Both appear to have been uſed at the ſame time; though interring appears to be the older practice. Cod. Theodoſ. lib. 9. tit. 17. *Bingh.* Orig. Eccleſ. p. 429. See the article BURNING.

Mr. Monro takes the catacombs about Rome to have been the *burial*-place of the antient Romans, before burning came into faſhion; and which, on the new mode's taking place, fell into diſuſe, till they were revived by the primitive chriſtians. Phil Tranſ. N° 265. p. 649, ſeq. See CATACOMB, *Cycl.* and *Suppl.*

The Romans in Britain *buried* their warriours near the via ſtrata, or military way, to put their bodies out of danger of inſult; and, to prevent the ſcattering of their aſhes in haſte, the whole army caſt on them graſſy turfs; which is the origin of many of the tumuli ſtill found among us [a]: As it was the greateſt diſhonour to lie unburied, it was moſt glorious to be covered with a large tumulus; which might be one reaſon of the Romans *burying* their generals near public ways, that paſſengers might be continually adding to the heap, which it was judged a work of piety to do [b].—[[a] *Plot*, Nat. Hiſt. Oxf. c. 10. §. 47. [b] Idem, ibid. §. 41. p. 330.] See the article BARROW.

Tho' burning was the ordinary uſage among the Romans, yet ſome ſtill retained the antient one of *burying*. The family of the Cornelii interred their dead all along till the time of Sylla the dictator, who, in his will, gave particular order to have his body burnt, probably to avoid the indignities which might have been offered it after *burial*, by the Marian faction, in return for the violence ſhewn by Sylla's ſoldiers to the tomb and relicks of Marius. *Cic.* de Leg. l. 2. p. 345. *Plin.* Hiſt. Nat. l. 7. c. 54.

Burial was denied by the antients to traytors, proſcribed perſons, ſuicides, and even frequently to enemies killed in war [c]; though this was reputed by the more moral and civilized nations a violation of the laws of nature [d]. Among the Greeks, ſpendthrifts and inſolvent debtors were alſo refuſed the rights of *burial* [e]. By the laws of the church, this penalty has been carried further, to perſons excommunicated, to thoſe who could not ſay their creed and pater-noſter, to ſtrikers of eccleſiaſtics, and to thoſe who ſhould omit communicating at Eaſter [f].—[[c] *Potter*, Archæol. Græc. l. 4. c. 1. p. 165, ſeq. *Pitiſc.* Lex. Ant. T. 2. p. 768. voc. *Sepultura*. *Calm.* Dict. Bibl. T. 1. p. 330, ſeq. [d] Vid. *Grot.* de Jure Belli, l. 2. c. 19. §. 2. n. 6. & §. 3. n. 1. *Seld.* de Leg. Nat. l. 6. c. 16. *Vitriar.* Inſt. Jur. Nat. l. 2. c. 19. qu. 4. *Budd.* Inſt. Phil. Pract. loc. cit. §. 17. p. 326. [e] *Potter*, lib. cit. p. 167. [f] Vid. *Johnſ.* Eccleſ. Law, an. 960. §. 22. Idem ibid. ann. 1138. §. 10. Id. ibid. an. 1378. §. 4.]

Among the antient Egyptians, kings themſelves were to undergo a trial after their death; and, if their behaviour had been ill, were refuſed the privilege of Charon's boat, that is, to be carried to *burial*. Mem. Acad. Inſcr. T. 2. p. 11.

Chriſtian BURIAL, that performed in holy ground, and with the uſual ſervice or ceremonies of the church.

The chriſtians were always tenacious of the plain way of *burying* by inhumation, and could never be brought to uſe any other; reckoning it a great piece of barbarity in their perſecutors whenever they denied them this decent interment after death, as they ſometimes did, either by expoſing their bodies to the fury of wild beaſts and birds of prey, or burning them in ſcorn and deriſion of their doctrine of a future reſurrection. *Bingh.* Orig. Eccleſ. l. 23. c. 2. §. 4. p. 429.

They ſeem to have had a particular averſion to burning; their method was to put the body whole in the ground, or, if there was occaſion for any other way of *burying*, they embalmed the body, and laid it in a catacomb. *Bingh.* Orig. Eccleſ. l. 23. c. 2. §. 4. p. 429. *Minut. Fel.* p. 20, & 101. *Tertull.* de Anima, c. 51. Item, de Reſurr. c. 1. *Bingh.* loc. cit. p. 429.

BURIAL *of an aſs*, *Aſini ſepultura*, an ignominious kind of *burial* out of holy ground, under the gallows, or in a high way, where ſeveral roads meet, and performed by public hangmen, or the like [g]. Such is that of ſuicides, excommunicated perſons, &c. ſometimes denoted *canine burial*, or *burial* of a dog [h].—[[g] *Du Cange*, Gloſſ. Lat. T. 4. p. 815. voc. *Sepultura*. [h] *Vitriar.* Inſt. Jur. Nat. l. 2. c. 19. qu. 2.]

In the middle age we alſo find mention of a peculiar kind of *burial*, called imblocation, practiſed on the bodies of perſons excommunicated. *Du Cange*, Gloſſ. Lat. voc. *Imblocatus*. See the article IMBLOCATION.

BURIAL *of the crucifix*, *Sepultura crucifixi*, denoted a repreſentation of the *burial* of Chriſt, antiently performed annually in churches on the day of the paraſceue. *Du Cange*, Gloſſ. Lat. T. 4. p. 815.

BURIALS, in computations of mortality, denote deaths, and ſtand oppoſed to births.

In this ſenſe, we have eſtimates of the *burials* in Brandenburg [a], in Francfort [b], Breſlaw [c], &c. The *burials* in London exceed the births; in other towns they come ſhort of them [d]. The number of yearly *burials* at Paris was computed, in the year 1686, to be at a medium 16381, at London 23212 [e]. At Edinburgh, the *burials*, in 1731, amounted to 1119 [f]; in the year 1732, to 1247 [g].—[[a] Phil. Tranſ. N° 261. p. 508. [b] Idem, N° 229. p. 559. [c] Idem, N° 196. p. 597, ſeq. [d] Idem, loc. cit. [e] Idem, N° 185. p. 239. [f] Med. Eſſ. Edinb. T. 1. p. 45. [g] Idem, T. 2. p. 35.]

By a ſtatute under king Charles II. a regiſter is to be kept in every pariſh, of all perſons buried within the ſame, or at the common *burial*-places thereof. Stat. 30 Car. II. c. 3.

BURIAL is alſo uſed to denote the dues paid for interment, eſpecially to the miniſter.

The *burial*-fee paid to the prieſt on opening the grave, was called by our Saxon anceſtors *ſoul-ſcot*. Phil. Tranſact. N° 189. p. 357.

BURIAL is alſo uſed for the incloſing of vegetable or mineral bodies in the ground, for divers purpoſes. Lord Bacon gives divers experiments of *burying* fruits, &c. for preſervation and condenſation. *Bac.* Nat. Hiſt. §. 376. Works, T. 3. p. 80, ſeq.

Some commend *burials* in the earth, others in wheat, to ſeaſon timber when firſt felled, and make it of more durable uſe [a]. Chemiſts ſometimes *bury* their cements. The Chineſe are reported to *bury* their porcellane, to give it the greater beauty [b].—[[a] *Mortim.* Art of Huſband. T. 2. l. 12. c. 10. p. 101. [b] *Bacon*, lib. cit. p. 253.] See TIMBER, &c.

It has been a tradition, that pearl, coral, and turquois ſtones, when they have loſt their colours, recover them again by *burial* in the ground. But the experiment did not ſucceed with Lord Bacon, upon trial of a ſix weeks *burial*. *Bacon*, Nat. Hiſt. §. 380. Works, T. 3. p. 81.

BURIS, a name given by Aviſenna, and ſome other old authors, to a ſchirrous hernia, cauſed by a hard abſceſs. *Caſtel.* Lex. Med. in voc.

BURLAW, or BYRLAW, *Burlawa*, in middle age writers, denotes country laws, or the laws concerning country affairs. *Sken.* de Verb. Signif. p. 33. *Du Cange*, Gloſſ. Lat. T. 1. p. 653. *Spelm.* Gloſſ. p. 79.

BURNERS, *Uſtores*, in antiquity, perſons whoſe office and employment it was to burn the bodies of the dead. *Pitiſc.* Lex. Antiq. T. 2. p. 1119. voc. *Uſtores*. See the articles BURNING, and BURIAL.

BURNET, *Burneta*, or *Burnetus*, in middle age writers, denotes brown cloth made of dyed wool.

In which ſenſe, the word ſtands contradiſtinguiſhed from *brunus*, which was applied to the wool undyed. *Blunt* ap. *Jac.* Law Dict. in voc.

BURN *(Cycl.)*— *Burns* are divided into dry and humid.

Dry BURNS are thoſe occaſioned by the application of a naked fire, or ignited body, as coals, flame, red-hot metals, gunpowder, lightning, and the like, which are attended with a corrugation or ſhrivelling of the part.

Humid BURNS, more uſually among us called *ſcalds*, are thoſe occaſioned by fluid ſubſtances, as hot water, oil, wax, or the like. *Junck.* Conſp. Chir. Tab. 11. p. 98.

Others make five degrees of *burns*: the firſt, when the ſkin only is hurt without any great redneſs: in the ſecond, the pain is conſiderable, and the redneſs deep, attended with puſtules: the third inſtantly produces puſtules, with a throbbing pain, inflammation, and ulceration of the part: in the fourth degree, a great havock is made in the fibres, by which the ſkin is much corrugated, ſeparated from the fleſh, and as it were roaſted, occaſioning an eſchar: the fifth degree is, when the fire penetrates deeper, and burns to the membranes, veſſels and nerves underneath, attended with a great ſhrivelling of the part, a violent inflammatory pain, and blackiſh eſchar. *Junck.* loc. citat.

Dry *burns* are of a worſe kind than moiſt ones. Of the dry, the worſt and moſt penetrating of all is that of lightning; the next are thoſe cauſed by melted metals and gun-powder; the next, by fats and oily ſubſtances; the ſlighteſt of all *burns* is that by hot water. *Junck.* ubi ſupra.

As *burns* nearly reſemble inflammatory diſorders in their ſeveral degrees, ſo they alſo do in their method of cure. In the ſlighter degree of *burns*, the beſt method is to have recourſe to emollients and aſtringents. The beſt ſlight aſtringent is either common proof ſpirit, or rectified ſpirit of wine, or, when it is neceſſary, ſpirit of wine camphorated: theſe may be applied to the part with linnen rags, as may alſo oxycrate, or the pickle of cabbages, or litharge vinegar; and theſe applications muſt be repeated as there is occaſion. Oil of turpentine has alſo very good effects, if applied in time, and repeated frequently. And the vulgar method of holding the injured part, when that is the hand or a finger, to the fire, as long and as near as can be born, is often attended with ſucceſs; for the ſtagnating fluids are, by this degree of heat, driven back into their proper channels, and, by that means, the veſication, and other troubleſome ſymptoms, which naturally ſucceed, are often prevented. Another remedy, however, there is, very efficacious on the ſame occaſions, though founded on a contrary intention. This is by emollient remedies, which remove the tenſion of the fibres and veſſels, and reſtore the blood to its natural courſe before any bad ſymptoms come on, as the injured part may be fomented with water, made as warm as the patient can bear, till all the pain and heat entirely diſappear. Sydenham very highly,

and

and with great reaſon, extols this method. It is eaſy, however, to add to the efficacy of it, by giving the virtues of a fomentation to the water before it is uſed, by boiling in it marſhmallows, mallows, mullein, linſeed, fenugreek ſeed, or quince ſeed. Cataplaſms made of the ſame ingredients, are alſo of great ſervice, as are alſo the emollient oils of linſeed, and the like. Whatever remedies are uſed in this caſe, ſhould be very frequently repeated; and when it is the face that is *burnt*, they ſhould be ſpread on a linnen maſk, to be kept conſtantly moiſt by the application of the ſame remedy.

When the *burn* is ſomething greater than this, and attended with veſication, or puſtules, the puſtules are by no means to be opened, which always brings on great pain; ſome of the remedies before-mentioned will always prove of more ſervice, applied while the bliſters are whole, and, by the uſe of them, the heat and pain will quickly go off, and the cuticle will ſeparate from the cutis, without either deformity or pain. But if theſe remedies do not abate the pain, the part is to be dreſſed with linſeed oil, or the litharge ointment, or the unguentum diopompholigos, or ſomething of a like kind. Theſe are to be applied either by rubbing them frequently on the parts, or ſpreading them on a linnen rag, and applying that, and often renewing it. After theſe, a plaſter of the emplaſtrum de minio, or any of a like kind, will keep the ſkin ſmooth, and forward the renovation of the cuticle. If the *burn* or ſcald, which ever it be, be very conſiderable in extent, and great part of the body be burnt, it is neceſſary to bleed plentifully, even till the patient faints, and to give a briſk purge. This method will often prevent ill conſequences, that too frequently elſe attend large *burns*; ſuch as foul ulcers, large cicatrices, and ſometimes even gangrenes. When infants are the ſubjects of theſe accidents, bleeding being not ſo convenient, the revulſion is to be made by repeated purges; and, in grown perſons, a regularity of diet is above all things to be obſerved.

In the yet greater degree of *burns*, where the burnt part is covered by a cruſt or eſchar, the cure cannot be performed without ſuppuration. When this accident happens to the face, great caution is neceſſary, to avoid making a deformed cicatrix; for this reaſon, all ointments and plaſters whatever are to be forbidden, even though they are the moſt valuable ſecrets, as there are in almoſt all families many ſuch; for the miſchief of theſe remedies is, that they all dry up the wound too faſt, and contract the fibres and the skin, and by that means leave an uneven cicatrix. The forwarding the caſting off the eſchar is by all means to be attempted, and the diſcharge of the matter that is contained under it. The eaſieſt and moſt ſucceſsful method of doing this, is by the repeated application of emollients. Three or four times every day the dreſſings are to be changed; and if, at any of theſe times, any part of the eſchar is found to be looſe, it muſt be raiſed with the forceps, and removed, if that conveniently may be; at the ſame time, the reſt of the eſchar muſt be anointed with butter, and warm fomentations, made of emollient herbs, &c. applied. Two, three, or four days employed in this manner, generally afford a ſeparation of all the cruſt or eſchar; and the next intention is then to heal the wound. It is firſt therefore to be thoroughly cleanſed, by means of ſome mild digeſtive mixed with honey of roſes, and afterwards healed up with any of the lead or litharge ointments. If the eſchar in theſe caſes ſhould not ſeparate in a proper time, it will be neceſſary to make a deep inciſion through the middle of it, to let out the included ſanies. *Burns* of the moſt extreme and worſt kind, where the *burn* has penetrated ſo deep as to deſtroy all the parts quite down to the bone, can have no relief from medicines; nor is there any thing in the ſurgeon's power, but amputating the limb. *Heiſter*'s Surgery, p. 220.

BURNING *(Cycl.)* —The appearances of *burning* ariſe ſucceſſively, and in a certain order: a heat muſt precede greater than what ſuffices to boil oil; the lighteſt and moſt volatile parts of the body burn the firſt; the heavier are ſlower in taking fire, but burn the longeſt. *Boerh.* Element. Chem. P. 2. T. 1. p. 294, ſeq.

Burning is a ſeparation of the parts of bodies made by means of fire [a]. Some conſider it as a ſpecies of ſolution [b], and ſuppoſe it effected by a diſſolvent power inherent in fire, which acts as a menſtruum in reſpect of the ſulphureous parts of bodies.— [[a] Vid. *s'Graveſ.* Inſt. Phil. Newt. n. 846. p. 243. [b] *Chauv.* Lex. Phil. p. 118, ſeq voc. *Combuſtio.*]

Dr. Hooke, conſidering the neceſſity of air to *burning*, and that heat, however great, does not alone ſuffice to burn a body, does indeed take *burning* for a ſolution of the ſulphureous parts of bodies; but ſuppoſes the menſtruum, by which it is done, to be the air, or at leaſt ſome ſubtile, ſaline, nitrous ſubſtance diffuſed in the air.

This diſſolution, like many others, does not take place till the ſubject body be ſufficiently heated, and the operation is performed with ſo much violence, as to agitate all the minuteſt parts of the body with great rapidity; from whence alſo ariſes the pulſe of light in the air; and from the ſame cauſe may be deduced the origin of the ſmoke, ſoot, aſhes, &c. *Hook*, Microgr. Obſ. 16. p. 103. *Walter*, Life of Hook, p. 21. ap. Poſthum. Works.

Divers bodies are only ſet on *burning* by the application of water to them; as lime, oil of vitriol, ſulphur, and iron-filings [c]. Others, by the acceſs of air to them, as the phoſphorus ardens. Some bodies will burn even under water, and that with violence, as that antient compoſition called *Ignis Græcus*, water-rockets, &c. Notwithſtanding the expence in fumes, the weight of certain bodies is increaſed by *burning* [d]. — [[c] *Newent.* Relig. Philoſ. Cont. 20. §. 74. p. 374. [d] *s'Graveſ.* Inſt. Phil. Newt. §. 867, ſeq.] See the articles CALX, FIRE, and CALCINATION.

Burning bodies are preſently extinguiſhed by taking away the air. *s'Graveſ.* ibid. §. 865. See the article EXTINGUISHING.

BURNING *mountains*, are more particularly called *volcanos*. See the article VOLCANO, *Cycl.*

The antients deſcribe a meteor under the denomination of *burning buckler*, *clypeus ardens*. *Plin.* Hiſt. Nat. l. 2. c. 34. Mem. Acad. Inſcript. T. 6. p. 95, ſeq.

BURNING *phoſphorus*— The flame of *burning* phoſphorus is different from that of all other bodies, and comes neareſt to that of lightning: that which extinguiſhes other fires, lights this, and what kindles this, extinguiſhes others: it ſpares ſome bodies which others conſume, and conſumes others which the reſt will not touch. Mem Acad. Scienc. an. 1692. p. 133, ſeq. See PHOSPHORUS and LIGHTENING, *Cycl.* and *Suppl.*

Travellers into Italy deſcribe a *burning* ſpot of ground at Firenzuola, in the Appennines, out of which a crackling flame continually ariſes, yet without any cleft for it to iſſue out at. Maffei ſuppoſes the ſteams which the place yields, to be a kind of native phoſphorus ardens, which take fire on their coming in contact with the air. *Maffei*, ap. Mem. de Trev. an. 1731. p. 1937.

Extraordinary caſes of BURNING.—We have inſtances of perſons *burnt* by fire kindled within their own bodies. A woman at Paris, who uſed to drink brandy in exceſs, was one night reduced to aſhes by a fire from within, all but her head and the ends of her fingers. Novum Lumen Phoſphor. accenſ. Amſt. 1717. Signora Corn. Z ngari, or, as others call her, Corn. Bandi, an aged lady, of unblemiſhed life, near Ceſena in Romagna, underwent the ſame fate in March, 1731. She had retired in the evening into her chamber ſomewhat indiſpoſed, and in the morning was found in the middle of the room, reduced to aſhes, all except her face, ſkull, three fingers, and legs, which remained entire with the ſhoes and ſtockings on. The aſhes were light, and, on preſſing between the fingers, vaniſhed, leaving a groſs ſtinking moiſture behind, with which the floor was ſmeared; the walls, and furniture of the room, being covered with a moiſt cineritious ſoot, which had not only ſtained the linnen in the cheſts, but had penetrated into the cloſet, as well as into the room over-head, the walls of which were moiſtened with the ſame viſcous humour. Mem. de Trev. an. 1731. p. 1923, ſeq.

Sig. Mondini, Bianchini, and Maffei [e], have written diſcourſes expreſs, to account for the cauſe of ſo extraordinary an event: common fire it could not be, ſince this would likewiſe have burnt the bed and the room; beſides that it would have required many hours, and a huge quantity of fuel, to reduce a human body to aſhes; and, after all, a conſiderable part of the bones would have been left entire, as they were antiently found after the fierceſt funeral fires [f]. Some attribute the effect to a mine of ſulphur under the houſe; others to miracle; while others ſuſpect that art or villainy had ſome hand in it. Sign. Mondini attributes it to lightening. A philoſopher of Verona maintains, that ſuch a conflagration might have ariſen from the inflammable matters wherewith the human body naturally abounds [g]. Sig. Bianchini accounts for it from an internal fire, occaſioned by ſpirit of wine camphorated, which the lady uſed by way of bath or lotion, when ſhe found herſelf out of order [h]. Maffei's ſyſtem is a combination of the three laſt: he ſuppoſes it owing to lightening, but lightening generated in her own body; agreeable to his doctrine, which is, that lightening does not come from the clouds, but is always produced in the place where it is ſeen, and its effects perceived [i]. — [[e] Mem. de Trev. an. 1731. p. 1922. [f] *Maffei*, ubi ſupra, p. 1924. [g] Bibl. Ital. T. 10. p. 280, ſeq. [h] Id. T. 14. p. 266, ſeq. [i] Mem de Trev. an. 1731. p. 1925, ſeq.]

The humours of her body, naturally inflammable enough, were become preternaturally ſo, by her putrid indiſpoſition; and theſe, by perſpiration, had enveloped her body with an atmoſphere of the ſame kind, replete likewiſe with mineral matters, whereby its activity was heightened. She had probably riſen in the night to uſe her lotion, and, by the friction of her hand, had helped to kindle the flame. Idem, ibid. p. 1950, ſeq.

We have various relations of ſeveral other perſons being *burnt* to death in this unaccountable manner; as Jo. Hitchell, in 1613, and Grace Pet of Ipſwich, in 1744. The *burning* of Hitchell was occaſioned by lightening; but that does not appear to have been the cauſe of the death of many other perſons that occur in authors. We have had a late attempt to eſtabliſh the opinion, that theſe deſtroying internal fires are cauſed in the intrails of the body by inflamed effluvia of the blood, by juices and fermentations in the ſtomach, by the many combuſtible matters which abound in living bodies, for the uſes of life; and, finally, by the firy evaporations which exhale from the ſettlings of ſpirit of wine, brandies, and other hot liquors, in the tunica villoſa of the ſtomach, and other adipoſe or fat membranes;

membranes; within which those spirits engender a kind of camphor, which in the night-time, in sleep, by a full respiration, are put in a stronger motion, and are more apt to be set on fire; see Phil. Trans. N° 476. p. 453, seq. to which we must refer the reader.

Others ascribe the cause of such persons being set on fire, to lightening, and their *burning* so entirely, to the greater quantity of phosphorus, and other combustible matter they contained. Philos. Transact. ibid. p. 478, 479. See the article PHOSPHORUS.

It is well known, that divers putrid bodies will glow, and even sparkle in the dark; not to mention those lambent flames produced from putrid humours in church-yards, and the like places, called *ignes fatui*.

Flashes of light have been often produced from the bodies of men, as well as other animals, by a brisk motion. Fortunius Licetus mentions a person, who, by only rubbing his body with his hand, could make fire issue; and Maffei relates the same of Signora Cassandra Buri Rambalda of Verona, who needed only rub her flesh with a linnen cloth, to produce flashes of light. See the articles LIGHT, PHOSPHORUS, *&c.*

BURNING, in antiquity, was a species of sepulture or burial, used by the Greeks, Romans, and northern nations, and still retained by many people in both Indies. Vid. *Pott.* Archæol. l. 4. c. 6. *Kenn.* Rom. Ant Not. P. 2. l. 5. c. 10. Philos. Trans. N° 126. p. 633. *Hought.* Collect. T. 2. N° 332, & 335. *Salmuth.* ad Pancirol. P. 1. tit. 62. p. 339. *Meurs.* de Funer. Græc. c. 25. See the article BURIAL.

In this sense, *burning* stands opposed to burying [a]; tho', after *burning*, the bones remaining, and ashes, have been usually collected into urns, and deposited in the earth [b].—[[a] *Plot*, Nat. Hist. Oxf. c. 10. §. 43. p. 331. [b] *Pitisc.* Lex. Ant. T. 2. p. 341. voc. *Ossilegium.* Phil. Transact. N° 285. p. 1405.] See the articles BURYING, BONE, *&c.*

Kings were burnt in cloth made of the abestos stone, that their ashes might be preserved pure from any mixture with the fuel, and other matters thrown on the funeral pile [c]. And the like usage is still retained for the princes in Tartary [d].—[[c] *Plin.* Hist. Nat. l. 19. c. 1. Mem. Acad. Inscr. T. 6. p. 419, seq. [d] Phil. Trans. N° 172. p. 1059.] See the article ABSESTOS, *Cycl.* and *Suppl.*

Burning is not so antient among the Greeks as interring; tho' we find it obtained in the time of the Trojan war. The antient christians, in this, deviated from the method of the heathens, that the generality of the latter burned their dead, whereas the former buried them in earth. *Potter*, Archæol. l. 4. c. 6. T. 2. p. 207.

For the manner of *burning* among the Greeks: The body was placed on the top of a pile, πυρα, on which were also thrown divers animals, and even slaves and captives, besides unguents and perfumes. In the funeral of Patroclus, we find a number of sheep and oxen thrown in, then four horses, followed by two dogs, and, lastly, by twelve Trojan prisoners. *Hom.* Iliad. xxiii. v. 166. *Pott.* Archæol. l. 4. c. 6. p. 208, seq.

The like is mentioned by Virgil in the funerals of his Trojans; where, besides oxen, swine, and all manner of cattle [e], we find eight youths condemned to the flames [f]. The first thing was the fat of the beasts, with which the body was covered, that it might consume the sooner [g]; it being reputed great felicity to be quickly reduced to ashes. For the like reason, where numbers were to be burnt at the same time, care was taken, that some of humid constitutions, and therefore easily to be inflamed, should be mixed with the rest [h]. Thus we are assured by Plutarch and Macrobius, that for every ten men it was the custom to put in one woman [i]. — [[e] *Virg.* Æn. l. 11. [f] Idem, l. 10. [g] *Eustath.* ad Iliad. loc. cit. [h] *Potter*, loc. cit. p. 209. [i] *Plut.* Sympos. l. 3. Quæst. 4. *Macrob.* Saturn. l. 7. c. 7.]

Soldiers usually had their arms burnt with them [k]. The garments worn by the living [l], were also thrown on the pile, with other ornaments and presents; a piece of extravagance, which the Athenians carried to so great a length, that some of their lawgivers were forced to restrain them, by severe penalties, from defrauding the living by their liberality to the dead [m].—[[k] *Virg.* Æn. l. 6. *Decorantque super fulgentibus armis.* [l] Idem, ibid. *Purpureasque super vestis, velamina, conjiciunt.* [m] *Potter*, lib. cit. p. 210.] See the article BURIAL.

Pliny assures us, that *burning* was first brought into use among the Romans, on occasion of the cruel usage which the bodies of the dead Romans underwent in enemies countries [n]. But these must only be understood in regard of the common usage; since we find mention of *burning* as practised by some even in the earliest ages of Rome: Numa forbad his own body to be burned, commanding it to be laid entire in a stone coffin, which shews, that the practice of *burning* was not then unknown at Rome [o].—[[n] *Plin.* Hist. Nat. l. 7. c. 54. [o] *Kenn.* Rom. Ant. Not. P. 2. l. 5. c. 10. p. 335.]

Some pretend, that the Romans borrowed the method of *burning* from the Barbarians, particularly the Westphalians, among whom the usage was most antient, and so firmly rooted, that Charlemaign had much ado, with the severest penalties, to put a stop to it. Trev. Dict. Univ. T. 4. voc. *Westphaliens.*

But 'tis more probable they had received the method long before from the Greeks. *Kenn*, ubi supra, p. 334, seq.

In some cases, *burning* was expresly forbid, and looked upon as the highest impiety. Thus infants, who died before the breeding of teeth, were intombed, unburnt, in the ground, in a particular place set apart for this use, called *suggrundarium.* The like was practised with regard to those who had been struck dead with lightening, who were never to be burnt again. *Kenn*, ubi supra.

Some say, that *burning* was denied to suicides as a punishment. *Hought.* Collect. N° 332. p. 358.

The manner of *burning* among the Romans, was not unlike that of the Greeks: the corps being brought without the city, if they designed to burn it, was carried directly to the place appointed for that purpose; which, if it joined to the sepulchre, was called *bustum*, if separate from it, *ustrina*, and there laid on the *rogus* or *pyra*, a pile of wood prepared to burn it on, built in shape of an altar, but of different height, according to the quality of the deceased. The wood used was commonly from such trees as contained most pitch or rosin; and if any other were used, they split it for the more easy catching fire: round the pile they set cypress trees, probably to hinder the noisome smell of the corpse. The body was not placed on the bare pile, but on the couch or bed where it lay on [p]. This done, the next of blood performed the ceremony of lighting the pile, which they did with a torch, turning their face all the while the other way [q], as if it were done with reluctance [r]. During the ceremony, decursions and games were celebrated; after which came the *ossilegium*, or gathering the bones and ashes; also washing and anointing them, and repositing them in urns; which were common to both nations [s] — [[p] *Tibull.* l. 1. Eleg. 1. *Flebis & arsuro positum me, Delia, lecto.* [q] *Virg.* Æn. l. 6. *Subjectam, more parentum, aversi tenuere facem.* [r] *Kenn.* Rom. Ant. P. 2. l. 5. c. 10. p. 355, seq. [s] Vide *Potter*, lib. cit. p. 211, seq. *Kenn*, ubi supra, p. 357, seq.]

'Tis commonly supposed the practice of *burning* ceased at Rome under the empire of the Antonines.

Gothofred takes it for a mistake, not only by reason Tertullian speaks of it as still customary among the heathens in his time, but because there is some intimation given of it in Theodosius's laws [t], as subsisting then: though it was not long after till it was totally disused; since Macrobius, who lived early in the fourth century, assures us, that the method of *burning* was then entirely disused [u].—[[t] Cod. Theod. l. 9. tit. 17. leg. 6. [u] *Macrob.* Saturn. l. 7. c. 7.]

BURNING is one of the methods used for the destruction of books.

The antient fathers procured the writings of the heathens to be *burnt*, out of zeal for religion; to the great detriment not only of learning but religion itself [a]. The Talmud was publickly burnt by pope Gregory IX. in 1230, and, after his example, by other popes, and kings of France [b]. Schulz has a treatise expres on *burning* the books of heretics [c]. — [[a] Vide *Shaftesb.* Charact. T. 3. p. 329, seq. [b] *Wolf.* Bibl. Hebr. l. 4. c. 5. T. 2. p. 932. [c] *Thurman.* Bibl. Acad. p. 119.]

Under king Henry IV. a proclamation was published for *burning* the English bible, lest the ignorant multitude should from it extract poison for their souls. Vid. *Steph.* Suppl. to Dugd. T. 2. p. 103.

Diocletian is said to have *burnt* the chemical books of the antient Egyptians, wherein the art of making gold was contained, to prevent the people from growing too rich, and being thereby brought to rebel. Vid. *Borrich.* de Orig. Chem. p. 89.

The emperor Chi-Hoam-Ti, 230 years before Christ, *burnt* all the books of the Chinese, except those relating to agriculture, physic, and divination; obliging the literati, in lieu of study, to take to the trewel, and work at the famous wall then erecting against the Tartars; as only needing two kinds of people, soldiers and masons. Vid. Phil. Trans. N° 230. p. 589. Mem. Acad. Inscr. T. 9. p. 357, seq.

BURNING is also an operation in pharmacy. Simples are frequently *burnt* in earth-vessels, either to reduce them to ashes, as in the preparation of vegetable salts, or in order to dry them, that they may be more commodiously pulverized, as is practised in regard of hartshorn, *&c.* *Cast.* Lex. Med. p. 75. voc. *Ustio.*

BURNING, *Ustio*, in chemistry, is distinguished from calcining; as the former is performed in close vessels, and terminates in charring, or reducing the body to a blackness; whereas the latter turns them white, being performed in the open air. Vid. *Junck.* Consp. Chem. Tab. 27. p. 577, 582, and 588. See the article CALCINATION, *Cycl.* and *Suppl.*

It also differs from roasting, *tostio*, as, in *burning*, the fire is applied in contact with the body, in roasting, at a distance from it. See the article ROASTING.

A dexterous *burning* volatilizes salts, as common salt, sal alkali. *Burning* also produces somewhat of a mineral sulphur out of tartar, *&c.* *Junck.* ibid. p. 596.

BURNING *of metals*, *Ustio metallorum*, is either performed by fire, or by corrosive salts; which latter is also denominated *cæmentation.* Theat. Chem. T. 3. p. 470. *Rolfink.* Chem. l. 2. c. 3. See the article CÆMENTATION, *Cycl.*

The first preparation of most ores is by ustion, or *burning*, whereby to dispose them for fusion. This is usually performed by exposing them, without addition, to a naked fire; some-

times fixed alkalis and abſorbents are added, to hinder the avolation of the metalline particles [a]. Some hold *burning* in the ſtone or glebe moſt advantageous; others *burning* in the meal [b]. —[a *Junck.* Conſp. Chem. Tab. 30. p. 667, ſeq. b Vid. *Alonz. Barb.* Art. Metal. l. 2. c. 9. Phil. Tranſ. N° 109. p. 212.]

The baſer metals, tin and lead, may be burnt like plants to aſhes. For gold and ſilver, the caſe is otherwiſe. *Junck.* ubi ſupra, Tab. 32. p. 828.

BURNING, among painters—Several of the painters colours require *burning*, to fit them for uſe, as lamp-black, umber, ivory, *&c.* See COLOUR, *&c. Cycl.* and *Suppl.*

The *burning*, or rather drying, of lamp-black, is performed by ſetting it over the fire in an iron laddle or crucible, till no ſmoke ariſes from it. To *burn* umber, they put it in large lumps into a naked fire, where it is left till thoroughly red-hot. Ivory muſt be *burnt*, to make a black, in two crucibles, luted, covered with coals. Vid. *Smith*, Art of Paint. c. 3. p. 30.

BURNING, among ſurgeons, denotes the application of an actual cautery, that is, a red-hot iron inſtrument to the part affected; otherwiſe denominated cauterization. *Horn.* Microtec. ſect. 1. §. 15. p. 50. *Junck.* Conſp. Chir. Tab. 79. p. 540. *Caſt.* Lex. Med. p. 435. voc. *Inuſtio.*

The whole art of phyſic, among the Japoneſe, lies in the choice of places proper to be *burnt*; which are varied according to the diſeaſe. *Ten. Ryne*, Diſſ. de Arthrit. P. 3. Phil. Tranſ. N° 148. p. 228.

In the country of the Mogul, the colic is cured by an iron ring applied red-hot about the patient's navel. Lett. Edif. T. 9. p. 253, ſeq.

Burning is particularly recommended in the gout, as a ſevere but adequate cure of that ſtubborn diſeaſe. *Ten. Ryne*, ubi ſup. p. 225.

The Japoneſe are many of them covered with ſcars all over their bodies, by the frequent *burnings* of moxa. Idem, ibid. p. 226. See the article MOXA, *Cycl.* and *Suppl.*

Burning pyramidal pieces of tow or cotton on the joints, is an antient practice revived in Europe, chiefly by Fab. ab Aquapendente, and Severinus, againſt pains of the joints ariſing from cold and viſcous humours impacted in them. The operation is alſo ſpoke of by Hippocrates [c] and Celſus [d]; the former of whom recommends the uſe of raw flax. Severinus calls it the Arabian *burning*, becauſe moſt frequently uſed among that people, tho' common enough alſo among the Egyptians [e].—[c *Hippoc.* Aph. ult. l. 6. Item, de Affectib. Text. 30 & 32. *Horn.* Microtec. ſect. 2. §. 35. p. 141, ſeq. d *Celſ.* l. 4. c. 22. e *Alpin.* de Medic. Ægypt. l. 3. p. 101.]

Accidents have often been the means of great diſcoveries, and a very remarkable one, commemorated by Mr. Homberg in the Memoirs of the Academy of Paris, inſtructed him in the cure of a diſeaſe, which had long baffled his ſkill. A woman of about five and thirty became ſubject to a head-ach, which at times was ſo violent, that it drove her out of her ſenſes, making her ſometimes ſtupid and fooliſh, and at others raving and furious. The ſeat of the pain was in the forehead, and over the eyes, which were inflamed and looked violently red and ſparkling; and the moſt violent fits of it were attended with nauſeas and vomitings. In the times of the fits ſhe could take no food; but out of them had a very good ſtomach. Mr. Homberg had in vain attempted her cure for three years with all kinds of medicines; only opium ſucceeded, and that but little, all its effect being only the taking off the pain for a few hours. The redneſs of her eyes were always her ſign of the violence of an approaching fit. One night feeling a fit coming on, ſhe went to lie down upon the bed, but firſt walked up to the glaſs with the candle in her hand, to ſee how her eyes looked; in obſerving this, the candle ſet fire to her cap, and, as ſhe was alone, her head was very terribly burnt before the fire could be extinguiſhed. Mr. Homberg was ſent for, and ordered bleeding and the proper dreſſings; but it was perceived, that the expected fit this night never came on; the pain of the *burning* wore off by degrees, and the patient found herſelf from that hour cured of her head-ach, which had never returned in four years after; which was the time when the account was given. Mem. Acad. Par. 1708.

Another not leſs remarkable cure of this kind was communicated to Mr. Homberg by a phyſician at Bruges. A woman had been long ſubject to terrible pains and ſwellings of her legs and thighs, and had been accuſtomed, by way of remedy, to rub them with brandy by the fire-ſide night and morning. One evening as ſhe was doing this, the whole quantity of brandy took fire by ſome accident, and burnt her, but not violently; ſhe uſed the common means for the burn, and, in the night, all the water which had been uſed to ſwell her legs, voided itſelf by urine: in the morning, the limbs were found free from the ſwelling, which never afterwards returned. Thus accident often does more than medicine; and it is pity that its good effects are not more common. It is certain, that, among the people of earlier times, theſe violent remedies were much more in uſe, and perhaps diſeaſes were cured by them, which now baffle all our art: and it is very certain, that accident has taught the ſavage inhabitants of many nations to cure diſeaſes in this manner greatly to their advantage; and many of them are fond of ſuch remedies, becauſe they are painful, and give them opportunities of ſhewing their courage. Mr. Homberg, who was born in the iſland of Java, ſays, it is a common practice with the natives to cure violent colics, by *burning* the ſoles of their feet with hot irons; and that, in the common caſe of a whitlow or felon on the finger, their remedy is to dip the finger into boiling water, and repeat this as often as neceſſary, at a minute's diſtance between each time. The accounts travellers give us of cures of other diſeaſes among the ſavages by *burning*, are very numerous; and even at home, we ſeem to know its efficacy very well, daily experiencing its ſalutary effects on horſes and other animals, though we are too delicate and tender to ſuffer it ourſelves. We ſeem to prefer long and leſs violent pains to ſhorter and ſharper; and even in that terrible caſe the gout, cannot bring ourſelves to the *burning* with moxa, the moſt ſlight of all cauterizations. Mr. Homberg, however, gives an account of a Dutch gentleman, who tried this under his care, and was by it relieved from a fit of the gout in ſeven or eight days, which he otherwiſe expected would have held him two months, and ever afterwards had the returns much leſs frequent. Mem. Acad. Par. 1708.

Burning for diſeaſes may cure three ways; firſt, by ſetting the noxious humours in a violent emotion, and by that perhaps determining them to new courſes; or, ſecondly, by rendering the juices fluid, which were before tough and viſcous, and by that means fitting them for being carried off; or, laſtly, deſtroying a part of the veſſels which furniſh them to the part in too large abundance.

BURNING *alive*, among the Romans, a puniſhment inflicted on deſerters, betrayers of the public councils, incendiaries, and even coiners: it was called *crematio. Pitiſc.* Lex. Ant. T. 1. p. 588. voc. *Crematio.* Idem, ibid. p. 952. voc. *Incendere.*

The Jews had two manners of *burnings*; one called *burning* of the body, performed with wood and faggots; the other, *burning* of the ſoul, *combuſtio animæ*, performed by pouring ſcalding hot lead down their throats. This laſt was not frequent. The criminal was ſet up to the knees in the ground; two perſons ſtrained a towel round his neck till they found his mouth open, upon which the lead was poured in [a]. The prieſt's daughter, who committed whoredom, he that lay with his own daughter, or grand-daughter, or his mother in law, were *burnt* alive [b].—[a *Schoetg.* Lex. Ant. p. 1422. b *Godwyn*, Moſes and Aaron, l. 5. c. 7. p. 201, ſeq.]

BURNING *on the forehead*, *Frontis inuſtio*, was antiently the penalty of a calumniator [a]. In the middle age, we find frequent inſtances of burning in the cheek; a puniſhment allotted to bondmen or villains guilty of theft [b].—[a *Kenn.* Rom. Ant. Not. P. 2. l. 3. c. 18. b *Du Cange*, Gloſſ. Lat. T. 1. p. 1073. voc. *Combuſtio.* Item, T. 3. p. 488. voc. *Maxilla.*]

BURNING is alſo a denomination given by phyſicians to divers diſorders, on account of a ſenſation of heat that attends them. In which ſenſe we ſay, a *burning* fever. See the articles FEVER and CAUSUS.

Among the divers ſpecies of madneſs incident to dogs, one is called the *burning* madneſs. If a mare which has been covered, and the colt knit within her, be covered by another horſe, he is ſaid to *burn* her. *Cox*, Gent. Recr. P. 1. p. 131.

BURNING is more particularly uſed for the herpes, or *ignis ſacer*, called *eryſipelas* and *arſura*. *Du Cange*, Gloſſ. Lat. T. 1. p. 344. voc. *Arſura.* See the article ERYSIPELAS, *Cycl.* and *Suppl.*

BURNING is alſo applied to the action of divers things which are cold to the touch, or do not contain fire.

In this ſenſe, aqua fortis is ſaid to *burn* cloth: There are certain fogs which *burn* or ſcorch the corn: Virgil obſerves, that ſevere cold itſelf will *burn*, that is, have much the ſame effects on the parts of the body, as fire itſelf in cauſing gangrenes. Vid. Hiſt. Acad. Scienc. an. 1709. p. 594.

Seamen talk much of the *burning* of ſea water; by which they only mean its yielding a briſk light, which it ſometimes does to that degree, that the water, as it paſſes off the oars, appears like liquid fire, chiefly during eaſterly and ſoutherly winds. Phil. Tranſact. N° 27. p. 497.

Some conſider the ſmutting of corn as a kind of *burning*; the beſt way to prevent the *burning* or ſmutting of grain, is to lime the ſeed. *Ray*'s Collect. Loc. Words, p. 130, ſeq. See the article SMUTT.

The tradition concerning Archimedes and his *burning*-glaſs, though defended by ſome modern writers [a], is held for a fable by the more intelligent in optics; and the rather, as neither Polybius, Livy, Diodorus, nor Plutarch, make any mention of it: Lucian [b] indeed aſſures us, that Archimedes *burnt* the enemies veſſels by art or ſtratagem; but does not ſay it was done by *burning* ſpecula [c]. Wolfius ſuggeſts divers reaſons for the impoſſibility of the thing [d]. But of late Monſ. Buffon has put the poſſibility of the thing beyond all doubt, by the combination of a multitude of *plana ſpecula*.—[a *Liebknecht*, Diſſ. de Specul. Cauſt. c. 1. *Walch.* Lex. Philoſ. p. 310. *Voſſ.* de Math. Scien. c. 24. §. 7. p. 101. Item, in Addend. p. 442. *Naud.* Synt. Mil. l. 2. p. 658. *Budd.* Obſerv. ad Hiſt Phyſ. §. 31. b *Lucian.* in Hippia, T. 2. p. 742. c *Fabric.* Bibl. Græc. l. 3. c. 22. T. 2. p. 552. d *Wolf.* Elem. Catoptr. §. 217.] See the article MIRROR.

Archimedes has a work extant on *burning*-mirrors [e], tranſlated into Latin from the Arabic by Gogava; though by ſeveral authors ſuſpected for ſpurious, and by ſome attributed to Ptolemy.

lemy [f].—[[e] Περι Κατοπτρων καυστικων. [f] *Fabric.* Bibl. Græc. l. 3. c. 22. §. 11. T. 2. p. 548.]

BURNING *of land*, in husbandry, is the setting fire to the sod or turf of some particular sorts of land, by way of improving them.

This is a very great means of improvement of land, and is not only at this time used in many parts of this and other kingdoms, but it has been practised from the earliest times of husbandry that we have any account of. Virgil very expressly mentions, and greatly recommends it, and all the old writers of husbandry say much in its praise.

It does not take effect, however, in all sorts of ground. It is not proper for rich soils, nor for stony or chalky ones; nor is it a practice to be often repeated on any land, especially where the surface is shallow; nor must corn be sown too long upon the land afterwards; for *burning* exhausts the good juices of the land, in some degree, as well as the bad ones. It is most profitably used to such lands as have lain a long time uncultivated, and are over-run with rank weeds, such as sowre-grass, fern, heath, furze, and the like. Some lands, when corn is sown upon them, run it up into straw, and make the ears but poor and light; these are, beyond all others, improved by *burning*. The usual method of plowing up for this is with a breast-plow, which a man pushes before him, and cuts the turf off the surface, turning it over when he has cut it to about eighteen or twenty inches long. The common way is only to pare it about half an inch thick; but if it be very full of weeds, with stubborn roots, it is better to go deeper.

If the season proves dry, the turf needs no more turning, but dries as it lies. If it be wet, it is necessary to set it on edge, and keep it hollow till the wind and air have sufficiently dried it. It is then to be piled up in little heaps, about the quantity of two wheel-barrows full in each heap; and if there be much roots and a good head upon it, there needs no farther care but the setting it on fire, and the whole heap will be reduced to ashes; but if it be earthy and too dead to burn out by itself, there must be a heap of furze or heath laid under every parcel.

When the heaps are reduced to ashes, they are left upon the place till some rain comes to wet them; otherwise, in the spreading, they would all blow away. When they are wetted, the farmer takes the opportunity of a calm day, and spreads them as equally as possible over the whole land, cutting away the earth a little under the heaps, to abate its over great fertility there. After this, the land is to be plowed but very shallow, and the corn is to be sown upon it only in half the quantity that it is upon other land, and the later this is sown the better. If it be wheat, the best time is the latter end of October; for, if sown sooner, it is apt to grow too rank. The beginning of May is the proper time for cutting the turf off from these lands, because there is then time sufficient to get the land in order for sowing at the proper season. The whole charge of cutting, carrying, and *burning* the turf, is generally about twenty-four shillings an acre.

The turf is not to be burnt to white ashes, for this wastes a great part of its salt; it is only to be burnt so as to crumble all to pieces, and be in a condition to spread well upon the land; and it is better that the heaps of it should burn slowly and gradually than furiously.

Some farmers stub up furze, heath, and the like, and, covering heaps of them with the parings of the earth, set fire to them; others burn the stubble of the corn-fields, and others the stalks of all sorts of weeds, and add half a peck of unslaked lime to every bushel of the ashes. They cover the lime with the ashes, and leave the heaps in this manner till there comes some rain to slake the lime; and, after this, they spread the mixture carefully over the field. There is one great advantage attending this sort of manure, which is, that it does not breed weeds like the common way with dung, but only fills the ears of the corn, not running them up into stalk; but it is proper to add some dung to these lands at the time of plowing them up for a second or third crop of corn. *Mortimer*'s Husbandry.

BURNING *spring*, in natural history. See the article SPRING.

BURNING *zone*, in geography. See TORRID *zone*, *Cycl.*

BURNISHED *gold* or *silver*, denotes those metals laid on any work or leaves, and afterwards passed over with a burnisher to heighten their lustre. *Park.* Treat. Japann. c. 20. p. 61, seq.

BURNISHERS (*Cycl.*)—*Burnishers* for gold and silver are commonly made of a dog's or wolf's tooth, set in the end of an iron or wooden handle. Of late, agates and pebbles have been introduced, which many prefer to the dog's tooth. *Felib.* Princ. de l'Archit. p. 363. voc. *Bruniſſoir.*

The *burnishers* used by engravers in copper, usually serve with one end to burnish, and with the other to scrape. *Park.* Treat. Japann. c. 19. p. 60. *Felib.* ibid. l. 2. c. 10. p. 281. Item, p. 263 & 284.

BURNT, (*Cycl.*) in speaking of medicines, imports as much as imperfectly calcined. *Libav.* Synt. Arc. Chym. T. 2. p. 147. See CALCINATION, *Cycl.* and *Suppl.*

Burnt bodies are generally dry and astringent. The other medicinal qualities belonging to bodies are frequently destroyed, at least impaired by the *burning*. *Cast.* Lex. Med. p. 751. voc. *Uſtus.*

BURNT *way*, *combuſta via*, among astrologers, that part of the zodiac from the beginning of Libra to the middle of Scorpio; or, according to others, from the middle of Libra to the end of Scorpio, comprehending 45 degrees: a space supposed very unfortunate, and in which the planets are much enfeebled in their virtues, especially the moon. *Vital.* Lex. Math. p. 118. voc. *Combuſta.*

BURNT *planet*.—A planet is said to be *burnt*, *combuſtus*, when it is in conjunction, or nearly so, with the sun. Thus Saturn is said to be *burnt*, when not above five degrees distant from the sun, Jupiter, when six, &c. Planets, in this situation, are supposed to be much weakened or enfeebled in their influences. *Vital.* Lex. Math. p. 117, seq. *Wolf.* Lex. Math. p. 402. voc. *Combuſtus.*

BURRS, denote bits of flesh adjoining to the horns of a beef's hide, cut off by poor women after it is brought to market. *Haught.* Collect. T. 1. N° 128. p. 337.

BURRAS-*pipe*, an instrument used by goldsmiths, consisting of a copper box, with a spout, having teeth like a saw; sometimes also used by surgeons for the application of certain solid medicines by insperſion. *Horn.* Introd. Chirurg. sect. 1. p. 72.

BURREL-*fly*, in natural history, the name given by the people of many parts of England to the *curvicauda*, or wringle-tail; a species of bee-fly, very troublesome to horses. It is very like the common bee, but has only two wings, and has no sting. See the article WRINGLE-*tail.*

BURROCK, a small wear or dam, where wheels are laid in a river for the taking of fish. Dict. Rust. in voc. See the article WEAR, *Cycl.*

BURROUGH-*duck*, in zoology, a common English name for the *tadoma*, a species of duck of many beautiful colours, called also thence the shell-drake. It is common on the coast of Lancashire, and in some other places, and seems to have obtained its name *borrough-duck* from its often lying in deserted rabbet-holes. See the article TADOMA.

BURROWS, holes in a warren, serving as a covert for rabbets, &c. Dict. Rust. T. 1. in voc. See the article WARREN, *Cycl.* and *Suppl.*

A coney's coming out of her *burrow*, is called *bolting*. To catch coneys, they sometimes lay purse-nets over the *burrows*, then put in a terrier close muzzled, which making the creature bolt, she is caught in the net. *Cox*, Gent. Recr. P. 1. p. 93.

BURROW, or BARROW, is also a denomination given by our Saxon ancestors to what the Romans called *tumulus*. *Plot*, Nat. Hist. Oxford. c. 10. §. 48. p. 332. See the article BARROW.

BURSA, *Burſe*, originally signifies a purse. *Spelm.* Gloss. p. 95. *Du Cange*, Gloss. Lat. T. 1. p. 654. *Caſen.* Orig. Franc. p. 28.

Revocatio per BURSAM, in the Norman laws, is a right belonging to the next akin, to redeem or purchase back, within a year after sale, a fee or tenement alienated by his kinsman, on paying the price it had been sold at. *Du Cange*, ubi supra.

BURSA is more particularly used in middle age writers for a little college or hall in an university, for the residence of students, called *burſales*, or *burſarii*. *Schoet.* Lex. Ant. p. 245.

BURSA, *Burſe*, or *Bourſe*, in the French universities, still denotes a foundation for the maintenance of poor scholars in their studies.

The nomination to *burſes* is in the hands of the patrons and founders thereof. The *burſes* of colleges are not benefices, but mere places assigned to certain countries and persons. A *burſe* becomes vacant by the bursars being promoted to a cure, as being incompatible. In the college of cardinal Maine at Paris, there are two sorts of *burſes*, lesser, for young scholars, who can only enjoy them six years, that is, as long as suffices for their rising to the degree of master of arts; and greater, which may be held nine years, or till the students obtain the degree of doctors. Trev. Dict. Univ. T. 1. p. 1182. voc. *Bourſe.*

BURSA *paſtoris*, *Shepherd's purſe*, in botany, the name of a genus of plants, the characters of which are these: The flower consists of four leaves, and is of the cruciform kind. The pistil arises from the cup, and finally becomes a flat triangular seed-vessel, filled with small seeds, and divided into two cells by an intermediate membrane, to which there adhere valves on each side. The species of *burſa paſtoris*, enumerated by Mr. Tournefort, are these: 1. The larger *ſhepherd's purſe*, with whole leaves. 2. The larger *ſhepherd's purſe*, with sinuated leaves. 3. The larger *ſhepherd's purſe*, with elegantly divided leaves, like those of buckshorn plantain. 4. The lesser *ſhepherd's purſe*. 5. The daisy-leaved mountain *ſhepherd's purſe*. *Tourn.* Inst. p. 216.

This is an officinal plant; its juice is reputed astringent and vulnerary, and as such is used against hæmorrhages, dysenteries, diarrhæas, &c.

The country people apply it to cuts and fresh wounds; and some hold it of great virtue when made up into a cataplasm, and applied to the wrists against tertians and quartans. *Quinc.* Dispens. P. 2. sect. 2. n. 99. p. 94. *Junck.* Consp. Ther. p. 437.

BURSALIS *muſculus*, in anatomy, a name given by Cowper and others to a muscle of the thigh, called also *marſupialis* by the same authors. It is the *obturator internus* of Winslow and Albinus,

nus, and is described by Vesalius under the name of *decimus tertius moventium*, and by Spigelius under that of *circumagentium tertius*, or *obturator internus*.

BURSAR, or BURSER, *Bursarius*, is used in middle age writers for a treasurer, or cash-keeper.

In this sense, we meet with *bursers* of colleges. Conventual *bursars* were officers in monasteries, who were to deliver up their account yearly on the day after Michaelmas. *Kenn.* Gloss. ad Paroch. Ant. in voc. *Bursars*. *Du Cange*, Gloss. Lat. T. 1. p. 654. voc. *Bursarius*. *Spelm.* Gloss. p. 95. voc. *Bursa*.

The city of Bern is commanded by four bannerets, who are the heads of the militia of the whole canton, and two *bursers*, who are the treasurers general, one for the German district, the other for the Roman or French. Trev. Dict. Univ. T. 1. p. 1183. voc. *Bourser*.

The word is formed from the Latin *bursa*; whence also the English word *purse*: and hence the like officer who in a college is called *bursar*, in a ship is called *purser*. See the article PURSER, *Cycl.*

BURSARS, or BURSERS, *Bursarii*, also denote those to whom stipends are paid out of a burse or fund appointed for that use [a]. At Paris, all exhibitioners, or stipendiary scholars, are still called *bursars*, or *boursiers*, either in regard they live on the endowments of the founder, or benefactor, or, as others think, because they were originally such novices as were sent to the university, and maintained by the religious out of their public burse or stock [b]. Actions brought for the effects of a college, are entered in the name of the principal and *bursars* [c].—[[a] *Du Cange*, Gloss. Lat. T. 1. p. 654. *Spelm.* Gloss. Lat. p. 95. voc. *Bursarii*. [b] *Kenn.* Gloss. ad Paroch. Ant. in voc. [c] Trev. Dict. Univ. p. 1183.] See BURSA.

BURSARIA, *Bursary*, in middle age writers, denotes the place of receiving and paying money and rents by the bursars or officers of account in religious houses. *Kenn.* Gloss. ad Paroch. Antiq in voc. See the articles BURSA, and BURSAR.

BURSE, in matters of commerce, denotes a public edifice in certain cities, for the meeting of merchants to negotiate bills, and confer on other matters relating to money and trade.

In which sense, *burse* amounts to the same with what we otherwise call an exchange. See the article EXCHANGE, *Cycl.*

The first place of this kind to which the name *burse* was given, Guicchardin assures us, was at Bruges; and it took its denomination from a hotel adjoining to it, built by a lord of the family *de la Bourse*, whose arms, which are three purses, are still found on the crowning over the portal of the house. Catel's account is somewhat different, *viz.* That the merchants of Bruges bought a house or apartment to meet in, at which was the sign of the purse. From this city the name was afterwards transferred to the like places in others, as in Antwerp, Amsterdam, Berghen in Norway, and London. This last, antiently known by the name of the *Common burse of merchants*, had the denomination since given it by Q. Elizabeth, of the *Royal Exchange*. *Catel.* Hist. de Langued. p. 199. *Menag.* Orig. Franc. p. 121. voc. *Bourse*.

In the times of the Romans there were public places for the meeting of merchants in most of the trading cities of the empire: that built at Rome in the year after its foundation 253, about 492 years before Christ, under the consulate of Appius Claudius and Publius Servilius, was denominated the *College of merchants*; some remains of which are still seen, known among the modern Romans by the denomination *loggia*, in the place St. George. The hans towns, after the Roman example, gave the name *colleges* to their *burses*. *Savar.* Dict. Comm. T. 1. p. 451.

The most considerable *burse* is that of Amsterdam, which is a large building, 230 feet long and 130 broad, round which reigns a peristyle or portico, 20 feet wide. The columns of the peristyle, amounting to 46, are numbered, for the convenience of finding persons. It will hold 4500 people. *Sav.* Supp. p. 86.

BURSE *of merchants*, *Bourse des marchands*, denotes a court or jurisdiction established in several trading cities of France, for the taking cognizance, at the first instance, of all disputes arising between merchants, bankers, negotiants, and the like, and from which no appeals lie but to the parliament.

The *burse* is a kind of consular jurisdiction, the judges whereof are also denominated *priors* and *consuls*.

The *burse* of merchants at Tholouse was established by Henry II. in 1549, after the manner of the judges conservators of the privileges of the fairs at Lyons. The chief officers are a prior and two consuls, chosen yearly, and empowered to chuse and associate, to the number of 60, several merchants, to assist them in the decision of differences. These are called judges *conseillers de la retenuë*. *Savar.* Dict. Comm. T. 1. p. 449, seq. Trev. Dict. Univ. T. 1. p. 1182.

The *burse* of Rouen, or, as it is commonly called, the convention of Rouen, is of some years later standing than that of Tholouse, having only been erected in 1566.

The latest of the consular *burses* is that of Marseilles, established by Louis XIV. in 1691; whose jurisdiction extends through several of the neighbouring dioceses. *Savar.* loc. cit. p. 450.

BURSTEN, a person ruptured, called by physicians *hernioſus*; in middle age writers, *ponderoſus*. *Spelm.* Gloss. p. 463. voc. *Ponderoſus*. See the articles HERNIA, *Cycl.* and *Suppl.* and RUPTURE, *Cycl.*

BURTHEN, properly signifies a heavy weight or load.

Ringelberg recommends the bearing *burthens* as the best sort of exercise; especially to strengthen men of study. To this end, he had a gown lined with plates of lead, which he could just lift with both his hands. This load he bore six or seven days together, either increasing or diminishing it as he found occasion; by which means he could both write and exercise at the same time, without the one being any hinderance to the other. *Ringelberg.* Diss. de Stud. Instit. *Junck.* Consp. Physiol. Tab. 5. p. 500.

BURTHEN also denotes a fixed quantity of certain commodities. A *burthen* of gad-steel is two score, or 120 pounds. *Moor*, Math. Compend. c. 2. p. 12.

BURTON, in the sea language, a small tackle, consisting of two single blocks, capable of being made fast any where at pleasure, for hoisting of small things in or out, and which will purchase more than a single tackle with two blocks. *Guill.* Gent. Dict. P. 3. in voc.

BURY, is sometimes used to denote the hole or den of some animal under ground. See the article BURROW.

In which sense we say, the *bury* of a mole, a tortoise, or the like. The grillotalpa, or male cricket, digs itself a *bury* with its fore-feet, which are made broad and strong for that purpose [a]. Naturalists speak of a kind of urchins in the island of Maraguan, which have two entries to their *buries*, one towards the north, the other to the south, which they open and shut alternately, as the wind happens to lie [b].—[[a] *Grew*, Mus. Reg. Societ. P. 1. sect. 7. c. 1. p. 160. [b] Idem, ibid. sect. 2. c. 1. p. 17.]

BURYING, the same with interment or burial. See the article BURIAL.

BURYING *alive*, was the punishment of a Vestal who had violated her vow of virginity. The unhappy priestess was let down into a deep pit, with bread, water, milk, oil, a lamp burning, and a bed to lie on: but this provision was but show, for the moment she was at the bottom, they began to cast in the earth upon her, till the pit was filled up. Vid. Mem. Acad. Inscr. T. 5. p. 278. See the article VESTALS, *Cycl.*

Some middle age writers seem to make *burying alive*, *defoſſio*, the punishment of a woman thief. *Du Cange*, Gloss. Lat. T. 2. p. 42.

Lord Bacon gives instances of the resurrection of persons who had been buried alive. The famous Duns Scotus is of the number, who having been seized with a catalepsis, was thought dead, and laid to sleep among his fathers, but raised again by his servant, in whose absence he had been buried. Vid. *Bac.* Hist. Vit. & Mort. ap. Works, T. 2. p. 178.

Bartholin gives the relation of a woman, who, on recovering from an apoplexy, could not be convinced but that she was dead, and solicited so long and earnestly to be buried, that they were forced to comply, and performed the ceremonies, at least in appearance. Vid. *Barth.* Act. Med. T. 5. Obs. 60. p. 151.

The famous emperor Charles V. after his abdication, took it into his head to have his burial celebrated in his life-time, and assisted at it. Vid. *Gedd.* Misc Tracts.

BURYING-*place*.—The antients buried out of cities and towns; an usage which we find equally among Jews, Greeks, and Romans [a]. Among the last, *burying* within the walls was expressly prohibited by a law of the twelve tables: *Hominem mortuum in urbe ne ſepelito, neve urito.* The usual places of interment were in the suburbs and fields, but especially by the wayſides [b]. Partly, says Kennet, to put passengers in mind of their mortality, and partly also to save the best of their land [c].——[[a] *Kenn.* Rom. Ant. Not. P. 2. l. 5. c. 10. p. 352. *Potter*, Archæol. l. 4. c. 7. T. 2. p. 218, seq. [b] *Salmuth.* ad Pancirol. P. 1. tit. 62. p. 339. [c] *Kenn*, ubi supra, l. 5. c. 10. p. 353.]

Two reasons are alleged, why the antients *buried* out of cities; the first, an opinion, that the touch, sight, or even neighbourhood of a corpse, defiled a man, especially a priest: whence that rule in A. Gellius, that the *Flamen Dialis* might not on any account enter a place where there was a grave [d]: the second, to prevent the air from being corrupted by the stench of putrefied bodies, and the buildings from being endangered by the frequency of funeral fires [e]. We have instances, however, of persons *buried* in the city; but it was a favour only allowed a few of singular merit to the commonwealth. Plutarch says, those who had triumphed were indulged in it. Be this as it will, Val. Publicola, and C. Fabricius, are said to have had tombs in the forum; and Cicero adds Tubertus to the number [f].—[[d] *A. Gell.* Noct. Att. l. 10. c. 15. [e] *Kenn*, Rom. Ant. Not. P. 2. l. 5. c. 10. p. 353. [f] *Plut.* Quæst. Rom. *Crinit.* de Honest. Discipl. l. 21. c. 12.]

Lycurgus allowed his Lacedemonians to *bury* their dead within the city, and around their temples, that the youth being enured to such spectacles, might be the less terrified with the apprehension of death. *Potter*, Archæol. Græc. l. 4. c. 7. p. 219.

Burying in churches was not allowed for the first three hundred years after Christ; and the same was severely prohibited by the christian emperors for many ages after. The first step towards it appears to have been the practice of erecting churches over the graves of some martyrs in the country, and translating the relicts of others into churches in the city: the next was, allowing

lowing kings and emperors to be *buried* in the atrium or church-porch. In the ſixth century, the people began to be admitted into the church-yards, and ſome princes, founders, and biſhops, into the church. From that time the matter ſeems to have been left to the diſcretion of the biſhop. Vid. *Somn.* Antiq. Canterb. p. 233, ſeq. *Bingh.* l. 23 c. 1. §. 2, ſeq. *Durand.* de Ritib. Eccleſ. l. 1. c. 23. n. 7. p. 219, ſeq.

BUSELAPHUS, in zoology, the name of an animal of the goat kind, called alſo *moſchelaphus*. It is of a ſort of middle ſhape between the ſtag and ox kind. Its head and its ears are long, its legs and feet ſmall, its tail about a foot long, and of the ſhape of that of a heifer; its upper part reddiſh and very naked, its lower covered with long hairs. The hair of its whole body is of a tawney or rediſh yellow colour; its horns are black, ſmooth at the top, and rough every where elſe. It has two teats, and is an extremely tame and quiet animal, and naturally full of play. It is extremely ſwift in running, and in moſt reſpects, except in ſize, greatly reſembles the common antelope. *Ray*, Syn. Quad. p. 8.

BUSH, a tuft or aſſemblage of boughs or branches.

Lime-BUSH, among bird-catchers, denotes an arm or bough of a buſhy tree, full of thick and long, yet ſmooth and ſtrait twigs, dawbed over with bird-lime, and placed on ſome hedge where birds frequent, uſed eſpecially for the taking of pheaſants and fieldfares. Dict. Ruſt. T. 1. in voc. *Lime*. See the articles BIRD and LIME.

Burning-BUSH, that wherein the Lord appeared to Moſes at the foot of mount Horeb. Exod. iii. 2.

'Tis diſputed who the perſon was that appeared to Moſes in the *buſh*. In divers places of Scripture it is ſaid to be God himſelf; in others, the angel of the Lord [a]. The fathers find great myſteries in the burning *buſh*: ſome will have the incarnation typified by it, others the hypoſtatic union, others the purity of Mary, who brought forth without injury to her virginity [b]. The Mahometans hold, that one of Moſes's ſhoes, which he put off as he approached the burning *buſh*, was repoſited in the ark of the covenant, to perpetuate the memory of that miracle [c]. —— [[a] *Budd.* Hiſt. Eccleſ. Vet. Teſt. P. 2. ſect. 1. §. 3. p. 396. ſeq. *Calm.* Dict. Bibl. T. 1. p. 331, ſeq. [b] Vid. *Suic.* Theſ. Eccleſ. T. 1. p. 672. voc. Bat☉. *Budd.* lib. cit. p. 396. [c] *Calm.* loc. cit.]

BUSH alſo denotes a coronated frame of wood hung out as a ſign at taverns. It takes the denomination from hence, that, anciently, ſigns where wine was ſold were *buſhes* chiefly of ivy, cypreſs, or the like plant, which keeps its verdure long. *Kenn.* Gloſſ. Paroch. Ant. voc. *Buſche*.

BUSHEL, (*Cycl.*) *Buſſellus*, appears to have been firſt uſed for a liquid meaſure of wine, equal to eight gallons. *Octo libræ faciunt galonem vini, & octo galones vini faciunt* buſſellum *London, quæ eſt octava pars quarterii* [a]. The word was ſoon after tranſferred to the dry meaſure of corn of the ſame quantity—*Pondus octo librarum frumenti facit* buſſellum, *de quibus octo conſiſtit quarterium* [b].—[[a] Compoſit. Menſur. an. 51 Hen. III. ap. *Spelm.* Gloſſ. p. 254. voc. *Galo*. [b] *Flet.* l. 2. c. 12. §. 1. *Kenn*, Gloſſ. Paroch. Antiq. in voc. *Buſſellus*.]

The Engliſh ſtandard *buſhel* is that of Henry VII. which is kept in the exchequer. This being filled with common ſpring water, and the water meaſured before the houſe of commons in 1696, in a regular paralleliopiped, was found to contain 2145, 6 ſolid inches [c]; and the ſaid water being weighed, amounted to 1131 ounces and 14 penny-weights troy [d].—— [[c] *Everard.* Stereom. [d] *Greav.* Orig. of Weights, p. 25, ſeq.]

Beſides the ſtandard or legal *buſhel*, we have ſeveral local *buſhels*, of different dimenſions in different places. At Abingdon and Andover, a *buſhel* contains nine gallons; at Appleby and Penrith, a *buſhel* of peaſe, rye and wheat, contains 16 gallons; of barley, big, malt, mixt malt, and oats, 20 gallons. A *buſhel* contains at Carliſle 24 gallons; at Cheſter, a *buſhel* of wheat, rye, &c. contains 32 gallons, and of oats 40; at Dorcheſter, a *buſhel* of malt and oats contains 10 gallons; at Falmouth, the *buſhel* of ſtricken coals is 16 gallons, of other things 20, and uſually 21 gallons; at Kingſton upon Thames, the *buſhel* contains eight and a half; at Newbury, 9; at Wiccomb and Reading, eight and three fourths; at Stamford, 16 gallons. *Hought.* Collect. T. 1. n. 46. p. 42. See the article WEIGHT.

Cenalis, in his treatiſe of weights and meaſures, makes his *buſhel* one third of the Roman amphora. Merſennus obſerves, that the Paris *buſhel* of wheat, heaped, contains 220160 grains, and when ſtroked, 172000 grains. At the time of Severus death, there was corn in the public granaries of Rome for ſeven years ſubſiſtence, at the rate of 75000 *buſhels per* day, that is, to ſubſiſt 600,000 men ſo long, the Roman *buſhel* being the ordinary allowance for eight men *per* day. Trev. Dict. Univ. T. 1. p. 1098. voc. *Boiſſeau*.

BUSS, in navigation, a kind of fly-boat uſed by the Dutch in the herring-fiſhing. See the articles HERRING and FISHERY, *Cycl.*

The word is originally Flemiſh, *buis*, or *buys*, which ſignifies the ſame.

BUSS, *Buſſa*, is alſo the name of a large ſort of veſſel of war in uſe in the middle age; ſpoke of by antiquaries and hiſtorians under the ſeveral denominations of *buſſa*, *buſcia*, *burcia*, *buza*, *bucca*, and *bucia*. *Spelm.* Gloſſ. p. 95. *Aquin.* Lex. Milit. T. 1. p. 143, ſeq. *Du Cange*, Gloſſ. Lat. T. 1. p. 656.

The herring-*buſs* is uſually about 60 tun. The officers on board it are the maſter or patron, his mate, and a boatſwain, who directs the fiſhermen, barrellers, &c. The only diet in a *buſs* is ſea-biſcuit, gruel, and the fiſh they catch. *Fæſch.* Ing. Lex. p. 400. voc. *Herring-buyſe*. See alſo *Aubin.* Dict. Mar. p. 130. voc. *Buche*; where the fabric and proportions of the ſeveral parts of a *buſs* are deſcribed, and a figure of this ſort of veſſel is given.

BUSSORIES, a name given by ſome to that ſpecies of pigeon called the *carrier*. The original of theſe pigeons came from Bazora in Perſia, being ſometimes brought from place to place by ſhipping, and ſometimes in the caravans; and the name *buſſories* ſeems only a corruption of *Bazoras*, or Bazora pigeons. *Moore*'s Columb. p. 28.

BUSTUARIÆ *mœchæ*, a kind of public whores, who proſtituted their bodies among the *buſta* or tombs, which it ſeems were ordinary places of rendezvous for affairs of this kind. *Turneb.* Adverſ. l. 13. c. 19. *Calv.* Lex. Jur. p. 129.

BUSTUM, (*Cycl.*) in antiquity, was properly the place where the corpſe of a dead man was burnt, and his bones and aſhes buried.

When the body was only burnt there, and buried elſewhere, the place was not properly called *buſtum*, but *uſtrina*, or *uſtrinum*. *Feſt.* in voc. *Kirchman.* de Funer. Rom. l. 3. c. 1. *Pitiſc.* Lex. Ant. T. 1. p. 303.

BUSTA *Gallica*, was a place in antient Rome, wherein the bones of the Gauls, who firſt took the city, and were ſlain by Camillus, were depoſited. *Varr.* de Ling. Lat. l. 4. *Aquin.* Lex. Milit. T. 1. p. 144. *Pitiſc.* Lex. Antiq. T. 1. p. 303. It differed from

BUSTA *Gallorum*, a place on the Appennines, thus called by reaſon of many thouſands of Gauls killed there by Fabius.

BUSTUM, in the Campus Martius, was a ſtructure whereon the emperor Auguſtus firſt, and, after him, the bodies of his ſucceſſors were burnt.

It was built of white ſtone, ſurrounded with an iron paliſade, and planted within ſide with alder trees. *Pitiſc.* ubi ſupra.

BUSTUM was alſo figuratively applied to denote any tomb. See the article TOMB, *Cycl.*

Whence thoſe phraſes, *facere buſtum*, *violare buſtum*, &c.

BUSTUM *of an altar*, was the hearth or place where the fire was kindled. Idem, ibid. See the article ALTAR, *Cycl.* and *Suppl.*

BUTCHER (*Cycl.*)—In London, the furniſhing the markets with *butchers* meat is cantoned into ſeveral offices. We have carcaſs *butchers*, who kill the meat in great quantities, and ſell it out to another ſort called retail *butchers*, diſperſed in all out-parts, villages, and towns near the city. There are, beſides, cow-jobbers, or ſaleſmen, who buy and ſell cattle, acting between the *butchers* and the breeders, or feeders [c]. Something like this alſo obtains at Paris [d].—[[c] Compl. Engl. Tradeſm. T. 2. p. 81. [d] Trev. Dict. Univ. T. 1. p. 1140. voc. *Boucher*.

BUTCHER-*bird*, the Engliſh name of the *lanius*. *Ray*'s Ornithol. p. 53. See the article LANIUS.

BUTCHERS-*broom*, a plant called by authors *ruſcus*. See the article RUSCUS.

BUTEO, the common *buzzard*, a bird of the long-winged hawk kind, of the ſize of a pheaſant, or ſmall pullet. Its head is large and flat, and its beak ſhort, crooked, and of a blueiſh black, and covered above with a yellow ſkin down to the noſtrils. Its back and wings are of a rediſh or yellowiſh brown, tending to black, or, as ſome call it, a ruſty black, ſometimes variegated with white ſpots near the ſhoulders. Its breaſt and belly are of a yellowiſh white, but on the breaſt there are ſeveral oblong ruſty coloured ſpots. Its thighs are covered with yellowiſh white feathers, with tranſverſe ſtreaks of a ferrugineous colour; between its eyes and noſtrils there are ſeveral black briſtles. The tail is not forked, the legs are ſhort, thick, ſtrong, ſcaly, and of a yellowiſh colour. It feeds on moles, field-mice, and other ſuch animals; ſometimes on ſmall birds, and ſometimes will ſeize on rabbets. In want of better food, it will alſo ſometimes live on beetles, worms, and the like. Its eggs are white, more or leſs ſprinkled with irregular red ſpots. In age, or by ſome other accidents, the head and back in this ſpecies are ſometimes found grey. *Ray*'s Ornithology, p. 88. See the article BUZZARD.

Apivorous BUTEO. See the article APIVORUS.

BUTHYSIA, Βυθυσια, in antiquity, a ſacrifice of the greateſt kind; ſuch were the hecatombs. See the articles SACRIFICE and HECATOMB, *Cycl.*

The Greeks frequently prefixed the particle βε, *bu*, to words, to denote things of extraordinary magnitude, as alluding to the bigneſs of oxen. *Varr.* de Re ruſtica, l. 2. c. 5. *Feſt.* de Verb. Signif. in voc. *Fab.* Theſ. p. 386.

BUTIGA, is an inflammation of the whole face, otherwiſe called *gutta roſacea*. *Rul.* Lex. Alch. p. 107. *Quinc.* Lex. Phyſ. Med. p. 61.

BUTLER, or BOTILER, an officer whoſe chief charge is over the cellar and drinkables,

BUTLERS, *Buticularii*, among the Normans, denote wine taſters, appointed to examine liquors, and ſee that they be right and

and legal. *Du Cange*, Gloſſ. Lat. T. 1. p. 659.

BUTLER *of France*, *Buticularius Franciæ*, was one of the four great officers in the houſhold of the antient kings of that country, who ſigned all the royal patents, or at leaſt was preſent at the diſpatch of them [a]. His ſeat was among the princes, and he even diſputed the precedency of the conſtable of France. He had a right of preſiding at the chamber of accounts; and, in the regiſters of that office of the year 1397, mention is made, that John de Bourbon, grand *butler* of France, was admitted there as firſt preſident. But the title is now aboliſhed, and, in lieu thereof, a new office of *grand echanſon*, or cupbearer, erected [b]. — [a *Du Cange*, ubi ſupra. *Spelm.* Gloſſ p. 96. voc. *Buticularius*. b Trev. Dict. Univ. T. 1. p. 1191.]

BUTLER'*s ſtone*, a medicinal preparation, of which Van Helmont tells us wonderful things; ſuch as, that, by ſlightly plunging it into oil or almond milk, they would acquire the virtues of curing the head-ach, eryſipelas, and many other diſorders; nay, even corpulency could not withſtand the power of this medicine, if the patient did but nimbly lick a ſmall fragment of this ſtone every morning. Mr. Boyle does not ſeem to diſcredit theſe ſtories. See his Works abr. Vol. 1. p. 50.

The inventor, from whom it takes its name, was a Scotchman, in great favour with king James I. and is ſaid to have done wonders with it, not only in the ſpeedy cure of the moſt dangerous diſtempers, but in the making of gold out of lead, and quickſilver.

The preparation of this ſtone is given by Morley. Collect. Chym. Leyd. c. 375.

BUTMENT (*Cycl.*)—*Butments* of arches are the ſame with butreſſes. They anſwer to what the Romans call *ſublices*, the French, *culees* and *butees*.

BUTMENTS, or ABUTMENTS of a bridge, denote the two maſſives at the end of a bridge, whereby the two extreme arches are ſuſtained and joined with the ſhore on either ſide. *Hawkſ.* Account of Lond. Bridge, p. 47. *Davil.* Explic. Term. Archit. p. 538. voc. *Culee*. *Felib.* Princ. Archit. p. 486.

The *butments* of bridges next the banks, ſhould be built more firm and ſolid, as ſerving to ſuſtain the whole ſeries of arches, and hinder them from ſpreading. See the article BRIDGE.

BUTOMUS, the *flowering ruſh*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form; from the center of the flower ariſes a piſtil, which finally becomes a membranaceous fruit, compoſed of ſeveral ſmall capſules, each terminating in a ſort of point. Theſe ſplit open longitudinally when ripe, and are found to contain oblong ſeeds. There is only one known ſpecies of the *butomus*, with its variety. 1. The common or pale red-flowered *butomus*. 2. The white-flowered *butomus*. *Tournef.* Inſtit. p. 271.

Butomus is ſaid to be of an aperient and deobſtruent quality. *James*'s Medic. Dict. in voc.

BUTORIUS, in zoology, a name by which ſome have called the *ardea ſtellaris*, or bittern, a bird of the heron kind. See the article BITTERN.

BUTRO, in natural hiſtory, the name of a ſort of wild bull common in Florida, having a large bunch on his back like that of a camel; the ſame with that deſcribed by Geſner under the name of *bos camelita*, and ſeeming the ſame with the *biſon* of Mr. Ray, and other authors. See Bos *camelita*.

BUTT, in our antient cuſtoms, denotes a place erected for archers to ſhoot at, and in which a mark or white was fixed.

BUTTER (*Cycl.*) is properly the fatty oleaginous part of milk; whence ſome have called it the oil of milk, *oleum ex lacte* [a]. A denomination which it ſeems well entitled to in many parts of the Eaſt Indies, where the *butter* is always fluid the year through, and ſold like other liquors by meaſure, not weight [b]. The ſame appears to have been the caſe in Job's country, who ſpeaks of brooks of *butter*, and waſhing his ſteps in *butter* [c]. *Butter*, when ſolid or conſiſtent, appears in a ſtate of violence. Mr. Boyle makes an inquiry which of the two is the moſt natural [d]. Some conſider *butter* rather as the produce of cream than of milk [e]. Tacitus ſeems to ſpeak of it under the name of *lac concretum*, clotted milk; agreeably enough to what Pliny ſays, that milk is condenſed into *butter*, *denſari lac in pingue butyrum* [f].—[a *Caſt.* Lex. Med. p. 116. b *Boyle*, Phil. Works abr. T. 3. p. 404. c Job xx. 6. Idem, xxix. 6. d *Boyle*, lib. cit. T. 1. p. 466, ſeq. e *Savar.* Dict. Comm. T. 1. p. 325. f *Conring.* de Habit. Corp. Germ. p. 57, ſeq.]

Butter is made in greateſt plenty from cows milk, but ſometimes alſo from goats, and the richeſt from ſheeps milk, as is obſerved by Pliny [g]; tho' Galen ſeems to doubt it. Inſtances have alſo been known of *butter* made from woman's milk, which is extolled by Hoffman as a ſovereign remedy againſt the phthiſis [h]. Add, that the antient Scythians, according to Hippocrates, made *butter* of mares milk; the method of preparing which is deſcribed by that author [i].—[g *Plin.* Hiſt. Nat. l. 28. c. 35. h *Hoffm.* Clav. ad *Schrod.* Pharm p. 662. *Hipp.* l. 4. de Morb. 25. p. 22, ſeq. *Linden*, Exerc. 16. §. 110, ſeq. i *Caſt.* Lex. Med. p. 116. *Conring.* ubi ſupra, p. 59, ſeq.]

Plot mentions a woman at Little Worley in Staffordſhire named Mary Eagle, who, beſides ſuckling a child, made two pounds of *butter per* week of her own milk, during upwards of five months after her being brought to bed. It was afterwards adminiſtred by the neighbouring apothecaries againſt ſwellings [k]. Borellus gives a like caſe of a woman at Boulogne, but her *butter* was chiefly uſed againſt conſumptions [l].—[k *Plot*, Nat. Hiſt. Stafford. c. 8. §. 31. p. 285. l *Borell.* Hiſt. & Obſervat Med. Phyſ. Cent 3. Obſ. 82.]

Pliny ſpeaks of *butter* as a delicacy peculiar to the Barbarians, and that which chiefly diſtinguiſhed the richer ſort from the poor. *Plin.* Hiſt. Nat. l. 28. c. 35.

The firſt time the word βουτυρον occurs is in Hippocrates, in ſpeaking of the Scythians, from whom the Greeks appear to have firſt learnt the art of making it. In reality, what reaſon can be given, why Herodotus ſhould deſcribe the Scythian proceſs of making *butter* with ſo much exactneſs, if the ſame had been in uſe among the Greeks. *Herodot.* Melpom. *Conring.* de Habit. Corp. Germ. p. 60.

It muſt not be forgot, that the antient Jews appear to have been acquainted with the method of preparing *butter*. Solomon [m], Eſaiah [n], and even Moſes, ſpeak of it. The laſt repreſents it as in uſe in Abraham's time [o], unleſs we ſhould ſuppoſe, with ſome modern writers, that by *butter* in theſe paſſages we are to underſtand cheeſe [p].—[m Prov. xxx. 33. *Churning of milk bringeth forth* butter. n Eſa. vii. 15. Butter *and honey ſhall he eat.* o *Conring.* lib. cit. p. 61, ſeq. p *Calm.* Dict. Bibl. T. 1. p. 332.]

In the cathedral of Rouen there is a tower called the *butter tower*, *tour de beurre*, by reaſon George d'Amboiſe, archbiſhop of Rouen in 1500, finding the oil fail in his dioceſe during Lent, permitted the uſe of *butter*, on condition that each inhabitant ſhould pay ſix deniers for the liberty, with which ſum this tower was erected. There are other *butter* towers at Notre Dame, Bourges, &c. Trev. Dict. Univ. T. 1. p. 1010.

Butter is an emollient, and has virtues approaching to thoſe of oil; having a peculiar power of reſiſting poiſon, and obtunding the acrimony thereof [q]. By its ſuppling and relaxing the parts, Dr. Quincy thinks it has a tendency to ſtop in the capillaries and glands, and foul the viſcera. Some repreſent it as a diuretic, purgative, and promoter of expectoration [r].—[q *Dioſcor.* l. 2. c. 81. *Foreſt.* Obſerv. l. 30. n. 8. in Schol. *Caſt.* Lex. Med. p. 116. r *Quinc.* Diſpenſ. P. 2. ſect. 13. n. 591. p. 232. *Junck.* Conſp. Therap. tab. 9. p. 287, ſeq.]

Writers on the dairy deſcribe the proceſs of making and ordering *butter*. The chief means whereby *butter* is produced, is a long continued agitation of milk, whereby its texture is broken. After the *butter* is come, as they call it, they take it out, waſh it, and beat it, to expreſs the milk [s]. In Bengal, *butter* is eaſily made, by the ſlight turning of a ſtick in milk [t].—[s Ruſt. Dict. T. 1. in voc. t Lett. Edif. T. 4. p. 424. Phil. Tranſ. N° 337. p. 227.]

If the milk be not well wrought out, the *butter* will not keep. In India we are told of *butter* four hundred years old, which is valued there equally with gold, for curing old aches, ſore eyes, &c. Vid. Phil. Tranſ. N° 244. p. 343.

When *butter* begins to decay and taſte amiſs, working it well anew, and waſhing it in water, will reſtore it.

In Bengal, to make *butter* paſs for freſh when old and rank, they melt it, and pour on it ſour curdly milk; ſome hours after which, they ſtrain it through a cloth for ſale. Phil. Tranſ. N° 337. p. 227.

If cows feed on ſhort graſs, they will yield more *butter*, though leſs milk, than if they fed on long rank graſs. The milk of ſome cows, though fed on the ſame graſs, will not yield ſo much *butter* as that of others. In many caſes, the *butter* is found to retain the taſte of the plant on which the cows feed. *Boyle*, Philoſ. Works abr. T. 3. p. 550.

The trade of *butter* is very conſiderable; ſome compute 50000 tons conſumed annually in London [u]. It is chiefly made within forty miles round the city. Fifty thouſand firkins are ſaid to be ſent yearly from Cambridge and Suffolk alone; each firkin containing 56 pounds [w]. Utoxeter in Staffordſhire is a market famous for good *butter*, inſomuch that the London cheeſemongers have an eſtabliſhed factory here for *butter*. It is bought by the pot, of a long cylindrical form, weighing 14 pounds.—[u Compl. Engl. Trad. T. 2. p. 134. w Idem, ib. p. 31. Atlas Marit. p. 110.]

Divers abuſes are practiſed in the packing and ſalting of *butter*, to increaſe its bulk and weight, againſt which we have a ſtatute expreſs [x]. Pots are frequently laid with good for a little depth at the top, and with bad at bottom; ſometimes the *butter* is ſet in rolls, only touching at the top, and ſtanding hollow below. To prevent theſe moorlandiſh cheats, the factors at Utoxeter keep a ſurveyor, who, in caſe of ſuſpicion, try the pots with an iron inſtrument, called a *butter-bore*, made like a cheeſe-taſter, to be ſtruck in obliquely to the bottom [y]. — [x Stat. 4. Car. 2. c. 26. Abr. T. 1. p. 128. *Coll.* Diſc. Salt. p. 137, ſeq. y *Plot*, Nat. Hiſt. Stafford. c. 3. §. 3. p. 109.]

BUTTER *of antimony*, is prepared of the ſimple regulus of antimony, by mixing it with twice its own weight of ſublimate mercury, and either by letting it ſtand a day or two in a cellar, or putting it directly in a retort, and urging it with a proper degree of fire in a ſand furnace, by which means the acid ſpirit of the ſublimate, diſſolving and imbibing the regulus, carries it

over

over with itself in form of *butter of antimony*. Vid. *Stahl.* Phil. Princ. Chem. P. 2. sect. 4. n. 135. p. 350. See also *Boerh.* Elem. Chem. P. 3. Proceſſ. 221. T. 2. p. 331, ſeq.]

Of *butter of antimony* are prepared the mercurius vitæ and bezoar mineral. See the articles MERCURY and BEZOAR.

It appears from experiments, that *bezoar of antimony* is compoſed of the reguline parts of antimony and the acid of ſea-ſalt. Med. Eſſ. Edinb. Abridg. Vol. 2. p. 434. in not.

It has been conjectured, that Ward's famous medicine owes its efficacy to the *butter of antimony* it contains. Med. Eſſ. ibid. See WARD's *Pill.*

It is a very ſingular property of this preparation, that it makes a very violent effervescence with ſpirit of nitre, and makes none at all with any other acid whatever: but Hoffman, in his treatiſe on cinnabar of antimony, has explained this phænomenon, by obſerving that the ſpirit of nitre, by mixing with the ſalts in the ſublimate, becomes an aqua regia, which works upon the included antimonial particles, juſt as that corroſive menſtruum is obſerved to work upon the powder of common crude antimony.

Butter of antimony is very cauſtic and acrimonious, and only uſed externally in regular practice [a]. It is a ſecret among ſome for ſtopping a mortification, by drawing a line with it round the part affected, which defines the bounds of the ſpreading evil [b].—[[a] *Quinc.* Diſpenſ. P. 2. ſect. 15. p. 280. [b] *Junck.* Conſp. Med. p. 94, ſeq. Ejuſd. Conſp. Chir. p. 95.]

The operation of making *butter of antimony* furniſhes an inſtance of the power of the Newtonian principle of attraction. When mercury ſublimate is ſublimed from antimony, or from regulus of antimony, the ſpirit of ſalt lets go the mercury, and unites with the antimonial metal, which attracts it more ſtrongly, and ſtays with it till the heat be great enough to make them both aſcend together, and then carries up the metal with it in the form of a *butter of antimony*; though the ſpirit of ſalt alone be almoſt as volatile as water, and the antimony alone as fixed as lead. *Newt.* Opt. Q. 31. p 357. See the article ATTRACTION, *Cycl.*

BUTTER *of arſenic*, *Butyrum arſenici*, is commended by Paracelſus againſt cancers, though not given without danger. *Libav.* Synt. Chem. T. 1. l. 7. c. 26.

Poterius alſo contrived a peculiar antihectical *butter* of pearls, *butyrum margaritarum. Rolfink.* Chem. l. 3. ſect. 1. art. 4. c. 41. *Caſt.* Lex. Med. p. 116.

BUTTER *of cacao*, denotes a thick oil raiſed by diſtillation from the chocolate nut, reputed good againſt burns, inflammations, &c. *Hought.* Collect. N° 451. T. 3. p. 111, ſeq.

BUTTER *of flax*, a greaſy ſubſtance of the conſiſtence of oil of mace, produced from that plant in lieu of oil, by treating it in a retort. *Grew*, Idea Phil. Hiſt. Plant. ſect. 51.

Jeſſamin or *Jaſemin* BUTTER, denotes the oil of the ben-nut, impregnated with the odorous ſpirit of jeſſamin flowers [a]. For the ben oil ſome ſubſtitute hogs lard [b].—[[a] *Grew*, Muſ. Reg. Societ. P. 2. ſect. 2. c. 1. p. 217. [b] *Hought.* Collect. N° 398. p. 4.]

BUTTER *of lead*, *Butyrum Saturni*, is a kind of liquid unguent made of vinegar and lead, incorporated with roſate oil, commended by many for the cure of tetters. *Savar.* Dict. Comm. T. 1. p. 327. voc. *Beurre.*

May BUTTER, *Butyrum majale*, is a medicine in ſome repute among good women for ſtrains, aches, and wounds. It is made of *butter* churned at that time, and expoſed to the ſun of the whole month, till, by repeated fuſions, it be brought to a whiteneſs [a]. Helmont calls it magiſtery of graſs [b]. Quincy affirms it is no better than plain lard [c]. — [[a] *Quinc.* Diſpenſ P. 3. ſect. 12. p. 547. Ruſt. Dict. T. 1. voc. *May.* [b] *Junck.* Conſp. Therap. tab. 9. p. 288. [c] Ubi ſupra.]

Naturaliſts ſpeak of ſhowers and dews of *butter*. In the year 1695, there fell in Ireland, during the winter and enſuing ſpring, a thick yellow dew, which had the medicinal properties of *butter*. Philoſ. Tranſact. N° 220. p. 224.

BUTTER *of nitre*, a kind of medicine procured from ſaltpetre by means of tartar, the proceſs whereof is deſcribed by Charas. *Savar.* Dict. Comm. T. 1. p. 327. voc. *Beurre.*

BUTTER *of ſtone*, a kind of mineral drug found on the higheſt mountains and hardeſt rocks of Siberia, being drawn by the ſun's heat, in the way of tranſudation, from the dry ſubſtance of the ſtones themſelves, and adhering to the ſurface thereof like a ſort of calx, which, having received its full coction, is ſcraped off by the inhabitants under the name of *kamine maſla.* The Ruſſians aſcribe many virtues to it. It is much uſed for the dyſentery and venereal diſeaſes; but its operation is ſo violent, however corrected by other ingredients, that none but the Ruſſians dare uſe it. *Savar.* Dict. Comm. Supp. p. 911. voc. *Kamine.*

BUTTER *of wax*, a ſoft unctuous ſubſtance, reſembling often the diſtillation of the ſpirit of wax. Hiſt. Acad. Scienc. an. 1708. p. 65. See *Oil of* WAX.

BUTTER-*bur*, *Petaſitis*, an officinal plant, both in figure and virtues reſembling maſter-wort; it is reputed an alexipharmic and detergent, and uſed in many compoſitions, eſpecially of the firſt of thoſe intentions. There is alſo a compound water denominated from it, though rejected in the laſt college diſpenſatory *Quinc.* Pharmac. P. 2. ſect. 6. n. 435. p. 176.

Among botaniſts this plant is denominated *petaſitis major & vulgaris*; by ſome, *petaſitis vulgaris rubens rotundiori folio.* See the article PETASITIS.

BUTTER-*fiſh*, a ſmall fiſh common in Cornwal, ſhaped ſomewhat like an eel, and diſtinguiſhed by two rows of black ſpots along its back. See GUNELLUS. *Willughby*, Hiſt. Piſc p. 115.

BUTTER-*fly*, in zoology. See the article PAPILIO.

Generation of BUTTER-*flies*. See the article GENERATION.

BUTTER-*fly fiſh*, the Engliſh name for the fiſh called by authors *blennus*, or *blennius*. Artedi makes the *blennus* a generical name, comprehending a great many ſpecies; among which he diſtinguiſhes that called by us the *butter-fly fiſh*, by the name of the *blennus*, with a furrow between the eyes, and with a large round ſpot in the back fin.

It has its name of the *butter-fly fiſh* from this ſpot in the fin, which reſembles thoſe in the wings of ſome butter-flies.

BUTTER-*milk*, the milk which remains after the butter is come by churning. See the article MILK, *Cycl.* and *Suppl.*

Some make curds of *butter-milk*, by pouring into it a quantity of new milk hot.

BUTTER-*nut*, a fruit in New England, whoſe kernel yields a great quantity of ſweet oil. *Grew*, Muſ. Reg. Societ. ſect. 1. c. 4. p. 205.

BUTTER-*wort*, in botany. See the article PINGUICULA.

BUTTERY.—Officers in the king's *buttery*, are a gentleman, yeoman, and three grooms of the *buttery* [a]. The *buttery* among us is uſually placed near the cellar, being commonly the room next the top of the cellar-ſtairs [b].—[[a] *Chamberl.* Preſent State, P. 2. l. 3. N° 18. p. 335. [b] *Neve*, Build. Dict.

BUTTING, *Imbotare*, in middle age writers, is uſed for tunning of wine, or putting it into butts. *Du Cange*, Gloſſ. Lat. T. 1. p. 662. voc. *Buſtellus.*

BUTTON, (*Cycl.*) among gardeners, denotes a flower or cluſter of leaves not yet expanded.

Buttons are a kind of ova, out of which ariſe either leaves alone, or intermixed with flowers Leaf-*buttons* are ſmaller and more pointed than flower-*buttons*, which are bigger and rounder. Among trees which bear kernel-fruit, each *button* produces ſeveral flowers; and, among ſtone-fruit trees, each *button* yields but one flower. Trev. Dict. Univ. T. 1. p. 1193. voc. *Bouton.*

The term *button* is chiefly uſed in ſpeaking of vines and roſes; and is otherwiſe denominated *eye*, *ſprout*, *bud*, *burgeon*, &c.

BUTTON, in fencing, ſignifies the end or tip of a foil, being made roundiſh, and uſually covered with leather, to prevent making contuſions in the body. Trev. Dict. Univ. T. 1. p. 1192. voc. *Bouton.*

BUTTON, in building, denotes a ſlight faſtening for a door or window, made to turn on a nail. *Neve*, Build. Dict. in voc. *Felib.* Princ. Archit. l. 1. c. 20. p. 154, 156, & 170. where divers ſorts and forms of *buttons* are deſcribed.

BUTTON *of a lock*, denotes a round head ſerving to move the bolt.

BUTTON *of the reins of a bridle*, is a ring of leather with the reins put through it, running all along the length of the reins. See BRIDLE and REINS.

To put a horſe under the *button*, is when he is ſtopt, having no rider on his back, by the reins being laid on his neck, and the *button* lowered, ſo far as that the horſe's head is brought in by the reins, and fixed to the true poſture or carriage. *Guill.* Gent. Dict. P. 1. in voc.

BUTTON *antennæ*, a name given by naturaliſts to thoſe *antennæ* or horns, as they are called, of butterflies, which are ſlender and terminated at the top by a ſort of *button*, in form of an olive, or of part of one. The French naturaliſts, from Reaumur, call theſe *antennes a boutons.* See the article FEELERS.

BUTTON-*ſtone*, in natural hiſtory, a kind of figured ſtone, ſo denominated from its reſembling the *button* of a garment.—— *Woodw.* Method of Foſſ. l. 2. art. 3. p. 17.

The *button-ſtone* is called by naturaliſts *porpites.* Some make it a ſpecies of echinites. See the article ECHINITES.

Dr. Hook gives the figure of three ſorts of *button-ſtones*, which ſeem to have been nothing elſe but the filling up of three ſeveral ſorts of ſhells. They are all of them very hard flints, and have this in common, that they conſiſt of two bodies, which ſeem to have been the filling up of two holes or vents in the ſhell. *Hook*, Poſthum. Works, p. 284.

Dr. Plot deſcribes a new ſpecies of *button-ſtone*, finely ſtriated from the top, after the manner of ſome hair buttons, on which account it may be denominated *porpites*, unleſs we ſhould rather take it for a new ſpecies of echinites. *Plot*, Nat. Hiſt. Oxford. c. 5. §. 178. p. 140.

This name is alſo given to a peculiar ſpecies of ſlate found in the marquiſate of Bareith, in a mountain called Fichtelberg; which is extremely different from the common ſorts of ſlate, in that it runs with great eaſe into glaſs in five or ſix hours time, without the addition of any ſalt or other foreign ſubſtance, to promote its vitrification, as other ſtones require.

It contains in itſelf all the principles of glaſs, and really has mixed in its ſubſtance the things neceſſary to be added to promote the fuſion of other ſtony bodies.

The Swedes and Germans make *buttons* of the glaſs produced from it, which is very black and ſhining, and it has hence its name *button-ſtone*. They make ſeveral other things alſo of this glaſs, as the handles of knives, and the like, and ſend a large quantity of it unwrought in round cakes, as it cools from the fuſion, into Holland. Mem. Acad. Scienc. Par 1736.

BUTTRESS (*Cycl.*)—*Buttreſſes* amount to the ſame with what the French call *arcboutants* [a], the Engliſh ſometimes alſo *butments*, the Italians, *contraforti* and *ſperoni*. Among the antients they were denominated *anterides*, Ανηρίδες, *eriſmæ*, Ερεισματα, and Ανηρεισματα [b].—[[a] *Davil.* Explic. Term. Archit. p. 385. voc. *Arcboutant.* [b] *Vitruv.* de Archit. l. 6. c. 11. Item, l. 10. c. 1. *Philand.* in Vitruv. l. 6. c. 11. *Salmaſ.* ad Solin. p. 1216. *Pitiſc.* Lex. Ant. T. 1. p. 115. voc. *Anterides.*]

The theory and rules of *buttreſſes*, or props for eaſing walls, is ranked among the deſiderata of architecture. They are uſually placed leaning againſt the edifice they are to ſuſtain. We find them uſed againſt the angles of ſteeples, churches, and other buildings of ſtone; alſo along the walls of ſuch buildings as have great and heavy roofs, which would otherwiſe be ſubject to thruſt the wall out. They are alſo placed as ſupports againſt the feet of arches turned croſs great halls, and at the head of ſtone walls where there are large crocket windows. *Neve*, Build. Dict. in voc.

BUTUMOS, in botany, a name by which ſome have called the *ſparganium*, or bur-reed. *Dale*, Pharm. p. 259.

BUTYROUS, or BUTYRACEOUS, ſomething that partakes of the nature or qualities of butter. See BUTTER, *Cycl.* and *Suppl.*

Milk conſiſts of three kinds of ſubſtances, a caſeous, a ſerous, and a *butyraceous* part. See MILK, *Cycl.* and *Suppl.*

The *butyrous* part is the cream, *i. e.* the unctuous or oily part, which riſes above the reſt. See CREAM, *Cycl.*

BUVETTE, or BEUVETTE, in the French laws, an eſtabliſhed place in every court, where the lawyers and counſellors may retire, warm themſelves, and take a glaſs of wine by way of refreſhment, at the king's charge.

There is one for each court of parliament, but theſe are only for perſons belonging to that body; there are others in the palais whither other perſons alſo reſort. Trev. Dict. Univ. T. 1. p. 1011. voc. *Beuvette.* Richel. T. 1. p. 252.

BUXUS, *Box*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the apetalous kind, being compoſed of a number of ſtamina which ariſe from the ſquare bottom of a foliaceous cup; theſe, however, are barren flowers, and the embryo fruits appear in other parts of the ſame plants: theſe finally become fruits, ſomewhat reſembling an inverted veſſel, and burſting when ripe, into three parts, being compoſed of three cells, and furniſhed with ſeeds placed in elaſtic capſules.

The ſpecies of *box* enumerated by Mr. Tournefort are theſe: 1. The common ſhrubby *box*. 2. The *box* with leaves variegated with yellow. 3. The large *box* with yellow edges to the leaves. 4. The ſmaller *box*, with leaves edged with yellow. 5. The long-leaved *box*, with ſharp pointed leaves. 6. The round-leaved *box*. Vid. *Tourn.* Inſt. p. 578.

Box is an evergreen ſhrub, cloathed with ſmall even leaves, and yielding a cloſe compact wood, of conſiderable uſe in divers arts.

The word *buxus* is formed from the Greek πυξος, which ſignifies the ſame. *Skinn.* Etym. in voc.

There are divers kinds of *box* cultivated for the ornament of gardens, chiefly for hedges and borders, the ſmallneſs of its leaf making it cut very cloſe and even [a]. Its wood is yellow, hard, cloſe, even, very heavy, and eaſily taking a poliſh: whence its uſe in making muſical inſtruments, combs, ſpoons, toothpick-caſes, and other Tunbridge ware [b]. It does not ſwim in water, nor is it liable to rot or worm-eat; whence its uſes for the axle-trees of wheels [c], &c.—[[a] *Mill.* Gardn. Dict. in voc. *Box.* *Bradl.* Bot. Dict. in voc. *Buxus.* [b] *Savar.* Dict. Com. T. 1. p. 434. voc. *Bouis.* *Mortim.* Art of Huſbandry, T. 2. l. 11. c. 27. p. 60. [c] *Aubin.* Dict. Mar. p. 113. voc. *Bouis*]

It yields a chemical oil and ſpirit by diſtillation [d], of ſome uſe in medicine, and its decoction is by ſome held equal in virtue to guiacum, for the venereal diſeaſe [e].—[[d] *Boyle*, Phil. Works abr. T. 3. p. 301. [e] *Quinc.* Diſpenſ. P. 2. ſect. 2. n. 167. p. 104. See alſo *Ray*'s Synop. Stirp. Britan. p. 310.]

Among the antients, the *box*-tree was conſecrated to Cybele, by reaſon flutes were then made of its wood, as is done to this day. Pitiſcus imagines it was alſo ſacred to Bacchus, from a paſſage in Statius, *Cum Bacchica mugit buxus* [f]; but without much foundation, the word *buxus* here only denoting flutes, as being the matter they were uſually made of; not that the tree was conſecrated to Bacchus [g].—[[f] *Stat.* Theb. l. 9. p. 579. *Pitiſc.* Lex. Ant. T. 1. p. 304. voc. *Buxus.* [g] Trev. Dict. Univ. T. 1. p. 1152, ſeq. voc. *Bouis.*]

BUYER, *Emptor*. See BUYING and EMPTOR.

BUYING, the act of making a purchaſe, or of acquiring the property of a thing for a certain price. See the article PURCHASE, *Cycl.*

Buying ſtands oppoſed to ſelling, and differs from borrowing or hiring, as in the former the property of the thing is alienated for perpetuity, which in the latter is not. See BORROWING, &c.

It differs from permutation or exchanging, as, in *buying*, the thing is paid for in money; in exchanging, with goods. *Calv.* Lex. Jur. p. 326, ſeq. *Pitiſc.* Lex. Ant. T. 1. p. 712. voc. *Emptio.* See EXCHANGE and PERMUTATION, *Cycl.*

By the civil law, perſons are allowed to *buy* hope, *ſpem pretio emere*, that is, to purchaſe the event or expectation of any thing. *E. gr.* The fiſhes or birds a perſon ſhall catch, or the money he ſhall win in gaming. *Calv.* Lex. Jur. p. 327. voc. *Emptio.*

In the Indies, people *buy* their wives, paying a certain price for them to their parents [h]. One of the methods of marriage in uſe among the Romans was called *coemption*, or mutual *buying* of each other [i].—[[h] Lett. Edif. T. 14. p. 38, ſeq. [i] *Scal.* Poet. l. 3. c. 100. *Pitiſc.* Lex. Ant. T. 1. p. 482. *Calv.* Lex. Jur. p. 195. voc. *Coemptio.*]

There are divers ſpecies of *buying* in uſe among traders, as *buying* on one's own account, oppoſed to *buying* on commiſſion [k]. *Buying* for ready money, which is when the purchaſer pays in actual ſpecie on the ſpot; *buying* on credit, or for a time certain, is when the payment is not to be preſently made, but, in lieu thereof, an obligation given by the buyer for payment at a time future [l]; *buying* on delivery, is when the goods purchaſed are only to be delivered at a certain time future [m].——[[k] *Savar.* Dict. Comm. T. 1. p. 22. voc. *Acheter.* [l] *Malc.* Treat. Book-keep. c. 2. ſect. 2. p. 39. [m] Idem, ibid. p. 47, ſeq.]

BUYING *the refuſal*, is giving money for the right or liberty of purchaſing a thing at a fixed price, in a certain time to come; chiefly uſed in dealing for ſhares in ſtock. This is ſometimes alſo called by a cant name, *buying the bear*. *Hought.* Collect. N° 102. T. 1. p. 272.

BUYING *the ſmall-pox*, is an appellation given to a method of procuring that diſeaſe by an operation nearly akin to inoculation; frequent in South Wales, where it has obtained time out of mind. See the article INOCULATION.

It is performed either by rubbing ſome of the *pus* taken out of a puſtule of a variolous perſon on the ſkin, or by making a puncture in the ſkin with a pin dipped in ſuch *pus*. Vid. Philoſ. Tranſ. N° 375. p. 262. Item, p. 464, & 267. See POX.

BUZ, in ichthyography, the name of a fiſh more commonly known by that of *albula*, and caught in the German lakes. *Willughby*, Hiſt. Piſc. p. 185. See the article ALBULA.

BUZIDAN, in the materia medica of the antients, a name given by Aviſenna and others to a wood produced in Africa, which had the ſame virtues with the radix behen, or white and red behen or ben root. We are not acquainted with this medicine at this time, but it appears to have been of the colour of our red ſaunders; ſo that it could only ſerve to adulterate the red ben root; though they ſay in general, that it was uſed to adulterate the ben when ſcarce.

BUZZARD, the Engliſh name of a bird of prey, of the long-winged hawk kind; of which there are ſeveral ſpecies. 1. The bald *buzzard*, ſo called from the whiteneſs of his crown. 2. The common *buzzard*, diſtinguiſhed from the former by the ſhortneſs of its wings and its ſmaller ſize. 3. The honey *buzzard*, or apivorous *buzzard*, which feeds its young from the beehives. 4. The *ſubbuteo*, the male of which is called the hen-harrier, the female the ring-tail; and, 5. The moor *buzzard*, common in marſhy places, and called *milvus æruginoſus* by authors. *Ray*'s Ornithol. p. 37, 38, 39, 40. See BUTEO, MILVUS *æruginoſus*, &c.

BYAS, is uſed by Petty for the central point ſuppoſed in the middle of each atom. *Pett*, Diſc Duplic. Proport p. 18, & 126. See ATOM and CORPUSCLE, *Cycl.*

BYRSODEPSICON, an epithet given to Sumach, denoting its uſe in dying of leather. *Caſt.* Lex. Med. p. 117. See the article RHUS.

BYSSUS, or BYSSUM, Βυσσος, a fine ſort of thready matter produced in India, Egypt, and about Elis in Achaia, of which the richeſt apparel was antiently made, eſpecially that wore by the prieſts both Jewiſh and Egyptian. *Poll.* Onomaſt. l. 7. c. 17. *Iſid.* Orig. l. 19. c. 27. *Plin.* Hiſt. Nat. l. 19. c. 1. & l. 13. c. 1. *Caſt.* Lex. Med. p. 117. Mem. Acad. Inſcr. T. 7. p. 339, ſeq. *Briſſ.* de Verb. Signif. p. 87. voc. *Byſſinum.* *Pitiſc.* Lex. Ant. T. 1. p. 304. *Calv.* Lex. Jur. p. 129. *Fab.* Theſ. T. 1. p. 387, ſeq.

Some interpreters render the Greek, Βυσσος, which occurs both in the Old and New Teſtament, by fine linnen.

But other verſions, as Calvin's and the Spaniſh printed at Venice in 1556, explain the word by ſilk; and yet *byſſus* muſt have been different from our ſilk, as appears from a multitude of antient writers, and particularly by Jul. Pollux [a]. M. Simon, who renders the word by fine linnen, adds a note to explain it, *viz.* There was a kind of fine linnen very dear, which the great lords alone wore in this country as well as in Egypt. This agrees perfectly with the account given by Heſychius, as well as what is obſerved by Bochart, that the *byſſus* was a finer kind of linnen, which was frequently dyed of a purple colour [b]. —[[a] *Poll.* Onomaſt. l. 7. c. 17. [b] *Bochart.* Phaleg. l. 3. c. 4.]

Some other authors will have the *byſſus* to be the ſame with our cotton [c]; others take it for the *linum aſbeſtinum* [d]; and a late author, for the lock or bunch of ſilky hair found adhering to the pinna marina, by which it faſtens itſelf to

the neighbouring bodies [c].—[[c] *Bradl.* Dict. Bot. T. 1. voc. *Gossipium.* Mem. Acad. Inscr. T. 7. p. 339, seq. [d] *Calmet*, Dict. Bibl. T. 1. p. 333. [e] Mem. Acad. Scienc. an. 1712. p. 270, seq.]

In reality, the antients seem to have applied the name indifferently to any kind of matter that was spun and wove finer than wool: so that it is probable there were divers sorts of *byssus*. This is certain, that Aristotle gives the name *byssus* to the hair or silken threads of the pinna marina; whether it were on account of its resemblance to the *byssus* of which cloths were made, or whether it were that this was the true *byssus* itself. What countenances this latter opinion is, that the *byssus* of the pinna marina may be spun, and consequently there is little doubt but that in ages when silk was scarce, it might be used in the cloaths of great men. Add, that this *byssus*, though grossly spun, appears much finer and more beautiful than wool, and comes not much short of silk. Stockings and other like works are still made of it, which would be more valuable if silk was less common. To spin this *byssus*, they leave it some days in a cellar to moisten and grow soft, after this they comb it, to get out the impurities, and, lastly, spin it as they do silk. Mem. Acad. Scienc. loc. cit. p. 271.

The pinnæ marinæ being plac'd upright on the tips of their shells, have occasion for such threads, which they spread all around them like so many ropes from a mast, to keep themselves steady in this situation. 'Tis probable these threads are spun by the pinna after the same manner as those of the sea muscle, described by Mr. Reaumur, to which they bear a resemblance; only that they are finer and more silky; differing from them, according to Rondeletius, as silk does from hemp. Mem. Acad. Scienc. ann. 1712. p. 272.

Authors usually distinguish two sorts of *byssus*, that of Elis, and that of Judea, which was the finest. Of this latter were the priestly ornaments made. Bonfrerius notes, that there must have been two sorts of *byssus*, one finer than the ordinary, by reason there are two Hebrew words used in Scripture to denote *byssus*, one of which is always used in speaking of the habit of the priests, and the other of that of the Levites. Trev. Dict. Univ. T. 1. p. 1297, seq.

Byssus, in botany, a word used to express a genus of mosses the most imperfect of the whole class of vegetables. The characters of this genus are, that the mosses of it are composed of simple and uniform parts, and always appear in form of excrescences, either of a woolly or of a dusty matter. It seems properly a genus of vegetables of a middle kind, between the mushrooms and the mosses, but most approaching to the latter, in that the several species of it are of a longer duration, and want that fleshy texture which distinguishes the fungus class, and in that they never produce heads, nor have any thing of the figure or texture of fungi. The *byssi* differ from the *confervæ*, in that they do not grow in the water, and in their being composed of slenderer and shorter filaments. They have not yet been discovered to have either flower or seed, but appear always in form of threads or of a light down, or fine powder, on the surfaces of many different bodies, but principally on such as are liable to putrefaction. Micheli, in his *Nova genera plantarum*, p. 210. mentions the seeds of some of the *byssuses*; but later observers, and particularly the indefatigable Dillenius, were never able to observe them. This last author has described 20 species of these small plants. 1. The green paper-like *byssus*. This is found in spring covering the surface of standing waters, with a fine green skin. 2. The white-wash *byssus*, a kind found incrusting over the surfaces of mosses, and other substances, in form of mortar or white-washing on a wall. 3. The mealy *byssus*. This is found in great plenty on the trunks of old trees, on the decaying branches of other mosses, and on the ground, in form of a fine white or hoary powder. 4. The yellow powder *byssus*. This crusts over old walls, trees, and the tiles of houses, with spots of a yellow downy matter. 5. The green cluster *byssus*. This is composed of a number of green globules clustered together, which are very small, and, when viewed with a microscope, appear gelatinous and transparent. It is found in summer on the sides of hollow ways, where the sun does not come. 6. The downy violet-coloured *byssus*. This has by some been called a small fungus, creeping like a herpes on wood; it is usually found on old boards, sometimes on the rotted stacks of moss, and is of a lanuginous structure, consisting of fine short threads: it flourishes principally in winter. 7. The pleasant green verdigrease-coloured *byssus*. This consists of fine threads, and is found on the stalks of decayed fern and other vegetables. 8. The purple bay-tree *byssus* of Micheli. This is composed of short interwoven fibres, and is common in Italy on the bark of the bay-tree. 9. The flaky snow *byssus*. This is described by some under the name of a white branched fungus. It is common in damp cellars, and spreads itself to a great extent. 10. The hairy-skinned *byssus*. This grows in the manner of some of the crustaceous lichens on the bark of old trees, and is white and membranaceous on the under-side, and all over hoary on the upper surface. 11. The black silky *byssus*. This is composed of short filaments, some single, others bifid, and is found on the barks of old trees in many places. 12. The mouse-skin cask *byssus*. This is common on old wine casks, and is of a tough cloth-like structure, and greenish black colour. 13. The yellow cloth *byssus*. This grows on the barks of old trees, and somewhat resembles the former in texture. 14. The green velvet-ground *byssus*. This is common on the surface of the earth, in woods and on garden walks. 15. The elegant branching hairy *byssus*. This, from a hairy basis, sends out a number of branches, which spread themselves every way, and sometimes divide at the extremities into small filaments, and sometimes form flat masses. It is sometimes white, sometimes blueish, sometimes yellowish, and always lies very close upon the things it grows from, which are rotten wood, decayed leaves, *&c.* 16. The saffron-coloured rock *byssus*. This is composed of hairy globules, and grows on stones. 17. The reddish hairy wood *byssus*. This grows on old boards. 18. The black haired rock *byssus*. This is composed of very short and very thick tufted filaments. 19. The red beard wood *byssus*. This is composed of very close-set hairs, and grows to half an inch in height. It is found on old rotten wood. 20. The whitish bristly *byssus*. This is composed of single and very stiff bristles, of a whitish colour, and about half an inch in length, and grows on stones and old walls. *Dillen.* Hist. Musc. p. 1—10.

C.

CAABA, a ſquare ſtone edifice in the temple of Mecca, ſuppoſed to have been built by Abraham and his ſon Iſhmael; being the part principally reverenced by the Mahometans, and to which they always direct themſelves in prayer. See KEBLA, *Cycl.*

The word is Arabic, *caaba*, and *caabah*, a denomination which ſome will have given to this building, on account of its height, which ſurpaſſes that of the other buildings in Mecca; but others, with more probability, derive the name from the quadrangular form of this ſtructure.

The *caaba*, or *al caaba*, is alſo called *allah-beit*, i. e. the houſe of God, as being hallowed or ſet apart for his worſhip. Vide *Sale*, Prelim. Diſc. to Koran, ſect. 4. p. 114, ſeq.

The Mahometans will have the *caaba* to have been a place of worſhip in Adam's days; at firſt it was only a tent, which had been ſent down from heaven, as a proper place wherein to worſhip the true God. It was accordingly often viſited by Adam on that account, as well as by Seth his ſon, who firſt built a ſtone temple on the ſpot. This having been demoliſhed by the deluge, was afterwards rebuilt by Abraham and Iſhmael. The tradition adds, that it was on occaſion of Abraham's ſacrifice of his ſon Iſhmael, that this edifice was raiſed by order of God himſelf; and that the horns of the ram, which had been ſacrificed in Iſhmael's place, were faſtened to the golden ſpout of the *caaba*, where they continued to the time of Mahomet, who took them away, to remove from the Arabs all occaſion of idolatry. *D'Herbel.* Bibl. Orient. p. 219, ſeq.

The length of the *caaba* is about 24 cubits, its breadth twenty three, and height 27 cubits; the door which is on the eaſt-ſide, being four cubits from the ground, and the floor level with the bottom of the door. In the corner next this door, is the famous black ſtone, which is ſet in ſilver, and exceedingly reſpected by the Mahometans. The pilgrims kiſs it with great devotion, and it is by ſome called the right-hand of God on earth. 'Tis fabled to be one of the precious ſtones of Paradiſe, which fell down to the earth with Adam, and being taken up again at the deluge, was brought back by the angel Gabriel to Abraham when he was building the *caaba*. It was at firſt whiter than milk, but grew black long ago; ſome ſay by the touch of a menſtruous woman, others by the ſins of mankind, others by the numerous kiſſes of the devotees. On the north-ſide of the *caaba*, within a ſemicircular incloſure, lies the white ſtone, ſaid to be the ſepulchre of Iſhmael, which receives the rain-water that falls off the *caaba*, by a ſpout formerly of wood, but now of gold. The *caaba* has a double roof, ſupported within by three octangular pillars of aloes wood, between which, on a bar of iron, hang ſome ſilver lamps. The out-ſide is covered with rich black damaſk, adorned with an embroidered border of gold, which is changed every year, and was formerly ſent by the caliphs, afterwards by the ſultans of Egypt, but now provided by the Turkiſh emperors. At a ſmall diſtance from the *caaba*, on the eaſt-ſide is the ſtation or place of Abraham, where is another ſtone wherein they pretend to ſhew the footſteps of that patriarch, ſuppoſed to have been made when he ſtood on it in building the *caaba*, where it ſerved him for a ſcaffold, with this peculiar advantage, that it roſe and fell of itſelf as he had occaſion. *Sale*, loc. cit. *Reland.* de Relig. Mahom. l. 1. c. 12. p. 118, ſeq.

CAAMINI, in botany, a name given by the Spaniards and others to the fineſt ſort of the Paraguay tea. It is the leaves of a ſhrub which grows on the mountains of Maracaya, and is uſed in Chili and Peru as the tea is with us. The mountains, where the trees which produce this valuable leaf grow naturally, are far from the inhabited parts of Paraguay; but the people of the place know ſo well the value and uſe of it, that they conſtantly furniſh themſelves with great quantities of it from the ſpot. They uſed to go out on theſe expeditions many thouſands together, and their country is left to the inſults of their enemies in the mean time, and many of them periſh with the fatigue.

To remedy theſe inconveniences, they have of late planted the trees about their habitations; but the leaves of theſe cultivated trees have not the fine flavour or the virtues of the wild ones.

The king of Spain has permitted the Indians of Paraguay to bring to the town of Santfoy twelve thouſand arobes of the leaves of this tree every year; but they are not able to procure ſo much of the wild leaves annually; about half the quantity is the utmoſt they bring of this; the other half is made up of the leaves of the trees in their own plantations, and this ſells at a lower price, and is called *pabos*. The arobe is about five and twenty pound weight, the general price is four piaſtres for the arobe, and the money is always divided equally among the people of the colony. Obſerv. ſur les Coutumes de l'Amerique, c. 1. p. 374.

CAAPIBA, in botany, the name given by Plumier to a genus of plants, called afterwards by Linnæus *ciſſampelos*. *Plumier*, p. 29. See the article CISSAMPELOS.

CAA-APIA, in botany, the name of a Braſilian plant, deſcribed by Marcgrave, Piſo, and others; the root of which ſo much reſembles the ipecacuanha in its virtues, that ſome have erroneouſly called it by the ſame name. It is an aſtringent and emetic, as the ipecacuanha, but it poſſeſſes both theſe qualities in a much weaker degree, and is therefore neceſſarily given in a much larger doſe, a dram being the quantity commonly given at once. The Braſilians bruiſe the whole plant, and expreſs the juice, which they take internally, and alſo apply it externally to wounds made by poiſoned arrows, and by the bites of ſerpents. Some have ſuppoſed the root of this plant to be the white ipecacuanha; but this is an error, that being little different from the grey. Mem. Acad. Par. ann. 1700.

CAB, or KAB, denotes a Hebrew meaſure of capacity, equal to the ſixth part of the ſeah, or an eighteenth of the epha. *Hoſt.* de Veter. Menſ. & Pond. l. 1. p. 122. *Cumberl.* Eſſ. Jew. Meaſ. c. 3. p. 86, & 137. *Beverin.* Synt. de Menſur. p. 133, ſeq. *Arbuth.* Tab. Ant. Coins, &c. n. 14, & 15. See the article EPHA, *Cycl.*

The *cab* of wine contained two Engliſh pints; the *cab* of corn, 2 $\frac{5}{6}$ pints corn meaſure.

At the ſiege of Samaria, the famine was ſo great, that a *cab* of pigeons dung was ſold for five pieces of ſilver; that is, five ſhekels, equivalent to about eleven ſhillings and ſix-pence ſterling. 2 Kings vi. 25.

We alſo find mention of the *cab* as a dry meaſure, in Grecian and Roman writers: ſome make it equal to the Grecian chœnix, and aſſert it to be the quantity of what a labourer eats *per* day, as aſſigned by Cato. *Suid.* Lex. in voc. Κάβος. *Pollux*, Onomaſt. l. 6. *Cat.* de Re Ruſt. c. 56. Trev. Dict. Univ. T. 1. p. 1300. *Hoſt.* loc. cit. See the article CHOENIX.

CABAL, a name given to a ſort of drink made of dried raiſins. The manner in which the Portugueſe make *cabal* is this; they take out the ſtones of about twenty pounds of raiſins, and then bruiſing the raiſins a little, they put them into a barrel of white wine, in the month of January or February, and let them ſtand till about Eaſter. It is then very clear and rich, luſcious and palatable to the taſte. It is recommended to ſtop coughs, and give ſtrength to the ſtomach. It is worth while to try the experiment with the ſame proportion of raiſins to the ſame quantity of our Engliſh cyder, which would probably prove a fine drink. Phil. Tranſ. N° 157.

CABALA *vein*, in natural hiſtory, a name given by our Suſſex miners to one kind of the iron-ore commonly wrought in that country. It is a ſtony ore, of a browniſh colour, with a bluſh of red, which is more or leſs conſpicuous in different parts of the ſame maſſes. It is uſually found in thin ſtrata, lying not far from the ſurface, and is not very rich in iron, but it runs very readily in the fire. *Woodw.* Cat. Foſſ. V. 1. p 225.

CABALATAR, in natural hiſtory, a name given by ſome of the chemical writers to nitre, called alſo *cerberus chemicus* and *ſal infernalis*.

CABALLI, among myſtic philoſophers, denote the ſhades, or aſtral bodies of men who died any ſudden or violent death, before the expiration of their predeſtinated term of life.

The *caballi*, called alſo *cabales* and *cobales*, are ſuppoſed to wander as goblins or ghoſts over the face of the earth, till their deſtined term is accompliſhed; being doomed to live out the time as ſpirits, which they ought to have ſeen in the fleſh. *Rul.* Lex. Alch. p. 108. *Caſt.* Lex. Med. p. 118.

CABALLINE, *Caballinus*, ſomething relating to, or partaking of the nature and qualities of a horſe.

Aloe CABALLINA, is a denomination given to the coarſeſt and rankeſt kind of aloes, as being little uſed unleſs for purging horſes.

horſes. Vid. Hiſt. Acad. Scienc. an. 1708. p. 66. *Hought.* Collect. T. 2. N° 324. p. 336. See the article ALOES.

Sulphur CABALLINUM, denotes common brimſtone. *Quincy*, Pharmac. P. 2. ſect. 4. n. 382. p. 157. See the article SULPHUR.

The word is formed from the middle age Latin *caballus*, and that from the Greek καβαλλης; a horſe. *Du Cange*, Gloſſ. Græc. T. 1. p. 525, ſeq.

CABBAGES, in gardening.—All the common ſorts of *cabbages* are largely cultivated about London. The common white, red, flat, and long-ſided ones, are chiefly for winter uſe. The ſeeds of theſe ſorts muſt therefore be ſown in the middle of March, in beds of good freſh earth; and in April, when the young plants will have about eight leaves apiece, they are to be pricked out into ſhady borders, about three inches ſquare, and, about the middle of May, they muſt be tranſplanted to the places where they are to remain: and this is commonly between cauliflowers or artichokes, at about two feet diſtance in the rows. They muſt be watered at times, and the earth muſt be houghed up about their roots, and kept clear from weeds.

Theſe *cabbages* will be fit for uſe ſoon after Michaelmas, and will continue till February, if not deſtroyed by bad weather; to prevent which, the gardners about London pull up their *cabbages* in November, and trench the ground in ridges, laying their *cabbages* againſt the ridges, as cloſe as poſſible on one ſide, burying their ſtems in the ground; and in this manner they let them remain till after Chriſtmas, when they cut them for market.

The Ruſſian *cabbage* is ſmall, and not much cultivated now. It is to be raiſed as the others, but may be planted nearer, as not ſo large. It is fit for uſe in July.

The early Batterſea and ſugar-loaf *cabbages* are ſown for ſummer uſe, and are commonly called Michaelmas *cabbages*. The ſeaſon for ſowing theſe is the beginning of July, in an open ſpot of ground. It is common to ſow ſpinage in the ſame beds with theſe, houghing it up from about their ſtalks in ſpring; in May and June theſe begin to turn their leaves for *cabbaging*, and may be brought to it much ſooner than naturally they would, by tying them about the top with an ozier band.

The Savoy *cabbages* are for winter uſe, and are to be ſown about the beginning of April; they are to be treated as the common *cabbage*, and planted out at two feet diſtance, in an open place.

The *bore-cole* may be cultivated in the ſame manner, but muſt be planted only at one foot diſtance; theſe are not fit to cut till the froſts have nipped them.

The method of getting good *cabbage*-ſeed is this: Chooſe out ſome fair plants in October, pull them up, and hang them up three days, with the root upward, in a ſhady place; then plant them under a warm hedge, burying the whole ſtalk and half the *cabbage* in the earth; cover them with culm if the winter be ſevere, and in ſpring they will ſhoot out many branches. When theſe begin to pod, the ends of the upper ones ſhould be cut off, to give ſtrength to the other pods. The ſeed muſt be preſerved from the birds, by planting ſome lime twigs about the plants, where the catching one or two will intimidate the reſt. When ripe, it muſt be threſhed out, and kept for uſe. *Miller*'s Gardn. Dict. in voc. See BRASSICA.

The *cabbage* removes, as it is ſaid, the conſequences of hard drinking; and it has been well known to be a cuſtom among many at this time, as well as among the antient Egyptians of old, to eat raw or boiled *cabbage*, as a preſervative againſt the effects of wine. This ſeems to have ſprung from the opinion of the great antipathy of the plants to one another; it having been affirmed, that the vine and *cabbage* will by no means grow together; and ſome of the moderns have endeavoured to account for this, from the nature of theſe two plants, by ſaying, that they are both ſo fond of nutritive juice, as greedily to ſuck up all the juices of the earth, and by that means, when planted near, to ſtarve one another. But we have no reaſon to have recourſe to theſe ſalvoes, ſince there is not the leaſt truth in the obſervation, but the vine and *cabbage* grow as well together as any two plants in the world. Ephemerid. German. N. C. D. 297.

CABBAGING, among gardners, is ſometimes uſed to denote the knitting or gathering of certain pot-herbs into round bunched heads.

In which ſenſe the word amounts to the ſame with what Evelyn calls poming, *pommer* [a]; *q. d.* appling, or growing apple-wiſe. Others call it ſimply heading or bunching [b].—[a Vid. *Evel.* French Garden. p. 175. b Trev. Dict. Univ. T. 4. p. 739. voc. *Pommer.*]

To make lettice *cabbage*, they tranſplant it, taking care, during the great heats, to water it; otherwiſe, inſtead of poming, it runs to ſeed [c]. To promote the *cabbaging* of cabbage, thoſe who live on the ſea-coaſt, put ſea-weed, with a little nitre, under their roots [d].—[c *Evel.* lib. cit. p. 183. d *Vallem.* Curioſ. de la Nat. & de l'Art, ap. Jour. des Scav. T. 46. p. 259.]

Cabbage plants of the early kind begin to turn in their leaves for *cabbaging* in May [e]. The Batterſea ſort *cabbage* apace when they once begin, and as ſoon grow hard and burſt open; but the ſugar-loaf kind is longer before it comes, and is as ſlow in its *cabbaging* [f].—[e *Mill.* Gard. Dict. in voc. f Id. ibid.]

CABBALA, (*Cycl.*)—This is by ſome called the acroamatic philoſophy of Moſes, by way of contradiſtinction from the exoteric or popular doctrine. *Budd.* Introd. ad Philoſ. Hebr. p. 48. See the article ACROAMATIC.

The generality of Jews prefer the *cabbala* to the Scripture; comparing the former to the ſparkling luſtre of a precious ſtone, and the latter to the fainter glimmering of a candle. *Cherubin.* Bibl. Crit. Sacr. T. 3. Diſſ. 1. Jour. des Scav. T. 36. p. 30.

It is divided into nominal and real. The nominal or literal *cabbala* is that employed in the myſtic uſe of letters, names and numbers; or that which, from the names of God, and the letters, words, ſyllables, numbers and numerals of the Hebrew text, draws myſtical doctrines and applications.

To which head belong eſpecially the compoſition of anagrams, chronograms, and other frivolous purſuits of that kind, only allowed among us to children and novices. *Burn.* Archæol. l. 1. c. 7. Phil. Tranſ. N° 201. p. 800.

The *cabbala* only differs from *maſorah*, as the latter denotes the ſcience of reading the Scripture, the former of interpreting it. Both are ſuppoſed to have been handed down from generation to generation by oral tradition only, till at length the readings were fixed by the vowels and accents, as the interpretations were by the miſnah and gemara. *Prideaux*, Conn. P. 1. l. 5. p. 506.

The real *cabbala* is that employed in diſcovering the myſteries of nature and religion, the properties of ſpirits, the heavens, elements, &c. from the contemplation of the ten ſephiroth, and the four cabbaliſtical worlds, *Azilath*, *Briah*, *Jetzizah*, and *Aſſiah*; i. e. the worlds of emanation, creation, formation, and of the fabric; before which they ſometimes alſo put the *Enſophic*, or infinite world; from which all the others are ſuppoſed to ſpring. *Burn.* Archæol. Philoſ. l. 1. c. 7. Philoſ. Tranſact. N° 201. p. 800, ſeq.

The generality of latter critics hold the *cabbala* a mere figment or invention of the modern rabbins.

The literal ſort appears to have been utterly unknown to the antient Jews. Joſephus makes no mention of it; and Philo, Origen, and Epiphanius, who were moſt converſant in the Jewiſh literature, ſay not one word of the *cabbala*. Nor is there the leaſt footſtep of it in the Talmud, or any of the antient Jewiſh writers. *Cherubin*, Bibl. Crit. Sacr. loc. cit.

For the real ſort, it is chiefly borrowed from the philoſophy of Plato and Pythagoras; tho' ſome pretend to deduce it from the hieroglyphic wiſdom of the Egyptians.

The firſt author who delivered any thing of the *cabbala*, was Joachaides, or Simon ſon of Joachai, who publiſhed that famous cabbaliſtical work entitled *Zohar*. Some ſay, he lived about the time of the deſtruction of Jeruſalem by Titus; others only in the tenth century. *Baſn.* Hiſt. des Juifs, l. 3. c. 10.

Several chriſtians have given into the *cabbala*, particularly Picus Mirandula, Reuchlin, Henry More, and Knorre a Roſenroth, counſellor of the prince of Sultzbach, who beſtow the higheſt encomiums on it, and repreſent it as the key to all pure and real knowledge. Henry More aſſures us, that all his learning and philoſophy ended in mere ſcepticiſm, till he applied his mind to the divine and hidden ſcience of the *cabbala*, which, in a ſhort time, brought him forth into the moſt glorious light, and filled his ſoul with notices utterly ineffable. *More*, Opp. Philoſ. T. 1. in Pref.

Galatinus will have the antient rabbins to have known and believed the myſtery of the Trinity by the *cabbala*; and Paracelſus, and his followers, aſſert Aaron, Elias, David, Bildad, &c. to have been great cabbaliſts.

Dr. Burnet examines into the merits of the ſeveral parts of the *cabbala*, which he finds to be without rational foundation, and not conducing to any real knowledge. But he conjectures, that the moſt antient *cabbala*, before it was confounded and defiled with fables, might contain ſomething of the original of things, and their gradations; particularly, that, before the creation, all things had their being in God; that from him they flowed as emanations; that they will all flow back again into him, when they are deſtroyed; and that there will ſucceed other emanations and regenerations, and other deſtructions and abſorptions to all eternity, as they had been from all eternity; that nothing is produced out of nothing; and that the things produced never return to nothing, but always have their ſubſiſtence in God. *Burn.* Archæol. l. 1. c. 7. Phil. Tranſ. N° 201. p. 800.

CABBALIC *art*, *Ars caballica*, is uſed by ſome writers for *ars palæſtrica*, or the art of wreſtling. *Gal.* ad Thraſyb. c. 45. *Fœſ.* Œcon. Hippoc. p. 294. *Caſt.* Lex. Med. p. 118.

CABBALISTIC *art*. See CABBALA, and CABBALISTS.

D. Franc. Berlendi, a theatin of Venice (under the fictitious name of C. Berardo Schinſlini) has publiſhed a *caballomachia*, or refutation of the *cabbaliſtic* art. Giorn. de Letter. d'Ital. T. 30. p. 456. Venet. 1718. 8°.

CABBALISTS, in the primitive ſenſe, the ſame with thoſe otherwiſe called *Tanaim*, *Amoraim*, *Seburaim*, &c.

Cabbaliſts differ from maſorites, as the former were employed about the interpretation of Scripture, and the latter about the

true reading of the Hebrew text. *Prid.* Connect. P. 1. l. 5. p. 507.

CABBIN. See CABIN.

CABEBI, a name given by ſome authors to the ſcales of iron. *Rulandus.*

CABILIAU, in zoology, a name by which ſome authors have called the common cod-fiſh, the *morhua* and *aſellus major* of other writers. *Willughby*, Hiſt. Piſc. p. 165. See COD-*fiſh*.

CABIN, or CABBIN, (*Cycl.*) is ſometimes uſed for the huts or cottages of ſavages, and other poor people.

The habitations of the Indians in Virginia are *cabins*, about nine or ten feet high, which are made after this manner: They fix poles into the ground, and bring the tops of them one within another, and ſo tie them together; the outſide of theſe poles they line with bark, to defend them from the injuries of the weather, but they leave a hole in the top, right in the middle of the *cabin*, for the ſmoke to go out; round the inſide of their *cabins* they have banks of earth caſt up, which ſerve inſtead of ſtools and beds. Philoſ. Tranſ. N° 126. See the article CABINS, *Cycl.*

CABINET (*Cycl.*) is ſometimes particularly uſed for a place at the end of a gallery, wherein are preſerved the paintings of the beſt maſters [a], conveniently ranged, and accompanied with buſts, and figures of marble and bronze, with other curioſities [b].—[[a] *Felib.* Princ. de l'Archit. p. 364. [b] *Daviler.* Expl. Term. Archit. p. 438, ſeq.]

In this ſenſe, *cabinet* amounts to the ſame with what is called by Vitruvius, *pinacotheca*. Sometimes there are ſeveral pieces or rooms deſtined for this uſe, which are all together called *cabinet*, or *gallery*. *Vitruv.* de Archit. l. 6. c. 5. *Daviler.* loc. cit. See GALLERY, *Cycl.*

CABINET alſo denotes a kind of bufet or cheſt of drawers, partly for the preſervation of things of value, and partly as a decoration of a chamber, gallery, or other apartment. Thus we ſay, an open *cabinet*, a walnut-tree *cabinet*, a Japan or Chineſe *cabinet*, &c. *Savar.* Dict. Comm. T. 1. p. 506.

In the repoſitory of the Royal Society is a Chineſe *cabinet*, filled with the inſtruments and ſimples uſed by the ſurgeons of that country. The moſt remarkable are thoſe which are contrived for ſcratching, picking and tickling the ears, in which the Chineſe take great pleaſure. Phil. Tranſ. N° 246. p. 390, ſeq.

CABINET, in gardening, is a little inſulated building in manner of a ſummer-houſe, built in ſome agreeable form, and open on all ſides; ſerving as a place of retirement, and to take the freſh air under cover. *Daviler.* Cours d'Archit. P. 2. p. 439.

According to Miller, a *cabinet* is a kind of ſaloon, placed at the end or in the middle of a long arbour. See the article ARBOUR, *Cycl.*

It differs from an arbour, which is long, in form of a gallery, and arched over head; whereas the *cabinet* is either ſquare, circular, or in cants, making a kind of ſaloon. *Mill.* Gard. Dict. in voc.

CABINET is alſo uſed in ſpeaking of the more ſelect and ſecret councils of a prince or adminiſtration.

Thus we ſay, the ſecrets, the intrigues of the *cabinet*.

To avoid the inconveniences of a numerous council, the policy of Italy, and practice of France, have introduced *cabinet* councils; a remedy worſe than the diſeaſe. *Bacon*, Mor. Eſſ. 21. Works, T. 3. p. 330. Trev. Dict. Univ. T. 1. p. 1307.

King Charles I. is charged with firſt eſtabliſhing this uſage in England. Beſides his privy council, that prince erected a kind of *cabinet*-council, or junto, under the denomination of a council of ſtate; compoſed of archbiſhop Laud, the earl of Stafford, and lord Collington, with the ſecretaries of ſtate. *Clarend.* Hiſt. Rebell. T. 1. l. 2. Bibl. Choiſ. T. 18. p. 68.

Yet ſome pretend to find the ſubſtance of a *cabinet*-council of much greater antiquity, and even allowed by parliament, who antiently ſettled a quorum of perſons moſt confided in, without whoſe preſence no arduous matter was to be determined; giving them power to act without conſulting the reſt of the council. As long ſince as the 28th of Henry III. a charter paſſed in affirmance of the antient rights of the kingdom [a]; which provided, that four great men, choſen by common conſent, who were to be conſervators of the kingdom [b], among other things, ſhould ſee to the diſpoſing of monies given by parliament, and appropriated to particular uſes; and parliaments were to be ſummoned as they ſhould adviſe [c]. But even of theſe four [d], any two made a quorum; and generally the chief juſtice of England, and chancellor, were of the number of the conſervators [e].—[[a] Vid. *Matth. Par.* 28 Hen. III. [b] *Per viſum & teſtimonium eorum tractetur theſaurus domini regis, & pecunia ab univerſis ſpecialiter conceſſa ad commodum domini regis & regni expendatur*, &c. [c] *Nec ſine ipſis ſed cum neceſſe fuerit & ad eorum inſtantiam iterum conveniant univerſi.* [d] *Et ſi non omnes duo ad minus præſentes ſint*, &c. [e] *Et quia frequenter debent eſſe cum rege poterunt eſſe de numero conſervatorum.*]

In the firſt of Henry VI. [f] the parliament provides, that the quorum for the privy council be ſix, or four at the leaſt; and that in all weighty conſiderations, the dukes of Bedford and Gloceſter, the king's uncles, ſhould be preſent; which ſeems to be erecting a *cabinet* by law [g].—[[f] Rot. Parl. 1 Hen. VI. n. 30, 31. [g] Accompt Land Forc. Engl. p. 54.]

CABIRI, in antiquity, certain deities worſhipped more eſpecially by the Samothracians, and in the iſle of Imbros, and ſome other parts of Greece.

The *Cabiri*, according to Sanchoniathon, were alſo adored by the Phœnicians [a]. Diodorus Siculus aſcribes to them the invention of fire, and the art of working iron [b]. Whence it is, that on a medal of Gordian [c], and another of Furia Sabina Tranquillina, both ſtruck at Carrhæ, where the *Cabiri* were worſhipped, we find the figure of a *Cabirus* on a column, holding a hammer in his right hand. For the ſame reaſon, Herodotus obſerves, they were repreſented like Vulcan [d].—[[a] *Euſeb.* de Prepar. Evang. l. 1. [b] *Diod. Sic.* l. 5. [c] *Vaillant*, Num Imper. P. 2. p. 205, 223. [d] *Herodot.* l 3. Trev. Dict. Univ. T. 1. p. 1307.]

'Tis diſputed who, and how many, the *Cabiri* were, whether they be of Phœnician, Samothracian, or Egyptian origin; and whether the ſons of Vulcan or of Jupiter? V. *Pitiſc.* Lex. Ant. T. p. 306. *Schoetg.* Lex. Ant. p. 274.

The common opinion limits them to two, viz. Caſtor and Pollux, otherwiſe called Dioſcuri. Others, on the authority of Mnaſeas, cited by the ſcholiaſt on Apollonius Rhodius, admit four more, *viz.* Axieros, or Ceres, Axiokerſa, or Proſerpine, Axiokerſos, or Pluto, and Caſmilos, or Mercury. But the reaſon of the denomination is by no means agreed on. The generality derive the word from the Hebrew *cabir*; or rather *ghabir*, powerful: on which principles the *Cabiri* are ſuppoſed to be the ſame with thoſe otherwiſe called *Dii magni*, or the greater Gods; tho' Gutberleth makes them to be the Penates, brought by Æneas into Italy, after the deſtruction of Troy. *Gutberleth*, Diſſ. Philol. de Deorum Cabirorum myſteriis. ap Ejuſd. opuſc. Franck. 1704. 8°. Act. Erud. Lipſ. 1705. p. 536.

Aſtorius derives the name from *chobir*, an inchanter, as ſuppoſing them to have originally been a ſort of magicians, before or ſoon after the Egyptian flood, to whom divine honours were paid [e]. M. Reland from *chabar*, to unite, aſſociate; on which principle the *dii Cabiri* ſhould import as much as ſocial or aſſociated Gods. An appellation which quadrates exactly with Caſtor and Pollux, whoſe union is ſo famous in all antiquity; and no leſs with the other four, whoſe fellowſhip did not conſiſt in their being of the number of great Gods, a quality which was by no means peculiar to them, but in what related to them as infernal Gods, and jointly charged with the care of the dead [f].—[[e] *Aſtor*, Diſſ. de Diis Cabiris. Venet. 1703. [f] *Reland* Diſſert. Miſcell. P. 1 Diſſ. 5. Act. Erud. Lipſ. 1707. p. 72. ſeq. Jour. des Scav. T. 39. p. 483. ſeq.]

CABIRI is alſo uſed to denote the *gabri*, or Perſian fire-worſhippers. *Hyde*, de Relig. Perſ. c. 29 *Cabiri ſunt gabri, voce Perſica aliquantulum detorta.* Trev. Dict. Univ. T. 1. p. 1307, ſeq. See GABRES, *Cycl.*

CABLING, in architecture, the figure of a ſtaff, or reed, either plain or carved, in reſemblance of a rope, or a ruſh, wherewith a third part of the flutings of a column are ſometimes filled up; hence called *cabled flutings*.

There are alſo *cablings* in relievo without fluting, eſpecially on certain pilaſters, as in the church of Sapienza at Rome. *Daviler.* Cours d'Archit. P. 2. p. 842. voc. *Rudenture.*

CABLISH, *cablicia*, in the foreſt law, denotes bruſh, or browſe wood [a]; tho' Spelman [b] takes it more properly to ſignify trees, or branches thrown down by the wind; from the French *chablis* or *bois chablis*, which denotes the ſame.—[[a] *Manwood*, For. Law. p. 84. Cromp. Juriſd. p. 165. *Cowel*, Interpr. in voc. [b] *Spelm.* Gloſſ. p. 96. *Du Cange*, Gloſſ. Lat. T. 1. p. 670. *Skinn.* Etym. voc. *Forenſ.*]

CABOCHED, in heraldry, a deer's, leopard's, or bull's head, is ſaid to be *caboched*, when it is born full-faced without any part of the neck. *Coas*, Dict. Her. p. 61.

The word is formed from the obſolete French *caboche*, from *caput*, head. *Menag.* orig. p. 143. *Skinn.* Etym. Angl. in voc.

CABOCLES, a name given in the Weſt-Indies by the Portugueſe to thoſe produced between Americans and Negroes. See *Boyle*'s Works, abr. Vol. 2. p. 45.

CABOTE, in zoology, the name of a fiſh of the cuculus kind, more uſually known among authors by the name of the *corax Piſcis*. *Geſner*, de Piſc. p. 356. See CORAX.

CABRUSI, in the writings of the antients, a word frequently uſed to expreſs Cyprian, or coming from the iſland of Cyprus. The antient Greeks had almoſt all their vitriols and vitriolic minerals from this iſland; they therefore ſometimes called theſe *cabruſi*, without any addition. It is very probable that our word copperas, the common name of green vitriol, is a falſe pronunciation of this word *cabruſi*.

CABUIA, a Weſt-Indian ſpecies of hemp, produced in the province of Panama, from a plant ſomewhat like the Chardon or Iris; when ripe, they lay it to ſteep in water, and after drying it again, beat it with wooden mallets till nothing but the hemp remains, which they afterwards ſpin and make thread and ropes of it; the former of which is ſo hard and tough, that with it they ſaw iron, by fitting it on a box, and laying a little fine ſand over the metal as the work proceeds. *Savar.* Dict. Com. T. 1. p. 506.

CABURE, in zoology, the name of a ſmall Braſilian bird of the owl kind; very beautiful, and very eaſily tamed. It is of a brown colour, variegated with white, and is feathered down to the toes. The Braſilians keep it tame for its diverting tricks; it will play with people like a monkey, and is perfectly harmleſs. *Marggraves*, Hiſtor. Braſil.

CABUREIBA, in botany, a name by which ſome authors have called the tree which affords the black Peruvian balſam of the ſhops. *Pſo*, p. 57.

CABURNS, in the ſea language, denotes ſmall lines made of ſpun yarn, wherewith to bind cables, ſeize tackles, and the like. *Botel.* Sea Dial. 4. p. 163. *Marwar.* Sea Dict. p. 18. *Guill.* Gent. Dict. P. 3. in voc.

CACABOGA, in zoology, the name of an American ſpecies of ſerpent, by ſome accounted the ſame with the *tareiboia*, or black water-ſnake of that part of the world; but by others deſcribed as yellow in colour, living about houſes, and doing great miſchief among poultry, tho' not fatal to mankind in its bite. *Ray*'s Synops, p 329. See TAREIBOIA.

CACAGOGA, in the antient medicinal writings, a word uſed for certain ointments intended for rubbing on the fundament to procure ſtools. The moſt common of theſe was made of alum mixed with honey, and boiled till the whole was of a tawny colour. This anointed on the fundament, procur'd a great many ſtools, but not without ſome pain.

CACALIA, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the floſculous kind, being compoſed of ſeveral ſmall floſcules, each divided into four ſegments at the end; theſe are placed on the embryo fruit, and are contained in a general cup of a cylindric figure. The embryos ripen into ſeeds, which are winged with down.

The ſpecies of *cacalia* enumerated by Mr. Tournefort, are theſe.: 1. The woolly leaved *cacalia*. 2. The *cacalia*, with thick hairy leaves. 3. The *cacalia*, with their ſmooth and ſharp pointed leaves. 4. The Pyrenæan *cacalia*, with alliaria leaves. 5. The Alpine *cacalia*, with leaves covered on both ſides with a thick woolly down. *Tourn.* Hiſt. p. 451.

The antient Greek writers all mention a plant of this name, famous for curing diſeaſes of the aſpera arteria; but it is plain from their deſcriptions, that this was not at all of the nature of our *cacalia*: Some deſcribe it as having flowers like the olive; others like thoſe of the oak; but the old manuſcripts of Dioſcorides ſay like bryony, and therefore not at all agreeing with thoſe of the plant we call *cacalia*.

The root of *cacalia*, macerated in wine, and made into an eclegma, or chewed by itſelf, is ſaid to cure coughs. Its ſeeds pulveriſed and made into a cerate, and uſed as an ointment, render the skin ſmooth and free from wrinkles. *James*'s Dict. Med. in voc.

CACAO, the *chocolate-tree*, in botany, the name of a genus of trees, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of a number of petals arranged in a circular form. The cup is compoſed of one leaf, divided into ſeveral ſegments; and from it there ariſes a piſtil, which finally becomes a large ſtriated fruit, of the ſhape of a cucumber; containing a number of ſeeds uſually collected into five oblong cluſters, which readily part into ſeveral almond ſhaped kernels. There is only one known ſpecies of this tree, which is that which produces the common *cocoa* or *chocolate-nut*. *Tourn.* Inſt. p. 660. For the uſe of the fruit of the *cocoa*, ſee CHOCOLATE, *Cycl.*

CACAOTETE, in natural hiſtory, the name by which the Braſilians call the Belemnites, which is very common there as well as with us. *Klein*, de Tub. Mar. See BELEMNITES.

CACATORY-*Fever*, *Febris Cacatoria*, a denomination given by Sylvius to an intermittent fever, accompanied with a ſevere looſeneſs, and ſometimes gripes. *Sylv.* Prax. Med. l. 1. c. 30. §. 39. *Caſt.* Lex. Med. p. 118.

CACAVATE, in botany, a name given by ſome authors to the cocoa-tree. *Park.* Theatr. 1642.

CACAVERA, in botany, a name given by ſome authors to the cocoa-tree. *Piſo*, Mont. Ar. 197.

CACAVIA, in botany, a name given by the Greek authors and ſome of the others to the *lotus* or nettle-tree; it obtained this name from the reſemblance of its fruit when ripe, to the halicaccabum or winter cherry. See the article HALICACCABUM.

CACCALIA, in botany, a name given by ſome of the old Greek writers to the *halicaccabum* or *alkekengi*, the winter cherry; a kind of nightſhade or plant allied to that family, but diſtinguiſhed from all the others by the fruit being covered with a membraneous bag.

CACCABON, in botany, a name given by ſome authors to the water-lilly or nymphæa. The Arabians called this *nufar*, and that particular kind which grew in the Nile, *nilnufar*, and *nilufar*; by tranſpoſition of ſome of the letters, this word was formed into *linufar*, and the late Greek writers made of this and the others many more names, but this *caccabon*, and another name of the ſame plant which is *rapalon*, are not of this origin.

CACHECTIC, a perſon labouring under a *cachexy*. See CACHEXY.

CACHEF, or CACHEEF, in the Turkiſh affairs, the governour of a city, town, or even province in Egypt. Mem. des Miſſ. T. 2. p. 150, and 152.

The title *cachef* is alſo given to the captains or commanders of little flying armies, intended to keep the Arabs in obedience. *Le Clerc*, Bibl. Univ. T. 5. p. 115.

Egypt is divided by the Turks into thirty nine *cacheſtecks*, or governments. *Sicard*, in Mem. des Miſſ. T. 5 p 205, and 231. Item, T. 7. p. 99.

CACHEXY, in medicine, a flaccid ſtate of the body, eaſily perceived externally, and ariſing from a viſcoſity of the juices, and a remiſſion of the tonic motions of the parts.

Some have imagined a *cachexy* to be the firſt degree of a dropſy, but this is far from truth; for tho', as many diſeaſes are ſubject to degenerate into one another, a dropſy is often the conſequence of a *cachexy*, yet there have been frequent inſtances in which a *cachexy* has remained to the period of life, without the genuine ſymptoms of a dropſy ever appearing; and often a dropſy ariſes in patients and is continued to its utmoſt period, obſerving in all its ſtages its true form, and not running into that of *cachexy*. This miſtake of many is to be carefully avoided, becauſe the methods of cure are not the ſame in theſe two diſeaſes. The *cachexy* is diſtinguiſhed from the anaſarca by the fleſh hanging flaccid and pendulous, and being ſoft in it; whereas in the anaſarca it is often ſo diſtended and hard, that the skin ſhines and looks as if it would burſt. The anaſarca alſo uſually forms œdematous tumors in many parts of the body, but the *cachexy* never does this. It differs from the aſcites in that this diſeaſe only affects the lower parts of the body, but the *cachexy* the whole; but it differs only from the chloroſis as genus from ſpecies. Phyſicians diſtinguiſh the *cachexy* into ſimple and compound; the firſt is when it is combined with no other diſeaſe; in the other, it is frequently compounded with the ſcurvy.

Signs of the cachexy. There is no diſeaſe more readily known than this, as none has ſuch obvious and diſtinctive ſymptoms. The face, hands, feet, and legs, are always bloated, and ſwelled beyond their natural dimenſions; the natural heat of the body decreaſes, and there is an evident and actual ſenſation of cold, in the parts. This is attended with an univerſal languor, and anxiety of mind, and a painful weakneſs in going up ſtairs, or walking up hill: the appetite is very uncertain, and loathings of food are very frequent: after food, there are all the ſymptoms of a bad digeſtion, as tenſions and oppreſſions about the ſtomach, and flatulencies. The bowels are in a very uncertain ſtate, ſometimes remaining coſtive for a long while; and at others, throwing off the food undigeſted, in the manner of a lientery: the patients have always a great propenſity to ſleep, but they are not refreſhed by it. The urine is but ſmall in quantity, and is ſometimes crude and rediſh; ſometimes limpid, but always has a livid appearance. The pulſe is languid and weak, and the blood, if it happen to be ſeen by any accident, is pale and thin, and abounds in ſeroſities. The patients always complain alſo of a ſhortneſs of the breath, and a difficulty of breathing, eſpecially after the body has been at any time in motion. Heats and fluſhings come on at times, and the head is always diſturbed; always torpid and inclined to ſleep, and not unfrequently vertiginous and violently painful; and œdematous tumors appear in the feet, when the patient is ſtanding up, but diſappear again, when he lies down.

There is always alſo a ſenſe of weight and preſſure in the abdomen; ſometimes in the right hypocondrium, ſometimes in the left; and often deeply inward under the navel; ſometimes the whole abdomen is inflated and hard, and ſometimes it is only partially ſo; hardneſſes and inequalities being ſenſible to the touch in it.

It moſt frequently attacks perſons of a phlegmatic habit, and is more common among women than men, as well on account of their ſofter texture, as of the frequent diſorders the irregularity of their menſtrual diſcharges throws them into. Women oftener, however, are brought into it thro' a defect of the menſes, than by the exceſs of that diſcharge.

Cauſes of it. Among theſe are to be rekoned, the living in wet and damp rooms; the leading an idle and ſedentary life; and the feeding on viſcous things, and drinking great quantities of water: on the contrary, the abuſe of ſpirituous liquors will alſo occaſion it; and the taking aſtringent medicines at the times when the blood is in violent emotions, as in hæmorrhages, and in acute fevers; the ſtriking in of cutaneous humors will alſo ſometimes occaſion it; and very often the omiſſion or ſuppreſſion of habitual diſcharges of blood, by whatever paſſages: great loſs of blood is vulgarly ſuppoſed to be one of the principal agents in bringing on this diſeaſe, but improperly; for when this ſucceeds ſuch diſcharges, it is rather owing to their being long continued, than violent, and to the improper diet of the patient afterwards, which prevents a proper ſupply of blood again, than from the actual loſs of it. Improper treatment of the gout, and the abuſe of volatile ſalts in high fevers, are alſo too often the cauſes of this diſeaſe.

Prognoſtiſts. When this diſeaſe is plenary, and the whole craſis of the humours is depraved by it, it is very difficult of cure: It is in general more eaſily cured in young people than

in

in older; and in these last, it usually degenerates into a dropsy, and hectick; and when driven back, it often produces a suffocative catarrh. When the disease is not plenary, or in its full state, but rather may be called a *cachectick* disposition than a *cachexy*, as is frequently the case with young people; particularly with girls, on account of the suppressions of the menses, then it is in general easily cured, unless the bad regimen of the patient for some time before has rendered it more than usually obstinate and violent; in general, the sooner it is undertaken, the more easily it is cured.

The chlorosis of young girls, which seems to be of a middle nature, between a cachectick disposition, and a confirmed *cachexy*, is a chronic case, and seldom admits of a sudden cure, unless there be a remarkable change of life in the patient, as by marriage. This chlorosis is in itself rather troublesome than dangerous, as it gives an universal languor both of body and mind, a bad colour, palpitations of the heart, and other painful symptoms; but it sometimes degenerates into a *cachexy*, or a hectick.

Method of cure. The general method must be by correction of the vitiated humors; a reseration of the viscera; an evacuation of the humors, when thus prepared for it; and, finally, a restitution of the due tone to the solids.

For the first fortnight, the patient should be treated with resolvents and digestives; such as the *tartarum vitriolatum* and absorbents salted with acids; as crab's eyes with lemon juice; and with aperient decoctions of the woods of guaiacum and sassafras; as the roots of pimpernell, and the like; and either during this time, or afterwards, evacuants are to be given; such as sena, jalap, and dwarf-elder. When the improper treatment of a fever has been the occasion of the malady, the mild alexipharmicks are to be given at times; and when an obstruction of the menses is in the case, the time they are to be expected is to be carefully regarded, and emmenegogues and baths for the feet, are to be ordered at those peiods. When obstructions of the hæmorrhoidal discharges are in the case, then, after the first fortnight, leaches should be applyed to the hæmorrhoidal veins; and if the disease has arisen from long continued hæmorrhages, then analepticks are to be trusted to, with very gentle correctives, for fear of exciting new commotions in the blood; and in these cases, bleeding in the arm is sometimes found necessary. *Junk.* Consp. Med. p. 420.

It is of the utmost consequence in this case, that a proper diet be observed; all coarse and heavy foods are to be avoided, as also all acid and salt things; and much water is as carefully to be guarded against, as an over use of spirituous liquors. Finally, when the disease is cured, its return is to be guarded against, by taking proper purgatives once a month. To this purpose, Stahl greatly recommends a mixture of gum, ammoniacum, galbanum and myrrh, and small quantities of calomel, with the purges. It is too common a practice to give boldly the forcing medicines, as they are called, to young women in *cachectick* complaints; such as myrrh, saffron, savin, and the like; but this very often throws them into an ascites, or other disorders worse than the first.

Uterine CACHEXY, a term used by Hofman for the fluor albus. Oper. T. 3. p. 348.

CACHLEX, in natural history, a name used by some authors for the small pebbles found on the sea and river shores, which being heated red hot, and quenched in whey, are said to give an astringent virtue. *Galen*, L. 10.

CACHORRODOMATO, in zoology, the name by which the Portuguese in America, call the *taiibi*; a creature in many things resembling the opossum, and suspected to be the male of that creature. See TAIIBI.

CACHRYS, in botany, the name of a genus of plants of the umbelliferous kind, the characters of which are these: The flower is of the rosaceous kind, being composed of several petals, which stand in a circular order on a cup, which afterwards becomes a fruit composed of two fungous semi-oval parts, sometimes smooth, sometimes rough and striated, and containing each a seed of the shape of a grain of barley.

The species of *cachrys*, enumerated by Mr. Tournefort, are these: 1. The ferulaceous leaved *cachrys*, with smooth fungose seeds. 2. The peucedanum leaved *cachrys*, with large fungous, smooth and flat seeds. 4. The peucedanum leaved *cachrys*, with smaller fungous, smooth and flat seeds. And, 5. The *Hungarian cachrys*, with panax leaves. *Tourn.* Inst. p. 325.

The seed of *cachrys*, tho' not used in the present pharmacy, was recommended by the antients for its heating and drying qualities; and therefore judged a proper ingredient in smegma's. It also made a good plaster for the head in defluxions upon the eyes, provided it is taken off at the end of three days; and taken with pepper and wine, it was said to be good for the epilepsy. Vid. *James*'s Med. Dict. in voc.

CACHRYS, or CANCHRYS, among antient botanists, denoted a scaly tuft, growing like a calkin on certain trees; as the oak, beech, pine, and the like; or according to others, an unseasonable kind of germen or bud, appearing either in the spring, or autumn; and which, after the winter is over, spreads or shoots into branches [a]. The word is sometimes also used for the seed of rosemary, or even the plant itself [b]; sometimes for barley roasted in a furnace, to render it more easy to grind into flower [c].—[a Vid. *Theophr.* Hist. Plant. l. 3. c. 7. *Bradl.* Dict. Bot. T. 1. in voc. b *Dioscor.* l. 3. c. 87. c *Salmas.* Exerc. ad Solin. T. 1. p. 599, seq. *Gorr.* Med. Defin. p. 219. voc. Καγχρυς. *Cast.* Lex. Med. p. 119.]

CACHUNDE, the name of a medicine, highly celebrated among the Chinese and Indians, and made of several aromatick ingredients, the perfumes, medicinal earth, and precious stones: they make the whole into a stiff paste, and form out of it several figures according to their fancy, which are dryed for use: these are principally used in the East-Indies, but are sometimes brought over to Portugal. In China, the greater persons usually carry a small piece in their mouths, which is a continual cordial, and gives their breath a very sweet smell. It is a highly valuable medicine also, in all nervous complaints; and is esteemed a prolonger of life, and a provocative to venery, the two great intentions of most of the medicines in use in the East. *Zacutus Lusitanus.*

CACHYMIA, a term used by Paracelsus, for an imperfect metalline ore, or as he expresses it, an immature metalline body, which is neither a saline substance nor a metal.

The *cachymiæ* may be divided into sulphurous, as marcasite; mercurial, as arsenic or orpiment; and saline, as all tales. *Dorn.* Geneal. Miner. c. 20. Theat. Chym. T. 1. p. 587. *Cast.* Lex. Med. p. 119. *Ruland.* Lex. Alch. p. 109, seq.

CACOCHOLIA, in the writings of the antient physicians, a name given to disorders which arise from an indisposition of the bile.

CACOCHYLIA, a term used by the antient writers on medicine for a distempered or depraved chylification.

CACOCHROI, a term used by the antient writers in medicine, for such persons as had an unnatural colour in their face.

CACODÆMON, Κακοδαιμων, in the antient astrology, denotes the twelfth house from the horoscope; thus called on account of its malignant influence. *Firmic.* Math. l. 2. c. 20. t. c. 22. *Fab.* Thes. p. 390. *Vitæl.* Lex. Math. p. 88. *Wolf.* Lex. Math. p. 279.

The word originally denotes an evil genius, or dæmon.

CACODES, in the antient writers of medicine, a name given to several kinds of matter discharged from the human body, which had an ill smell. The offensive matter voided sometimes by vomit, has this name, as also that evacuated by stool, and the discharge of foul ulcers.

CACOETHES, or CACOETHIA. See MALIGNANT, *Cycl.*

CACOETHE *ulcera*, Κακοηθη ἑλκη, a name given by the antients to all ulcers not cureable by the proper and usual methods, by reason of the putrid acrimony of the matter flowing to them. *Cels.* de Med. l. 5. c. 28. *Plin.* Hist. Nat. l. 22. c. 25. *Gal.* Meth. Med. 4, 5. *Cast.* Lex. Med. p. 119. *Gorr.* Med. Defin. p. 204.

COGAMIA, Κακογαμια, among the antient Spartans, denoted the vice, or failing of persons who used their wives ill; which, among that people, was penal, and severe laws made against it. Vid. *Plut.* in Lycurg. & in Apophth. Clearch. *Solens.* in Libr. Proverb. Mem. Acad. Inscr. T. 5. p. 410.

CACOMACHIA, Κακομαχια, in the antient gymnastic art, denoted foul play in fighting, or other disputes for victory. *Philostr.* l. 2. Mem. Acad. Inscr. T. 2. p. 321.

CACOPHONIA, in medicine, denotes a vice or depravation of the voice, or speech; of which there are two species, *aphonia*, and *dysphonia*. *Gal.* de Diff. sympt. c. 3. *Cast.* Lex. Med. p. 119.

CACOPHRAGIA, in the antient writers on medicine, a term often used for a distemperature of the viscera, by which nutrition is performed.

CACOSYNTHETON, Κακοσυνθετον, in grammar and rhetoric, denotes a vicious and unnatural composition of words. Such is

——— *Versâque Juvencum*
Terga fatigamus Hastâ.
Virg. Æn. l. 9. v. 610. *Fab.* Thes. p. 390.

CACTONITES, in natural history, a name given by some old writers, to a beautiful pale red stone, supposed to be the same with our pale cornelian. In the fabulous accounts of the virtues of stones, among the writers of the middle ages, this is said to have a power of resisting enchantments.

CACTUS, in botany, a name given by some of the Greek writers to all the plants of the thistle kind; others apply it only to some peculiar species; and others to some thorny shrubs very different from thistles. The general acceptation of the word is, that it signifies the artichoak; but Hippocrates gives it as a name of the shrub which bears the gumm tragacanth; he orders this to be given in insusion to horses, in cases of bad breath; and the common people of Greece, about the time of Hippocrates, it appears from many other authors, had no name for the tragacanth, but this of *cactus*. Athenæus allows, that the *cactus* of Theophrastus was the artichoak; and tho' some of the Greeks of after-times, used the word Κυναρα *cinara*, for this plant; yet the old name *cactus*, still continued in the more general use.

The *cinara* and *cactus* are properly, therefore, the same plant, and are synonyms of the same countries at different times; yet Columella distinguishes them as two plants; and says,

that the one was prickly, and the other not ſo. This, however, is but an accidental and trivial difference; for as the *cactus*, according to this author, was prickly, and the *cinara* ſmooth, but both were in other reſpects the ſame, it is probable, that the ſpecies were the ſame, and the difference was owing to culture; the wild plant being naturally ſmaller and prickly, and the garden plant larger, ſmooth, and with finer and fuller heads.

CACULE, in the materia medica, a name given by Aviſenna, Serapio, and all the other Arabian writers, to the cardamom ſeeds. They diſtinguiſh two kinds of this fruit, a larger, and a ſmaller. The larger is the grain of paradiſe, and the ſmaller the common cardamom ſeed of theſe times. They alſo called the cardamoms, in general, by the name *heil*, and diſtinguiſhed the ſmall kind, now principally in uſe, by the word *hilbanc*, which after writers corrupted into *hilbave* and *hilbua*, or *helbua*. Garcias tells us, that the cardamom ſeeds were in his time, called *hil*, in Bengal, and many other parts of the Eaſt.

CADE *(Cycl.)* — Antiently the *cade* of herrings appears to have contained 600 fiſh, reckoning ſix ſcore to the hundred. *Dugd.* Monaſt. Ang. T. 1. p. 83. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

CADE-*Lamb*, a young lamb weaned, and brought up by hand, in a houſe; called in the North, pet-lamb. *Skinn.* Etym. Angl. Dict Ruſt. T. 1. in voc.

CADE-*oil*, in the materia medica, a name given to an oil much in uſe in ſome parts of *France* and *Germany*. The phyſicians call it *oleum cadæ*, or *oleum de cada*. This is ſuppoſed by ſome to be the piſſelæum of the antients, but improperly; it is made of the fruit of the oxycedrus, which is called by the people of theſe places, *cada*. Some have imagined it to be the piſſelæum, made by the antients of the fruit of the cedars mentioned by Pliny; but this does not appear to be the piſſelæum of any other of the antients, theirs being the oil of pitele, made from the pine, or turpentine trees; and the oil of the cedar, which was the ſame ſort of ſubſtance, made from the cedar-wood, being the cedrelæum of theſe authors. Pliny and ſome others, have called all theſe by the general name, biſſelæum, but this is only a falſe ſpelling of piſſelæum.

CADE-*worm*. See PHRYGANIUM.

CADENCE, *(Cycl.)* among the French muſicians, is uſed to ſignify a trillo, or ſhake, but improperly, according to Broſſard. In effect, the *cadence* is properly the tranſition from the note on which the ſhake is made, to a note which is a tone lower, or a ſemi-tone major higher, in the treble parts. See CADENZA SFUGGITA.

CADENCE, in the manege, denotes an equal meaſure, or proportion, obſerved by a horſe in all his motions, when he is thoroughly managed, and works juſtly either at the gallop, terra a-terra, or the airs.

A horſe's working in *cadence* imports, that his times or motions are uniform, and that one does not take in more ground than another. *Guill* Gent Dict. P. 1. in voc.

CADENCY, in heraldry, the ſtate, or quality of a cadet. See CADETS, *Cycl.*

Niſbet has an eſſay on the additional figures and marks of *cadency*. See DIMINUTION, *Cycl.*

CADENT *of the horoſcope*, in the Chaldaic aſtrology, the ſame with *cacodæmon*, or ill genius. *Stanl.* Hiſt. Philoſ. P. 15. p. 1048. See CACODÆMON.

CADENZA *Sfuggita*, in the Italian muſic, is uſed when a part inſtead of aſcending or deſcending the proper interval, to form a *cadence*, proceeds by ſome other interval. For inſtance, when the baſs, inſtead of riſing a fourth, or falling a fifth, aſcends only by a tone, or ſemi-tone major.



Thus, in Ex. 1. where the baſs inſtead of proceeding to C, the key-note, after G, goes to A. Thus alſo, in Ex. 2. after E, the ear would naturally expect to hear A, the key-note, but this is avoided, and F put in its place.

CADGE, a round frame of wood, on which falconers carry their hawks when they expoſe them to ſale. Dict. Ruſt. T. 1. in voc.

CADI *(Cycl.)*—We find numerous complaints of the avarice, extortion, and iniquity of the Turkiſh *cadis*; all juſtice is here venal; the people bribe the *cadis*; the *cadis* bribe the moulas; the moulas the cadileſchers, and the cadileſchers the mufti. *Tournef.* Voy. du Levant. T. 2. p. 57.

Each *cadi* has his ſerjeants, who are to ſummon perſons to appear and anſwer complaints. If the party ſummoned fails to appear at the hour appointed, ſentence is paſſed, by proviſion, in favour of his adverſary. It is uſually vain to appeal from the ſentences of the *cadi*; ſince the affair is never heard anew, but judgment is paſſed on the caſe, as ſtated by the *cadi*. But the *cadis* are often caſhiered, and puniſhed for crying injuſtice with the baſtonado and mulcts; but the law forbids them to be put to death. Conſtantinople has had *cadis* ever ſince the year 1390, when Bajazet I. obliged John Palæologus, emperor of the Greeks, to receive *cadis* into the city, to judge all controverſies happening between the Greeks and the Turks ſettled there.

In ſome countries of Africa, the *cadis* are alſo judges of religious matters. Among the Moors, *cadi* is the denomination of their higher order of prieſts, or doctors, anſwering to the rabbins among the Jews. Vid. Journ. des Scav. T. 81. p. 100.

CADILESCHER *(Cycl.)* — The *cadileſchers* have much the ſame authority in the provinces, that the muftis have at Conſtantinople [a]: they even frequently riſe to be muftis: their chief ſtudy is the alcoran, which is the code of their civil as well as canon law. Their place at the divan is at the ſide of the grand vizir. Appeals are ſometimes brought to them from the ſentences of the *cadis* in civil affairs; and they have the ſuperintendence of all other officers of juſtice within the empire. They nominate the *cadis*, and *moula-cadis*; but theſe laſt only with the conſent of the grand ſeignor. On any grievous complaints againſt the *cadis*, they condemn and depoſe them [b]. — [a Vid. Jour. des Scav. T. 58. p. 441. b *Tournef.* Voyag. du Levant. T. 2. Lett. 14. p. 57.]

A *cadi leſcher*, in Egypt, is an officer like a lord high chancellor, ſent yearly from Conſtantinople to Grand Cairo, to whom the people may appeal from the *cadis*, and many cauſes of importance in Cairo go immediately before him. *Pocock's* Egypt, p. 170.

CADITES, an appellation given by Plot to a kind of figured ſtone, reſembling a *cadus*, or barrel.

The *cadites* ſwells in the middle, and goes tapering to both ends, being divided lengthwiſe with ſuch equidiſtant lineaments, as are uſually made by the ſtaves of a barrel, but without hoops, nor yet hollow. *Plot.* Nat. Hiſt. Staffordſh. c. 5. §. 42. p. 198.

CADMEAN-*Letters*, the antient Greek, or Jonic characters, ſuch as they were firſt brought by Cadmus from Phœnicia; whence Herodotus alſo calls them, *Phœnician*-letters. Vid. *Montfauc.* Palæogr. Græc. l. 2. c. 1. p. 116. Mem. Acad. Inſcr. T. 3. p. 311.

According to ſome writers, Cadmus was not the inventor, nor even importer of the Greek letters, but only the modeller and reformer thereof; and it was hence they acquired the appellation *Cadmean*, or *Phœnician*-letters; whereas before that time they had been called *Pelaſgian*-letters. *Nouv.* Rep. Lett. T. 45. p. 506.

CADMIA, Καδμια, *(Cycl.)* originally denoted the tower or caſtle of Thebes, built by Cadmus ſon of Agenor. From hence the name has been transferred by alchemiſts, to denote divers other things, as the matter of the philoſopher's ſtone, or even the ſtone itſelf; on account of which the adepts ſometimes call themſelves fellows or companions of Cadmus, *q. d.* men who have ſtormed and taken the ſtrong, and otherwiſe impregnable caſtle of nature.

Sometimes it ſignifies a foſſil ſubſtance, as the *Lapis calaminaris*; ſometimes a flower, or ſublimate of like uſe with calamine, for tinging copper yellow; ſometimes a ſubſtance which yields vitriol either *per ſe*, or by accident; ſometimes a ſort of pyrites called cobalt, of which a blue colour is prepared. Vid. *Lynk.* Comm. de Cobalt. ap. Philoſ. Tranſ. N° 396. p. 193. *Woodw.* Catal. For. Foſſ. p. 26, ſeq. *Mercat.* Metall. Arm. 7. c. 3. p. 146.

CADMIA is alſo uſed by Pliny for copper ore, or the ſtone of which copper is made [a]. And hence the ſeveral appellations, *cadmia foſſilis*, *cadmia fornacum*, *cadmia metallica*, *cadmia atramentoſa*, and *cadmia pro cæruleo* [b].—[a *Plin.* Hiſt Nat. l. 34. c. 10. It. c. 1. *Hardouin*, Not. ad Eund. b *Lynk.* loc. cit.]

CADMIA-*foſſilis*, a name given by ſome to the mineral called more uſually *cobalt*; this is a greyiſh or whitiſh ore, conſiderably firm and very heavy; much reſembling ſome of the ſilver ores, and in ſome ſpecimens looking like the white pyrites, but leſs gloſſy. It contains arſenick or ratsbane, and a fixt earth, which on fuſion with fluids and potaſh, or any other alkali ſalt, yields that fine blue glaſs which we call ſmalt, and which our painters and waſher women uſe under the names of ſmalt and powder-blue. It is dug about Sneeberg and Annaberg, and in ſome parts of Bohemia. It is always found below, not mixt with the ores of metals, and is very rich in the arſenick in ſome places, and but poor in others: all our arſenick is made from it. The miners are directed where the veins of *cobalt* lie, by a ſort of foſſil which they call therefore the flower of *cobalt*: it is a very elegant ſubſtance, of a fine blooming red colour, and of a radiated ſtructure; ſometimes of a paler red, and in form of powder. This is found on the ſurface of the earth where the veins of *cobalt* are within; and the people who dig where it is found, are ſeldom deceived in their expectations. When a mineral of this nature is met with, there requires great skill in the miner to diſtinguiſh it from the white pyrites, a grey copper ore, and from ſome of the white ſilver ores, to all which it bears a great external reſemblance, and they to it; but they all differ extremely in their nature and properties. The eye is able to judge of this after a long experience, but not without it; but when there is any expectation of advantage from the

ore,

ore, it is eaſily tried by fire; for the glaſs producible from theſe ſeveral things, ſo like in external appearance, is wholly different. The glaſs from the white pyrites is black, that from the grey copper ore is red, and that from the ſilver blackiſh; but that from the *cobalt* is of the fine blue of which we make ſmalt. This is an exact ſapphire colour, and probably from this colour obtained the name of zaffer, which is at preſent generally uſed to ſignify roaſted *cobalt*, which is blue, and becomes of a ſtrong hardneſs on lying by a little wetted; but ſome uſe it in general, either for this, or for the ſmalt prepared of it.

Cobalt, when expoſed for a conſiderable time by itſelf in a heap to the ſun and rain, yields an efflorescence of a roſe or peach bloſſom colour, called by the miners the flower of *cobalt*, and very much reſembling the native flowers of *cobalt* deſcribed before, but leſs beautiful: this efflorescence when properly treated affords a very fine red colour for the painter's uſe, and a little green vitriol Spirit of nitre diſſolves the *cobalt* with a violent effervescence; four times the quantity of the acid is ſufficient to diſſolve ſome *cobalt*, but other ores require ſix times or more: this is owing to the purity or impurity of the ore. The ſolution is of an uncertain colour, according to the other matters contained in the *cobalt*; when it contains vitriol it is blue, when it contains copper, as is often the caſe, but particularly in that kind called by the miners *copper nickle*, which has an appearance of copper on the ſurface, the ſolution is then green; it is alſo ſometimes green from the pureſt ores to appearance. This green colour reſembles very much that of ſalt of ſteel well purified, but it ſtill ſeems to have ſome ſhare of copper in it.

When the ſolution is rediſh, it ſhews that there is a mixture of biſmuth ore in the *cobalt*; and finally, when it is yellowiſh, it ſhews the *cobalt* to be richeſt of all for the making of ſmalt.

The ſolutions of *cobalt*, when an alkali is added, ſuch as oil of tartar, or the like, precipitate a fine blue ſmalt, which is the richeſt of all colours for china ware: it is poſſible that this was the old blue employed by the Chineſe, which we find ſo greatly ſuperior to that uſed at preſent, but our ſmalt being afforded ſo much cheaper than they could make this elegant colour, they ſoon diſuſed it, and made their blues wholly from our ſmalt. Oil of vitriol, and ſpirit of ſea ſalt, act on *cobalt*, but do not properly diſſolve it: they may rather be ſaid to erode it, and particularly the acid of vitriol, which turns it into a white powder, ſo that ſpirit of nitre ſeems the proper ſimple ſolvent of it. Philoſ. Tranſ. N° 396. p. 199.

Cobalt put into a coated retort, and ſet over a ſtrong fire, yields thick fumes, which by degrees aſſemble themſelves in the neck, and upper part of the veſſel, in form of a ſolid ſubſtance. This is white arſenick, or ratſbane, but the ore is ſeldom ſo pure as to yeild theſe flowers white and perfect from the beginning; they are often blackiſh at firſt, and after this red, which ſhews that there is ſome portion of common ſulphur in the *cobalt*, which mixing with the arſenick, turns it red, as it will common white arſenick, eſpecially if a little ſcoriæ of copper be added, or in the firſt caſe if a little copper be contained in the *cobalt*.

Theſe red flowers form themſelves into a ſolid ſubſtance of a laminated ſtructure, and have much the appearance of a regulus of ſome kind, but they alter on being expoſed to the air, and though very bright and gloſſy at firſt, they become opake and dull afterwards. When roaſted, as the miners term it, in a reverberatory oven, in which the flame of the wood is beat back upon the ore, it yields a white duſty ſubſtance like meal, which ſticks to the top of the oven, and is collected for the making of the common white arſenick, and the other kinds. The remaining ſubſtance, after all theſe white flowers are raiſed, is only the fixed earth which turns into that blue glaſs called ſmalt.

Biſmuth ores, treated in the ſame manner, yield their metal for the common uſes, as the *cobalt* yields its arſenick, and the remainder, like that of the *cobalt*, is an earth eaſily fuſible into the ſame blue glaſs.

CADMIA *Fornacum*. See TUTTY.

CADMITES, in natural hiſtory, a kind of gem, nearly reſembling the oſtracitis; from which it only differs in that the latter is ſometimes girt with blue ſpots. *Plin.* Hiſt. Nat. l. 37. c. 10. See OSTRACITIS.

In ſome MSS. for *cadmites*, we read *calamites*. *Hardouin.* Not. ad Plin. loc. cit.

CACUEATOR, in antiquity, a denomination given to heralds or meſſengers of peace. *Aquin.* Lex. Milit. T. 1. p. 146. See CADUCEUS, *Cycl.* and *Suppl.*

CADUCEUS (*Cycl.*)—F. Lafitau pretends to have found the *caduceus* among the ſavages of America. The famous myſtic tobacco pipe, or calumet, according to this author, is the true and original *caduceus*, of which the Greek and Roman ones were only types. *Lafitau*, Paral. des Mœurs. Sauv. ap. Mem. Trev. 1725. p. 216, ſeq. See CALUMET.

Wedelius has given a diſſertation expreſs on *caduceated* medals, De Nummis Caduceatis. Ext. in Ejuct. Exercit. Med. Dec. 6. Ex. 5. p. 22, ſeq.

CADUCEUS is alſo a name given to a kind of ſtaff covered with velvet, and decorated with *flower de luces*, which the French heralds of arms bear in their hands on ſolemn occaſions. That born by the king at arms has a golden *flower de luce* at the end; and is by ſome called ſceptre. Trev. Dict. Univ. T. 1. p. 1322.

CADUS, Κάδος, an antient liquid meaſure of capacity, containing ten, ſometimes twelve congii; and ſixty, or according to others, ſeventy-two ſextaries. *Linden.* Exerc. 10. §. 140. *Gorr.* Med. Def. p. 292. *Caſt.* Lex. Med. p. 120. *Fab.* Theſ. p. 396. *Pitiſc.* Lex. Ant. T. 1. p. 312.

The *cadus* is the ſame with what is otherwiſe denominated *metretes* [a] and *cerameon* [b], &c.—[a *Gorr.* Def. Med. p. 292. voc. μετρητης. b *Paul.* Addit. ad Beverin. p. 135]

St. Jerom alſo makes it the ſame with the *batus*, or *bath*. *Hieron.* ad Ezech. c. 45. See BATH.

According to Beverinus, the *cadus* was different from the μετρητης, and contained three modii, or the third part of a corus; and conſequently, eighty pounds of water, or ſixty of wheat; being alſo equal to the amphora. *Beverin.* Synt. de Ponder. P. 2. p. 134. See AMPHORA, *Cycl.* and *Suppl.*

CÆCÆ *Glandulæ*. See GLANDULÆ *Cæcæ*.

CÆCILIA, in zoology, the name of the ſlow-worm, or blind-worm, called by the Greeks *typhlinus*. It is a ſmall ſpecies of ſerpent, which has ſuch extremely ſmall eyes, that it has been uſually ſuppoſed to have none at all. It is diſtinguiſhed from all our ſnakes by its ſmallneſs, and by the ſhape of its tail, which runs out a great way beyond the anus, and yet is blunt and conſiderably thick at the end. The colours vary much in the different ſexes, and probably often alſo in the ſame ſex; the common colour is a duſky greyiſh yellow on the back, and the ſides are variegated with ſtreaks of black and white: it reſembles the viper in its manner of producing its young, which are put forth alive. *Ray*'s Syn. p. 289.

CÆCILIA, in icthyography, a name uſed by ſome authors for the fiſh more uſually known by the name of the *acus*. *Geſner*, de piſc. p. 1225. See the article ACUS.

CÆCILIANA, in botany, a name uſed by Pliny and ſome other authors for the *Tutſan* or *androſæmum*. *Gerr.* Emac. Ind. 2.

CÆCUM *inteſtinum*. See INTESTINUM *Cæcum*.

CÆLATURA, or COELATURA, the art of engraving on metals, ſtones, woods, or the like, with inſtruments of ſteel, diamond, &c. *Libav.* Synt. Arc. Chym. l. 1. c. 23. *Caſt.* Lex. Med. p. 120. *Fab.* Theſ. p. 402. *Pitiſc.* Lex. Ant. T. 1. p. 313. See ENGRAVING, SCULPTURE, &c. *Cycl.*

CÆLESTIANS, CÆLESTIANI, or CÆLESTII, antient heretics, the followers of Cæleſtius, a monk, who flouriſhed under the empire of Arcadius, about the year 405, and taught moſt of the ſame errors with Pelagius. See PELAGIANS, *Cycl.*

The *Cæleſtiani* aſſerted, that no man need ſin unleſs he will; and that it is in every perſon's power to be righteous, and arrive at a ſtate of perfection, if he do his utmoſt; laſtly, that man may fulfil all the commands of God without divine grace, and obtain ſalvation by his own works alone.

The *Cæleſtians* were condemned with the Pelagians at the council of Epheſus. Their arguments were refuted by St. Auguſtin, whom St. Jerom compliments as having driven the *Cæleſtians* off the ſtage. *Prateol.* Elench. Hæreſ. l. 2. p. 126.

CÆMENT, or CEMENT, the ſolution of metals by acid menſtrua, ſuch as aqua fortis, ſpirit of nitre, and the reſt, is a thing commonly practiſed and well known; but theſe menſtrua all evaporate over a fire ſtrong enough to make them boil; and yet it was found neceſſary for the metallurgiſts and aſſayers to know the effects of the ſame menſtrua in a much greater degree of heat; and as this could not be given them in their fluid form, by reaſon of their evaporation, they have found a method of uſing the ingredients which afford them in their dry ſtate: theſe ingredients thus uſed are called *cements*, and the operation *cementation*.

It was ſoon found, that the acid ſalts, when condenſed into liquors, could not bear any great degree of fire, but were by it reſolved into vapours, and flew off; yet that theſe very liquors or acid ſpirits, could not be ſeparated from their ſalts but by a very violent and ſtrong fire; and thence it was learned, that to have the effects of theſe powerful menſtrua, with the effect of a ſtrong fire at the ſame time, it was neceſſary to uſe, not the menſtrua already extracted in a fluid ſtate, but the ingredients from which they were to be made in their dry form. The bodies therefore to be thus wrought upon by the acid ſpirits, and by a violent fire at the ſame time, muſt be put into the veſſel wherein the ſaid ſpirits are produced, that being made red hot therein, they may be ſurrounded on every ſide by the agitated vapours of theſe ſpirits: this is eaſily done by firſt ſlightly moiſtening the matter which affords theſe acid ſpirits, then preſſing the mixture a little, and expoſing the metal mixed with this matter to the fire.

The proportion of the ingredients and additions to them, uſed in making *cements*, is much the ſame as in the diſtillation of the acid ſpirits from the ſame ingredients; but common ſalt, nitre and vitriol, being the melting menſtrua of metals; and vitriol being apt to become extremely hard, by the ſame fire which is proper to be uſed in *cementations*, that is not a very violent one, on this account they uſe a quantity of brick-duſt, or other ſuch ſubſtance with them, three or four times greater than their own; leſt the ſalts melting by a ſomewhat ſtronger fire being employed, ſhould put the metals, eſpecially gold and ſilver, in fuſion: but by this method you prevent the melting

melting of the ſalts, or if they melt, you at leaſt prevent them by it from running together and hardening to ſuch a degree, that the maſs cannot be got aſunder, or the metal ſeparated without great difficulty. Some uſe bole alone on theſe occaſions, but from what has been obſerved it may be found not proper to do that, becauſe bole hardens into a ſort of ſtone in the fire.

That the ſpirits which are driven out of the matter uſed in the *cementation* may act on the metal the longer, and with the greater force, the veſſels in which the operation is performed, muſt be cloſed; the junctures of them muſt not, however, be perfectly ſtoped, but covered with clay, leaving ſome vent. By this means the ſpirits are beaten back, and yet not ſo abſolutely confined as not to be able, when the fire is increaſed, to make their way thro' the cloſures of the veſſels; which vent not being given them, the veſſels muſt inevitably burſt.

Among the metals, copper, iron, lead, and tin; and all the ſemi-metals are totally corroded in a few hours, by any of the ingredients of the acid ſpirits uſed as *cements*; and this is yet the ſooner done, if they are intermixed with the matter of the *cement*, in form of lamina or thin plates, or if they are granulated.

Silver alſo is immediately conſumed by the ſeveral ſpecies of ſpirit of nitre; nay, even the ſpirit of common ſalt conſumes it in this operation, tho' in the form of a fluid body it does not corrode it; nor does ſilver reſiſt the vapours of vitriol in *cementation*; nay, even the vinegar of vegetables concentrated in the cryſtalls of verdigreaſe, and mixed with terreſtrial bodies, and uſed as a *cement*, takes ſomething from ſilver.

Gold remains untouched in all the before-mentioned *cements*. The other metals, as alſo all ſemi-metals, when intermixed with gold, if this be granulated or reduced into thin plates, are all eroded from it by *cementation*. Silver, however, is with more difficulty ſeparated from it than the other metals; and ſometimes a ſmall quantity of copper mixed with it, tho' a larger is very quickly eroded, is found to be with great difficulty ſeparated entirely by *cementation*. *Cramer*, Art. Aſſ. 46, 48.

CÆMENT, in architecture. Mr. Boyle ſpeaks of a *cement* he knew for rejoining the parts of broken ſtatues; and by the ſame he could counterfeit marble ſo well, that tho' large cavities were filled up with the *cement*, the work would paſs for entire, and be undiſtinguiſhable from natural marble. Works abr. Vol. 1. p. 111.

The ſame author tells us, that the beſt method to cloſe and mend pipes of ſubterraneous aquæducts, is with tobacco-pipe clay pulverized, and mixed with a large quantity of pulverized flocks, and carefully beat up with linſeed oil into a ſtiff paſte. Ib. p. 148.

To faſten the receiver of an air-pump to a metalline plate: This may be done by a cement of bees wax and turpentine, made with equal parts for the winter; and three parts of the former to two of the latter, for the ſummer. *Boyle*'s Works, abr. Vol. 2. p. 475.

Receivers, when cracked may be mended by a *cement*. See RECEIVER.

CÆMENT-*pots*, in aſſaying, are veſſels made for the *cementation* of metals with ſalts, and the ingredients of the ſtrong acid menſtrua, where the force of thoſe menſtrua, and a ſtrong fire, are required together.

Theſe pots are cylindrical veſſels, made of potters clay, with tiles adapted to them, and may be conveniently turned by the potters. The ſize of theſe veſſels muſt be proportioned to the quantity of *cement* to be put in them. It is not prudent, however, to make them of more than eight or ten inches broad, becauſe when they are larger the fire acts but difficultly and unequally upon them, eſpecially on that part of the matter near their center.

It is to be obſerved, in the making theſe veſſels alſo, that all kinds of clay contract and take up a ſmaller ſpace in the drying and baking; the purer clay will contract one tenth part of their diameter, but the more ſand or other dry powder there is in the mixture, the leſs it contracts. If a veſſel, therefore, of any determinate ſize is to be made of clay without admixture, it muſt be made one tenth larger than the expected ſize; if of clay with theſe admixtures, experience alone can ſhew what muſt be the exceſs in ſize, when moiſt. *Cramer*, Art. Aſſ. p. 711.

CÆMENTATION (*Cycl.*) is defined by Stahl, a method of corroding metals in a dry form by the fumes of dry ſalts. *Stahl*, Phil. Princ. Chem. P. 1. Sect. 2. n. 20. p. 28.

CÆMENTATION *of gold*. See the article GOLD.

CÆRITES, or CÆRITUM *tabulæ*, in antiquity, denote the cenſors tables, wherein were entered the names of ſuch perſons as for ſome miſdemeanor, were to loſe their right of ſuffrage in elections at Rome.

The origin of the appellation aroſe hence, that during the captivity of Rome under the Gauls, the *Cærites* or inhabitants of Cære, a city in Etruria, preſerved their ſacred books and other matters belonging to the worſhip of the Gods, in gratitude for which, the Romans dignified the *Cærites* with the appellation of Roman-citizens, but without admitting them into any part of the adminiſtration. *A. Gell.* Noct. Att. l. 16. c. 13. *Sigon.* de Ant. Jur. Ital. l. 2. c. 6. *Donat.* ad Liv p. 31. *Pitiſc.* Lex. Antiq. T. 1. p. 314. See the article MUNICIPAL, *Cycl.*

CÆRULEUS, in zoology, a name given by authors to a bird of the thruſh or blackbird kind, and ſomewhat reſembling that ſpecies of blackbird commonly called the ſolitary ſparrow. It loves rocks and old buildings, and is thence called by ſome petrocoſſyphus or the ſtone blackbird, and from its colours is called by the Germans blauvogel: it is of the ſize of a ſtarling; its breaſt, back, and neck are of a very fine deep blue; it lives among the mountains; it ſings very ſweetly, and in winter loſes its fine blue colour, and becomes black. *Ray*'s Orintholeg. p. 141.

CÆRULEUS is alſo a name given by Solinus to the great Indian worm deſcribed by Pliny and others, as inhabiting the Ganges. No author but this has ever uſed the word in this ſenſe, and he ſeems to take it from a falſe underſtanding of Pliny; who ſays, that it was called *vermis cæruleus*, from its external appearance. Solinus miſtakes the author ſo far as to think he allows it to be a worm, and ſays it was called *cæruleus* from its colour; but his true ſenſe is, that it was called *vermis* from its reſembling a worm, tho' it was not one: it is probable that all the accounts we have of this monſtrous animal are only falſe deſcriptions of the crocodile. See VERMIS *Cæruleus*.

CÆSALPINOIDES, in botany, a name given in the Hortus Cliffortianus to the genus of plants called by others, *glediſtia*. Hort. Cliffort. p. 489. See the article GLEDISTIA.

CÆSALPINA, in botany, the name of a genus of plants deſcribed by Plumier, the characters of which are theſe: The flower has no cup; it is monopetalous, and of the gaping kind; the tube of it is inflated, and of a globular figure: it is divided into four parts at the edge, and the upper ſegment is twice as large as any of the others; this is hollow and undivided: the oppoſite ſegment to this is ſomewhat erect, tho' open; this alſo is undivided: the ſide petals are placed erect, and are equal to one another in ſize, and crenated at the edges: theſe are about the ſize of the lower ſegment. The ſtamina are five extremely long and ſlender filaments; they are intorted and directed toward the upper ſegment; the autheræ are ſimple. *Linnæ.* Gen. Plant. p. 522.

The piſtil has a ſlender oblong germen, of the length of the ſtamina is the ſtyle, which is ſimple and the ſtigma is headed. The fruit is an oblong pointed pod, containing only one cell; the ſeeds are numerous and of an oval figure. Linnæus confeſſes that this flower is a ſort of botanical paradox; for he cannot conceive how a cup ſhould be wanting, or what a monopetalous flower with five ſtamina ſhould do with a leguminoſe pod. *Plumier*, 9.

CÆSAR (*Cycl.*)—To this day the emperors of Germany bear the title *cæſar*: 'tis not known when this uſage was firſt reſtored; for Charlemaign and his ſucceſſors had declined the appellation, uſing that of Auguſtus in lieu of it. Goldaſtus takes it to have been firſt aſſumed by the emperor Lewis IV. in 1338. *Goldaſt.* Conſtit. T. 3. p. 410. *Boecler.* Notit. Imper. l. 4. c. 1. p. 82.

The Julian family becoming extinct by the death of Nero, *Cæſar* became a name or title of dignity which the ſucceeding emperors aſſumed, who had no pretenſions to a deſcent from the Julian family; as appears from Galba, who ſucceeded Nero, and took the title *Cæſar*. Vitellius, indeed, rejected it at firſt, as well as the title *Auguſtus*, but he afterwards aſſumed both out of condeſcenſion to the reigning taſte of the people. The Veſpaſians, and others, did the like, without pretending to be iſſued from the family of the *Cæſars*; as is largely proved by M. Spanheim [a] againſt Hardouin, who, on ſome ſtrange principles of his own, had denied that ever *Cæſar* was the name of a dignity, or was given to any but thoſe deſcended from *Cæſar*, or thoſe who married the daughters of *Cæſars* [b].—[a *Spanheim*, de Uſu & Præſt. Numiſm. T. 2. Diſſ. 12. Bibl. Anc. Mod. T. 7. p. 169. b *Hardou.* Hiſt. Auguſt. ex Numiſm. Reſtit. Nuov. Rep. Lett. T. 48. p. 296.]

Under the lower empire *Cæſar* became the title of the deſtined ſucceſſor to the empire.

From the time of Marcus Aurelius to that of the emperor Valens, none had the title of *Auguſti* given them, till they had been firſt created *Cæſars*. Spartian ſays Ælius Verus was the firſt that was called *Cæſar* before he was made emperor [a]; not that all the medals where we only find *Cæſar*, with Auguſtus, were ſtruck in honour of the *Cæſars* deſigned ſucceſſors of the empire; for ſome emperors only aſſumed the title *Cæſar*, as Diadumenus; and others only that of *Auguſtus*, as Adrian; and others rejected both, at leaſt for a time [b].—[a *Spartian* in Æl.Ver. §. 2. b *Vander Meulen*, Diſſ. de Ortu Imper. Rom. p. 161, ſeq. *Kuſt.* Bibl. Nov. Libr. An. 1698. p. 157, ſeq. Ouvr. des Scav. 1698. p. 262, ſeq.]

Both the *Cæſar* and *Sebaſtocrator* wore crowns, tho' much inferior to that of the emperor in ſplendor and magnificence. Till this time, thoſe dignified with the title of *Cæſar* were looked on as ſucceſſors, at leaſt partners of the future empire [c]. But after the introduction of the dignity of *Sebaſtocrator*, that of *Cæſar* dwindled to a mere title of honour: both the one and the other became at length inferior to the dignity of deſpot [d].—[c *Ann. Commen.* l. 3. *Alexand.* p. 78. *Codin.*

de

de Offic. Aul. Conſtant. c. 1. p. 1. Item, c. 3. p. 16 & 21. Item, c. 19. p. 1. [d] *Du Cange*, Gloſſ. Græc. p. 542. voc. Καισας.]

Some pretend that the laurel crown on medals is never given to *Cæſars*, but only to *Auguſti*, which is overthrown by a medalion of Maximus; not to mention another medal of the lower empire, wherein Criſpus *Cæſar* is crowned with laurel. Vid. Trev. Dict. Univ. T. 1 p. 1578. voc. *Cæſar*.

Card. Noris obſerves, that the years of the *Cæſars* were frequently marked on their medals; of which we have inſtances in the medals of Conſtantine, Chlorus, and divers others, whoſe years are expreſſed on their coins, tho' they were never more than *Cæſars*. Trev. loc. cit.

Emplaſtrum-CÆSARIS, among phyſicians, a name given to a plaſter compoſed of aſtringents, to prevent abortion. *Quinc.* Lex. Phyſ. Med. p. 62.

CÆSAREAN-*Section*. See SECTION.

CÆSARIANS, or CÆSARIENSES, in antiquity, were miniſters or officials of the procurator *cæſaris*, to whom belonged the keeping the fiſcal accounts, and taking poſſeſſion of effects devolving or eſcheating to the emperor.

Theſe were alſo called *catholiciani*. From the appellation *cæſarianus* ſome deduce the modern word ſergeant. *Du Cange*, Gloſſ. Lat. T. 1. p. 675. *Calv.* Lex. Jur. p. 133. See SERGEANT, *Cycl.*

CÆSIAS, in meteorology, denotes the north eaſt wind [a]; called in the Mediterranean, *vento græco*, or *greco levante* [b].—[a *Plin.* Hiſt. Nat. l. 2. c. 47. *Hardouin.* Not. ad loc. b *Vocab. Cruſc.* voc. *Greco levante*.]

CÆSONES, a denomination given to thoſe cut out of their mothers womb. *Plin* Hiſt. Nat. l. 7. See the article SECTION, *Cycl.* and *Suppl.*

Pliny ranks this as an auſpicious kind of birth; the elder Scipio Africanus, and the firſt of the family of Cæſars, were brought into the world in this way. *Plin.* loc. cit.

CÆSTURA, in botany, a name given by Serapion and the other Arabian writers to a plant very much fam'd for its virtues as a cephalick. It is the ſame with the *ferrata* of the Italians, which is our *ſawwort*, but has been miſtaken to mean the plant we call *betony*; this error is very natural: *betony* is a name but of late given to the peculiar plant we call by it, and was originally only a ſynonym of the *ferrata* or *ſawwort*. Pliny tells us, that the plant called *ferrata* by the Italians was called *betonica* by the Gauls; and Dioſcorides, who deſcribes the plant under its proper Greek name *ceſtrum*, ſays that it was called by the Latins *betonica* and *ferratula*, and by the other Greek writers *priorites* and *pſuchrotrophon*. It is very evident, that the *cæſtura*, or as it is ſometimes written *caſtaron* of the Arabians, was the *caſtrum* of the Greeks; for the word is formed of it; and it is certain alſo, that tho' the names *betonica* and *ferrata*, were both given to this plant, and even a third, which is *roſmarinus*, by ſome of the old Roman authors according to the ſame Dioſcorides; the plant we call *ſawwort* is only meant by the name, becauſe the deſcription anſwers to that and to no other of the plants whoſe names are mentioned.

CAFFACA, in natural hiſtory, a name given by the Turks and Tartars to a peculiar kind of earth of a grey colour, having a ſlight caſt of green in it. It is very ſoft and unctuous, and ſomething reſembles our fullers earth; but is more aſtringent, and adheres very firmly to the tongue: theſe people bath very frequently, and they uſe this earth on thoſe occaſions.

CAGADO DE AGOA, in zoology, a name by which the Portugueſe in America call a ſpecies of tortoiſe common there, and uſually known among authors by its Braſilian name *jurura*. See JURURA.

CAGADO *de Terra*, in zoology, the name by which the Portugueſe in America call a remarkable ſpecies of tortoiſe, called by the Braſilians *jaboti*. See the articles JABOTI and TESTUDO.

CAGANUS, or CACANUS, an appellation antiently given by the Hunns to their kings.

The word appears alſo to have been formerly applied to the princes of Muſcovy, now called *czar*. See CZAR, *Cycl.*

From the ſame alſo, probably, the Tartar title *Cham* or *Can*, had its origin. *Du Cange*, Gloſſ. Lat. T. 1. p. 675. See CHAM, *Cycl.*

CAGAO, in natural hiſtory, the Indian name for a large bird which inhabits the mountains, and feeds on the piſtachia nuts, and many other fruits, all which it ſwallows whole: it is very voracious, and its food paſſes off very quickly; the piſtachias only looſe their rind in its ſtomach, and the almonds their pulpy covering; the kernel and the ſtone being voided whole: it is of the ſize of a common hen, but has a longer neck; its belly is black, and its back of a greyiſh brown; the neck and head are of a rediſh colour; the head is ſmall, and has a blackneſs about the eyes, which have a grey pupil, and a whitiſh iris.

CAGASTRUM is uſed by Paracelſus to denote a morbific ſemen, not connate or hereditary, but acceſſional, owing to corruption.

In which ſenſe the word ſtands oppoſed to *iliaſtrum*. The pleuriſy, plague, fever, &c. are ranked by that author in the number of *cagaſtric* diſeaſes. *Caſt.* Lex. Med. p. 121.

CAGE, an incloſure made with wire, wicker, or other matter interwoven latticewiſe, for the detention of wild beaſts or birds.

The word is French, *cage*, formed from the Italian *gaggia*, of the Latin *cavea*, which ſignifies the ſame: *a caveis theatralibus in quibus includebantur feræ*. Vid. *Menag.* Orig. Franc. p. 145. *Skin.* Etym. Angl. in voc.

Beaſts were uſually brought to Rome ſhut up in oaken or beechen *cages*, artfully formed, and covered or ſhaded with boughs, that the creatures deceived with the appearance of a wood, might fancy themſelves in their foreſt. The fiercer ſort were pent in iron *cages*, leſt wooden priſons ſhould be broke through. *Claud.* in Conſ. Stilich. ap. *Pitiſc.* Lex. Ant. T. 1. p. 384.

In ſome priſons there are iron *cages* for the cloſer confinement of criminals; as in the caſtle of Amboiſe. Philip de Comines was claped up eight months in a *cage* of iron, wherein he had not room to ſtir [c]. Tamerlane is ſaid to have confined Bajazet in an iron *cage*. The tradition adds, that this latter unable to brook the infamy, knocked out his brains againſt the bars of his *cage* [d].—[c *Varill.* Hiſt. Charl. 8. Ouvr. des Scav. 1691. p. 334. d Trev. Dict. Univ. T. 1. p. 1329.]

The French laws diſtinguiſh two ſorts of bird-*cages*, *viz.* high, or ſinging-*cages*, and low or dumb-*cages*; thoſe who expoſe birds to ſale are obliged to put the hens in the latter, and the cocks in the former, that perſons may not be impoſed on, by buying a hen for a cock. *Savar.* Dict. Comm. Suppl. p. 106.

CAGES, *caveæ*, denote alſo places in the antient amphitheatres, wherein wild beaſts were kept, ready to be let out for ſport. The *caveæ* were a ſort of iron *cages* different from dens, which were under ground and dark; whereas the *caveæ* being airy and light, the beaſts ruſhed out of them with more alacrity and fierceneſs than if they had been pent under ground. *Pitiſc.* Lex. Ant. T. 1. p. 384.

CAGE, in carpentry, ſignifies an outer work of timber, encloſing another within it.

In this ſenſe we ſay, the *cage* of a windmill. *Savar.* Dict. Com. T. 1. p. 518.

The *cage* of a ſtair-caſe denotes the wooden ſides, or walls which encloſe it.

CAGGAW, in botany, a name given, by the people of Guinea, to a plant which they boil in water, and uſe the decoction to waſh the mouth with, as a cure for the toothach. The leaves of this are ſmooth and ſhining, like thoſe of the laurel, but they are thin and bend like thoſe of the bay. They are four or five inches long, and a little more than two inches wide; they are rounded at the baſe, and pointed at the tip, and they are placed on foot ſtalks of half an inch long, which are black at each end, and green in the middle; its veins are very conſpicuous on the leaves, and are on both ſides divided, and ramify'd into fibres of a great fineneſs. Phil. Tranſ. N° 232.

CAGIT, in natural hiſtory, a name given by the people of the Philippine iſland, to a ſpecies of parrot, very common in their woods: it is of a middling ſize, and is all over of a fine green colour.

CAGUI, in zoology, the name of a kind of Braſilian monkey, called alſo *pougi*, of which there are two ſpecies, the one larger, the other ſmaller. The large kind is of a grey colour, with a mixture of black, and its hairs are longer than thoſe of the ſmall ſpecies, its face is round, and it has ſomething of the look of a lion; its ears are ſmall, round, black, and naked; its eyes are alſo black, as is its mouth, and its forehead is covered with a mixture of grey and black hairs; its tail is above a foot long, and is covered with hairs of a tawney colour. *Rays* Syn. Quad. p. 154.

The leſſer *cagui* is a ſmall and tender animal, but has the ſame lion-like face with the larger. Its body is not above ſix fingers breadth long; its tail about ten fingers; its head is ſmall, ſcarce ſo large as a ſmall apple; its noſe is ſmall and elate; its eyes very tender, its mouth little, and its teeth extremely ſharp; its ears are round, and ſurrounded with white hairs in a very beautiful order; its hair is all of a rediſh tawney toward the body, and toward the ends of a mixture of white and brown, and its tail is variegated with circular rings of white and brown; its voice is extremely ſhrill; it is naturally an extremely lively and nimble creature, but cannot bear the leaſt cold.

CAHLLO, in ichthyology, a name given by ſome authors to the fiſh uſually called the *lupus marinus*, or wolf fiſh. It is properly a ſpecies of pearch, and is diſtinguiſhed by Artedi under the name of the pearch with thirteen rays in the ſecond fin of the back, and fourteen in the primary. See PERCA.

CAIA, in the Turkiſh military orders, an officer ſerving in the poſt of a deputy or ſteward, and acting for the body of the Janizaries. *Pocock*'s Egypt, p. 168.

CAIANI, in eccleſiaſtical antiquity, a ſort of heretics thus denominated from one Caianus of Alexandria, their leader, otherwiſe denominated *Aphthardocitæ*. See APHTHARDOCITÆ, *Cycl.*

The ſame name is ſometimes alſo given to the ſect of Cainians or Cainites. *Damaſcen.* Hær. 84. *Fabric.* Cod. Pſeud. vet. Teſt.

Teſt. T. 1. p. 138. *Suic.* Theſ. Eccleſ. T. 2. p. 17. See CAINITES, *Cycl.*

CAIC, *Caique*, *Caica*, in the ſea language, is uſed to denote the ſkiff, or ſloop belonging to a galley.

The Coſſacs give the ſame name *caic* to a ſmall kind of bark uſed in the navigation of the black ſea. It is equipt with 40 or 50 men, all ſoldiers: Their employment is a kind of piracy [a]. The Turks have alſo a ſort of *caics*, which ſome render by biremes [b]. — [a *Aubin.* Dict. Mar. p. 142. b *Du Cange*, Gloſſ. Græc. p. 540. voc. Καικ.]

CAJEPUT, an oil brought from the Eaſt-Indies. The ſmell of the oil of *cajeput* reſembles that of cardamoms; hence Dr. Trew judges the plant from which it is obtained to be the *elegans melegettæ ſpecies*, deſcribed by Sobelius, or the *granis paradyſi ſive me'igittæ affinis fructus.* C. B. pin. *Commerc. Norimb.* 1737. *Hebd.* 17. §. 2.

Four or five drops of this oil of *cajeput*, in a proper liquor, is recommended as an excellent nervous medicine, and as of great efficacy in the cardialgia. *Com. Norimb.* 1732. *Hebd.* 2. 1737. *Hebd.* 24. and 1734. *Hebd.* 5.

CAINS, in the iſland of Candia, denote Greeks revolted, and retired to the Venetians, either at Suda, or Spina longa; who in time of war, burn, pillage, and commit all manner of cruelties on their antient brethren under the Turks.

When a *cain* or falſe brother is taken, there is no mercy for him, they either impale him, or put him to the ganche. *Tourneſ.* Voyag. du Levant. T. 1. Lett. 2. p. 36.

CAJOU, *caſhew*, or *caſſu*, an American fruit, ſhaped like a pear, having the large end next the ſtalk, and at the ſmall end a nut, in ſhape and ſize reſembling a hare's kidney, which is the ſeed of the plant.

The *cajou* is the fruit of the acajou, a tree frequent in Jamaica and the Carribee iſlands. The nut or ſeed, called in Engliſh the *caſhew-nut*, and ſometimes the apple-bean, bears a near affinity in figure as well as virtues, to the anacardium, or Malacca bean, of which ſome make it a ſpecies, under the denomination of *anacardium occidentale*. See ACAJOU and ANACARDIUM.

Cluſius deſcribes the *cajou* as reſembling a gooſe egg, both for ſize and figure, of a yellow colour, and ſweet; full of a liquor like that of a citron: both the fruit and nut are eaten in Jamaica with great pleaſure; as the former grows bigger, the nut diminiſhes. Between the rind and ſhell of the latter is a ſpongy ſubſtance full of a cauſtic oil, uſed againſt tetters, but which muſt be diſcharged by roaſting the nut in embers, ere the kernel is eaten. The thin aſh-coloured ſkin wherewith the kernel is covered, is uſed as an exciter of venery. *Bradl.* Dict. Bot. *Mill.* Gard. Dict. in voc. *Ajacou. Quinc.* Pharmac. P. 2. ſect. 1. n. 27. p. 75.

CAIRINA, in zoology, a name by which ſome authors have called the Muſcovy duck.

CAISSON, in the military art, is ſometimes uſed for a cheſt; and in particular for a bomb-cheſt. See BOMB-CHEST, *Cycl.*

The *caiſſon* is conſidered as a ſuperficial mine, or tourneau. See MINE, *Cycl.*

CAISSON is alſo a covered waggon to carry bread, or ammunition. Milit. Dict. in voc.

CAISSON is alſo uſed for a kind of cheſt uſed in laying the foundations of the piers of bridges. See BRIDGE and CHEST-WORK.

CAITAIA, in zoology, the name of an American monkey, remarkable for its ſweet ſmell; it has indeed ſomewhat of a ſcent of muſk about it; its hair is long and of a whitiſh yellow colour; its head is round; its forehead depreſſed, and very ſmall; its noſe ſmall and flatted, and its tail arch'd. It is eaſily tamed and kept about houſes, but it is very clamorous and quarrelſome. *Ray*'s Syn. Quad. p. 158.

CAKE, a finer ſort of bread, denominated from its flat, round figure. See BREAD.

We meet with divers compoſitions under the name of *cakes*; as *ſeed-cakes*, made of flower, butter, cream, ſugar, coriander and caraway ſeeds, mace, and other ſpices and perfumes baked in the oven; *plumb-cake*, made much after the ſame manner, only with fewer ſeeds, and the addition of currants; *pan-cakes*, made of a mixture of flower, eggs, &c. fried; *cheeſe-cakes*, made of cream, eggs and flower, with, or without cheeſe-curd, butter, almonds, &c. [a]; *oat-cakes*, made of fine oaten-flower, mixed with yeſt, rolled thin, and laid on an iron or ſtone to bake over a ſlow fire [b]; *ſugar-cakes*, made of fine ſugar beaten and ſearced with the fineſt flower, adding butter, roſe-water, and ſpices [c]; *roſe-cakes*, *placentæ roſaceæ*, are leaves of roſes dryed and preſſed into a maſs, ſold in the ſhops for epithems [d] —[a *Hought.* Collect. T. 1. N° 91, ſeq. p. 245, ſeq. b Dict. Ruſt. T. 2. in voc. *Oat.* c Id. ibid. in voc. *Sugar.* d Vid. *Morl.* Collect. Chym. Leid. c. 363. *Caſt.* Lex. Med. p. 592.] See EPITHEM, *Cycl.*

CAKE-*wax*, a denomination ſometimes given to the white or virgin wax. *Savar.* Dict. Com. Supp. p. 1049. voc. *Pain.* See WAX, *Cycl.* and *Suppl.*

CAKE-*ſoap*, ſtands diſtinguiſhed from ſoft-ſoap, and ball-ſoap *Stat.* Abr. T. 1. voc. *Cuſtoms*, p. 82. See SOAP, *Cycl.* and *Suppl.*

CALABA, in botany, the name given by Plumier to a genus of plants afterwards called by Linnæus *caryophyllum.* *Plumier*, Gen. 8. See CARYOPHYLLUM.

CALABASH, in commerce, a light kind of veſſel made of the ſhell of a gourd, emptied and dried, ſerving for a caſe to put divers kinds of goods in, as pitch, roſin, and the like.

The word is Spaniſh, *calabaça*, which ſignifies the ſame.

The Indians alſo, both of the north and ſouth ſea, put the pearls they have fiſhed in *calabaſhes*, and the Negroes on the coaſt of Africa do the ſame by their gold duſt.

The ſmaller *calabaſhes* are alſo frequently uſed by theſe people as a meaſure, by which they ſell theſe precious commodities to the Europeans.

The ſame veſſels likewiſe ſerve for putting in liquors, and do the office of cups as well as of bottles for ſoldiers, pilgrims, &c. Def. Scots Settl. at Darien, p. 65. *Savar.* Dict. Com. T. 1. p 525.

CALABRINA, in botany, a name by which ſome authors call the rough ſpleenwort or *lonchitis aſpera.* *Ger.* Emac. Ind.

CALADE, in the manege, a deſcent, or ſlope in a riding ground, by which to bring a horſe to bend his haunches, and form his ſtop, with the aids of the calves of the legs, bridle, and caveſon, ſeaſonably given.

The *calade* is alſo called by the French, *baſſe.* They ſay to ride or gallop down the *calade.* *Guill.* Gent. Dict. P. 1. in voc.

CALAE, CALAEM, or CALAEMUM, denotes a ſpecies of Indian tin, which by force of fire is tranſmutable into ceruſs, like that made of our lead.

Alchemiſts alſo pretend, that it may be converted by cementation into ſilver, and alledge it as an argument in behalf of a poſſibility of tranſmutation of other metals into gold. *Caſt.* Lex. Med. p. 121.

CALAINUS, in natural hiſtory, a name given to the ſubſtance otherwiſe called *callimus.* See CALLIMUS.

CALAMBA, or CALAMBAC, in commerce, a kind of wood brought from China, uſually ſold under the denomination of *lignum aloes*, or *agallochum.* See ALOES, and AGALLOCHUM.

Sir Phil. Vernatti makes *calambac*, and *lignum aloes*, ſynonymous [a]. Others ſeem to diſtinguiſh, reſtraining *calamba* wood to the beſt ſort of aloes-wood, growing chiefly in Malacca, and Sumatra; and much uſed in India for making of beads and crucifixes [b]. — [a Phil. Tranſ. N° 43. p. 863. b *Linſch.* Voyag. l. 1. c. 76. *Grew*, Muſ. Reg. Societ. P. 2. Sect. 1. c. 1. p. 180. *Salmaſ.* Exerc. ad Solin. p. 1057.]

CALAMIFEROUS, a denomination given by ſome to thoſe otherwiſe called *culmiferous* plants. *Moriſ.* Hiſt. Plant. P. 3. Sect. 8. Works of Learn. T. 2. p. 509. See CULMIFEROUS, *Cycl.*

CALAMINARIS *Lapis*, (*Cycl.*) in natural hiſtory, the name of a mineral ſubſtance, which is properly the ore of zink. It is a ſpungy ſubſtance, of a lax and cavernous ſtructure, yet conſiderably heavy. It is found in maſſes of various and irregular figures, with rugged protuberant and cavernous ſurfaces; theſe are of all ſizes, from an ounce to ten or twelve pound weight, and often much more than that.

Calamine, when pure, is of a pale browniſh grey colour, but its lax and ſpungy ſtructure makes it liable to receive various admixtures of extraneous matters, earths, &c. and hence it is often found yellowiſh or rediſh. *Lapis calaminaris* is much uſed externally in cerates for burns, and in collyriums for the eyes: its reguline matter, which is zink, ſerves much better for the purpoſe of turning copper into braſs than the crude ſtone or ore. *Hill*'s Hiſt. of Foſ. p. 62.

Dr. Lawſon was the firſt who publickly proved *calamine* to be the ore of zink. See ZINK.

Calamine ſtone is a ſpecies of foſſil cadmia; ſome even take it for the true cadmia of Galen and the antients, to which it is certain it bears a near reſemblance: when burnt, its fume gathers and grows on the ſides of the chimney. *Mercat.* Metalloth. Arm. 7. c. 3. p. 146. See CADMIA, *Cycl.* and *Suppl.*

It lies in maſſes in perpendicular fiſſures from near the day to ten fathom deep, among clay, coarſe ſpar, and riders of ſtone: as to appearance it bears a near reſemblance to many of the ſorts of lead ores in the north. At Shipham in Somerſetſhire, the *calamine* has frequently ſparks of lead concreted with it; they have ſometimes even found conſiderable quantities of lead at the bottom of their *calamine* veins, and might probably find it in the reſt, if they ſought for it. *Woodw.* Nat. Hiſt. Eng. Foſſ. T. 1. p. 19. Item, p. 106. Item, T. 1. p. 184.

There are no certain ſigns to direct the miners where to find this mineral ſubſtance, only they expect none in grounds that have no communication with hills. In the *calamine*-works they uſe the ſame way and inſtruments as they do in the lead-mines. When they have landed a good quantity of it, which is done by winding it up in buckets from their works, they next carry it away to places where they waſh, clean, or buddle it, as their term is; which is performed in this manner: A ſmall piece of ground is incloſed with boards or turfs, through which a clear ſtream of water runs; within this incloſure they ſhovel their *calamine* with the reſt of the impure and earthy parts, which laſt are waſhed away with the running water, leaving the lead (ſome of which is always found in theſe works) *calamine* and heavier ſtony or ſparry parts be-

hind. When they have thus waſhed it as clean as they can, by turning and ſtirring it often in the running ſtream, they remove the bigger parts both of the lead and *calamine* and put the ſmaller parts, that none of their ore may be loſt, into ſieves with bottoms made of ſtrong wire; this they dip and ſhake up and down in a great tub of water, by which ſhaking of the ſieves, the parts of lead, being heavieſt, ſink or pitch down to the bottom, the parts of the *calamine* in the middle, and the other parts riſe to the top; which laſt being ſkim'd off and thrown away, they then take off the *calamine*, and after that the lead. The *calamine* is next ſpread on a board in order to pick out with the hand what traſh there ſtill remains among it.

When the *calamine* is ſufficiently prepared by waſhing and picking, they carry it to the oven, which reſembles that of a baker's in form, but is much bigger, and has a hearth on one ſide which is ſeparated from the reſt by a hem or partition made open at the top, whereby the flame paſſes over and bakes the *calamine*. They let it lie in the oven for four or five hours, during which time they turn it ſeveral times with long iron rakes; when it is ſufficiently burnt, baked and dried, they beat it to a powder with long iron hammers like mallets, upon a thick plank, picking out what ſtones they find amongſt it; ſo that at laſt the *calamine* is reduced to duſt to be uſed in diſtemperatures of the eyes. Vid. Phil. Tranſ. N° 198.

Glauber holds it of an aluminous, others of a ferruginous nature. It is aſtringent and deterſive, abſorbs acids and humidities, and thence becomes of uſe in the cure of ulcers, and takes off films from the eyes of horſes: ignited and extinguiſhed in ophthalmic waters, it is applauded as a collyrium [a]. Crato's great arcanum for the eyes was the ſtone ground fine and mixed up with the marrow of calves ſhanks, or May butter [b]. Paracelſus alſo gave the *lapis calaminaris* internally [c]. —[[a] *Libav.* Alchym. Pharm. c. 10. [b] *River.* Prax. Med. l. 2. c. 8. p. 162. [c] *Caſt.* Lex. Med. p. 121. *Boyle*, Phil. Works, Abr. T. 2. p. 327. *Vat.* Phyſ. Exper. p. 449, ſeq. *Grew*, Diſc. of Mixt. l. 2. c. 2. §. 9.]

Some of the modern writers have been fond of deriving the word *calamine*, from the Indian *calaem*, which with the people of that nation is the name of the zink, or *tutenag*; and had the great alliance which there really is between the *calamine* and zink been known at the time when this name was given, it would ſeem a probable opinion enough; but as it is certain, that this is but a very modern diſcovery, and there is not the leaſt reſemblance in appearance between theſe two ſubſtances; it is not probable that the one ſhould have been named from the other. The word *calamine* is much more naturally deduced from the general origin of theſe ſort of modern names in the materia medica, that is, the Arabic. Aviſenna, Serapio and the other Arabian phyſicians call this ſubſtance *climia*, and ſometimes this word is written *calimia*. The modern Greeks write it *celimia*, and the word *calamia* is ſo very little different from this, that there need be no farther ſearch after its origin or etymology.

CALAMINT, *Calamintha*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is of the labiated kind; the upper lip is roundiſh, erect and bifid; the lower is divided into three ſegments. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower, and is ſurrounded by four embryos, which afterwards become ſo many roundiſh ſeeds to which the cup of the flower ſerves as a capſule. To theſe marks it may be added, that the flowers of all the *calamints* grow in the alæ of the leaves, and ſtand on ramoſe pedicles.

The ſpecies of *calamint* enumerated by Mr. Tournefort, are theſe: 1. The common *calamint*, or mountain-*calamint*, with a large flower. 2. The large flowered taller *calamint*. 3. The *calamint*, with the ſmell of penny-royal. 4. The very tall mountain-*calamint*, with the ſmell of penny-royal, with dentated leaves and pale blue flowers on long and branched pedicles. 5. The great leaved and large flowered *calamint*. 6. The white large flowered large leaved *calamint*. 7. The ſmall flowered *calamint*. 8. The low round-leaved *calamint*, commonly known under the name of *ground-ivy*. 9. The purple-flowered *ground-ivy*. 10. The ſmaller elegant roundiſh-leaved *ground-ivy*. 11. The hoary baſil-leaved *calamint*. 12. The ſhrubby *calamint*, with the leaves, appearance, and ſmell of winter-ſavory. 13. The marum-leaved ſhrubby Spaniſh *calamint*. 14. The long and narrow-leaved cretic *calamint*. 15. The annual thyme-leaved *calamint*. *Tourn.* Inſt. p. 73.

CALAMINT is an officinal plant, whoſe leaves ared reputed warm, aperient, and diaphoretic, and enter ſeveral alexipharmic compoſitions.

There are three ſorts of *calamint* in uſe, *viz.* the *ſylveſtris*; the *vulgaris*, or *montana*; and *paluſtris*, or *aquatica*; of which the firſt ought to be the officinal ſort, tho' the ſcarcity of it among us uſually brings the ſecond to market in its ſtead; the third is taken into the college diſpenſatory, but rarely uſed. In the college diſpenſatory, we find a compound powder denominated from *calamint*. Pharmac. Coll. Med. Lond. p. 119. *Quinc.* Pharmac. P. 2. ſect. 6. n. 416. *Gorr.* Med. Defin. p. 205. voc. Καλαμινθα. *Ray*, Synopſ. Stirp. Brit. p. 131. *Junck.* Conſp. Therap. p. 313.

CALAMISTRUM, in natural hiſtory, a name by which Linnæus and ſome authors have called a ſmall plant, known among us by the name of *pepper-graſs*, from its having graſſy leaves, and round globules at their inſertions reſembling pepper-corns. Mr. Vaillant has more properly nam'd it *pilularia*. *Linnæi* Gen. Plant. See PILULARIA.

CALAMITA, or CALAMITIS, (*Cycl.*) is uſed to denote the magnet or loadſtone. Trev. Dict. Univ. T. 1. p. 1339. *Menag.* Orig. Fr. p. 149. See MAGNET, *Cycl.* and *Suppl.*

CALAMITIS is alſo uſed for a ſpecies of artificial *cadmia*, found adhering to the ſticks, ladles, and other utenſils wherewith they ſtir the copper when in fuſion in the furnace.

It is denominated *calamitis*, from the Latin *calamus*, a reed, on account of its reſemblance to the figure of a reed cloven in the middle. *Schrod.* Pharm. l. 3. c. 19. *Caſt.* Lex. Med. p. 121. *Savar.* Dict. Comm. T. 1. p. 525.

Agricola alſo gives the denomination *calamites* to a kind of ſtone-plant growing in the ſea, bearing ſome reſemblance to the figure of a reed. *Agric.* Foſſil, l. 4. in fin. *Caſt.* Lex. Med. p. 121.

CALAMITA *Alba*, in natural hiſtory, the name of an earth dug in Spain and Italy, of a hard texture, a white colour, and ſtyptic taſte; they pretend that this attracts fleſh in the ſame manner as the magnet does iron, and thence call it *magnes carneus*. See the article MAGNES *Carneus*.

CALAMITA *Styrax*. See STYRAX.

CALAMITES, in natural hiſtory, a name given by ſome to the oſteocolla, which when in ſmall pieces, ſometimes pretty exactly reſembles the barrel of a quill; others have called ſome of the foſſile *coralloides* by this name, there being frequently in them the reſemblance of ſeveral quills cemented together in ſtone.

CALAMUS, Καλαμος, in phyſiology, the ſame with *arundo*, a reed, ruſh, cane, or flag. *Plin.* Hiſt. Nat. l. 16. c. 35. *Gorr.* Med. Defin. p. 205. voc. Καλαμος.

CALAMUS *aromaticus*, in the materia medica, a drug very erroneouſly confounded with the acorus by moſt writers, and uſually called by the ſame name as a ſynonym. The acorus-root, which is too often improperly called by the name of this drug, is well known to be a root; whereas this is the ſtalk of a ſmall reed: the true *calamus aromaticus* is of the thickneſs of a gooſe quill, full of joints, and three or four foot high. It ſhould be choſen large, freſh, clean, without leaves or roots among it; of a browniſh red without, and white and full of a ſpungy pith within. This pith alſo ſhould be of a fair white, for when the drug is old it always becomes yellow, and falls into duſt as if the worms had eaten it; it ought eaſily to break into ſmall ſplinters, and to be of a very bitter taſte, and very agreeable ſmell. *Pomet's* Hiſt. of Drugs, p. 62.

It is the ſtalk of an arundinaceous plant, common in Egypt, and called by Proſper Alpinus, *coſſabell darrira*. It is an ingredient in the Venice treacle, and is ſaid to be good againſt diſeaſes of the head and nerves.

CALAMUS *indicus petrefactus*, in the natural hiſtory of the antients, a name given to a ſubſtance found often in the foſſile world, uſually of about three inches long, half an inch broad, and one third of an inch thick, and covered all over its ſurface with large round figures, in form of radiated ſtars within. This very much reſembled in external appearance the root of our common *calamus* aromaticus of the ſhops turn'd into ſtone, and ſeems to have been vulgarly ſuppoſed to be that ſubſtance petrified. The more accurate among the earlier writers however have by no means countenanced ſo wild a conjecture, and Theophraſtus though he records the ſubſtance under that name, as it had no other in his time, yet joins it to the corals which, he ſays, grow in the ſea, and are vegetables, and adds, that thoſe, and this ſubſtance, are properly the ſubjects of another treatiſe, not of a hiſtory of ſtones. See Tab. of Foſſils, Claſs 7.

This author's placing it among the corals is perfectly right, ſince the ſpecimens of it now found are plainly no other than corals of the ſtellated kinds, which have been long buried in the earth. *Hill's* Theophr. p. 99.

CALAMUS *odoratus*, in the materia medica, the name of a reed of the Eaſt Indies of a very ſweet ſmell. Our *calamus* aromaticus which is the root of a water plant is a very different ſubſtance. *Camell.* Syllab. p. 22. See CALAMUS *aromaticus*, Supr.

CALAMUS *ſcriptorius*, properly denotes a reed, or ruſh to write with, anſwering the uſe of the antient ſtylus and modern pen. *Montfauc.* Palæogr. Gr. l. 1. c. 3. p. 21. *Pitiſc.* Lex. Ant. T. 1. p. 318, ſeq.

The antient Ægyptian *calamus* was a ſort of *arundo aquatica* growing plentifully about Memphis, and on the banks of the Nile; whence it was alſo called *calamus Memphiticus*, *Niloticus*, &c.

CALAMUS, in the antient poets, denotes a ſimple kind of pipe, or fiſtula, the muſical inſtrument of the ſhepherds and herdſmen; uſually made either of an oaten ſtalk, or a reed. *Salmaſ.* Exerc. ad Solin. p. 117. *Pitiſc.* Lex. Ant. T. 1. p. 318. *Heder.* Schul. Lex. p. 636.

CALAMUS *aucupatorius*, or *calamus ſtructus*, among fowlers, a bird-call. *Salmaſ.* ub. ſup. p. 118, et 1087. *Pitiſc.* Lex. Ant. T. 1. p. 318. See CALL, *Cycl.* and *Suppl.*

CALAMUS alſo denotes a ſort of meaſure otherwiſe called *canna*, or reed. *Beverin.* Synt. de ponder. p. 178, 224, & 262. *Montfauc.* Palæogr. Gr. p. 365. *Pitiſc.* Lex. ub. ſup. See CANNA.

CALANDRE, in natural hiſtory, a name given by the French writers to an inſect that does vaſt miſchief in granaries. It is properly of the ſcarab claſs; it has two antennæ, or horns, formed of a great number of round joints, and covered with a ſoft and ſhort down; from the anterior part of the head there is thruſt out a trunk, which is ſo formed at the end, that the creature eaſily makes way with it through the coat or ſkin that covers the grain, and gets at the meal or farina, on which it feeds; the inſide of the grains is alſo the place where the female depoſits her eggs, that the young progeny may be born with proviſion about them. When the female has pierced a grain of corn for this purpoſe, ſhe depoſits in it one egg, or at the utmoſt two, but ſhe moſt frequently lays them ſingle; theſe eggs hatch into ſmall worms which are uſually found with their bodies rolled up in a ſpiral form, and after eating till they arrive at their full growth, they are changed into chryſalis, and from theſe, in about a fortnight, comes out the perfect *calandre*. The female lays a conſiderable number of eggs, and the encreaſe of theſe creatures would be very great, but nature has ſo ordered it, that while in the egg ſtate, and even while in that of the worm, they are ſubject to be eaten by mites; theſe little vermin are always very plentiful in granaries, and they deſtroy the far greater number of theſe larger animals. *Deſlandes* Trai. de Phyſ.

CALANGAY, in natural hiſtory, a name given by the people of the Philippine iſlands to a ſpecies of Parrot very common there; it is all over white, and has a creſt of white feathers on its head; it is of the ſize of a pigeon, and is eaſily kept tame, and learnt to talk. It is called alſo in ſome of the Philippines *catatua* and *abacay*.

CALASH, or CALESH, a ſmall light kind of chariot, or chair, with very low wheels, uſed chiefly for taking the air in parks and gardens.

The word is French *caleche*, which Menage derives from the latin *carrus*, *carri*, *carriſcus*, *carriſca*, *carreſca*, *caleſca*, *caleche*. *Menag.* Orig. p. 150. voc. *caleche*.

The *calaſh* is for the moſt part richly decorated, and open on all ſides, for the conveniency of the air, and proſpect; or at moſt incloſed with light mantlets of wax cloth, to be opened and ſhut at pleaſure. *Savar.* Dict. Com. T. 1. p. 577. voc. *carroſſe*.

In the Philoſophical Tranſactions, we have a deſcription of a new ſort of *calaſh*, going on two wheels, not hung on traces, yet eaſier than the common coaches, over which it has this further advantage, that whereas a common coach will overturn if one wheel go on a ſurface a foot and half higher than that of the other, this will admit of a difference of $3\frac{1}{3}$ of a foot, without danger of overturning. Add, that it would turn over and over, that is, after being turned ſo as that the ſpokes are parallel to the horizon, and one wheel flat over the head of him that rides in it, and the other flat under him, it will turn once more, by which the wheels are placed in *ſtatu quo*, without any diſorder to the horſe, or rider. Phil. Tranſ. N° 172. p. 1028.

CALASIRIS, or CALASSIS, in antiquity, a linnen tunic worn by the Phœnician, Ægyptian, Roman and other Prieſts.

We alſo find mention of the *calaſiris* as worn by the ſoldiers, and by women. In which laſt ſenſe it ſeems to have been a knot in the womens gown, whereby it was drawn about the neck. *Feſt.* in voc. *calaſſis*. *Voſſ.* Etym. p. 91. *Ferrar* de re veſt. c. 23. *Pitiſc.* Lex. Ant. T. 1. p. 319.

CALATHIANA *viola*, in botany, a name given by many writers to a ſpecies of gentian, called alſo by others *pheumonantne*. See GENTIANA.

CALATHUS, καλαθος, in antiquity, a kind of hand-baſket made of light wood, or ruſhes; uſed by the women ſometimes to gather flowers, but chiefly, after the example of Minerva, to put their work in. *Pitiſc.* Lex. Ant. T. 1. p. 319.

The figure of the *calathus*, as repreſented on antient monuments, is narrow at the bottom, and widening upwards, like that of a top. Pliny compares it to that of a lilly. *Plin.* Hiſt. Nat. l. 21. c. 5. *Fab.* Theſ. p. 411. ſeq.

The *calathus* or work-baſket of Minerva, is no leſs celebrated among the poets, than her diſtaff. Hiſt. Acad. Inſcr. T. 3. p. 400.

CALATHUS is alſo uſed to denote a drinking cup [a]. Pliny ſeems likewiſe to uſe it for the calyx of a flower [b].—[[a] *Fab.* Theſ. p. 412. [b] *Plin.* Hiſt. Nat. l. 25. c. 7.] See CALYX.

CALATOR, in antiquity, a cryer, or officer appointed to publiſh ſomething aloud, or call the people together.

The word is formed from the Greek καλεω, *voco*, I call. Such miniſters the pontifices had, whom they uſed to ſend before them when they went to ſacrifice on feriæ or holydays, to advertiſe the people to leave off work. *Serv.* ad Geor. l. 1. v. 268.

The magiſtrates alſo uſed *calatores*, to call the people to the comitia, both curiata and centuriata. The officers in the army alſo had *calatores*, as had likewiſe many private families, to invite their gueſts to entertainments. *Pitiſc.* Lex. Ant. T. 1. p. 320. See COMITIA, *Cycl.* and *Suppl.*

CALAUDRA, in zoology, the name of a bird of the lark kind, and of the ſhape of the common lark, but conſiderably larger; its head is large and thick, its beak ſhorter, and ſtronger than in the common larks, but its feet made exactly as theirs. Its breaſt is of a ſhining grey, ſpotted with black, like the breaſt of a thruſh; its back, tail, and wings are of an umbre colour, or ſomewhat greeniſh brown, and it has a ring of black feathers round its neck. This bird is either the ſame with the common Engliſh bunting called by authors emberiza alba, or very like it. *Geſner* de Avib.

CALAURITIS, in the materia medica of the antients, a name given to a ſort of litharge; we find the litharge made in the ſame operation will be of different colours, according to the degree of heat it receives, and we have accordingly dignify'd it with the founding names of litharge of gold, and litharge of ſilver; the Greeks went yet farther, and added to theſe a third kind which they called litharge of lead or molybditis. All theſe ſorts of litharge were brought in great abundance from Calauros, a ſmall iſland near Crete, to the Greeks, for their uſe in medicine. The fires here not being ſo ſtrong however as in ſome other places, where furnaces were worked, there was leſs of the yellow litharge brought from this place than of the others. This therefore kept its uſual name of chryſites among them, but the other two were indifferently called *calauritis*. It is not eaſy to diſtinguiſh in theſe writers which of the two they mean by this name; but there is ſo little real difference between them that an error is of very little conſequence.

CALCADIS, in the materia medica, a name given by the Arabians to white vitriol, or to ſome white vitriolic mineral. All the account we have of the *calcadis* is in Aviſenna, who in treating of the zagi or alzagiat, which is his general name for all the vitriolic minerals, tells us, that there are four kinds, the colcothar which is yellow, the ſory which is rediſh, the calcanthum which is green, and the *calcadis* which is white.

CALCAGIUM, in middle age writers, a tax or contribution paid by the neighbouring inhabitants towards the making or repairing a common cauſeway. *Kenn.* Gloſs. ad Paroch. Antiq. in voc. *Du Cange*, Gloſs. Lat. T. 1. p. 680.

CALCANTHUM (*Cycl.*)—That ſulphur is contained in vitriol is evident from the ſmell it yields in calcination, and in diſtillation. If it be urged with a ſtrong fire from the beginning; and the ſpirit thus drawn be rectify'd, the liquor which firſt comes over has a highly ſulphureous ſmell. The common oil of vitriol digeſted on antimony, and then diſtilled, yields a much greater quantity of ſulphur than could have been produced if any other acid liquor had been employed; and the ſame oil of vitriol digeſted with ſpirit of vitriol, and diſtiled, yields at the latter end of the diſtillation an oil and a large quantity of ſulphureous flowers. The acid ſaline principle in vitriol, is manifeſt in its ſpirit, or in that ſtronger acid liquor commonly, but improperly, called its oil. Theſe are the principles of vitriol in general; but to theſe ſome add another, which is the ſalt ſeparated from the colcothar, or caput mortuum of vitriol after diſtillation; but this is not different from the ſaline acid matter, which goes off in form of the oil, only that it is more fixed: and it is therefore not to be ſuppoſed an additional principle. Phil. Tranſ. N° 103.

CALCAR, in anatomy, the ſame with *calcaneum*. See CALCANEUM, *Cycl.*

CALCAR, in glaſs-making, is the name of a ſmall oven, or reverberatory furnace, in which the firſt calcination of ſand, and ſalt of potaſhes is made for the turning them into what they call *frit*. *Boerhaave*, Chym. p. 184.

This furnace is made in the faſhion of an oven, ten foot long, ſeven broad in the wideſt part, and two foot deep. On one ſide of it is a trench ſix inches ſquare, the upper part of which is level with the *calcar*, and ſeparated only from it at the mouth, by bricks nine inches wide. Into this trench they put ſea coal, the flame of which is carried into every part of the furnace, and is reverberated from the roof upon the frit, over the ſurface of which, the ſmoak flies very black, and goes out at the mouth of the *calcar*; the coals burn on iron grates, and the aſhes fall through. *Neri*'s Art of Glaſs, p. 240.

CALCARIOUS, ſomething that partakes of the nature and qualities of calx, or lime.

We ſay a *calcarious* earth, *calcarious* ſtone.

Liſter ſpeaks much of a *calcarious* nitre. *Liſter*, de Therm. p. 6 & 24, 38, & 58. See NITRE.

Several authors attribute the heat of thermæ, or hot ſprings, to the admixture of a *calcarious* earth or ſtone with the water. *Giorn.* de Lettr. d'Ital. T. 28. p. 93. Phil. Tranſ. N° 169. p. 924.

CALCARIUS *Lapis*, the ſtone of which lime is made.

The *lapis calcarius* is found unfit for the making of glaſs, by reaſon of the acid ſalt it abounds with. *Helmont*, de Lithias. c. 3. n. 7. *Caſt.* Lex. Med. p. 122.

CALCEARIUM, or CALCIARIUM, in antiquity, a donative, or largeſs beſtowed on the Roman ſoldiers for buying ſhoes. *Pitiſc.* Lex. Ant. T. 1. p. 320. *Aquin.* Lex. Milit. T. 1. p. 149.

In monaſtries, *calcearium* denoted the daily ſervice of cleaning the ſhoes of the religious. *Du Cange*, loc. cit.

CALCEDO-

CALCEDONIANS, a denomination given by copt-writers to the Melchites, on account of their adherence to the council of Calcedon. Mem. des Miſſ. T. 2 p. 12. See MELCHITES, COPHTI, MONOPHYSITES, *&c. Cycl.*

CALCENA, a term uſed by ſome medicinal writers to denote a morbid tartareous humor in the body.

CALCEOLUS, *Ladies-ſlipper*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the polypetalous, anomalous kind, conſiſting of ſix irregular petals, four of which are placed in a ſort of uniform order; and the other two ſtand in the middle; a bifid petal lying upon an undivided turgid one, which is hollow, and emulates, in ſome degree, the figure of a ſlipper or wooden-ſhoe. The cup becomes afterwards a fruit which is pervious, by means of three feneſtræ, each of which has its valve: the ſeeds are ſmall and reſemble duſt. The ſpecies of *calceolus* enumerated by Mr. Tournefort, are theſe: 1. The common *ladies-ſlipper*. 2. The *ladies-ſlipper*, with a larger flower. 3. The canada *ladies-ſlipper*. 4. The yellow flowered *ladies-ſlipper*. See Tab. 1. of botany, Claſs 11. *Tournef.* Inſt. p. 436.

CALCHACCA, in botany, a name by which ſome authors have called the tree whoſe bark is the caſſia lignea, uſed in medicine. *Piſo*, Mant. Arom. p. 165.

CALCHOCHRUM, in botany, a name by which ſome authors call the *fumaria* or *fumitory*. *Ger.* Emac. Ind. 2.

CALCHOPHONOS *Lapis*, among the antients, a name given to a ſtone of a black colour and conſiderable hardneſs, which when cut into thin plates and ſtruck againſt by any other hard body, gave a ſound like that of braſs: it ſeems to have been one of the hard black marbles.

CALLIFRAGA, in botany, a name given by ſome authors to ſamphire. *Ger.* Emac. Ind. 2.

The antients alſo gave the appellation *calcifraga*, to the ſea-fennel, though on a different account, by reaſon of its ſprouting up in the middle of ſtones. *Plin.* Hiſt. Nat. l. 27. c. 9. *Hardou.* Nat. ad loc.

CALCIFRAGUS, *ſtone-breaking*, an appellation given by ſome to the ſcolopendrium; by others to pimpernel, on account of their lithontriptic quality. *Caſt.* Lex. Med. p. 122. *Salmaſ.* Exerc. ad Solin. p. 1295.

CALCINATION, *(Cycl.)* is ſometimes alſo called *incineration*, and *cinefaction*; from which, however, in ſtrictneſs it differs, as a ſpecies from the genus, or as a calx from mere aſhes. *Caſt.* Lex. Med. p. 423.

Calcining differs from mere burning, as the latter leaves the bodies of a black colour, the former of a white one.

If white wine, tartar, or the white chryſtals of ſuch tartar, are burnt without being truely *calcined*, the caput mortuum will be black. But if the *calcination* be continued till the tartar is perfectly reduced to aſhes, and kept long enough in a ſtrong fire, the remaining calx will be white. And ſo we ſee, that not only other vegetable ſubſtances, but even white woods, as the hazel, will yield a black charcoal, and afterwards whitiſh aſhes. Thus alſo animal ſubſtances, naturally white, as bones and egg ſhells, grow black upon being burnt, and white again when perfectly *calcined*. *Boyle* of Colours, Phil. Works abr. T. 2. p 39.

Hence the rule *aduſta nigra*, *peruſta alba*; which yet does not hold ſo univerſally but that Mr. Boyle finds ſeveral exceptions to it. Lead *calcined* by a ſtrong fire turns to minium; which is of a red colour. See MINIUM, *Cycl.* and *Suppl.*

Calcination alſo differs from meer combuſtion, or burning, in that the former requires the preſence and aſſiſtance of the air, whereas the latter may be done without it. Thus a coal kept in a veſſel exactly cloſed, will not be *calcined* tho' kept ever ſo long in a ſtrong fire; but when taken out into the open air, readily falls to pure white aſhes without the help of any new *calcination*. *Boyle*, Scept. Chym. ap. Phil. Works abr. T. 3. p. 270.

By *calcination*, the parts of bodies are not only much broken, but rarified and rendered ſpecifically lighter. Thus the gravity of crude-lead compared to water, is above 11 to one; of *calcined*-lead only as nine to one. And the like holds of other metals, yet in ſome bodies *calcination* ſometimes increaſes the abſolute gravity while it diminiſhes the ſpecific. Thus four ounces of regulus of antimony, by being kept in fuſion an hour and a half, will gain two drams and a half, notwithſtanding all that it has loſt by evaporation: the reaſon of which ſeems difficult to aſſign. The acceſſion of the particles of the fire, which become fixed and retained in the pores of the body, are ſuppoſed by Quincy to be the cauſe both of the increaſe of the abſolute gravity, and the decreaſe of the ſpecific, taking it for granted, that the particles of fire are much lighter than thoſe of the body *calcined* [a]. But this Boerhaave will by no means allow him, who makes fire the moſt ponderous of all the bodies in the univerſe [b]. — [a *Quinc.* Lex. Phyſ. Med. p. 63. b *Boerh.* Elem. Chem. P. 2. T. 1. c. de Igne.]

The native virtues of metals and gems, ſome urge, are not loſt by *calcination*, which is rather a key whereby we are admitted to their intimate nature and powers. Quercetanus even aſſerts, that metalline bodies are not diminiſhed, but rather multiplied by *calcination*; which ſeems ſupported by Mr Boyle, who from a number of experiments concerning the ponderability of fire and flame, draws this concluſion, that in *calcination*, the humid and other volatile particles of metals are not loſt, but only diſſolved; ſince from their calces a true metalline ſubſtance may be again procured. *Caſt.* Lex. Med. p. 122. See METAL, *Cycl.* and *Suppl.*

Potential, *philoſophical* or *chymical* CALCINATION, comprehends amalgamation, precipitation, evaporation, fumigation, and cæmentation. See AMALGAMATION, *&c.*

Detonation by nitre is alſo reduced by Libavius to this ſpecies of *calcination*. See DETONATION, *Cycl.*

CALCINATION *by dry corroſion*, is that effected without moiſture, by the application of dry corroſive ſalts; to which head belongs cæmentation.

CALCINATION *by vaporous corroſion*, is when metalline bodies being reduced to thin plates, are expoſed to the action of an acrimonious fume or vapour.

There are divers ways of performing this; ſometimes the plates are ſuſpended over aqua fortis; ſometimes over vinegar, or the recrements of preſſed grapes; ſometimes, eſpecially the nobler metals, over melted lead or quick ſilver, *&c.* *Rul.* Lex. Alch. p. 126.

Humid CALCINATION is either by vapour, or immerſion. Iron is calcined to a ſubtile crocus, by a vaporous corroſion over ſtrong aqua fortis. Lead is calcined to ceruſe over vinegar, copper over the recrements of grapes.

Humid CALCINATION by immerſion, is when the body is dipt into the corroſive fluid, and is either performed by amalgamation or præcipitation.

Reverberatory CALCINATION, properly denotes the ſolution or reduction of a body into a calx or impalpable powder; ſometimes alſo denominated *alcohol*. See ALCOHOL, *Cycl.* and *Suppl.*

CALCINATUM, a calx or body which has undergone calcination. See CALX and CALCINATION.

CALCINATUM *majus* is uſed by alchemiſts for any thing rendered ſweet by chemical art, which of its own nature was not ſo; as *mercurius dulcis*, or *ſaccharum ſaturni*.

CALCINATUM *minus* denotes a thing which is naturally ſweet, as ſugar, manna, *&c.* *Rul.* Lex. Alch. p. 127. *Caſt.* Lex. Med. p. 121.

CALCIS *Os.* See Os *Calcis*.

CALCULARII, in antiquity, a ſort of juglers who practiſed ſlight of hand. Their art conſiſted in laying ſeveral calculi, or counters on the table, then covering them with cups, and ſhifting and changing them with dexterity, like what is practiſed by our jugglers. *Buleng*, de Theatr. T. 1. p. 40. *Pitiſc.* Lex. Ant. T. 1. p. 324.

CALCULARY *of a pear*, a congeries of little ſtony knots diſperſed through the whole parenchyma of the fruit.

The *calculary* is moſt obſerved in rough taſted or choak pears. The knots lie more continuous and compact together towards the pear, where they ſurround the acetary. See ACETARY. About the ſtalk they ſtand more diſtant, but towards the cork or ſtool of the flower, they ſtill grow cloſer, and there at laſt gather together into the firmneſs of a plumb-ſtone.

The *calculary* is no vital, or eſſential part of the fruit; the ſeveral knots whereof it conſiſts being only ſo many concretions or precipitations out of the ſap, as we ſee in urines, wines, and other liquors. *Grew*, Anat. of Plant. l. 1. c. 6. §. 3. ſeq. p. 41.

CACULATORES, in antiquity, accountants who reckoned their ſums by calculi. There were ſeveral ſervants under this denomination in great families. Children alſo at ſchool were taught to practiſe the ſame. *Pignor.* de Serv. p. 336. *Pitiſc.* Lex. Ant. T. 1. p. 324.

In the antient canons, we find a ſort of diviners, or enchanters, cenſured under the denomination of *calculatores*. *Bingh.* Orig. Eccleſ. l. 16. c. 5. §. 6.

CALCULUS *(Cycl.)* primarily denotes a little ſtone or pebble, antiently uſed in making computations, taking of ſuffrages, playing at tables, and the like.

In after times, pieces of ivory, and counters ſtruck of ſilver, gold, and other matters, were uſed in lieu hereof, but ſtill retaining the antient names. *Pitiſc* Lex. Ant. T. 1. p. 324, ſeq.

Hence the phraſe *ponere calculos*, to denote a ſeries of reaſons, and a multitude of others alluding to the uſe of theſe *calculi* in accounts. Computiſts were by the lawyers called *calculones*, when they were either ſlaves, or newly freed men; thoſe of a better condition were denominated *calculatores*, or *numerarii*: ordinarily there was one of theſe maſters in each family of diſtinction; the title of whoſe office was *a calculis*, or *a rationibus*. Hiſt. Acad. Inſcr. vol. 3. p. 392.

The Roman judges antiently gave their opinions by *calculi*, which were white for abſolution, and black for condemnation. *Calv.* Lex. Jur. p. 135.

Hence *calculus albus*, in antient writers, denotes a favourable vote, either in behalf of a perſon to be abſolved and acquitted of a charge, or elected to ſome dignity or poſt; as *calculus niger* did the contrary.

This uſage is ſaid to have been borrowed from the Thracians, who marked their happy or proſperous days by white, and their unhappy, by black pebbles put each night into an urn. — Hence alſo the phraſes, *ſignare*, *notare aliquid albo*, *nigrove lapillo ſeu calculo*. *Heder. Schul.* Lex. p. 638, ſeq.

Beſides

Beſides the diverſity of colour, there were ſome alſo which had figures or characters painted or graven on them, as thoſe which were in uſe in taking the ſuffrages both in the ſenate and at aſſemblies of the people.

The *calculi* were made of thin wood, poliſhed and covered over with wax of the ſame colour: this we learn from Cicero, *ceratam unicuique tabellam dari cerâ legitimâ*. Their form is ſtill ſeen in ſome medals of the Caſſian family; and the manner of caſting them into the urns, in the medals of the Licinian family. *Cic.* de Divin. c. 7.

The letters marked upon theſe *calculi* were U. R, for *uti rogas*, and A for *antiquo*; the firſt of which expreſſed an approbation of the law, the latter a rejection of it.

Afterwards the judges, who ſat in capital cauſes, uſed *calculi* marked with the letter A, for *abſolvo*, C for *condemno*, and N. L, for *non liquet*; ſignifying a more full information was required. Hiſt. Acad. Inſcr. ubi ſupra.

We may alſo mention another ſpecies of *calculi* uſed at the public games, whereby the rank and order in which the athletæ were to fight was determined. If for inſtance they were twenty, then twenty of theſe pieces were caſt into an urn; each ten were marked with numbers from one to ten, and the law was, that each of thoſe who drew, ſhould fight him who had drawn the ſame number.

Theſe were called *calculi athletici*. *Mahudel.* in Hiſt. Acad. Inſcr. T. 3. p. 394, ſeq.

CALCULUS *Minervæ*, among the antient lawyers, denoted the deciſion of a cauſe, wherein the judges were equally divided. The expreſſion is taken from the hiſtory of Oreſtes, as repreſented by Æſchylus and Euripides; at whoſe trial, before the Areopagites for the murder of his mother, the votes being equally divided for and againſt him, Minerva interpoſed and gave the caſting vote, or *calculus*, in his behalf. *Hofm.* Lex. Univ. Hiſt. T. 3. p. 470. Bibl. Germ. T. 28. p. 161.

M. Cramer, profeſſor at Marpurg, has a diſcourſe expreſs, *de calculo minervæ*; wherein he maintains, that all the effect an entire equality of voices can have, is to leave the cauſe *in ſtatu quo*.

CALCULI *tiburtini*, a ſort of figured ſtones, formed in great plenty about the cataracts of the Anio, and other rivers in Italy; of a white colour, and in ſhape oblong, round, or echinated. They are a ſpecies of the ſtiriæ lapideæ, and generated like them; and ſo like ſugar-plumbs in the whole, that 'tis a common jeſt at Rome to deceive the unexperienced, by ſerving them up at deſerts. *Mercat.* Metalloth. Arm. 9. c. 20. p. 254.

CALCULUS is alſo uſed in antient grammatic writers for a kind of weight equal to two grains of cicer. Some make it equivalent to the ſiliqua, which is equal to three grains of barley. Two *calculi* made the ceratium. *Fab.* Theſ. p. 412.

CALDA, or CALDUM, in the antient diet, denotes hot water, uſed much among the Romans, antiently, as a drink, partly for pleaſure, and partly for health.

The word is form'd for *calidus*, hot; aqua being underſtood; *calda*, q. d. *calida aqua*.

Lipſius, Caſtalio, Mercurialis, Baccius, and Freinſhemius, have treated largely *de potu caldæ*, or *caldi*. Act. Erud. Lipſ. 1721. p. 354, ſeq.

CALDARIA *Judiciaria*, the method of trial, or purgation by boiling water. See PURGATION and ORDEAL, *Cycl.*

CALDARIUM, in the antient baths, denoted a brazen veſſel or ciſtern, placed in the hypocauſtum full of hot water, to be drawn thence into the piſcina or bath, to give it the neceſſary degree of heat. See BATH, *Cycl.* and *Suppl.*

In this ſenſe, the *caldarium* ſtood contradiſtinguiſhed from the *tepidarium* and *frigidarium*. *Vitruv.* de Archit. l. 5. c. 10. Philoſ. Tranſ. N° 306. p. 2132.

CALDARIUM alſo denoted the ſtove, or ſudatory, being a cloſe vaulted room, wherein by hot dry fumes, without water, people were brought to a profuſe ſweat.

In which ſenſe, *caldarium* was the ſame with what was otherwiſe denominated *vaporarium*, *ſudatorium*, and *laconium*; in the Greek baths, *hypocauſtum*, ὑποκαυσον. *Dempſt.* Parallip. ad Roſin. l. 1. c. 14. p. 82. *Mercurial.* Gymnaſt. l. 1. c. 10. *Pitiſc.* Lex. Ant. T. 1. p. 326.

CALDARIUM *Æs*, denotes pot-metal. *Plin.* Hiſt. Nat. l. 34. c. 8. See POT-*metal*.

CALDRON, a large kitchen utenſil, commonly made of copper; having a moveable iron handle, whereby to hang it on the chimney hook.

The word is form'd from the French *chaudron*, or rather the Latin *caldarium*, of *caldus*, or *calidus*, hot. *Savar.* Dict. Comm. T. 1. p. 704. Trev. Dict. Univ. T. 1. p. 1702. voc. *Chaudron*.

Boiling in CALDRONS, *caldariis decoquere*, is a capital puniſhment ſpoken of in middle age writers, decreed to diverſe ſorts of criminals, but chiefly to debaſers of the coin. *Du Cange*, Gloſſ. Lat. T. 1. p. 682.

One of the torments inflicted on the antient Chriſtian martyrs, was boiling in chaldrons of water, oil, &c. *Schoetg.* Lex. Ant. p. 251.

CALENDAR *(Cycl.)*—The word *calendar* is alſo written *kalendar*, *kalendarium*, being form'd from the word *kalendæ*; antiently written in capital letters at the head of each month.

Calendar amounts to much the ſame with what is otherwiſe called *almanac*, and by the Romans *faſti*. See ALMANAC, *Cycl.* and *Suppl.*

The days in *calendars* were originally divided into octoades, or eights, but afterwards, in imitation of the Jews, into hebdomades, or ſevens; which cuſtom, Scaliger obſerves, was not introduced among the Romans till after the time of Theodoſius. *Scal.* de Emend. Temp. l. 4. *Fab.* Theſ. p. 413.

There are divers *calendars*, according to the different forms of the year, and diſtributions of time, eſtabliſhed in different countries. Hence the Roman, the Jewiſh, the Perſian, the Julian, the Gregorian, &c. *calendars*.

The antient Roman *calendar* is given by Ricciolus [a], Struvius [b], Danet [c], and others; by which we ſee the order and number of the Roman holy days, and work days. How it ſtood according to the deſcriptions of Ovid, Columella, and Pliny, is alſo ſhewn by Petavius [d] in his uranologium, wherein are repreſented the riſings and ſettings of the principal ſtars, and alterations of the weather. How it ſtood in the time of Conſtantine the great, *anno Chriſti* 325, is alſo ſhewn by the ſame Petavius [e]. Blondel, Clavius, and Gaſſendi, have written expreſly on the Roman *calendar* [f].—[a Chronol. Reform. l. 1. c. 22. p. 49, ſeq. b Synt. Antiq. Rom. c. 8. p. 352, ſeq. c Dict. Ant. Rom in voc. d De Doctr. Temp. Ed. Ult. Batav. an. 1703. P. 3. p. 60, ſeq. e Lib. cit. p. 67, ſeq. f Trev. Dict. Univ. T. 1. p. 1348]

From the time of the council of Nice, held in 327, to the year 1582, the Julian Roman *calendar* obtained through chriſtendom, only with the addition of the dominical letter, golden number, and cycle of the ſun; on which the time of celebrating Eaſter depends. To which have been ſince added, the Chriſtian feaſts, both moveable and immoveable, and the names of the ſaints commemorated in the Romiſh church on each day of the month. Regio Montanus firſt began to inſert the courſe of the ſun, moon, and planets, with aſtronomical predictions of the weather. *Wolf.* Lex. Math. p. 294.

The Gregorian *calendar* is largely explained by Clavius, and defended againſt the obſervations of Mæſtlinus, Joſ. Scaliger, Georg. Germanus, and Franc. Vieta.

The three Chriſtian *calendars* are given by Wolfius in his elements of chronology.

The Jewiſh *calendar* was fixed by Rabbi Hillel, about the year 360, from which time the days of their year may be reduced to thoſe of the Julian *calendar*, which before, by reaſon of the uncertainty of the commencements of their months and years, and of the quantity of their intercalations, they could not be. Concerning the Jewiſh *calendar*, ſee *Wolf*, Elem. Chron. where he alſo ſhews how to reduce, or accommodate the Turkiſh *calendar*. See alſo *Prid.* Connect. T. 1. pref. p. 13. Item, l. 3. p. 264.

CALENDAR, *Kalendarium*, originally denoted among the Romans, a book containing an account of monies at intereſt, which became due on the calends of January; the uſual time when the Roman uſurers let out their money. *Senec.* de Benef. l. 7. c. 10. Item, l. 1. c. 2. Ejuſd. Epiſt. 14. Item, Ep. 87. *Fab.* Theſ. p. 413.

CALENDAR is alſo applied to divers other compoſitions reſpecting the twelve months of the year.

In this ſenſe Spencer has given the ſhepherds *calendar*; Evelyn, the gardners *calendar*, &c.

CALENDAR is alſo extended to an orderly table, or enumeration of perſons or things.

L^d. Bacon wiſhes for a *calendar* of doubts [a]. A late writer has given a *calendar* of the perſons who may inherit eſtates in fee ſimple [b].—[a *Bac.* de Augm. Scient. l 3. c. 4. Opp. T. 1. p. 106. b Lond. 1736, 8°.

CALENDAR *Glaſs*, *vitrum calendare*, a name formerly given by ſome writers to a thermometer, or graduated tube, whereby to meaſure the degrees of heat. *Bac.* Nov. Organ. l. 2. Opp. T. 1. p 330. Item, p. 325. See THERMOMETER, HEAT, &c. *Cycl.* and *Suppl.*

CALENDAR *Brothers*, *fratres calendarii*, a ſort of devout fraternities, compoſed of eccleſiaſtics as well as lay-men; whoſe chief buſineſs was to procure maſſes to be ſaid, and alms diſtributed, for the ſouls of ſuch members as were deceaſed. They alſo made laws and regulations for church diſcipline within their ſeveral diſtricts; which became of force by being confirmed by abbots or other prelates. They received legacies and donations of money, lands, &c. out of which they defrayed the charge of obits, wax-candles, and the like; what remained was ſpent in a collation in memory of the dead. *Schoet.* Ant. Lex. p. 252.

They were alſo denominated *calend brothers*, by reaſon they uſually met on the *calends* of each month, though in ſome places only once a quarter.

Aſtronomical CALENDAR, an inſtrument engraved upon copper-plates, printed on paper, and paſted on board, with a braſs-ſlider which carries a hair, and ſhews by inſpection, the ſun's meridian altitude, right aſcenſion, declination, riſing, ſetting, amplitude, &c. to a greater exactneſs than our common globes will ſhew, *Harris*, Lex. in voc. *Aſtronomical*.

CALENDARIUM *Feſtum*. The Chriſtians retained much of the ceremony and wantonneſs of the Calends of January, which for many ages was held a feaſt, and celebrated by the clergy with great

great indecencies, under the names *feſtum kalendarum*, or *hypodiaconorum*, or *ſtultorum*, that is, the feaſt of fools: ſometimes alſo *libertas decembrica*. The people met maſked in the church, and in a ludicrous way proceeded to the election of a mock pope, or biſhop, who exerciſed a juriſdiction over them ſuitable to the feſtivity of the occaſion: fathers, councils, and popes long laboured to reſtrain this licence to little purpoſe. We find the feaſt of the Calends in uſe as low as the cloſe of the 15th century. *Du Cange*, Gloſſ. Lat. T. 3. p. 183, ſeq. voc. *Kalendæ*. Ejuſd. Gloſſ. Græc. T. 1. p. 547. voc. Καλανδων εορτη. *Schoet.* Ant. Lex. p. 251.

CALENDER *(Cycl.)*—At Paris they have an extraordinary machine of this kind, called the *royal calender*, made by order of M. Colbert; the lower table or plank of which is made of a block of ſmooth marble, and the upper lined at bottom with a plate of poliſhed copper.

There are alſo *calenders* without wheels, which are wrought by a horſe harneſſed to a wooden bar, which turns a large arbor placed upright; at the top of which, on a kind of lanthorn, is wound a rope, the two ends of which being faſtened to the two extremities of the upper plank of the engine, give it motion. But the horſe *calender* is in leſs eſteem than the wheel kind, as the motion of this latter is more equable and certain. *Savar.* Dict. Comm. T. 1. p. 526. voc. *Calendre.*

CALENDER alſo denotes the workman who manages the machine above deſcribed; applying the cloth or ſtuff underneath, after having firſt wound it on the rollers.

CALENDERS is alſo the name of a ſort of derviſes ſpread thro' Turky and Perſia, whoſe order is not in general eſteem among the Mahometans, as being reputed leſs abſtemious and ſtrict in morals than ſome other orders. *D'Herbel*, Bibl. Orient. p. 244. See DERVIS, *Cycl.*

CALENDRING, the paſſing of cloths thro' the calender. See CALENDER, *Cycl.* and *Suppl.*

We read of *calendring* worſteds [a]. To improve linen farther, the drapers get ſeveral ſorts of their cloths *calendred*; whereby their threads are made to lie flatter and ſmoother. Houghton deſcribes *calendring* as performed by rolling the cloths on great wooden rollers, and laying them under a huge wooden box full of weighty materials, which is drawn by a horſe to and *fro on* ſeveral of theſe rollers [b].—[[a] Stat. 5. *Hen.* VIII. c. 4, & 35. Ejuſd. c. 5. *Cowel*, Interp. in voc. [b] *Hought.* Coll. T. 2. N° 352. p. 402.]

CALENDS *(Cycl.)*—Hederic [a] and others give us tables of the *calends*, to ſhew the days of our months correſponding to each day of the Roman *calendæ*. But they may be found without tables by this rule: To the number of the days in the preceding month, add two, and from the ſum ſubſtract the number of the *calends* given, the remainder is the day of our month. [[a] Schul. Lex. p. 630, ſeq.]

Thus the fifth of the *calends* of October will be found to anſwer to the 27th of September. For

Sept. 30 was prid. Kalend.
29 —— tert°. ——
28 —— quart. ——
27 —— quint. ——
&c.

CALENDS, *Kalendæ*, are alſo uſed in church hiſtory to denote conferences antiently held by the clergy of each deanry, on the firſt day of every month, concerning their duty and conduct, eſpecially in what related to the impoſition of penance. *Du Cange*, Gloſſ. Lat. T. 3. p. 185. voc. *Kalendæ*. Trev. Dict. Univ. T. 1. p. 1347.

CALENDS is alſo an appellation given to religious and devout ſocieties, otherwiſe called *confraternitates*; probably named *kalendæ*, by reaſon of their meeting on the calends of each month. *Du Cange*, Gloſſ. Lat. T. 3. p. 185. voc. *Kalendæ*.

CALENDS *of January*, in Roman antiquity, was a ſolemn feſtival conſecrated to Juno and Janus; wherein the Romans offered vows and ſacrifices to thoſe deities, and exchanged preſents among themſelves as a token of friendſhip.

It was only a melancholy day to debtors, who were then obliged to pay their intereſts, &c. Hence Horace calls it *triſtes calendæ*. *Hor.* l. 1. Serm. Sat. 3.

CALENDULA, in pharmacy, the herb, or flower popularly called *marygold*, uſed in the ſhops as a cardiac and alexipharmic, of like, though of inferior virtue to ſaffron. *Quinc.* Diſpenſ. P. 2. Sect. 6. p. 425. *Junck.* Conſp. Phyſ. p. 122, & 215. See MARYGOLD.

CALENTES, in philoſophy, a ſort of ſyllogiſm in the fourth, commonly called *galenical* figure, wherein the major propoſition is univerſal and affirmative; and the ſecond or minor, as well as the concluſion, univerſal and negative.

This is intimated by the letters it is compoſed of, where the A ſignifies an univerſal affirmative, and the two E's as many univerſal negatives. *Ex. gr.*

CA. Every affliction in this world is only for a time.
lEn. No affliction, which is only for a time, ought to diſturb us.
tEs. No affliction ought to diſturb us which happens in this world.

The Ariſtotelians not allowing the fourth figure of ſyllogiſms, turn this word into *CElAntEs*, and make it only an indirect mood of the firſt figure. *Walch.* Lex. Phil. p. 338. See CELANTES.

CALENTURE *(Cycl.)*—This diſtemper ſometimes comes on without a fever, and may be carried off, by proper methods, in a few days without any feveriſhneſs growing upon the patient from its continuance. The firſt ſymptom is, the perceiving green leaves as it were on the water, and a deſire of getting at them: yet this is ſo far from being attended with a fever, that it is certain, the fleſh of the patient is colder than uſual, and the pulſe ſlow and temperate.

The firſt ſtep toward a cure is, the giving a briſk vomit; this has the immediate effect of diſpelling the fancy of the green leaves and trees in the water; after this, ſalt of wormwood, a little diaſcordium and conſerve of roſes vitriolated are proper, and bleeding in the arm; and if that does not take effect, the opening of the temporal artery is proper: a thin diet and cream of tartar in water-gruel, after theſe things, generally cures the remains of the diſeaſe.

The ſeat of this diſorder is in the ſtomach, and its principal ſource ſeems to be the eating ſalt proviſions for a long time together. Hence it is that a vomit has ſo immediate a good effect, and that diluting medicines alone are neceſſary to compleat the cure. Phil. Tranſ. N° 98.

The word *calenture* is Spaniſh, *calentura*, ſignifies a heat, fever, or ague; from the Latin *calere*, to be hot.

Calentures are chiefly found in ſailing towards the Weſt-Indies, as they approach the tropic. Thoſe affected with them have a fierce look, and are very unruly, being ſo eager to get to their imaginary cool verdure, and ſo ſtrong that ſix men ſometimes ſcarce ſuffice to detain them. The diſeaſe chiefly ſeizes the young and ſtrong, eſpecially of a ſanguine complexion; the pulſe is extremely low. When taken in time it rarely proves mortal. *Bonet.* Medic. Septentr. l. 1. Sect. 6. c. 2. p. 83. *Shaw*, New Pract. Phyſ. p. 406, ſeq. *Caſt.* Lex. Med. p. 123. Phil. Tranſ. N° 290. p. 1562, ſeq.

CALERUTH, a word uſed by ſome authors to expreſs an indication of a deſire to the firſt perpetual; as when any thing has a deſire to return to the firſt matter from which it proceeded. *Ruland.*

CALF, *vitulus*, in zoology. There are two ways of breeding *calves* that are intended to be reared; the one is to let the *calf* run with its dam all the year round: this is the method in the cheap breeding countries, and is generally allowed to make the beſt cattle. The other way is to take them from the dam after they have ſuck'd about a fortnight; they are then to be taught to drink flat milk, which is to be made but juſt warm for them, it being very dangerous to give it them too hot.

The beſt time of weaning *calves* is from January to May; they ſhould have milk for twelve weeks after, and a fortnight before that is left off, water ſhould be mixed with the milk in larger and larger quantities. When the *calf* has fed on milk about a month, little whiſps of hay ſhould be placed all about him in cleft ſticks to induce him to eat. In the beginning of April they ſhould be turned out to graſs; only for a few days they ſhould be taken in for the night, and have milk and water given them; the ſame may alſo be given them in a pail ſometimes in the field, till they are ſo able to feed themſelves that they do not regard it. The graſs they are turned into muſt not be too rank, but ſhort and ſweet, that they may like it and yet get it with ſome labour.

Calves ſhould be always weaned at graſs, for if it be done with hay and water, they often grow big-belly'd on it and are apt to rot. When thoſe among the males are ſelected which are to be kept as bulls, the reſt ſhould be gelt for oxen: the ſooner the better. Twenty days old is a very good time, or any thing between that age and ten days. About London almoſt all the *calves* are fatted for the butcher. The reaſon of this is, that there is a good market for them; and the lands here are not ſo profitable to breed upon as in cheaper countries. The way to make the *calves* fat and fine is, the keeping them very clean, giving them freſh litter every day, and the hanging a large chalk ſtone in ſome corner where they can eaſily get at it to lick it, but where it is out of the way of being fouled by their dung and urine. The coops are to be ſo placed as not to have too much ſun upon them, and ſo high above the ground that the urine may run off. They alſo bleed them once when they are a month old, and a ſecond time before they kill them; this is a great addition to the beauty and whiteneſs of their fleſh; the bleeding is by ſome repeated much oftener; but this is ſufficient.

Calves are very apt to be looſe in their bowels; this waſtes and very much injures them. The remedy is, to give them chalk ſcraped into milk, pouring it down with a horn. If this does not ſucceed, they give them bole armenic in large doſes, and uſe the cold bath every morning. If a cow will not let a ſtrange *calf* ſuck her, the common method is to rub both her noſe and the *calf*'s with a little brandy: this generally reconciles them after a few ſmellings. *Mortimer*'s Huſbandry, p. 230.

CALF, among ſportſmen, is uſed for a male hart, or hind of the firſt year. *Cox*, Gent. Recr. P. 1. p. 6, ſeq. Dict. Ruſt. T. 1. in voc.

CALF alſo denotes the young of the whale. Phil. Tranſ. N° 387. p. 260.

CAF's *skins*, in the leather manufacture, are prepared and dreſſed by the tanners, ſkinners, and curriers, who ſell them for the uſe of the ſhoemakers, ſadlers, bookbinders, and other artificers, who employ them in their ſeveral manufactures.

CALF-*ſkin dreſſed in ſumac*, denotes the ſkin of this animal curried black on the hair ſide, and dyed of an orange colour on the fleſh ſide, by means of ſumac, chiefly uſed in the making of belts.

The Engliſh *calf-ſkin* is much valued abroad, and the commerce thereof very conſiderable in France and other countries; where divers attempts have been made to imitate it, but hitherto in vain. Mr. Colbert, to whom France owes a great number of uſeful arts and eſtabliſhments of this kind, ſet on foot a company of undertakers in 1665; who ſet up a manufactory of this kind under the denomination of *bonnets tanneurs*. But after an hundred thouſand livres ſunk in the undertaking, they were forced to deſiſt.

The attempt however had the effect to facilitate the procurement of the true Engliſh *calf*-ſkins. Till that time, the ſmaller ſkins only had been allowed to be exported; the larger from 36 to 45 pds. being forbid to be carried out of England. But Charles II. fearing a total interdict of the Engliſh *calf*-ſkins in France, where the chief demand for them was, in caſe the new company ſucceeded, took off the prohibition, and allowed foreigners to carry away ſkins of all weights and qualities, and even greatly reduced the duty on exportation.

What is like to baffle all endeavours for imitating the Engliſh *calf* in France is, the ſmallneſs and weakneſs of the *calves* about Paris; which, at 15 days old, are not ſo big as the Engliſh ones when they come into the world.

The laſt war of 1702, put the French on divers ways to do without the help of the Engliſh *calf*-ſkin; and at preſent 'tis certain they make a ſhift without it; generally contenting themſelves with what their own country affords. *Savar.* Dict. Comm. T. 2. p. 1846, ſeq. See alſo *Hought.* Collect. T. 1. N° 123. p. 323, ſeq. Item, N° 126. p. 331.

CALI is uſed to denote potaſhes, or the ſalt of the plant *kali*. See KALI.

CALICAPHA, in botany, a name uſed by ſome authors for the whitethorn.

CALICULARIS, in botany, a name given by ſome authors to the common hyoſciamus, or henbane. *Ger.* Emac. Ind. 2. See HYOSCIAMUS.

CALIDUCTS *(Cycl.)*—This name ſeems to owe its origin to Sir Henry Wotton. It is formed by analogy to ventiducts, and aquæducts.

Whether the antient *caliducts* were a cuſtom or a delicacy, they ſeem both for thrift and uſe preferable to the German ſtoves; and might even challenge the advantage over our own faſhion, were it not that the very ſight of a fire adds ſomething of luſtre to a room. *Wolf.* Elem. Archit. T. 1. p. 17.

CALIETA, in botany, a name uſed by ſome authors for a ſort of yellow fungus common about the roots of trees, as the juniper, &c. *Paracelſus.*

CALIGA, in Roman antiquity, was the proper ſoldier's ſhoe, made in the ſandal faſhion, without upper leather to cover the ſuperior part of the foot, tho' otherwiſe reaching to the middle of the leg, and faſtened with thongs. The ſole of the *caliga* was of wood, like the ſabot of the French peaſants, and its bottom ſtuck full of nails; which clavi are ſuppoſed to have been very long [a] in the ſhoes of the ſcouts and ſentinels; whence theſe were called by way of diſtinction, *caligæ ſpeculatoriæ* [b]; as if by mounting the wearer to a higher pitch, they gave a greater advantage to the ſight. The others will have the *caligæ ſpeculatoriæ*, to have been made ſoft and woolly, to prevent their making a noiſe [c].—[[a] Vid. *Plin.* Hiſt. Nat. l. 34. c. 14. Item, l. 9. c. 18. *Hardouin*, Not. ad. loc. [b] *Suet.* in Calig. c. 52. *Tertull.* de Coron. [c] *Aquin.* Lex. Milit. T. 1. p. 151.]

Nigronius gives us the figure of a *caliga clavata*, at the end of his work *de Caliga veterum*. *Hardouin*, Not. ad Plin. l. 9. c. 18.

From theſe *caligæ* it was that the emperor Caligula took his name, as having been born in the army, and afterwards bred up in the habit of a common ſoldier. *Suet.* in Calig. c. 9. *Kenn.* Rom. Ant. P. 2. l. 5. c. 8. p. 328. *Nigron.* de Caliga. *Pitiſc.* Lex. Ant. T. 1. p. 327, ſeq.

In the decline of the empire, the *caliga* was alſo worn by the ſenators, though of a form ſomewhat different from that of the ſoldiery. *Pitiſc.* Lex. Ant. T. 1. p. 328.

Eccleſiaſtical writers ſpeak alſo of *caligæ*, as a particular ſort of ſhoes or ſandals worn by monks; and alſo by biſhops when they celebrated maſs pontifically. *Du Cange*, Gloſſ. Lat. T. 1. p. 684. Ejuſd. Gloſſ. Græc. p. 549. voc. Καλιγα. *Magr.* vocab. Eccleſ. p. 40.

CALIGATI, an appellation given by ſome antient writers to the common ſoldiers in the Roman armies, by reaſon of the caliga, a peculiar ſort of ſhoe worn by them. *Juv.* Sat. 16. v. 24. *Suet.* in Auguſt. c. 25. *Kenn.* Rom. Ant. P. 2. l. 5. c. 8. p. 325. *Fab.* Theſ. p. 414. *Calv.* Lex. Jur. p. 136.

The caliga was the badge, or ſymbol of a ſoldier; whence to take away the belt and caliga, imported a diſmiſſion or caſhiering. *Du Cange*, Gloſſ. Græc. p. 550. voc. Καλιγατος.

CALIGO, or CALIGATIO, in medicine, an opacity, or cloudineſs of the anterior ſurface of the chryſtalline, cauſing a dimneſs or ſuffuſion of ſight. *Plin.* Hiſt. Nat. l. 29. c. 6. Mem. de Trev. 1726. p. 2186.

The *caligo* is the ſame with what the Greeks call Αχλυς, *achlys*; *Gorr.* Med. Def. p. 67. voc. Αχλυς. See ACHLYS.

CALIMUS. See the article CALLIMUS.

CALIN, the name of a ſort of mixt metal, ſeeming compoſed of lead and tin. It is prepared by the Chineſe, and they make ſeveral utenſils of it, as tea-caniſters, coffee-pots, and the like. In ſome places alſo they cover their houſes with it as we do with lead. *Lemery*, des Drog.

CALIPH *(Cycl.)*—One of the chief functions of the *caliph*, in quality of imam, or chief prieſt of muſulmaniſm, was, to begin the public prayers every Friday in the chief Moſque, and to deliver the *khothbah* or ſermon. In after times, they had aſſiſtants for this latter office; but the former the *caliphs* ever performed in perſon. The *caliph* was alſo obliged to lead the pilgrims to Mecca in perſon, and to march at the head of the armies of his empire. He granted inveſtitures to princes, and ſent ſwords, ſtandards, gowns, and the like, as preſents to the princes of the Mahometan communion; who, though they had thrown off the yoke of the *caliphate*, nevertheleſs held of it as vaſſals. They alſo honoured them with titles, as *defender*, *ſupport*, or *pillar* of the faith, &c. for which they ſometimes made them pay dear.

The *caliphs* uſually went to the Moſque mounted on mules, and the ſultans ſelgiucides, though maſters of Bagdat, held their ſtirrups, and led their mule by the bridle ſome diſtance on foot, till ſuch time as the *caliphs* gave them the ſign to mount on horſeback.

At one of the windows of the *caliph*'s palace, there hung always a piece of black velvet 20 cubits long, which reached to the ground, and was called the *caliph*'s-ſleeve; which the grandees of his court never failed to kiſs, with great reſpect, every day.

The honours paid the *caliphs* were exceſſive, and bred a pride in them of which they ceaſed not to give marks even when their authority was at the loweſt. They affected great ſplendor and magnificence in every thing. Abulpharagius relates, that the *caliph* Motazem had no leſs than 100 women in his ſeraglio, and 300 eunuchs to keep them.

But this ſplendor was much diminiſhed during the reign of the Bonides in Perſia; who ſtript them of every thing, taking from them their vizirs, and leaving them no higher officer than a ſecretary to take care of their affairs. At that time, and eſpecially under the *caliphate* of Radhi, the 20th of the family of Abbas, the dominions of the empire of Mahomet became ſo diſmembred and divided, that this prince was reduced to the ſingle poſſeſſion of the city of Bagdat. Such was its ſtate in the year of the hegirah 325. But this was not the loweſt ſtate of the *caliphs*, who when the Bonides afterwards rendred themſelves maſters of Bagdat, were reduced to the ſingle functions of the Moſque; being put up or depoſed by thoſe princes at pleaſure. By the diſorders of the Turkiſh ſoldiery ſeveral were even put to death in different manners; but ſtill ſo as not to ſhed their blood out of a reſpect always preſerved to their high dignity. In this low ſtate, one of them is ſaid to have begg'd alms at the door of the Moſque among the blind.

Several of them made efforts to ſhake off the yoke of this foreign domination. The *caliph* Raſched gathered an army privately, but not ſucceeding, was depoſed. His ſucceſſor Moktafi, the 31ſt *caliph* of the line of Abbas, carried his point, and threw off the yoke of the ſultan of ſelgiucides; from which time the *caliphs* recovered much of their antient ſplendor, and received many marks of the veneration and obedience of the Mahometan princes their neighbours, till their entire ruin; which was occaſioned by the diviſion between the ſunnites and ſchiites [a]. The *caliphs* loſt their authority, and almoſt their name, in that deluge of deſtruction by the Tartars, who over-run all the Eaſt. Since the deſtruction of the *caliphate*, the Mahometan princes have a particular officer appointed in their reſpective dominions, who ſuſtains the ſacred authority of *caliph*. In Turkey he goes under the denomination of *mufti*, and in Perſia under that of *ſadne* [b].—[[a] *D'Herbel.* Bibl. Orient. p. 985, ſeq. voc. *Khalifah*. [b] Life of *Mahom.* p. 70, ſeq.]

CALIPHATE, or *Kaliphate*, a ſovereign dignity antiently ſubſiſting among the Mahometans, veſted with abſolute power in every thing relating to religion as well as policy. See CALIPH.

The *Caliphate* comprehended the power both of the royalty, and prieſthood.

The double character of prince and pontiff, which Mahomet acquired for himſelf, he tranſmitted to his ſucceſſors under the title of *caliphs*, who like the *Jewiſh* princes of the Maccabee race, were both kings, and chief prieſts of their people at the ſame time. The empire of the *caliphs* was of vaſt extent, including all Arabia, Syria, Perſia, and Egypt, with other parts of Africa, and even Spain.

The ſucceſſion of *caliphs* laſted till the 655th year of the Hegirah, when the Tartars took the city of Bagdat, and put to death Moſtaazem, the laſt *caliph* of the line. 'Tis true there were perſons after that time who claimed the *caliphate*, as pretending

tending to be of the family of the Abaſſides, and to whom the ſultans of Egypt rendered great honours at Cairo, as the true ſucceſſors of Mahomet: But this honour was merely external, and the rights allowed them only in matters relating to religion; and though they bore the ſovereign title of *caliphs*, they were nevertheleſs ſubjects and dependents of the ſultans.

The Fathimites erected a kind of *caliphate* in Africa, which commenced about the year of the Hegirah 361, and laſted till it was ſuppreſſed by Saladin.

There was alſo another *caliphate* in Africa and Spain, which begun under the Reign of Joſeph, ſon of Baſchkehin.

Hiſtorians alſo ſpeak of a third *caliphate* in Yeman, or Arabia Fœlix, erected by ſome Princes of the family of the Jobites. *D. Herbe'*, Bibl. Orien. p. 985, ſeq. *Okel.* Hiſt. Conq. Syria, &c. Lond. 1708. Bibl. Angl. T. 3. p. 153. ſeq.

The emperors of Morocco aſſume the title of grand cherifs, and pretend to be the true *caliphs*, or ſucceſſors of Mahomet, though under another name.

CALIXTINS (*Cycl.*)— The *Calixtins* made one of the two parties of reformers in Bohemia, at the time of the council of Baſle; the other being the Taborites. See TABORITES, *Cycl.* The *Calixtins* are not ranked by Romaniſts in the Liſt of Heretics [a], ſince in the main they ſtill adhered to the Doctrine of Rome. The Reformation they aimed at terminated in the four following articles. 1°. In reſtoring the cup to the laity. 2°. In ſubjecting the criminal clerks to the puniſhment of the civil magiſtrate. 3°. In ſtripping the clergy of their lands, lordſhips, and all temporal juriſdiction. 4°. In granting liberty to all capable prieſts to preach the word of God [b]. —[[a] *Trev.* Dict. Univ. T. 1. p. 1353. [b] *Lenfant.* Hiſt. de la Guerre des Huſſ. T. 2. Bibl. Germ. T. 23. p. 2. ſeq.

CALKINS, or CALKERS, a part prominent from a horſe-ſhoe, intended to ſecure the beaſt from ſliding.

The *calkins* are the end or extremity of horſe-ſhoes, turned or bent downwards, and forged to a ſort of point, to make the beaſt ſtep more ſafe and ſteady on the ice. *Savar.* Dict. Com. T. 1. p. 1598. voc. *crampon.*

The inconvenience of *calkins* is, that they hinder the horſe from treading evenly on the ground, and thus occaſion wrenches of the foot, or ſtrains of the ſinews; eſpecially in ſtony ways, where the hardneſs of the bottom will not ſuffer the *calkins* to penetrate: Add that they are apt to make a horſe cut. Dict. Ruſt. T. 1. in voc. item in *horſe-ſhoe.*

Calkins are either ſingle or double, i. e. at one end of the ſhoe, or at both; the latter are reputed leſs hurtful, as they allow the creature to tread more even; ſome are made large and ſquare; the beſt are in form of the point of a hare's ear.

CALL, (*Cycl.*) among fowlers, the noiſe or cry of a bird, eſpecially to its young, or its mate in coupling time.

One method of catching partridges, is by the natural *call* of a hen trained for the purpoſe, which drawing the cocks to her, they are entangled in a net. Dict. Ruſt. T. 1. in voc.

Different Birds require different ſorts of *calls*; but they are moſt of them compoſed of a pipe or reed, with a little leathern bag or purſe, ſomewhat in form of a bellows; which, by the motion given thereto, yields a noiſe like that of the ſpecies of bird to be taken. *Savar.* Dict. Comm. T. 1. p. 116. voc. *appeau.*

The *call* for partridges is formed like a boat, bored through, and fitted with a pipe or ſwan's quill, &c. to be blown with the mouth, to make the noiſe of the cock partridge, which is very different from the *call* of the hen.

Calls for quails, &c. are made of a leathern purſe in ſhape like a pear, ſtuffed with horſe hair, and fitted at the end with a bone of a cat's, hare's, or coney's leg, formed like a flageolet: They are plaid by ſqueezing the purſe in the palm of the hand, at the ſame time ſtriking on the flageolet part with the thumb to counterfeit the *call* of the hen quail.

CALLARIAS, by ſome called *aſellus callarias*, a fiſh of the truttaceous kind called by Aldrovandus *Tinca marina*, and by Rondeletius and Geſner *Phycis*. It uſually grows to about a foot in length, and is in ſhape ſomething flattiſh; it is covered with ſmall ſcales, and is of a greyiſh colour, but ſomewhat purple on the head. Its mouth is very large, its lips thick, its teeth are numerous, and very ſmall, and in the top of the palate there is a cluſter of ſmall teeth amaſſed together in a congeries of a triangular form; and in the lower part of the mouth are four tubercles rough alſo with ſmall teeth; its tongue is ſmooth, and from the angle of the lower jaw there hangs a ſingle fleſhy filament, by way of beard; its tail is roundiſh, not forked; it is a very well taſted fiſh, and is common in the Mediterranean, and brought to market, at Rome, Venice, &c. *Willughby*'s Hiſt. piſc. p. 205.

CALLIBLEPHARA, in the medicinal writings of the antients, a name given to certain compoſitions intended to make the eye-lids beautiful; and as the eye-lids are ſubject to be deformed ſeveral ways, there were ſeveral different ſorts of theſe medicines.

The principal deformities of this part, they accounted either the two great abundance of hairs, or the falling off and defect of them, or their ill colour, or irregular arrangement. Their over abundance they eſteemed owing to a redundance of humors, their falling off to an acrimony of them, and their whiteneſs or redneſs to particular humors of that co'our. The principal ingredients in theſe *calliblephara*, were ſuch medicines as they eſteemed moderately drying and proper to conſume the vitiated humours, ſuch were lapis Armenus, ampelitis, ſoot of frankincenſe, burnt antimony, and lead, ſquamma æris, and the like. *Gor.* Med. Defin. in voc.

Marcellus, in his explanations of Dioſcorides, ſays, that the old Greeks called thoſe medicines meant to remedy diſeaſes of this part, as well as to give it beauty, by the ſame common name *calliblephara.*

CALLICHTHUS, in zoology, a name given by ſome writers to the *anthias* a ſmall fiſh caught in the Adriatick, and ſuppoſed to be a certain token of there being no voracious fiſhes near the place where it is found; it is called alſo *ſacer piſcis* the holy fiſh, and is a very beautiful fiſh. *Rondelet*, de Piſc.

CALLICO, in commerce, a ſort of cloth reſembling linnen, made of cotton.

This name is taken from that of *Callicut*, a city on the coaſt of Malabar, being the firſt place at which the Portugueſe landed when they diſcovered the India trade. The Spaniards ſtill call it *callicu.* *Atlas* Marit. p. 218. *Skin.* Etym. in voc.

Callicoes are of divers kinds, plain, printed, painted, ſtain'd, dyed, chints, muſlins, and the like, all included under the general denomination of *callicoes.*

A great naturaliſt has ſuggeſted that the Indian *callico* is made of the fibres of nettle-ſtalks [a]; but this is not confirmed: on the contrary, there are *callicoes* alſo made in the iſland of Candia, which 'tis known are made of cotton [b]. —[[a] *Ray*, Phil. Lett. p. 174. ſeq. [b] *Atlas* Marit. p. 209. ſeq.]

By an act of parliament made in 1722. the uſe of dyed, painted, or printed *callicoes* is forbid, either in apparel or furniture, on the forfeiture of five pounds to the informer for every offence. 7 Geo. I. Stat. 1. c. 7. § 2. but this prohibition does not extend to *callicoes* dyed blue. Ibid, § 11.

The deſign of this prohibition was to promote the conſumption of our own manufactures. But its chief effect has been to promote the uſe of printed linnen. Upon the act's taking place, the *callico*-printer's fell to work to imitate the Indian *callicoes*, by making the ſame ſtamps and impreſſions, and with the ſame beauty of colours upon linen. This fell chiefly on Scots and Iriſh linen, the manufacture of which have been hereby greatly increaſed, many hundred thouſand ells thereof being yearly imported from thoſe countries, and printed, or ſtamp'd in England. Plan of Engl. Comm. P. 2. c. 2. p. 295, ſeq.

CALLIDRYS, in zoology, a name given by Bellonius and ſome other authors to a water bird, known among us by the name of the *redſhank.* See REDSHANK.

CALLIDRYS *nigra*, in zoology, the name of a bird, deſcribed by Bellonius, and ſuppos'd by ſome to be that bird which we call the *knot.* *Bellon.* de Avib. See the article KNOT.

CALLIDRYS *rubra*, in zoology, the name of a long-leg'd water bird of a browniſh grey on the back, and a whitiſh grey on the rump and neck: on each ſide of the temples it has two black ſpots which ſeem to make a ſort of ſhade to the eye-lids, which are diſtinguiſhed by a very white ſpeck; its beak is about three fingers breadth long, and its legs of a rediſh yellow. The French call this bird *chevalier aux pieds rouges*, and the *limoſa* to which it very much approaches, the *chevalier aux pieds verds.* Theſe have by ſome been ſuſpected to be only the different ſexes of the ſame bird. *Ray*'s Ornithology p. 22.

CALLIGRAPHY, Καλλιγραφια, the art of fair writing.

Cocker, Gerin, Gething, Skelton and Hoar, are comparable for their ſkill in *calligraphy* to the moſt renowned of the antients [a]. Callicrates is ſaid to have written an elegiac diſtich on a Seſamum ſeed [b]. Junius ſpeaks of him as a miracle, who wrote the apoſtles creed, and beginning of St. John's Goſpel in the compaſs of a farthing: What would he have ſaid of our famous Peter Bale, who in 1575, wrote the Lord's prayer, creed, ten commandments, and two ſhort prayers in latin, with his own name, motto, day of the month, year of the Lord, and reign of the queen, in the compaſs of a ſingle penny, inchaſed in a ring and bordure of gold, and covered with a cryſtal, all ſo accurately wrought, as to be very legible [c]? —[[a] *Evel.* Diſc. of Med. c. 8. p. 267. [b] *Ælian.* Var. Hiſt. l. 1. c. 17. [c] *Evel.* loc. cit. V. Montfauc. Palæogr. Græc. l. 1. c. 5, ſeq. where we have the ſeveral kinds of notes and ſubſcriptions of the antient *calligraphi*, as alſo a liſt of the names of the principal *calligraphers* from the 3d to the 13th century.]

CALLIGRAPHY is alſo uſed to denote the *calligraphers* work, in tranſcribing fair and at large. See CALLIGRAPHUS, *Cycl.*

In which ſenſe *caligraphy* made an article in the manual labour of the antient monks. *Du Cange* Gloſſ. Græc. p. 522, ſeq. voc. Καλλιγραφια.

CALLIMUS, Καλλιμος, in phyſiology, a ſtony ſubſtance found in the cavity of the ætites, or eagle ſtone. See ÆTITES.

The word is alſo written *calimus*, and in ſome copies of Pliny *calainus*; which latter reading Salmaſius receives.

The *callimus* fills the hollow of the ætites, much as the yolk does the white of an egg. *Grew.* Muſ. Reg. Societ. P. 3. Sect. 1. c. 5. p. 298.

The Geodes, inſtead of a *callimus*, or ſolid ſtone, has a looſe, ſandy, chalky, or earthy ſubſtance, and the enhydros a liquid ſubſtance. *Plin.* Hiſt. Nat. l. 36. c. 21. *Salmaſ.* Exerc. ad Solin.

Solin. p. 713, seq. *Mercat.* Metalloth. p. 261. *Woodw.* Nat. Hist. Eng. Foss. T. 1. p. 235. See GEODES and ENHYDROS.

CALLING *the house*, in a parliamentary sense, has been sometimes practised, to discover whether there be any in the house not returned by the clerk of the crown; but more frequently to discover what members are absent without leave of the house, or just cause.

In the former case, the names of the members being called over, every person answers to his name, and departs out of the house, in the order wherein he is called. In the latter, each person stands up, uncovered at the mention of his name. Memor. of Proceed. of Parl. c. 13. p. 84, seq.

CALLION, in botany, a name given by Pliny, and some other authors to the alkekengi, or winter cherry. *Ger.* Emac. Ind. 2. Some of the Greeks called it also *cystis*, from its fruit being wrapped in a kind of bag or bladder, but the general name was *hallicaccabum*.

CALLIONYMUM, in botany, a name given by some authors to the lilly of the valley. *Ger.* Emac. Ind. 2. 322.

CALLIONYMUS, in zoology, a name used by Appian and some other authors for the fish called the *uranoscopus*, or the stargazer. *Dale*'s Pharm. p. 376. *Willughby*, Hist. Pisc. p. 287.

CALLIPÆDIA, Καλλιπαιδεια, the art of getting or breeding fine and beautiful children.

The word is formed from καλος fair, and παις puer, either boy or girl.

We find divers rules and practices relating to this art, in antient and modern writers: Among the magi, a sort of medicines called ermesia was prescribed to pregnant women, as a means of producing a beautiful issue. Of this kind were the kernels of pine nuts ground with honey, myrrh, saffron, palm wine, and milk. *Gorr.* Med. Def. p. 156. *Cast.* Lex. Med. p. 315.

The Jews are said to have been so solicitous about the beauty of their children, that care was taken to have some very beautiful child (such as was Jochanan the disciple of Judah, author of the mischna) placed at the door of the public baths, that the women at going out being struck with his appearance, and retaining the idea, might all have children as fine as he. *Basnage*, Hist. des Juifs, l. 6. p. 2. Jour. des Sçav. T. 37. p. 99. The Chinese take still greater care of their breeding women, to prevent uncouth objects of any kind from striking either their sense or imagination: musicians are retained to entertain them nightly with agreeable songs or odes, in which are set forth all the duties and comforts of the conjugal and domestic life; that the infant may take good impressions even before it is born, and not only come forth agreeably formed in body, but well disposed in mind. *Wolf.* Orat. de Sinar. Phil. Pract. ap. Act. Erud. *Lipsi.* 1726. p. 238.

Callipædia, nevertheless, seems to have been first erected into a just art by Claude Quillet de Chinon, a French abbot, who under the fictitious name of Calvidus Lætus, has published a fine latin poem, in four books, under the title of *callipædia, seu de pulchræ prolis habendæ ratione*; wherein are contained all the precepts of that new art. Lugd. Bat. 1655, 8vo. Paris, 1656, 8vo. and Lond. 1708, 8vo. In which last edit. several verses were restored, which the author at the request of cardinal Mazarin had omitted in the Paris edit. 1665. Jour. des Sçav. T. 41. p. 214. *Morhof*, Polyhist. Liter. l. 2. c. 1. p. 323. Act. Erud. Lipsi. 1725. p. 90. *Monnoy*, Not. ad Baill. Jugem. des Sçav. T. 4. P. 2. p. 300, seq.

CALLISTIA, Καλλιστια, in antiquity, a Lesbian festival, wherein the women presented themselves in Juno's temple, and the prize was assigned to the fairest.

The word is formed from the greek καλλος, beauty, q. d. beauty's rewards. The like contest of beauty was held at the festival of Ceres Eleusinia, among the Parrhasians, first set on foot by Cypselus, whose wife Herodice was honoured with the first prize. Another obtained among the Eleans, where the contest was among the men, the most beautiful of whom was presented with a suit of armour which he consecrated to Minerva, to whose temple he walked in procession, adorned with ribbons, and crowned with a myrtle garland. *Athen.* Deipnos. l. 12. *Meurs*, Græc. Færiat. de Fæst. Græc. l. 3. c. 2. *Pott.* Arch. Græc. l. 2. c. 20. p. 407.

CALLOSUM *corpus*, in anatomy, denotes a part in the medulla of the brain of a white colour, and a texture somewhat harder and more compact than the rest; approaching to that of a *callus*. V. *Barthol.* Anat. l. 3. c. 6. *Willis*, Anat. Cerebr. c. 10. n. 5. *Malpighi*, de Cerebr. *Cast.* Lex. Med. p. 125, seq.

The *corpus callosum* runs along the whole tract of the falx; at the extremity next the cerebellum it sends out two processes, whose juncture constitutes the fornix; under which lies the septum lucidum. *Drak.* Anthrop. l. 3. c. 3. p. 275.

The *corpus callosum* is an assemblage of bundles of fibres springing from the glands, which compass the cineritious part, and serving as excretory ducts thereto: these fibres as descending towards the medulla oblongata, all meet there; and serve to connect the lobes of the brain. Signior Lancisi makes the *corpus callosum* to be the immediate seat of the soul. *Malpigh.* Diss. de sede Cogitant. Anim. Mem. de Trev. 1717. p. 1474.

CALLOUS, *callosus*, something of the nature or consistence of a *callus*. See CALLUS *Cycl.* and *Suppl.*

Physicians speak of *callous* nodes or excrescences,[a] *callous* ulcers, and the like[b]; — [[a] Ephem. Acad. N. C. dec. 1. an. 6. obs. 101. [b] *Junck*, Comp. Chir. p. 257.]

CALLOUS *eggs*, *ova callosa*, the longer and better sort, supposed to contain male chicks; having a denser white, and richer flavour than the rest. *Hor.* l. 2. Sat. 4. v. 14. *Fab.* Thes. p. 417. See EGGS.

CALLUS (*Cycl.*) — In cases of fractures, when the bones are properly replaced, and care taken to preserve them in that situation, the surgeon has done his part, and nature provides for the rest, by supplying the divided parts with a *callus*, which sweats out from the small arteries, and bony fibres of the divided parts in form of a viscous liquid matter or jelly, and soon fills up the chinks and cavities between them: this first appears of a cartilaginous substance, but at length it becomes quite bony, and joins the fractured parts so firmly together, that the limb will make a greater resistance to any external violence in that than in any other part.

But as the new flesh in wounds will frequently sprout up too fast, so will also the *callus* in fractures; and by this means render the limb uneven and deformed. The only methods that can be taken to prevent the *callus* from exceeding its due bounds, are to make the bandage somewhat tighter than ordinary, and wet it with spirit of wine, for by this means the *callus* is not only often kept within its due bounds, but the induration of it is also much forwarded; but when once the *callus* is indurated, we have no medicines by which it can be taken down or destroyed. *Heister*'s Surg. p. 115.

CALLUS *microscopically examined.* Mr. Lewenhoek examining the *callus* form'd on the hands and feet, observed that it was a substance composed of several layers of particles so loosely connected, that it was a wonder they could hang together; on putting a piece of this into fair water, after it had stood a considerable time to steep, he found that the particles of which it was composed would easily separate from one another with a little touch of a quill, and these separated particles put into a drop of water, and examined before the microscope, were found to be all of the same regular shape, which was like that of a weaver's shuttle, being broad in the middle, and pointed at each end, with a line in the middle like those upon the uppermost or outside skins of fruits, or of our bodies, but generally irregular. These pieces were thick in proportion to their size, and when they are put into water, and separated again, they naturally form a great number of other particles, all of which are of the same regular figure with the original piece. Phil. Transf. N° 373. p. 160.

By this we see the reason of the increase in thickness of the skin of the hands of those who labour hard, and of the feet of such people as walk much, which is wholly owing to the addition of vast numbers of these shuttle-like particles which form combinations together, but those so loosely, that it is no wonder they are so easily separated on moistening; and in carefully examining pieces of this thick skin transversely cut, we may see that they are composed of several layers of different thicknesses, which have been added from time to time, and that each of these layers is only a congeries of an almost infinite number of these parts.

The *callous* skin for these examinations must not be cut from the hands of those persons who use extreme hard labour, such as masons and the like, for in them by the continual pressing the hand upon hard bodies, the several particles of which these *callous* layers are composed are pressed down so closely upon one another, that no art is able to separate them, and all that can be discovered by a view of such skin is, the distinct layers of which its thick parts are composed.

The people who labour ever so hard will have no *callus* upon their hands, if they wash them often; the washing the hands daily rubs off a great quantity of these particles or scales if they may be so called, but they are quickly renewed, and so much of them must come off on occasions of rubbing, that we must necessarily eat every day a large quantity of those from our cooks hands among our food, and have them turn with it to digestion. It is amazing to see the vast quantities of these scales which are daily thrown off from our hands and feet, though from no other part of the body, and we may learn from this the great bounty of nature to us in so carefully supplying those parts which are destined for walking or labour, with an additional matter for their defence, which is not in any other part of the body.

CALLUS is by some also applied to those knots or tophaceous nodes generated in the joints of gouty patients. *Cast.* Lex. Med. p. 125. voc. *Callositas.* See TOPHUS, NODE, &c. *Cycl.*

CALLUS is also especially used to denote a hardness of the eyebrows, occasioned by the congestion of an acid, or tartareous juice therein. *Scrib. Larg.* n. 26, seq. *Sennert.* Med. Pract. l. 1. P. 3. sect. 2. c. 3. *Cast.* Lex. Med. p. 125.

Paracelsus also gives the denomination *callus*, to an abscess or ulcer, caused by the acrimonious or arsenical quality of the nutricious juice, and exciting a vehement itching. *Paracels.* Chirurg. Tr. de Ulcer. c. 59, seq. *Cast.* loc. cit.

CALLYCHTHIS, in zoology, the name of a broad and flat sea-fish, brought to market at Rome under the name of the *lampuga*, and commonly called the *stromateus*; and by the Venetians the *licette*. *Gesner*, de pisc. p. 1109. See the article STROMATEUS.

CALLYONYMUS, in zoology. See CALLIONYMUS.

CALM, in the sea language, that state of the air and water when there is no wind stirring.

They say a flat *calm*, a dead or stark *calm*. A *calm* is more terrible to a sea-faring-man than a storm, if he have a strong ship and sea-room enough [a]; for under the line excessive heat sometimes produces such dead *calms* that ships are obliged to stay two or three months without being able to stir one way or other [b].—[a *Manwar*. Sea Dict. p. 18. *Aubin*, Dict. Mar. p. 149. b Jour. des Scav. T. 5. p. 192.]

Two opposite winds will sometimes make a *calm*. This is frequently observed in the gulf of Mexico, at no great distance from the shore, where some gust or land-wind will so poise the general easterly wind, as to produce a perfect *calm*. Phil. Transf. N° 36. p. 707.

Calms are never so great on the ocean as on the Mediterranean, by reason the flux and reflux of the former keep the water in a continual agitation, even when there is no wind; whereas there being no tides in the latter, the *calm* is sometimes so dead, that the face of the water is as clear as a looking-glass; but such *calms* are almost constant presages of an approaching storm [a]. On the coasts about Smyrna, a long *calm* is reputed a prognostic of an earthquake [b].—[a *Savar*. Dict. Comm. Supp. p. 109. b Mem. des Miss. T. 1. p. 44.]

Calms are said to reign perpetually on the tops of very high mountains; whence the antient tradition concerning mount Olympus, that the ashes of the annual sacrifice performed there, remained on the altar the whole year without the least atom being blown away, or disturbed by wind. The jesuit Casati has a treatise entitled, *The ashes of mount Olympus blown away*; wherein he shews this to be a vulgar error. Le Cineri dell Olimpo ventilate. Parm. 1677. Mem. de Trev. 1708. p. 1457.

When a ship is close under the lee of another, the windward vessel is said to *becalm* the leeward.—A ship is also said to be *becalmed* when near the land, which keeps the wind from it. *Guill*. Gent. Dict. P. 3. in voc. *Manwar*. Sea Dict. p. 18, seq.

It is not uncommon for the vessels to be *calmed*, or *becalmed*, as the sailors express it, in the road of the constant levantine winds, in places where they ride near the land. Thus between the two capes of Cartooche toward the main, and cape Antonio in Cuba, the sea is narrow, and there is often a *calm* produced by some gust of a land-wind, that poises the levantine wind, and renders the whole perfectly still for two or three days.

In this case, the current that runs here is of use to the vessels, if it set right; when it sets easterly, a ship will have a passage in three or four days to the Havannah; but if otherwise, it is often a fortnight or three weeks sail; the ship being embayed in the gulf of Mexico.

When the weather is perfectly *calm*, no wind at all stirring, they try which way the current sets, by means of a boat which they send out, and which will ride at anchor, though there is no bottom to be found, as regularly and well as if fastened by the strongest anchor to the bottom. The method is this: They row the boat to a little distance from the ship, and then throw over their plummet, which is about forty pounds weight; they let this sink to about two hundred fathom; and then, though it never reaches the bottom, the boat will turn head against the current, and ride as firmly as can be. Phil. Transf. N° 36.

CALOGERI, or CALOYERS, (*Cycl.*) are the Greek monastics, and differ from the papas, Παπας, which are the secular priests.

Out of the body of the *caloyers* come all the prelates of the Greek church; the papas being incapable of any dignity above that of archpriest, πρωτοπαπας.

Though the denomination be taken from their age, there are many of them in the prime of youth. Tournefort assures us, that in many convents they admit religious at 10 or 12 years of age. For the females, he adds, they are most of them only a more moderate sort of Magdalens, who, as they grow old, make a vow to practise those virtues they had much neglected in their youth; and retire into convents to lead a life somewhat less scandalous than before, under the eyes of a superior or hegumeniss, who is far from being too severe.

The *caloyers*, in some places, are divided into cœnobites, anachorites, and ascetics, or hermits; the life of which last is the most severe and recluse.

The simple *caloyers* are not qualified to say mass; if they be ordained priests, they commence hieromonachi, or holy monks; in which quality they may celebrate mass on the solemn festivals, but for the ordinary service there are papas retained in all the convents. Vid. *Suic*. Thes. T. 2. p. 26. Καλογηρος. *Du Cange*, Gloss. Lat. T. 1. p. 688. *Montfauc*. Palæogr. Græc. p. 434. *Tournef*. Voyag. du Levant. T. 1. Lett. 3. p. 40—43.

CALOMEL (*Cycl.*) is the panchymagogum of Quercetanus. It is an effectual purge, and given not only to adults, but even to children to carry off the slimy humors from whence the worms arise [a]. *Calomel* rubbed with sulphur of antimony, is also found a powerful alterant [b].—[a *Quinc*. Pharmac. P. 2. Sect. 15. p. 265. b Med. Ess. Edinb. T. 1. p. 47.] See PLUMMER'S *Æthiops*.

CALONDRONIUS, a name given by the writers of the middle ages to a stone of which they have left us no description, but only a wide account of its great virtues, in giving chearfulness to the person who wears it, and preventing the power of magic and enchantments.

CALOPHYLLUM, in botany, the name given by Linnæus to a genus of plants called by Plumier *calaba*, the characters of which are these: The cup is coloured and deciduous, and consists of one leaf divided into four acute segments; the flower consists of four roundish hollowed and expanded petals; the stamina are numerous capillary filaments, shorter than the flower; the antheræ are roundish; the germen of the pistil is roundish; the style is simple, and of the length of the stamina; the stigma is headed; the fruit is a large globose unilocular drupa; and the seed is a large pointed nut, of a roundish figure. *Linnæi* Gen. Plant. p. 234. *Plumier*, Gen. 8. Hort. Malabar, v. 4. p. 38.

CALTHA, *Marygold*, in botany. See MARYGOLD.

CALTROP (*Cycl.*)—The word is formed from *calvatrapa*, used in middle age writers for a sort of thistle, called also *carduus stellatus*, in English *caltrope*, to which this instrument bears some resemblance.

The *caltrop* is the same with what is otherwise called *crows-foot*, by the Latins *murex* [a], the Greeks Τριβολος [b], and the French *chausse trape* [c].—[a *Pitisc*. Lex. Ant. T. 2. p. 238. b *Calv*. Lex. Jur. p. 916. voc. *Tribuli*. c Trev. Dict. Univ. T. 1. p. 1707. voc. *Chausse trape*.]

CALTROP, in botany. See TRIBULUS.

CALUEGIA, in natural history, a name by which some authors have called the *galangal*; an aromatic root used in physic. *Ger*. Emac. Ind. 2. See GALANGALA.

CALVARIA, or CALVA, terms used by anatomists to denote the whole cranium or scull.

In which sense, they include the whole bony and hairy part of the head.

The external parts of the *calva* are the synciput, occiput, vertex, and temples; all invested with hair, and the common integuments of the body.

The *calvaria* in adults consists of eight bones, one of the forehead, another of the occiput, two of the synciput, two of the temples, and two others common also to the upper jaw, *viz*. the cuneiforme and spongiosum. *Barthol*. Anat. l. 3. in Proœm. Item, l. 4. c. 4. *Cast*. Lex. Med. p. 126.

CALVINISTS, a religious sect of Protestants distinguished by their adherence to the principles of calvinism. See CALVINISM, *Cycl*.

Calvinist is a name of reproach, which those to whom it is given generally reject, and assume some other taken not from the name of any man, but from the quality or character of their doctrine; they therefore call themselves the reformed, a title which not only the Roman catholics, but the lutherans contest them. The latter pretend that it belongs more properly to themselves, as being the first who began the reformation. Among catholics, the *calvinists* are called the pretended reformed. In England they go by the name of puritans and presbyterians. Vid. *Radrauf*. Protheor. Theol. P. 1. Sect. 1.

The *calvinists* differ from the lutherans in what relates to the ubiquity of Christ's body, and the presence of Christ in the eucharist; but chiefly in the doctrine of predestination and grace, which makes the great *pomum discordiæ* between the two religions. Vid. *Basn*. Ouvr. des Scav. Mars, 1697. p. 300, seq.

Though 'tis said Luther himself was, in this matter, of the opinion of Calvin; and that his successors have herein departed from their leader. See LUTHERANISM, *Cycl*.

The *calvinists* readily admit the lutherans to their communion, and demand to be admitted to the communion of the lutherans [a]. But 'tis generally refused them, chiefly on account of their doctrine of absolute predestination and particular grace; which, according to the lutherans, absolutely overturn the whole œconomy of the Christian religion [b].—[a Vid. *Turret*. Nubes Testium, in Pref. Bibl. Germ. T. 10. p. 176. Jour. Liter. T. 11. p. 277, seq. b Vid. *Puffend*. Jus Feudale Divin. ap. Ouvr. des Scav. Mars, 1697. p. 303.]

The *calvinists* differ from the zuinglians in what relates to the eucharist; the former only allowing a figurative presence, the latter a real, though spiritual presence. Though M. de Brueys asserts, that the modern *calvinists* have in this point abandoned the sentiment of Calvin and their predecessors, and are become thorough zuinglians. *Brueys*, Entret. Pacif. 1. Bibl. Univ. T. 3. p. 510, seq. and Nouv. Rep. Lett. T. 14. p. 1255. See ZUINGLIANS, *Cycl*.

The *calvinists* agree with the jansenists and thomists in the articles of grace and predestination, at least the modern *calvinists*; who, according to M. Germain, have herein departed from the doctrine of their founder. *Germ*. Tradit. de l'Egli. Rom. sur la Grace. T. 3. Nouv. Rep. Lett. T. 17. p. 351.

Some indeed make a distinction between the followers of Calvin and those of Jansenius, and St. Thomas; in that the former assert necessitating or irresistable grace, the latter only efficacious grace. According to the former we are made to do good or evil, whether we will or no; according to the latter,

latter, the will itself is made to give its consent; so that in the one case we act voluntarily and out of choice, in the other we are driven as by a physical impulse, and a necessity we are not able to resist.

But in reality, the irresistable grace of Calvin is the same with the efficacious grace of Jansenius and the thomists; the difference lying only in the terms. Calvin would have allowed that the will, stirred and excited by grace, yields its consent, and is brought to will and nill, by a sort of charm which does not violate its liberty; at least it is thus the modern *calvinists* explain the opinion of their leader [a]. And what confirms it is, that Calvin drew no consequences from his necessitating grace, which the predeterminants do not draw from their efficacious grace. 'Tis plain the necessity Calvin admits is only a necessity *secundum quid*, not an absolute necessity, or a necessity which does not arise from the nature of the will, but from the nature of grace [b].—[a *Basn.* Ouvr. des Scav. Juill. 1690. p. 479, seq. b Mem. de Trev. an. 1731. p. 112, seq.]

The *calvinists* in their progress have divided into various branches or lesser sects; as into remonstrants and contra-remonstrants, or arminians and gomarists; into supralapsarians and infralapsarians, particularists and universalists, cocceians and voetians, episcopalians and presbyterians. Vid. Bibl. Germ. T. 24. p. 158, seq.

The episcopal government, liturgy, and ceremonies retained in the English church, were antiently a sore offence to the pure *calvinists* of Geneva. But they are become of late better reconciled to them, and now speak of episcopacy and ceremonies in a style very different from that of Calvin and Beza: and the episcopalians seem to meet the Genevois with open arms. This appears from a letter written in 1706, in the name of the church of Geneva, to the university of Oxford; and the answer of that university the same year.

The presbyterians in England, who retain the same doctrine as well as discipline with those of Geneva, were scandalised at those proceedings; apprehending an union intended between the episcopalians and *calvinists* of Geneva, of which they were to be the victim [a]; and published remarks on those letters, wherein they accused messieurs of Geneva with a defection from the principles of their predecessors [b].—[a *Jour.* des Scav. T. 42. p. 437, seq. b Stricturæ Breves in Epistol. D D. Genevens. et Oxoniens. Lond. 1707. 4to.]

CALUMET, among travellers, a mystic kind of pipe used by the American savages as the ensign of peace, and for religious fumigation.

The *calumet* is a sort of tobacco pipe, made of red, black, or white marble. The shank is decorated with rounds of feathers and locks of hair, or porcupines quills: in it they smoke in honour of the sun. F. Lafitau will have it to be the original caduceus of Mercury, of which that used by the Greeks and Romans, with its wings and its serpents, was only the copy.

The *calumet*, is the symbol and security of traffic; by it they pronounce life and death, peace and war: they also ascribe to it a power of raising the souls of the dead. Mem. de Trev. An. 1725. p. 216, seq. Trev. Dict. Univ. T. 1. p. 1358, seq. See CADUCEUS, *Cycl.* and *Suppl.*

CALUMNY, the crime of accusing another falsely, and knowingly of some heinous offence. *Calumnia est malitiosa & mendax informatio.* *Chauv.* Lex. Philos. p. 90. *Non. Marcell.* c. 4. §. 74.

It is an antient maxim, which experience shews but too much truth in, *Audacter calumniare, semper aliquid hærebit.* *Bacon*, de Augm. Scient. l. 8. c. 2.

Oath of CALUMNY, *Juramentum*, or rather *Jusjurandum calumniæ*, among civilians and canonists, was an oath which both parties in a cause were obliged to take; the plaintiff, that he did not bring his charge, and the defendant, that he did not deny it with a design to abuse each other, but because they believed their cause was just and good [a]; that they would not deny the truth nor create unnecessary delays, nor offer the judge or evidence any gifts or bribes. If the plaintiff refused this oath, the complaint or libel was dismissed; if the defendant, it was taken *pro confesso* [b].—[a *Kenn.* Rom. Ant. Not. P. 2. l. 3. c. 17. p. 136. b *Wood*, Inst. Imp. Law. l. 4. c. 1. p. 297.]

This custom was taken from the antient athletæ, who, before they engaged, were to swear that they had no malice, nor would use any fraudulent or unfair means for overcoming the other. *Pitisc.* Lex. Ant. T. 1. p. 331.

The *juramentum calumniæ* is much disused, as a great occasion of perjury. *Wood*, lib. cit. c. 3. p. 314.

Antiently the advocates and proctors also took this oath; but of late it is dispensed with, and thought sufficient that they take it once for all at their first admission to practice.

Judicium CALUMNIÆ was an action brought against the plaintiff in a court for a false and malicious accusation. *Kenn.* Rom. Ant. Not. P. 2. l. 3. c. 17. p. 137.

Where an accuser did not prove his charge, nor seemed to have sufficient or probable grounds for bringing any, the judges in pronouncing sentence used the formula *calumniosus es*; which gave the defendant a right to bring an action of *calumny*; the penalty of which was *frontis inustio*, or burning on the forehead. Vid. *Pitisc.* Lex. Ant. T. 1. p. 331. *Calv.* Lex. Jur. p. 137.

CALX *(Cycl.)*—The more imperfect metals are all extremely subject to be reduced to *calxes*, and receive a destructive change in the fire. This is no where more evidently seen than in the operation of cupelling; in which we find these metals very readily burning to ashes, or else running into glass along with the lead.

On this disposition of metals, indeed, the whole art of cupelling depends; but by the contriving to melt these metals in contact with coals, their metallic form is greatly preserved, especially as the stony vitrifiable matter, wherewith such ores are usually mixed, occasions them, by their clinging nature, to unite more intimately with the glowing coals.

This doctrine receives a remarkable confirmation from the usual method of recovering metals burnt to ashes at the smelting furnace; for if the litharge blown off in testing, or even the glass of lead, or the ashes of any other of the imperfect metals be only melted in contact with charcoal, the *calx* immediately re-assumes its former metalline state; and the same thing is also effected by adding any unctuous or inflammable matter. Whence it seems to be the unctuous or inflammable matter of the coals which thus insinuating itself into the metalline *calces*, restores their metallic nature. *Shaw*'s Lectures, p. 274.

CALX *antimonii*, a name given in the late London dispensatory to the preparation of antimony, called before *antimonium diaphoreticum*. This is made by mixing antimony with three times its weight of nitre, throwing it into a hot crucible; and when removed from the fire, washing it both from its salts and from such parts as have not been well calcined; the washing is to be continued till the water come away tasteless, and the finer part separated for use by pouring off the water turbid, and leaving the coarse particles behind, taking only the sediment of this water. *Pemberton*'s Lond. Disp. p. 233.

CALX *nativa*, in natural history, a native marley earth, which, without burning, has some of the qualities of the artificial lime, and was called by the antients, *gypsum tymphaicum*.

It is a hard, dry, and somewhat coarse earth; it never constitutes a stratum of itself, but is sometimes found in the fissures of other strata, and sometimes lying loose upon or among the laxer strata of gravel and the like. It is usually found in masses of two, three, or four inches in diameter, of irregular surfaces, and generally flatish. It is of a dead whitish colour, with some faint admixtures of a greyish brown; it breaks with a rough surface, is harsh to the touch, adheres very firmly to the tongue, and does not stain the hands; it is of a harsh disagreeable taste, and if thrown into water it makes a considerable bubbling and hissing noise, and has, without previous burning, the quality of making a cement like lime, or plaster of Paris; it makes a considerable efforvescence with aqua fortis, and in burning acquires a pure and fine white. These are the characters by which this is distinguished from all other earths. It is found in some parts of England, and appears to have been well known to the antients, and in common use among them about cloaths. *Hill*'s Hist. of Fossils, p. 42.

CALX, or *Os* CALCIS, in anatomy, the same with calcaneum. See CALCANEUM.

CALX *solis*, denotes calcined gold. See GOLD.

CALX *lunæ*, the *calx* of silver. See SILVER.

CALX *mercurii*, precipitated mercury. See MERCURY.

CALX *veneris*, verdigrease. See VERDIGREASE.

CALX *martis*, the crocus or saffron of iron. See IRON.

CALX *jovis*, the *calx* of tin. See TIN.

CALX *saturni*, is ceruse calcined with spirit of vinegar, or in the sun. *Isaac.* Oper. Miner. c. 42. Theat. Chym. T. 3. p. 297.

CALX *saturni*, is also used for minium or red lead. *Teichmey.* Instit. Chem. P. 2. c. 11. p. 162, seq. *Junck.* Lex. Pharm. P. 1. p. 78, seq. See MINIUM.

CALX *viva*, quick-lime, that on which no water has been cast since its burning, in opposition to *calx extincta*, that slacked by the effusion of water. *Plin.* Hist. Nat. l. 29. c. 3. & l. 36. c. 23. See LIME, *Cycl.* and *Suppl.*

Paracelsus calls the bolar and argillaceous earths, *calces terræ*, as chalk. See BOLE and CHALK.

The same author also gives the denomination *calx* to the chalky matter formed in the joints of gouty persons. *Cast.* Lex. Med. p. 126, seq.

Calxes differ from ashes not only as the former is the effect of calcination, and the latter of mere burning, but as the former is of a more solid consistence than the latter; and that the bodies reduced to a *calx*, as metals and minerals, may frequently be restored out of these *calces*; which can never be done out of the ashes of wood and other bodies consumed by burning. *Casat.* Diss. 10. de igne ap. Nouv. Rep. Lett. T. 12. p. 179. See BURNING and CALCINATION.

Calxes are divided into reducible and irreducible, fixed and volatile. Chemists speak of fire retained and fixed in all *calces* [a], of fixed salt procurable from *calces* [b].—[a Hist. Acad. Sciene. An. 1712. p. 56, seq. b Hist. Acad. Sciene. l. 4. sect. 6. c. 3.] See FIRE, SALT and LIME.

Many metals and some minerals, whose parts are most homogeneous, do not appear to lose their nature with their form.

Thus gold, silver, and quicksilver, cannot be so destroyed by *calcination*, but that they may easily be revived. So out of *calx* of tin, the tin itself may be restored, and the like holds of the *calx* of lead, though the most impure of all metals; and even of antimony, the first substance of which may be extracted either from its *calx* or even glass. So that calcination in such bodies appears but imperfectly performed, many of the particles being so little altered by it that they readily re-assume their natural figure. *Friend*, Chym. Lect. 2. p. 27, seq.

CALX is also the produce of a metalline or mineral substance, consumed by corrosion, called *philosophical calcination*. See CALCINATION and CORROSION.

In respect hereof, *calces* are of two kinds, one procured by ignition, the other by corrosion. The latter again are of different species, some procured by immersion, others by vapour, or corrosive fumes. *Kirch.* Mund. Subter. l. 11. sect. 1. c. 6. T. 2. p. 243.

CALX *viva philosophorum*, denotes that made of quicksilver.

CALX, *lime*, is also made of the bones of large fishes, and from the shells of buccinæ, oisters, and the like burnt. This is more particularly called *calx peregrinorum* and *calx manica alba*. *Vitruv.* Arch. l. 11. c. 5. *Pitisc.* Lex. Ant. T. 1. p. 332. *Fab.* Thes. p. 424. *Rul.* Lex. Alch. p. 130. *Cast.* Lex. Med. p. 126.

CALYBITES, Καλυβιτης, the inhabitant of a cottage, an appellation given to divers saints on account of their long residence in some hut, by way of mortification.

The word is formed from the Greek Καλυπτω, *tego*, I cover; whence Καλυβη, a little cot.—The Romish church commemorates St. John the *calybites* on the 15th of December. *Belland.* Act. Sanct. Jan. T. 1. p. 1029 & 1031. *Du Cange*, Gloss. Græc. T. 1. p. 558. *Magr.* Not. Voc. Eccl. p. 42. Trev. Dict. Univ. T. 1. p. 1359.

CALYCISTÆ, among the botanical authors, such as have established the classes and distinctions of plants upon the differences of the calix or cup of the flower, as Magnol. *Linnæi*, Fund. Bot. p. 2.

CALYCULUS, in antient naturalists, denotes a siliqua or seed-case. *Plin.* Hist. Nat. l. 20. c. 19. Item, l. 27. c. 5. See SILIQUA and CAPSULA.

CALYCULATED, an appellation given by some naturalists to the fruits of those trees which have the calyx of their flower non-deciduous, and whose fruit stands as in a cup. *Dale*, Pharmacol. l. 2. cl. 3. p. 4. Phil. Trans. N° 204. p. 928. See CALYX, FRUIT, PLANT, TREE, *&c.*

CALYPTRA, among botanists, a thin membranous involucrum, usually of a conic figure, which covers the parts of fructification. The capsules of most of the mosses have *calyptræ*. See MOSSES.

CALYX (*Cycl.*)—CALYX, among botanists, a general term expressing the cup of flowers, or that part of a plant which surrounds, incloses, or supports the other parts of the flower.

The cups of flowers are very various in their structure, and are distinguished by the names of *perianthium*, *involucrum*, *spatha* and *gluma*. See PERIANTHIUM, *&c.*

Botanists distinguish two sorts of *calices*, one external, called the *calyx* of the flower; by the antients *perianthium*, as encompassing the flower and seed; the other internal, called the *calyx* of the fruit; by the antients *pericarpium*, as being the capsule which compasses the fruit, and is itself encompassed by the petala.

The external *calyx* may also be divided into two sorts, one which surrounds the flower, another which sustains it, different from the pedicle; in that this latter spreads itself underneath the flower to give room for the nutritious juice to rise more freely; the cavity of the pedicle enlarged, is reputed part of the *calyx* both external and internal.

M. Magnol makes the *calyx* the characteristic of plants, which, according to him, may be better distinguished from the conditions and varieties of their *calyces*, than either of their petala or fruits. Some have only an external, others only an internal, some surrounding, others a supporting *calyx*, all which he makes so many genera or classes. *Magnol*, Nov. Charact. Plantarum, Jour. des Scav. T. 76. p. 525, seq.

Auctus CALYX, in botany, a term used by authors to express one kind of the perianthia of the compound flowers. A cup is thus called when it consists of a single and equal series of scales, which are of an oblong figure and surround the flowers; and another small series of scales, which only surround these, close to the base.

CALYX. The antients have often used this word to express the rose when in the bud, and not yet shewing its petals, except between the segments of the cup.

CALYX, in antient aquæducts, denoted a brazen module or cup, put over a head or castellum, and to which pipes were fitted. Vid. *Pitisc.* Lex. Ant. T. 1. p. 330.

CAMÆA, in natural history, the name of a genus of the semipellucid gems, the characters of which are these: They are obscurely transparent stones approaching to the onyx structure, being composed of zones, and formed on a crystalline basis, but having their zones very broad and thick, and laid alternately on one another with no other matter between. *Hill's* Hist. of Foss. p. 498.

Of this genus we have four known species.

The first is that with broad zones of black and white, called the *camea* by the moderns, and the *Arabian onyx* by the antients. This is only composed of alternate zones, or plates of black and white, and those so debased by earth, that they have been taken for marble by many who have written on this subject: they differ, however, from marble, in that they will not ferment with acids, and will give fire with steel; so that they are truely of a crystalline basis, and properly of the gem class. This stone, in the hands of the lapidaries, makes a very beautiful figure; for they cut a head or other figure in the black zone, and then cutting away all the rest of that surface, leave only a white ground; so that it seems a head of one sort of stone fastened on a plate of another; or else they cut their figure through the black or outer zone to the white one, and leaving the rest of the black zone on, the figure looks as if painted white at the bottom.

The second is the dull broad zoned green and white *camea*, called the *jaspicamea* by the Italians. See the article JASPICAMEO.

The third is the hard *camea*, with broad white and chesnut coloured zones. This is a very elegant and beautiful species, and though now not frequently found, must have been very common among the antient Romans, since many of the antique figures are found engraved on it. It is composed of zones, or plates only of two colours, the one a very bright white and the other a fine bright chesnut colour; and so much approaching to the nature and texture of the cornelian, that were these any cornelians known of that colour, one should readily declare these zones to be of the matter of those stones.

The fourth is the hard *camea*, with broad zones of bluish white and flesh colour, which was the sardonyx of Pliny's time. This is the most elegant, and also the most scarce of all the gems of this kind; and though the common red sardonyx was the stone called by that name in the earliest ages, yet, in the days of Pliny, the same name had been appropriated to this stone, though of a different genus from that originally called so. It is of a very fine texture, and is always found small; it is composed only of two sorts of zones which are laid in thick tables very regularly one over another; the one sort are of a bluish white, or the colour of the common chalcedony, the other of a fine pale red, and truly of the matter of the finest pale cornelians. It is at present very scarce, being found only in the East-Indies, and there but very rarely. Our jewellers are very little acquainted with it; but among the antient Romans it must have been very common, many of the fine antique heads, in the cabinets of the curious, being cut in it. The stone most frequent among our dealers in these things, under the name of the sardonyx, is no other than an agate artificially stained. *Hill's* Hist. of Foss. p. 500.

CAMAHA, in the materia medica, a name given by Avicenna and others to the large truffles found in the deserts of Numidia, and many other parts of Africa, in great abundance. These are white on the outside; the modern Africans call them *terfon*, and are very fond of them; they eat them stew'd with milk, water, and spices, and account them very wholesom and nutritive. *Leo Africanus.*

CAMAIEU (*Cycl.*)—This is also called *gamahe* [a]; the Latins call it *camæus* [b], sometimes *camahutus* and *camahelus*; the Italians *cameo* [c].—[[a] *Jun.* Paint. of Ant. l. 2. c. 1. p. 95. [b] *Du Cange*, Gloss. Lat. T. 1. p. 690. voc. *Camæus*. [c] *Menag.* Orig. p. 151.]

Gattarel derives the word from the Hebrew *chemaija*, water of God, alluding to the appearance of waves visible in several of these stones [a]. Others chuse to deduce it from χαμαι, a word frequently used by the Greeks to express a thing low; alluding to the dents or carvings of these stones, or to the caverns where they are found [b].—[[a] *Gattar.* Curios. Inou. c. 5. p. 76. [b] *Menag.* Orig. p. 151.]

'Tis of these *camayeux* Pliny is to be understood when he speaks of the manifold picture of gems, and the party-coloured spots of precious stones: *Gemmarum pictura tam multiplex, lapidumque tam discolores maculæ. Plin.* Hist. Nat. l. 2. c. 93.

The same naturalist rehearses divers admirable instances of such stones; particularly that of king Pyrrhus, whereon were seen the nine muses, and Apollo holding a lute, each muse with her peculiar attribute: The whole expressed by spots or stains spread over the stone by the hand of nature herself. Id. ib. l. 37. c. 1. *Solin.* Polyhist. c. 12.

Gaffarel speaks of a figure of a crucifix at Venice, represented in a marble so naturally, that the nails, the wounds, nay the very drops of blood were expressed.

Cardan will not allow these pictures to be the mere work of nature, that of Pyrrhus's stone he supposes to have been first painted by some artist on marble, which being long lost, and lying under ground, had changed its nature, and grown into an agate [a]. Gaffarel treats it as a ridiculous conceit, to suppose all the stones of this kind had been painted; and resolves the whole after Albertus Magnus into the influence of the stars: Whence it is that the *camaieux* are said to be more frequent as the countries are hotter, by reason the constellations are there more powerful [b]. — [[a] *Card.* de Subtilit. l. 7. [b] *Albert.* Tract. 3. c. 4. *Gaffar.* c. 5. p. 77. seq.]

CAMAIEU is also frequently applied to any kind of gem, whereon figures may be engraven either indentedly, or in relievo.

In

In this ſenſe the lapidaries of Paris are called in their ſtatutes, *cutters of camayeux*. *Savar.* Dict. Comm. T. 1. p. 532.

A ſociety of learned men at Florence have undertaken to procure all the *cameos* or *camayeux*, and intaglio's in the great duke's gallery to be engraven: they have already begun to draw the heads of divers emperors in *cameo's*. New Mem. of Liter. T. 3. Art. 32. p. 235.

CAMALDULIANS (*Cycl.*) are alſo called *camaldolites*, *camaldulites*, and *camaldulenſes*.

Their habit is white, occaſioned by the viſion of a ladder, to St. Romuald, on which white monks were ſeen to aſcend to heaven. They have no common dormitory nor refectory, their cells being in ſeparate houſes; they only eat together twelve times in the year, nor do they meet at divine offices except on ſundays and holydays. *Gedd.* View of Monks, p. 9. Miſc. Tract. T. 3.

Guido Grandi mathematician of the great duke of Tuſcany, and a monk of this order, has publiſhed *camaldulian* diſſertations, on the origin and eſtabliſhment of it. Diſſertationes *Camaldulenſes*, Luc. 1707, 4°. An extract of it is given in Act. Erud. Lipſ. 1709. p. 49. ſeq.

CAMARA, a name given by Plumier to an American ſpecies of lantana. See LANTANA.

CAMAROSIS, Καμαρωσις, among phyſicians, denotes a fracture of a bone, wherein the two broken ends riſe and form a kind of *camera*, or arch. *Junck.* Conſp. Chir. Tab. 53. p. 340. *Gorr.* Defin. p. 206. *Caſt.* Lex. Med. p. 127. See FRACTURE.

This is alſo called *camaroma*, and by modern latin writers *cameratio*, ſometimes *fornicatio*. — It is commonly reſtrained to fractures of the ſcull.

CAMBERED-*deck*, in ſhip-building, is uſed for one that lies compaſſing, and is by no means proper for a man of war.

CAMBLET (*Cycl.*)—The true or oriental *camblet* is made of the pure hair of a ſort of goat, frequent about Angora, and which makes the riches of that city, all the inhabitants whereof are employed in the manufacture and commerce of *camblets*. *Tournef.* Voy. du Levant. T. 2. Lett. 21. p. 185.

'Tis certain we find mention in middle age writers of ſtuffs made of camel's hair, under the denominations of *cameletum* and *camelinum*; but theſe are repreſented as ſtrangely coarſe, rough, and prickly, and ſeem to have been chiefly uſed among the monks by way of mortification, as the hair ſhirt of later times. *Du Cange*, Gloſſ. Lat. T. 1. p. 699.

We have no *camblets* made in Europe of the goats hair alone; even at Bruſſels, they find it neceſſary to add a mixture of woollen thread. *Savar.* Dict. Comm. T. 1. p. 535, ſeq.

CAMBNITES *lapis*, a name given by the writers of the middle ages to a ſtone of which they record virtues which appear to ſavour too much of imaginary ones, ſuch as the curing the dropſy by being worn tied to the arm: it ſeems to have been only a cloudy and leſs valuable kind of brown cryſtal.

CAMEL, *camelus*, in the Linnæan ſyſtem of zoology. This is a diſtinct genus of animals; the great characters of which is, the want of horns, which all the other genus's of the pecora have.

The animals of this genus are the camel, the dromedary, the bactrianus, and the glama. *Linnæi* Syſtema Naturæ, p. 41.

The characters Mr. Ray has given us of this creature are: that it is one of the unguiculated quadrupeds, chewing the cud, having bifid feet, without horns, and without the foreteeth of the upper jaw, but as all other ruminating beaſts, and having four ventricles.

There are four ſpecies of camels. 1. The camel, with one bunch on its back, called the *dromedary*. 2. The Bactrian *camel*, with two bunches. 3. The Peruvian *camel* called *glama*, and by ſome *elaphocamelos*. And 4. The *pacos*, uſually called the Indian or Peruvian ſheep. *Ray*'s Syn. Quad. p. 143.

The dromedary is principally uſed for riding on, the Bactrian *camel*, or that with two bunches on its back for travelling with loads. See DROMEDARY, &c.

The *camel* is a domeſtic beaſt of burden, of a gentle diſpoſition, much uſed for carriage in divers parts of Aſia; and making the chief riches of the Arabs.

The word is formed from the Greek Καμηλος, which ſignifies the ſame; and according to Nicod, from the Hebrew *gamal*; but according to others from Καμπυλον, on account of the bunch on his back. Trev. Dict. Univ. T. 1. p. 1607. voc. *Chameau*.

In Perſia they only diſtinguiſh two ſorts of *camels*, viz. the ſouthern, which are ſmaller, and not fit to carry above 700 weight; and the northern, which are bigger, and able to carry 12 or 1300 weight.

The name *camel*, among us, is vulgarly reſtrained to that ſort which has but one bunch on the back; the appellation *dromedary* being given to thoſe which have two. In this we follow the example of Solinus [a], contrary to Pliny [b], Ariſtotle, and the generality of antient naturaliſts, who diſtinguiſh two ſorts of *camels*; one of which retains the name of the genus, and has two bunches; chiefly found in the eaſtern parts of Aſia; whence it is alſo called *bactrianus*. The others, which are ſmaller and fitter for the courſe, are hence called δρομαδες, *dromedaries*, having but one bunch, and chiefly found in the weſtern parts of Aſia, *viz.* Syria and Arabia [c].—[a *Solin.* Polyhiſt. c. 49. p. 76. b Vid. *Plin.* Hiſt. Nat. l. 8. c. 18. c *Salmaſ.* Exerc. ad Solin, p. 309 & 987. Mem. Nat. Hiſt. Anim. p. 27.]

The bunch on the *camel*'s back is uſually ſaid to be a callous ſort of fleſh. The academiſts of Paris found it mere hair; and that when this was preſſed cloſe down, the creature appeared no more bunch-back'd than a ſwine.

Pliny affirms, that the *camel* can endure four days without drink [a]; whence Perſius gives it the appellation *Sitiens*. *Tolle recens primus pipere ſitiente camelo* [b].—[a *Plin.* Hiſt. Nat. l. 8. c. 18. *Fab.* Theſ. p. 426. b *Perſ.* Sat. 5. v. 136.]

Tavernier aſſures us, on his own knowledge, that it will endure nine days without drink; and even in the coupling ſeaſon, forty days without either drink or meat [a]. In order to this, the *camel* is ſaid to have a great number of reſervoirs in his ſtomach, wherein he lays up water for future occaſions. This is contradicted by the jeſuits, who, diſſecting many *camels* in China, found no ſuch thing. Yet it is confirmed by the royal academiſts, who, in the ſecond ventricle of a dromedary diſſected by them, found ſeveral ſquare holes, which were the orifices of about twenty cavities, made like ſacks, placed between the two membranes, which compoſe the ſubſtance of the ventricle [b].—[a *Tavern.* Voy. T. 1. p. 117. *Hardouin*, Not. ad Plin. l. 8. c. 18. b Mem. for Nat. Hiſt. Anim. p. 39, ſeq.]

'Tis even pretended, that travellers in the laſt extremity of thirſt, open their *camels* for a ſupply of water. But this is doubtleſs a fable. Mem. Acad. Scienc. An. 1693. p. 316.

The Arabs, Perſians, and other oriental nations, eat the fleſh of *camels*; which is a delicacy ſerved up at the beſt tables. Phil. Tranſ. N° 218. p. 156, ſeq. *Plin.* Hiſt. Nat. l. 11. c. 41. *Athen.* l. 4. *Ariſtot.* Hiſt. Anim. l. 6. c. 26. *Herodot.* in Clio. *Calmet.* Dict. Bibl. T. 1. p. 350.

Camel's milk is ſaid to be ſovereign againſt the dropſy, for which purpoſe the Arabs drink a pint per day for three weeks. Native ſal armoniac is commonly ſuppoſed to be the urine of *camels*. See ARMONIAC.

Camels caſt their hair in the ſpring, which is gathered up with great care, on account of the traffic thereof, which is very conſiderable. When left bare of hair, they pitch them over to defend them from the flies.

They ſpin the *camel*'s hair and weave it into ſtuffs: it is ſometimes alſo uſed with other hairs in making of hats. The beſt hair is that from the *camel*'s back. *Savar.* Dict. Comm. T. 1. p. 631. voc. *Chameau*.

Camels are the chief vehicles in caravans. See CARAVAN, *Cycl.* and *Suppl.*

They are very apt to ſlide; for which reaſon, in paſſing ſlippery ways, their leaders ſtrew carpets under them, ſometimes to the number of 100 one before another.

As ſoon as a *camel* is brought forth, they tie his four feet under his belly, put a carpet over his back and ſtand on the borders of it that he may not be able to riſe for twenty days. Thus is he taught the habit of bending his knees to reſt himſelf, or when he is to be loaded or unloaded. They dreſs him with a ſwitch inſtead of a curry comb; with this they beat him as they would do a carpet to clear it of the duſt. *Calm.* Dict. Bibl. T. 1. p. 351.

The *camel* that carries Mahomet's ſtandard, which the caravan of pilgrims offer yearly on the tomb of their prophet, is exempted the reſt of its life from all ſervice. 'Tis even pretended that this happy beaſt will riſe again at the general reſurrection, and enjoy the pleaſures of paradiſe. Trev. Dict. Univ. T. 1. p. 1607.

On medals, the *camel* is the ſymbol of Arabia, when found on the coins of any other nation. Thus on a medal of the gens Plautia, we find a woman's head with a mural crown, *A. Plautius Æd. Cur. S. C.* and on the reverſe, *Judæus*; and in the exergue, *Bacchius*; the deviſe, a man on his knees holding with his right hand a *camel* by the bridle, and with the left, a branch of palm. It alſo denotes alliance with Arabia. Vid. Trev. Dict. loc. cit.

CAMEL, in mechanics, a kind of machine uſed in Holland for raiſing or lifting ſhips.

The *camel* was invented by a burgo-maſter of Amſterdam, towards the cloſe of the laſt century. It took the denomination from its heavineſs or ſtrength. Vid. *Aubin*, Dict. Mar. p. 187, ſeq.

Its uſe is to raiſe veſſels, in order to bring them over the Pampus, which is at the mouth of the river Y, where the ſhallowneſs of the water hinders large ſhips from paſſing. Vid Jour. des Scav. T. 67. p. 300, ſeq. where its ſtructure is deſcribed.

CAMEL is alſo a denomination given to a kind of pit-coal, otherwiſe called *canel*. Stat. abr. 8° T. 6. tit. Rivers, §. 33, & 135. See CANEL-*coal*.

CAMELS *hay*, *fœnum camelorum*, an appellation given to the plant *ſcœnanthus*, or *juncus odoratus*. *Quinc.* Pharm. P. 2. Sect. 1. n. 12. p. 71. See SCÆNANTH.

CAMELEON (*Cycl.*)—This is not the only animal poſſeſſed of the property of changing its colour; Grew mentions another ſort of lizzard, which, when he ſwells with anger, changes his colour from green to a kind of ruſſet [a]. The like is ſaid of the naque mouſche, an inſect in the iſland of Nevis [b].—[a *Grew*, Muſ. Reg. Societ. P. 1. ſect. 2. c. 3. p. 47. b Bibl. Univ. T. 6. p. 249.]

The bird of paradiſe is ſometimes called *chamæleon aerius*, the aerial camæleon. *Grew*, Muſ. Reg. Societ. P. 1. Sec. 4. p. 56.

There is ſomething very extraordinary in the motion of the *camæleon*'s tongue, which, in order to catch flies for the creature's food, is darted out to ſuch a length as even to equal that of the whole animal; and on being drawn in, contracts again into a very ſmall compaſs. To account for this in a mechanical way, is a problem not eaſy to be ſolved, as there appear no muſcles adequate to the effect. Mr. De la Hire, however, thinks the tongue of the *camæleon* muſt be provided with two kinds of muſcles, the one circular, and the other longitudinal; by the action of the former whereof it is extended, and by that of the latter contracted again. By this mechaniſm worms extend and contract themſelves in a no leſs remarkable proportion than the tongue of the *camæleon*. Vid. *De la Hire* Mecanique, Prop. 112. p. 240, ſeq

See further concerning the hiſtory and phænomena of the *camæleon*, *Wheel*. Voy. Greece, l. 3. p. 239, ſeq. Bibl. Univ. T. 13. p. 236, ſeq. Jour. des Sçav. T. 83. p. 494, ſeq. *Grew*, Muſ. Reg. Societ. P. 1. Sec. 2. c. 3. p. 40, ſeq. Acad. Scien. Mem. for Nat. Hiſt. Anim. p. 17. ſeq. Extracts of which are given in Phil. Tranſ. N° 49. p. 991, ſeq. Jour. des Sçav. T. 2. p. 533, ſeq. *Du Hamel*, Hiſt. Acad. Scient. l. 1. Sect. 11. c. 2. p. 126, ſeq. See alſo *Valiſnieri*, Iſtoria del cameleonte Affricano, Venez. 1715. 4°; of which an extract is given in *Giorn.* de Letter. d' Ital. T. 23. Art. 2. p. 28, ſeq.

CAMELITA *bos*, in natural hiſtory, the name of a ſpecies of wild bull, deſcribed by Geſner, remarkable for having a bunch upon his back like that of the camel, and probably the ſame with that of the biſon. *Geſner*, de Quad.

CAMELLIA, in botany, a name given by Linnæus to a genus of plants mentioned in Kempfer's Japan, under the name of *tſubaki*. The characters of the genus are theſe: the perianthium is compoſed of ſeveral leaves, and is of a roundiſh figure, and imbricated, being formed of a number of roundiſh ſcales, the internal ones growing gradually larger than the others, and all of them hollowed and deciduous.

The flower is compoſed of five petals of an oval figure, and growing together at the baſe. The ſtamina are a great number of filaments that ſtand erect, and are formed in the lower part into a ſort of corona, which is larger than the ſtyle. They are free at the top, and are ſhorter than the flower; the antheræ are ſimple; the piſtil has a roundiſh germen, the ſtyle is pointed, and of the ſame length with the ſtamina, and the ſtigma is acute and bent; the fruit is a turbinated woody capſule, with ſome furrows on its ſurface. *Linn.* Gen. Pl.

CAMELOPARDALUS, in zoology. See ZURNAPA.

CAMELOPARDALUS in aſtronomy, a new conſtellation of the northern hemiſphere, formed by Hevelius, conſiſting of 32 ſtars firſt obſerved by him, ſituate between Cepheus, Caſſiopeia, Perſeus, the two bears, and draco. Vid. *Hevel.* Firmam. Sobieſc. fig. O. ejuſd. Prodrom. Aſtron. p. 278, ſeq. *Wolf.* Lex. Math. p. 297.

The name and figure are taken from thoſe of an animal in Æthiopia, taller than an elephant, though not ſo bulky; in the head and neck reſembling a camel, but ſpotted like a leopard: whence the denomination of *camelopardos*, *camelopardalus*, or *camelopardalis*, q. d. camel-leopard. See ZURNAPA.

CAMELUS, the *camel*, in zoology. See CAMEL.

CAMERA (*Cycl.*)--CAMERA *Æolia*, a contrivance for blowing the fire, for the fuſion of ores, without bellows; by means of water falling through a funnel into a cloſe veſſel, which ſends from it ſo much air or vapour, as continually blows the fire: if there be the ſpace of another veſſel for it to expatiate in by the way, it there lets fall its humidity, which otherwiſe might hinder the work. See BELLOWS, *Cycl.* and *Suppl.*

This contrivance was named *camera Æolia* by Kircher. *Hook*, Phil. Coll. N° 3. p. 80.

CAMERA *lucida*, a contrivance of Dr. Hook for making the image of any thing appear on a wall in a light room, either by day or night.

Oppoſite to the place or wall, where the appearance is to be, make a hole of at leaſt a foot in diameter, or if there be a high window with a caſement of this dimenſion in it; this will do much better without ſuch hole, or caſement opened. At a convenient diſtance, to prevent its being perceived by the company in the room, place the object or picture intended to be repreſented, but in an inverted ſituation. If the picture be tranſparent, reflect the ſun's rays by means of a looking glaſs, ſo as that they may paſs through it towards the place of repreſentation; and to prevent any rays from paſſing aſide it, let the picture be encompaſſed with ſome board, or cloth. If the object be a ſtatue, or a living creature, it muſt be much enlightened by caſting the ſun's rays on it, either by reflection, refraction, or both. Between this object and the place of repreſentation put a broad convex glaſs ground to ſuch a convexity as that it may repreſent the object diſtinctly in ſuch place. The nearer this is ſituate to the object, the more will the image be magnified on the wall, and the further the leſs; ſuch diverſity depending on the difference of the ſpheres of the glaſſes. If the object cannot be conveniently inverted, there muſt be two large glaſſes of proper ſpheres, ſituate at ſuitable diſtances, eaſily found by trial, to make the repreſentations erect. This whole apparatus of object, glaſſes, &c. with the perſons employed in the management of them, are to be placed without the window or hole, ſo that they may not be perceived by the ſpectators in the room, and the operation itſelf will be eaſily performed. Phil. Tranſ. N° 38. p. 741, ſeq.

CAMERLINGO, or CAMARLINGO, the chamberlain of the pope's court, or he who has the adminiſtration of the apoſtolical chamber.

The word imports as much as keeper of the chamber, or treaſure; though the *camerlingo* has divers other juriſdictions which have no relation to the office of treaſurer. The name antiently denoted a cubicularius, or gentleman of the bed-chamber; but this is now expreſſed by *cameriere*. Vocab. Acad. Cruſc. T. 2. p. 215.

The *camerlingo* is the moſt conſpicuous officer in the court of Rome; by reaſon all the revenues of the holy ſee are managed by the chamber of which he is preſident. *Trev.* Dict. Univ. T. 1. p. 1366.

This office was antiently performed by the archdeacon of Rome, a dignity which was ſuppreſſed by pope Gregory the 7th, as of too great power and intereſt; inſomuch that he could often controul the pontiff himſelf, and generally by his intrigues raiſed himſelf to the papacy. In his ſtead was placed a cardinal, under the title of *camerlingo*, who is aſſiſted in his function by twelve prelates called clerks of the chamber, *clerici di camera*. *Magri*, Notiz. de voc. eccles. p. 42. ſeq. *Du Cange*, Gloſſ. Lat. T. 1. p. 703.

The cardinal *camerlingo*, on the death of a pope, does not enter the conclave with the reſt, to aſſiſt at the election of a new one, but ſtays without, keeps poſſeſſion of the pope's apartments in the vatican, and whenever he goes abroad is attended with the ſwiſs guards, like the pope himſelf [a]. He even coins money in his own name, and with his own arms; and, in fine, is a kind of vice pope, governing the eccleſiaſtical ſtate during the vacancy of the holy ſee [b]. — [a] *Trev.* loc. cit. [b] *Miſt.* Miſc. Lett. T. 4. p. 230. ſeq.

The cardinals have alſo their *camerlingo*, or treaſurer of their college, diſtinct from that of the pope: the former is elected every year, whereas the latter is for life. The perſon choſe to this office has the receipt of all the revenues belonging to the college, which he is to diſtribute at the end of the year in equal portions to the cardinals then at Rome; thoſe who are abſent having no ſhare therein after they have been ſix months from court. Jour. des Sçav. T. 37. p. 360.

CAMERONIANS, a ſect or party in Scotland who ſeparated from the preſbyterians in 1666, and continued to hold their religious aſſemblies in the fields.

The *cameronians* took the denomination from Richard Cameron, a famous field preacher, who refuſing to accept the indulgence to tender conſciences, granted by king Charles IId. as ſuch an acceptance ſeemed an acknowledgment of the king's ſupremacy, and that he had before a right to ſilence them, made a defection from his brethren, and even headed a rebellion, in which he was killed. His followers were never entirely reduced till the revolution, when they voluntarily ſubmitted to king William.

The *cameronians* adhered rigidly to the form of government eſtabliſhed in 1648. Vid. Bibl. Angl. T. 14. p. 240, ſeq.

CAMERONIANS, or CAMERONITES, is alſo the denomination of a party of calviniſts in France, who aſſerted that the will of man is only determined by the practical judgment of the mind; that the cauſe of mens doing good or evil proceeds from the knowledge which God infuſes into them; and that God does not move the will phyſically, but only morally, on virtue of its dependence on the judgment of the mind.

They had this name from John Cameron, a famous profeſſor, firſt at Glaſgow, where he was born in 1580, and afterwards at Bourdeaux, Sedan, and Saumur; at which laſt place he broached his new doctrine of grace and free-will, which was followed by Amyraut, Cappel, Bochart, Daille, and others of the more learned among the reformed miniſters, who judged Calvin's doctrine on theſe heads too harſh.

The *cameronians* are a ſort of mitigated calviniſts, and approach to the opinion of the arminians. They are alſo called *univerſaliſts*, as holding the univerſality of Chriſt's death; and ſometimes *amyraldiſts*

The rigid adherents to the ſynod of Dort, accuſed them of pelagianiſm, and even manicheiſm. The controverſy between the two parties was carried on with a zeal and ſubtilty ſcarce conceivable; yet all the queſtion between them was only, whether the will of man is determined by the immediate action of God upon it, or by the intervention of a knowledge which God impreſſes into the mind? The ſynod of Dort had defined that God not only illumines the underſtanding, but gives motion to the will, by making an internal change therein. Cameron only admitted the illumination, whereby the mind is morally moved, and explained the ſentiment of the ſynod of

Dort ſo as to make the two opinions conſiſtent. *Du Pin*, Bibl. des Ant. Separ. T. 22. p. 335, ſeq. Mem. de Trev. 1714. p 626. *Le Clerc*, Bibl. Univ. T. 4. p. 348.

CAMES, a name given to the ſmall ſlender rods of caſt-lead, of which the glaziers make their turned lead.

Their lead being caſt into ſlender rods of 12 or 14 inches long each, is called the *came*; ſometimes alſo they call each of theſe rods a *came*, which being afterwards drawn through their vice, makes their turned lead. *Neve*, Build. Dict. in voc.

CAMILLI and CAMILLÆ, in antiquity, boys and girls of ingenuous birth, who miniſtred in the ſacrifices of the gods; and eſpecially thoſe who attended the flamen dialis, or prieſt of Jupiter. Vid. *Macrob.* Saturn. l. 3. c. 8. *Serv.* ad Virg. Æn. l. 11. v. 542. *Feſt.* de Verb. Signif. p. 29. *Scalig.* in Feſt. ejuſd. Conject. ad Varr. Item, Caſtigat. ad Propert. l. 4. *Piriſc.* Lex. Ant. T. 1. p. 334. *Fab.* Theſ. p. 427.

The word ſeems borrowed from the language of the antient Hetrurians, where it ſignified miniſter, and was changed from *caſmillus*. *Boch.* Hieroz. l. 2. c. 36. Ejuſd. Canaan. l. 1. c. 12. *Trev.* Dict. Univ. T. 1. p. 1366.

The Tuſcans alſo gave the appellation *Camillus* to Mercury, in quality of miniſter of the gods.

CAMINI, or *yerva* CAMINI, an American herb, the ſame with what is otherwiſe called *paraguay*, or *yerva con-pallos*. *Savar.* Dict. Comm. p. 537. See PARAGUAY.

CAMIS, or KAMIS, in the Japoneſe theology, denote deified ſouls of antient heroes, who are ſuppoſed ſtill to intereſt themſelves in the welfare of the people over whom they antiently commanded.

The *camis* anſwer to the heroes in the antient Greek and Roman theology, and are venerated like the ſaints in the modern Romiſh church.

Beſides the heroes or *camis* beatified by the conſent of antiquity, the mikaddos, or pontiffs, have deified many others, and continue ſtill to grant the apotheoſis to new worthies; ſo that they ſwarm with *camis*: the principal one is *Tenſio Dai Sin*, the common father of Japan, to whom are paid devotions and pilgrimages extraordinary. *Kæmpf.* Hiſt. Japan. ap. Bibl. Angl. T. 15. p. 58 and 64, ſeq.

CAMLET, a kind of ſtuff, otherwiſe called *camblet*. See the article CAMBLET.

CAMLETINE, in commerce, denotes a ſlight, narrow kind of camblet, little valued. See CAMBLET.

The name is alſo given to a ſlender ſort of ſtuff made of hair mixed with wool, in imitation of a *camblet*. *Savar.* Dict. Comm. T. 1. p. 537.

CAMMOROS, in botany, a name given by ſome of the old writers to the poiſonous plant called by the Romans *cicuta* or hemlock.

Cacomoros was a common name among the Greeks for hemlock, and this *cammoros* is the ſame word, only ſpoke according to the Doric dialect.

As hemlock was a poiſonous plant, it ſoon became a cuſtom to call other poiſonous plants alſo by its name, and *cammoros* became hence a name for the mandrake, and ſome of the nightſhades, with ſome authors. Dioſcorides has called one kind of aconite or wolf's-bane by this name, and others have adapted it to other ſuch plants; but the more judicious have only given it as an additional epithet to theſe, expreſſing their being poiſonous, and have added the peculiar name of the plant before it.

Many of the moderns, and even ſome among the antients, have erred greatly in confounding the *cammoros* with the *cammaros*. Hippocrates has mentioned this poiſonous *cammoros*, and Galen reading it *cammaros*, or confounding it with that word, ſays that Hippocrates cannot have meant to ſay this of the root of the poiſonous aconite of Dioſcorides, called *cammoros*, (which however he certainly does mean) but of the inſect which he calls *cammaros*, and which, he ſays, is like a ſmall ſhrimp, and whoſe body reſembles the figure of the root of this aconite.

This is a very erroneous expoſition of Galen, for the plant is certainly meant by Hippocrates, not the animal; and though the Greeks had two of the aconites whoſe roots they ſaid reſembled the bodies of animals, the one the ſcorpion, and the other the ſhrimp, being fringed with ſmall fibres as that inſect is with feet; the other, or ſcorpion kind being bare; yet the latter of theſe was never called *cammarus* by any author, though the former generally was.

CAMP *(Cycl.)*—The order and contrivance of the Roman *camp* was admirable. Its figure was a ſquare divided into two principal parts: in the upper part, were the generals pavilion, or prætorium, and the tents of the chief officers; in the lower, thoſe of the inferior degree were placed.

On one ſide the prætorium ſtood the queſtorium, or apartment of the treaſurer of the army, and near this, the forum, both for a market-place, and the aſſembling of councils. On the other ſide of the prætorium were lodged the legati, and below it, the tribunes had their quarters, oppoſite to their reſpective legions. Aſide of the tribunes were the præfecti of the foreign troops, over againſt their reſpective wings; and behind theſe were the lodgments of the evocati, then thoſe of the extraordinarii and ablecti equites, which concluded the higher part of the camp.

Between the two partitions was a ſpot of ground called *principia*, for the altars and images of the gods, and probably alſo the chief enſigns.

The middle of the lower partition was aſſigned to the Roman horſe; next to whom were quartered the triarii, then the principes, and cloſe by them the haſtati; afterwards the foreign horſe, and laſtly, the foreign foot. *Kenn.* Rom. Ant. P. 2. l. 4. c. 12. p. 211, ſeq.

They fortified their *camp* with a ditch and parapet, which they termed foſſa and vallum: in the latter, ſome diſtinguiſh two parts, *viz.* the agger or earth, and the ſudes or wooden ſtakes driven in to ſecure it.

The *camps* were ſometimes ſurrounded with walls made of hewn ſtone; and the tents themſelves formed of the ſame matter.

Mr. Thoresby gives the deſcription of a Roman chiſſel, uſed in cutting ſtones and other materials ſerviceable for building their *camps*. Phil. Tranſ. N° 323. p. 407.

The Spartan *camp* was of a circular figure, which was preſcribed by Lycurgus as the beſt fitted for defence, contrary to the Roman rule, whoſe *camps* were always quadrangular. All angular forms were rejected by Lycurgus, by reaſon the angles are neither fit for ſervice, nor defenſible, unleſs guarded by a river, mountain, wall, or other work. *Pott.* Archæol. Græc. l. 3. c. 8. T. 2. p. 70.

In the Grecian *camps*, the moſt valiant of the ſoldiers were placed at the extremities; the reſt in the middle, that the ſtronger might be as a guard to the weaker, and ſuſtain the firſt onſets. Thus Achilles and Ajax are poſted by Homer at the ends of the Grecian *camp* before Troy, as bulwarks on each ſide. *Hom.* Il. λ. v. 806.

In *camps* for continuance, they erected altars to the Gods, places for public aſſemblies, courts of juſtice, and the like.

According to Plutarch, the Lacedæmonians alone had no ſtage-players, buffoons, dancers, or ſongſtreſſes in their *camps*. Yet the Spartan lawgiver allowed his people greater liberty in the *camp* than in the city, to allure them to ſerve with more delight in the wars. Hence their exerciſes were more moderate, their fare leſs hard, and their actions leſs ſeverely noted when in the field than at home; ſo that they were the only people in the world to whom war gave repoſe. *Plut.* in Cleom. Item, in Lycurg. *Pott.* Archæol. Græc. l. 3. c. 8. p. 72.

Yet the magnificence of the Turkiſh court appears more in the *camp* than in the ſeraglio: the tents of the great officers appear ſo many palaces, both for extent, ornament, and coſtly furniture; having all the accommodations both of city and country. Each grandee has two ſets of tents; one of which is advanced a conac, or days journey before the other; ſo that leaving one tent in the morning, they find another ready-furniſhed in the evening.

In the front of the Turkiſh *camp* are quartered the janizaries, and other foot, whoſe tents encompaſs their aga. In the rear are the quarters of the ſpahis and other horſemen. The body of the *camp* is poſſeſſed by the ſtately tents or pavilions of the vizier or general, reis effendi or chancellor, kahija or ſteward, the tefterdar baſcha or lord treaſurer, and kapiſler kahiaſee or maſter of the ceremonies.

In the middle of theſe tents is a ſpacious field, wherein are erected a building for the divan, and a hafna or treaſury. *Rycaut*, Preſ. Stat. Ottom. Emp. l. 3. c. 11. p. 204.

When the ground is marked out for a *camp*, all wait for the pitching of the tent *lailac*, the place where the courts of juſtice are held; it being the ſituation of this that is to regulate the diſpoſition of all the reſt. *Marſigl.* Stato Milit. delle Imper. Ottom. c. 20. Mem. de Trev. 1733. p. 1136.

The Arabs ſtill live in *camps*, as the antient Scenites did. The *camp* of aſſyne emir, or king of the country about Tadmor, is deſcribed by a traveller who viewed it, as ſpread over a very large plain, and poſſeſſing ſo vaſt a ſpace, that though he had the advantage of a riſing ground he could not ſee the utmoſt extent of it. His own tent was near the middle, ſcarce diſtinguiſhable from the reſt, except that it was bigger, being made, like the others, of a ſort of hair-cloth. Phil. Tranſ. N° 218. p. 154.

Flying CAMP is uſed for the ground on which a flying body is encamped. *Guill.* Gent. Dict. P. 2. in voc.

Summer CAMP, *caſtra æſtiva*, among the Romans, was ordinarily light and moveable; ſo that they might be ſet up or taken down, and removed in a night. In which caſe it was alſo called ſimply *caſtra*.

Standing CAMP, *caſtra ſtativa*, was that wherein they deſigned to continue longer in a place; and therefore more pains was taken to fortify and regulate it. *Veget.* de re milit. l. 3. c. 8. The Roman *camps*, in a march, were alſo called in the middle age *manſiones*. *Horſl.* Brit. Rom. l. 1. c. 7. p. 100, ſeq.

Winter CAMP, *caſtra hyberna*, or winter quarters, were uſually taken up in ſome city or town; or elſe ſo contrived as to make almoſt a town of themſelves.

The Roman *camps* ſometimes gave the origin to cities, which were formed of them, and often took their denomination from thoſe whoſe *camps* they had been. This chiefly happened when an army continued long in a place, eſpecially in the winter, where they were obliged to build many works, and fortify themſelves exactly. Thus the *Caſtra cornelia*, a city of Africa, not far from Utica [a], was originally the *camp* of Cornelius Scipio [b].—[a *Cæſ.* bell. civ. l. 2. c. 25 and 27. b Liv. l. 29. c. 35.]

Antiquarians

Antiquarians obſerve, that all the modern towns among us, whoſe names end in ceſter, or cheſter, were originally theſe *caſtra hyberna* of the Romans.

Mooned CAMPS, *caſtra lunata*, thoſe made in figure of a half-moon. *Pitiſc.* Lex. Ant. T. 1. p. 376.

Tertiated CAMPS, *caſtra Tertiata*, thoſe which were a third part longer than broad, which Hyginus repreſents as the Roman model. *Schel.* in Hygin. *Græv.* Thæſ. Art. R. T. 10. p. 1087. *Caſtra in quantum fieri potuerit tertiata eſſe debebant — ut puta in longum duo millia quadringenti, in latum mille ſexcenti pedes. Pitiſc.* Lex. Ant. T. 1. p. 377.

Naval CAMP, *caſtra nautica*, or *navalia*, denoted a ſtation of ſhips. *Cæſ.* Bell. Gall. l. 5. c. 22.

City CAMP, *caſtra urbana*, was a place near the city wall, not far from the *via nomentana*, where the prætorian guards were encamped; whence it was alſo called the *pretorian camp*, *caſtra prætoria*, or *prætoriana* [a]. The like we alſo read of at Jeruſalem, called by St. Luke abſolutely the *camp*, παρεμβολη [b]. By which we are doubtleſs to underſtand the *caſtra antonia*, which Joſephus tells us, was afterwards uſed as a caſtle [c].—[a *Suet.* in Claud. c. 21. *Capitol.* in Vit. Balbin, c. 10. Vet. Schol. Juven. ad Sat. 10. v. 95. *Tacit.* Ann. l. 4. c. 1. b *Luke*, c. 21. v. 34 and 37. c *Fab.* Theſ p. 485.]

CAMP is alſo uſed among the Siameſe and Eaſt-Indians, for a quarter of a town aſſigned to foreigners, wherein to carry on their commerce.

In theſe *camps*, each nation forms itſelf a kind of city apart, in which their ſtore houſes and ſhops are, and the factors and their families reſide.

The Europeans at Siam, and in moſt other cities of the Eaſt, are exempted from this reſtraint, and allowed to live in the cities or ſuburbs, as they find them moſt commodious. *Savar.* Dict. Comm. T. 1. p. 538, ſeq.

CAMP *Duty*, in its utmoſt extent, includes every part of the ſervice performed by the troops during the campaign. But in a more particular ſenſe, denotes the guards ordinary and extraordinary kept in *camps*. *Bland*, Milit. Diſcipl. c. 15. P. 1. p. 206.

A great part of the *camp duty* is performed in the ſame manner as that of a gariſon.

CAMP *Colour-men*, are ſoldiers appointed to attend and aſſiſt the quartermaſter general, in marking out and keeping the *camp* clean, receiving and diſtributing proviſions, *&c.*

The *camp colour-men*, are drawn a man out of a company, and are exempt from all other duty during the campaign: each carries either a ſpade or a hatchet. *Bland*, Milit. Diſcipl. c. 17. Art. 3. p. 247, ſeq.

CAMP *fight*, or KAMP-*fight*, in law writers, denotes the trial of a cauſe by duel, or a legal combat of two champions in the field, for deciſion of ſome controverſy. *Kenn.* Gloſſ. ad Paroch. Antiq. voc. *Bellum*. *Coke*, 3. Inſtit. p. 221.

In the trial by *camp-fight*, the accuſer was, with the peril of his own body, to prove the accuſed guilty; and by offering him his glove, to challenge him to this trial, which the other muſt either accept of, or acknowledge himſelf guilty of the crime whereof he was accuſed.

If it were a crime deſerving death, the *camp-fight* was for life and death: if the offence deſerved only impriſonment, the *camp-fight* was accompliſhed when one combatant had ſubdued the other, ſo as either to make him yield, or take him priſoner. The accuſed had liberty to chuſe another to fight in his ſtead, but the accuſer was obliged to perform it in his own perſon, and with equality of weapons.

No women were permitted to be ſpectators, nor men under the age of 13. The prieſt and the people who looked on, were engaged ſilently in prayer, that the victory might fall to him who had right. None might cry, ſhriek, or give the leaſt ſign; which in ſome places was executed with ſo much ſtrictneſs, that the executioner ſtood ready with an ax to cut off the right hand or foot of the party that ſhould offend herein.

He that being wounded, yielded himſelf, was at the others mercy either to be killed or ſuffered to live. But if life were granted him, he was declared infamous by the judge, and diſabled from ever bearing arms, or riding on horſeback. *Verſteg.* Reſtit. Dec. Intell. c. 3. p. 51.

CAMP-*Law*, a method of deciding controverſies by duel or *camp*-fight. See CAMP-*fight*.

CAMP *Diſeaſes*, *morbi caſtrenſes*, thoſe chiefly prevalent in armies. Under *camp*, or *field diſeaſes*, come the plague, malignant fever, ſcurvy, flux, *&c.* Willius, phyſician to the king of Denmark, has a treatiſe on *camp diſeaſes*. De Morbis Caſtrenſibus Internis. Hafn. 1676, 4to. Phil. Tranſ. N° 136. p. 918. See DISEASE.

The *camp diſeaſe*, *morbus caſtrenſis*, abſolutely ſo called, is a malignant fever. Dudley Digges died of the *camp diſeaſe*, which raged in the gariſon at Oxford, in 1643 [a]. On which Ed. Greaves, phyſician to K. Charles II. has a treatiſe expreſs under the title of *Morbus Epidemicus*, or the New Diſeaſe [b].—[a *Wood.* Ath. Oxon. T. 2. n. 37. p. 32, ſeq b Oxon. 1643. Vid. *Wood.* lib. cit. n. 528. p. 669.]

CAMP *Fever*, *febris caſtrenſis*, a ſpecies of malignant and contagious fever, uſually epidemical, thus denominated by reaſon ſoldiers in *camp* are more than ordinary liable to it *Nenter.* Fund. Medic. T. 2. tab. 150. c. 22. p. 633.

The *camp fever* is the ſame with what is otherwiſe called the hungarian fever, and bears a near affinity to the petechial fever. See FEVER.

CAMP *Flux*, a name frequently given to the dyſentery; not as if it were of a different kind in armies, but by reaſon it is more uſual there than elſewhere.

CAMPANA-*floræ*, in botany, a name given by Helwing and ſome other of the German authors to the plant we call *pulſatilla*, or the *paſque flower*. It was named *campana floræ*, or Flora's bell, by Helwing, becauſe of its being the ſignal of the approach of ſpring, and as it were the caller forth of the other flowers.

This author has written a compleat treatiſe on this plant. He obſerves, that the antients did not know the name *pulſatilla*, but that it was given to it by the Italians, from the pulſatile motion of the long threads of down which are faſtened to its ſeeds, and are thrown into a tremulous undulation by every breath of wind. Dioſcorides ſeems to have made it an anemone, and Pliny calls it limonium, a word very likely to occaſion much miſunderſtanding in the haſty reader, as we know a very different plant at this time under that name; and many others have ranked it among the ranunculi or crowfoots.

We generally find the *pulſatilla* on dry and barren places, as ſandy hills, ſterile downs, and the like; but this author tells us, that in Pruſſia, it is moſt frequent in woods, and among pines and firs, and often is found in a looſe, ſpungy, and wet ſoil. There is in Pruſſia, a very remarkable ſpecies of it, according to this author, which has a white flower; the leaves are of the jagged kind, and reſemble thoſe of the anemone, and the back part of the petals is tinged with a faint blue.

The whole genus of the *pulſatillas*, are of an acrid and cauſtic quality, approaching to that of the ranunculus; and if they are given internally, without proper correctors, are poiſonous; but like the colchicum root, and ſome other of thoſe cauſtic plants, when given with proper mixtures, and in proper doſes, it proves a very valuable alexipharmic: externally it is of great ſervice in cleanſing foul ulcers. *Helwing*, de Campana Floræ.

CAMPANIAN *Diſeaſe*, *morbus campanus*, in antiquity [a], is variouſly explained by modern writers. Some will have it only a ſort of tubercles, or warts on the face, to which the people of Campania were liable [b]. Others maintain it to be the venereal diſeaſe; and hence draw an argument againſt the ſuppoſed novelty of that malady [c]. Dacier will have it to be ſomething ſtill worſe; the Campanians, it ſeems, were addicted to a ſort of commerce too abominable to be named; *ore morigeri erant*. Whence it is, Plautus repreſents them as more pathic or paſſive, than the Syrians themſelves [d].—[a *Hor.* Sat. 5. l. 1. v. 62. b Vid. Jour. des Scav. T. 33. p. 1229. *Heder.* Schul. Lex. p. 667. c Jour. des Scav. loc. cit. d *Dacier*, Not. ſur Hor. ſat. 5. l. 1. v. 62.]

CAMPANIFORMIS *Flos*, in botany, the term uſed for a flower reſembling a bell in ſhape, and making the character of one of Mr. Tournefort's genus's.

He defines the *campaniform* flower to be compoſed of one leaf, and form'd into the ſhape of a bell, but with ſome differences in the figure, which conſtitute four ſubordinate ſpecies. 1. The bell-flower, ſimply ſo called, which approaches to no other figure but that expreſſed by that name. 2. The tubular narrow kind, which is always conſiderably long. 3. The expanded kind, which opens very wide at the extremity, and repreſents, in ſome degree, a diſh or baſon. And, 4. The globular bell-flower, the mouth of which is narrower and ſmaller than the belly. See Tab. 1. of Botany, Claſs 1. *Tournefort's* Inſt. p. 76.

CAMPARCIUM. See CHAMPART.

CAMPANOLOGIA, the art or ſcience of ringing bells.

An anonymous author has publiſhed a *campanologia* improved, or the art of ringing made eaſy, by plain and methodical rules, and directions for ringing all manner of double, triple, or quadruple changes, with variety of new peals upon 5, 6, 7, 8 and 9 bells; as alſo the method for calling bobs for any peal of triples from 168 to 2500; (being the half peal) alſo for any peal of quadruples or cators, from 324 to 11340. Lond. 1703. 12°.

CAMPANULA, in botany, the name of a very large genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is of the ſhape of a bell, whence the plants of this genus have the Engliſh name *bell-flower*. The flower is divided into ſeveral ſegments at the end, and its cup finally becomes a membranous fruit divided into three or more cells, with an axis fixed in the commiſſure, and furniſhed with three placentæ, to which adhere a great numbers of ſeeds. In ſome ſpecies theſe are extremely ſmall, in others, they are larger, flat and oval, and ſurrounded with a ſort of ring; theſe are diſperſed abroad, when ripe, through a hole which each cell has. See Tab. 1. of Botany, Claſs 1. *Tourn.* Inſt. p. 108.

The ſpecies of this genus enumerated by Mr. Tournefort are theſe: 1. The greateſt broad-leaved blue *campanula*, with large flowers, called by ſome authors trachelium or throatwort. 2. The great broad-leaved *campanula*, with white flowers. 3. The great broad-leaved *campanula*, with grey flowers. 4. The great broad-leaved *campanula*, with pale red flowers. 5. The

great broad-leaved *campanula*, called by authors *trachelium giganteum*, or giant throatwort. 6. The common rough nettle-leaved *campanula*. 7. The purple-flowered rough nettle-leaved *campanula*. 8. The double-flowered rough nettle-leaved *campanula*. 9. The white-flowered rough nettle leaved *campanula*. 10. The double-white nettle-leaved *campanula*. 11. The long-leaved nettle *campanula*, with ſmoother leaves. 12. The ſmoother long-leaved nettle *campanula*, with white flowers. 13. The tall pyramidal *campanula*, called rampions. 14. The alpine pyramidal *campanula*, with leaves like vipers bugloſs. 15. The ſmooth alpine *campanula*, with very pale blue flowers. 16. The white-flowered Bononian *campanula*. 17. The ſmall pyramidal *campanula*. 18. The great flowered *campanula*, with leaves like thoſe of lampſana or nipplewort. 19. The tuberous-rooted *campanula* of the Canaries, with leaves like thoſe of the atriplex. 20. The field *campanula*, with roots like thoſe of the garden rampions. 21. The garden *campanula*, with long leaves and flowers. 22. The white-flowered garden *campanula*, with long leaves and flowers. 23. The pale whitiſh-flowered garden *campanula*, with long leaves and flowers. 24. The purple-flowered garden *campanula*, with long leaves and flowers. 25. The variegated blue and white garden *campanula*, with long leaves and flowers. 26. The blue-flowered double *campanula*, with long leaves and flowers. 27. The middle-ſized *campanula*, with the lower leaves hoary. 28. The Spaniſh cut-leaved *campanula*, with long flowers. 29. The long-leaved alpine *campanula*, with ſhining leaves. 30. The cluſter-flowered wild *campanula*. 31. The cluſter-flowered white field *campanula*. 32. The field *campanula*, with ſingle flowers placed at diſtances on the ſtalks. 33. The white-flowered field *campanula*, with ſcattered flowers. 34. The round-headed alpine *campanula*. 35. The round-headed hairy alpine *campanula*, with roundiſh leaves. 36. The common round-leaved *campanula*. 37. The alpine *campanula*, with an angular leaf, like that of the teucrium. 38. The echium-leaved *campanula*, with hairy flowers. 39. The alkanet-leaved *campanula*, with long flowers. 40. The large flowered ſtone *campanula*, with leaves like thoſe of echium. 41. The hoary alpine *campanula*, with a pyramidal ſpike of flowers. 42. The umbellated *campanula*, with long hairy leaves. 43. The tall alpine hairy *campanula*, with a ſmall flower. 44. The alpine *campanula*, with leaves like thoſe of goats beard. 45. The red cluſter-flowered meadow *campanula*. 46. The purple-flowered globular-headed alpine *campanula*. 47. The large-flowered white ſtone *campanula*, with echium leaves. 48. The curled echium-leaved ſtone *campanula*. 49. The peach-leaved *campanula*. 50. The double blue peach-leaved *campanula*. 51. The white-flowered peach-leaved *campanula*. 52. The double white peach-leaved *campanula*. 53. The great narrow-leaved wood *campanula*, with large flowers. 54. The leſſer narrow-leaved large-flowered wood *campanula*. 55. The ſmall-flowered narrow-leaved wood *campanula*. 56. The branched white ſmall-flowered *campanula*. 57. The blue *campanula*, with eatable roots, called the eſculent rampions. 58. The white-flowered *campanula*, with eſculent roots. 59. The little American *campanula*, with rigid leaves and a white wide flower. 60. The little alpine *campanula*, with a pyramidal ſpike of flowers. 61. The hairy daiſy-leaved *campanula*. 62. The little flax-leaved alpine *campanula*. 63. The ſcarcer flax-leaved blue *campanula*. 64. The dwarf creeping alpine *campanula*, with large flowers. 65. The ſtone *campanula* of Crete, with daiſy-like leaves, and a large flower. 66. The common ſmall round-leaved *campanula*. 67. The white-flowered common ſmall round-leaved *campanula*. 68. The little round-leaved *campanula*, with a ſingle flower at the end of each ſtalk. 69. The leaſt round-leaved alpine *campanula*. 70. The leaſt round-leaved *campanula*. 71. The ivy-leaved *campanula*. 72. The thyme-leaved *campanula*. 73. The black-flowered broad-leaved alpine *campanula*. 74. The ſmall annual *campanula*, with jagged leaves. 75. The white-flowered ſmall cut-leaved annual *campanula*. 76. The long rooted round-leaved *campanula*. 77. The little round-leaved *campanula*, with a large pentangular flower. 78. The roundiſh ſerrated-leaved *campanula*. 79. The hairy *campanula*, with leaves like baſil, each ſurrounding the ſtalk, and pendulous flowers. 80. The dwarf narrow-leaved ſingle-flowered Portugal *campanula*. 81. The upright field *campanula*, called by many viola arvenſis, is the field violet. 82. The procumbent field *campanula*. 83. The long and broad-leaved field *campanula*. 84. The ſmall field *campanula*, with hairy ſeed-veſſels. 85. The upright field *campanula*, with a white flower. 86. The large-leaved Thracian field *campanula*. 87. The perfoliate field *campanula*. *Tourn.* Inſt. p. 110, 111, 112.

The different ſorts of this plant make beautiful ornaments for chimnies, and other places, being very tall, very much branched, and full of large and beautiful flowers, which retain their beauty a long time.

They are propagated by ſowing their ſeeds in March, in a bed of light and undung'd ſoil, or by parting the roots; but the latter method being the more expeditious, is moſt practiſed. Almoſt every ſlip, taken from the roots in September, and in March, will thrive; but the plants raiſed from ſeeds are ſeen to produce the fineſt flowers: they are very tedious, however, this way, being three or four years before they flower. They ſhould, therefore, be tranſplanted the September after their ſowing into nurſery-beds, which ſhould be of a light ſoil and not wet; they ſhould be ſet here at ſix inches ſquare, and in froſty weather, the whole beds ſhould be covered with mats, which will greatly ſtrengthen the roots. In the September of the third year, they ſhould be removed into pots, and ſheltered, during the ſevere weather, in glaſs frames; or elſe in wet weather, the pots muſt be turned ſideways; and in very cold, they muſt be ſet under a warm wall, and covered with haulm, and ſurrounded with a little dung on the outſides of the pots, to preſerve the roots from the froſts. Theſe plants will often ſucceed without this care, but with it they produce their flowers in ſuch beauty and plenty, as amply to reward it. *Miller's* Gard. Dict.

CAMPECHE *Wood (Cycl.)* ſeems to ſome to be the ſame with what is otherwiſe called *braſil*. *Jour.* des Scav. T. 86. p. 551. Nouv. Rep. Lett. T. 26. p. 518. See BRASIL, *Cycl.*

It takes the former denomination from the city *Campeche*, about which it grows in greateſt plenty.

CAMPECHIA, in botany, the name by which Sir Hans Sloane has called the logwood-tree, called by Linnæus *hæmatoxylum*. See HÆMATOXYLUM.

CAMPESTRE, in antiquity, a ſort of cover for the privities, worn by the Roman ſoldiers in their field exerciſes; being girt under the navel, and hanging down to the knees.

The name is ſuppoſed to be formed from *campus*, the field or place where the Roman ſoldiers performed their exerciſes. *Turneb.* Adverſ. l. 27. c. 22. *Pitiſc.* Lex. Ant. T. 1. p. 337. *Du Cange*, Gloſſ. Lat. T. 1. p. 724. Trev. Dict. Univ. T. 1. p. 1371.

CAMPHOR *(Cycl.)*—It has been diſputed to what ſpecies of vegetable juices *camphor* properly belongs? ſome will have it a gum, others a reſin, others a volatile ſalt. Phil. Tranſ. N° 389. p. 322.

But *camphor* is well known to be a vegetable production, and much has been written of it by the chemiſts, yet we do not ſeem to have any ſatisfactory account of it, either as to the manner in which it is collected in the Indies, or as to what it truly is; and while we readily acknowledge it a vegetable production, yet it is odd, that we cannot produce any other ſubject perfectly like it, either from the animal, vegetable, or mineral kingdoms.

It is evident, that it is neither a ſalt nor a gum, ſince it is not ſoluble in water; nor is it a reſin, ſince it does not yield by diſtillation either a phlegm or oil, or an acid ſpirit, as all reſins do; much leſs does it leave a caput mortuum like thoſe bodies. It totally vaniſhes and evaporates in the open air; in hot water, it firſt runs and then evaporates, and in ſpirit of wine, or ſpirit of nitre, it wholly diſſolves. It is no oil, becauſe it is not unctuous to the touch, but is a firm, dry, cryſtalliz'd matter; in its evaporation in the air, it leaves no remainder; and in cloſe veſſels over the fire, it riſes entire without diſtillation, and appears at the top of the veſſel in a dry form. It leaves no caput mortuum, is ſubject to no ſeparation of parts, and takes no empireumatic ſmell; in mixing with concentrated ſpirit of nitre, it makes no ebullition, but placidly reſolves into a ſort of oil. This is extremely different from the effect of all vegetable oils, which are known to efferveſce violently with this acid, and ſome even to take fire, and are finally converted by it into a dry reſin. *Camphor* is therefore an inflammable ſubſtance, ſui generis, an artificial, ſublimated, dry, white, pellucid, and cryſtallized body, acrid to the taſte, of an aromatic ſmell, extremely fragrant, brittle, and eaſily evaporable by fire, or in a warm air. When broken, it appears bright, ſmooth, and ſaponaceous, but not unctuous to the touch; it conſiſts of a copious inflammable principle, a ſmall portion of water, and yet leſs of a very fine and ſubtile earth, mixt intimately together. Act Eruditor, 1727. p. 524.

The common ways of keeping it from evaporation, are by burying it in linſeed, millet, pepper, or the like, but the rational way is, by keeping it from the external air; this is beſt done by wraping it up in a paper or bladder, and putting it then into a leaden box, or an earthen, or glaſs veſſel ſet in a cool place. Or it may be preſerved in large quantities, only by papering it up carefully, and putting it in wooden veſſels in a cellar. Notwithſtanding that it is a body ſo nicely and intimately combined, in its own texture, yet it is ready at all times for medicinal uſe; and as it is not eaſy to give it any preparation, ſo it needs none. In its natural ſtate, it readily mixes with all oils and inflammable ſpirits, and this without fear of evaporation; it has no change of colour in ſolution with ſpirit of nitre, but when diſſolved with oil of vitriol, it becomes brown, and finally, red; and if water be added to either of theſe ſolutions, the *camphor* is precipitated in its proper and ſolid form: it may, however, be abſolutely diſſolved, by long maceration and frequent drawing over by the retort, with either of theſe menſtruums.

The two medicinal preparations of *camphor*, in uſe now in the ſhops, are the ſolution of it in wine and in oil; the one called camphorated ſpirit of wine, the other, oil of *camphor*.

The preparation of the firſt is by bare mixture, and requires no diſtillation, whether ſalt of tartar be or be not added to it.

The oil of *camphor*, is either prepared by ſolution, or ſublimation; the firſt is, either by diſſolving *camphor* in ſome ex-

preſſed vegetable oil, or by ſeparating the oil which ſwims upon the ſurface of a ſtrong ſolution of *camphor*, in ſpirit of wine. To prepare the other, one part of *camphor* is to be mixed with three parts of bole armenic, and put over the fire in a retort. The ſublimed *camphor*, is to be again mixed with freſh bole, and this ſo often repeated till no more *camphor* is found to be ſublimed in the proceſs; from this, the liquid matter, ſeparated by diſtillation, is to be ſeparated, and the oil preſerved. Act. Eruditor. 1727. p. 523.

Camphor may alſo be diſſolved in oil of turpentine, or mixed with Venice ſoap, and thus diſtilled, and finally, rectified. All theſe oils are ſtrongly empireumatic, and therefore the *camphor*, in its natural ſtate, is greatly preferable to them all. *Camphor* water, and the flowers of *camphor*, are alſo greatly inferior to the crude ſubſtance. When *camphor* is to be mixed with powders, it ſhould be gently moiſtened, in the rubbing, with ſpirit of wine; when it is to be mixed with aqueous menſtruums, it ſhould be rubb'd with blanched almonds, or incorporated with the yolk of an egg.

The uſual way of extracting *camphor* from the tree, is by cutting the root in ſmall pieces, and putting them in a veſſel, covering them with water, cloſing the veſſel with a ſtraw covering, and making a gentle fire under it; the volatile parts are ſublimed and caught, and condenſed by the covering, and formed into cakes of *camphor*. *Bradl.* Dict. Bot. in voc.

Some naturaliſts aſſert, that beſides the common *camphor*, another may be procured from the root of the cinnamon tree, the zedoary of Ceylon, ſome ſpecies of roſemary, ſouthern wood, and other aromatic plants; which is, in ſome meaſure, confirmed by the experiments of Mr. Neuman, chemiſt of the king of Pruſſia; who has produced a true denſe chryſtali-form *camphor*, poſſeſſed of all the qualities, except the ſmell, of the oriental *camphor*, from the common garden thyme. Phil. Tranſ. N° 389. p. 323, ſeq.

But Mr. Brown, ſoon after, made remarks on Mr. Neuman's paper, and mentioned ſeveral experiments, by which it appeared, that common *camphor* differed conſiderably from that cryſtalliform ſubſtance ariſing from thyme. Phil. Tranſ. N° 389 and 390.

Camphor is ſometimes purified by diſſolving it in ſpirit of wine, and then diſtilling the ſpirit from it, the *camphor* being afterwards melted in glaſſes, is formed into cakes of the form of the glaſſes. Act. Acad. Nat. Curioſ. Vol. 5. Obſ. 98.

Dr. Shaw recommends a mixture of nitre and *camphor*, as a quieter, inſtead of opium. Chem. Lect. p. 234.

The learned Fr. Hoffman extols the virtues of *camphor* given internally, as a moſt excellent diſcutient, reſiſting putrefaction, and as the chief alexipharmic. He adviſes it in malignant fevers, and in the venereal diſeaſe: in inflammations he adds nitre. See his Diſſertation, *De camphoræ uſu interno ſecuriſſimo et præſtantiſſimo.* Oper. T. 6. p. 60.

Kempfer deſcribes a ſort of laurel, growing in the weſtern parts of Japan, called by the literati *ſſio*, by the populace, *kus noki*, which yields *camphor*. The extracting it is the work of the peaſants in the province of Satzuma, and the neighbouring iſlands, Gotho, &c. where the tree is plentiful. They chop the wood and roots ſmall, boil them in an iron veſſel, over which is put a large earthen capital, furniſhed with a beak: as the reſin or *camphor* riſes into the capital, it gathers and hangs on the ſtraw placed there to receive it. Vid. *Kæmpf.* Amæn. Exot. Faſc. 5. cl. 1. p. 770. *Seba.* Theſ. Rer. Natur. T. 1. Fig. 33. Bibl. Raiſ. T. 12. p. 372.

Though the virtues of *camphor* are in many caſes very great, yet Boccone gives us a remarkable inſtance of its efficacy in external applications, which ſeems to argue that the uſe of this medicine is not free from danger. A certain empiric being ſent for to a woman, who, after a ſevere fit of an apoplexy, had fallen into a palſy of the whole left ſide; he anointed her from head to foot every morning and evening on that ſide, with *camphor* diſſolved in ſpirit of wine, and other things: in the whole time of his uſing this medicine, which was ſix weeks, he employed no leſs than twelve pounds of *camphor*. This vaſt quantity had no ſenſible effect upon the woman, nor at all relieved her in the diſeaſe. She was with child all the while, and went her proper time when ſhe was delivered of a ſon ſeemingly perfect, but that all his bones were ſoft and flexible; the bones of his legs and arms ſeeming like tendons. The child lived eighteen months, and the bones never hardened. This being a ſingle inſtance, it is not eaſy to ſay, with any degree of certainty, whether it was owing to the *camphor*; though there ſeems ſome room to believe that it was. *Boccone* Muſeo de Piante.

Principles of CAMPHOR.—Mr. Lemery, in his analyſis of this drug, made it his great care to ſeparate its principles without the intervention of any foreign ſubſtance, that he might be aſſured of having them pure and genuine; but he found it impoſſible ever to ſucceed perfectly in this attempt. He found that its principles were an oil and a volatile ſalt; but that theſe were ſo intimately united together in the mixt, that they were not to be perfectly ſeparated by any pains in this manner, but always afforded ſimple ſolutions, or ſimple ſublimations. The *camphor* he uſed, was the rough or native kind; and the reſult of his experiments was as follows:

Camphor is not ſoluble in aqueous liquors, but in ſulphureous ones; which is a property common with it to all ſulphureous ſubſtances, at leaſt ſo far as they are ſulphureous. If a ſolution of *camphor*, in ſpirit of wine, be ſet on fire, the flame will be bluiſh at firſt. This is owing to the ſpirit of wine, which naturally burns firſt. As this conſumes, the *camphor* will be ſeen collecting itſelf into a maſs; and when the ſpirit is all burnt away, the flame will not ceaſe, but only will appear white, becauſe the *camphor* alone is burning. If a ſtrong ſolution of *camphor* be mixt with water, the *camphor* will ſeparate itſelf in form of a white butter, the ſpirit being, when ſo weakened, no longer able to retain it in ſolution.

If a ſolution of *camphor*, in ſpirit of wine, be mixed with ſpirit of ſal armoniac, made with ſalt of tartar, the whole is immediately converted into a ſnow-white, tolerably firm ſubſtance; but if the ſpirit of ſal armoniac, made with lime, be uſed, there is only found a ſlight precipitation, which is diſſolved again in a little time. Oil of tartar, though an alkali not leſs powerful than the ſpirit of ſal armoniac, produces no change at all in the ſolution of *camphor*. Spirit, or oil of turpentine, and oil of olives both diſſolve *camphor*, both being ſulphureous liquors: each of theſe, however, is capable of diſſolving only a fourth part of its own weight. In diſtilling theſe ſeveral ſolutions of *camphor*, its proportionate weight to the ſolvents was found; for it is certain, that a body lighter than another will riſe before it in diſtillation; that two bodies equally light, will riſe together. Thus Mr. Lemery found, that *camphor* was heavier than ſpirit of wine; equally heavy with oil of turpentine, and lighter than oil of olives. Mem. Acad. Par. 1708.

This is the hiſtory of the ſolutions of *camphor* in ſulphureous fluids, but it was alſo proper to examine the effects of acid, and alkaline liquors upon it. Oil of tartar, and ſpirit of ſal armoniac, were both tried in vain as ſolvents, neither diſſolving any part of it. Spirit of vitriol, ſpirit of alum, and diſtilled vinegar, are alſo as unable to diſſolve it; and in attempting a ſolution of it over the fire in theſe liquors, the *camphor* ſublimes away from them, and ſticks to the head of the matraſs unaltered.

The black oil of vitriol, containing ſome ſulphur, diſſolves *camphor* in the proportion of four parts of the liquor, to one of the ſubſtance; and good ſpirit of ſalt, diſſolves it imperfectly in the proportion of three parts to one; but it is perfectly ſoluble in ſpirit of nitre, and requires only twice its own weight of that liquor: and it is to be obſerved, that *camphor* is the only known reſin that is ſoluble in this menſtruum. This ſolution is called *oil of camphor*.

CAMPHOR *Julep*. See JULEP.

CAMPHOR *Oil*. See OIL *of camphor*.

CAMPHORATA, a medicinal plant, called in Engliſh, ſtinking ground pine; reputed cephalic and nervine; though little uſed in the modern practice. *Quinc.* Pharmac. P. 2. Sect. 1. n. 3. See CHAMÆPITYS.

It takes the name from its ſmell, which bears ſome reſemblance to that of camphor.

The *camphorata Monſpelienſis*, growing by the road ſides in Langueduc, and eſpecially about Montpelier; has been lately produced as a ſpecific for the dropſy and aſthma. M. Burlet has given its hiſtory and analyſis. Vid. Hiſt. Acad. Scienc. An 1703. p. 65, ſeq.

CAMPHORATED, denotes a thing tinctured, or impregnated with camphor. See CAMPHOR.

Spirit of wine *camphorated*, is a remedy frequently applied externally in caſes of inflammations, &c.

CAMPICURSIO, in the antient military art, a march of armed men for ſeveral miles, from and back again to the camp, to inſtruct them in the military pace. This exerciſe was nearly akin to the *decurſio*, from which it only differed, in that the latter was performed by horſemen, the former alſo by foot. *Aquin.* Lex. Milit. T. 1. p. 155.

CAMPIDOCTORES, or CAMPIDUCTORES, in the Roman army, were officers who inſtructed the ſoldiery in the diſcipline and exerciſes of war, and the art of handling their weapons to advantage. Theſe are alſo ſometimes called *campigeni*, and *armidoctores*. Vid. *Salmaſ.* de. re Milit. c. 6. *Du Cange*, Gloſſ. Lat. T. 1. p. 714. *Pitiſc.* Lex. Ant. T. 1. p. 338. *Kenn.* Rom. Ant. P. 2. l. 4. c. 13. p. 215. *Aquin.* Lex. Milit. T. 1. p. 155.

CAMPIDUCTOR, Καμπιδεκτωρ, in middle age writers, ſignifies the leader or commander of an army, or party. *Du Cange*, Gloſſ. Lat. T. 1. p. 715. Item, Gloſſ. Græc. T. 1. p. 566. voc. Καμπιδεκτωρ.

CAMPIPARS. See CHAMPART.

CAMPITÆ, in church hiſtory, an appellation given to the donatiſts, on account of their aſſembling in the fields for want of churches. *Du Cange*, Gloſſ. Lat. T. 1. p. 727. See DONATISTS, *Cycl.*

For a ſimilar reaſon, they were alſo denominated *montenſes* and *rupitani*.

CAMPINSA, in botany, a name given by Myrepſus and others to the plant we call *ſcabious*.

It was more uſually written *ſcampinſa*, and was a barbarous Greek word formed of the Latin *ſcabioſa*, by the common

practice of changing o into u, and b into mp; thus ſcabioſa becomes ſcampiuſa, and without the initial ſ, *campiuſa*.

CAMPOIDES, in botany, a name given by Rivinus to a plant compriſed by Linnæus under the genus of ſcorpiurus, the ſerpioides of other authors. *Rivin.* 4. 115.

CAMPUS, (*Cycl.*) in antiquity, a field or vacant plain in a city not built on, left vacant either on account of ſhews, combats, exerciſes, or other uſes of the citizens. *Fabric.* Deſcrip. Urb. Rom. c. 8. *Pitiſc.* Lex. Ant. T. 1. p. 388.

CAMPUS *martius*, a large plain field in the ſuburbs of antient Rome, lying between the quirinal and capitoline mounts, and the Tyber, thus called becauſe conſecrated to the god Mars, and ſet apart for military ſports and exerciſes, to which the Roman youth were trained; as the uſe and handling of arms, and all manner of feats of activity.

Here were the races run, either with chariots or ſingle horſes; here alſo ſtood the villa publica, or palace for the reception of ambaſſadors, who were not permitted to enter the city. Many of the public comitia were held in the ſame field, part of which, for that purpoſe, was cantoned out. The place was alſo nobly decorated with ſtatues, arches, columns, porticos, and the like ſtructures. *Pitiſc.* Lex. Ant. T. 1. 339. *Kenn.* Rom. Ant. P. 2. l. 1. c. 4. p. 47. *Schoet.* Lex. Antiq. p. 259.

CAMPUS *martius* is alſo uſed in a more general ſenſe by middle age writers, for any large plain open place near a great city, wherein the inhabitants were trained to the exerciſe of arms.

Of ſuch we find mention at Verona, Triers, Dornic, and even Conſtantinople. *Du Cange*, Gloſſ. Lat. T. 1. p. 730. *Schoet.* Lex. Ant. p. 260.

Among the French, *campus martius* was an appellation given to the yearly aſſemblies of the people called by the kings, either for enacting new laws, or deliberating on the great affairs of the nation. They were thus denominated, either becauſe uſually held in the month of March, or in imitation of the *campus martius* of the Romans, which was alloted for the like uſe. In aftertimes, they were called *campus majus*, and by corruption, *campus madius* and *magius*, by reaſon the time of holding them was altered by Pepin to the month of May. *Le Gendre*, Meurs des Franc. p. 12. Item, T. 1. p. 409. Trev. Dict. Univ. T. 1. p. 1610. voc. *Champ.*

F. Daniel takes the *campus martius* to have denoted, not the aſſembly, but the place where the general review of the forces was made; which, according to this hiſtorian, was ſo called, not as being the particular name of any field, for that their reviews were held ſometimes in one place, ſometimes in another, but in honour of Mars; who, among the heathens, was adored as the god of war. *Daniel*, Hiſt. de Franc. T. 1. p. 7.

Under the third line of kings, their aſſemblies took the denomination of ſtates general, *etats generaux*.

CAMPUS *ſceleratus*, a place without the walls of antient Rome, where the veſtals, who had violated their vows of virginity, were buried alive. *Kenn.* Rom. Ant. P. 2. l. 2. c. 6. p. 70.

CAMSHALL, a word uſed in Zetland to denote the *os ſapiæ*, which is ſometimes found on the ſhores of that iſland. Phil. Tranſ. N° 473. Sect. 8.

CAMURI, in zoology, the name of a ſea-fiſh of the lupus or baſſe kind, common in the ſeas and larger rivers of America. It grows to about two foot long, and a foot thick.

Its head is monſtrouſly large, and its mouth extremely wide; it has a large and ſtrong fin on its back, which is armed with ſharp prickles, and has a furrow in the back behind it, into which the fiſh can lay it down upon occaſion; its ſides are yelloviſh, and its belly white; its fins of a browniſh yellow, and its ſide lines, which run from the gills to the tail, broad and of a fine black. *Willoughby*, Hiſt. Piſc. p. 273.

CAN, in the ſea language.—A pump's *can*, is a ſort of wooden jug or pitcher, wherewith ſeamen pour water into pumps to make them work. *Guill.* Gent. Dict. P. 3. in voc.

CANADA *ſtag*, *cervus canadenſis*, the ſame with the Virginian deer. See Tab. of Quadrupeds, N° 9. and the article DEER.

CANADA *worm*. See WORM.

CANAL, *canalis*, in general, denotes a long, round, hollow inſtrument, through which a fluid matter may be conveyed.

In which ſenſe, it amounts to the ſame with what we otherwiſe call a pipe, tube, channel, &c.

CANAL more particularly denotes a kind of artificial river.

Canals are contrived for divers purpoſes; ſome for forming a communication betwixt one place and another, as the *canals* between Bruges and Ghent, or between Bruſſels and Antwerp; others for the decoration of a garden, or houſe of pleaſure, as the *canals* of Verſailles, Fontainbleau, St. James's Park, &c. Others are made for draining wet and marſhy lands; which laſt, however, are more properly called water-gangs, ditches, drains, &c. *Ozan.* Dict. Math. p. 362.

Egypt is full of *canals*, dug to receive and diſtribute the waters of the Nile, at the time of its inundation. They are dry the reſt of the year, except the *canal* of Joſeph, and four or five others, which may be ranked as conſiderable rivers. Mem. des Miſſ T. 7. p. 115, ſeq.

There were alſo ſubterraneous *canals*, dug by an antient king of Egypt, whereby thoſe lakes, formed by the inundations of the Nile, were conveyed into the Mediterranean.

M. Gaudereau attributes the frequency of the plague in Egypt of late days, to the decay, or ſtopping up of theſe *canals*; which happened upon the Turks becoming maſters of the country. Jour. des Scav. T. 71. p. 561, ſeq.

CANALS *of communication* are artificial cuts, uſually furniſhed with locks and ſluices, and ſuſtained by banks or mounds, in order to make a quicker paſſage and ſhorten the way between one place and another, by means of veſſels. *Davil.* Courſ. d'Archit. P. 2. p. 444.

Store of navigable *canals* and rivers, is one of the marks of good policy in a country; in which reſpect, Italy, the Netherlands, and France, but eſpecially China, abound, as much as England is defective.

We have but one remarkable *canal*, and that made by other people, and ſuffered to decay by ourſelves. By this I mean, that antient *canal* from the river Nyne, a little below Peterborough, to the river Witham three miles below Lincoln; called by the modern inhabitants *caerdike*; which may be ranked among the monuments of the Roman grandeur, though 'tis now moſt of it filled up. It was 40 miles long; and ſo far as appears from the ruins, muſt have been very broad and deep; ſome authors take it for a Daniſh work Morton will have it made under the emperor Domitian. Urns and medals have been diſcovered on the banks of this *canal*, which ſeem to confirm that opinion. *Mort.* Nat. Hiſt. Northampt. c. 10. Mem. de Trev. an 1714. p. 846.

In China, there is ſcarce a town or village but has the advantage either of an arm of the ſea, a navigable river, or a *canal*, by which means navigation is rendered ſo common, that there are almoſt as many people on the water as the land. Nouv. Relat. de la Chin. c. 9. Nouv. Rep. Lett. T. 14. p. 1195.

The *canal of Languedoc*, called alſo the *canal of the two ſeas*, as ſerving to join the Mediterranean and Cantabrian ſeas, was firſt propoſed under Francis I. but begun and finiſhed under Louis XIV. By means of it, a ready communication is made between the two fertile provinces of Guyenne and Languedoc. The *canal* is 64 leagues long, extended from Narbonne to Tholouſe, and receiving ſeveral little rivers in the way, ſupported at proper intervals with 104 ſluices. In ſome places it is conveyed over aquæducts and bridges of incredible height, built on purpoſe, which give paſſage underneath to other rivers. What is moſt extraordinary is, that in ſome places for a mile together, a paſſage is dug for it through the rock. The expence was thirteen millions of livres, of which the king contributed near ſeven millions; the province of Languedoc the reſt. Vid. *Savar.* Dict. Comm. Supp. p. 110, ſeq. Atlas Marit. p. 67.

The *canal of Briere*, called alſo *canal of Burgundy*, makes a communication between the Loire and the Seine, and ſo to Paris; to the great advantage of all this part of France, and even to Burgundy itſelf. Atlas Marit. p. 55, ſeq.

The *canal of Orleans* was begun in 1675, for eſtabliſhing a communication between the Seine and the Loire. It is conſiderably ſhorter than that of Briere, having twenty ſluices.

The *canal of Bourbon* was but lately undertaken; its deſign being to make a communication from the river Oiſe to Paris. *Savar.* Dict. Comm. Supp. p. 110, ſeq. Atlas Marit. p. 67.

The *new canal of the lake Ladoga*, cut from Volhowa to the Neva, whereby a communication is made between the Baltic, or rather ocean, and the Caſpian ſea, was begun by the czar Peter I. in 1719: by means of it, the Engliſh and Dutch merchandiſe are eaſily conveyed into Perſia without being obliged to double the Cape of Good Hope [a]. There was a former *canal* of communication between the Ladoga lake and the river Wolga, whereby timber, and other goods had been brought from Perſia to Petersburg; but the navigation of it was ſo dangerous, that a new one was reſolved on [b].—[[a] Journ. des Scav. T. 82. p. 401. [b] New Mem. of Liter. T. 1. p. 383.]

The *canal of Egypt*, for a communication between the Nile and the Red-ſea, was begun, according to Herodotus, by Necus ſon of Pſammeticus, who deſiſted from the attempt on an anſwer from the oracle, after having loſt ſix ſcore thouſand men in the enterprize. It was reſumed and compleated by Darius ſon of Hyſtaſpes, or according to Diodorus and Strabo, by Ptolemy Philadelphus; who relate, that Darius relinquiſhed the work on a repreſentation made to him by unſkilful engineers, that the Red-ſea being higher than the land of Egypt, would overwhelm and drown the whole country [a]. It was wide enough for two galleys to paſs a-breaſt; its length was four days ſailing [b]. Diodorus adds, that it was alſo called *Ptolemy's river*; that this prince built a city at its mouth on the Red-ſea, which he called *Arſinoe* from the name of his favourite ſiſter; and that the *canal* might be either opened or ſhut, as occaſion required: policy probably had ſome ſhare in the diſuſe to which it afterwards fell.—[[a] *Diod. Sic* Bibl. l. 1. *Strab.* Rer. Geogr. l. 17. [b] *Herodot* Hiſt. l. 2.]

It ſeems to have been opened afreſh about the year 635, under the Caliph Omar. Elmacin indeed ſays, that a new *canal* was then made for the conveyance of the corns of Egypt to Arabia; but this is more naturally underſtood of a renewal of the antient one, the navigation of which, towards the decline of the Roman empire, had been much neglected. The ſame author adds, that it was ſtopped again on the ſide next the Red-ſea by the Caliph Abugiafar Almanzor II. of the family

of

of Abbas, in the year of the Hegira 150, anſwering to the year of Chriſt 775. There are ſome traces of it ſtill ſubſiſting: M. Boutier, in 1703, diſcovered the end which ariſes out of the moſt eaſterly branch of the Nile. Hiſt. Acad. Scienc. An. 1702. p 110. ſeq.

The Great CANAL *of China*, is one of the wonders of art, made about 800 years ago. It runs from North to South quite croſs the empire; beginning at the city Canton. By it all kinds of foreign merchandize entered at that city are carried directly to Pekin, a diſtance of 825 miles. Its breadth and depth are ſufficient to carry barks of conſiderable burden, which are managed by ſails and maſts, as well as towed by hand: On this *canal* the emperor is ſaid to employ 10000 ſhips, abating one, for a reaſon very peculiar. It paſſes through, or by, 41 large cities; there are in it 75 vaſt locks, and ſluices to keep up the water, and paſs the barks and ſhips where the ground will not admit of a ſufficient depth of channel, beſides ſeveral thouſand draw and other bridges. Atlas Marit. p. 199. See alſo *Kircher*, Chin. illuſt. l. 5. Phil. Tranſ. N° 26. p. 487.

F. Magaillane aſſures us, there is paſſage from one end of China to the other, the ſpace of 600 French leagues, always either by *canals* or rivers, except a ſingle day's journey by land, neceſſary to croſs a mountain, an advantage which this jeſuit, who made the voyage himſelf, obſerves is not to be found in any other ſtate of the univerſe. De *Magaillane* Nouv. Relat. de la Chine. c. 8. Nouv. Rep. Lett. T. 14. p. 1194, ſeq.

We alſo read of divers projects and undertakings of *canals*, which were never atchieved. Demetrius Poliorcetes, Julius Cæſar, the emperors Caligula and Nero, attempted in vain to cut through the Iſthmus, whereby Peloponeſus is joined to the reſt of Greece, and make a canal of communication between the Ionian and Ægean ſeas. Plin. Hiſt. Nat. l. 4. c. 4. Mem. de Trev. Juin 1702. p. 149.

'Tis commonly alledged that ſeveral attempts have been made to cut the Iſthmus or tract of land, which ſeparates the Mediterranean from the Red Sea. But this ſeems to be a popular error ariſing from a miſtake of the place where the *canal* was to be cut. *Kirch.* Œdip. Ægypt. Synt. 1. c. 8. *Brown*, Vulg. Error. l. 6. c. 8. p. 269. See alſo *Becman*, Hiſt. Orb. Terr. P. 1. c. 3. §. 4.

Seleucus Nicanor had a deſign to make a *canal* between the Euxine and Caſpian ſeas. Lucius Verus, who commanded the Roman army in Gaul under Nero, attempted to make a *canal* between the Moſelle and the Rhine.

A new *canal* for conveying the waters of the Nile from Æthiopia into the Red Sea without paſſing into Ægypt was projected by Albuquerque, viceroy of India for the Portugueſe, in order to render Ægypt barren and unprofitable to the Turks. *Becman*, Hiſt. Orb. Terr. P. 1. c. 3. §. 5.

The Spaniards have ſeveral times had in view the digging a *canal* through the iſthmus of Darien from Panama to Nombre de dios, to make a ready communication between the Atlantic and the South Sea, and thus afford a ſtrait paſſage to China and the Eaſt Indies. *Becman*, Hiſt. Orb. Terr. P. 1. c. 3. § 21.

CANAL *of an aqueduct*, is the part through which the water paſſes; which in the antient edifices of this kind, is lined with a coat of maſtic of a peculiar compoſition. *Davil.* Courſ. de l'archit. P. 2. p. 444.

CANAL *of a garden*, is a long extended piece of water, bordered with ſtone or turf. Id. ibid.

CANAL is alſo applied to the furrows on the face of, or underneath a larmier; ſometimes called porticos; and fitted up with reeds or flowers. Sometimes to thoſe cavities ſtrait or winding made on the caulicoles of a capital. Id. ibid. p. 445.

CANALS is alſo uſed for the flutings of a column or pilaſter.

CANAL, in anatomy. Under *canals* are included all kinds of veſſels, as arteries, veins, nerves, &c. See ARTERY, VEIN, &c. *Cycl.* and *Suppl.*

The hole or perforation through the vertebræ of the neck, whereby the ſpinal marrow communicates with the brain, is by ſome called the ſacred or great *canal*, ἱερὰ συριγξ. *Caſt.* Lex. Med. p. 128.

CANALICIUM *aurum*, or *canalienſe*, that gold which is dug out of mines, or veins under ground. *Plin.* Hiſt. Nat. l. 33. c. 4. Bibl. Raiſ. T. 3. p. 28.

CANALICULATE *leaf*, among botaniſts. See LEAF.

CANALICULATE *ſtalk*. See the article STALK.

CANALIS is uſed by ſurgeons for an oblong concave inſtrument, in which to put a broken limb, leg, or thigh [a]. It is made either of braſs, wood, or earthen ware, ſometimes even of ſtraw fitted with linnen cloth [b].—[a] *Celſ.* de Medic. l. 8. c. 10. N° 5. *Junck.* Conſp. Chir. tab. 2. p. 13. [b] *Scultet.* Arm. Chirurg. P. 1. tab. 13. *Caſt.* Lex. Med. p. 128. *Fab.* Theſ. p. 429.

CANALIS *arterioſus* (*Cycl.*)—Dr. Agricola deſcribes a valve at the entry of the *canalis arterioſus* into the aorta deſcendens, compoſed of four ſides. Two of them prevent its being ſhut till after birth, and the other two prevent its being thruſt off from the orifice of the *canalis arterioſus*. Commerc. Norimb. 1735. Hebd. 4. §. 2.

There have been ſome diſputes between meſſieurs Mery, Buiſſiere, Rohault and others, about the real uſe of the *canalis arterioſus*, as well as of the foramen ovale. Vid. Mem. Acad. Scienc. an. 1693. p. 198, ſeq. Bibl. Ital. T. 4. p. 83, ſeq. See FORAMEN *ovale*, *Cycl.* and *Suppl.*

CANALIS *naſalis*, a kind of ſulcus or furrow formed in the oſſa unguis and maxillaria, whereby a mucous humour is conveyed from the puncta lacrymalia to the noſe. *Junck.* Conſp. Phyſiol. tab. 15. p. 264. *Heiſt.* Comp. Anat. §. 82. 85. p. 31. ſeq.

CANALIS *venoſus*, a duct in the liver of a fœtus, whereby a communication is maintained between the porta and cava; which becoming uſeleſs after the birth, the canal gradually dries up. *Drak.* Anthrop. l. 1. c. 22. p. 173. *Heiſt*, Comp. Anat. § 243. p. 159.

CANALIS, in zoology. See the article TUBULUS *marinus*.

CANARIA *lappa*, in botany, a name given by the antient Romans ſometimes to the rough fruit of the common aparine or clivers, and ſometimes to the plant itſelf. Pliny calls the plant *lappa* and *lappago*, and the fruit of it *lappæ boariæ*, *lappæ canariæ*, and *lappæ caninæ*.

CANARIUM, in antiquity, a Roman ſacrifice, wherein dogs of a red or ruddy colour were ſacrificed; for a ſecurity of the fruits of the earth againſt the raging heats, and diſorders of Sirius in the dog days. *Feſt.* de verb. ſignif. in voc. *Rutilæ.* *Ovid.* Faſt. l. 4. v. 905. 906. *Briſſon.* de form. l. 1. p. 57. *Pitiſc.* Lex. Ant. T. 1. p. 342. *Salmaſ.* exerc. ad Solin. p. 309.

CANARY *birds*, a ſpecies of ſinging birds, greeniſh in colour, formerly brought only from the *Canary* iſlands, but of late chiefly from Germany and Switzerland; which laſt, called alſo German birds, are preferred to the former.

Canary birds are diſtinguiſhed by different names at different times and ages: Such as are about three years old are called *runts*; thoſe above two, are named *eriffs*; thoſe of the firſt year under the care of the old ones are termed *branchers*; thoſe that are new-flown, and cannot feed themſelves, *puſhers*; and thoſe brought up by hand, *neſtlings*.

Canary birds are various in their notes; ſome having a ſweet ſong, others a laviſh note, others a long ſong, which is beſt, as having greateſt variety of notes. Some prefer thoſe which whiſk and chew like a tit lark; others are for thoſe which begin like a ſky lark, continuing their ſong with a long yet ſweet note; others chuſe thoſe which begin their ſong with the ſky lark, and then run on the notes of the nightingale; others again prefer a loud note and laviſh, regarding little more than the noiſe. *Cox*, Gent. Recr. of Fowl, p. 59. ſeq. *Savar.* Dict. Com. T. 2. p. 1532. voc. *Serin.* See PASSERES *Canarienſes*.

CANATTE CORONDE, a name given by the Ceyloneſe to a peculiar kind of cinnamon growing in that iſland; this is eſteemed the ſecond kind in value, and the name they give to it ſignifies bitter and aſtringent cinnamon. The bark of this kind of cinnamon tree comes off very eaſily, and is of a very fragrant ſmell when freſh, but it has a bitter taſte. It is not very common in the iſland, and is not eaſily diſtinguiſhed on the tree from the beſt cinnamon. The trees which yield the eight different kinds of cinnamon, ſo very various in flavour and virtue, are all ſo like one another, that it requires a great deal of attention to diſtinguiſh them. The root of this kind of cinnamon tree yields a very fine ſort of camphor. Phil. Tran. N° 409.

CANAVAY, in natural hiſtory, a name given by the inhabitants of the Philippine iſlands to a ſea bird which is deſcribed as being of the bigneſs of a pigeon, and laying its eggs on the naked rocks, where it ſits and hatches them. Some ſuppoſe this bird no other than the common kingfiſher. But this is ſcarce probable; as we have no account of its being very beautifully coloured; and this is a circumſtance which can hardly have eſcaped thoſe who mentioned it, being ſo very remarkable. It is much more probably ſome ſea bird wholly unknown in this part of the world.

CANCAMUM, in the materia medica, a name given by the Greeks to a gum or reſin, and continued down to the preſent age, though not without ſome uncertainty in its ſignification. The Arabian writers in general have looked on the word *cancamum* as a ſynonymous term for gum lack, which the Greeks have called lancha and lacha, and Aviſenna loch.

This however is an erroneous opinion, and the lacha and *cancamum* of the Greeks are evidently different druggs. Serapion has deſcribed the *cancamum* from Dioſcorides, tranſlating the very words of that author; but this he has done in the chapter of lacca, and under that name. And Aviſenna in one part of his writings tells us that many people in his time were of opinion that the gum called lacca or *cancamum* was the ſame thing with carabe or amber; and in another place under the name *keckim*, which is plainly a word formed out of the Greek κανκαμον *cancamum*, he tells us that many people believed it to be the ſame thing with ſandaracha or ſandarus; for this laſt is the true name of the gum ſince called ſandarax and ſandaracha, the laſt of which names is a notoriouſly improper one, as it confounds this gum with the mineral ſandarach a ſubſtance of the orpiment claſs.

The gum ſandarach is indeed very like yellow reſin, and therefore cannot be unlike to common yellow amber. The Arabian authors have alſo ſometimes called this gum by the name vernix, the varniſh gum. It was an extremely improper, but yet very common cuſtom among them, to call whatever ſubſtances concurred in the ſame general qualities, and had the ſame uſes, by the ſame name, and confound them one with another. Thus the ſandarach, *cancamum*, and verniſh are called the

the ſame gum in their writings, and expreſſed indiſcriminately by the ſame name.

CANCELLI, in building, lattices, or a ſort of windows made with croſs bars of wood or iron, chequer-wiſe.

The term is alſo applied to the baluſters or rails which compaſs a court of juſtice, a communion table, or the like. *Du Cange* Gloſſ. Lat. T. 1. p. 736. *Calv.* Lex Jur. p. 140. *Neve*, build. Dict. in voc. *Bingh.* Orig. Eccleſ. l. 8. c. 6. §. 6.

CANCELLI, in a military ſenſe, the ſame with barrier. *Aquin.* Lex. Milit. T. 1. p. 156. See BARRIER, *Cycl.*

CANCER, in zoology. See the article CRAB.

CANCER, *(Cycl.)* in medicine, amounts to the ſame with what is otherwiſe called *carcinus* or *carcinoma*, καρκινωμα; though ſome diſtinguiſh them making the carcinoma a tumor only tending to a *cancer*. *Nent*, Fund. Med. T. 2. tab 8. c. 9. p. 341.

A *cancer* differs from a *ſchirrus*, in that the latter is without pain. *Shaw*, new pract. of Phyſ. p. 616. See SCHIRRHUS.

Cancers alſo differ from thoſe called ſimply *cancerous ulcers*, or tumors, which though of a like general nature, vary in many circumſtances. See CANCEROUS.

Cancers appear with ſuch a diverſity, that it ſeems impoſſible to give a definition which ſhall agree to all. Some have a round, unequal, livid, painful hardneſs; others are flat without lividity, and ſometimes indolent. The variety ariſes chiefly from their riſe, and the different parts they are ſeated in, as the breaſt, womb, lips, noſe, eyes, ears, &c. Phil. Tranſ. N° 260. p. 476.

Some reſtrain *cancers* to thoſe on womens breaſts, which alone exhibit the appearance of crabs; and give the name *carcinoma*, and *cancerous ulcer*, to thoſe on the other parts. *Junck.* Conſp. Chir. Tab. 50. p. 299.

The generality of authors aſcribe the cauſe of *cancers* to an acid ferment which firſt coagulates the juices in the glands, and afterwards corrodes and ulcerates the part. Gendron refuting this theory, ſubſtitutes another; the *cancer*, according to him, is not a diſeaſe of the fluids, but of the ſolids. It ariſes from a diſorder of the lymphatic and excretory veſſels of the glands, which becoming by ſome accident impervious, and ceaſing to filtrate and convey their liquors, by degrees degenerate into a compact horny maſs, capable of germination and ulceration. What ſeems to confirm this origin is, that in grown *cancers* there is always found a hard callous ſubſtance not unlike horn, with blood veſſels diſſeminated through it, which yet are ſmaller and narrower than before the formation of the hardneſs. This calloſity is found in cutaneous *cancers*, though it there extends itſelf in a different manner, appearing at firſt like a ſmall wart from which ſpring cutaneous filaments. When the ulceration has made ſome progreſs, theſe appear like pin-heads in the fleſh, which are no other than the extremities of the filaments. This ſubſtance always found in true *cancers*, according to M. Gendron, is the *cancer* itſelf, formed by the tranſmutation of the glandular and lymphatic veſſels. On this principle he reſolves the ſpreading of a *cancer*, into a vegetation performed by the conveyance of the nutritious juices through the ramifications of the tumor, as through horns, nails, or the like ſubſtances. The pain proceeds from the compreſſion of the nervous parts, as that in corns, and the lividity from the obſtruction of the blood; not as commonly ſuppoſed from a cauſtic ſalt, which would ſoon cauſe an eſchar. *Gendron*, Recherch. ſur la Nat. &c. des *cancers*. c. 3. ſeq. Phil. Tranſ. N° 260. p. 477. ſeq. Act Erud. Lipſ. an. 1701. p. 306. ſeq.

The *cancer* is one of thoſe diſeaſes for which no competent remedy has been yet found, not even when taken early, or in its occult ſtate. The moſt that medicine can do, is to palliate, or keep it back by diet and general remedies. *Le Clerc*, Treat. Chir. Operat. c. 8. p. 198, ſeq. Where the operation of cutting off a cancerous breaſt is deſcribed.

'Tis a famous aphoriſm, that occult *cancers* are better uncured than cured; and that the patient will live longer with them than without them [a]. But phyſicians are not to be deterred by an old aphoriſm; they attempt not only a palliative, but a radical cure. The former partly by externals of the narcotic kind, to allay the pain, and hinder the ſpreading of the *cancer*; partly by internals, the chief of which are the diaphoreticum poterii, martials, ſeveral preparations of earth worms, and tincture of antimony [b], but eſpecially the juice of the ſolanum lethale, which is a topic of great fame for the palliative cure of *cancers*. It was the great ſecret of Percival Willougby. Gendron improves it by the addition of ſaccharum ſaturni [c]. Paracelſus and Helmont boaſt of their arſenical preparations, and other mineral abſorbents, which may indeed conſume the fungous fleſh, but the cure, according to Gendron, conſiſts only in eradicating the callous body, which is rather irritated and increaſed by the injudicious application of corroſive medicines [d]. — [a *Hippoc.* aphor. 38. ſect. 6. b Act. Erud. Lipſ. an. 1701. p. 310. c Phil. Tranſ. ubi ſupra. p. 481. d Id. ib. p. 480.]

The true cure of *cancers*, according to this writer, is either by exſection or amputation of the part, or by the application of cauteries. The former may be uſed where the tumor is moveable, and its baſe terminates abruptly, does not adhere to the adjacent parts, and conſequently has ſent no filaments to the ſame; as is the caſe in all *cancers* ariſing from ſchirrhous or ſcrophulous tumors. *Gendron*, lib. cit. c. 8. Act. Erud. Lipſ. 1701. p. 308, ſeq.

But the true *cancers*, he obſerves, are ſeldom extirpated with ſucceſs; and the operation would be leſs in repute, if ſchirrhi, ſtrumæ, and other ſimilar tumors were not frequently miſtaken for *cancers*. Phil. Tranſ. loc. cit. p. 479.

Dr. Cheyne ſays, that a total aſs milk diet, about two quarts a day without any other food or drink, will in time cure a *cancer*. Nat. meth. of curing diſ. p. 263, 264.

In the memoirs of the royal academy of ſciences mention is made of the radical cure of three inveterate *cancers*, by an infuſion of the leaves of plumbago in olive oil; theſe *cancers* had been deemed incurable by reaſon of their adherence to bony parts. The author of that memoir, Monſieur Sauvages de la Croix, obſerves, that the cancerous ulcers were anointed three times a day with the beforementioned infuſion of plumbago, and that the operation was repeated, till the black eſchar thereby formed was ſufficiently encruſted for the patient to feel no ſharp pains upon the application; and that this happened in about a fortnight's time. See Mem. Acad. Scienc. An. 1739. p. 471. Edit. Pariſ.

Cancers are ſometimes internal. We have hiſtories of two ſuch in the philoſophical Tranſactions [a], from which Dr. Burton endeavours to deduce the diagnoſtics of a *cancer* within the abdomen [b]. — [a N° 464. ſect. 2. b Ib. p. 111.]

To prevent CANCERS. — When there is danger of an approaching *cancer*, the acrimony of the blood is, if poſſible, to be corrected by the uſe both of internal and external remedies, and a ſtrict regimen in regard to diet is to be obſerved. Broths and ſoups made of the fleſh of young animals, and with proper herbs boiled in them, as ſcorſonera, and the others of that tribe, are very beneficial in theſe caſes; the moſt wholeſome drink is either fair water, or a decoction of China Root, or ſarſaparilla, or the like; and when the pains are violent from the ſchirrus, which is now threatning to become a *cancer*, white poppy ſeeds may be added in conſiderable quantities to the decoction, and it may be ſweetened with a proper quantity of ſyrup of diacodium. Two or three times a day alſo ſhould be taken a doſe of Gaſcoin's powder, ſalt of wormwood, native cinnabar, crude and diaphoretic antimony, adding to each doſe as there ſhall be occaſion, half a grain of laudanum to aſſuage the violence of the pain. Great benefit is alſo ſometimes received in this caſe by taking either the powder or juice of millepedes, with ſperma ceti.

Purges alſo of the mercurial kind frequently do great ſervice, as does alſo bleeding and cupping frequently in the ſpring and autumn. A thin plate of lead well impregnated with quickſilver may alſo be very conveniently worn on the part and with great advantage, for this method cannot but weaken the ſenſe of pain, and may often prevent a *cancer*.

If the application of the plate of lead ſhall prove inſufficient, plaiſters and ointments compoſed of ſuch ingredients as are known to aſſuage pains may alſo be applied; the following are of this kind, and are frequently found of ſervice. Take of the unguentum diapompholygos two ounces, of opium half a ſcruple, mix theſe into an ointment, and frequently rub the part affected with it; or take of an amalgama of quickſilver and lead two ounces, mix this with a ſufficient quantity of ointment of roſes, or any the like unguent, then ſpread a part of it on a linen rag, and apply it in the manner of a plaiſter to the part; or take litharge vinegar an ounce, expreſſed oil of henbane ſeeds, poppy ſeeds, and the infuſed oil of roſes, of each two ounces, mix them by a long and continued ſtirring together into an ointment, adding toward the end of the operation purified opium from ſix to ten grains, as the urgency of the ſymptoms may require: this is to be ſpread in like manner on linen rags, and applied at times to the part.

If the daubing of theſe ointments is diſliked, a refrigerent plaiſter may be uſed in their ſtead, ſuch is the lead plaiſter of Mynſycht, the plaiſters of red lead, or pompholyx, or the excellent plaiſter made by the following preſcription: take of the freſh and depurated juices of henbane, garden poppy, and water hemlock, of each four ounces, boil theſe to a thickneſs over a gentle fire, adding toward the end of the boiling eight ounces of white wax, and one ounce of oil of roſes, and make the whole into a plaiſter; or take of ſugar of lead, of ceruſe of the amalgamation of quickſilver and lead, and of the expreſſed oil of henbane ſeed, and infuſed oil of roſes, of each two ounces, make theſe into a plaiſter. If the pains are very violent, a ſmall quantity of opium may be added to either of theſe plaiſters. *Heiſter's* ſurgery, page 223.

CANCER, in a more vague ſenſe, is extended to all ulcers diſpoſed to putridity. See ULCER.

Such are moſt inveterate, malignant, cavernous, fiſtulous, varicous and colliquative ulcers. The Arabs call the elephantiaſis the univerſal *cancer*. Journ. des Sçav. T. 67. p. 312. *Junck.* Conſp. Chir. Tab. 50. p. 300. Celſus even ranks the gangrene and ſphacelus in the claſs of *cancers*.

Others include the caries of bones in the number. The reaſon is, that what a *cancer* is in the glands, that a caries is ſuppoſed to be in the bones, and a gangrene in the fleſhy parts; the juſtneſs of which ſuppoſition may bear much diſpute. Ephem. Acad. N. C. dec. 1. An. 1. p. 18.

Cancers are by ſome divided into *primitive* and *degenerate*.

Primitive CANCERS are thoſe which come of themſelves, appearing at firſt about the bigneſs of a pea, and only painful at in-

intervals; but growing bigger, and more troublesome by degrees.

Degenerate CANCERS, are those which succeed obstinate, ill-managed tumors, or imposthumes. These commence ulcerated *cancers*, without ever having been occult ones. *Le Clerc*, Treat. Chir. Disc. c. 3. art. 4. Comp. Surg. p. 123, seq.

CANCER *albus*, the white *cancer*, is used by French writers for a white chalky recrement, sometimes found adhering to the tongue, and internal parts of the mouths of children, and which, unless timely brushed away, is apt to ulcerate. *Pare*, Chir. l. 23. c. 17.

In which sense it seems to amount to the same with *aphthæ*, *Cast.* Lex. Med. p. 129. See APHTHÆ, *Cycl.* and *Suppl.*

CANCER is also applied to a species of bandage for the head, and divided into several parts, resembling the legs of a crab fish. *Gal.* de Fasc. *Cast.* Lex. Med. p. 129. See BANDAGE.

CANCER, in astronomy, is the fourth constellation in the starry zodiack, and that from which one quadrant of the ecliptic takes its denomination. The reason generally assigned for its name as well as figure, is a supposed resemblance which the sun's motion in this sign bears to the crab fish. As the latter walks backwards, so the former in this part of his course begins to go backwards, or recede from us [a], though the disposition of stars in this sign is by others supposed to have given the first hint to the representation of a crab [b]. — [a Phil. Trans. N° 301. p. 2067. b *Vital.* Lex. Math. p. 90.]

Cancer is known by divers other names, as *Octipes*, *Nepo*, *Astacus*, *Cammarus*, *Alsartan* and *Asartan*. Schiller, in lieu of the figure of a crab, represents the evangelist St. John; Harsdorff, the christian in armour; Weigelius, the manger, or countryman's arms. *Wolf.* Lex. Math. p. 301. Ephes. c. 6. v. 14, seq.

CANCER, in the military art, denotes a long, ponderous beam, used for beating down walls, not unlike the manner of a ram. *Aquin.* Lex. Milit. T. 1. p. 157. *Du Cange*, Gloss. Lat. T. 1. p. 737. See ARIES, *Cycl.*

CANCEROUS, or CANCEROSE, something that belongs to, or partakes of the nature and qualities of a *cancer*. See CANCER.

In which sense the word signifies the same with *carcinomatous*. See CARCINOMATOUS.

CANCEROUS *ulcer*, is frequently used for an open *cancer*, or a *cancer* when come to an ulceration.

CANCEROUS *tumor* is sometimes used for an occult *cancer*, or a *cancer* before it bursts.

CANCEROUS, or CANCRIFORM, is also an apellation given to all disorders which bear a resemblance to *cancers*, yet are not strictly such.

In this sense we say a *cancerous* ulcer. See ULCER, *Cycl.* and *Suppl.*

Cancerous tumors bear a near affinity to schirrous ones. When a schirrhus comes to suppurate, it it generally called a *cancerous* ulcer. *Shaw*, New Pract Phys. p. 441, and 616. See SCHIRRHUS, *Cycl.* and *Suppl.*

CANCRIFORM, *cancriformis*, the same with *cancroides*, or *cancerous*. See CANCEROUS.

Wedelius gives a discourse of hard rebellious *cancriform* tumors. Ephem. Acad. N. C. Dec. 2. An. 1. Obs. 12.

CANCRINE *verses*, the same with retrograde. *Baill.* Jugem. des Scav. T. 4. P. 1. p. 50. See RETROGRADE, *Cycl.*

CANDELARIA, in botany, a name by which some authors have called the great white mullein. *Ger.* Emac. Ind. 2.

CANDERROS, in the materia medica, a name of an East Indian gum, not much known among us, though sometimes imported. It has much of the appearance of common amber, only that it wants its yellow colour, being white and pellucid; we sometimes see it turned into toys of various kinds, which are very light, and of a good polish. Garcias and some other authors tell us, that the people of Borneo, and some other places where camphor is produced, have the art of adulterating the crude camphor, which they send over to us with large quantities of this gum.

Scaliger observing that there is a kind of camphor called by authors *canzuri*, supposes that to be the kind thus adulterated with the *canderros*; he says that the camphor which is brought from the island of Borneo has always a large quantity of foulness, and extraneous substances mixed among it; particularly that it contains fragments of stones, and a large quantity of the gum *canderras*, which, he adds, is an oriental gum, resembling amber.

It is not probable, however, that this is the camphor called *canzuri*, because this is always described as the best sort of camphor, which would scarce be the case, were it an adulterated kind; it is more probable that it had this name from some place called *Canzur*, where it was either produced, or brought to market.

CANDIDATE (*Cycl.*) — The white gown worn by *candidates* was loose and ungirded, nor was there any close garment under it, which some interpret as done with design to avoid any suspicion people might have of bribery; though Plutarch rather thinks it done to gain the affections of the people by suing in such an humble garb; or else that such as had received wounds in the service of their country, might more easily demonstrate those tokens of their courage and fidelity. Vid. *Plut.* in Coriol. *Ferrar.* de re Vest. l. 1. c. 1. 8. *Schoetg.* Lex. Ant. p. 262. *Pitisc.* Lex. Ant. T. 1. p. 343, seq. *Kenn.* Rom. Ant. Not. P. 2. l. 5. c. 8. p. 306, seq.

The Roman *candidates* usually declared their pretensions a year before the time of election, which was spent in making interest and gaining friends. Various arts of popularity were practised for this purpose, and frequent circuits made round the city, and visits and compliments to all sorts of persons, the process of which formed what was called *ambitus*. See AMBITUS, *Cycl.* and *Suppl.*

CANDIDATI *principis*, were those who were recommen offices by the emperors.

Thus supported they needed not much to court the people, so that their behaviour is represented as rather disobliging, at least negligent. Hence that jest in Quintilian, *L. Galba pilam negligenter petente, sic inquit petis tanquam Cæsaris candidatus.* i. e. He aimed at the ball with as much negligence as the emperors *candidates* did at honours. *Quint.* Inst. l. 6. c. 3. *Pitisc.* Lex. Ant. T. 1. p. 344. *Schoetg.* Lex. Ant. p. 262.

CANDIDATUS *principis*, in antiquity, an office in the court of the emperor of Constantinople, answering to a secretary of state among us.

The *candidatus principis* was also denominated *Quæstor principis* or *Augusti*. *Brisson*, Sel. Ant. l. 1. c. 16. *Kenn.* Ant. Rom. P. 2. l. 3. c. 8. p. 115.

CANDIDATES *of baptism*, in the antient church were called catechumens. See CATECHUMEN, *Cycl.*

CANDIDATES, in the college of physicians, London, is the order of members out of whom the fellows are chosen. See COLLEGE, *Cycl.*

The *candidates* must be natives of England, doctors of physic, admitted to the degree in our own universities, and ought to have practised physic four years before they are admitted into the order. The number of *candidates* is never to exceed twelve. Stat. Coll. Reg. Med. Lond. c. 11.

CANDIDATE, in academical orders or degrees, denotes a person to whom, after full examination, and the performance of inaugural exercises, licence is granted to take up the highest or doctoral dignity when he pleases. Itter. de Honor. et Grad. Acad. c. 3. *Kust.* Bibl. Nov. Libr. An. 1698. p. 481. See DEGREE, DOCTOR, LICENTIATE, &c. *Cycl.*

CANDLE (*Cycl.*) — The ascent of the tallow up the wick in a burning *candle*, may be resolved into the same principle of filtration, or attraction as that of water up a heap of ashes, or even up a capillary tube. The wick of a *candle* is but slightly twisted, that all its hairs may be easily come at; which being very small, and abounding in sulphur, soon take the flame; and the flame by its heat rarifying the air, and dissolving the tallow underneath, makes the globules thereof ascend into the rarified spaces of the wick, and these, with the air about it, prove food for the flame. *Hought.* Collect. T. 1. N° 19. p. 57.

The flame of a *candle* is found to be hotter at the bottom, and the edges, than in the middle; and hence it is, that holding a thread through the middle of the flame, it first breaks or burns in a part where the edge of the flame touched, not in the middle. Helmont and others compare the sensitive soul or principle of life in animals to the flame of a *candle*. *Hook*, Microgr. Obs. 20. p. 429. *Helm.* de Lithias c. 9. n. 35.

Several authors assert, that the stench of a tallow *candle* extinguished, is of a poisonous nature, and is said to promote abortion [a]; Lanzoni gives an instance of a young man in liquor killed by the repeated application of the snuff of a *candle* to his nose, when asleep, by his comrades. After half an hour's practice, the youth was seized with a difficulty of breathing, and convulsions, and died the following night [b]. — [a *Amman.* Medic. Crit. p. 367. *Cast.* Lex. Med. p. 129. b *Ephem.* Acad. N. C. Dec. 2. An. 9. Obs. 205.]

The Roman *candles* were at first little strings dipt in pitch, or surrounded with wax; though afterwards they made them of the papyrus, covered likewise with wax; and sometimes also of rushes, by stripping off the outer rind, and only retaining the pith. — For religious offices, wax *candles* were used; for vulgar uses, those of tallow. *Serv.* ad Æn. l. 1. v. 731. *Plin.* Hist. Nat. l. 17. c. 37.

Lord Bacon proposes *candles* of divers compositions and ingredients, as also of different sorts of wicks; with experiments of the degrees of duration, and light of each.

Good housewives bury their *candles* in flour, or bran, which 'tis said increases their lasting, almost half [a]; — Some speak of perpetual *candles* made of salamander's wool [b]. — [a *Bac.* Nat. Hist. Cent. 4. § 369, seq. b Id. ibid. Cent. 8. § 774.]

CANDLE-*snuffer*. In Spain, the great *candle-snuffer* is said to be an officer of great dignity; he is called *espavillador major*. Trev. Dict. Univ. T. 1. p. 1622.

Shoemaker's CANDLE, a kind of double *candle*, composed of two mould *candles* joined by clapping them together, when on the rod or broch, and cementing them still further by giving them one or two dips in the melted tallow.

They are thus called because chiefly used by the artificers of that denomination, to work by in the winter nights.

King's CANDLE, or *Royal* CANDLE, denotes a very large sort of *candle*, made in a mould, and decorated with ornaments of painting and sculpture. *Savar.* Dict. Comm. T. 1. p. 648. voc. *Chandelle.*

Rush CANDLES, uſed in divers parts of England, are made of the pith of a ſort of ruſhes, peeled, or ſtripped of the ſkin, except in one ſide, and dipt in melted greaſe.

Medicinal CANDLES, *candelæ fumales*, are compoſitions of odoriferous, aromatic, and inflammable matters, as benzoin, ſtorax, olibanum, turpentine, and the like, mixed up with mucilage of tragacanth, and formed into maſſes in ſhape of *candles*. The effluvia and odours whereof when burnt, are ſuppoſed to be ſalutary to the breaſt, &c. *Junck*, Lex. Chym. Pharm. P. 2. p. 110, ſeq.

Candles for caruncles of the urinary paſſage, are made of wax and turpentine melted, and wicks dipt into the ſame, till brought to the due thickneſs; then ſmeared over with an unguent of ceruſs, and precipitate and butter of antimony; to be thruſt up the yard till they reach the caruncula. Id. ibid. p. 111.

CANDLE-*tree*, in the Weſt Indies, a tree of whoſe fruit boiled to a thick fat conſiſtence, are made good *candles*. *Ray*, Wiſd. of Creat. P. 2. p. 210. It ſeems to be the ſame as the

CANDLE *berry tree*, a denomination of an aromatic evergreen, from whoſe berries are drawn, by boiling, a green wax, of which *candles* are made. It is alſo called the *Virginia myrtle*. *Bradl.* New Improv. Gard. P. 3. p. 265.

CANDLE *wood*, ſlips of pine about the thickneſs of the finger, uſed in New England and other colonies to burn inſtead of *candles*, giving a very good light. *Hought*, Collect. T. 3. N° 417. p. 42. The French inhabitants of the iſland of Tortuga uſe ſlips of yellow ſantal wood for the ſame purpoſe, and under the ſame denomination of *bois de chandelle*, which yields a clear flame, though of a green colour. *Trev.* Dict. Univ. T. 1. p. 1095. voc. *Bois*.

CANDLE-*lighter*, an officer in the antient church, called alſo *accenſor* and *acolythus*. *Du Cange*, Gloſſ. Lat. T. 1. p. 34. voc. *accenſor*.

CANDLESTICK, a houſhold utenſil, contrived to hold one, or more lighted candles. Larger, and more ſtately *candleſticks* contrived for holding a great number of candles, are called *branches* and *girandoles*; and when made of glaſs, *luſtres*.

Moſes made a golden *candleſtick* with ſeven branches, ſupporting as many lamps, to be placed in the tabernacle, to illumine the altar of perfumes and table of ſhew-bread [a]; it weighed a talent, or, according to Joſephus, ſeventy minæ. Solomon when he built the temple, inſtead of one, erected ten golden *candleſticks* of the ſame form with that deſcribed by Moſes [b]. On a triumphal arch erected to Veſpaſian, is repreſented the golden *candleſtick* with ſeven branches [c].—[a *Exod.* xxv. v. 31. ſeq. b 1 *King.* c. vii. v. 49. c *Baron.* an. 73. n. 2. *Calm.* Dict. Bibl. T. 1. p. 354. Jour. Liter. T. 9. p. 309.]

Water CANDLESTICK, a kind of jet or fountain raiſed on a foot which ſupports a little baſon reſembling the diſk of a *candleſtick*, down which the water falls into another larger baſon. *Davil.* Courſ. d'Archit. P. 2. p. 457. in voc. *Chandelier*.

CANE, *(Cycl.)* in commerce, the ſame with reed, called among botaniſts *arundo*.

Canes make a conſiderable article in commerce. There are imported two ſorts, viz. walking and rattan *canes*. Stat. Abr. 8vo. Art. Cuſtoms, T. 1. p. 193, ſeq. *Hought.* Collect. T. 2. N° 307, ſeq. p. 300, and 302.

Walking-CANES are ſaid by Bradley to be joints of the roots of a ſort of reed, called *canna Indica*. This plant ſhoots in joints about three or four feet long, near the ſurface of the ground, and at every knot produces great numbers of fibres, by which it receives its nouriſhment. The joints are made ſtrait by the fire, which occaſions thoſe ſhades or clouds frequently ſeen in them. Bradley thinks the *cane* tree might be propagated here by planting ſome of the roots with their knots in artificial bogs, &c. *Bradl.* Dict. Botan. T. 1. voc. *cannæ*.

Canes may be ſtained like tortoiſe ſhell, by a mixture of aqua fortis and oil of vitriol, laid on them at ſeveral times, over live coals, to cauſe it to penetrate the deeper, and afterwards giving them a gloſs with a little ſoft wax, and a dry cloth. *Boyle*'s Works, abr. Vol. 1. p. 133.

Rattan CANES are a ſmaller ſort brought from China and Japon, very tough; which being ſplit, are uſed for making of *cane* chairs. — They are the produce of a reed called *rottang malabarica minor*, or leſſer rattan [a]. Theſe when dry, being ſtruck againſt each other, will give fire, and are uſed accordingly in ſome places in lieu of flint and ſteel. Being twiſted together they make cordage of them. The Chineſe and Japoneſe veſſels are ſaid to have their cables made hereof, which are leſs liable to rot in the water than hemp [b]. — [a Vid Phil. Tranſ. N° 244. p. 326, ſeq. Item, N° 267, p. 717. b *Salmon*, Preſ. Stat. Chin. p. 67.]

CANE *apple*, in natural hiſtory, a name given by the common people of Ireland to the arbutus or ſtrawberry tree, which is a native of that country, and flouriſhes very particularly in it. The moſt ſouthern parts of France, Italy, and Sicily, are given us by authors as the places of growth of this tree, and in all theſe places it grows but low and in form of a ſhrub: whereas in the rocky parts of the county of Kerry, about Loughlane, and in the iſlands of the ſame Lough, it grows up into a large and tall tree.

Bellonius, in his obſervations ſays, that it grows in this manner alſo in mount Athos in Macedony, and Pliny quotes Juba as mentioning it as a very ſtrange thing, that the arbutus or ſtrawberry tree grows to a tall tree in ſome parts of Arabia. In Ireland the body of the tree is often three or four foot in circumference, and its height between twenty and thirty. Phil. Tranſ N° 227. p. 510.

CANELLA *alba*, in botany, the ſame with what is otherwiſe called *cortex winteranus*. See WINTERANUS *cortex*.

CANENTES, in natural hiſtory, a name uſed by ſome of the older writers for a ſpecies of foſſil ſhell not known to us in its recent ſtate, but deſcribed by Klein under the name of the *tubulus marinus concameratus*, and by other of the late authors under thoſe of *polythalamium* and *orthoceratites*. *Aldrovand.* Muſ. Met. p. 732.

CANEPHORÆ *(Cycl.)* — The learned are at variance about the contents of the baſkets bore by the *canephoræ*. Some will have it, that neither they, nor the prieſteſs herſelf knew what was in them. Others conjecture that it was the things neceſſary for ſacrifice. Others with more probability aſſert, it was a woman's privities, which had a peculiar ſhare in thoſe myſteries. Vid. *Sigon.* de Rep. Ath. l. 4. c. 7. *Meurs.* Cecrop. c. 23. Ejuſd. Panath. c. 23. *Pitiſc.* Lex. Ant. T. 1. p. 344. *Schoetg.* Cur. Lex. Ant. p. 261, ſeq.

There were alſo *canephoræ* in the ceremonies of Ceres and Bacchus [a]. Thoſe in the Bacchanalia carried golden baſkets, in which, beſides divers ſorts of firſt fruits [b], were contained a man's privities. Among antient monuments, we find mention of divers figures of *canephoræ* [c]. In that famous cornelian called Michael Angelo's ring, there are three *canephoræ* with their baſkets on their heads. — [a Vid. *Fab.* Theſ. p. 435. *Pitiſc.* Lex. Ant. T. 1. p. 344, ſeq. b *Lakemac.* Antiq. Græc. Sacr. P. 4. c. 2. § 12. *Schoetg.* Lex. Ant. p. 263. c *Cic.* Verr. 6. c. 3.] See CANEPHORIA, *Cycl.*

The appellation *canephoræ* was alſo given to virgins at Athens, when becoming marriageable, they preſented certain baſkets full of little curioſities to Diana, in order to procure leave to quit her train, and change their ſtate of life. *Pott.* Archæol. Græc. l. 4. c. 11. p. 279.

CANES, in Egypt and other Eaſtern countries, a poor ſort of buildings for the reception of ſtrangers and travellers. People are accommodated in theſe with a room at a ſmall price, but with no other neceſſaries; ſo that, excepting the room, there are no greater accommodations in theſe houſes than in the deſarts, but that there is a market near. *Pocock*'s Egypt, 8vo. p. 37.

CANES *Venatici*, in aſtronomy, the greyhounds, two new conſtellations, firſt eſtabliſhed by Hevelius, between the tail of the great bear, and Bootes arm, above the Coma Berenices [a]. The firſt is called *aſterion*, being that next the bear's tail, the other *chara*. They comprehend 23 ſtars, of which Tycho only obſerved two. The longitudes and latitudes of each are given by Hevelius [b]. — [a *Hevel.* Firmam. Sobieſc. Fig. E. b *Hevel.* Prodrom. Aſtron. p. 277. ſeq. *Wolf.* Lex. Math. p. 303.]

CANGA, in the Chineſe affairs, a wooden clog borne on the neck by way of puniſhment for divers offences.

The *canga* is compoſed of two pieces of wood notched, to receive the criminal's neck; the load lies on his ſhoulders, and is more or leſs heavy according to the quality of his offence. Some *cangas* weigh 200 pounds; the generality from 50 to 60 pounds. The mandarins condemn to the *canga*. Sentence of death is ſometimes commuted for by the penalty of the *canga*. Lett. Edifiant. et Cur. T. 18. p. 444. Item, T. 19. p. 392.

CANIA, in botany, a name given by Pliny and ſome other authors to the common ſtinging nettle. *Ger.* Emac. Ind. 2.

CANICULA, in zoology, the name by which Ariſtotle, and ſince him Rondeletius, Aldrovandus, and ſome others have called the *catulus*. *Willughby*'s Hiſt. Piſc. p. 62. See CATULUS.

CANICULA was alſo uſed by Pliny and the old Romans for that fiſh which the Italians expreſs by the ſame ſort of diminutive name, at this time the *lamiola*. It is the *galeus canis* of authors, the fiſh we in Cornwall call the *tape*. It is a ſpecies of ſqualus called by Artedi the ſqualus with the noſtrils placed near the mouth, and with ſmall foramina near the eyes. See the articles GALEUS and SQUALUS.

CANICULAR *(Cycl.)* — *Canicular* days are computed by Harris to extend from the 24th of July to the 28th of Auguſt; by Ozanam from the 24th of July only to the 24th of Auguſt [a]. By the body of almanac-makers from the 19th of July to the 28th of Auguſt [b]. Though by ſome from the 19th of July to the 26th of Auguſt [c]. — [a Vid *Wolf.* Lex. Math. p. 1289, voc. *Sirius*. *Ozan.* Dict. Math. p. 155. *Harr.* Lex. Tech. in voc. *Caniculus*. b Vid. *Park.* Ephem. & *Gadb.* Alman. an. 1732. c Vid. Lady's Diary ann. 1732.]

Tis obſervable, that the ſame qualities and influences are popularly aſcribed to the *dog-days* among us as among the antients, though the grounds as well as computations be ſo different; for whereas they obſerved the canicula's riſing heliacally, we obſerve it coſmically. The reaſon of the change may perhaps be owing to this, that before the canicula riſes heliacally in our latitude, the heat of the ſummer is uſually ſpent. So that we deduce our *dog-days* from the hot weather, rather than the hot weather from them. But this is not the only variation; for the antients computed from the riſe of the greater dog-ſtar or Sirius, whereas the moderns, at leaſt ſome of them, reckon from that of the leſſer dog-ſtar or Procyon, the one in Orion's dog, the other in that of Cephalus [a]. And hence our almanac-makers ſet down the 19th of July for the beginning of the

dog-

dog-days, which is about the time when the leſſer dog-ſtar riſes with the ſun; whereas the greater dog-ſtar does not riſe till near a month after. Yet is not the vulgar error on the whole ſo great as Dr. Brown would make it. The *canicular* days, according to the true account, commencing twenty days before the riſing of Sirius, will begin the 27th of July, and end the 4th of September. Dr. Bainbrigge, aſtronomy profeſſor at Oxford, has a treatiſe expreſs on the *dog-days*, under the title of *canicularia* [b]; to which is added by Greaves, a demonſtration of the heliacal riſing of Sirius for the parallel of the Lower Egypt.—[a *Vital.* Lex. Math. p. 387. *Trev.* Dict. Univ. T. 1. p. 1386. b Oxon. 1648. 12°.]

CANICULAR *year*, *annus canicularis*, denotes the Egyptian natural year, which was computed from one heliacal riſing of canicula to the next. *Strauch.* Brev. Chronol. l. 1. c. 6. § 14. This is alſo called *annus canarius*, and *annus cynicus*; by the Egyptians themſelves the *Sothic year*, from *Soth* a denomination given by them to Sirius. Some alſo call it the *heliacal year*.

The *canicular* year conſiſted ordinarily of 365 days, and every 4th year of 366 days, by which it was accommodated to the civil year. The reaſon of their choice of canicula before the other ſtars, to compute their time by, was not only the ſuperior brightneſs of that ſtar, but becauſe its heliacal riſing was in Egypt a time of ſingular note, as falling on the greateſt augmentation of the Nile, the reputed father of Egypt. Epheſtion adds, that from the aſpect of canicula, its habit and colour the Egyptians drew prognoſtics concerning the riſe of the Nile; and, according to Florus, predicted the future ſtate of the year. So that the firſt riſing of this ſtar was yearly obſerved with great attention. *Bainbrig.* Canicul. c. 4. p. 26. ſeq.

CANICULUM, or CANICULUS, κανικλειον in the Byzantine antiquities, a golden ſtandiſh, or ink veſſel, decorated with precious ſtones, wherein was kept the ſacred *encauſtum*, or red ink, wherewith the emperors ſigned their decrees, letters, &c. The word is by ſome derived from *canis* or *caniculus*, ; alluding to the figure of a dog, which it repreſented; or rather becauſe it was ſupported by the figures of dogs [a]. By Salmaſius from Κανον, an inkhorn [b]. — [a *Aleman.* ad Procop. Hiſt. Arcan. *Du Cange*, Gloſſ. Gr. T. 1. p. 574. b *Salmaſ.* Exerc. ad Solin. T. 1. p. 129.]

The *caniculum* was under the care of a particular officer of ſtate, hence called *caniclinus* or *canicleus*, κανικλειος. or ὁ επι τε κανικλειε, who was in great requeſt. *Du Cange* will have the *caniclinus* to have been the ſame with the *logotheta*. *Du Cange*, Gloſs. Græc. T. 1. p. 574. Ejuſd. Gloſſ. Lat. T. 1. p. 741. *Salmaſ.* Exerc. ad Solin. p. 129. *Montfauc.* Palæogr. Gr. l. 1. c. 3.] See LOGOTHETA.

CANICUM, in botany, a name given by Avicenna, and ſome other authors, to the ſmall celandine or pile-wort. *Ger.* Emac. Ind. 2.

CANINA *lappa*, in botany, a name given by ſome of the old Roman authors to the fruit of the aparine or gooſe-graſs. They are called by others *lappæ boariæ*, and *lappæ canariæ*, and the plant *lappa* and *lappago*.

CANINANA, in zoology, the name of a ſpecies of ſerpent found in America, and eſteemed one of the leſs poiſonous kinds. It grows to about two foot long, and is green on the back, and yellow on the belly. It feeds on eggs and ſmall birds; the natives cut off its head and tail, and eat the body as a delicate diſh. *Ray*'s Syn. anim. p. 328.

CANINE, (*Cycl.*) in a general ſenſe, ſomething that relates to dogs.

Dr. Douglaſs gives frequent compariſons between the *canine* muſcles and the human. *Dougl.* Myol. in Præf. p. 6.

The voice of perſons ſeized with the hydrophobia is frequently uttered with a *canine* hoarſeneſs, and bears ſome reſemblance to the barking of a dog [a]. Dr. Liſter accounts for the cynical appearances in the hydrophobia from a ſuppoſition, that the patient has undergone ſomewhat of a transformation into the *canine* nature, or that certain of the organical parts of his body, eſpecially the gula, tongue, &c. are diſpoſed after the manner of a dog [b]. — [a Phil. Tranſ. N° 207. p. 25. b Phil. Tranſ. N° 147. p. 169.]

CANINE *appetite*, *appetentia*, or *fames canina*, amounts to much the ſame with *bulimia*, though the more exact writers make a diſtinction between the two. See BULIMY.

We have a late ſurpriſing inſtance of the *canine* appetite, mentioned in the Philoſophical Tranſactions, N° 476. p. 366, ſeq. and p. 381. A boy had this extraordinary craving appetite to ſuch a degree as to make him devour about 380 pounds of food in ſix days. It can hardly be called eating, as nothing paſſed the ſtomach, but every thing was thrown up again; this diſorder ſucceeded a fever. The boy loſt the uſe of his legs and thighs, and died a few months after, quite emaciated.

CANINE *laughter*, *riſus caninus*, that wherein the lips are drawn far back, and the mouth much extended. *Trev.* Dict. Univ. T. 1. p. 1387.

CANINE *ligament*, κυνοδεσμιον, is that whereby the prepuce of the human penis is faſtened to the glans, otherwiſe called the *frænum*. *Gorr.* Med. Defin. voc. κυνοδεσμιον. *Caſt.* Lex. Med. p. 130. See PENIS, FRÆNUM, &c. *Cycl.*

CANINE *madneſs*. *rabies canina*, is uſually ſuppoſed the ſame with hydrophobia, though ſome diſtinguiſh, applying the former denomination where the patient raves, or has loſt all uſe of reaſon; the latter, where he ſtill retains his reaſoning faculty, only his members are ſubject to certain involuntary convulſive motions, as thoſe of an epileptic or aguiſh perſon. Ephem. Acad. N.C. Dec. 3. an. 2. Obſ. 104. p. 136. ſeq. See HYDROPHOBIA and MANIA, *Cycl.* and *Suppl.*

The *rabies canina* is never without the hydrophobia, but the latter frequently without the former.

CANINE *ſulphur*, a ſort of native ſulphur diſcovered near Reggio, intermixed with earthy or ſtony matters; thus called by reaſon that dogs are ſo fond of it as to dig it out of the earth. *Giorn.* de Lettre d' Ital. T. 30. p. 266. ſeq. See SULPHUR.

CANINE *teeth*, theſe are alſo called *cynodontes*, κυνοδοντες [a]; and by the women *eye-teeth* [b]. — [a *Caſt.* Lex. Med. p. 238. voc. *cynodontes*. b *Drak.* Anthrop. l. 4. c. 3.]

CANINUS *ſerpens*, in zoology, a name given by ſome writers to the *mauballa* of the Ceyloneſe, a ſnake that has a way of flying at every thing that comes in its way, in the manner of our dogs. *Ray*'s Syn. An. p. 337.

CANIS, *dog*, in the Linnæan ſyſtem of zoology, makes a diſtinct but very large genus of animals, taking in all the dog kind, which this author only accounts ſo many varieties, and the wolf and fox, which he accounts diſtinct ſpecies. The characters of this genus are, that the creatures of it have ten paps, four on the breaſt, and ſix on the belly, feet adapted to running with five toes on the fore ones, and four on the hinder. The common dog he diſtinguiſhes by his crooked tail, the fox he calls the dog with a ſtrait tail, as long as his body; and the wolf the dog with a ſtrait tail ſhorter than its body. *Linnæus*'s Syſtem Naturæ, p. 36. See DOG.

CANIS *carcharias*, in natural hiſtory, a name given by Rondeletius, and other authors, to that ſpecies of ſhark called the *lamia*, or white ſhark by others, or *carcarias*, *lamia*, &c. See Tab. of Fiſhes. N° 3.

CANIS *galeus*, in zoology, the name of a large fiſh of the ſhark kind. It has three rows of extremely ſharp teeth; the eyes are ſmall for the ſize of the fiſh, the pupils areproportionably ſmall, and the iris of a fine bright ſilver colour, with a caſt of blue or green. The noſtrils are ſmall, and ſituated between the mouth and the end of the noſe; and the noſe, ſo far as it is extended beyond the noſtrils, is pellucid. It is of a duſky colour on the back, and a ſilver white on the belly, and its fleſh is tender, and not ill taſted. It is brought to market in Rome, and is ſometimes caught alſo on our own coaſts, as about Penzance in Cornwall. It is extremely fond of human fleſh, and will venture to leap up even upon the ſhoar for it. *Willughby*'s Hiſt. Piſc p. 51.

CANIS *volans*, in zoology, the name of an animal properly of the bat or veſpertilio kind, and diſtinguiſhed by Linnæus by the name of *veſpertillio cauda nulla*, the tailleſs Bat. *Seba*, T. 1. p. 91.

CANKER, (*Cycl.*) denotes any gnawing ulcer that corrodes the fleſh about it.

CANKER ſeems alſo popularly uſed for a gangrene, or beginning mortification. See GANGRENE.

CANKER is alſo a diſeaſe in dogs, which ſeizes their ears. Dict. Ruſt. T. 1. in voc.

CANKER, in hawks, breeds in the throat and tongue, occaſioned by foul feeding. It is cured by waſhing the mouth with honey, and white wine boiled together, then ſtrewing it with chervil powder. *Trev.* Dict. Univ. T. 1. p. 1621. voc. *chancre*.

CANKER, in horſes, is a loathſome ſorrance, which if it continue long uncured, ſo feſters and putrifies the part, that it will eat to the very bone, and if it happens to come upon the tongue will eat it aſunder; lighting upon the noſe it devours the griſtle through. Dict. Ruſt. T. 1. in voc.

CANKER, in trees, a term uſed by our farmers to expreſs a wound or blemiſh in the trunk of a tree, which does not heal up by nature, but will encreaſe and damage, if not endanger, the whole tree. Theſe wounds are ſometimes occaſioned by accidents, as blows, or by the branches of one tree galling another by the motion they are put into by the winds; if this latter be the caſe, the offending branch muſt be cut off, or drawn another way, or elſe all remedies are vain.

The wound muſt be cut and enlarged every way to the quick, and all the decayed wood muſt be taken clean out, then the whole internal ſurface of the wound muſt be rubbed over with tar mingled with oil, and after this it muſt be filled up with clay and horſe dung mixed together, or with horſe dung alone, which many eſteem beſt of all; in this caſe the dung muſt be bound over with a rag; hogs dung is by many preferred to horſe dung for this purpoſe, and it is proper to add to this application the keeping of the roots cool and moiſt, by laying fern and nettles about them. If the *canker* be only in one of the boughs of the tree, the ſhort way is to cut off the bough at once. If that be a large one, it ſhould be cut off at ſome diſtance from the body of a tree, but if a ſmall one it ſhould be cut off cloſe. The adding a coat of dung, and pond or river mud about the roots of trees, if they are ſubject to this from their ſtanding in a dry barren land, as is often the caſe, is a very good cure. *Mortimer*'s Huſbandry, V. 2. p. 79.

CANKER *worm*. See SCARABÆUS.

CANNA, in the Linnæan ſyſtem of botany, the name of a genus of plants, called *cannacorus* by Tournefort and other authors. It characters are, that the flower-cup is compoſed of three leaves, which are ſmall, coloured, pointed, placed erect, and remain a long time.

The flower is monopetalous, but divided into six parts; the several parts are pointed, and grow together at their bases; the three exterior ones are placed erect, and are twice as large as the cup, the three interior are long, two of them are erect, and one reflex.

The stamen is a single-pointed filament, very like in shape to the last segment of the flower, and affixed opposite to it; and bent back; the antheræ strait and slender, and fixed to the edge of the stamen; the pistilum is composed of a roundish, rough germen, placed under the receptacle of the seeds; a single pointed stylus, of the length and shape of one of the divisions or jags of the flower, and a long, slender, or narrow stigma on the margin of the stylus. The fruit is a roundish, rough capsule divided into three parts. The seeds are roundish. *Linnæi*, Gen. Pl. p. 1. See CANNACORUS.

CANNA, in the antient pharmacy and botany, denoted the calamus aromaticus, or according to others, cassia, fistula. *Salmas.* Exerc. ad Solin. T. 1. p. 1303.

CANNA also denotes a sort of long measure, otherwise called by modern authors a *cane*, by the Latins *calamus*, and in scripture a reed. *Calm.* Dict. Bibl. T. 1. p. 342.

The Roman *canna* contains four *braccios* [a], or palms, equivalent to six feet eleven inches Paris measure [b]. — [a *Cruse.* Vocab. T. 2. p. 273. b *Davil.* Cours. d' Archit. P. 2. p. 445. *Pitisc.* Lex. Ant. T. 1. p. 347.]

The *canna* appears to have been antiently used for a land-measure, answering to our rod, or pole. The *canna* was estimated at eight palms. Regist. Walt. Giff. Archiepisc. Ebor. p. 45. *Jac.* Law Dict. in voc.

CANNABIS, *hemp*, in botany, the name of a genus of plants, the characters of which are these: the flowers are of the apetalous kind, being composed only of a number of stamina placed in a cup. These are barren, and the embryo fruits grow on such plants of *hemp* as have no flowers. The species of *hemp* enumerated by Mr. Tournefort are these. 1. The common male *hemp*. 2. The common female *hemp*. And 3. The tall African *hemp* with small seeds. *Tourn.* Hist. p. 535. See HEMP.

CANNACORUS, in botany, the name of a genus of plants, the characters of which, according to Tournefort, are these: the flower is lilliaceous, and consists of one leaf of a tubular form, and divided into six segments at the edge; from one of these segments there grows a slender body which seems to supply the office of a pistil, and as if it also was to supply that of the stamina, it is furnished with a sort of apex or head. The cup, which is tubular, encloses the flower, and finally becomes a fruit of an oblong or roundish shape and membranaceous structure, divided into three cells, and contains several roundish seeds.

The species of *cannacorus* enumerated by Mr. Tournefort are these: 1. The common broad-leaved *cannacorus*. 2. The *cannacorus*, with yellow spotted flowers. 3. The *cannacorus*, with very large leaves, and red flowers. 4. The *cannacorus*, with shining scarlet flowers. 5. The narrow leaved *cannacorus*, with yellow flowers. And, 6. The *cannacorus*, with yellow roots, said to be the curcuma or turmerick of the shops. *Tourn.* Inst. p. 367.

CANNEL *coal*, a black bituminous fossil, frequent in Staffordshire and Lancashire, of a fine hard texture, so as to receive a polish, and become of service for divers works instead of ivory, but chiefly used for fuel, as affording a brighter, and purer flame than the common sea-coal. See COAL.

Dr. Woodward takes our *cannel coal* to be the same with the lapis ampelites of the antients, and the lapis obsidianus of some later writers. *Plin.* Hist. Nat. l. 35. c. 16. *Dioscor.* l. 5. c. 181. *Woodw.* Meth. Foss. cl. 4. c. 2. Ejusd. Nat. Hist. Engl. Foss. T. 1. cl. 7. P. 1. See AMPELITES, &c.

Cannel-coal, or as some call it *canal-coal*, is also found in Cumberland, and some other counties of the North. — It is of so close a texture, that it will take a tolerable polish. The choir of the cathedral of Litchfield is said to be in a great measure paved with *cannel-coal* for the black, and alabaster for the white, which when clean resembles marble. It also turns like ivory into many pretty works, as ink standishes, salts, candlesticks, &c. *Woodw.* Nat. Hist Engl. Foss. T. 2. p. 17.

In disposing it for fire regard is had to the grain. If they would have it burn slow they lay it flatwise on the fire, if clear, they set it edgewise, in which case it burns as light as a candle. *Hought.* Collect. N° 239. p. 152.

CANNEVAROLA, in zoology, a name by which Aldrovandus and some other authors have called the lesser reed sparrow, called by others, ficedula cannabina, and by Mr. Ray passer arundinaceus minor. It is of the size of the common redbreast, or somewhat smaller, and lives among reeds in watery places, on which it sings very sweetly. Its rump is olive-coloured, the rest of its back greyish; its breast is white, its throat yellowish, and its legs and beak are very large in proportion to its size. *Ray*'s Ornithol. p. 99. See Tab. of Birds, N° 16.

CANNIBAL, or CANIBAL, is used by modern writers for an anthropophagus, or man-eater, more especially of the West Indies. See ANTHROPOPHAGI, *Cycl.* and *Suppl.*

The denomination *cannibal* most properly belongs to the natives or savages of the Caribbee islands, among whom it is an established custom to kill and eat their prisoners of war. The name is properly that of the nations who were antiently possessed of all the Carribbee islands, and still remain possessors of some of them, either in the whole, or in part; particularly those of St. Vincent, Bekia, and St. Domingo. Some represent them as a gigantic people, whose arrows are dipt in a poison which give the hydrophobia to those wounded with them. *Zach.* Quest. Med. Leg. l. 2. tit. 1. quæst. 17. n. 7. *Cast.* Lex. Med. p. 131.

The origin of the word is unknown: 'Tis supposed to be American. The people themselves give the name *callinago* to their men, and *callipona* to their women. The Europeans are first said to have given them the denomination, *Caraibas* or *Caribbees*. They are supposed to be descended from the Galibis, a people of the neighbouring continent. *Trev.* Dict. Univ. T. 1. p. 1433. *Martin*, Dict. Geogr. T. 2. P. 2. p. 236. seq. voc. *caraibe*.

Some derive the origin of the venereal disease from the *cannibals*, attributing it to I know not what venomous quality in man's flesh, of which those people feed [a]. The *cannibals* themselves eat no flesh of those who die a natural death, as being unwholesome [b]. When the *cannibals* of St. Vincent take any of the Arouages, their hereditary enemies, prisoners, they feed them high four or five days, and then make a feast, and sacrifice them to Maboya. Such of their enemies as are killed in battle they eat on the spot. They only save women and children for slaves; they have eaten persons of all nations that have come among them. They say the French are tenderer than the Spaniards. Since their conversion to christianity they shew more humanity to their victims than before; they kill and eat them without exercising other cruelties before-hand [c]. — [a *Bac.* Nat. Hist. Cent. 1. §. 26. b Id. Cent. 9. §. 859. c Bibl. Univ. T. 6. p. 256.]

CANNOCK, or CANNOT-*stone*, a base sort of iron oar, in Staffordshire mines, of which the worst metal is made. *Plot*, Nat. Hist. Stafford. c. 4. §. 17, & 20. *Hought.* Collect. T. 2. N. 271. p. 220.

CANNON (*Cycl.*) — In the list of aids raised for the redemption of king John of France, in 1368, mention is made of an officer in the French army called *master of the king's cannons*, and of his providing four great *cannon* for the garrison of Harfleur. Du Cange even finds mention of the same engines in Froissart, and other French historians some time earlier [a]. The Germans carry the invention of *cannon* farther back, and attribute it to Albertus Magnus, a Dominican monk, about the year 1250 [b]. Is. Vossius rejects all these conjectures, and finds *cannons* in China almost 1700 years ago. According to him they were mounted by the emperor *Kitey*, in the year of Christ 85 [c]. — [a *Du Cange*, Gloss. Lat. T. 1. p. 751. voc. *canones*. b *Reiman*, Enleit. Hist. Liter. l. 2. c. 98. p. 210. c *Voss.* Var. Observ. c. 14. p. 83.]

Cannon are sometimes cooled by smeering them with sheep skin dip'd in water mixed with vinegar. Without this precaution they are apt to burst after many discharges. 'Tis also requisite to clean them with the spunge, that no fire may be left behind to endanger the next charge of powder. *Fasc.* Inq. Lex. p. 864. voc. *stuck*.

Cannon of battery, among the Italians, are those which carry an iron ball from 20 to 50 pound weight.

Culverins, those which carry a ball from 14 to 30 pound weight.

Feild peices, or small artillery, those which carry a ball from 1 to 10 or 12 pound weight.

Pattereros those which carry a stone shot from 14 to 100 pound weight. *Moore*'s Treat. Artill. P. 1. c. 6.

Different nations, it is to be observed, give different proportions to pieces of the same denomination. So that we have an Italian, a German, a French, and an English set of *cannons*, all differently adjusted. Among the Germans, the

Extraordinary reinforced CANNON, is that which shoots a ball above 70 pound weight. We find mention of divers such among the older writers on the military art; some carrying 80 pounds, and even upwards; but they are disused.

Double CANNON, is intended more for curiosity than use, being too bulky for service. It carries an iron ball of 96 pound, and is 17 calibres, or 14 foot long, weighing 128 hundred weight.

Whole CANNON, that which carries a ball of 48 pound weight. It is 18 calibres long; weighs 86, or according to Wolfius from 70 to 80 hundreds, requires 24 pounds of powder to each shot, three cannoneers to attend it, and ten labourers, and to remove it 30 horses.

Three Quarter CANNON, that which shoots a ball of 36 pounds weight, being 20 calibres long, and weighing 72, or, according to Wolfius from 60 to 70 hundreds. Its charge is 18 pound of powder, and to the management of it are required two cannoneers, and 8 servants, and to bring it into the field 26 horses are necessary. It carries the ball a somewhat less distance than the whole cannon.

Demi CANNON, or *Half* CANNON, *Mezzo cannone*, that which shoots a ball of 24 pound weight. It is 23 calibres long, 55, or according to Wolfius, from 50 to 60, hundreds weight, requires 12 pounds of powder to each shot, two cannoneers, and 6 labourers, and to bring it to the field 20, or according to Wolfius, 16 horses.

Quarter CANNON, that which shoots a ball of 12 pound weight. It is 28 calibres long, weighs 33, or, according to Wolfius, from 28 to 30 hundreds weight. Its charge of powder is 6 pound; to manage it are required two cannoneers, with 5 or 6 labourers; to bring it to the field 12, or according to Wolfius,

from

from 8 to 10 horſes. *Fæſch.* Ing. Lex. p. 156, ſeq. *Wolf.* Lex. Math. p. 312, ſeq. voc. *carthaune.*

Half Quarter CANNON, that which ſhoots a ball of 6 pound weight. It weighs from 19 to 20 hundred weight.

CANNON, among the French, is that which carries a ball of 33 pounds, is 11 foot 1 inch long, and weighs 6200 pounds.

Demi CANNON *of Spain*, that which carries a ball of 24 pounds, is 10 foot 11 inches ½ long, and weighs 5100 pounds.

*Demi*CANNON *of France*, or *culverin*, carries a ball of 16 pounds, is 10 foot eleven inches long, and weighs 4100 pounds.

Quarter CANNON *of Spain*, carries a ball of 12 pounds, is 10 foot 9 inches ½ long, and weighs 3400 pounds.

*Quarter*CANNON *of France*, or *baſtard*, carries a ball of 8 pounds, is 10 foot 7 inches ½ long, and weighs 1950 pounds.

Middle piece, *la moyenne*, carries a ball of 4 pound weight, is 10 foot 7 inches long, and weighs 1300 pounds.

Faucon and *Fauconnear* carries a ball from 2 pound to ¼ of a pound, is 7 foot long, and weighs from 800 to 150 pounds. *Saint Remy*, Mem. d'Artill. T. 2. p. 58, ſeq. *Wolf.* Elem. Pyrotech. c. 4. §. 99, & 110. *Fæſch.* Ing. Lex. p. 142. voc. *canon.*

Among the Italians, the *whole cannon* carries a ball from 70 to 120 pounds; the *cannon* from 30 to 50 pounds, and formerly to 60 pounds; the *demi cannon* from 20 to 28 pounds; the *quarter cannon* from 6 to 18 pounds; the *cannon baſilisk* among the Turks from 130 to 150, or even 200 pound. *Moore*, Treat. Artill. P. 2. c. 4.

*Ordinary*CANNONS, are thoſe of the common or middling length, each according to the proportions of its kind, *ex. gr.* 32 callibers for a culverin.

Extraordinary CANNONS, are thoſe which are longer than the uſual proportion allowed to their ſpecies, *ex. gr.* from 32 to 48 or 50 callibers for a culverin. *Moore*, Treat. Artill. P. 2. c. 3.

Baſtard CANNON, thoſe which are ſhorter than ordinary, whether they be of the whole cannon, cannon, or demi-cannon, or quarter cannon kind. Such, *ex. gr.* are culverins from 32 to 26 callibers.

Some call thoſe *baſtard cannon* which are longer than ordinary *cannons*, yet do not reach the length of culverins. But theſe ought rather to be called *extraordinary cannons*, or baſtard culverins. *Moore*, Treat. Artill. c. 4.

Cannons longer than ordinary are alſo called *ſlings*, *drakes*, &c. as thoſe ſhorter are called *cuts*.

Chambered or *camerated* CANNON is that which has a chamber near the breaſt, about 4 diameters of the piece in length, and ⅝ of a diameter in width. *Moore*, ibid. c. 4.

The thickneſs of metal in theſe is at the touch-hole ⅞, in the middle ⅝, and at the neck ⅜ of their calliber.

Reinforced, or *fortified* CANNONS, thoſe ſtronger and thicker in metal than ordinary, have their metal at the touch-hole one diameter thicker, in the middle 5 or ⅝, and at the neck ⅜.

All chamber'd *cannons* are reinforced. *Moore*, ibid. c. 4.

See further concerning the ſeveral kinds of the antient *cannons*, Semionovicz, Artill. p. 24. St. Remy, Mem. d' Artill. P. 2. p. 55. The modern pieces are deſcribed by Meith, in Artill. Recent. Prax.

Ship CANNON are ſtronger in metal than thoſe uſed by land, on account of the neceſſity they are often under of being charged with chain ſhot. They lie on ſhip carriages, having four ſmall wheels, without ſpokes, with two ropes to ſtop their running back, and bring them back to their place upon the battery.

CANNON *of courſe*, or *chaſe* CANNON, in a gally, is the largeſt, middlemoſt, and moſt effective of the guns placed in the prow, or chaſe of the veſſel, and which delivers its ſhot over the very ſtem, generally carrying a ſhot of 33 or 34 pound weight. It is a long piece, and recoils all along the middle of the gally to the maſt. *Moore*, Treat. Artill. P. 5. p. 103, ſeq. See GUN.

Braſs CANNON. What are commonly called *braſs cannon*, are not made of pure braſs; they cannot be made either of this, or of pure copper, but it is always found neceſſary to mix with theſe metals ſome coarſer ones, in order to make the whole run the cloſer and ſounder: ſuch are lead, and what the founders call pot metal. As bell metal is a mixture of copper and tin, ſo pot metal is copper and lead. About twenty pound of lead is uſually put to a hundred weight of pot metal, but about ſix pounds is ſufficient for a hundred weight of gun metal, and is of vaſt ſervice.

Firing of CANNON is performed by the application of a quick-match to the touch-hole.

The antients had their fiery tubes, or *cannæ*, which being loaden with pitch, ſtones, and iron balls, were exploded with a vehement noiſe, ſmoke, and great effect; though much inferior to our bombs. Vid. *Aquin.* Lex. Milit. T. 1. p. 159.

CANNON *mouth of a bit*, denotes a round, long piece of iron, ſometimes compoſed of two pieces coupled together, and bent in the middle. See BIT.

CANNON *mouths*, in the manege, are contrived to keep a horſe in ſubjection, being ſo ordered that they riſe gradually toward the middle, and aſcend towards the palate, that the void ſpace left underneath may afford a liberty to the tougue. *Guill.* Gent. Dict. P. 1. in voc.

CANNONEER, or CANNONIER, an officer in the artillery, who has the care of charging, pointing, and firing a cannon. *Aubin*, Dict. Mar. p. 161. *Trev.* Dict. Univ. T. 1. p. 1397. See CANNON.

The *cannoneer* is the ſame with what is otherwiſe called *gunner*; in the ſtreights *captain*; and in other places *connoſtable*. *Moore*, Treat. Artill. P. 5. p. 105.

CANNOW. See the article CANOW.

CANNULA, or CANOLA, *(Cycl.)* in eccleſiaſtical writers, was a tube of ſilver, or other metal, wherein were put the relicks, which the pope ſent as preſents to princes, &c. *Schmid.* Lex. Eccleſ. P. 1. p. 109. voc. *canola.* *Du Cange*, Gloſſ. Lat. T. 1. p. 749.

CANNULA, or CANOLA, was alſo a ſort of ſiphon, through which they antiently ſucked the wine in the euchariſt. *Schmid.* loc. cit. Item, P. 3. p. 47. voc. *ſiphon.* *Schoetg.* Cur. Ant. Lex. p. 263.

CANOE. See the article CANOW.

CANONARCHA, or CANONARCHUS, Κανωναρχης, or Κανωναρχων, a dignity in the Greek church, anſwering to the precentor in the Latin, or chanter in the Engliſh church. See PRAECENTOR and CHANTER, *Cycl.*

The word is formed from κανων and αρχη, beginning, or governing; in regard it belongs to this officer to ſet the canons, or church hymns, and to direct the choir in ſinging them. *Fabric.* Bibl. Græc. l. 5. c. 32. *Du Cange*, Gloſſ. Græc. T. 1. p. 583.

A like officer we alſo find in the antient monaſteries, under the denomination *canonarcha*, whoſe buſineſs was to beat the ſemantrum, or wooden inſtrument, whereby the monks were called to the choir to ſing canons. There appear to have been ſeveral *canonarchæ* in the ſame monaſtery. *Suic.* Theſ. Eccleſ. T. 2. p. 33. ſeq. *Du Cange*, loc. cit. *Magr.* Not. Voc. Eccl. p. 50. *Moſch.* Vit. Patr. l. 10. c. 11. and c. 50. *Trev.* Dict. Univ. T. 1. p. 1396.

CANONE *al ſoſpiro*, in the Italian muſic, a canon, the parts of which ſucceed each other by a ſoſpiro, that is, the time of a crochet. *Broſſard.*

CANONICA, in philoſophical hiſtory, an appellation given by Epicurus to his doctrine of logic.

It was called *canonica*, as conſiſting of a few canons, or rules for directing the underſtanding in the purſuit and knowledge of truth.

Epicurus's *canonica* is repreſented as a very ſlight and inſufficient logic, by ſeveral antients [a] who put a great value on his ethics and phyſics. Laertius [b] even aſſures, that the Epicureans rejected logic, as a ſuperfluous ſcience; and Plutarch [c] complains that Epicurus made an unſkilful and preſpoſterous uſe of ſyllogiſms. But theſe cenſures ſeem too ſevere. Epicurus was not averſe to the ſtudy of logic, but even gave better rules in this art than other philoſophers who aimed at no glory but that of logics. He only ſeems to have rejected the dialectics of the ſtoics, as full of vain ſubtilties and deceits, and fitted rather for parade and diſputation than real uſe [d].—[a *Cic.* de Finib. l. 1. c. 7. Item Acad. quæſt. l. 3. b *Laert.* l. 10. Sec. 31. c *A. Gel.* Noct. Att. l. 2. c. 8. d *Gaſſend.* de Vit. et Morib. Epicur. l. 8. c. 4. & c. 10. *Walc.* Hiſt. Log. l. 2. Sec. 1. §. 16. Parerg. Acad. p. 543, ſeq.] See DIALECTICA, *Cycl.*

The ſtreſs of Epicurus's *canonica* conſiſts in his doctrine of the criteria of truth.

All queſtions in philoſophy are either concerning words or things: concerning things we ſeek their truth, concerning words their ſignification: Things are either natural or moral; and the former are either perceived by ſenſe, or by the underſtanding. Hence, according to Epicurus, ariſe three *criterions* of truth, viz. ſenſe, anticipation, or prænotion, and paſſion. The great canon, or principle of Epicurus's logic is, that the ſenſes are never deceived; and therefore that every ſenſation, or perception of an appearance is true. Vid. *Gaſſend.* Synt. Phil. Epicur. P. 1. de orig. & variet. c. 7. *Stanl.* Hiſt. Philoſ. P. 13. p. 351. *Thomas*, Introd. Phil. Aulic. c. 5. §. 18. ſeq. p. 106. ſeq. *Walc.* loc. cit.

CANONICA, κανονικη is alſo uſed by ſome antients to denote the art of muſic. *A. Gell.* l. 16. c. 18. *Voſſ.* de quat. Art. Popul. c. 4. §. 2.

CANONICA is more particularly uſed to denote that ſpecies of muſic, which does not determine the intervals of ſounds by the ear, but by a canon, or ſtretched chord. Vid. *Ptolem.* Harm. l. 1. c. 8. *Boet.* de Muſ. l. 1. c. 9. *Vitruv.* l. 1. c. 1. *Voſſ.* Scient. Mathem. c. 19. §. 5. p. 81, ſeq. See CANON, *Cycl.*

CANONICAL, ſomething that belongs to, or partakes of the nature of a rule or canon.

Canonical amounts to much the ſame with what we otherwiſe call regular.

CANONICAL *obedience*, is that ſubmiſſion which by the eccleſiaſtical laws the inferior clergy are to pay to their biſhops; and religious to their ſuperiors. To the Textus Roffenſis are ſubjoined ſeveral formulæ of *canonical obedience* antiently paid by the Engliſh biſhops, not excepting the archbiſhop of York, to the Archbiſhop of Canterbury. Vid. Text. Roffens. Ed. Hearn. Oxon. 1720. 8vo. Bibl. Angl. T. 8. p. 342. See OBEDIENCE.

CANONICAL *ſins*, in the antient church, thoſe which were capital or mortal: Such eſpecially were idolatry, adultery, murder, hereſy, and ſchiſm. *Du Pin*, Bibl. Eccleſ. T. 17. p. 231. Jour. des Scav. T. 52. p. 15. See SIN, *Cycl.*

CANONICAL *punishments* are those which the church may inflict: Such are excommunication, degradation, and penance in Roman catholic countries; also fasting, alms, whipping, &c. See PUNISHMENT, PENANCE, &c. *Cycl.*

CANONICAL *purgations*, were antient methods of proving innocency, by ordeal, &c. See PURGATION, ORDEAL, JUDICIUM *Dei*, &c. *Cycl.*

CANONICAL *liberty*, a freedom to which certain churches are left, being governed by the antient canons and usages established before the papal hierarchy was carried to its height: Such is that which, of later days, the French call the *Gallican liberty*. *Du Pin*, Bibl. Eccles. T. 17. p. 151.

CANONICAL *institution*, a regular and legitimate collation to a benefice, agreeable to the rules of the canon law. *Calv.* Lex. Jur. p. 141.

CANONICAL *portion*, so much of the effects of a person deceased as the canons allow to the parish church he belonged to. *Calv.* loc. cit.

CANONICAL *life*, the method or rule of living prescribed by the antient clergy who lived in community.

The *canonical life* was a kind of medium between the monastic and clerical lives.

Originally the orders of monks and clerks were intirely distinct. But pious persons in process of time instituted colleges of priests and canons, where clerks brought up for the ministry, as well as others already engaged therein, might live under a fixed rule, which though somewhat more easy than the monastic, was yet more restrained than the secular. This was called the *canonical* life; and those who embraced it canons. See REGULAR, RELIGIOUS, &c. *Cycl.*

Authors are divided about the founder of the *canonical* life. Some will have it instituted by the apostles: others ascribe it to pope Urban I. about the year 230, who is said to have ordered bishops to provide such of their clergy as were willing to live in community, with necessaries out of the revenues of their churches. The generality attribute it to St. Augustin, who having gathered a number of clerks to devote themselves to religion, instituted a monastery within his episcopal palace, where he lived in community with them. Onuphrius Panvinius brings the institution somewhat lower; according to him, pope Gelasius I. about the year 495, placed the first regular canons of St. Augustin in the lateran church. *Bingh.* Orig. Eccles. l. 7. c. 2. §. 9. *Trev.* Dict. Univ. T. 1. 1629.

CANONICAL *letters*, in the antient church, were a sort of testimonials of the orthodox faith, which the bishops and clergy sent each other, to keep up catholic communion, and distinguish orthodox christians from arian, and other heretics.

They were denominated *canonical*; either as being composed according to a certain rule, or form; or because they were given to the *canonici*, that is, those comprehended in the canon, or catalogue of their church.

When they had occasion to travel into other dioceses, or countries, dimissory and recommendatory letters, also letters of peace, &c. were so many species of *canonical letters*. See DIMISSORY, *Cycl.*

CANONICAL is also an appellation given to those epistles in the new testament, more frequently called catholic, or general epistles.

CANONICAL *hours*, are certain stated times of the day, consigned more especially by the Romish church to the offices of prayer and devotion: Such are *mattins*, *lauds*, *sixth*, *ninth*, *vespers*. Bibl. Angl. T. 13. p. 341. *Bingh.* Orig. Eccles. l. 13. c. 9. §. 8.

CANONICAL *horses*, *canonici equi*, was an antient tax, or tribute imposed on certain provinces, whereby they were obliged to furnish the emperor with so many horses to mount his cavalry. *Bingh.* Orig. Eccles. l. 5. c. 3. §. 4.

CANONICAL, *canonicus*, was also an appellation given to all the officers and ministers of a church or monastery, from the bishop or abbot, to the meanest servant, including priests, monks, virgins, and all who were entered in canon, that is, in the matricula or register of the church. *Helyot*, Hist. des Ord. Monast. T. 2. p. 55. *Stev.* Suppl. to Dugd. T. 2. p. 68.

CANONICAL is an appellation more peculiarly given to those writings designed by God to be the canon, or rule of our faith and practice; and which have been solemnly received as such by the church, and comprehended in the canon, or catalogue of the scriptures. *DuPin*, Prelim. sur la Bibl. l. 1. c. 1. §. 1. In which sense, *canonical* stands contra-distinguished from *apocryphal*; ακανονιστοι, or *non-canonical*; spurious, doubtful, and even merely ecclesiastical.

Canonical differs from divine or inspired, as the former imports a book authentically received by the church or synagogue, as coming from God, and placed in the canon accordingly; which is not supposed in the latter. 'Tis alledged there are many prophetical books which were never received by the synagogue, nor publickly read in churches, which yet are by no means to be rejected, as not dictated by God [a]; these though never actually taken into the canon, yet were capable of being made *canonical*, in case more books had been wanting to be read in the assemblies of christians. Who doubts but the books of Nathan, and Gad, Ahija and Jeddo, the visions of Hosea, &c. were divinely inspired, though not taken into the canon? And such, according to a modern Lutheran writer is the book of Wisdom [b]. — [a Vid. *Simon.* Hist. Crit. du vieux. Testam. p. 56, seq. b Vid. Observ. Halens. T. 5. Sect. 13. §. 12, seq. Nouv. Rep. Lett. T. 33. p. 420.]

The conditions then requisite to constitue a book *canonical*, are; that it be written by divine inspiration, and that it be solemnly accepted, and consigned by the church for a perpetual guide or rule of faith, and practice. *Carpzov.* Introd. ad Libr. Biblic. P. 1. c. 1. §. 2.

Divines generally hold, that those books only of the new testament are to be accounted *canonical*, which were either written or at least approved and authorized by the apostles. *Cosin*'s Hist. of Canon of Old Testam. §. 73. p. 80. *Richard.* Vindic. Can. New Test. §. 2. p. 6. *Clark*, Reflect. on Amynt. p. 37, seq.

Formerly these were not so well distinguished as among us. In the first ages of the church, Dodwell observes, the genuine writings of the apostles used to be bound up together with those now called spurious, and apocryphal; so that it was not manifest by any public judgment, which of them was to be preferred to the other, but later times thought fit to make a separation. *Dodw.* ap. Nye. Def. Can. New Test. p. 18.

The Jews allow of no book for *canonical*, but those written before or soon after the return from the Babylonish captivity, when the gift of prophecy ceased among them. *Basnage*, Diss. sur le Canon, in Ouvr. des Scav. 1704. p. 25.

Eusebius lays down three marks, by which the spurious writings forged by heretics, under the names of the apostles, were distinguished from the genuine and *canonical*. 1mo, Their not being cited as scripture by the doctors of the church; which, however, must not be taken without some restriction; since several such are indeed quoted as scripture by Origen and Clemens Alexandrinus [a], the most learned of the antient fathers, as Eusebius himself elsewhere owns; but we are to suppose he meant not cited as divine scripture in those places, where they speak expressly what books were *canonical*, and what not. 2do, Their manner of writing, which is wholly different from the spirit, genius, and manner of the apostles. 3tio, The doctrines, opinions, and other matters advanced in their books, which were so contrary to truth and orthodoxy, that it is not enough to call them spurious, but they must also be denominated absurd and impious [b]. — [a *Richard.* Can. N. T. Vindic. §. 6. p. 25. *Euseb.* Hist. Eccles. l. 3. c. 25. *Nye.* Def. Can. New Test. p. 68.]

A late writer alledges two marks, or arguments of a book's being *canonical*: 1mo, its being cited by the antient fathers, under the name of scripture; and, 2do, its having been read in the antient churches: Both which characters agree to the epistles of Clemens and Barnabas, and the pastor of Hermas. But it has been shewn him that these criterions are not sufficient. The word scripture was not always used by the fathers in its proper, but sometimes in a lax sense; and as to reading of books in churches, the practice of our own church is to this day a proof that it does not imply their canonicity. Some of the Romish doctors distinguish the inspired writings into three classes, *canonical*, or proto-*canonical*, deutero-*canonical*, and apochryphal. Vid. *Richardf.* Vindic. Can. New Test. §. 6. p. 26, seq.

Post-CANONICAL, or *deutero*-CANONICAL, are those doubtful books, which were never regularly allowed for scripture, nor admitted into any canon before that of the council of Carthage [a]; though otherwise frequently cited as scripture by ecclesiastical writers, and read in many churches. The first catalogue wherein the books of Wisdom, Ecclesiasticus, Tobit, Judith, and the two Maccabees were put in the number of *canonical* books, was that of the third council of Carthage, held in 397, which confirmed the decree of a council of Hippo in 393, whereby those books had been declared part of the canon, but on condition, that the churches on the other side of the sea should be consulted about confirming this decision. The same decree was also repeated in a council of Carthage held in 419, with this clause, that it should be communicated to the pope and bishops of Italy. Pope Innocent came into it, so did his successor pope Gelasius, in a council at Rome in 494. Pope Eugenius, and the council of Trent, confirmed it yet more solemnly [b]. — [a *Du Pin*, Diss. Prelim. l. 1. c. 1. §. 5. b Idem, l. 1. c. 1. §. 4. ibid.]

CANONICUM, κανονικον, in a general sense, denotes a tax, or tribute.

CANONICUM is more particularly used in the Greek church for a fee paid by the clergy to bishops, archbishops, and metropolitans, for degrees and promotions. Vid. *Du Cange*, Gloss. Gr. T. 1. p. 578.

CANONICUM also denotes a due of first fruits, paid by the Greek laity to their bishops, or according to Du Cange, to their priests. The *canonicum* is assessed according to the number of houses, or chimnies in a place.

The emperor Isaac Comnenus made a constitution for regulating the *canonicum* of bishops, which was confirmed by another made in 1086, by his nephew Alexis Comnenus. A village containing 30 fires, was to pay for its *canonicum*, one piece of gold, two of silver, one sheep, six bushels of barley, six of wheat flower, six measures of wine, and thirty hens. Vid. *Du Cange*, Gloss. Gr. T. 1. p. 578. *Trev.* Dict. Univ. T. 1. p. 1397.

CANONIST, a person skilled in, or who makes profession of the study and practice of the canon law. See CANON *law*, *Cycl.*

Canonists and civilians are usually combined in the same persons.

persons. And hence the title of *doctor juris utriusque*, or *legum doctor*, usually expressed in abreviature, L. L. D. or J. U. D.

CANOO. See the article CANOW.

CANOPUS, in astronomy, a bright star of the first magnitude in the rudder of Argo, a constellation of the Southern hemisphere. See ARGO, *Cycl.*

Vitruvius places *canopus* in the tip of the rudder, Bayer in the place where the helm touches the water. Vitruv. de Archit. l. 9. c. 7.

Hyginus calls it the last star of the river Eridanus, Pliny describes it as a huge bright star, *sidus ingens et clarum* [a]. Proclus calls it λαμπρὸν ἀστρον. F. Thomas, the jesuit, assures it is the biggest in the heavens after Sirius [b]. It is also called *fuchel*, *fihel* or *fohail* [c]. Sometimes *Rubayl*, *Ptolemæus*, *Ptolemæon*, &c. [d] By the Chinese, *lao-ginsing*, the star of long livers [e]. — [a *Plin.* Hist. Nat. l. 6. c. 22. b Mem. Acad. Scienc. An. 1693. p. 390. c *D' Herbel.* Bibl. Orient. p. 817. voc. *fohail.* d *Bayer*, Uranometr. Tab. Trev. Dict. Univ. T. 1. p. 1400. e Lett. Edif. T. 7. p. 172.]

The longitude of *canopus*, as given by Halley, for the year 1700, is 10° 52′ of Cancer, and its southern latitude, 72° 49′. F. Noel, in 1697, found its right ascension, 93° 54′, its declination southwards, 52° 29′ [a]. F. Feuille, in the beginning of March 1709, observed the declination of *canopus* 52° 30′ 4″. F. Thomas, in January 1682, found the declination 52° 31′ 33″ its right ascension 93° 32′ 20″, longitude, 8°. 52′, of Cancer, latitude southern, 75° 55′ [b]. — [a *Wolf.* Lex. Math. p. 305, seq. b Mem. Acad. Scienc. an. 1693. p. 390, seq.]

CANOPY, in architecture and sculpture, a magnificent kind of decoration, serving to cover, and crown an altar, throne, tribunal, pulpit, chair, or the like. *David.* Cours. d' Architect. P. 2. p. 539. voc. *dais.* See BALDACHIN.

The word is formed from the barbarous latin *canopeum* [a], of the Greek κωνωπειον, a net spread over a bed to keep off the gnats, from κωνωψ, *culex*, a gnat [b]. — [a *Du Cange*, Gloss. Lat. T. 1. p. 761. b *Skin.* Etym. Angl. in voc.]

Canopies are also borne over the head in processions of state, after the manner of umbrellas.

The *canopy* of an altar is more peculiarly called *ciborium*. *Bingh.* Orig. Eccles. l. 8. c. 6. §. 18. See CIBORIUM.

The Roman grandees had their *canopies*, or spread veils, called *thensæ*, over their chairs: the like were also in temples over the statues of the gods. The modern cardinals still retain the use of *canopies*. *Pitisc.* Lex. Ant. T. 2. p. 950. voc. *thensæ.*

CANOSA, in zoology, the name by which Salvian, and some other authors have called the *canis galeus*, and *mustelus levis*, a kind of shark. *Willughby*'s Hist. Pisc. p. 51.

CANOW, a kind of boat in use among the Indians of America.

The word is also written *canoo* [a], *canoe* [b], and *cannow* [c]. It is borrowed from the Spanish *canoa*, which signifies the same, and that from the language of the Indians. — [a *Grew* Mus. Reg. Societ. P. 4. Sec. 2. p. 364. b *Skin.* Etym. Angl. in voc. c *Boyle*, Phil. Work. abr. T. 1. p. 12.]

The common *canows*, among the Indians, are those made of trees hollowed; being either greater or less, according to the size of the tree they are made of. They are rowed with paddles, and rarely carry sails; the loading is laid at the bottom: but having no ballast they are frequently turned upside down. They have no rudder, the want of which is supplied by the hind oars. The negroes of Guinea use the same sort of *canows*, though made in a different manner. They are long shaped, having only room for one person in width, and 7 or 8 in length; they shew little wood above the water; those who row are extremely dexterous, not only in giving the strokes with cadence and uniformity, by which their *canows* seem to fly along the surface of the water, but also in ballancing the vessel with their bodies, and preventing their overturning, which otherwise, on account of their lightness, would continually happen. Add, that when they are overturned, they have the address to turn them up again in the water itself, and mount them anew. They venture as far as four leagues to sea, but dare not venture further.

They are usually 16 foot long, and a foot or two wide, though there are some larger, as far as 35 foot long, 5 wide, and 3 high, used for the carriage of cattle, and expeditions in war. They are fitted with sails made of rushes.

On return from a voyage the *canows* are not left in the water, but presently drawn ashore, where they are hung by the two ends, and left to dry; in which state they are so light, that two men will easily carry them on their shoulders.

The *canows* of the Canadese are made of the bark of the birch-tree, sometimes large enough to hold 4 or 5 persons. Those of the savages of Terra del Fuego, and the other islands of the straits of Magellan, are also of bark, and fashioned with great skill, from 10 to 16 foot long, and two wide, capable of holding 8 men, who row standing, with a swiftness which gives surprize. *Aubin.* Dict. Mar. p. 161, seq.

In the repository of the Royal Society is the model of a Greenland *canow*, covered with seal skins, and resembling a great bladder; so as that, however the waves dash over it, the person in it sits safe. It is rowed with a single paddle. *Grew*, Mus. Reg. Societ. P. 4 Sect. 2. p. 364, seq.

CANSTRISIUS, Καστρισιος, an officer in the church of Constantinople, whose business is to take care of the patriarchs pontifical vestments, assist in robing him, and during mass to hold the incense pot, and sprinkle holy water among the people, while the hymn of the trinity is singing.

The word is also written *Canstrinsius*, Καστρησιος; it is usually derived from *canistrum*, a name which some suppose given to the incense pot, others to the kind of basket in which the patriarchs vestments were kept. *Du Cange*, Gloss. Gr T. 1. p. 576. *Magri*, Notiz. de Vocab. Eccles. p. 51. Trev. Dict. Univ. T. 1. p. 1400.

CANT, a quaint, affected manner of speaking, or writing, adapted chiefly to the lower sort. See CANTING *language.*

Skinner racks his invention for the origin of the word *cant*, which he deduces successively from the German, Flemish, Latin and Saxon tongues. But his learning in this, as on many other occasions, serves only to puzzle and mislead him.

Cant is originally the proper name of a Cameronian preacher in Scotland, who, by exercise, had obtained the faculty of talking in the pulpit in such a tone and dialect as was understood by none but his own congregation.

Since Andrew *Cant*'s time, the word has been extended to signify all sudden exclamations, whining, unmusical tones, and in fine, all praying and preaching like that practised by the more zealous and less knowing, among the presbyterian ministers.

CANT is also applied to words and phrases affected by particular persons, or professions for low ends, and not authorized by the established language. See CANTING.

Cant is not restrained to the style of gypsies, thieves, and beggars, but possesses a large department in the politer provinces of the English language.

A late writer assigns divers sources of *cant* words; one is the natural taciturnity of the English people, which leads them to clip their longer words, by pronouncing only the first syllable, and dismissing the rest; whence the words *phizz*, *hippo*, *mobb*, *pozz*, *bamm*, &c. Tatl. N° 230. T. 4. p. 171.

The sea language will most of it come under the denomination of *cant*; and the like holds of the terms in alchemy, heraldry, not to say in astrology, or even chemistry, pharmacy, &c. In reality, the difference between a *cant* term, and a technical term is not easy to assign, unless we chuse to restrain the former to words introduced out of folly, affectation, or imposture; and the latter to such are introduced for the sake of clearness, precision, and significancy.

CANT is also used to denote a sale by auction. Stat. Abr. 8vo. tit. *Taxes*, n. 681. T. 4. p. 107.

The origin of the word, in this sense, is dubious; it may come, according to some, from *quantum*, how much; according to others, from *cantare*, to sing, or cry aloud; agreeably to which, we sometimes also call it an *out-cry.* Trev. Dict. Univ. T. 2. p. 1153. voc. *encan.*

CANT is also a term used by some carpenters; when a piece of timber comes the wrong way in their work, they say *cant* it; i. e. turn it over. *Neve*, Build. Dict. in voc.

CANT is also popularly used for an angle, or corner.

CANTABRIAN, the antient language of the north eastern part of Spain, in use before the country was subdued by the Romans.

Dr. Wallis [a] seems to make the *Cantabrian* the antient language of all Spain: Which, according to him, like the Gaulish, gave way to a kind of broken latin called *romance* or *romanshe*; which by degrees was refined into the Castilian or present Spanish. But we can hardly suppose, that so large a country, inhabited by such a variety of people, spoke all the same language [b]. — [a Vid. *Wall.* Gram. Angl. in Pref. *Greenw.* Engl. Gram. Pref. p. 12. §. 15. b *Wilk.* Real Charact. l. 1. c. 2. §. 3.]

The antient *Cantabrian*, in effect, is still found to subsist in the more barren and mountainous parts of the province of Biscay, Asturias, and Navarre, as far as Bayonne, much as the British does in Wales; but the people only talk it: for writing, they use either the Spanish or French, as they happen to live under the one or the other nation. Some attribute this to a jealousy of foreigners learning the mysteries of their language; others to a poverty of words and expressions. The *Cantabrian* does not appear to have any affinity with any other known language, abating that some Spanish words have been adopted into it for things whose use the Biscayans were antiently unacquainted with. Its pronunciation is not disagreable, and the greater part of its nouns end in *a* in the singular, and in *ac* in the plural. Such are *cerva*, and *cervac*, heaven; *lurra* and *lurrac*, earth; *eguzquia*, sun; *izarquia*, moon; *izarra*, star; *odeya*, cloud; *fua*, fire; *ibaya*, river; *uria*, village; *echea*, house; *ocea*, bed; *oguia*, bread; *ardava*, wine, &c.

The Lords prayer, in the *Cantabrian* tongue, runs thus: *Gure aita cervetan aicena, sanctifica bedi hire icena, ethor bedi hire resuma, eguin bedi hire vorondatea cervan becala lurrean ere*, &c. Vid. les Delices de l' Espagne, T. 1. p. 107, seq. Act. Erud. Lipsi. 1707. p. 99, seq.

CANTABRICA, in botany, a name by which different authors call two different species of plants. The *cantabrica* of Pliny is the rapunculus. The *cantabrica* of Turner the clove gilliflower. *Ger.* Emac. Ind. 2.

CANTABRICA is also a name used by Clusius and some others for the little narrow-leaved bind weed. See the article CONVOLVULUS.

CANTABRUM, in antiquity, a large kind of flag used by the Roman emperors, distinguished by its peculiar colour, and bear-

ing on it ſome words, or motto of good omen, to encourage the ſoldiers. *Pitiſc.* Lex. Ant. T. 1. p. 348. *Du Cange* Gloſſ Lat. T. 1. p. 671. *Schoet.* Cur. Ant. Lex. p. 267.

CANTALIVERS (*Cycl.*) — Thoſe which project much are now out of faſhion, and with good reaſon, eſpecially in London, as they darken, by their hanging over, the upper chambers at leaſt; and are apt to ſpread, and communicate fire, in caſe of a misfortune of that kind; beſides, that in the preſent mode of building, uſe, conveniency and ſimplicity are more ſtudied than ornament. *Neve*, Build. Dict. in voc.

CANTAR, or CANTARO, an eaſtern weight, of different value in different places, equivalent at Acra in Turkey to 603 pounds, at Tunis and Tripoli to 114 pounds. Lex. Mercat. p. 388.

CANTAR is alſo an Egyptian weight, which is denominated a *quintal*, and conſiſts of a hundred, or of a hundred and fifty *rotolos*, according to the goods they are to weigh. *Pocock*'s Egypt, p. 175.

CANTARO is alſo an Egyptian weight, which at Naples is equivalent to 25 pounds, at Genoa to 150 pounds. *Du Cange*, Gloſſ. Lat. T. 1. p. 762. Vocab. Cruſc. T. 2. p. 275.

At Leghorn there are three kinds of *cantaros*, one weighing 150 pounds, another 151, and a third 160 pounds. *Savar.* Dict. Comm. T. 1. p. 550.

CANTARO is alſo a Spaniſh liquid meaſure, in uſe eſpecially at Alicant, containing three gallons. Lex. Mercat. p. 388.

CANTARO is alſo a meaſure of capacity, uſed at Cochin, containing four rubies, the rubi 32 rotolos. *Savar.* Dict. Comm. T. 1. p. 557.

CANTATOR, Καυλατωρ, in the Greek empire, a name given to thoſe who exhorted and encouraged the ſoldiers to behave gallantly in battle. *Du Cange*, Gloſſ. Græc. T. 1. p. 576.

CANTATRICES, in middle age writers, hired weepers, and waiters at funerals. *Du Cange*, Gloſſ. Lat. T. 1. p. 763.

CANTEL, *cantellum*, in antient Engliſh writers, denotes a cuſtom of ſelling by the lump, without tale or meaſure.

Spelman derives the word from *quantillum*, and defines it by over meaſure, or what is added over and above ſtrict meaſure. *Spelm.* Gloſſ. p. 114. *Du Cange*, Gloſſ. Lat. T. 1. p. 763.

Kennet derives it from the old word *cant*, a hundred, q.d. the ſale of about a hundred weight; anſwering to what we now call the taking of a hundred pound on content; as when we take it in a bag, ſealed up, without telling the pieces. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

CANTERII, or CANTHERII, in the antient architecture, rafters or joiſts of a houſe, which reach down from the ridge to the eaves. *Vitruv.* Archit. l. 4. c. 2. and c. 7. *Bald.* Lex. Vitruv. p. 19. *Philand.* not. ad Vitruv. p. 63. *Pitiſc.* Lex. Ant. T. 1. p. 349.

CANTHARÆ, among the antients, a kind of candleſtick. See BRANCH.

CANTHARIAS *lapis*, in natural hiſtory, a name given by ſome writers to a foſſile ſubſtance ſuppoſed to reſemble a beetle. We ſometimes meet with parts of the ichthyperia or bony parts of fiſhes, which are ridged longitudinally, much in the manner of the outer wing of ſome of the beetle tribe, and from their ſize and ſhape which is an oblong, or oval one of the bigneſs of a common beetle, and ſometimes of the largeſt, and at others of the very ſmalleſt kinds; theſe have been called by ſome petrified beetles and *cantharidæ lapides*, others have extended the name to ſuch pieces of amber as have in them the body or any fragment of the beetle of any ſpecies.

CANTHARIDES (*Cycl.*) — The antients held them a poiſon when taken internally, by reaſon doubtleſs of their tendency to ulcerate the bladder [a]. Yet ſome moderns, as Langius [b], Bartholin [c], and others [d], have ventured to give them internally, ſupported by the authority of Hippocrates, who appears to have given them in dropſies and jaundices. — [[a] *Hildan.* Cent. 6. Obſ. 99. [b] *Lang.* Epiſt. Medic. l. 1. Ep. 47. [c] *Barthol.* Cent. 5. Hiſt. 82. [d] Ephem. Acad. N. C. Dec. 1. ann. 1. Obſ. 133. p. 260, ſeq.]

Groenvelt has a treatiſe expreſs on the ſafe internal uſe of *cantharides*, wherein he recommends them, eſpecially againſt ulcers in the bladder; for which he ſuffered a perſecution from the college of phyſicians, though further experience has ſhewn he had juſtice on his ſide. Vid. *Groenv.* Tract. de tut. Canthar. in Medic. uſu intern. Act. Erud. Lipſ. 1707. p 182.

Dr. Morgan propoſes a tincture of *cantharides*, made with the elixir vitrioli, as good in the diabetes. See DIABETES.

CANTHARUS *of a fountain*, among Roman writers, denotes the part, or apparatus out of which the water iſſued. See FOUNTAIN, *Cycl.*

It was made in divers forms, ſometimes in that of a ſhell, at other times in that of an animal, which yielded water at its mouth, eyes, and the like. *Ferret.* Muſ. Lapid. 2. Mem. 32. *Brod.* Miſcell. l. 10. c. 13. *Pitiſc.* Lex. Ant. T. 1. p. 348.

CANTHARUS, in eccleſiaſtical writers, denotes a fountain, or ciſtern in the middle of the atrium, before the antient churches, wherein perſons waſhed their hands and faces before they entered. *Bingh.* Orig. Eccleſ. l. 8. c. 3. §. 6. *Du Cange*, Gloſſ Lat. T. 1. p. 764.

CANTHARUS, in zoology, the name of a ſea fiſh much reſembling the ſparus and ſargus in ſhape, but of a duſkier and blacker colour, covered with ſmall ſcales, and not marked with the annular black ſpots which both theſe fiſh have near the tail. Its teeth alſo are ſlender and ſharp, not broad and obtuſe as in thoſe, and has very remarkable yellow lines running longitudinally down its ſides. It has only one back-fin, the anterior rays of which are prickly, the others not at all ſo. It is common in the Mediterranean; and is frequently brought to market in Rome, &c. being eſteemed a very well taſted fiſh. *Rondelet*, de Piſc. l. 5. c. 4. p. 120. *Geſner*, de Piſc. p. 111.

The *cantharus* of the antients is called by Artedi the *ſilver-eyed ſparus*, with longitudinal and parallel yellow lines on each ſide. Gaza calls this fiſh *ſcarabæus*. See the article SPARUS.

CANTICLES, a canonical book of the old teſtament, otherwiſe called the ſong of Solomon, by the Jews, the ſong of ſongs, *canticum canticorum*.

The Book of *canticles* is uſually ſuppoſed to be an epithalamium compoſed by Solomon, on occaſion of his marriage with the king of Egypt's daughter. But thoſe who penetrate further into the myſtery, find in it the marriage of Jeſus Chriſt with human nature, the church, and good men.

On this principle the *canticles* is held to be a continued allegory, wherein, under the terms of a common wedding, a divine and ſpiritual marriage is expreſſed.

This ſong contains the adventures of ſeven days, and ſeven nights, the exact time allowed for the celebration of marriage among the Hebrews.

The Jews themſelves apprehending the book liable to be underſtood in a groſs and carnal manner, prudently prohibited the reading of it before the age of thirty, and the ſame uſage antiently obtained in the chriſtian church. *Orig.* Præf. in Cant. *Theodoret*, Opp. T. 1. p. 985. *Hieron.* in Ezek. *Calm.* Dict. Bib. T. 1. p. 356. *Wolf.* Bibl. Hebr. T. 2. p. 126.

Among the antients, Theodore Mopſuetanus rejected the book of *canticles*, as not divine. Divers Rabbins have alſo queſtioned its being written by inſpiration. The anabaptiſts generally lay it aſide, as a dangerous compoſition. 'Tis alledged, that the name of God is not once found in it. Mr. Whiſton has a diſcourſe expreſs to prove, that the *canticles* is not a ſacred book of the old teſtament [a]. He alledges it indeed to have been written by king Solomon, the ſon of David, but aſſerts, that it was compoſed at the time when that prince, blinded by his concubines, was ſunk in filthy love, and even idolatry. This he chiefly infers from the general character of vanity and diſſoluteneſs which reigns through the *canticles*, in which there is not, according to Whiſton, one thought that leads the mind toward religion, but all is worldly and carnal, to ſay no worſe. For the myſtic ſenſe, he aſſerts it to be without any foundation, and that the book is not cited as canonical by any writer before the deſtruction of Jeruſalem. Mr. Whiſton will have it to have been taken into the canon between the years 77 and 128, when allegories came in vogue, and the rabbins began to corrupt the text of ſcripture. Grotius, Nierembergius, the Dutch divines who criticiſed F. Simon, Menetrier, Baſnage, and ſome others, ſeem alſo to take the *canticles* for a prophane compoſition, on a footing with the love pieces of Catullus or Ovid. But this opinion is refuted by Michaelis, Majus, Witſius, Nat. Alexander, Outrein, Trancius, and others [b]. Mr. Whiſton's arguments have been particularly conſidered by Itchener [c]. — [[a] Lond. 1723. 12°. Bibl. Angl. T. 11. p. 74, ſeq. [b] *Wolf.* Bibl. Hebr. T. 2. l. 1. ſect. 2. ſubſ. 7. §. 10. [c] Defence of canon of old Teſt. Lond. 1723, 12°. Vid. Bibl. Angl. T. 11. p. 463, ſeq.]

R. Akiba finds the book of *canticles* more divine than the reſt: The whole world, according to this rabbin, is not worth that day when the *canticles* was given to Iſrael; for whereas all the hagiographers are holy, the *canticles* is the holy of holies. *Cartwright*, Mellific. Hebr. l. 4. c. 4. ap Crit. Sacr. T. 7. p. 855. *Carpzov.* Introd. ad Libr. Vet. Teſt. P. 2. p. 256, ſeq.

CANTING *language*, *or dialect*, is a myſterious ſort of jargon uſed by gypſies, thieves, and ſtrolling beggars, to expreſs their ſentiments to each other, without being underſtood by the reſt of mankind.

The *canting dialect* is a confuſed jargon, and not grounded on any rules; yet even out of that irregularity many words ſeem to retain ſomething of ſcholarſhip, as *togeman*, a gown, from *toga*, in the Latin; *pannam*, bread, from *panis*; *caſan*, cheeſe, from *caſeus*, &c.

It is obſervable, that, even unknown to ourſelves, we have inſenſibly adopted ſome of their terms into our vulgar tongue, as *bite*, and *bilk*, to cheat; *bounce*, to vapour; *bowſe*, ſtrong drink; *filch*, to ſteal; *flog*, to whip; *rig*, game or ridicule; *roaſt*, to rally; *rhino*, money. And from the ſame ſource proceed the words *ſham*, *banter*, *bubble*, *bully*, *ſharper*, *cutting*, *ſhuffling*, *palming*, &c. Cant. Dict. in Præf.

An anonymous author has given a *canting* dictionary, comprehending all the terms uſed in the ſeveral tribes of gypſies, beggars, ſhoplifters, highwaymen, footpads, and other clans of cheats and villains, with a collection of ſongs in the *canting* dialect. Lond. 1725. 8vo.

CANTING *arms*, among heralds, are thoſe which expreſs their owners ſurname. See ARMS, *Cycl.* and *Suppl.*

Theſe anſwer to what the French call *armes parlantes*, they are a ſort of rebus's, and are never preſumed to be noble. *Niſb.* Eſſ. on Arm. c. 1. p. 14. and 20. See REBUS, *Cycl.*

CANTING *coins*, in ſhip building, the ſame as *cantic coins*. See QUOIN, *Cycl.*

In Harris's Lex. Techn. they are called *canoigne coins*, but this ſeems an error of the preſs. Manwayring calls them *cantick-quoynes*.

CANTO denotes a part or diviſion of a poem, anſwering to what is otherwiſe called a book.

The word is Italian, where it properly ſignifies ſong.

Taſſo, Arioſto, and ſeveral other Italians, have divided their longer or heroic poems into *cantos* [a]. In imitation of them Scarron has alſo divided his Gigantomachia, and Boileau his Lutrin, into *chants*, or ſongs [b]. The like uſage has been adopted by ſome Engliſh writers, as Butler, who divides his Hudibras, and Dr. Garth his diſpenſary into *cantos*. A late Tranſlator of part of Virgil's Æneid, has even ſubdivided a book of Virgil into ſeveral *cantos* [c]. — [a Vocab. Acad. Cruſc. T. 2. p. 276. b *Trev.* Dict. Univ. T. 1. p. 1635. voc. *chant*. c *Theob.* Third Book of Æneis.]

CANTO, in the Italian muſic, ſignifies a ſong: hence *canto ſimplice* is where all the notes or figures are equal, called alſo *canto fermo*: *canto figurato*, that where the figures are unequal, and expreſs different motions.

CANTO alſo ſignifies the treble part of a ſong; hence *canto concertante*, the treble of the little chorus; *canto ripieno*, the treble of the grand chorus, or that which ſings only now and then, in particular places.

Canto ſignifies the firſt treble, unleſs ſome other word be added to it, as *ſecondo*, in which caſe it denotes the ſecond treble. *Broſſ.* Dict. Muſ. p. 16. *Walth.* Lex. Muſ. p. 135, ſeq.

CANTON (*Cycl.*) — The Swiſs *cantons* are divided into proteſtant, popiſh, and thoſe which are partly one, partly the other. The proteſtant *cantons* are four; Zurich, Bern, Baſle, and Schaffhauſen. The popiſh *cantons* are ſeven; viz. Lucern, Uri, Underwald, Zug, Fribourg, Soleure, and Schwitz, which gives the denomination to all the reſt. Thoſe compoſed of both religions are Glaris and Appenzel.

The compoſition of the *cantons* differs from that of the united provinces, in that each *canton* may do what it thinks good; whereas in Holland one province can undertake nothing without the concurrence of the reſt. Jour. des Scav. T. 1. p. 253. The *cantons* have no dependency on each other, having each their ſeparate laws, and forms of government, which in ſome is abſolutely democratical, in others ariſtocratical [a]. They are obliged by the alliance between them to aſſiſt each other when attacked. They hold an ordinary aſſembly yearly in June, at Baden, where their deputies treat of the affairs which concern the whole body. The *canton* of Zurich holds the firſt place, and its deputies preſide at the aſſembly; but Bern is far the richeſt and ſtrongeſt, making near one third part of the whole. Some compare it to the duchy of Milan [b]. — [a *Chavigni*, Scienc. des perſon. de la Cour. T. 1. p. 229, ſeq. b Souver. du Mond. T. 3. p. 12, ſeq.]

The Swiſs *cantons* date their freedom from the year 1308, when driven by the ill uſage of their Auſtrian governors, the three *cantons* of Uri, Schwitz, and Underwald, combined together, drove out the Auſtrians, and ſollicited the reſt to join with them; In 1351 Zurich, in 1352 Zug and Glaris, in 1353 Bern, in 1481 Fribourg and Soleure, in 1501 Baſle and Schaffhauſen, and laſtly Appenzel in 1513. The eight firſt are ſometimes diſtinguiſhed by the appellation of the *antient cantons*. Souver. du Mond. T. 3. p. 6, ſeq. Nouv. Rep. Lett. T. 21. p. 295.

CANTONING, in middle age writers, denotes the dividing a thing into hundreds, or ſelling it by hundred weights, or hundreds in tale. *Kenn.* Gloſſ. ad Paroch. Antiq.

CANTONING, in the military art, is a method of quartering troops in a town, where the garriſon is ſo numerous, that ſeveral regiments muſt be quartered on the inhabitants for want of caſerns or barracks to contain them.

In this caſe they divide the town into as many parts as there are regiments to be ſo quartered, that the officers and ſoldiers of each may have a diſtinct part to themſelves. This, in the military phraſe, is called *cantoning of a town*. Vid. *Bland.* Treat. Milit. Diſcipl. c. 10. art. 2. p. 149.

CANTRED or CANTREV, denotes a diſtrict or diviſion of an hundred towns, or villages. See HUNDRED, *Cycl.*

The word is Britiſh, compounded of *cant*, hundred, and *trev*, or *tref*, town or village.

In Wales, the counties are divided into *cantreds*, as thoſe in England are into hundreds. Angleſey, in particular [a], is divided into three *cantrevs* or *cantreds*, which are each ſubdivided into ſix *comots* or *commotes*, each *commote* containing about ſixty *trevs*, or townſhips. The general partition of Wales into *cantrevs* and *comots* is very antient [b]. — [a *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *cantredum*. *Du Cange*, Gloſſ. T. 1. p. 767. b *Rowl.* Mona. Antiq. Eſſ. Sect. 10. p. 110, ſeq. *Spelm.* Gloſſ. p. 115.]

CANVAS (*Cycl.*) is the cloth on which painters uſually draw their pictures; the *canvas* being ſmoothed over with a ſlick-ſtone, then ſized, and afterwards whited over, makes what the painters call their *primed cloth*, on which they draw their firſt ſketches with a coal or chalk, and afterwards finiſh with colours. *Salm.* Polygr. l. 3. c. 2. ſect. 6. *Savar.* Dict. Com. T. 2. p. 1769. voc. *toile*.

CANVAS alſo denotes a coarſe kind of hempen cloth, wove pretty open, uſed in divers parts of men's, but eſpecially women's dreſs *Trev.* Dict. Univ. T. 1. p. 1386.

We have divers ſorts and denominations of *canvas*, moſt of them imported from abroad; as Dutch, Barras, and Heſſian *canvas*; packing *canvas*; guttings and ſpruce *canvas*; Poledavies, Ebbing, or Queenſborough *canvas*; working *canvas*, for botts or cuſhions, narrow, broad, and broadeſt. *Hought.* Collect. T. 4. N° 11. p. 119.

CANVAS is alſo a name ſometimes given to ſail-cloth. *Savar.* Dict. Comm. T. 1. p. 546.

CANVAS-*bags*, in the military art, contain about a cubic foot of earth or ſand, with which they are filled. Their uſe is to raiſe a parapet in haſte, or to repair one, when beaten down. See SACKS *of earth*, *Cycl.*

CANZONE, in the Italian muſic, in the general, ſignifies a ſong; particularly a ſort of Italian ode, or Lyric poem, conſiſting of ſeveral ſtanzas, through all which the ſame order and diſpoſition of verſes, meaſures, and rhimes, are obſerved as in the firſt.

The *canzone* is uſually very long, and may be ſet to muſic in much the ſame ſtyle with the cantata. See CANTATA, *Cycl.*

There are alſo pieces of ſymphony without words, called *canzone*, much the ſame with ſonata's. *Broſſ.* Dict. Muſ. p. 16. Explic. Term. Muſ. p. 19. *Walth.* Lex. Muſ. p. 139. Cruſc. Vocab. T. 2. p. 277.

The word *canzone* in ſonatas, ſerves to indicate that the airs it is put under, are airs of briſk movement; ſuch as are the uſual fugues otherwiſe marked with *allegro*. See ALLEGRO, *Cycl.* and *Suppl.*

CANZONETTA denotes a little *canzone*. See CANZONE.

The word is a diminutive of the Italian *canzona*, or *canzone*. Cruſc. Vocab. T. 2. p. 277.

CANZURI, a name given by ſome authors to a peculiar kind of camphor more eſteemed than any other ſort. Some have ſuppoſed it thus called from *Kanzur* or *Chanzur*, the name of a place where they ſuppoſe it to be produced, which ſeems the more probable opinion, though Scaliger rejects it, and will have it that this fine camphor had its name from a certain gum called *canzur*, which, according to Garcias, and ſome others, is frequently mixed with the camphor by the people who collect it for ſale.

This gum, he ſays, is called alſo *canderros*; and that it is ſomewhat like the crude amber, only that it is whiter. There is this great objection to this being the true ſenſe of the word, that it expreſſes an adulterated kind, which it is ſcarce probable ſhould be true of that which all the authors who have mentioned this kind of camphor have agreed in calling the beſt and moſt excellent of all the ſorts.

CAOUANNE, in zoology, the name of a ſpecies of tortoiſe very much reſembling the jurucua of the Braſilians, but having a thicker ſhell, and a harſh, tough, and ſtringy fleſh, of but very bad taſte. *Ray*'s Syn. Quad. p. 257. See JURUCUA.

CAOUKE, in the Turkiſh dreſs, a high ſtiff turban, worn by the odabaſhees, or heads of the chambers of janizaries, when they go in proceſſion. *Pocock*'s Egypt. p. 167.

CAP (*Cycl.*) — The Romans were many ages without any regular covering for the head: when either the rain or ſun was troubleſome, the lappet of the gown was thrown over the head; and hence it is that all the antient ſtatues appear bareheaded, excepting ſometimes a wreath, or the like. And the ſame uſage obtained among the Greeks, where, at leaſt during the heroic age no *caps* were known.

Yet on ſome occaſions we find the Romans uſing a ſort of coverings for the head, as at ſacrifices, public games, feaſts of Saturn, and on journeys and military expeditions. Some perſons were alſo allowed to have their heads always covered, as thoſe who had lately been made free, and were thereupon ſhaved cloſe on their head. Theſe might wear the *pileus* both as a defence from the weather, and a badge of liberty; and the like privilege was granted to perſons under any indiſpoſition. *Lipſ.* de Amphitheat. c. 19. *Kenn.* Ant. Rom. P. 2. l. 5. c. 8. p. 320.

The ſorts of *caps* or covers of the head in uſe among the Romans on divers occaſions were the *mitra*, *pileus*, *cucullus*, *galerus*, and *palliolum*; the differences between which are often confounded by antient as well as modern writers.

The French clergy wear a ſhallow kind of *cap*, called *calotte*, which only covers the top of the head, made of leather, ſattin, worſted, or other ſtuff.

The *red cap* is a mark of dignity allowed only to thoſe who are raiſed to the cardinalate. *Savar.* Dict. Com. T. 1. p. 531.

The ſecular clergy are diſtinguiſhed by black leathern *caps*, the regulars by knit and worſted ones.

CAP *of a gun*, is a piece of lead which is put over the touch-hole of a gun, to keep the priming from being waſted or ſpilt. *Guill.* Gent. Dict. p. 3. in voc.

To cap, is ſaid of a ſhip, in the trials of the running or ſetting of currents. *Guill.* Gent. Dict. p. 3. in voc.

CAP or *great* CAP, a denomination of a kind of compendious bandage, ſerving for almoſt all occaſions of the head, being in figure not unlike a helmet. Vid. *Le Clerc*, Deſcr. of Band. p. 13. ſeq. where the manner of making the *great cap* is deſcribed.

Among chirurgical inſtruments we meet with a ſilver *cap*, *pileolus argenteus*, (though of late alſo made of wood, or even white wax) perforated at both ends, applied to the paps of nurſing women, when ulcerated, for the more commodious giving of ſuck. Vid. *Scultet.* Arm. Chir. P. 1. tab. 13. fig. 7. *Caſt.* Lex. Med. p. 500.

CAP, in phytology, a name given to the huſk or green ſucculent coat which covers the upper part of a nut, and connects it to the parent tree. *Grew*, Anat. of Plant. l. 1. c. 6. §. 8.

The *cap* conſiſts of a pilling and parenchyma derived from the bark, and ramulets from the lignous body of the branch.

CAP *of a muſhroom* is the head or ſuperior part expanded over the footſtalk, ſomewhat in manner of a canopy, or umbrello. *Bradl.* new Improv. Garden. P. 2. p. 121. See MUSHROOM.

Neptune's CAP. See the article NEPTUNE.

CAPASH, a kind of head-dreſs worn by the women of Candia. It is of a ſtiffened fine muſlin, and is made ſo as to ſtand up very high, and extends out a great way on the right ſide. *Pocock's* Egypt, V. 2. P. 2. p. 10.

CAPEDUNCULA, in Roman antiquity, the veſſels wherein the ſacred fire of Veſta was preſerved. See VESTALS, *Cycl.*

CAPEL, CAPELLA, in chemiſtry. See VESSELS.

CAPELAN, in zoology, a name given by ſome authors to the ſmall ſpecies of whiting called by the Venetians *matlo*, and by others the *aſellus omnium minimus*, and *merlangus*. *Willughby*, Hiſt. Piſc. p. 171.

CAPELINE, a kind of bandage uſed by the French ſurgeons in caſes of amputations; conſiſting of a roller with two equal heads. *Trev.* Dict. Univ. T. 1. p. 1408. *Le Clerc*, Trait. Chir. Oper. c. 21. Compl. Surg. p. 219, ſeq. where the manner of making the *capeline* is deſcribed.

CAPELLA (*Cycl.*) in zoology, the name of the bird commonly known in England by the name of the lapwing or baſtard plover, and called by ſome, in Latin, *vanellus*. It is a very well known bird, about the ſize of a pigeon, and has a beautiful creſt upon its head. Its legs are long and red, and it is remarkable for running very ſwiftly; it lays in open places on the ground, but uſually covers its eggs with a few looſe ſtraws. It is very clamorous about its breeding time, and it is ſaid has the cunning to fly about, and make a great noiſe where its neſt is not, to lead people away from the place where it is. *Ray's* Ornitholog. p. 228.

CAPER (*Cycl.*) — When the *capers* are budded for flowering, the ſhoots are cut away, and the leaves and flower-buds ſtript off; and being paſſed through a ſieve, the *capers* are thereby ſeparated from the leaves.

This is a ſpeedy way, without which they would come too dear for common uſe. *Bradl.* Dict. Botan. in voc.

Some ſay the plant grows in Oxfordſhire, and might doubtleſs be propagated in other places. In England broom-buds pickled are frequently ſubſtituted for *capers*. *Hough.* Coll. T. 3. N. 349. p. 6. *Savar.* Dict. Com. T. 1. p. 553.

Long CAPERS are the ſtyle or piſtil of the flower which grows into a fruit, long and round like an olive or acorn when ripe, containing divers hard brown ſeeds, like the acini of grapes. *Bradl.* loc. cit.

Capuchin CAPERS are produced by a plant formerly brought from India, thus called by reaſon the bottom of the calix of the flower reſembles the *capouche* of the religious of St. Francis. *Savar.* Dict. Com. T. 1. p. 554. See CIPARIS.

CAPER is alſo a veſſel uſed by the Dutch, for cruizing and taking prizes from the enemy.

In which ſenſe *caper* amounts to the ſame with *privateer*. See PRIVATEER, *Cycl.*

Capers are commonly double officered, and crouded with hands even beyond the rate of ſhips of war, in regard the thing chiefly in view is boarding the enemies. *Aubin.* Dict. Mar. p. 170.

CAPH, a Jewiſh meaſure of capacity for things eſtimated by kimhi at the 30th part of the log, by Arbuthnot at the 16th part of the hin, or 32d of the ſeah, amounting to five eighths of an Engliſh pint. *Arbuthn.* Tab. Anc. Coins, &c. p. 14.

The *caph* does not occur in ſcripture as the name of any meaſure. *Hoſt.* de veter. menſur. & ponder. l. 1. p. 123.

CAPHURA (*Cycl.*)--The original name of the drug which we call *camphor*. The Arabians call it caphur and cofor. The authors who have written firſt of the navigation and trade of the Eaſt Indies, have diſtinguiſhed three kinds of camphor, which they ſay are put to different uſes, and bear a different price in the Indies. The firſt kind is the camphora craſſa; this we call the crude or unrefined camphor, and import it in large and dirty cakes, which are purified into the clear and pellucid form we ſee it in, in Holland and elſewhere. The ſecond kind is the camphora ſana the Indians put this to no other uſe; but the anointing the ſtatues of their gods. And the third is called eſculent or eatable camphor; this is uſed by them in foods, and is called alſo camphor of Borneo, from the iſland of that name, which is the place it is principally brought from.

This is more proper for internal uſe than any other kind. The camphor of the Arabians in general is the ſame with the drug that we know by this name; only it is to be obſerved, that what we find deſcribed in Averrhöes under the name of camphora Indica, as it ſtands in the interpretations of the works of that author, muſt needs be a ſubſtance wholly different from our camphor, or that of the antients. The Arabians in general agreed that camphor was cold and dry, in the third degree, as they expreſs it, but Averröes ſays, that the camphora Indica is dry and hot in the ſecond degree.

Theſe authors paid too great a reſpect to one another, to differ ſo widely as this without alledging a reaſon for it, and as Averröes in this place gives none, it is probable he was not ſenſible of this account differing from that of the others, but meant ſome other ſubſtance, and not camphor, by the phraſe. He ſays that this camphor was called in the Arabic, cofor algend. There ſeems to have been a double error in the place, one of the original copyiſts, and another of the tranſlator; the name probably at firſt ſtood hofer alithend, and then the text is reconcileable to what the reſt of theſe authors ſays, for kofer ſignifies bitumen, and by the addition of the alihend becomes the name of bitumen Judaicum, which all the ſame authors attribute theſe very qualities to; and the tranſlator miſtaking the word Judaicum for Indicum, made the text much leſs intelligible than it would have been; for had he called it caphura Judaica, we ſhould have known that as no camphor came from Judæa, ſome other thing muſt have been meant by the word. What moſt of all confirms this opinion of what is called the Judæan camphor of Averröes not being what we call camphor, is that himſelf deſcribes our camphor in the ſame chapter, and gives it the ſame degree of cold and dry that the Arabians do. See CAMPHOR.

CAPICATINGA, in the materia medica, a name by which ſome authors have called the *acorus aſiaticus*, or Aſiatick ſweet flag. *Piſo*, p. 241.

CAPIDOLIUS, in ichthyology, a name given by Paulus Jovius, and ſome others, to the fiſh we call the *grampus*, and the generality of authors the *orca*. According to the Artedian ſyſtem, it is a ſpecies of the delphinus or dolphin, and it is diſtinguiſhed by that author by the name of the dolphin with the ſnout bending upwards, and with broad ſerrated teeth. See the articles ORCA and GRAMPUS.

CAPILLAMENT (*Cycl.*) — Bradley ſeems to reſtrain *capillaments* to the ſmaller flowers; and *ſtamina* (which he corruptly calls *apices*) to the larger. *Bradl.* Bot. Dict. T. 1. in voc.

CAPILLAMENT is alſo applied to the ſtrings or threads about the roots of plants. *Mill.* Gard. Dict. in voc. *Trev.* Dict. Univ. T. 1. p. 1411.

CAPILLARY (*Cycl.*) — *Capillary plants* amount to much the ſame with what are otherwiſe denominated *acauloſe plants*. Vid. *Ray*, Hiſt. Plant. T. 1. l. 3. Phil. Tranſ. N° 186. p. 284. *Quinc.* Lex. Phyſ. Med. p. 66. See ACAULOSE.

Arbor CAPILLARIS or CAPILLATA, an antient tree at Rome, on which the veſtal virgins when ſhaven for their office, hung up their hair, and conſecrated it to the gods. *Plin.* Hiſt. Nat. l. 10. c. 44. *Feſt.* in voc. *Fab.* Theſ. p. 448.

CAPILLARY is alſo uſed by mineraliſts in ſpeaking of ores which ramify or ſhoot out fine branches like threads.

In which ſenſe it amounts to the ſame ſenſe with what is otherwiſe called *arboreſcent* and *ſtriated*. Woodward ſpeaks of *capillary* or arboreſcent ſilver, and iron [a]; Grew deſcribes a piece of pure *capillary* copper from the mine at Heragrunt, the ſeveral ſtriæ, or capilli of which are ſhort, of a rediſh golden colour, growing together almoſt like thoſe of the little ſtone-moſs [b]. —[[a] *Woodw.* Nat. Hiſt. Engl. Foſſ. T. 1. p. 114. [b] *Grew*, Muſ. Reg. Societ. P. 3. Sec. 2. c. 1. p. 326.]

CAPILLARY *roots*. See FIBROSE *roots*.

CAPILLARY *tube*. — Some doubt whether the law holds throughout, of the aſcent of the fluid being always higher as the tube is ſmaller; Dr. Hook's experiments, with tubes almoſt as fine as cobwebs, ſeem to ſhew the contrary. The water in theſe, he obſerves, did not riſe ſo high as one would have expected. The higheſt he ever found was at 21 inches above the level of the water in the baſon, which is much ſhort of what it ought to have been by the law above-mentioned. *Hook*, Microgr. Obſ. 6. p. 11. See TUBE.

CAPILLARY *veſſels*. Many ſmall veſſels of animal bodies have been diſcovered by the modern invention of injecting the veſſels of animals with a coloured fluid, which upon cooling grows hard. But though moſt anatomiſts know the manner of filling the large trunks, few are acquainted with the art of filling the *capillaries*. Mr. Monro has given us what he, after many trials has found moſt ſucceſsful, in the Medic. Eſſ. Edinb. Vol. 1. art. 9. where he enters into a very nice detail of the operation, to which we muſt refer the curious. Some particulars we ſhall give under the head *injection*.

CAPILLARY *worms*, in children, are the ſame with what are otherwiſe called *crinones*, *comedones*, and *dracunculi*: See CRINONES, *Cycl.*

CAPILLITIUM *veneris*, in phyſiology, denotes a meteor appearing in the air, in form of fine threads reſembling a ſpider's web.

Some think that the *capillitium veneris* derives its origin from a cloud, the watery parts of which having been exhaled by the ſun's heat, only the earthy and ſulphureous parts are left behind, which ſhoot into this figure.

It is ſometimes alſo found hanging about woods and coppices, or even extended on the ground like a fine net, frequently enough miſtaken for ſpiders webs. *Chauv.* Lex. Philoſ. p. 90.

CAPILLUS *Veneris*, maiden-hair, in botany, &c. See ADIANTUM.

CAPIPLENIUM is uſed by ſome authors for a catarrh [a];but more properly, by the Italian phyſicians, for a continual heavineſs of the head, frequent at Rome, and almoſt endemic.[b]—[a *Schneid.* de Catarrh. l. 1. c. 3. [b] *Bagliv.* de Prax. Med. l. 1. c. 13 n. 4. p. 116. *Caſt.* Lex. Med. p. 132, ſeq.]

CAPISCOLUS or CAPISCHOLUS, in eccleſiaſtical writers, denotes a dignitary in certain cathedrals, who had the ſuperintendency of the choir, or band of muſic, anſwering to what in other churches is called *chanter* or *precentor*. See CHANTOR, *Cycl.*

The word is alſo written *cahiſcolus*, and *caputſcholæ*, q. d. the head of the ſchool, or band of muſic.

The *capiſcolus* is alſo called *ſcholaſticus*, as having the inſtruction of the young clerks and *choiriſters*, how to perform their duty. Vid. *Fleur.* Trait. des Etud. Sect. 8. p. 42. *Du Cange*, Gloſſ. Lat. T. 1. p. 826, ſeq. *Menag.* Orig. p 156. Trev. Dict. Univ. T. 1. p. 1411.

CAPISTRUM (*Cycl.*) among the antient muſicians was a kind of head ſtall, or bridle made of leather, faſtened round the head, which paſſing over the mouth, compreſſed the lips and cheeks ſo cloſe, that the perſon, whatever effort he made, could not give his pipe, or flute, above the due quantity of wind requiſite to make it ſpeak.

The figure of a muſician equipt with a *capiſtrum* is given by Salmaſius, who maintains it to be that of Marſyas the ſatyr, who, according to Plutarch, was the inventor of this inſtrument; in virtue of which he had even dared to contend with Apollo [a]. It was copied from an antient ſeal, formerly belonging to Velſerus [b]. — [a *Plut.* Sympoſ. l. 7. c. 8. [b] *Salmaſ.* Exerc. ad Solin. p. 585. Jour. des Scav. T. 6. p. 270.]

Some pretend that the uſe of the *capiſtrum* was to hide the deformity of bloated cheeks, and a gaping mouth, eſpecially where the teeth were naught; others, that it was intended to ſave the lips and cheeks from being extended ſo as to endanger burſting; others, to fortify the part, that it might yield the ſtronger noiſe. But the chief uſe appears to have been, to temper and moderate the breath, and prevent its animating the pipe beyond the due pitch. *Barthol.* de Tib. l. 3. c. 4. *Pitiſc.* Lex. Ant. T. 1. p. 351. See PHORBÆA.

The chemiſts give the denomination *capiſtrum auri* to borax. *Mercat.* Metalloth. p. 43. *Rul.* Lex. Alch. p. 131. See BORAX.

CAPITA or CAPITUM, in antiquity, denotes a tax among the Romans for the maintenance of the horſes in the army, levied according to the number of heads thereof.

The *capitum* was an obligation to furniſh hay to the emperor's ſtables, from whence it was afterwards diſtributed to the equites or horſe guards, and their officers [a]. It was deemed a mark of extraordinary honour, when the emperor ordered livery, or allowance of meat and provender to any perſon during his ſtay at Rome, ſo that both himſelf and horſes were ſupported at the public expence, as Valerian did to Aurelian [b]. — [a *Burm.* Diſſ. de Vectig. c.4. *Pitiſc.* Lex. Ant. T. 1. p. 352. [b] *Vopiſc.* in Aurel. c. 9.]

CAPITAL (*Cycl.*) — M. Bayle has a diſcourſe on the advantages of being born and living in the *capital* of the country. *Bayle*, Rep. aux Queſt. d' un Provinc. T. 1. c. 1. ſeq. Jour. des Scav. T. 37. p. 44.

Some pretend to limit the magnitude of a *capital* from the proportion to the reſt of the country, founded on a ſuppoſed analogy between the *capital* of a country, and the head of an animal. But the analogy is falacious, and ſo are the complaints grounded on it, that the city draws away the nouriſhment from the country, and that England is in the condition of an hydropic, where one part indeed ſwells immoderately, and the whole waſtes by the ſame means. 'Tis certainly an advantage to trade to have one great *capital* city in a kingdom, rather than to have the ſame number of people diſperſed in ſeveral places. ex. gr. ſuppoſing the city of London to contain fifteen hundred thouſand people, as by ſome computations it does, it is more advantageous to the whole kingdom, that theſe ſhould be ſo collected, than that the ſame ſhould be divided equally between 15 ſeveral cities at a diſtance from each other.

Spain is an inſtance of the effects of wanting a *capital*; there are abundance of great cities in it, as Madrid, Seville, Granada, Cadiz, Barcelona, Malaga, Valentia, Toledo, Cordova, &c. The three firſt of which contain each thre hundred thouſand people, and the reſt from one hundred to two hundred thouſand; but they want a center towards which their motions may be directed, and, like the heart in the body, produce a circulation of money and buſineſs to the remoteſt parts. A middling city, as Briſtol, or Madrid, will indeed influence trade, but this influence will only reach to the adjacent country, ſome 20. or 30 miles from the place, whereas a million and a half of people in London, and half a million more in the adjacent parts, which receive their proviſions from London, engage the whole kingdom, and ſet the wheels of trade going almoſt over the whole iſland. Comp. Engl. Tradeſman. T. 2. c. 4. p. 122, ſeq.

CAPITAL *court*, *capitalis curia*, the chief manor-houſe, or place-houſe where the lord of the manor holds his court, called alſo in Kent the court-lodge. See COURT, *Cycl.* and *Suppl.*

Capital court is ſometimes uſed for the ſame with *capital* meſſuage. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. See MESSUAGE, *Cycl.*

CAPITAL *honour*, *capitalis honor*, denotes the chief honour, or prime barony of the whole county, as that in antient times uſually enjoyed by the count or earl of ſuch county. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc.

CAPITAL *lord*, *capitalis dominus*, the lord of the fee, from whom the eſtate is held by inferior tenants. *Kenn.* Paroch. Antiq. p. 162. an. 220. Ejuſd. Gloſſ. ad Eund. ibid.

CAPITAL *picture*, in painting, denotes one of the fineſt and moſt excellent pieces of any celebrated maſter.

F. Chamillard gives a liſt of the pieces of each famous painter, and the places where they are found. Such are the transfiguration of Raphael, in the church of St. Peter in Montorio, at Rome. The nativity of Corregio, in the palace of the duke of Modena. The St. Peter Martyr of Titian, at Venice, in the church of St. John. The paradiſe of Tintoret, in the hall of the great council in the ſame city. The judgment of Michael Angelo, in the pope's chapel in the Vatican. The St. Michael of Guido, in the capuchin church at Rome. The St. Jerom dying, of Dominichino, in the church of St Jerom de la Carita, at Rome. The marriage of Canna, by Paolo Veroneſe, in the Louvre at Paris [a]. Raphael painted a multitude of fine madonas, but the moſt *capital*, in the judgment of all the conoiſſeurs, is that in the palace Chigi, repreſenting the holy virgin holding the child Jeſus by the hand, and St. Joſeph approaching to kiſs him — [a *Chamill.* Diſſ. ſur. plus Med. & Pier. de ſon Cabin. ap. Mem. de Trev. 1712. p. 489, ſeq. [b] *Raguen.* Monum. de Roma, ap. Mem. de Trev. Mar. 1702. p. 90.

CAPITAL, in matters of uſury, denotes the ſum of money put out to intereſt.

In which ſenſe it amounts to the ſame with principal, and ſtands oppoſed to intereſt. *Ozan.* Lex. Math. p. 58.

Folded CAPITAL, in architecture, that of a pilaſter in a re entering angle whether right or obtuſe.

Mutilated CAPITAL, that whoſe projecture is leſs on one ſide than on another, as being too near ſome adjacent body or angle. *Davil.* Courſ. d' Archit. p. 462.

Attic CAPITAL, that which has water-leaves in the gorgerin.

Symbolical CAPITALS, thoſe adorned with the attributes of heathen deities Such are moſt of the antique *capitals*, in which we find thunderbolts and eagles for Jupiter, trophies for Mars, lyres for Apollo, &c. Such alſo among the moderns are thoſe which bear the arms and devices of a nation, the marks of a victory, a dignity, or the like. *Davil.* Courſ. d' Archit. P. 2. p. 460. in voc. *chapiteau.*

The *capitals* of triglyphs, according to Vitruvius, are to be a ſixth part of the module. Over them is to be placed a corona. *Vitruv.* d' Archit. l. 4. c. 3.

CAPITAL *of a lanthorn*, the covering which terminates the lanthorn of a dome, either in the figure of a bell, as that of the Sorbonne, or of a cupola, or a ſpiral, as that of the church of Sapienza at Rome.

CAPITAL *of a mill*, the covering thereof in form of a cone, which turns vertically on the round tower, in order to expoſe the ſails to the wind. *Davil.* Courſ. d' Archit. P 2. p. 462.

CAPITAL *letters*. The antient MSS. both Greek and Latin, are written wholly in *capitals*. Phil. Tranſ. N° 189. p. 364. In the early days of printing, there were alſo ſeveral editions of books in *capitals*, as of Homer, the Greek Anthology, Apollonius, &c. Johannes Laſcaris ſeems to have brought the antient printers to give editions in *capitals*. Mataire gives a Greek epigram, and a Latin epiſtle of Laſcaris in *capitals*. *Mattair.* Annal. Typogr. T. 1. *Le Clerc*, Bibl. Choiſ. T. 11. p. 368.

CAPITAL-*line*, in fortification. See LINE, *Cycl.*

CAPITAN *baſhaw*. See CAPTAIN *baſhaw*.

CAPITAN *reis*, or CAPIDAN *reis*, an appellation given by the Turks to the grand pilot, anſwering to pilot royal among the French. *D' Herbel.* Bibl. Orient. p. 251. voc. *capudan.*

CAPITANA or CAPTAIN *gally*, the chief or principal gally of a ſtate, not dignified with the title of a kingdom. *Aub.* Dict. Mar. p. 169.

The *capitane* was antiently the denomination of the chief galley of France, which the commander went on board of. But ſince the ſuppreſſion of the office of captain-general of the gallies in 1669, they have no *capitana*, but the firſt galley is called *Reale*, and the ſecond *Patrone*. Trev. Dict. Univ. T. 1. p. 1414.

CAPITANEALE, in a general ſenſe, the ſame with capitania See CAPITANIA.

Capitaneates, in Pruſſia, are a kind of noble feuds, or eſtates, which beſides their revenue, raiſe their owners to the rank of nobility. They are otherwiſe called *ſtaroſties*. Vid. Bibl. Germ. T. 6 p. 11.

CAPITANEI or CATANEI, in Italy, was a denomination given to all dukes, marquiſſes, and counts, who were called *capitanei regis*. The ſame appellation was alſo given to perſons of inferior rank who were inveſted with fees, formerly diſtinguiſhed by the appellation *valvaſores majores*. *Du Cange*, Gloſſ. Lat. T. 1. p. 803, ſeq.

CAPITANEUS, in antient law writers, denotes a tenant in capite, or chief. *Spelm.* Gloſſ. Lat. p. 118. See CAPITE, *Cycl.* and *Suppl.*

CAPITANEUS *eccleſiæ*, the ſame with *advocate*. *Du Cange*, Gloſſ. Lat. T. 1. p. 802.

CAPI-

CAPITANIA, the office or dignity of a captain, and more eſpecially a perpetual feud. *Du Cange*, Gloſſ. Lat. T. 1. p. 803. See CAPITANEATE.

CAPITANIA is alſo a denomination given to the twelve governments eſtabliſhed by the Portugueſe in Braſil. Trev. Dict. Univ. T. 1. 1414.

CAPITATUS, in ichthyology, a name given by Joannes Cuba, and ſome others, to that fiſh which we commonly call the bull-head and miller's thumb, the cottus and gobio capitatus of authors. It is of the genus of the cotti, according to the Artedian ſyſtem, and is diſtinguiſhed by that author by the name of the ſmooth ſcaleleſs *cottus*.

CAPITE *cenſi*, in antiquity, the loweſt rank of Roman citizens, who in public taxes were rated the leaſt of all, being ſuch as were never worth above 365 aſſes.

They were ſuppoſed to have been thus called by reaſon they were rather counted and marſhalled by their heads than their eſtates. *A. Gell.* l. 7. c. 13.

The *capite cenſi* made part of the 6th claſs of citizens, being below the *proletarii*, who formed the other moiety of that claſs. *Kenn.* Rom. Antiq. P. 2. l. 3. c. 16.

The *capite cenſi* were not enrolled in the army, as being judged not able to ſupport the expences of war; for in thoſe days the ſoldiers maintained themſelves. It does not appear that before Caius Marius any of the Roman generals liſted the *capite cenſi* in their armies. *Saluſt.* Bell. Jugurth. p. 135. *Pitiſc.* Lex. Ant. T. 1. p. 360. *Panvin.* de civ. Rom. c. 52. *Sigon.* de Ant. Juris civ. Rom. l. 1. c. 4. *Schoetg.* Lex. Ant. p. 270.

CAPITIS *nonus*, in anatomy, the name given by Fallopius to one of the muſcles of the head, deſcribed by Albinus under the name of the *rectus capitis internus major*, and by Winſlow and others under that of the *rectus capitis anterior longus*. See the article HEAD.

CAPITIS *par tertium*, in anatomy, a name given by Fallopius and others of his time, to a muſcle ſince called by Winſlow, *complexus minor* and *maſtoidæus lateralis*, and by Cowper and Albinus *trachelomaſtoidæus*.

CAPITO, in ichthyology, the *chubb*, is called alſo by ſome authors the *cephalus* and *ſqualus*, and in ſome parts of England the *chevin*. It is a longer-bodied fiſh than the carp, and its head is black, large, and ſomewhat flat. Its back is of a duſky green, and its belly and ſides are uſually white and ſilvery, but in the larger and fatter fiſh they become yellow, and ſpotted with ſmall black ſpots; its ſcales are very large, and its mouth ſmall.

It has no teeth either in the jaws, palate, tongue, or throat; its tail is forked, and all its fins are of a blueiſh black colour. Its belly is ſomewhat prominent; it is a river fiſh, and loves the covert of old ſtumps of trees and hollow banks, and gives the angler much diverſion; it will not live in ponds; it ſpawns in May, and is in beſt ſeaſon in April, when full of ſpawn, but is never a very delicate fiſh. *Ray*'s Ichthyogr. p. 255.

CAPITO is alſo a name given by ſeveral authors to the mugil or mullet. Gaza ſeems to have given riſe to this error, he found the word *cephalus* in Ariſtotle as the name of the mullet, and tranſlated it by the word *capito*, not conſidering that he by that name confounded this fiſh with another, namely, the *chubb*. See CEPHALUS.

CAPITO *cæruleus*, the blue *chubb*, a fiſh common in the Danube, and other of the larger rivers in Germany, and frequently called the *jentling*. *Geſner*, de piſc. p. 1266. See JENTLING.

CAPITO *rapax*, in zoology, a name given by ſome authors to the *corvus piſcis*, a fiſh of the ſhape of our river chubb. *Willughby*'s Hiſt. Piſc. p. 246. See the article CORVUS *piſcis*.

CAPITOLINI, in Roman antiquity, a college of men reſiding in the capital and arx, to whom was committed the care of celebrating the Capitoline games. *Liv.* Hiſt. l. 5. c. 50. *Pitiſc.* Lex. Ant. T. 1. p. 352.

CAPITOUL or CAPITOL, an appellation given to the chief magiſtrates of Tholouſe, who have the adminiſtration of juſtice and policy both civil and mercantile in the city.

The *capitouls* at Tholouſe are much the ſame with the echevins at Paris, and the conſuls, bailiffs, burger-maſters, mayors, and aldermen, &c. in other cities. In antient acts they are called *conſules capitularii*, or *capitolini*, and their body *capitulum*: From this laſt come the words *capitularii* and *capitouls*. The appellative *capitolini* aroſe hence, that they have the charge and cuſtody of the town-houſe, which was antiently called *capital*. Trev. Dict. Univ. T. 1. p. 1416. *Savar.* Dict. Comm. T. 1. p. 553.

The office only laſts one year, and ennobles the bearers. In ſome antient acts they are called *capitulum nobilium Toloſæ*. Thoſe who have borne it, ſtyle themſelves afterwards burgeſſes[a]. They are called to all general councils, and have the *jus imaginum*, that is, when the year of their adminiſtration is expired, their pictures are drawn in the town-houſe; a cuſtom which they have retained from the antient Romans, as may be ſeen in Sigonius[b]. — [[a] *Seld.* Tit. of Hon. p. 482. [b] *Sigon.* de Antiq. Jur. Civ. Rom. l. 2. Trev. Dict. loc. cit.]

CAPITOULATE, an appellation given to the ſeveral quarters, or diſtricts of the city Tholouſe, each under the direction of a *capitoul*; much like the wards of London, under their aldermen. See CAPITOUL.

Tholouſe is now divided into eight *capitulates* or quarters, which are ſubdivided into *moulans*, each of which has its tithing man, whoſe buſineſs is to inform the *capitoul* of what paſſes in his tithing, and to inform the inhabitants of the tithing, of the orders of the *capitoul*. *Catel.* Hiſt. de Langued. l. 2. p. 144, ſeq. Trev. Dict. Univ. T. 1. p. 1416.

CAPITULA *ruralia*, denote chapters held by the rural dean and clergy within the precincts of each deanry, antiently held every three weeks, then once a month, and more ſolemnly once a quarter *Kenn.* Paroch. Antiq. p 640. Ejuſd. Gloſſ. ad Eund.

CAPITULATION (*Cycl.*) — The imperial *capitulation*, according to Conringius, is a kind of convention, whereby the emperor, nominated by the electors, accepts, before the ceremony of his coronation, the conditions propoſed to him, and vows to obſerve the ſame. The king of the Romans alſo when elected, ſigns the emperor's *capitulation*, as being in right of ſuch election to ſucceed to the empire after the death of the emperor. *Conring.* Diſſ. Acad. 3. Th. 20. Bibl. Univ. T. 4. p. 173.

Some authors date the origin of imperial *capitulations* from the time of Charlemaign. Others will have it to have been firſt eſtabliſhed in the Time of Conrade I. as being the firſt who came to the empire by election; all his predeceſſors having mounted the throne by right of conqueſt, it is not natural to ſuppoſe they would receive laws and conditions from thoſe they had conquered. Journ. des Scav. T. 50. p. 176.

The deſign of the *capitulation* is, on the one hand, to prevent the emperor from abuſing his power to the oppreſſion of the people, and on the other, to prevent the people from breaking in on the juſt rights of the emperor. The imperial *capitulations* are conſidered as fundamental laws of the empire; and though the drawing up, preſenting, procuring the ſignature, and taking care of the execution of it, be committed to the electors, it is reputed the act of the ſtates of the empire. *Schurſchiſl.* Diſſ. de Elect. Frid. III. §. 10. *Imhof.* Not. Imp. l. 4. c. 2. §. 5. Trev. Dict. Univ. T. 1. p. 1418.

CAPITULUM, (*Cycl.*) in anatomy, a little head, eſpecially of a bone, anſwering to the Greek *condylus*. *Caſt.* Lex. Med. p. 133.

CAPITULUM, in the antient military art, was a tranſverſe beam, wherein were holes through which paſſed the ſtrings whereby the arms of huge engines, as baluſtæ, catapultæ, and ſcorpion, were played or worked. *Vitruv.* de Archit. l. 1. c. 1. *Bald.* Lex. Vitruv. p. 19. *Aquin.* Lex. Milit. T. 166.

CAPITULUM, in eccleſiaſtical writers, denoted part of a chapter of the bible read and explained.

In which ſenſe they ſaid, *ire ad capitulum*, to go to ſuch a lecture. Afterwards the place or apartment where ſuch theological exerciſes were performed was denominated *domus capituli*. *Hopfn.* Saxon. Evang. p. 598. *Fab.* Theſ. p. 460.

CAPIVI (*Cycl.*) — Beſide the common uſes of this balſam, the art of the modern chemiſts has found a new and very profitable one, that is the debaſing and adulterating the dearer eſſential oils with it, as the ſmell in its oil is much ſweeter than that of turpentine or deal wood.

This balſam yields a very large proportion of eſſential oil, by diſtillation with water, even to the quantity of five or ſix ounces from a pound, and the chemiſts who know this, adulterate their oils, either by mixing them with the oil of *capivi*, or more cunningly, by putting a proper quantity of this balſam with the ingredients into the ſtill, and ſo drawing off the oil of both mixed intimately together. There ſeems no eaſy way of detecting this fraud; the nice uſe of a hydroſtatical balance indeed would do it; and it is worth obſerving whether the oils thus adulterated will not, on long keeping, diſcharge the ink of their written label, as the eſſential oils, adulterated with the oil of turpentine, are known to do, on account of the acid vapour which continually exhales from that oil. *Shaw*'s Lectures, p. 115.

CAPNELÆON, Καπνελαιον, among antient naturaliſts, denotes a ſpecies of reſin, which flows ſpontaneouſly, being warmer, thinner, and more fluid than all other ſorts of reſins, ſo as nearly to approach the nature of oil, and evaporating plentifully on being expoſed to the fire; whence the denomination which imports as much as ſmoking oil. It is ſometimes alſo called *piſſanthos*, or flower of pitch. *Caſt.* Lex. Med. p. 133.

CAPNICON, in antiquity, chimney-money, or a tax which the Roman emperors levied for ſmoke, and which of conſequence was due from all, even the pooreſt, who kept a fire. This was firſt invented by Nicephorus. *Zonar.* l. 3. p. 100. *Buling.* de Vectig c. 74. *Pitiſc.* Lex. Ant. T. 1. p. 355.

CAPNISTON, Καπνιστον, among antient phyſicians, denotes oil whoſe fumes rendred aromatic by burning ſpices, are conveyed to a part affected.

CAPNITIS, or *capnias jaſpis*, in the natural hiſtory of the antients, the name of a ſpecies of *chalcedony*, of a browniſh ground, clouded with a large miſt of blackiſh, looking like a column of ſmoak. The antients alſo called our common *chalcedony* a jaſper, not alloting any peculiar generical name to theſe miſty ſtones; and the name they gave this ſpecies very happily expreſſed its character, as it looks exactly as if obſcured by a cloud of thick ſmoke.

It is the leaſt beautiful of all the *chalcedonies*, and is found in large maſſes, in the ſhape of our common flints and pebbles; the whole is very opake, and is never variegated with any veins; it is nearly as hard as the oriental onyx, and takes a very fine poliſh. It is very common in the Eaſt-Indies, and is ſometimes found in Germany and France, but is ſeldom worked into any thing better than knife-hafts. *Hill*'s Hiſt. of Foſſ. p. 167.

CAPNOIDES, in botany, the name of a genus of plants, the characters of which are theſe: the flower wholly reſembles that of the fumitory, but the piſtil which ariſes from the cup finally becomes a long bivalve cylindrical pod containing many roundiſh ſeeds. *Tourn.* Inſt p 423.

There is only one known ſpecies of this genus, which is the plant called by many authors the evergreen fumitory.

CAPO, in ichthyology, a name given by Paulus Jovius and ſome others to the fiſh called *coccyx* by the antient Greeks, *cuculus* by the Latin writers, and by ſome *lyra*. It is a ſpecies of the triglæ, diſtinguiſhed by Artedi by the name of the red trigla, with a bifid ſnout, and with the coverings of the gills ſtriated.

CAPO *negro*, in zoology, the name of a ſpecies of duck called *mergus cirratus minor*, and *anas folligula prima* by Geſner, and *querquedula criſtata* and *colymbus* by Bellonius, in Engliſh the tufted duck.

Its beak is blueiſh, and the upper part of its head of a deep purple, tending to black, and from this there hangs a creſt of the ſame colour, of an inch and half in length. Its neck, ſhoulders and back, are all of a deep duſky colour, nearly approaching to black. Its wings are ſhort, and altogether black, except for a little whiteneſs, on ſome of the longer feathers; its tail is very ſhort, and altogether black; its throat, and the anterior part of its breaſt are ſomewhat blackiſh, but its belly of a ſilvery white; its legs are ſhort, and are placed very backward, they are of a blueiſh colour. *Ray*'s Ornitholog. p. 280.

CAPO *roſſo*, in zoology, the name of a ſmall ſpecies of ſea duck, called by ſome *anas fera fuſca minor*, the ſmall wild brown duck. It is ſomething larger than the teal; its beak is of a duſky blue, its head is very large, and all over of a rediſh brown, but has a ſmall white ſpot at each angle of the mouth. The neck is ſhort, as in moſt other birds of this kind, and has a ring of brown round its middle. Its back and wings are brown, but the long feathers have ſome whiteneſs in them which gives the appearance of a white ſtreak to the ſides of them when folded. The iris of the eye in this bird, is of a pure white, as milk or ivory, which is a very great ſingularity. The tail is very ſhort and brown, and the breaſt of a rediſh brown. *Ray*'s Ornithol. p. 281.

The deſcription Bellonius gives of the bird he calls *glaucium* and *morillon*, ſo nearly agrees with this, that there is great reaſon to ſuſpect they are both the ſame ſpecies of fowl. See DUCK.

CAPO *roſſo maggiore*, in zoology, the Italian name of a ſpecies of duck, for which we have no Engliſh one, nor have authors honoured it with a Latin one. It is ſomewhat larger than the common duck; its beak is of a blood red, and appears very large. Its head is of a beautiful red at the top; theſe feathers are large, ſomewhat elevated above the ſurface of the reſt, ſo as to form a ſort of very large creſt, the neck, breaſt, ſhoulders, and belly, are all black, and the ſides and under-part of the wings white, with a faint caſt of rediſhneſs. The long wing feathers are white and grey with black tips. The back is of a colour which yet wants a name, and can be only very imperfectly expreſſed by calling it a greyiſh red, but the rump is black, the tail is of a greyiſh red, and the legs and feet are red, but the membrane of the feet is black. *Ray*'s Ornithol. p. 279.

CAPON, a cock chicken, caſtrated young, generally as ſoon as left by the dam.

The word is formed from the Latin *capo*, of the Greek Κοπων, which ſignify the ſame.

Capons, beſides their uſe for the table, ſerve to lead chickens, ducklings, turkey-pouts, pea-hens, pheaſants, or partridges, in lieu of their natural dams, over which they have ſeveral advantages, by the largeneſs of their body, which will brood, or cover, thirty or forty young. Trev. Dict. Univ. T. 1. p. 1652. voc *chapon*. Dict. Ruſt. T. 1. in voc.

CAPONE, in ichthyology, a name given by the Italians to the fiſh called the *hirundo* and *corvus* by authors, and by Artedi made a ſpecies of the trigla. It is diſtinguiſhed from the reſt of this genus by that author, under the name of the trigla with an aculeated head, and with three appendages on each ſide to the pectoral fins.

CAPONIERE (*Cycl.*) — The *caponiere* differs from the coffer in that the latter poſſeſſes the whole breadth of the ditch, whereas the former only takes up a part of it. *Ozan.* Dict. Math. p. 602. Dict. Milit. in voc. See COFFER, *Cycl.*

Caponieres are partly under ground, and partly above it. They are ſo well ſcreened a-top, that no bomb or carcaſs can penetrate them. *Wolf.* Lex. Math. p. 308.

CAPOT, at picquet, is when one of the gameſters wins all the cards, in which caſe he gains forty points. Trev. Dict. Univ. T. 1. p. 1420.

CAPPANUS, in natural hiſtory, the name given by ſome authors to the ſea-worm which bores into the bottoms of ſhips. See the article SOLEN.

CAPPARIS, *capers*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the roſaceous kind, conſiſting uſually of four petals, which are diſpoſed in a circular form. The piſtil ariſes from the cup of the flower, and is furniſhed with an embryo which afterwards becomes a pear-faſhioned fruit of a fleſhy ſubſtance, in which are contained a number of ſeeds of a roundiſh, or ſomewhat kidney-ſhaped form. The ſpecies of *capers* enumerated by Mr. Tournefort are theſe: 1. The ſmall fruited, round-leaved prickly *capparis*. 2. The *capparis*, with ſharp-pointed leaves. 3. The Sicilian *capparis* with ſharp-pointed leaves and double prickles. 4. The larger fruited *capparis*, without prickles. 5. The bay-leaved American tree *capparis*, with white flowers, and very long fruit 6. The bay-leaved American *capers*, with white flowers and roundiſh fruit. *Tourn.* Inſt. p. 267. See CAPER.

CAPPEROL *coronde*, a name given by the Ceyloneſe to a peculiar kind of cinnamon, eſteemed the third in value: this has a very ſtrong taſte and ſmell of camphor, and its name with the natives ſignifies camphorated cinnamon. The tree which produces it grows very plentifully in many parts of the iſland of Borneo, but is not met with in the eaſtern parts of it. This is often ſold to the Danes and Engliſh who come to trade on the coaſts of Coromandel; it is prohibited exportation from the iſland, but ſo long as only one port is open there are people enough who will carry out great quantities of it.

There is a ſpecies of canella very much reſembling this kind of cinnamon tree, which grows very frequently on the continent of India toward Goa, and another canella or wild cinnamon on the coaſt of Malabar, in many things reſembles this. The barks of all theſe trees are greatly inferior to the true cinnamon in ſmell, taſte, and virtue, yet they are too often ſold to the leſs judicious traders in theſe things, either alone or mixed with the ſeveral better kinds of cinnamon, to the great damage of all that afterwards buy them. Phil. Tranſ. N° 409.

CAPRA, the *goat*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of animals of the order of the pecora, the diſtinguiſhing characters of which from the reſt of the animals of that order, are: that its horns are hollow, turned upward, and not ſmooth, but annulated on their ſurface. This genus comprehends all the goat kind, the gazella, ibex, rupicapra, &c. *Linnæi* Syſtem Natur. p. 42. See GOAT.

CAPRA *ſaltans* (*Cycl.*) — The *capræ ſaltantes* are not ſo called from their figure, which is various, ſometimes round, ſometimes long, but from their moving by jerks ſomewhat like the leaps of that animal; and from the little languets of fire which hang at, and ſometimes fall from them, which antiquity has been pleaſed to fancy like the beard or locks of a goat's hair. Ariſtotle diſtinguiſhes the *capra* from the trabs, in that the latter proceeds with an uniform motion, the former with an irregular one, and as it were by jumps. *Ariſt.* Meteor. l. 1. c. 5. Mem. Acad. Inſcr. T. 6. p. 95.

The *capræ* ſeem to be very low, yet ſometimes fly ſo high, that meteorologiſts have placed them in the upper region, though not ſo conſtantly, but they are ſometimes alſo found in the middle region.

Of globular *capræ* we have divers inſtances, in antient as well as modern naturaliſts. Such was the flame ſaid by Seneca to have been ſeen in form of a huge ball, about the bigneſs of the moon, when Paulus Æmilius waged war againſt Perſeus. Such another, he tells us, was ſeen at the death of Auguſtus; another on the tragedy of Sejanus, another at the death of Germanicus [a]. Such alſo was that ſeen about Michaelmas 1676 by no leſs than twelve counties at once [b]; it is deſcribed by Mr. Naſh, as it appeared near Seighford in Staffordſhire, as of a globular figure, moving by jerks, and making ſhort reſts at every one of them, letting fall drops of fire, which were part of its body; for it decreaſed in magnitude the farther it went, and the oftener it dropped, till at length it wholly diſappeared [c]. — [[a] *Senec.* Nat. Queſt. l. 1. c. 1. [b] Phil. Tranſ. N° 135. p. 863. ſeq. [c] *Plot.* Nat. Hiſt. Stafford. c. 1. §. 40.]

CAPRA *trituratoria*, in the antient huſbandry, was a kind of iron log, made in the figure of a goat, which was laid on the tribula, to make it more effectual in ſeparating the corn from the ears, the antient way of threſhing. *Schoetg.* Antiq. Tritur. ap. pref. Stat. Rep. Lett. T. 1. p. 153.

CAPRARIA, in the Linnæan ſyſtem of botany, a diſtinct genus of plants, the characters of which are theſe: the calyx is a hollow perianthium, conſiſting of one leaf divided into four ſegments at the end, which are ſlender and rough; the flower conſiſts of one petal which is hollow, and divided into four obtuſe ſegments; the ſtamina are four pointed filaments ſhorter than the flower; the antheræ are ſimple; the germen of the piſtillum is of a conic form; the ſtyle is of the length of the flower, of a pointed figure, and remains after the flower is fallen; the ſtigma is acute. The fruit is an oblong conic capſule, with a narrow end; it is compoſed of only one cell, divided by two valves; the ſeeds are numerous, and of an oblong figure. *Linnæi*, Genera Plant. p. 282.

CAPREOLUS, in zoology, the name of an animal called *caprea* by Pliny, and known among us by the name of the roe-deer. Its Latin names are extremely improper, ſince it has not the leaſt reſemblance or analogy to the goat kind in any

any reſpect. It is properly of the deer kind, but differs from all the other ſpecies in the ſmallneſs of its ſize, and ſhortneſs of its horns. The horns in this ſpecies are not palmated or compreſſed as in moſt of the deers, but are rounded, and ſerve very aptly for the making knife hafts, and other ſuch things. *Ray*'s Syn. Quad. p 89.

CAPREOLUS, among botaniſts, ſometimes alſo called *clavicula*, is the part of a ſtalk which curls or lays hold on any adjacent body. *Mart.* Lect. Bot. 1. p. 7.

CAPREOLUS, in anatomy, denotes the helix, or outer ambit of the ear. *Barthol.* Anat. l. 3. c. 9. *Caſt.* Lex. Med. p. 133.

CAPREOLI, in the antient architecture, a ſort of rafters or timbers ſerving to ſuſtain the canterii, either in buildings, or machines

They were thus called, not as Philander imagines, from their reſemblance to the *capreoli*, or tendrils of vines, but, from the affinity of their form and office to wild goats; as theſe butt and repel things with their horns, ſo do the former oppoſe their heads or horns to the weight of the canterii. *Vitruv.* de Archit. l. 10. It. l. 4. c. 2. *Philand.* Comm. ad Eund. ib. *De Laët.* Lex. Vitruv. p. 20. *Aquin.* Lex. Milit. T 1. p. 167.

CAPREOLUS, in the antient huſbandry, a kind of iron hoe or inſtrument with two forks or fangs, wherewith to ſtir and move the ground. *Columel.* l. 11. c. 3. *Pitiſc.* Lex Ant. T. 1. p. 355. *Voſſ.* Etym. in voc.

CAPRICE, in muſic, is ſometimes uſed for an irregular compoſition, which ſucceeds rather by the force of genius, than obſervation of the rules of art.

The word is French, where it ſignifies humouroufneſs, fantaſticalneſs. Some deduce it from the Italian *capriccio*, and that from the Latin *capra*, goat, to whoſe wantonneſs it is ſuppoſed to bear alluſion [a]. St. Amant has given poems under the title of *caprices*. The Abbe Pic has alſo publiſhed his *caprices* [b]. The *caprices*, or poſtures of Calot the engraver, are famous [c]. The Italians, according to Huarte, give the appellation *capricious*, to inventive wits. — [[a] *Morhof.* Polyhiſt. T. 1. l. 2. c. 1. n. 41. [b] Mem. de Trev. an. 1704. p. 1119. [c] Trev. Dict. Univ. T. 1. p. 1427.]

Broſſard defines *caprice* to be a ſong, or compoſition not reſtrained to any certain meaſure, or deſign, but wherein the compoſer gives a full looſe to his fancy and humour, otherwiſe called *phantaſia*, *voluntary*, *boutade*, &c. *Broſſ.* Dict. Muſ. p. 17. *Walth.* Lex Muſ. p. 141.

CAPRICE is applied in architecture to an edifice of a ſingular taſte, and deviating much from the common rules of building. *Davil.* Courſ. d' Archit. P. 2. p 445.

CAPRICORN (*Cycl.*) — This ſign is known by divers other appellations, as *Neptunia proles*, *æquoris hircus*, *caper*, *imbrifer*, *gelidus*, *corniger*, *capra*, *Pan*, *Ægipan*, *Algedi*, and *Alcantarus*.

Schiller, in lieu of *capricorn*, repreſents the apoſtle Simon; Schickhard, *azazel*, or the ſcape goat; Weigelius the horns in the Naſſavian arms. *Wolf* Lex. Math. p. 309.

The emperor Auguſtus was born under *capricorn*, which he took care to publiſh as a happy horoſcope, by a gold coin, on which this ſign was repreſented. This account we have from Suetonius [a], who elſewhere relates, that this prince was born on the 9th of the calends of October, that is, as Dion alſo aſſures on the 23d of December [b]. According to which account, *capricorn* muſt have been in the meridian of the antipodes at the time when Auguſtus was born. Chronologers are here terribly at a loſs; Scaliger and Petavius ſolve the difficulty by making Suetonius to have been deceived [c]. The editor of Suetonius in uſum Delphini, has found a more natural and eaſy ſolution; according to him Auguſtus's horoſcope was not taken from the time of his birth, but from that of his conception: Now being born on the 23d of September, if we go backwards 9 months, we ſhall fall on the 23d of December, the day when the ſun entered *capricorn*, a point of time, ſays Julius Firmicus, peculiarly happy for a horoſcope, and which promiſes nothing leſs than ſceptres and empires [d]. — [[a] *Suet.* in Aug. c. 94. n. 24. *Carrio*, Emend l 2. c. 2. [b] *Suet.* in Aug. c. 5. *Dio*, Hiſt. l. 56. [c] *Scalig.* de Emend. Temp. l. 5. p. 441. Item in Manil. p. 147. *Petav.* de Doctr. Temp. l. 10. c. 64. & l. 11. c. 6. [d] *Firmic.* Matheſ. l. 8. Trev. Dict. Univ. T. 1. p. 1423. *Pitiſc.* Lex. Ant. T. 1. p. 356.]

CAPRICORN *beetle*, — There are ſix different ſpecies of this inſect deſcribed by Liſter in his treatiſe *De ſcarabæis*, publiſhed at the end of Mr. Ray's hiſtory of inſects. The generical characters of theſe inſects are theſe: they have long and ſlender bodies; their horns are long and jointed; and they are fond of places in the neighbourhood of rivers.

The ſpecies are theſe: 1. The great ſweet ſmelling *capricorn*, called by ſome authors *cerambyx*, and by others the *muſk beetle*. This is one of the moſt beautiful of the Engliſh beetles; the male is much ſmaller than the female, and is of a mixed colour of purple and gold, the female is more of a green colour, the horns of the males alſo conſiſt of longer joints, and in both ſexes the horns hang over the back, and are longer than the whole body. It is found among old willows, and often in the very wood; it is moſt frequent in the month of July.

It makes a mournful ſound when taken, and Mouffett obſerves that it loſes its perfumed ſmell when dead; but Liſter obſerves farther, that this ſmell is only found in it at the time of copulation. 2. The ſmall gilded *capricorn*; this is of a true gold colour, but in ſome lights has a caſt of purple and of green. It is found very frequently among reeds by the banks of rivers. 3. The yellow *capricorn*, with a large black ſpot on each of the caſes of the wings; this is found among dry hay in April. 4. The yellow legged *beetle*, with a black body, variegated with yellow ſtreaks. This is found in gardens among the kitchen herbs, principally in the month of May. 5. The black *capricorn*, with the caſes of the wings yellow at the top, and white at the bottom, with ſome other white marks about them; this is found in the meadows in the month of May. 6. The green *capricorn*; this is of the ſize, ſhape, and colour of the cantharides; it is found in May in woods. *Ray*'s Hiſt. Inſect. p. 386.

CAPRIFICATION, a name given in the iſlands of the Archipelago to a peculiar method of propagating and ripening the fruits of the domeſtic fig trees, by means of inſects. *Plin* Hiſt. Nat. l. 15. c. 19. Act Erud. Liſp. 1721. p. 84. *Savar.* Dict. Comm. Supp. p. 117.

The word is formed from *caprificus*, the wild fig-tree, from whoſe fruits the inſects are produced, which are the chief inſtruments of *caprification*.

Caprification, or the manner of impregnating fig-trees, of which the antients ſpeak with ſo much wonder, is not imaginary, as many have ſuppoſed. M. Tournefort aſſures us it is ſtill practiſed every year in moſt of the Grecian iſlands, by means of a ſort of gnats, or flies peculiar to the country. The fig-trees there bear much fruit; but this fruit, in which part of the riches of the country conſiſts, would be of no advantage, if it was not managed in the following manner:

There are two ſorts of fig-trees cultivated in theſe iſlands; the firſt called *ornos*, from the Greek ὄρνος, which is the wild fig-tree, or the *caprificus* of the Latins, the ſecond is the domeſtic fig-tree. The former bears three kinds of fruits, none of them fit to eat, but abſolutely neceſſary for ripening the domeſtic ones. Theſe fruits of the wild fig-tree are called *fornites*, *cratitires*, and *orni*.

The fornites appear in Auguſt, and continue unripe till November. In theſe ſmall worms are bred, from the puncture of certain gnats, obſerved only about the fig-trees. In October and November, the ſame gnats wound the ſecond fruits of the ſame trees. Theſe which are called cratitires only appear at the end of September, and the fornites fall gradually off after their flies have quitted them. But the cratitires remain on the tree till May, and incloſe the eggs left by the flies of the fornites. In May the third kind of fruit begins to bud on the ſame trees which bore the other two; this is by far the largeſt fruit, and is called ornus. When it is arrived at a certain magnitude, and its buds begin to open, it is wounded in that part by ſuch of the flies of the cratitires as can ſhift from one fruit to the other, to depoſit their eggs.

It ſometimes happens that the flies of the cratitires lie in ſome places, and do not come out, though the orni are fit for their reception. In this caſe the cratitires muſt be fetched from elſewhere, and put on the extremities of thoſe branches whoſe orni are in a good forwardneſs, in order that they may wound them. If that ſeaſon be loſt, the orni fall, and the inſects of the cratitires fly away, finding no orni to prick. The peaſants who apply themſelves to the culture of fig-trees are the only judges of the proper ſeaſon in which this may be prevented; in order to which they carefully obſerve the bud of the fig; for this part not only ſhews the ſeaſon of the fly's exit, but alſo that in which the fruit may be ſucceſsfully wounded. If the bud be too hard and cloſe, the fly cannot depoſit its egg, and the fig drops when the ſame eye is too lax and open.

But this is not all: theſe three kinds of fruit abovementioned are not good to eat; they are only appointed by the author of nature to ripen the fruit of the domeſtic fig-tree. The method of managing them is thus: in June and July the peaſants take the orni, when their flies are ready to come out, and hang them on the domeſtic fig trees; ſeveral of theſe they ſtring on a ſtraw, and lay on the tree, more or leſs in quantity, as they ſee occaſion. If they miſs this ſeaſon, the orni drop off, and the fruit of the domeſtic fig-tree not ripening, falls alſo in a little time. The country people know ſo well theſe precious moments, that every morning in making their review, they lay only the beſt conditioned orni on the fig-trees, otherwiſe they would loſe their harveſt. 'Tis true they have a ſort of remedy for this, by ſtrewing on the domeſtic fig-trees the flowers of a plant called *aſcolimbros*, in the tops of which flowers are ſometimes found flies fit to wound the figs; or poſſibly the flies of the orni feed on this plant. In fine, the peaſants manage the orni ſo well, that their flies ripen the domeſtic figs in about forty days.

Theſe figs are very good crude; to dry them they are laid in the ſun for ſome time, after which they give them a heating in the oven, to preſerve them for the reſt of the year. They are the chief food of the peaſants of the Archipelago, whoſe ordinary fare is only barley bread and dry figs. Yet are theſe figs far from being ſo good as thoſe of Provence, Italy, and Spain; the heat of the oven deprives them of their fine reliſh, but on the other hand it deſtroys the eggs of the flies of the orni, which would infallibly produce little worms, which would deſtroy the fruit. This, one may ſay, is taking a great deal of pains for fruit that is naught at laſt. M. Tournefort could not enough admire the

patience

patience of the Greeks who ſpent above three months in carrying the flies from one fig-tree to another; but he ſoon underſtood the reaſon, for aſking them why they did not cultivate the French and Italian figs, he was anſwered, that the great quantity of fruit which their own trees yielded, made them preferable. In reality, one of theſe trees produces generally 224 pounds of figs, whereas the French trees yield not 25 pounds.

As to the manner wherein the puncture of the flies contribute to the maturation of the fruit, poſſibly it may be by lacerating the veſſels, and extravaſating the nutritious juice when they depoſit their eggs; or when with the egg they alſo convey ſome liquor which gently ferments with the juice of the fig, and ſoftens its pulp. Even the Provence and Paris figs ripen much ſooner by wounding their buds with a ſtraw or feather dipped in oil olive; plumbs and pears alſo wounded by inſects, are found to ripen the ſooneſt, and in theſe the pulp about the wound is more exquiſite than the reſt. Mem. Acad. Scienc. An. 1705. p 447, ſeq.

CAPRIFICATION is alſo applied in a leſs proper ſenſe to the art of propagating the palm tree. Act. Erudit. Lipſ. 1721. p. 84.

CAPRIFICUS, in botany, a term by which ſome authors, particularly Pliny, call the ſmall ſpurge or eſula. *Ger.* Emac. Ind. 2.

CAPRIFICUS was alſo uſed by the antients for the wild fig-tree. See CAPRIFICATION.

CAPRIFOLIUM, the *honey-ſuckle*. See HONEY-*ſuckle*.

CAPRIMULGUS, in zoology, the name of a ſpecies of owl, called the churn owl, or fern owl, and in ſome places the goat-ſucker, according to its Latin name. It obtained this from an opinion that it uſed in the night to ſuck the goats dugs for their milk; but there has been no proof of the truth of that tradition. It is a moderately large owl; its head is large in proportion to its body, yet leſs ſo than in the other owls. Its beak is black, very ſmall, and ſomewhat crooked, but the opening of its mouth is extremely wide. Its breaſt and belly are mottled with ſtreaks of a browniſh white, and a duſky or blackiſh grey; its head is grey, the middle of the feathers being all black; its wings and back are of a duſky brown, variegated with black; its legs are ſhort or ſmall, and feathered almoſt to the toes before; it is upon the whole a very beautiful bird, and more reſembles the cuckow than the owl kind in its ſhape. It is common in the northern counties of England. *Ray*'s Ornitholog. p. 70.

CAPRISCUS, the *goat-fiſh*. See GOAT-FISH.

CAPSARIUS, in antiquity, a ſervant who attended the Roman youth to ſchool, carrying a ſachel with their books in it, ſometimes alſo called *librarius*. *Pignor.* de Serv. p. 238. *Pitiſc.* Lex. Ant. T. 1. p. 356.

CAPSARIUS was alſo an attendant at the baths, to whom perſons committed the keeping of their cloths. *Pitiſc.* Lex. Ant. ib.

CAPSARIUS, among the Roman bankers, was he who had the care of the money-cheſt, or coffer. *Pitiſc.* Lex. Ant. ib.

CAPSICUM, *Guinea pepper*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is rotated and divided into ſeveral ſegments at the edge. From the cup ariſes a piſtil, which is fixed in the manner of a nail to the middle of the flower, and by degrees ripens into a ſoft and membranaceous fruit, which contains a number of flat ſeeds uſually of a kidney-like ſhape. The ſpecies of *capſicum* enumerated by Mr. Tournefort are theſe: 1. The common *capſicum* with long hanging-down pods. 2. The crooked podded *capſicum*. 3. The leſſer *capſicum* with crooked pods. 4. The yellow podded *capſicum*. 5. The long upright podded *capſicum*. 6. The upright podded *capſicum* with long and very ſmall pods. 7. The upright podded *capſicum* with oblong but ſhort pods. 8. The *capſicum* with bifid fruit. 9. The *capſicum* with cylindric pods of a ſpan long. 10. The *capſicum* with long pods, turned in the middle, and ſquare at the end. 11. The *capſicum* with flat and rounded pods. 12. The *capſicum* with long heart-faſhioned hanging pods. 13. The *capſicum* with roundiſh heart-faſhioned hanging pods. 14. The *capſicum* with olive-ſhaped pods. 15. The *capſicum* with cherry-ſhaped hanging pods. 16. The largeſt round-fruited *capſicum*. 17. The *capſicum* with large prickly fruit. 18. The *capſicum* with ſmaller prickly fruit. 19. The *capſicum* with upright round pods. 20. The *capſicum* with upright round pods a little pointed at the end. 21. The *capſicum* with upright heart-faſhioned pods. 22. The *capſicum* with upright heart-faſhioned angular pods. 23. The *Capſicum* with upright cherry-like pods. 24. The large flowered hairy ſtalked *capſicum*. 25 The *capſicum* with the ſmalleſt round fruit. And 26, The American *capſicum* with the oblong ſweet fruit. *Tourn.* Inſt. p. 153.

Guinea pepper is more uſed as a ſauce, and in pickle, than in phyſic, being frequently put into fiſh ſauce, or into any thing that is flatulent and windy; for which purpoſe it is ordered divers ways, either green or ripe, pickled, or rubbed to powder with ſalt. A decoction of it with peny royal is commended by ſome to expel a dead child. The ſkins boiled, and uſed as a gargle, are good againſt the toothach; a cataplaſm of the ſeeds, powdered and mixed with honey, applied to the throat, is good for the quinſy. Vid. *James*'s Med. Dict. in voc.

CAPSTAN (*Cycl.*) — The word is alſo written, *capſtand*, *capſtern*, and even *capſtow* [a]; it is formed from the French *cabeſtan*, which ſignifies the ſame [b]. — [[a] *Skin.* Etym. Angl. in voc. *capſtow*. [b] Trev. Dict. Univ. T. 1. p. 1305. voc. *cabeſtan*.]

The power of the *capſtan* is reducible to that of the axis in peritrochio. See AXIS *in peritrochio*, *Cycl.*

De Camus conſiders the *capſtan* as a perpetual lever. *De Camus*, Tr. des Forces Mouvant. ap. Mem. de Trev. 1723. p. 718. See LEVER, *Cycl.*

The parts of a *capſtan* are, the foot, which is the loweſt part; the ſpindle, the ſmalleſt part; the whelps a ſort of brackets ſet into the body of the *capſtan* cloſe under the bars; the barrel, the main body of the whole; the holes for the bars to be put into; the bars, which are ſmall pieces of timber by which the men heave; laſtly, the pawl, which is a piece of iron bolted to one end of the beams of the deck, cloſe to the body of the *capſtan*, but ſo as that it have liberty to turn about every way; and againſt it do the whelps of the *capſtan* bear; ſo as that by it the *capſtan* may be ſtopped from turning back. *Botel.* Sea Dial. 4. p 113, ſeq. *Manwar.* Sea Dict. p. 19, ſeq.

CAPSULE, among botaniſts, a ſpecies of pericarpium compoſed of dry elaſtic valves, which uſually burſt open at the points: this kind of pericarpium ſometimes contains only one cell or cavity, ſometimes more; in the firſt caſe it is called *unilocular*; in the ſecond, *bilocular*, *trilocular*, &c. according to the number of cells in it for the reception of ſeeds. See PERICARPIUM.

CAPTAIN (*Cycl.*) — The duty of this officer is to be careful to keep his company full of able bodied ſoldiers, to viſit their tents and lodgings, to ſee what is wanting, pay them well, cauſe them to keep themſelves neat and clean in their cloaths, and to keep their arms bright. He has power in his own company of making ſerjeants, corporals, and lanſpeſades. *Cruſ.* Milit. Inſtr. Cavalr. P. 1. c. 6. *Guill.* Gent. Dict. P. 2. in voc.

Second CAPTAIN, one whoſe command having been taken away, he is joined to another *captain*. to ſerve under him, and receive pay as a *captain* reformed. Milit. Dict. Voc. *Second*.

Among the French, there are alſo *ſecond captains*, who never had companies of their own.

CAPTAIN *en pied*, a *captain* kept in pay, that is not yet reformed.

The expreſſion, though altogether French, occurs ſometimes.

CAPTAIN *General of Great Britain* is the higheſt military poſt in our army. *Bland.* Treat. of Milit. Diſcipl. c. 14. Art. 4. p. 201.

In Holland the office of *Captain General* is uſually joined with that of ſtadtholder, and though by the perpetual edict paſſed in 1667, the two offices were for ever disjoined; ſo that whoever was poſſeſſed of one, was rendered incapable of the other; this regulation laſted but five years. *Baſn.* Hiſt. des Oeuvr. des Scav. Oct. 1702. p 468, ſeq. See STADTHOLDER, *Cycl.*

CAPTAIN *of a man of war*, is held equivalent to that of a colonel at land. The *captain* is accountable for the ſhip, if loſt or taken by his miſconduct. *Botel.* Sea Dial. 1. p. 41, ſeq. *Guil.* Gent. Dict. P. 3. in voc. *Ozan.* Dict. Math. p. 321.

In admiral ſhips, and all ſhips of the firſt rate, the French have two *captains*, two lieutenants, and two enſigns. *Aubin.* Dict. Mar. p. 166.

The pay of ſea *captains*, in the Engliſh ſervice, was formerly ſmall, which defect was made up to them, by indulging them in many privileges not now allowed, as plundering of prizes, taking convoy monies, and even carrying merchants goods, plate, &c. K. James II taking this laſt privilege away, in lieu thereof granted them an annual allowance of table monies, almoſt equal to their whole former pay. But this not taking place by reaſon of the abdication, king William III. in 1693, ordered the pay of the *captains* to be doubled, but the fund for this failing at the peace of Ryſwick, a new eſtabliſhment was made in 1700, whereby nearly one third was retrenched from the ſea pay, and that of a firſt rate fixed at 1 *l.* 0 *s.* 0 *d*; of a ſecond rate at 0 *l.* 16 *s.* 0 *d.*; of a third rate at 0 *l.* 13 *s.* 6 *d.*; of a fourth rate at 0 *l.* 10 *s.* 0 *d.*; of a fifth rate at 0 *l.* 8 *s.* 0 *d*; of a ſixth rate at 0 *l* 6 *s.* 0 *d. per* day. Treat. of Domin. and Laws of Sea. p. 591, ſeq.

CAPTAINS *of port*, in the French marine affairs, officers eſtabliſhed in ſome conſiderable ſea ports where there are arſenals. To them belongs the command of the guard of the place, the watching of the ſea, and the care and cuſtody of the veſſels brought into port.

There are ſuch *captains* at Toulon, Rochfort, Breſt, Havre, Dunkirk, and port Lewis [a]. They are to take care of mooring the king's ſhips, and oblige all to give the due ſalutes. *Aubin.* Dict. Mar. p. 167, ſeq. *Ozan.* Dict. Math. p 371.

CAPTAIN *baſhaw*, in the Turkiſh affairs — This officer is governor of the iſlands of the Archipelago, though his reſidence is at Gallipoli on the continent [a]; his office is the ſecond in the empire, there being none but the grand vizier above him. His power is ſo abſolute, that without the Dardanelles, he may ſtrangle viceroys and governors on the coaſts, without waiting for the ſultan's order. Not only the ſea officers, but the governors of all the maritime provinces receive their orders from him. [b] — [[a] Trev. Dict. Univ. T. 1. p. 1413. voc. *capitan*. [b] *Tournef.* Voy. du Lev. T. 2. Let. 13. p. 38.]

The Turks call him *capudan pacha*, a denomination taken from the Italian word *capitano* [a], very current in the ſtates of Greece, ſubject to the grand ſignior, having been ſo before the Turks

Turks were masters of them. The Greek emperors gave the title *cattano*, to the governors of some provinces, whom they sent into Italy, particularly that of Puglia Piana. This Vossius and others derive from the Latin *capitaneus*; though signior Redi chuses to deduce it by contraction from *castellano*, and others from the Greek Καταπανω [b]. — [a] *D'Herbel.* Bibl. Orient. p. 251. voc. *capudan bacha.* [b] *Aquin.* Lex. Milit. T. 1. p. 165, seq.]

CAPTAIN *of the guides*, an officer appointed for providing guides for the army. Of these he ought always to have a sufficient number with him, who know the country very well; that they may guide the army on a march, or go with convoys, parties, baggage, artillery, and detachments. To provide such, the *captain* ought to have a party of horse to go to the adjacent villages, castles, or forts, to demand boors, whom he brings to his quarters, and keeps under a guard, till the army comes to another ground, where he may be provided with others. He ought to understand several languages, especially that of the country in which the army is.

CAPTAINRY, *capitainerie*, in the French law, denotes the government or command of a royal palace, and the lands dependent thereon.

The name is also applied to the office of *captains* of chaces or woods. Such are the *captainries* of Fontainbleau, the wood of Boulogne, &c. *Menestr.* Hist. de Lion. p. 525. Trev. Dict. Univ. T. 1. p. 1412.

CAPTIVES, *captivi*, *(Cycl.)* among the Romans, differed from dedititii, as the former were taken by force, whereas the latter surrendred themselves. *Aquin.* Lex. Mil. T. 1. p. 167.

By the LexCornelia, aRoman citizen taken *captive*, in case he returned, was reputed as having never been taken; if he died in captivity he was reputed for dead the moment he was taken: In the former case he recovered all his rights, and even the dominion over his children; in the latter his son became free from the time of his father's detention. *Justin.* Inst. l. 1. Tit. 12. §. 5.

Formerly, *captives* in war became the slaves of those who took them [a]; and though slavery, such as obtained among the antients, be now abolished, some shadow of it still subsists in respect of prisoners of war, who are reputed the property of their captors, and have no right to liberty, but by concession from them [b]. — [a] Id. ibid. Tit. 3. §. 3. [b] *Calv.* Lex. Jur. p. 147.]

The Romans used their *captives* with great severity; their necks were exposed to the soldiers to be trampled on, and their persons afterwards sold by public auction. *Pitisc.* Lex. Ant. T. 1. p. 356, seq.

Captives were frequently burnt in the funeral piles of the antient warriors, as a sacrifice to the infernal gods. See BURIAL. Those of royal or noble blood had their heads shaven, and their hair sent to Rome, to serve as decorations in female toys, &c. They were led in triumph loaden with chains through Rome, in the emperors train, at least as far as the foot of the Capitoline mount, for they were not permitted to ascend the sacred hill, but carried thence to prison. Those of the prime quality were honoured with golden chains on their hands as well as feet, and golden collars on their necks. If they made their escape, or killed themselves, to avoid the ignominy of being led in triumph, their images or effigies were frequently carried in their place.

CAPTIVITY. The state or condition of a captive. See CAPTIVE, *Cycl.* and *Suppl.*

Princes of the CAPTIVITY, are heads or chiefs of the Jewish nation, appointed for the administration of justice among them, during their captivity both in the East and West, since the destruction of their temple by the Romans.

The prince of the *captivity* in the east, is said to have had the government of the Jews who dwelt at Babylon, in Chaldæa, Assyria and Persia. The Prince of the *captivity* in the West, had the direction of those who lived in Judæa, Egypt, Italy, and other parts of the Roman empire. *Basn.* Hist. des Juifs, T. 2. l. 4. c. 3.

The former were called *Rabbana*, and were supposed to have descended from David, in a direct line by the males; the latter called *Rabban*, only descended from David by the females.

The Jews, we are told by Prideaux, after the loss of their authority, still kept up the title, and for many ages had a person of the house of David resident about Babylon, who, under the name of the head of the *captivity*, was acknowledged and honoured as a prince among that people, and had some sort of jurisdiction, as far as was consistent with the subordination they were under, always invested in him, and sometimes even a ratification of it was obtained from the sovereigns of the country; something of this pageantry is said to be still kept up. Perhaps that they may be furnished with an answer to the christians, when they urge the prophecy of Jacob against them. The scepter they pretend being still preserved among them in the head of the *captivity*. *Prid.* Conn. P. 1. l. 2. p. 153. Item P. 2. l. 9. p. 934. See ÆCHMALOTARCHA, *Cycl.* and *Suppl.*

The prince of the *captivity* in Judæa usually resided at Tiberias, and assumed the title of *Roch-abboth*, q. d. head of the fathers, or patriarchs; he presided in the synagogues, and at all assemblies, decided all important cases of conscience, levied taxes to provide for the expences of his visits, and had officers under him, who were dispatched through the provinces to execute his orders. Some reckon 10, others 13, of these princes, the first of which was Killel, the last Gamaliel the 4th. *Basn.* Hist. des Juifs, l. 4. c. 1, seq.

CAPUCHINS *(Cycl.)* — The *capuchins* were at first restrained from spreading out of Italy; but Charles IX. of France, writing to pope Gregory XIII. to demand some *capuchins*, that pope, by a bull dated in 1575, took off the prohibition, and granted them leave to settle any where. The cardinal of Lorrain built them a convent at Meudon, and Henry III. another at Paris, in the rue St. Honoré. F. Zach. de Boverio has written the annals of the *capuchins* in Latin, in three volumes folio, from the year 1524 to 1634. Trev. Dict. Univ. T. 1. p. 1426.

CAPUCHIN is also the name of a particular species of pigeon, in shape and make much like the jacobine or jack, but something larger than that; its beak also is longer; and it has a tolerable hood of feathers on the back part of its head, but has no cravat or chain down to the shoulders as that species has. Its marks are the same with the jacobine, and it seems to be no other than a bastard breed between that and a common pigeon. *Moore's*, Columbarium, p. 47.

CAPUCIATI, an appellation given to the followers of Wickliff in the 14th century, by reason they did not uncover themselves before the host, but kept on their *capuce*, or cap used in those times. Spondanus speaks of the *capuciati*, under the year 1387. Trev. Dict. Univ. T. 1. p 1426.

CAPUCIATI is also the denomination of a faction which appeared in Auvergne in 1183, having at their head a carpenter named Durand; thus called becaus they wore the image of the virgin in their white linnen capuces, as the badge of their engagement. *Du Cange*, Gloss. Lat. T. 1. p. 828.

CAPUCINE, in botany, the name by which the French call the cardamindum or nasturtium Indicum, a plant commonly kept in our gardens for the beauty of its flower, and its use in sallads and pickles. See CARDAMINDUM.

CAPUENA, in zoology, the name of a fish caught in the American seas among the rocks, and about the shore, and esteemed a very delicate one for the table. It is of a long and rounded shape: its usual length is about five inches; its nose is obtusely pointed, and it has in each jaw one row of small teeth. Its mouth is of a deep purple colour within, and it has seven fins, and is covered with small silvery scales, with a cast of yellow among them. Its fins are all of a pale grey, and it has two longitudinal lines on each side, which are considerably broad and of a fine gold colour. *Margrave*, Hist. Bras.

CAPUT *concutiens*, in anatomy, the name given by Douglass and some others to a muscle, described by Albinus under the name of the *intertransversarius colli*, among some others of the same nature, which he distinguishes according to their situation into *priores* and *posteriores*. This being of the former number, Winslow calls it the *transversarius secundus anterior*, which see.

CAPUT *cordis*, a name sometimes given to the upper and larger side of the heart, otherwise called its basis. See HEART and BASE, *Cycl.*

CAPUT *draconis*, a denomination given by some to a fixed star of the first magnitude, in the head of the constellation *draco*, called also by the Arabs *rasaben* and *eltanin*. See DRACO, *Cycl. Vital.* Lex. Math. p. 92. & p. 158.

CAPUT *jejunii*, a name given to Ash-wednesday, as being the first day of the Lent-fast. *Schoetg.* Lex. Ant. p. 274. *Du Cange*, Gloss. Lat. p. 826. See LENT, *Cycl.*

CAPUT *moventium secundus*, in anatomy, a name given by Fallopius and others to a muscle called by Albinus *biventer cervicis*, and by some the *complexus*.

CAPUT *porcinum*, *swine's head*, a denomination given by the Romans to an order of battle more frequently called *cuneus*. *Kenn.* Rom. Ant. P. 2. l. 4. c. 10. *Aquin.* Lex. Milit. T. 1. p. 169. *Pitisc.* Lex. Ant. T. 1. p. 360. See BATTLE.

CAPUT *purgia*, a barbarous term used by some physicians to denote medicines which cleanse the head, either in the way of sneezing, more properly called *errhines*; or by chewing in the way of salivation, called *apophlegmatizants*. *Cast.* Lex. Med. p. 134, seq. *Du Cange*, Gloss. Lat. T. 1. p. 826. See ERRHINA, STERNUTATIVE, and APOPHLEGMATIZANTS, *Cycl.*

CAPYBARA, in zoology, the name of an animal found in many parts of America, and somewhat approaching to the nature of the river-horse, but with so much of the general figure of the hog kind, that Marggrave and some others have called it the porcus marinus, or sea hog. It is of the size of a half grown hog, measuring in length, from the head to the rump, about two foot: its belly is as prominent as that of a fat hog. It has no tail, its feet are wholly like those of the hog, but that the fore ones have four claws each, and the hinder ones only three. Its head is very thick, and proportionably too large for the body; its eyes are large and black, its ears small and round; the lower jaw is shorter than the upper, and each has two long crooked teeth that stand out a finger and a half from the jaw, and are buried two fingers in it, but these do not shew themselves outwardly when the mouth is shut. It feeds on vegetables, and its flesh is eaten by the Indians, but is not well tasted. *Ray's* Syn. Quad. p. 185.

CARA, in botany, a name given by the old Roman authors to a plant with large and eſculent roots. We are told that the ſoldiers of Cæſar, in ſome of their marches, when diſtreſſed for proviſions, made a ſort of bread of the root of the *cara*. And we learn from Paulus, Ægineta, and Dioſcorides, that this plant was of the paſtinacha or parſnip kind. It was probably the elaphoboſcum, or wild parſnip, which has roots long and thick, and of as good a taſte as the garden parſnip, only that they are not ſo tender: Pliny tells us that the bears, as ſoon as they are able to crawl out of their den, eat up the leaves and roots of this plant, to give them ſtrength, and clear their inteſtines from any thing that may be in them. Pliny tells us, that the plant is arum; but the acrid nature of arum is too great to let it be eaten by any animal, ſo that the *cara* is certainly the plant here meant, that being the word ſtanding in many manuſcripts of this author. It is ſuppoſed by ſome that our word carrot is derived from this *cara*. Some of the copies alſo have it tamus inſtead of *cara*. This tamus is in another part of Pliny's works mentioned as a plant growing ſpontaneouſly in Italy, and it ſeems to be the ſame with our tamnus, or black bryony.

CARABE, a name given to amber. See the article SUCCINUM.

CARACALLA, in antiquity, a long garment, having a ſort of capuchin, or hood a-top, and reaching to the heels; worn equally among the Romans by the men and the women, in the city and the camp. Trev. Dict. Univ. T. 1. p. 1429.

Spartian and Xiphilin repreſent the emperor Caracalla as the inventor of this garment, and hence ſuppoſes the appellation *caracalla* was firſt given him [a]. Others with more probability make the *caracalla* originally a Gallic habit, and only brought to Rome by the emperor above-mentioned [b], who firſt enjoined the ſoldiery to wear it. The people called it *antoninian*, from the ſame prince, who had borrowed the name of Antoninus. — [a *Spart.* in Caracallam. c. 9. b *Bingh.* Orig. Eccleſ. l. 6. c. 4. §. 20.]

The *caracalla* was a ſort of caſſock, or ſurtout. Salmaſius, Scaliger, and after them Du Cange even take the name *caſaque*, to have been formed from that of *caraque*, for *caracalla* [a]. This is certain from St. Jerom, that the *caracalla*, with a retrenchment of the capuchin, became an eccleſiaſtical garment [b]. It is deſcribed as made of ſeveral pieces cut and ſewed together, and hanging down to the feet; but 'tis more than probable there were ſome made ſhorter, eſpecially out of Rome, otherwiſe we do not ſee how it could have fitted the ſoldiers purpoſes [c]. — [a *Scalig.* ad Spart. loc. cit. *Du Cange*, Gloſſ. Lat. T. 1. p. 830. b *Hieron.* de veſt. ſacerdot. ap. *Eucher.* act. ſanct. T. 4. p. 148. *Bingh.* loc. cit. *Magr.* Not. Vocab. Eccleſ. p. 56. c *Tillem.* ap. Trev. Dict. ubi ſupra. *Pitiſc.* Lex. Ant. T. 1. p. 360, ſeq. *Fab.* Theſ. p. 467.]

CARACARA, in zoology, the name of a Braſilian bird of the genus of the hawk, called by the Portugueſe gavicaou. It is properly of the ſparrow hawk kind, but of the ſize of a kite.

It is of a greyiſh yellow colour, variegated with white and yellow ſpots; its tail is variegated with white and brown; its beak is conſiderably large and black; its legs yellow, and its claws extremely ſharp; the belly and breaſt in ſome of the birds has been obſerved to be white. They are great deſtroyers of the poultry. See Tab. of birds, N° 4. *Marggrave*'s Hiſt. Braſ.

CARACOLI, in commerce, a factitious metal whereof the natives of the Caribbee iſlands make a kind of ornament, in form of a half moon, which is called by the ſame name.

The metal is brought from the terra firma; and the common opinion is, that it is compoſed of gold, ſilver, and copper, but the mixture is ſo perfect that a metal reſults from the whole which never ruſts nor tarniſhes how long ſoever kept either in the ſea or the ground. The Engliſh and French goldſmiths have made frequent attempts to imitate it. Thoſe who have ſucceeded beſt, uſe ſix parts of ſilver, three of purified copper, and one of gold. But the curious find all the imitations much inferior in beauty to the original metal of the ſavages.

M. Hauterire, procuror general of Martinico, makes the *caracoli* to be a compound of gold only with a ſort of copper found in the terra firma of America. The Spaniards repreſent it as a ſpecific againſt megrims, or head-achs [a]. F. Labat takes it for a native, or ſimple metal. The Americans alſo make rings, buckles, cane-heads, and the like of *caracoli* [b]. — [a Hiſt. Acad. Scienc. an. 1724. p. 26. b *Savar.* Dict. Comm. Supp. p. 117.]

CARACT *(Cycl.)* — The Arabs ſtill call the fruit *ſiliqua*, mentioned in the Cyclopædia, *kerath* [a], a denomination which they alſo give to a weight, which is half their *danek*, or $\frac{1}{6}$ of their *dirhem* [b]. In Latin writers, we alſo find caratium uſed for the 24th part of an ounce, otherwiſe called a ſcruple [c]. — [a *Caſt.* Lex. Med. p. 158. voc. *ceratium*. b *D' Herbel.* Bibl. Orient. p. 959. voc. *kerath*. c Vid, *Pancirol.* Not. Dignit. c. 75. *Pitiſc.* Lex. Ant. T. 1. p. 361.]

The grains of the jewel *caract* are ſomewhat heavier than thoſe uſed on other occaſions. According to Sir Jonas Moor, 20 *caract* grains are equal to 24 grains troy weight [a]. The great mogul's diamond is ſaid by Tavernier to weigh 279 *carats* [b]. Eighty eight *carats* make an hundred ruttees [c]. — [a *Moor*, Math. Compend. c. 2. p. 16. b Dict. Trev. in voc. c Coins, weights, &c. uſed in India. p. 4.]

CARAGUATA, a Braſilian name, by which ſome authors have called the common great aloe. *Marggr.* p. 27. *Piſo*, p. 193. From an inciſion made in the ſhoots of this plant, there flows a great quantity of liquor, whereof the Braſilians make wine, vinegar, honey and ſugar. Vid. *Boyle*'s works, abr. Vol. 1. p. 53. ſeq.

CARANDA, in the materia medica, a name uſed by ſome authors for the tamarind tree. *Bont.* p. 24.

CARANNA *(Cycl.)* — This gum, called alſo *caragna* and *karagna*, both in figure and virtue bears a near reſemblance to the *tacamahaca*. *Caſt.* Lex. Med. p. 135. See TACAMAHACA, *Cycl.*

It oozes from a tree reſembling the palm; and is at firſt white, but with keeping turns browniſh, bordering on green, and is imported in lumps wrapt up in leaves. The beſt ſort is ſoftiſh, of an agreeable aromatic ſmell, and the whiter the better. It is ſaid to be excellent againſt head-achs, and good alſo againſt pains of the joints, inſomuch that 'tis become a proverb among the Spaniards, *Whatever tacamahaca has not cured, caranna will cure* [a]. Among us, its internal uſe is much diminiſhed; and it is given chiefly as a topic againſt tumors, aches, &c. [b]. — [a *Savar.* Dict. Comm. T. 1. p. 556. ſeq. b *Quinc.* Pharmac. P. 2. Sect. 4. n. 278. Trev. Dict. Univ. T. 1. p. 1433. voc. *caragne*.

CARANTIA, in the materia medica, a name given by ſome authors to the carob, or *ſiliqua dulcis*, the ſweet pipe. See CAROB. *Dale*, Pharmac. p. 340.

CARAPO, in zoology, the name of a fiſh, of which there are two kinds caught in many parts of the lakes of America.

The firſt has a long and thin body, of the ſhape of a knife blade, the back being thick, the belly very thin and narrow; the tail is pointed, and the uſual ſize of the fiſh is a foot in length, and two fingers broad in the broadeſt part; the head is flat and pointed, and the lower jaw runs out a little farther than the upper; the mouth is very narrow, and the bottow jaw is furniſhed with very ſmall and ſharp teeth; the upper is toothleſs; its eyes are very ſmall; and it is covered with little ſcales.

It is of a brown colour, with a faint admixture of red, and the back and head are ſomewhat blackiſh; there runs a duſky line all along the ſides in their middle, and under this the fiſh is ſpeckled with black ſpots of the ſize of a ſeed of muſtard.

The ſecond kind no way differs from the firſt, but that it is much narrower in proportion to its length, and has no ſpots. They are both eatable. *Marggrave*'s Hiſt. Braſ. p. 113.

CARAPOPEBA, in zoology, the name of a ſmall ſpecies of lizard common in the Braſils, and eſteemed a poiſonous animal: Its body is of a liver colour, and has ſeveral white ſpots. There are marks of white on the tail, variegated with ſome ſmall quantity of yellow; the eyes are remarkably bright and vivid. *Ray*'s Syn. Quad. p. 267.

CARARA, a weight at Leghorn, and in other parts of Italy, uſed in the ſale of wool and codfiſh, equivalent to ſixty pounds of that country. *Savar.* Dict. Comm. T. 1. p. 557.

CARASSIUS, in zoology, the name of a genus of leather-mouthed fiſhes of the carp or bream kind, of which there are three ſpecies, no better diſtinguiſhed by names among authors, than by thoſe of Geſner, the firſt, ſecond, and third ſpecies, or *caraſſii prima*, *ſecunda*, and *tertia ſpecies*; the laſt of theſe is the more common kind, and is uſually ſimply called *caraſſius*. It is a ſmall freſh water fiſh, of about three, four, or five inches long, with a flatted body, and a riſing back; it reſembles the bream indeed in ſhape very nearly, but is ſomewhat thicker; its colour is a pale yellow, and its belly of a deeper yellow, without any redneſs. The mouth is ſmall and round, and the eyes ſmall, and ſunk in their orbit. *Willughby*, Hiſt. Piſc. p. 250.

The firſt ſpecies of Geſner and other authors, is ſmaller than this, and thinner, and is of a yellowiſh blue, with a mixture of brown upon the back; the tail and back fin are of a plain brown; the reſt of the fins have a rediſhneſs mixed with the brown in them. This ſpecies ſeldom exceeds four inches in length, and principally inhabits weedy and muddy ſtanding waters.

The ſecond ſpecies of theſe authors is longer and thicker than either of the others, and is leſs broad; it has a blackneſs alſo mixt with its yellow. Theſe love ſtanding waters, but ſometimes paſs out of lakes or ponds into rivers of a ſlow current. All the ſpecies are eaten, and their fleſh looks yellow, and is of a viſcous nature. *Geſner*'s Paralipon p. 1275.

CARATH, in the materia medica, a name given by the Arabian writers to the acacia. The word ſeems formed upon the Greek word *ceration*, which was given by that nation to the carob tree or ſiliqua dulcis, on account of the fruit being a pod ſomewhat reſembling a horn, κερας. The Arabians uſed their name charnub both for the carob and the acacia tree, and probably they uſed this word *carath* originally for both; but we find it in the works of thoſe authors handed down to us, only given for the acacia.

CARAVAN (*Cycl.*) — There are four regular *caravans* which go yearly to Mecca; the firſt from Damaſcus, compoſed of the pilgrims from Europe and Aſia; the ſecond from Cairo, for the Mahometans of Barbary; the third from Zibith, a place near the mouth of the Red Sea, where thoſe of Arabia and India meet; the fourth from Babylon, where the Perſians aſſemble. Moſt of the inland commerce in the Eaſt is carried on by *caravans*. The late czar, Peter the Great, eſtabliſhed a trade between Ruſſia and China by means of a *caravan*[a]. M. Bougnon[b], geographer of the duke of Lorraine, has given a treatiſe of the *caravans* of merchants in Aſia, wherein he ſhews of what they are compoſed; how many ſorts there are; the ſeveral uſes of the different ſorts of animals in them; the price given for them; the officers and men appointed to conduct them; and the pay of each; with their manner of marching, halting, fighting, treating, &c. — [[a] Atlas Marit p. 128. [b] *Bougnon*, Relation exacte concernant les *Caravannes* des marchants d'Aſie, Nanc 1711. 12°.]

Caravans of this kind are large convoys of armed men, merchants, and travellers, with divers ſorts of animals, for the carriage of their proviſions.

To form a *caravan*, the permiſſion of the ſovereign muſt be obtained in writing, which permiſſion is to expreſs the number of men and carriages, and the quantity of merchandizes it is to be compoſed of, and muſt alſo be legalized by at leaſt two other neighbouring ſovereigns: this is called the *commiſſion of the caravan*, a term borrowed from the military uſage.

There are commonly four chief officers of a *caravan*; viz. the *caravan bachi*, or chief; the captain guide; captain of reſt; and captain of diſtribution.

The firſt has an abſolute command over all the reſt; the ſecond is abſolute in the march; the office of the third only commences when the *caravan* ſtops, and makes a ſtay; to the fourth it belongs to diſpoſe of every part of the corps, in caſe of an attack, or battle; he has alſo the inſpection over the diſtribution of proviſions, which is made under him by ſeveral diſtributers, who give ſecurity to the maſter of the *caravan*, and have each of them a certain number of perſons, elephants, dromedaries, &c. to take care of at their own peril.

The treaſurer of the *caravan* makes the fifth officer, who has under him ſeveral agents and interpreters, who keep journals of all that paſſes, for the ſatisfaction of thoſe concerned in fitting out the *caravan*. Another ſort of officers are the Arab mathematicians, who, to the number of three, in large *caravans*, do the office of quarter-maſters, as well as aids de camp, in caſe the *caravan* be attacked.

There are five ſorts of *caravans*, viz.

Heavy CARAVAN, compoſed of elephants, dromedaries, camels, and horſes.

Light CARAVAN, in which there are but few elephants.

Ordinary CARAVAN, that in which there are no elephants.

CARAVAN *of horſes*, that in which there are neither camels nor dromedaries, but only horſes.

Sea CARAVANS, are companies of merchant veſſels, loaden with goods, and conveyed by ſhips of war.

In the heavy *caravans*, to five hundred elephants there are a thouſand dromedaries, and at leaſt two thouſand horſes, eſcorted by four thouſand cavaliers. Two men are required to lead each elephant; five to three dromedaries; and ſeven to twelve camels. Such a number of ſervants joined with the officers and paſſengers, the number whereof is not limited, renders the body very formidable; the paſſengers indeed are not obliged to fight, but in caſe they refuſe, proviſion will ſcarce be allowed them afterwards, even for their money.

As few of the Arab princes have any other ſubſiſtance than what they can get by pillage, they keep continually ſpies on foot, to give them intelligence of the departure and motions of *caravans*, which they frequently attack with ſuperior forces: in caſe of repulſe they come to an accommodation; but if the *caravan* be beaten, it is abſolutely plundered, and the whole guard made ſlaves; though more indulgence is ſhewed to ſtrangers. The taking of a ſingle *caravan* ſometimes enriches a prince for ever.

The profits to be made in a *caravan*, during its march, are often incredible; Mr. Bougnon gives inſtances where, by repeated bargains and exchanges, a perſon has made twenty thouſand crowns out of a ſingle gold watch, and 30 louis d' ors. Relat. de carav. d' Aſie. *Savar.* Dict. Comm. Supp. p. 118, ſeq. Jour. des Scav. T. 49. p. 88, ſeq.

Any dealer is at liberty to form a company, in order to make a *caravan*. He in whoſe name it is raiſed, is conſidered as the *caravan-bachi*, or chief of the *caravan*, unleſs he appoint ſome other in his place. If there be ſeveral merchants equally concerned, they elect a *caravan bachi*, after which they appoint officers to conduct the *caravan*, and decide all controverſies which may ariſe during the journey. *Bougnon*, Relat. des caravan. ap. Jour. des Scav. T. 49. p. 88.

CARAVANSERA *(Cycl.)* — Meninſki writes the word *karwaan ſerai*, and derives it from the Turkiſh *karwan*, or *kerwan*, a *caravan*, and *ſarai*, houſe or palace. Trev. Dict. Univ. T. 1. p. 1440.

Caravanſera's are places of ſhelter, erected in the habitable parts of Turky and Perſia, where caravans are ſecured from the enemy and the weather.

There are *caravanſera's* where moſt things may be had with money; and as the profits of theſe are conſiderable, the magiſtrates of the cities to whoſe juriſdiction they belong, take care to ſtore them well. There is an inſpector, who, at the departure of each caravan, fixes the price of the night's lodging, from which there is no appeal. *Bougnon*, ubi ſupra, Jour. des Scav. T. 49. p. 92, ſeq.

CARAUNA, in zoology, the name of a ſmall Braſilian fiſh, in many reſpects approaching to the turdus kind, and much reſembling the itacara of the ſame place: its mouth is of a ſemilunar figure; and its teeth very ſmall, and extremely ſharp; its covering of the gills are terminated behind by a ſharp prickle; the eyes are ſmall, and ſtand very cloſe together in the upper part of the head; its ſcales are all of a ſemilunar figure, and its colour a fine bright red, all over ſpotted with very ſmall black ſpots. *Marggrave's* Hiſt. Braſil.

CARBASA *caryſtia*, a term uſed by many of the antient writers to expreſs pieces of cloth made of the *linum incombuſtibile*, or Aſbeſtus ſtone, which being found plentifully about Caryſtium, was thence called by the name of the place. Pauſanias calls it linum Carpaſium, for the ſame ſort of reaſon, Carpaſus, a town in the iſland of Cyprus, being a place famous for affording large quantities of the ſtone in its neighbourhood. Pauſanias expreſly ſays of his, that being thrown into the fire, it ſuffered nothing by it; wherever therefore the words caryſtium or carpaſium is added to the word linum, it is to be underſtood of this ſort of manufacture, and the word *carbaſa*, which is indeed but a derivative of carpaſium, being added to the other epithet caryſtium, expreſſes the ſame thing; but when the word *carbaſa* is uſed without this epithet of place, it generally ſignifies no more than linum, flax, or linen made of flax.

CARBENSIS *aqua*, in the materia medica, the name of a mineral water of Germany, of which Hoffman from Petzlerus has given the following account: All about the place of its origin, and along the canals through which it paſſes, it depoſits an earthy and ferruginous matter, which concretes into a ſtony hardneſs. When any alcaline liquor, whether fixed or volatile, is added to theſe waters, they become turbid, and precipitate a whitiſh earthy matter to the bottom of the veſſel; after the evaporation of the water they leave a ſal enixum, and an alkaline earth; two quarts of them yield two ſcruples and ten grains of the earth, and twelve grains of the ſalt. If it be kept for any time in a glaſs, or earthen veſſel, it depoſits a ſediment of a yellow ochreous earthy matter, and when immediately taken from the ſpring, it changes to a blueiſh brown colour, on being mixed with galls. It contains a very large portion of a ſubtile mineral ſpirit; for if a long necked veſſel be filled half full with it, and the orifice ſtopped with the thumb, the whole on a little ſhaking, ſends up a froth to the top; and when the thumb is taken off, the water ſpirts out to ſeveral foot diſtance. It makes an effervеſcence on mixing oil of vitriol with it; but this laſts but a very little time. From the whole it ſeems to contain a large quantity of calcareous earth, and ſome ſmall portion of ferruginous matter; whence it purges both by ſtool and urine, though moſtly the latter way; the former operation which is pretty conſtant, is owing to this alkaline earth meeting with an acid in the prima via, and being by it changed into a bitter purging ſalt, of the nature of Glaubers.

CARBONADE, or CARBONADO, in cookery, fleſh, fowl, or the like, ſeaſoned, and broiled on the coals.

CARBUNCLE *(Cycl.)* — The name of a gem very commonly uſed, but very little underſtood. The diſtinguiſhing character of the *carbuncle* is, that it is a gem of great hardneſs, and of a deep red with an admixture of ſcarlet. It was known among the antients by the name ανθραξ, which was uſed metaphorically to ſignify that this gem was in ſome lights of a fire colour, the proper ſignification of the word being a piece of lighted charcoal. The Latin name is a tranſlation of the Greek, and moſt nations have agreed to call it by a name of the ſame ſignification.

Our jewellers, among whom it is very rare, know it by no peculiar name, and not only now, but for many ages back, this has been the caſe; and while the genuine *carbuncle* was often ſeen, it was yet generally thought not to exiſt, and this merely from an error: its name importing a reſemblance to a burning charcoal, the world, in general, grew into an opinion of its having the properties of a burning coal, one of which is the ſhining in the dark; and ſuppoſing that property ſtrongly commemorated in the name, and finding no gem which had it, they took it for granted that the *carbuncle* no longer exiſted; nay, the fertile imaginations of ſome travellers have gone ſo far as to affirm, that a gem with this property is yet to be ſeen in ſome places, and have given a thouſand abſurd relations about it.

To all this it is only to be anſwered, that the whole is an abſurd error; for that the antients never attributed any ſuch quality to their *carbuncle*, but that the whole reaſon of their giving the name anthrax to that gem, was, that it was of itſelf of a very deep and ſtrong red, but when held up againſt the ſun, or when ſet upon a bright pale foil, it was exactly of that ſort of red colour which is ſeen in burning charcoal.

Theophraſtus, the greateſt naturaliſt of antiquity, aſſerts this in plain words, and calls the gem that had this property anthrax. Other of the antients have called it the Garamantine or Carthaginian *carbuncle*; and it has been ſuppoſed by the better writers among the moderns to be the ſame ſtone with the true garnet: this, however, on comparing the ſtones, appears to be

an

an egregious error, the difference in colour, and even in figure, between theſe two gems being obvious and eſſential.

The *carbuncle* is uſually found pure and faultleſs, and is of the ſame degree of hardneſs with the ſapphire, being ſecond only to the diamond. It is ever found naturally of an angular figure, ſmaller at one end than at the other, and at that ſmall end tapering to a pointed pyramid, compoſed of the ſame number of planes with the column, which is ſix, and thoſe uſually very unequal. It is found adhering by its baſe to a heavy and hard ferruginous ſtone of the emery kind, and is always more finely coloured toward the point than at the baſe of the column. Its uſual ſize is near a quarter of an inch in length, and two thirds of that in diameter in its thickeſt part. Its colour is a very beautiful, and very deep red, reſembling that of a mulberry when nearly ripe, and where paleſt, going off into a fine ſcarlet, not into the purpliſh or violet tinge of the garnet; but when held up againſt the ſun, it loſes its deep dye, and becomes exactly of the colour of a burning charcoal; ſo that the propriety of the name given it by the antients immediately ſtrikes one on making the trial. It bears the force of fire unaltered, not parting with its colour by it, as do moſt of the gems, nay, it even will not be at all affected by fire, nor become a whit the paler. This has been an experiment diligently tried by ſome of our jewellers, who being diſguſted by its too deep colour, have endeavoured the rendering it more vivid and ſtriking to the eye, by diveſting it of a part of it by this means, but always without ſucceſs.

It is found only in the Eaſt Indies ſo far as is yet known, and that but very rarely.

The diſtinctions between the ſeveral red gems are very nice, and their names in ſome degree arbitrary. Many authors have confounded the *carbuncle* with the ruby, and determined with Garcias, that every ruby which exceeded twenty-four carats in weight, was properly a *carbuncle*. This gem, however, is by all trials proved to be evidently the *carbuncle* of the antients, and eſſentially different from the ruby in wanting the purpliſh tinge into which the colour of that gem goes off, as is extremely evident in all the deep ones; this going off into a true ſcarlet, and for that reaſon giving the colour of a lighted charcoal in the ſun, which neither the ruby, garnet, nor any other gem can do which has the blue or purple caſt. *Hill*'s Hiſt. of Foſſ. p. 589.

The fineſt *carbuncles* are ſaid to be produced in the iſland of Ceylon, the king of which country is poſſeſſed of a *carbuncle* a palm broad, and three inches thick, of the brightneſs of fire. *Paul Venet.* ap. Eraſm. Franciſc. Hort. Indic. P. 2. p. 1229. *D'Herbel.* Bibl. Orient. p. 780.

Some include granats and hyacinths under the claſs of *carbuncles*. *Caſt.* Lex. Med. p. 135. See GRANAT, &c.

CARBUNCLE is alſo, in medicine, ſometimes uſed for the *furunculus*. *Junck.* Conſp. Chir. Tab. 8. p. 81. See FURUNCULUS.

This is more particularly called *carbunculus benignus*, by way of contra-diſtinction from that mentioned in the Cyclopædia, which is of the malignant kind. *Junck.* loc. cit.

CARBUNCLE is alſo frequently uſed to denote a ſmall eruption, which, coming on any part of the body, ſoon diſcharges its contents, and afterwards appears in form of a cruſty tubercle, of the ſize of a millet ſeed, ſurrounded with a red fiery circle. *Shaw*, New Pract. Phyſ. p. 170. See PESTILENTIAL *carbuncle*.

CARBUNCLE, *carbunculus*, alſo denotes a ſort of ſandy matter found in Hetruria, formed of a hard earth of the ſame name, concocted in the viſcera of the mountains, by the heat of the ſubterranean vapours. *Vitruv.* de Archit. l. 2. c. 4. & c. 6. *Bald.* L. Vitruv. p. 20.

Pliny and Varro ſpeak of the *carbunculus*, as a peculiar kind of hot, dry, lean ſoil. *Plin.* Hiſt. Nat. l. 17. c. 4. *Varro*, de Re Ruſt. l. 1. c. 2.

CARBUNCULATION, *(Cycl.)* a diſeaſe of plants, otherwiſe called *pruina* [a]. It happens chiefly in the ſpring and autumnal ſeaſons, when vegetables being covered with dewy vapours, a ſudden cold comes on them, which, congealing thoſe vapours, the nutritious juice of the plant is coagulated, and the texture of its fibres deſtroyed [b]. — [a *Plin.* Hiſt. Nat. l. 17. c. 24. b *Vat.* Phyſ. Exper. P. 2. Sec. 6. c. 4. p. 511.]

CARCARIAS *canis*. See LAMIA and SHARK.

CARCASSES, *(Cycl.)* in war, are come to diſuſe, being found not to anſwer what was expected from them. Bombs and fire-balls prove equally ſerviceable, though of much leſs trouble and expence. *Remy*, Mem. Artill. T. 1. p. 343. *St. Julien*, Forge de Vulcan. p. 78. *Guill.* Gent. Dict. P. 2. in voc. *Fæſch.* Ing. Lex. p. 153. *Wolf.* Lex. Math. p. 310.

In lieu of the antient *carcaſſes*, a new ſort has been introduced made of iron bands, or ribs, which incloſe a canvaſs bag, filled with combuſtible matter, hardly to be extinguiſhed. *Fæſch.* loc. cit.

We have alſo a third ſort of *carcaſſes*, of a late invention, for the ſea ſervice, differing in nothing from a bomb, except in their being filled with a compoſition like that above-mentioned, and having five holes all primed with powder and quick match, which take fire from the flaſh of the mortar, and having fired the compoſition, it burns vehemently from thoſe holes. *Guil.* Gent. Dict. P. 2. in voc.

CARCERES, in antiquity, were the liſts, or barriers of the circus, within which the horſes were confined, till the ſignal was given by the magiſtrate for ſtarting.

The word is Latin, ſuppoſed to be formed *a coercendo*, as they ſerved as a reſtraint to the horſes ready to run. *Varr.* de Ling. Lat. l. 4. c. 32.

The number of *carceres* was twelve. In the early days of Rome they were made of wood, which Claudius afterwards changed for marble [a]. They were kept faſt with bolts, ſuſtained by ropes, which, the moment the ſignal was given, flew open all at once. Some think that only four were uſed at a time [b]. — [a *Suet.* in Claud. c. 21. n. 6. b *Pitiſc.* Lex. Ant. T. 1. p. 362.]

CARCHARIAS *canis*. See the article CANIS and SHARK.

CARCINOMA *(Cycl.)* is ſometimes uſed to denote a diſorder of the tunica cornea of the eye, wherein the little veins of the part appear turgid and livid. *Caſt.* Lex. Med. p. 136, item p. 126, voc. *cancer*.

CARCINOMATOUS, the ſame with cancerous. See CANCEROUS.

Schirrhi and ſtrumæ, which are formed of the humors ſtopped by their viſcidity, or coagulated by an acid, as alſo polypus's, wherein the veſſels retain their order and diſtribution, are originally different from *carcinomatous* tumors, which, according to Gendron, ariſe from an indiſpoſition of the glandular veſſels. Yet, when the ſtructure of the veſſels is once deſtroyed, the former degenerate into a hard indiſſolvable lump, capable of germination, ſo that they loſe their former nature, and become cancerous. Vid. *Gendron*, Recherch. ſur les cancers c. 6. Phil. Tranſ. N° 260. p. 479.

CARD, *(Cycl.)* in the woollen manufactory, a ſort of inſtrument beſet with ſmall teeth of iron wire, ſerving to range the hairs of wool, hemp, and the like. See CARDING, *Cycl.* and *Suppl.*

The word ſeems formed from the Latin *carduus* (*fullonum*) which denotes the fuller's teazle; a kind of thiſtle whoſe head is uſed to range and ſmooth the nap of cloth, &c. *Skin.* Etym. Angl. in voc.

There are divers ſorts of theſe *cards*, as ſtock-*cards*, hand-*cards*, wool-*cards*, tow-*cards*, &c.

CARDS *for play*. — Among ſharpers divers ſorts of falſe or fraudulent *cards* have been contrived; as marked *cards*, breef-*cards*, corner-bend, middle-bend, &c.

Marked CARDS are thoſe where the aces, kings, queens and knaves, are marked on the corners of the backs with ſpots of different number and order, either with clear water, or water tinged with pale Indian ink, that thoſe in the ſecret may diſtinguiſh them. Aces are marked with ſingle ſpots on two corners oppoſite diagonally; kings with two ſpots at the ſame corners; knaves with the ſame number tranſverſed, &c.

Breef CARDS are thoſe which are either longer or broader than the reſt; chiefly uſed at whiſt and picquet.

The broad *cards* are uſually for kings, queens, knaves and aces; the long for the reſt. Their deſign is to direct the cutting, to enable him in the ſecret to cut the *cards* diſadvantageouſly to his adverſary, and draw the perſon unacquainted with the fraud, to cut them favourably for the ſharper. As the pack is placed either endwiſe or ſidewiſe to him that is to cut, the long or broad *cards* naturally lead him to cut to them. *Breef cards* are ſometimes made thus by the manufacturer, but in defect of theſe, ſharpers pare all but the breeſs with a razor or penknife.

Corner bend denotes four cards turned down finely at one corner, to ſerve as a ſignal to cut by.

Middle bend, or *Kingſton-bridge*, is where the tricks are bent two different ways, which cauſes an opening or arch in the middle, to direct likewiſe the cutting. Myſt. of Mod. Gam. p. 95, ſeq.

The inventor of *cards* is not known, nor even the age when they firſt appeared; but by the matter they were always made of, viz. leaves of paper, they ſhould ſeem to be much poſterior to the time of Charlemaign. F. Meneſtrier ſhews, that they were unknown in France 400 years ago. According to this jeſuit they had their origin ſoon after the year 1392, about the time when Charles VI. was ſeized with a phrenſy, to divert whoſe melancholy they ſeem to have been at firſt intended. In an antient account of that king's ſilverſmith, mention is made of three packs of *cards*, gilt and covered with divers devices, carried to the king for his amuſement. What ſeems to confirm their having been invented in France, is that all the figures had antiently flower de luces in their habits. Perhaps la Hire might be the inventor, whoſe name was put at the bottom of the knave of hearts; being partner in this honour with Hector and Ogier the Dane, which are the knaves of ſpades and diamonds. Others make *cards* of earlier date, and to have been invented by the Germans, adding that, in lieu of the kings, queens, knaves, and other figures now repreſented on them, they had antiently the figures of heathen gods and idols, and had even miniſtred to the purpoſes of idolatry. *Meneſtr.* Bibl. Cur. T. 2. p. 174. Mem. de Trev. 1720. p. 935, ſeq.

Be this as it will, we know not whether any expreſs mention is made of *cards* before the year 1404, when a ſynod held at Langres prohibited the clergy the uſe of them. *Meneſtr.* loc. cit. Nouv. Rep. Lett. T. 35. p. 514, ſeq.

CARDAMINDUM, *Indian graſs*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the polypetalous kind, and is compoſed of five petals irregular in ſhape and ſize, and growing from the diviſions of the cup; the piſtil ariſes from the bottom of the cup, which terminates in a ſpur or tail, and finally becomes a fruit compoſed of three or more capſules, of a roundiſh form, arranged into a roundiſh head, and containing roundiſh ſeeds.

The ſpecies of *cardamindum* enumerated by Mr. Tournefort are theſe: 1. The *cardamindum* with large leaves and flowers. 2. The common, or ſmaller *cardamindum*. 3. The ſmaller *cardamindum* with pale yellow flowers. *Tourn.* Inſt. p. 430.

This plant is eſteemed a good antiſcorbutic; its young ſhoots and fruits are uſed in pickles. *James*, Med. Dict. in voc. *acriviola*.

CARDAMINE, *ladies-ſmock*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of four leaves, and is of the cruciform kind; the piſtil ariſes from the cup, and becomes finally a long pod, which is divided by an intermediate membrane into two cells, and contains uſually roundiſh ſeeds. To theſe marks it is to be added, that the pods, when ripe, fly open with violence, and throw out the ſeeds to a conſiderable diſtance. See Tab. 1. of Botany, Claſs 5.

The ſpecies of *cardamine* enumerated by Mr. Tournefort are theſe: 1. The large purpliſh-flowered meadow *cardamine*. 2. The large white-flowered meadow *cardamine*. 3. The large double-flowered meadow *cardamine*. 4. The ſmaller-flowered *cardamine*. 5. The very ſmall-flowered annual *cardamine*. 6. The fumitory-leaved Sicilian *cardamine*. 7. The little rounder-leaved white-flowered *cardamine*. 8. The taller large-flowered *cardamine*, called bitter water creſs. 9. The ſmall Alpine *cardamine* with rocket leaves. 10. The mountain *cardamine* with aſarum leaves. 11. The purple-flowered hairy *cardamine* with celandine leaves. 12. The ſmooth celandine-leaved *cardamine*. 13. The trifoliate Alpine *cardamine*. 14. The trifoliate African *cardamine*. *Tourn.* Inſt. p. 224.

This plant is alſo known by the names of *cuckow-flower*, and *meadow-creſſes*. It is a kind of naſturtium, and is pungent and diſcuſſive, but is not uſed either in compoſition, or common preſcription. Vid. *Quinc.* Pharm. P. 2. Sect. 4. p. 121.

CARDANES, in natural hiſtory, the name of a ſmall inſect reſembling a beetle, of a very ſweet ſmell, and very ſoft to the touch. It is very ſwift in its motions, and is of a blackiſh colour, having two ſhort wings, which do not nearly reach to the tail; it is likewiſe remarkable for having the tail of the ſame ſhape with the head, ſo that when it ſtands ſtill, it looks as if it had two heads, one at each end.

CARDIACA, *motherwort*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is of the labiated kind; the upper lip which is imbricated, is conſiderably longer than the lower which is divided into three ſegments; the piſtil ariſes from the cup, and is fixed in the manner of a nail into the hinder part of the flower; this is ſurrounded by four embryo's, which afterwards ripening into as many angular ſeeds, are contained in, and occupy the whole ſpace of the cup, which before contained the flower.

The ſpecies of *cardiaca* enumerated by Mr. Tournefort are theſe: 1. The common *cardiaca*. 2. The white-flowered *cardiaca*. And, 3. The *cardiaca* with elegantly-curled leaves.

The *cardiaca's*, when not in flower, are eaſily known from the reſt of this claſs of plants by their having leaves divided into many parts like the aconites. *Tourn.* Inſt. p. 186.

The *cardiaca* is accounted attenuating, drying, deterſive and cordial. It promotes urine and the menſes, is good in aſthma's and palpitations, and is ſaid to facilitate delivery. It may be taken either in powder, or in decoction. Vid. *Lemery*, des Drog. in voc. *cardiaca*.

CARDIALGIA (*Cycl.*) is otherwiſe called *cardiogmus*, Καρδιαγμὸς; though ſome diſtinguiſh, reſtraining the latter to the ſeverer degrees of this diſorder, which riſe to palpitations and fevers, and *cardialgia* to the ſlighter acceſſes of it. Vid. *Gorr.* Med. Defin. in voc. *Linden*, Sel. Med. Ex. 13. §. 133, ſeq. *Caſt.* Lex. Med. p. 136.

The *cardialgia* is a ſpaſmodic and conſtrictory pain at the orifice of the ſtomach. Phyſicians divide this diſtemper into the ideopathic and ſymptomatic; the firſt, which is alſo called by ſome the *cardialgia nauſeoſa*, takes its riſe from crudities in the primæ viæ, and is often owing to worms; the other uſually is owing to a ſuppreſſion of the menſtrual, or hæmorrhoidal diſcharges. Theſe differ greatly in degree, the ſymptomatic being much the moſt violent, as the viſcera and vena porta are brought into conſent with it; but the moſt violent degree of the *cardialgia* is that which is attended with fainting: in this the whole meſentery is drawn into conſent, and is affected with ſpaſmodic contractions. Sometimes alſo in the idiopathic *cardialgia* there is a great apprehenſion of ſuffocation; this ariſes from the conſent of the diaphragm and pericardium.

Signs of a CARDIALGIA. Theſe are a ſenſation of preſſure and tenſion about the pit of the ſtomach, a ſtraitneſs and anxiety of the precordia, and often there comes on a nauſea, and ſometimes actual vomiting. When there are worms in the caſe, water comes into the mouth in great quantities, and the mucous matter is felt in the bottom of the jaws, as if a piece of ſomething cold lay there. Heat and cold often return ſucceſſively and ſuddenly on the perſon, and the complaint is always worſe upon an empty ſtomach, and mitigates on taking a full meal; whenever the patient can belch alſo, it gives him conſiderable relief for the time; and finally where the commotions of blood in the vena porta are in fault, there is uſually a ſlight touch of a fever attending it.

Perſons ſubject to the CARDIALGIA. — Theſe are principally valetudinary people, who have foulneſſes of the primæ viæ; ſometimes hypochondriac perſons have it to a very great degree, theſe people being uſually troubled with flatulences; women ſubject to hyſteric complaints alſo, and ſuch as have ſuppreſſions of the menſes often fall into it, and not uncommonly infants, in caſes of worms. The cauſe of the complaint is either flatulency or a foulneſs in the ſtomach and inteſtines, which occaſion a reciprocal laxation and ſtricture of the tone of the ſtomach and inteſtines, and other parts which are drawn into conſent; when the tone is relaxed, the flatus has room to expand, and the parts are conſequently diſtended, and the conſtriction of the ſame parts coming on afterwards is attended with a very ſenſible pain by the conſent of the nerves; ſo that in violent caſes the patients often faint away, and ſeem to be ſuffocated.

The occaſional cauſes of its coming on are coſtiveneſs and the retention of flatulencies; ſudden cooling of the abdomen when the body is hot; coarſe foods, and ſuch as are hard of digeſtion, and the ſwallowing the victuals in large quantities without chewing it; the change of a common coarſe diet into a finer will ſometimes occaſion it, and ſometimes the ſuppreſſing a violent paſſion of anger, while eating. Tender conſtitutions are in general moſt ſubject to it.

Prognoſtics in a CARDIALGIA. — This, in its ſimple ſtate and firſt ſtages, is no very terrible complaint, but its long continuance often brings on habitual faintings, and ſometimes there is danger of congeſtions of the blood and inflammations. The ſymptomatic kind is more difficult of cure as well as more violent than the idiopathic, for this often is but of ſhort duration, whereas the other often becomes habitual, and brings on convulſions, eſpecially in caſes where hot medicines have been given in it with intent to ſtrengthen the tone of the ſtomach. There have alſo been inſtances where vomits given to hypochondriac perſons have brought on deliriums and even abſolute madneſs. *Juncker's* Conſpect. Med. p. 580.

Method of curing the CARDIALGIA. — In the idiopathic *cardialgia* the peccant matter is to be prepared and corrected by reſolvent, abſtergent, and inciding medicines, ſuch as the tartarus tartariſatus, and vitriolated tartar; after this the acrid aromatics are to be given, among which common pepper is one of the very beſt; with this may be given the acrid roots, as thoſe of pimpernell, arum, and the like; and with all theſe it will be very proper to drink at certain intervals wine made hot, and aromatized with the ſpices. Muſtard ſeed is particularly recommended by ſome on this occaſion, and, in many caſes, the common abſorbents ſerve in the place of correctors, by rendering the matter ſoft and pulpy.

After a few days taking theſe things, if there be no contra-indication in the caſe, it will be very proper to give a vomit; to which purpoſe two or three grains of tartar emetic, with ſome of the tartariſed tartar is a very proper medicine. Where there are worms in the caſe, after the bitter digeſtives have been given, ſuch things are to follow as will deſtroy thoſe animals, as mercurius dulcis, and the like; after theſe things, it will be very proper to give the theriaca every night in ſmall doſes, by way of anodyne, and after all this the tone of the parts is to be ſtrengthened by chalybeates, with the common bitters.

In caſes of the ſymptomatic *cardialgia*, attended with fainting, the hot medicines preſcribed in the laſt caſe are wholly to be abſtained from, and in their place the temperating nitrous ones are to be taken, with a little cinnabar, and the digeſtive ſalts impregnated with a few drops of the eſſential oils of the ſpices. Medicines of this kind are always of ſingular ſervice in caſes of ſtraitneſs and conſtriction of the præcordia, and diſorders of a like kind, from whatever cauſe, and in either ſex. In the intermediate days during a courſe of theſe, the patient is to take ſome purgatives of the gentler kind, and afterwards the common chalybeates and bitters for the reſtoring the tone of the parts, and finally the beſt of all preſervatives againſt a return of this complaint are bleedings at the ſpring and autumnal ſeaſons. Aromatic medicines, in general, not only render the peccant matter more fluid, but at the ſame time ſtrengthen the tone of the parts, and for this reaſon when there is no febrile heat in the caſe they are extremely valuable remedies; but they muſt by no means be given where there is any febrile heat, as is very often the caſe in the ſymptomatic *cardialgia*; for in this caſe they always increaſe the complaint. The vulgar remedy in many places for an idiopathic *cardialgia* is ten or twelve grains of pepper ſwallowed in a ſpoonful of brandy, and this is no deſpicable medicine, ſince it not only corrects the matter, but gives a gentle diaphoreſis, which is always highly uſeful in theſe caſes. Id. ibid. p. 581.

CARDINAL, (*Cycl.*) *cardinalis*, was an appellation given under the eaſtern empire to the præfecti prætorio of the dioceſes of Aſia, as being greater and more conſiderable than the reſt. *Piſc.* Lex. Ant. p. 363.

CARDINAL, in the Romiſh church. — Duarenus takes *cardinals* to have originally been thoſe prieſts who officiated together with

with the bishop, in all those greater churches called by us cathedrals, though in after-times the name became restrained to those of the Roman church alone, being as it were the council or senate of the bishop. *Pitisc.* Lex. Ant. T. 1. p. 363.

See further concerning the origin and rights of *cardinals* in Onuphrius, Duarenus, Ciaconus. Traité de l' origine des *cardinaux*. Aubery has given the general history of *cardinals* in 5 volumes 4°. See also *Du Cange*, Gloss. Lat. T. 1. p. 835. Trev. Dict. Univ. T. 1. p. 1446, seq.

CARDINAL-*signs*, in astronomy, are *aries*, *libra*, *cancer* and *capricorn*. See SIGN, *Cycl.*

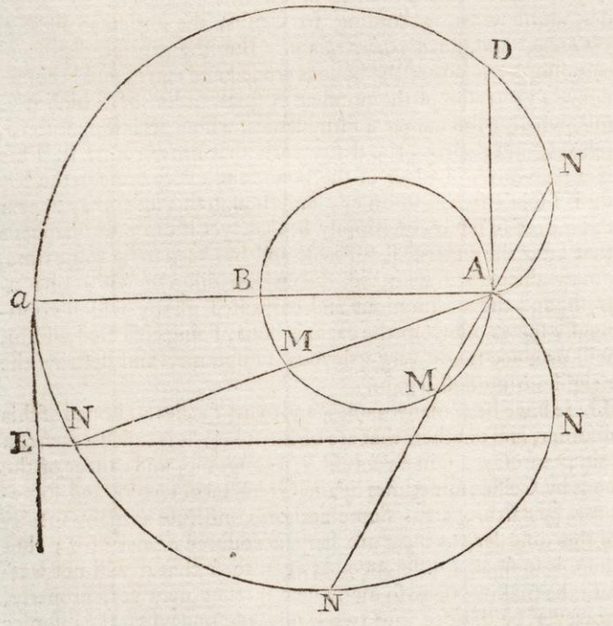
CARDINALITIUS, in zoology, a name given by some to the coccothraustes indica cristata, commonly called the Virginian nightingale. *Aldrovand.* de avib. See NIGHTINGALE.

CARDING (*Cycl.*) answers to what the Latins call *carminare*, and antiently *carere*; as appears from Plautus in his Menæchmus: *inter ancillas sedere jubeas, lanam carere.* Janus Laurembergius takes the French *carder* and our *carding* to have been formed from *carere*, by an interposition of the letter d. Joseph Scaliger derives both *carere* and *cardrius* from the Greek κειρω, εκαρον, to shear. *Casen.* orig. Franc. p. 30.

CARDIOGMUS, Καρδιωγμος, is sometimes used for the same with cardialgia. See CARDIALGIA.

CARDIOGMUS, in a more restrained sense, denotes a peculiar species of cardialgia, attended with an anxiety of the præcordia, and a painful heaviness, caused by a flatulent distention of the abdomen and stomach, which compresses the diaphragm. *Nent.* Fund. Medic. T. 2. tab. 209. c. 9.

CARDIOID, in geometry, is thus formed; let the diameter AB



of the circle A M B A, revolve about the point A, and on A B produced let B *a*, M N, A D, M N, &c. be always equal to A B; then will the point *a* describe a curve, which from its figure resembling a heart, is called *cardioid.*

From the construction it appears, that A N = B A + A M, and that N A N is always double of the diameter A B, and is bisected by the circle in M.

This curve is algebraical; if A B = *a*, *a* E = *x*, E N = *y*, its equation will be,

$$y^4 - 6ay^3 + 12x^2y^2 - 6ax^2y + x^4 = 0 + 12a^2y^2 - 8a^3y + 3a^2x^2$$

For the method of drawing tangents, and other properties of this curve, see Phil. Transf. N° 461. Sect. 8. See also Mem. Acad. Scienc. 1705. where Monsieur Cané first proposed this curve.

CARDIOSPERMUM, in botany, the name by which Linnæus calls that genus of plants named *corindum* by Tournefort and other authors. *Linnæi*, Gen. Plant. p. 171. See CORINDUM.

CARDISCE, in natural history, the name of a stone mentioned by the old authors, and called also *encardia.* Pliny tells us there were three kinds of it; the one black, in which there was the plain figure of a heart delineated in white, another green in that part where the heart was figured; and the third white all over, except that the heart is marked in black. We know of no such stones as these at present, unless they are to be sought for among the agates, the various and accidental course of the veins in which, represent sometimes a thousand singular figures, among which imagination may easily trace hearts, eyes, and the like. Our modern writers understand by this name a very different stone, more usually called *bucardites* from its resembling the heart of an ox. This does not shew the delineation of a heart, but represents in some measure the shape of one in its whole figure, and owes its form to its being the matter which has once filled up the cavity between the two shells of a large bivalve of the cockle kind. The writers of the middle ages imagined the wearing the encardia of the antients about them, a cure for the palpitation and other disorders of the heart; we attribute no virtue to ours. See BUCARDITES.

CARDITES, in physiology, a figured stone in the form of a heart. Of these there are divers species, which receive different denominations from the particular animals whose hearts they are supposed to represent; as the *anthropocardites*, the *bucardites*, &c. See BUCARDITES.

Plot describes a stone of the former kind, found near Stoken church, so exactly like the heart of a man, that the very trunks of the descending and ascending parts of the vena cava, with a part of the aorta, were represented in it, in their due position. *Plot*, Nat. Hist. Oxfordsh. c. 5. §. 154.

CARDONIUM, among antient physicians, denotes wine medicated with herbs.

It is made by pouring must, or new wine on the herbs. *Cast.* Lex. Med. p. 136.

CARDOPATIUM, in botany, a name applied by some authors to the carline thistle. *Ger.* Emac. Ind. 2.

CARDUELIS, in zoology, the name of a very well known bird, called in English the *gold-finch*, and by the old naturalists the *chrysomitres* and *acanthis*; the first from its yellow head, and the last from its feeding among thistles.

CARDUS, in botany, a name given by the Romans to the plants called *cactos* by the Greeks. These words were sometimes used by both as the general names of the thistle kind, and in that sense the word *cardus* and *carduus* are the same; but some of the Roman authors have used this as the Greeks did *cactos*, in a more limited sense, expressing by it only the artichoak. This they knew both in its wild state, and in its garden state; the wild plant was very prickly, and the garden one much larger in all its parts, and smooth.

Columella is almost the only author among the antients who seems to make the *cactos* and *cinara* different plants; but his distinction turning only upon the one being prickly, the other not, it comes to no more than that *cactus* was the name of the plant in its wild state, and *cinara* in its garden state.

CARDUUS, the *thistle*, in botany, &c. See THISTLE.

CAREOPULI, in botany, a name given by some authors to the tree which affords us the gamboge, the *gutta gamba*, and *gambogium* of the shops. *Park.* Theatr. p. 1635.

CARETTA, in zoology, the name of that species of tortoise, the shell of which is of the greatest value, and is principally used with us under the name of tortoise-shell.

This is but a small tortoise in comparison of many others, and its flesh is very coarse and ill tasted: its eggs, however, which it lays in great numbers among gravel, are very delicate food. The shell of this kind is composed of fifteen pieces, some larger, some smaller; ten of these are flat, four considerably bent and the other, which is what covers the neck, is of a triangular figure, and is hollowed so as to look like a small shield. The spoils of this creature usually weigh about four pound, and sometimes the several scales are so long and thick as to rise to six or seven pound. *Ray*, Syn. Quad. p. 258.

CARETTI, in botany, a name by which many authors have called the *acacia glorioſa*, or the tree which produces the marsao, or bezoar nuts. Hort. Mal. Vol. 2. p. 35.

CAREX, in botany, a word used by Linnæus as the name of a genus of plants, comprehending those called *cyperoides* by Tournefort and others, and the *scirpoides* of other authors. The characters of the genus are these: it produces male and female flowers, in most species, on the same plant; the male flowers are digested into a long spike; the cup is an oblong and imbricated amentum, consisting of acute, hollow, and lanceolated scales, each containing one flower; there is no corolla; the stamina are three erect, setaceous filaments, of the length of the cup; the antheræ are oblong, and not pendulous, but erect.

In the female flowers the cup is the same as in the male; there are no petals, but there is an inflated oblong nectarium; the germen is three square, and is placed within the nectarium; the style is very short; the stigmata are sometimes three, sometimes but two; they are long, crooked, pointed, and hoary. The nectarium grows larger when the flower is fallen, and contains the seed in it; the seed is single, of an acute, and somewhat oval form, three-cornered, and has one of its angles usually much smaller than the others. The *scirpoides* of authors usually have the male and female flowers on the same plant. *Linnæi*, Gen. Pl. p. 446. *Tourn.* Inst. p. 299. *Shenk.* Agrost. p. 10. *Micheli*, p. 32. seq. *Dillen.* Gen. p. 13.

CARGADORS, at Amsterdam, a kind of brokers who make it their sole business to find freight for ships which want loading, and vessels for merchants or passengers who want conveyance to such or such a place. *Savar.* Dict. Comm. Supp. p. 120.

CARGO (*Cycl.*) — *Sortable* CARGO, is that which contains something of every sort, necessary to furnish the tradesmen of the place it is sent to, with parcels fit to fill their shops, and invite their customers. Compl. Engl. Tradesm. T. 1. Lett. 7. p. 84.

Officers and sailors on board a vessel are allowed to carry a small *cargo* or *pacotille*, not exceeding a certain bulk or weight for their own account, without paying any freight. *Savar.* Dict. Comm. T. 2. p. 947. voc. *pacotille.*

CARGO also denotes a weight used in Spain and Turky, amounting to about 300 English pounds. Lex. Mercat. p. 388.

CARIA, in natural history, a name given by authors to a very mischievous species of ant, common in some parts of the East-Indies,

Indies. This creature is larger than our ant, and is the common food of a great many other animals, as the squirrels, serpents, lizards, and a great many birds. In order to defend itself from so many enemies, it enters into large communities, which together erect great hills of earth, of five or six foot high. The fields in some places are full of these, and it is in vain to attempt beating them down, since they would be immediately made up again; the creature builds them with firm and tough clay which it wets as it uses it, and the walls or outer case is built so thick and firm that scarce any rain can hurt them. The whole space within is full of different compartments, to every one of which there is a particular pathway, and these separate paths joining as they come near one another, make at length one great and general road to the door or gate of the city. These animals are generally busied in their cells, and never go out but at the necessary time to search for food; this excursion they always make regularly at one time of the day, and fall to work on the first corn, or other valuable plant, they find, which they gnaw off very quick, and carry into their habitation.

There is another species of the *caria* much smaller than this, which builds in the peoples houses, not in the fields. In the center of the habitation of this creature there is usually found a sort of comb, or collection of cells, resembling a honeycomb. This insect is very particular in the covering its path near the nest, which it does with earth, in such a manner that it forms a sort of pipe or tube, in which it walks to some distance from home. This little species feeds on the leaves of the palm, and many other plants, and will sometimes eat dry straw or stubble, gnawing the thatch on the houses. Observations sur l'Asie, p. 380.

CARIAMA, in zoology, the name of a Brasilian bird of the size of the heron, and, like that bird, frequenting watery places. On the top of the head it has a high, erect, plumose crest, of a mixt colour of black and grey; the back is short, and a little bending upwards; the wings are short, and, when folded, reach but a little beyond the origin of the tail; its legs are very long and yellow; its general colour is grey, variegated with brown, and a slight admixture of an obscure yellow; the ends of the wings and tail are wholly brown, except that at the very ends they have slight variegations of a yellowish and grey colour It makes a loud noise like the turkey, and is a very valuable and well tasted fowl. *Marggrave*'s Hist. Brasil.

CARIBO, or MACARIB, a name given by Josselyn, in his New England Voyages, to an animal which he describes a species of the deer kind; but later naturalists are of opinion, that the whole account is fiction, and that there is in reality no such animal.

CARICA, in botany, the name by which Linnæus calls the *papaya* of other authors. The characters of this remarkable plant are these: it produces both male and female flowers; in the male flower the cup is scarce visible; the flower is monopetalous, and funnel-shaped; the tube is slender, and very long, narrow in its lower part, and at the mouth divided into five obtuse, lanceolated segments, which are obliquely turned into a spiral line; the stamina are ten filaments placed in the top of the tube of the flower; the antheræ are oblong.

In the female flowers the cup is small, divided into five segments, and remains on the fruit; the flower is composed of five leaves, which are lanceolated, blunt at each extremity, and very long; the pistil has an oval germen, and scarce any style; the stigmata are five in number: they are oblong, crenated, and truncated at their ends. The fruit is an extremely large berry, containing only one cell, but made angular by five very deep sulci; the seeds are numerous and oval. *Linnæi*, Gen. Pl. p. Inst. 483. *Tourn.* p. 441.

CARICA, among the antient naturalists, denotes a kind of fig peculiar to Syria; sometimes also the dried fig[b]. — [[a] *Plin.* Hist. Nat. l. 13. c. 5. [b] Id ib. l. 15. c. 19.]

CARICA is also used in antient writers to denote the fruit of the palm tree, otherwise called *cariata*, which was sent annually by clients, on New Year's day, as a present or acknowlegment to their patrons. *Calv.* Lex. Jur. p. 149.

CARICATURA, in painting, a loading, or exaggerating of the defects of an object represented, with a concealment of the beauties or advantages of it; yet so as still to preserve a resemblance. Vid. Spectat. N° 537. T. 7. p. 244.

The word is Italian, formed of *carica*, a load, burden, or the like.

CARICOUS *(Cycl.)* — Quincy represents the *caricous* tumor as the same with what Hippocrates called *carycoides*, which seems to be a mistake; Καρυκοειδὲς, in Hippocrates denoting an excrement of a bloody colour, resembling a kind of condiment or confection, antiently called *caryca*, made of blood, and invented by the Lydians.

CARIES *(Cycl.)* — There are several species of *caries* in the bones. The learned Mr. Monro mentions seven which he has seen. These he distinguishes by the appellations of 1°, The dry or gangrenous *caries*; 2°, The worm-eaten *caries*, or ulcer of the bones. 3°, The carnous *caries* or ulcer of the bones with hyperfarcosis. 4°, The phagedenic *caries*, with hyperfarcosis. 5°, The scrophulous *caries*. 6°, The schirro-cancrous *caries*. 7°, The spreading cancrous *caries*.

He enters into a curious detail of the several natures of these kinds of *caries*, and of the topical management. A speedy and safe separation of all the corrupted part is the principal indication to be pursued. See Medic. Ess. Edinb. Vol. 5. Art. 24. Abridg. Vol. 2. p. 150, seq. Where he shews the analogy between these diseases of the bones to those of other parts of the body. This is not surprising, since bones have the same general texture, and are only distinguished from other parts by a greater solidity or firmness.

A *caries* differs from a spina ventosa, in that the latter begins within the substance of the bone, and proceeds outward; whereas the former begins on the surface, and proceeds inward. See SPINA *ventosa*.

Caries's are divided into idiopathic and symptomatic.

Idiopathic or *simple* CARIES, is an erosion of a bone, happening without any other disease, commonly owing to some external cause, rarely to an internal one, as the afflux of humours.

Symptomatic CARIES, that which oftnest happens to persons deeply affected with some other disorder, especially the scurvy, or venereal disease.

Caries's may also be divided in respect of their degree.

Those in the first degree, discover a yellow fattiness on the surface of the bone. In the 2d a blackness. In the 3d a roughness, and inequality of the bone, caused by a multitude of foramina or little holes. In the 4th the corruption penetrates deeper through the whole substance, which it seems as it were to dissolve. *Junck* Consp Chir. Tab. 51. p. 318. *Le Clerc*, Treat. Chir. Diss. c. 4. Compl. Surg. p. 177.

A *caries* is properly a disorder in which the bone, from whatever cause, is deprived of its periosteum, and having lost its natural heat and colour, becomes fatty, yellow, brown, and at length black; this is the first and lightest degree of the disorder, and is what, according to Celsus, the antients called *os vitiatum*, and the *nigrities ossium*. But the greater degree of this disorder is where the bone is eroded and eaten, and becomes uneven by reason of the number of small holes, of which it is full, when it discharges a filthy sanies, whose acrimony softens, relaxes, and destroys the fleshy parts that grow round it. This is a true *caries* or ulcer of the bone, and every bone in the body is subject to this disorder; and though this ulcer may appear to be ever so safely or happily healed, yet it too often happens that after the cicatrix is formed, and has been so for some time, a new abscess will be made, the whole disorder will return afresh, and the acrimonious and corrupted matter which continually spews out from the carious bone, being collected within, will produce many very grievous symptoms, and destroy the neighbouring flesh again.

There have been many names, and many species reckoned of this disorder, and of others that are of kin to it; it is called a *caries*, a spina ventosa, a spinæ ventositas, a gangrene, and cancer of the bone by Celsus, sometimes by the Greek term teredo, and sometimes pædarthrocaces. Some authors constitute as many species of this disorder, as there are here accounted names of it; but there is so small a difference between these, that it will not warrant the making them so many species: they may very properly, however, be divided into two kinds, the one when the disorder begins in the internal part of the bone, the other when it begins on the outside, or from an external cause. This may be called a *caries*, and that a spina ventosa, or where it happens in children, according to Severinus, a pædarthrocaces.

There are two principal causes of a *caries* of the bones, the one where the bone is deprived of its periosteum, by a wound, fracture, or other accident, and is corrupted, either by being exposed to the external air, or heated with greasy dressings; the other where the fluids are interrupted in their circulation by any external violence, or internal cause whatsoever, from whence inflammation and suppuration succeed, and the bone and periosteum suffer, to such a degree that the vessels which are sent to the part for its nourishment and support, being inflamed and corrupted, the bone is brought into consent, and quickly becomes carious: this disorder, if not quickly remedied, spreads and communicates itself to the neighbouring parts of the bone, and makes the same progress that ulcers do in the softer parts. There are therefore several degrees of the *caries* of the bones; the first is when the bone is laid bare, looks greasy, and turns yellowish: as soon as it becomes thoroughly yellow, or brown, or black, the incipient *caries* then degenerates into a worse state. The third degree is when the bone becomes uneven, rough, and rotten, and the greater erosion the bones have suffered, the more rough and uneven they will appear. When the cranium is perforated through both its tables, or the tibia or femur are eaten through to the marrow, this is a *caries* of a very bad kind; but the worst of all *caries*, and that in which the case may indeed be almost pronounced desperate, is that which falls upon the joints, or those parts of the bones that lie very deep, because in this case there is no access for the hands to clean the bone, and there is no remedy but the amputating the limb.

Many methods have been attempted for the cure of a *caries*; the first and mildest is applied to the slightest degree of the disease, and is performed by the application of spirituous remedies, such as spirit of wine, hungary-water, or by slight balsamics, such as the powder of birthwort, florentine, iris, myrrh, or aloes. Either of these powders is to be sprinkled on the part, after the sanies has been carefully wiped away with dry lint, and this continued till the cure is perfected. In a *caries* that penetrates

penetrates ſomewhat deeper, ſtronger remedies take place, ſuch as powder of euphorbium, or its eſſence, made in well rectified ſpirit of wine; or oil of cloves, cinnamon, or guaiacum; either of theſe may be touched on with a pencil, or laid upon dry lint, and applied: ſome alſo uſe the corroſive medicines, the phagadenic water, and ſpirit of vitriol, or of ſulphur; and, in the place of theſe, a ſolution of quickſilver in aqua fortis may be uſed with great ſucceſs. When, by theſe means, an exfoliation of the bone has been produced, the buſineſs is then to treat it with balſamics.

A ſecond method of cure for a greater degree of *caries*, is perforating the bone with the trepan, and dreſſing the part afterwards either with balſamics or with dry lint. By theſe means the exfoliation of the bone is forwarded, and new veſſels puſh themſelves through the foraminula, which, joining with the neighbouring fleſh, make a new covering for the bone.

The third method of cure is performed by the raſpatory, or chiſſel, taking off the corrupted or vitiated part of the bone, till all beneath appears white or ruddy, and ſound: and the fourth, which is the moſt antient, and the moſt ſpeedy, and certain method, is by the actual cautery, burning down the vitiated part of the bone. This method, however, is not neceſſary, except in great degrees of this diſorder; and in the performing it great care muſt be taken not to injure the neighbouring ſoft parts: for this reaſon, an aſſiſtant ſhould always draw back the lips of the wound both ways, while this is performed; and if the opening be not wide enough, it ſhould be opened and enlarged by ſponge tents before, or widened by the knife, till the bone lies fair, and the part muſt be carefully wiped firſt with dry lint, from the ſanies; and if there be any fungous fleſh, that muſt alſo firſt be removed. One application of the cautery, when the diſorder is conſiderable, will ſeldom prove ſufficient; it uſually requires to be repeated ſeveral times, at proper intervals; and if the *caries* be of ſuch extent that one cautery will not cover it all over, the firſt muſt be applied to the middle, and the ſucceeding towards its edges. This operation is not attended with any great pain, if care be taken not to injure the adjacent ſoft parts; for the bones are, in themſelves, free from any ſenſe of pain. Where the cranium is the ſeat of this diſorder, the cautery is attended with great hazard, as it is alſo in a *caries* of the ribs, or ſternum, from the neighbourhood of parts of the utmoſt conſequence to life. The carpus and tarſus alſo will very badly admit of cauterizing, becauſe of the neighbourhood of the tendons and ligaments, which it is ſcarce poſſible to avoid injuring in the operation. After cauterizing the part is to be dreſſed with dry lint only, or if the patient complain of great heat in the part, the lint may be dipped in ſpirit of wine before it is applied; afterwards balſamics are to be applied, till the part exfoliate, and then, if the cure be perfect, the vacuity will be ſoon filled with new ſound fleſh. But if the bone remains bare, or the fleſh it is covered with be ſoft and ſpungy, and does not adhere ſufficiently to the ſubjacent bone, or where the bone remains diſcoloured; in either of theſe caſes the cure will not ſtand, but the diſorder will break out again, unleſs prevented. In theſe caſes therefore, the work muſt be all done over again, the ſpungy fleſh removed, and the actual cautery again applied, otherwiſe the cure can never ſtand. *Heiſter*'s Surgery, p. 204.

CARIGOI, in zoology, the name by which ſome authors have deſcribed a very remarkable American animal, more uſually known by the name of the *opoſſum*. See OPOSSUM.

CARIGUEYA, in zoology, the Braſilian name for a very remarkable American animal, which we know by the name of the *opoſſum*. See OPOSSUM.

CARIMPANA, in botany, the name of an Indian palm tree, deſcribed in the hortus Malabaricus, the leaves of which, when full grown, are thirty foot long, and nine foot broad, or more, if carefully extended.

CARINA *(Cycl.)* is uſed by anatomiſts to denote the *ſpina dorſi*. *Gal.* de uſu Part. l. 2. c. 11. *Hofm.* Comm. ad Eund. ibid. n. 905. See SPINA, *Cycl.* and *Suppl.*

CARINA is alſo uſed, by ſome chemiſts, for the twentieth part of a drop. *Rul.* Lex. Alch. p. 134.

CARIOUS, the ſtate of a bone putrified or rotten. See CARIES.

Horchius gives the hiſtory of a tophus, taken out of a *carious* bone. Ephem. Acad. N. Cur. Dec. 2. An. 10. Obſ. 167. p. 177.

CARISSIMI, in antiquity, a quality, or appellation, given by the emperors to preſidents, governors of provinces, and others. *Pitiſc.* Lex. Ant. T. 1. p. 365.

CARITAS.—The *poculum caritatis*, or grace cup, was an extraordinary allowance of wine, or other liquors, wherein the religious, at feſtivals, drank in commemoration of their founder and benefactors. Cartul. Abb. Glaſt. MS. p. 29. *Jac.* Law Dict. in voc.

CARK, or CARKE, a certain quantity, or meaſure, of wool, equal to a thirtieth part of a ſarplar. Stat. 27. Hen. 6. c. 2. *Cow.* Interp. in voc. Term. de Ley. p. 43. b. See SARPLAR.

CARLIN, CARLINE, or CAROLINE, a ſmall ſilver coin, current in Naples and Sicily, equivalent to about four-pence Engliſh. *Savar.* Dict. Com. T. 1. p. 564.

CARLINA, in botany, the name of a genus of plants, the characters of which are theſe: the flower is naturally of the radiated kind; its diſk is made up of a number of floſcules, affixed to the embryo ſeeds, but its outer edge or circle not of ſemifloſcules, but merely of flat petals, affixed to no embryos, but contained in the ſame general cup with the floſcules, which is large and prickly. The embryos finally ripen into ſeeds, winged with down, and divided from one another by imbricated leaves.

The ſpecies of *carline*, enumerated by Mr. Tournefort, are theſe: 1. The common *carline*, without a ſtalk, and with large purple flowers. 2. The common *carline*, with a large white flower, without a ſtalk. 3. The large-flowered, no-ſtalked *carline*, with perennial roots. 4. The ſtalkleſs, gummiferous *carline*, commonly called the white chamelion thiſtle. 5. The ſtalky *carline*, with large white flowers. 6. The ſtalky *carline*, with large red flowers. 7. The many-headed white *carline*. 8. The common wild *carline*. 9. The wild perennial *carline*, with gold-yellow flowers. 10. The leſſer Spaniſh wild *carline*. 11. The ſpreading *carline*, with the leaves and whole appearance of the atractylis. 12. The umbellated *carline* of Apulia. 13. The *carline*, with a ſpreading purpliſh red flower. *Tourn.* Inſt. p. 500.

CARLINÆ *radix*, in the materia medica, the name of a root kept in the ſhops in ſome places, and diſtinguiſhed into two kinds, the white and the black; the white is the root of the common *carline* thiſtle, which produces no ſtalk, the other of the *carlina cauleſcens*, called the black chamelion thiſtle.

The white *carline* root is of the thickneſs of one's thumb, and is often two foot long; it is brown on the outſide, and white within, and ſhould be choſen plump, firm, and well dried. It is accounted a very great medicine in peſtilential diſeaſes.

The black is a ſmaller and ſhorter root than the white, and is much leſs eſteemed in medicine. The plant which produces the white grows very frequent with us on hilly places, and is a very ſingular plant, producing a number of fine long prickly and jagged leaves, and, in the center of them, a large purple flower, of the thiſtle kind, but growing cloſe to the ground; the other is very frequent in France, but is not met with in England.

Carline is eſteemed a very powerful ſudorific and alexipharmic. Schroder tells us alſo, that it is good againſt worms, and in dropſies; and that it is a powerful emmenagogue and diuretic. *Pomet*'s Hiſt. of druggs, p. 46.

CARLOSTADIANS. See CAROLOSTADIANS.

CARMEN *(Cycl.)* was antiently a denomination given to precepts, laws, prayers, imprecations, and all ſolemn formulæ, couched in a few words, placed in a certain order, though written in proſe. Vid. *A. Gell.* l. 9. c. 2. *Fabric.* Bibl. Græc. l. 1. c. 9. §. 14. Ejuſd. Bibl. Lat. l. 1. c. 2. §. 7.

In which ſenſe it was that the elder Cato wrote a *carmen de moribus*, which was not in verſe, but proſe.

CARMEN *ſaliare*, a ſet of antient verſes compoſed by Numa, and ſung by the Salii, accompanied with the claſhing of ancylia, or ſacred bucklers. *Kenn.* Rom. Ant. P. 2. l. 2. c. 5. p. 75. See SALII and ANCYLE, *Cycl.*

CARMEN alſo denotes a form of prayer, or words whereby divers among the antients devoted themſelves. Such was that of the Decii, ſpoken of by Pliny. *Plin.* Hiſt. Nat. l. 38. c. 2. *Pitiſc.* Lex. Ant. T. 1. p. 365.

CARMENIAN *wool*, a denomination given to a kind of goat's hair, brought from Carmenia, or Caramania, a country of Aſia minor. Stat. Abr. 8vo. Vol. 1. Tit. Cuſtoms. §. 209.

CARMINE *ſeed*. See CHOUAN.

CARNABADIUM, in the materia medica of the antients, a name given to a drug frequently mentioned by the Greek and Arabian writers. It is properly an Arabian word which the Greeks have adopted, and given a Greek termination to, writing it Καρναβάδιον. Guillandini ſuppoſes this to be the ſame with the durunegi or doronicum of the ſame authors; but nothing can be more abſurd than ſuch an opinion, an examination of theſe writers themſelves ſhewing that they commonly uſed it for caraway, or caruiſeed, and ſometimes for the Æthiopian cummin ſeed. Nicomedes, in his gloſſary, tranſlates the *carnabadion*, Æthiopian cummin. Myrepſus gives it the ſame meaning, and Hierophylus, who mentions it among the ſeeds uſed in preſerving fruits, ſays that it comes from the Eaſt, and that it is the ſame that is called Æthiopian cummin by others. It ſeems, therefore, that a great many authors uſed it as a name of this ſeed, and we find as many uſing it alſo for caraway ſeed: none, however, have ever named it as a root, which muſt be allowed before it could rationally be ſuſpected to be doronicum, even though its virtues were as like thoſe of that drug as they are different.

CARNATIONS, in gardening. — Theſe flowers are propagated two ways, the one by ſeed, the other by layers; the firſt of theſe methods is the way to raiſe new flowers, the other is the way to preſerve and multiply thoſe of former years.

For the raiſing them from ſeed, great care muſt be taken to procure good ſeed, and ſome pots or boxes muſt be filled with very freſh light earth, mixed with rotten cow-dung. The ſeed is to be ſown not too thick on this, and a little of the ſame light earth ſifted over it; then the pots are to

be

be expoſed to the morning ſun, till eleven a clock, and gently watered as they require. The ſeed muſt be ſown in April. In a month the plants will appear; they muſt be kept clear of weeds, and in June they muſt be tranſplanted into ſome beds of the ſame earth, in an open airy ſituation. They muſt be ſet here at four inches diſtance, and kept clear from weeds, and watered as there ſhall be ſeen occaſion; they may remain here till Auguſt; from hence they muſt then be removed into other beds of the ſame earth, and planted at ſix inches diſtance, and in this place they are to be left to flower.

When they are in flower the fineſt kinds ſhould be marked, and all the layers that can be, ſhould, during the time of their flowering, be laid down from them: toward the latter end of Auguſt theſe will have taken root, and they are then to be taken off, and planted out into pots, two in each pot. The method of laying them is this. Slip off the leaves from the lower part of the ſhoot intended to be laid, and cut a ſlit in one of the middle joints, and cut off the tops of the leaves, and cut out the ſwelling part of the joint, where the ſlit is made; then raiſe the earth about the place a little, and bend down the ſlit part of the joint into it, keeping the top upright, and faſten it in its place by a hooked ſtick, ſtuck into the ground over it, and cover it with earth; then give it a gentle watering, and repeat this as often as is neceſſary, and in ſix weeks the layers will have taken ſo much root as to be ready to tranſplant; they are then to be planted ſingle, in pots of a prepared earth, of a hazel land, or under turf-earth of paſture, with a mixture of old cow-dung, or the rotten dung of a melon bed. The turf ſhould be taken with the ſoil, and the whole ſuffered to lie and mellow together for ſix or eight months before it is wanted, turning it often in the mean time. They require ſhelter in the winter ſeaſon, and as it is difficult to ſhelter a large number in their pots, which are uſually nine inches over, it may be a better way to plant them out in Auguſt in very ſmall pots, ſheltering a number of theſe all winter in a frame; and in the middle of February they may be tranſplanted into the pots they are to flower in: theſe, in April, ſhould be ſet out upon a ſtage of boards, open to the South-eaſt, but defended from the weſt winds, and not too near trees, walls, or buildings, where they are to flower. *Mill.* Gard. Dict. in voc.

CARNEIA, Καρνεια, in antiquity, a feſtival in honour of Apollo, ſurnamed Carneus, held in moſt cities of Greece, but eſpecially at Sparta, where it was firſt inſtituted.

The reaſon of the name, as well as the occaſion of the inſtitution, is controverted. It laſted nine days, beginning on the 13th of the month Carneus. The ceremonies were an imitation of the method of living, and diſcipline uſed in camps. Nine σκιαδες, or tents, were erected, in each of which nine men of three different tribes lived the ſpace of nine days, during which time they were obedient to a public cryer, and did nothing without expreſs order from him. The chief prieſt who attended this ſolemnity was named *Agetes*; beſides whom, there were five miniſters called *carneatæ*, who were obliged to hold their office four years, and to remain batchelors during that time. *Meurs.* Græc. Feriat. *Caſtelan*, de Feſt. Græc. *Pott.* Arch. Græc. l. 2. c. 20. p. 408.

CARNELIAN. See the article SARDA.

CARNEUM *operculum*, in anatomy, a name given by ſome writers to a muſcle of the abdomen, called by Veſalius the *principium recti abdominis*; and by Fallopius, the *muſculus carnoſus*. It is now generally known by the name of *pyramidalis*. See the article PYRAMIDALIS.

CARNEY, a diſeaſe in horſes, wherein their mouths become ſo furred that they cannot eat. Dict. Ruſt. T. 1. in voc.

CARNICULA is uſed by ſome for a caruncle, more particularly for that fleſhy ſubſtance which inveſts the teeth. *Caſt.* Lex. Med. p. 137.

CARNID, in natural hiſtory, a name given by Averrhoes to what is called zarnich by more antient writers. He calls the yellow orpiment by the name *carnid*, without any epithet or addition; but the red he diſtinguiſhes by the epithet akmer. This ſeems, however, not to be a diſtinctive term, but to take in the red arſenic, and the ſandarach of that author; which he diſtinguiſhes, however, in his writings, as two very different ſubſtances.

Serapio deſcribes the ſandarach and yellow orpiment of Dioſcorides under the name of *narneth*, which is evidently the ſame word with *zarnich*, only corruptly ſpelt; and he no where uſes the word ſandarach as a name for any mineral ſubſtance, but always applies it to the gum of the juniper, ſo called alſo by Dioſcorides. Aviſenna's interpreter, on the contrary, uſes the word ſandarach as a name of orpiment, and that not only of the red kind, but of orpiment in general, calling the title of one of his chapters, *De arſenico*, id eſt, ſandaracha. We have applied the word arſenic of late days to the common ratſbane, a poiſonous preparation of cobalt; but the antients, not acquainted with this poiſon, uſed the word arrenicon, or arſenicon, as they differently ſpelt it, for orpiment. Aviſenna mentions three kinds of this mineral, the white, the yellow, and the red; the two latter of theſe have been always well known, but the white kind was ſuppoſed never to have exiſted, but to have been an error of the copies, till Dr. Hill proved it to exiſt in nature, and deſcribed it among the zarnichs in his hiſtory of foſſils. See the article ZARNICH.

CARNIFEX, among the Romans, the common executioner.

By reaſon of the odiouſneſs of his office, the *carnifex* was expreſly prohibited by the laws from having his dwelling-houſe within the city. *Cic.* Orat. pro Rabir. c. 5. *Pitiſc.* Lex. Ant. T. 1. p. 366. *Kenn.* Rom Ant. P. 2. l. 3. c. 13. p. 123. In middle age writers *carnifex* alſo denotes a butcher. *Du Cange* Gloſſ. Lat. T. 1. p. 848.

Under our Daniſh kings, the *carnifex* was an officer of great dignity; being ranked with the archbiſhop of York, earl Goodwin, and the lord ſteward. Flor. Wigorn. An. 1040. *Rex Hardecanutus Alfricum Ebor. Archiep. Goodwinum comitem, Edricum diſpenſatorem, Throndſuum* carnificem, *& alios magnæ dignitatis viros Londinum miſit.* *Spelm.* Gloſſ. p. 125.

CARNIFICATION, the making of, or turning to fleſh.

Phyſicians give inſtances of the *carnification* of bones, that is, where the bones loſe their natural conſiſtence, and become ſoft and fleſhy. This is a tranſmutation which is the reverſe of oſſification. Vid. Jour. des Scav. T. 80. p. 267, ſeq. Mem. de Trev. 1722. p. 1623, ſeq. Item 1726. p. 1146. See OSSIFICATION and BONE.

CARNIVAL. See CARNAVAL.

CARNIVOROUS *(Cycl.)* — To the arguments uſed by Dr. Wallis and others, to prove that man is not naturally *carnivorous*, Dr. Tyſon anſwers, that if man had been deſigned by nature not to be *carnivorous*, there would doubtleſs have been found ſomewhere in the globe, people who do not feed on fleſh; and as hiſtory ſeems not to furniſh any inſtance hereof, may not we ſay, that what is done univerſally by the whole ſpecies, is natural? For what the Pythagoreans did in abſtaining from fleſh, was on the principle of a tranſmigration, a miſtake in their philoſophy, not a law of nature: and though in ſome countries, men feed more ſparingly on fleſh than in others, this is owing to their own choice, from the advantage they perceive by it.

That *carnivorous* animals are not always without a colon and cæcum; nor are all animals *carnivorus* which have thoſe parts; but that the carigueya, or opoſſum, for inſtance, has both a colon and a cæcum, yet feeds on poultry, and other fleſh; whereas the hedge-hog has neither colon nor cæcum, and therefore ought to be *carnivorous*, yet it feeds only on vegetables; add, that hogs, which have both, will feed on fleſh greedily enough when they can get it; and that rats and mice, which have large cæcums, feed on bacon, as well as bread and cheeſe.

That from the multitude of *carnivorous* animals which want thoſe parts, and of non-*carnivorous* which have one or both, no ſafe concluſion can be drawn; ſince we might as well argue, that becauſe the neat-kind, ſtag-kind, goat-kind, and ſheep-kind, which live on herbage, have four ſtomachs, therefore all thoſe which have not four ſtomachs were not deſigned by nature to be graminivorous; whereas the horſe-kind and hare-kind have but one ſtomach, yet feed on graſs like the former: Add, that in many animals which live on the ſame ſort of food, the ſtructure of the ſtomach is found very different; and that in others which live on different foods, *ex. gr.* on fleſh, on fruits, on graſs, &c. the ſtomachs are found ſo like, that 'tis difficult to aſſign any difference between them; and if we cannot make a judgment what food is moſt natural to an animal from the ſtructure of its ſtomach, which is the part moſt concerned in digeſting it, much leſs can we judge from the colon or cæcum, which are parts remote from the ſtomach, and rather ſeem as a cloaca for the reception of the fæces, than of uſe for digeſting or diſtributing the food.

In fine, ſince man has all manner of teeth, fit for the preparation of all ſorts of foods, ſhould it not rather ſeem that nature intended we ſhould live on all? And as the alimentary duct in the human-kind is fitted for digeſting all ſorts of food, may we not rather conclude that nature did not intend to deny us any? Vid. Phil. Tranſ. N° 269. p. 775, ſeq.

'Tis no leſs diſputed, whether mankind were *carnivorous* before the flood? St. Jerom, Chryſoſtom, Theodoret, and other antients maintain that animal food was then totally forbidden; which opinion is alſo ſtrenuouſly ſupported among the moderns, by Curcellæus [a], and refuted by Heidegger, Danzius, Bochart, &c. [b] — [a Vid. *Curcell.* de eſu Sang. inter Chriſtian. b *Heidegg.* de Libert. Chriſtian. a lege cibaria, c. 2. ſeq. Item Hiſt. Patriarch. P. 1. Exerc. 15. p. 390. *Wal.* Lex. Phil. p. 235, ſeq. *Danz.* Diſp. de Creophagia ante diluvium licita. *Selden.* de Jur. Nat. & Gent. ſecund. diſcipl. Hebr. l. 7. c. 1. *Bochart*, Hieroz. l. 1. c. 2. *Budd.* Hiſt. Eccleſ. Vet. Teſt. T. 1. p. 185.]

CARNIUS, in chronology, the Syracuſian name for the Athenian month *metagitnion*; which was the ſecond of their year, and anſwered to the latter part of our July and beginning of Auguſt. See METAGITNION, and MONTH.

CARNOUS *leaf*, among botaniſts. See LEAF.

CARNOSUS *muſculus*, in anatomy, a name given by Fallopius and others to a muſcle, called by Veſalius the beginning of the ſtraight muſcle of the abdomen, and now generally known by the name of *pyramidalis*.

CARNUBIA, in the materia medica, a name by which ſome authors have called the carob, or ſweet pipe. *Dale*, Pharm. p. 461.

CAROB, *caroba*, a medicinal pod or fruit, called alſo *ceratia*, and *ſiliqua dulcis*, reputed a dryer and aſtringent. *Alleyn*, Diſpenſ. P. 1. Sect. 2. c. 36. n. 55.

CAROB is alſo a ſmall goldſmith's weight, amounting to the 24th part of a grain. It is alſo called *prime*. Ruſt. Dict. T. 1. in voc. Trev. Dict. T. 1. p. 1463.

CARCŒNON, Καρωνον, ſometimes alſo called *carenum*, denotes wine boiled down, till a third be evaporated. *Gor.* Med. Def. p. 210. *Linden*, Ex. 10. §. 19, ſeq. *Caſt.* Lex. Med. p 138.

CAROLI, among ſome phyſicians, denote venereal puſtules on the penis; called alſo *caries pudendorum*. *Caſt.* Lex. Med. p. 138.

CAROLOSTADIANS, or CARLOSTADIANS, an antient ſect, or branch, of Lutherans, who denied the real preſence of Chriſt in the euchariſt.

They were thus denominated from their leader Andrew Caroloſtadius, who having originally been archdeacon of Wittemberg, was converted by Luther, and proved the firſt of all the reformed clergy who took a wife; but diſagreeing afterwards with Luther, chiefly in the point of the ſacrament, founded a ſect apart. The *Caroloſtadians* are the ſame with what are otherwiſe denominated *Sacramentarians*, and agree in moſt things with the Zuinglians. *Prateol.* Elench. Hæret. l. 2. n. 8. Jour. des Scav. T. 47. p. 653. See SACRAMENTARIAN, and ZUINGLIAN, *Cycl.*

CAROLUS (*Cycl.*) is uſed for a ſmall copper French coin, mixt with a little proportion of ſilver, firſt ſtruck by Charles VIII. of France, whence it took its name; being at the time when it ceaſed to be current, valued at ſix deniers. *Savar.* Dict. Com. T. 1. p. 566.

CAROPI, in botany, a name given by the inhabitants of the Philippine iſlands to a plant more uſually known among authors by the name of *tugus*, a plant greatly eſteemed by the natives, and ſuppoſed by Camelli to be the true amomum of the Greeks, ſo much valued in thoſe antient times. See TUGUS.

CAROTEEL, in matters of commerce, denotes a certain weight or quantity of divers kinds of goods, *ex. gr.* of cloves, from four to five hundred weight, of currants from five to nine hundred weight, of mace about three hundred weight, and of nutmegs from ſix to ſeven and an half hundred weight. Dict. Ruſt. T. 1. in voc.

CAROTIC is uſed by ſome writers to denote thoſe who are ſeized with the *carus*. Ephem. Acad. N. C. Dec. 2. An. 1. p. 4. Trev. Dict. Univ. T. 1. p. 1464. See CARUS, *Cycl.*

CARP, in ichthyology, ſee the article CYPRINUS.

The *carp* is the moſt valuable of all kinds of fiſh for the ſtocking of ponds. It is very quick in its growth, and brings forth the ſpawn three times in a year; ſo that the increaſe is very great: the female does not begin to breed till eight or nine years old, ſo that in breeding-ponds a ſupply muſt be kept of *carp* of that age. The beſt judges allow, that in ſtocking a breeding pond four males ſhould be allowed to every twelve females. The uſual growth of a *carp* is two or three inches in length in a year, but in ponds which receive the fattening of common ſewers they have been known to grow from five inches to eighteen in one year.

A feeding pond of one acre extent will very well feed two hundred *carp* of three years old, three hundred of two years old, and four hundred of a year old. *Carp* delight greatly in ponds that have marley ſides; they love alſo clay ponds well ſheltered from the winds, and grown with weeds, and with long graſs at the edges, which they feed on in the hot months. *Carp* and tench thrive very faſt in ponds and rivers near the ſea, where the water is a little brackiſh, but they are not ſo well taſted as thoſe which live in clear water. No fiſh will thrive in a pond where there are many roach, except the pike which feeds on them. Grains, blood, chickens guts, and the like, may be at times thrown into ponds where there are *carp*, to help to fatten the fiſh.

If the breeding and feeding this fiſh were a thing more underſtood than it is at preſent, the advantages might be very great, and fiſhponds become as valuable an article as gardens. The gentleman who has land in his own hands, may, beſide furniſhing his own table, and making preſents to his friends, raiſe a great deal of money, and very conſiderably improve his land at the ſame time, ſo as to make it really yield more this way, than by any other employment whatever. Suppoſe the place a meadow of forty ſhillings an acre, four acres of this in pond will return every year very eaſily a thouſand fed *carps* from the leaſt ſize that is eaten to fifteen inches long, beſide pikes, pearch, tench, and other fry. Suppoſe the *carps* are ſaleable at from ſixpence to a ſhilling apiece, they will bring twenty-five pound, which is ſix pound five ſhillings an acre for the land made into the pond.

When a great deal of water is deſigned to be brought, they firſt ſpit off the ground on which the bank is to ſtand, and form the pan of the pond. The gentleman who keeps land in his own hand, and will do this, will find no expence in the making his pond, if near his other land; for the earth that is dug out may be laid on the lands, and will ſave all the price of manure for a long time.

If the ſoil about the waters be mooriſh, the making a pond will keep up a ſupply of water that will make it always moiſt, and it will ſerve excellently for the planting of oziers, which will turn to a very conſiderable account. If cattle graze near the large ponds they will ſerve them for watering places, and they will delight to ſtand in them in hot weather, in which caſe their dung which falls in is a fine food for the fiſh, at the ſame time that it does great good alſo to the cattle.

The *carp* is a very cunning and wary fiſh, it very often eſcapes the net, and, when angled for, requires great ſkill and patience in the ſportſman to make any great work of it. The *carp* always chuſes the deepeſt parts of ponds and rivers, and in the laſt it is generally found in places where the ſtream is leaſt perceptible. The *carp* will never bite in cold weather; and in the hot months the angler can never be either too early in the morning, or too late in the evening for the ſport; when he has once taken the bait, there is no fear of his getting away, for he is one of the leather-mouth'd fiſhes.

The tackle in fiſhing for *carp* muſt be very ſtrong, and it will be proper to bait the place before-hand where he is to be fiſhed for, with a coarſe paſte. The red worm is the beſt bait in March, the cade in June, and the graſs-hopper in July, Auguſt, and September.

Not only theſe baits, but a ſweet paſte may be uſed in angling for *carp*, with great ſucceſs. There are many kinds of theſe paſtes made up by the anglers, but the general baſis of them all is ſugar or honey with flour: theſe ſort of paſtes are not only proper to bait the hook with, but they may be thrown into the water ſome hours before to draw the fiſh together. It may be proper alſo to bring the *carp* to the place intended for the angling for them, by throwing in cow-dung and blood, or bran and blood mixed together, ſome chickens guts cut ſmall, and ſmall pellets of theſe ſweet paſtes: this will learn them to frequent the place, as a part beſt ſupplied with food, and the having fed with ſafety before, will make them the leſs ſuſpect the bait on the hook. A very much eſteemed paſte is made thus; take common wheat flour, and veal, or any other young meat, of each equal quantities, beat them together in a mortar, till the meat is thoroughly diſſolved, or broke to pieces, then add about half the quantity of honey; beat it well together again, and finally add more flour till the whole is of a proper conſiſtence. This has the advantage of a paſte, and an animal bait at once, and hangs well upon the hook, ſo that it ſeldom miſſes ſucceſs. *Mortim.* Huſbandry, T. 1. p. 294.

To make the *carp* in a pond grow large and fat, the growth of graſs under the water ſhould be by all means poſſible encouraged; to this purpoſe as the water decreaſes in the beginning of ſummer, the ſides of the pond left naked and dry, ſhould be well raked with an iron rake, to deſtroy all the weeds, and cut up the ſurface of the earth; hay-ſeed ſhould be ſown plentifully in theſe places, and more ground prepared in the ſame manner as the water falls more and more away. By this means there will be a fine and plentiful growth of young graſs along the ſides of the pond to the water's edge, and when the rains fill up the pond again this will be all buried under the water, and will make a feeding place for the fiſh, where they will come early in the morning, and will fatten greatly upon what they find there.

CARP-*ſtone*, *lapis carpionis*, a kind of gem ſaid to be found in the ſauces, by others in the back-bone of the *carp* fiſh, about the ſize of a pea, of a triangular figure, and white colour without, but yellow within. It is ſuppoſed to be of uſe againſt the ſtone, and ebullitions of the bile, being taken in powder, or held in the mouth. *Rul.* Lex. Alch. p. 279. voc. *lapis*. *Nicolſ.* Lapid. P. 3. c. 47.

CARP-*meals*, a coarſe kind of cloth, made in the Northern parts of England. Dict. Ruſt. T. 1. in voc.

CARPACK, in the Ægyptian dreſs, a ſort of red cap turned up with furr, which ſome make a cuſtom of wearing in common, though it is properly a part of the dreſs of the interpreters only, the ſame cap with muſlin tied round it being more properly the common dreſs. *Pocock*'s Ægypt, p. 191.

CARPASIUM *linum*. See LINUM *Carpaſium*.

CARPASUM, or CARPASIUM, in the materia medica of the antients, the name of a poiſonous gum, exſudating from a tree, ſo like myrrh in appearance that many periſhed by the error of uſing it inſtead of myrrh, or mixed among it. We are, at this time, wholly ignorant of what it was, but that it was a gum exſudating from a tree is plain from the account of Dioſcorides, who calls it *opocarpaſum*, as we do the flowing balm of Gilead, *opobalſamum*. The wood of the tree which produced it, he calls *xylocarpaſum*, in the ſame manner as the other wood is called *xylobalſamum*. This wood was little leſs poiſonous than the *carpaſum*, or gum itſelf.

Galen tells us that the *carpaſum* was like myrrh of the very pureſt and fineſt kind, and that thoſe people who were moſt curious of all to have fine myrrh, often met with the *carpaſum* among it, and gave death, inſtead of relief to the perſons they adminiſtred it to. We find by the words of Galen in this place, that this gum was not only like myrrh, but was alſo brought from the ſame places, and was often mixed with

it The fineſt myrrh uſually had moſt of this poiſon among it, and we may collect from the ſame account that it was a ſweet-ſcented gum, for otherwiſe no body could have miſtaken it for myrrh.

Uranius, in treating of the Abyſſines, a people of Arabia, from whoſe country the antients had their fineſt myrrh, mentions a poiſonous drug, which he calls *cerpathos* or *carpathus*; this is a ſmall variation of the name, one of the moſt common dialects of the Greek language changing the σ, s, into θ, th; and in this very word, though given in another meaning, we find an inſtance of it; for the city *Carpaſus* or *Carpaſia*, in the iſland of Cyprus is, according to Stephens, called *Carpathus* by Xenagoras.

The word *carpaſus* among the Greeks ſignifies alſo a ſort of linnen made of manufactured flax, and the Latin carbaſus uſed as the name of a ſail, is, by the beſt critics, ſuppoſed to be a word ſtretched too far, the original meaning being no more than that of the Greek *carpaſus*, linnen.

CARPENTER, (*Cycl.*) an artificer whoſe buſineſs is to cut, faſhion, and join timber, and other wood for the purpoſes of building.

The word is formed from the French *charpentier*, which ſignifies the ſame, formed of *charpente*, which denotes timber; or rather from the Latin *carpentarius*, a maker of *carpenta*. Vid. *Savar.* Dict. Comm. T. 1. p. 684, ſeq. voc. *charpente* and *charpentier*.

Some will alſo have *carpentarius* to have been uſed for him who drove a *carpentum*, or carriage [a]; anſwering to a coachman among us: but Henninius denies this acceptation of the word [b]. — [a *Berg.* de Viis Milit l. 4. Sect. 10. §. 8. b *Hennin.* Not ad eund. ibid. *Pitiſc.* Lex. Ant. T. 1. p. 367.] See CARPENTUM.

Carpenters were antiently denominated by the French, *carpenters* of the great hatchet, *de la grand coignée*, by way of diſtinction from joiners, who were called *carpenters* of the little hatchet, *de la petite coignée*. *Savar.* Dict. Comm. Supp. p. 136.

Ship-CARPENTER is he employed in the docks, in the conſtruction and repairing of veſſels. *Aubin.* Dict. Mar. p. 194.

CARPENTER *of a ſhip* is an officer at ſea, whoſe buſineſs is to have things in readineſs for keeping the veſſel in repair; and to attend the ſtopping leaks, fiſhing maſts or yards, alſo caulking, careening, breaming, and the like.

He is to watch the timber of the veſſel that it do not rot; conſult frequently with other officers on the ſtate of the maſts, yards; and in time of battle he is to have plugs, tampions, and planks ready for repairing breaches made by the enemies cannon. *Aubin.* Dict. Mar. p. 194.

The *carpenter* has a mate under him, and a crew or gang to command on neceſſary occaſions.

CARPENTUM, in antiquity, a denomination common to divers ſorts of vehicles, anſwering to coaches as well as waggons, or even carts among us. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 367, ſeq.

The *carpentum* was originally a kind of carr, or vehicle wherein the Roman ladies were carried; though in after-times it was alſo uſed in war.

Some derive the word a *carro*; others from *Carmenta*, mother of Evander, by a converſion of the m into p, *carpentum* for *carmentum*. Thus Ovid,

Nam prius Auſonias matres Carpenta vehebant
Hæc quoque ab Evandri dicta parente reor.
Ovid. Faſt. l. 1. *Calv.* Lex. Jur. p. 150.

CARPERA, in ichthyology, a name given by Cuba, and ſome other writers on fiſhes, to the carp. See the article CYPRINUS.

CARPERITARIA, in botany, a name uſed by ſome authors for the barbarea or winter-creſs, a wild plant common in hedges in ſpring. *Chabræus*, p. 278.

CARPESIA, in the materia medica of the antients, a name given to a kind of ſpice, or aromatic drug, often mentioned by Ægineta and others, and made an ingredient in cordial and ſtomachic medicines. This was a vegetable ſubſtance, being the top ſhoots of young twigs of an odoriferous ſhrub, growing in Pamphylia, and ſmelling very like the fineſt cinnamon.

Galen, who mentions this drug very frequently, makes two kinds of it different in goodneſs: the one he calls *Laerticum*, and the other *Ponticum*, but he ſays that they both were gathered on the mountains of Pamphylia. Some of the copies of Galen have the word πικρον bitter, inſtead of *Ponticum*; but as we learn by Stephens's accounts that the Laerticum was derived from Laertes, the name of a mountain in Pamphylia, where the drug was gathered, it is moſt probable that the other name alſo was derived from the name of ſome other place where it was gathered; and it does not ſeem from any accounts given us of either kind of *carpeſium*, that the epithet bitter could by any means be applied to them. *Galen*, de Med. Simp. l. 7.

Julius Scaliger, in his exercitations againſt Cardan, is of opinion that this latter kind had the name Pontic, becauſe of its being brought from Pontus, but he forgets that Galen ſays expreſly that both were gathered on the mountains of Pamphylia. It is evident that the ſecond, as well as the firſt name is a derivative of the name of ſome mountain of that country, and it may be a falſe ſpelling for *Adricon* or *Suedricon*, either of which give us the known names of mountains there. The likeneſs in ſound of the words *carpaſium* and *carpeſia* have given occaſion to ſome to ſuppoſe them the ſame thing; but they muſt have read very little of the antients who fall into this error. The *carpaſium* was a gum ſo nearly reſembling the fineſt myrrh, that it was often miſtaken for it: it came from the country of the Abyſſines, and was often mixed with the myrrh, and was ſo terrible a poiſon that many lives were loſt by the taking it among, or inſtead of, myrrh. This Galen aſſures us. That the *carpeſium* was not this ſubſtance, is very evident, ſince it was neither a gum nor a poiſon, but a ſafe and cordial internal medicine, and the young ſhoots of a tree, or ſhrub: but what it really was is not ſo clear. Actuarius is of opinion that the *carpeſia* and the cubebs were the ſame thing; but this is evidently erroneous: they are nearer the mark who ſuppoſe it to have been the young ſhoots of the tree whoſe fruit was the cubebs; but there are great reaſons even againſt this. *Scaliger*, Exercit.

As the antients uſed both this drug and cubebs, it is certain that had they both been the produce of the ſame tree, they muſt have known it; and this it is plain they did not know, for they have no where named any ſuch thing, but, on the contrary they have expreſly ſaid, that the *carpeſia* was the ſhoots of a tall tree, which produced no fruit. Aviſenna gives alſo this account, and adds, that it grew, in his time, on mount Lebanon, and that the part gathered for uſe was certain twigs, very long, cylindric, and but little thicker than a needle, which had a very fragrant ſmell.

CARPESIUM, in the materia medica, a name given by ſome authors to cubebs. *Ger.* Emac. Ind. 2. See CARPESIA

CARPET (*Cycl.*) — The chief furniture of the Turkiſh houſes are *carpets*, or mats of Grand Cairo, neatly wrought with ſtraw, ſpread on the ground. Vid. Phil. Tranſ. N° 155. p. 444, ſeq.

CARPET-*knights*, a denomination given to gown-men and others of peaceable profeſſions, who, on account of their birth, office, or merits to the public, or the like, are, by the prince, raiſed to the dignity of knighthood.

They take the appellation *carpet*, by reaſon they uſually receive their honours from the king's hands in the court, kneeling on a *carpet*.

By which they are diſtinguiſhed from knights created in the camp, or field of battle, on account of their military proweſs.

Carpet-knights poſſeſs a medium between thoſe called *truck*, or *dunghill-knights*, who only purchaſe, or merit the honour by their wealth; and *knights-batchelors*, who are created for their ſervices in the wars. Vid. *Markh.* Book of Hon. Dec. 2. Ep. 8.

CARPINUS, the *hornbeam*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the catkin kind, being compoſed of a number of ſmall leaves, affixed to an axis in a ſquammoſe manner, under each of which there ſtand a great number of ſtamina: theſe are the barren male flowers, the embryo fruits appearing in other parts of the tree, between the leaves of larger and more beautiful ſpikes; which finally become a fruit of an umbilicated kind, compreſſed and ſtriated, and containing a roundiſh nut or kernel, pointed at one end.

There is only one known ſpecies of the *carpinus*, which is the common hornbeam. *Tourn.* Inſt. p. 582.

CARPIONE, in ichthyology, a name given by Salvian to the fiſh called by other writers *carpio lacus Benaci*. It is a ſpecies of the ſalmon-kind, and is the ſame with that fiſh called in ſome parts of England the *gilt charre*. Artedi diſtinguiſhes it from the other ſpecies of the ſalmons by calling it the ſmall ſalmon with five rows of teeth in the palate. See the article SALMO.

CARPOS, Καρπος, *fruit*. The word in this ſenſe is too well known and underſtood to admit of any explanation; but it is neceſſary to obſerve that the old Greek writers did not keep ſtrictly to the ſenſe of the word, limiting it, as we do, to that part of a plant or tree which ſucceeds the flower, and in which the ſeeds are contained; but they often uſed it in a larger ſenſe, and expreſſed by it the eſculent part of a plant, though it did not ſerve to this purpoſe. Thus the roots of the bulbus edulis, and many other plants of this kind, are called, even by Theophraſtus, *carpi*; and, in ſome of the leſs known plants, great errors have ariſen from this. The Arabians expreſſed by the word *hab*, what the Greeks did by *carpos*, and uſed it in the ſame unlimited ſenſe, and this having not been obſerved, we have many commentators arguing for certain ſubſtances not being roots, becauſe called *hab* and *carpi*; and yet theſe certainly are ſuch, only called fruits becauſe they ſupply the uſe of fruits to the eater. The roots of the traſi or avellanda are called fruits by many of the old authrs, and Theophraſtus expreſly calls the tuberous roots of the arachidna its fruit.

CARPUM *flectentium interior*, in anatomy, a name given by Spigelius to the muſcle called by Albinus *ulnaris internus*, and by Winſlow, *internus cubitalis*.

CARPUS. See the article WRIST.

CARR, *carrum*, in the middle age, denoted any ſort of vehicle, or carriage, either by land or ſea. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *caracta*.

CARRAC, or CARRACA, a name given by the Portugueſe to the

the veſſels they ſend to Braſil and the Eaſt-Indies; being very large, round built, and fitted for fight, as well as burthen. Their capacity lies in their depth, which is very extraordinary. They are narrower above than underneath, and have ſometimes ſeven or eight floors; they carry about 2000 ton, and are capable of lodging 2000 men; but of late they are but little uſed. Formerly they were alſo in uſe among the knights of Rhodes, as well as among the Genoeſe, and other Italians. Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 171. *Aquin.* Lex. Milit. T. 1. p. 171. Vocab. Cruſc. T. 2. p. 287.

It is a cuſtom among the Portugueſe, when the *carracs* return from India, not to bring any boat or ſloop for the ſervice of the ſhip, beyond the iſland of St. Helena; at which place they ſink them on purpoſe, in order to take from the crew all hopes or poſſibility of ſaving themſelves, in caſe the veſſel be thrown away. *Aubin.* Dict. Mar. p. 171.

CARRAGO, in antiquity, a kind of fortification, or defence about a camp, compoſed of carts, waggons, and the like vehicles, chained or faſtened together; chiefly uſed by the barbarous nations. Vid. *Veget.* l. 3. c. 10. *Stewech.* ad eund. ibid. *Pitiſc.* Lex. Ant. T. 1. p. 868.

CARRARA *marble*, among our artificers, the name of a ſpecies of white marble, which was called marmor Lunenſe, and Liguſtrium by the antients: it is diſtinguiſhed from the Parian, now called the ſtatuary marble, by being harder and leſs bright. See the article LUNENSE *marmor*.

CARRAT *(Cycl.)* — The *carrat* by which jewellers eſtimate the weight of diamonds and pearls, is about $\frac{1}{130}$ of a troy ounce. *Jeffreys* on diamonds.

Hence the *carrat* is about $3\frac{1}{4}$ grains troy.

Carrats are divided into halves, quarters, or grains; and farther, into eighths, ſixteenths, and thirty-two parts. Id. ibid.

CARRIAGE *(Cycl.)* ſignifies the removal of goods, or other things, from one place to another, eſpecially with a carr or cart. *Savar.* Dict. Comm. T. 1. p. 684. voc. *chariage.*

CARRIAGE alſo denotes the money or hire paid to a carrier, or other bearer of goods.

The *carriage* of letters is called *poſtage*. See POST, *Cycl.*

CARRIAGE *by ſea*, is denominated *freight*. See the article FRAIGHT, *Cycl.*

Bill of CARRIAGE, *lettre de voiture*, among the French, denotes a paper given to a carrier, expreſſing the quantity and quality of the goods and parcels committed to him, partly to entitle him to receive his hire from the perſon to whom they are directed, and partly that this letter may ſhew whether all be brought, and whether in due time, and in the condition required. *Savar.* Dict. Comm. T. 2. p. 1935. voc. *voiture.*

CARRIAGE *of a cannon*, conſiſts of the cheeks, the tranſums, the bolts, the plates, the train, the bands, the keys and locks, the bridge, the bed, the hooks, the trunion holes, and the cap ſquare. *Guill.* Gent. Dict. P. 2. in voc.

The *carriages* for mortars are low, with four wheels, each of one piece, exactly like the ſea *carriages*. Milit. Dict. in voc.

The parts of a ſea *carriage* are the two cheeks, the axle-trees, bolts, cap-ſquares, hooks, forelocks, trucks, linſpins. *Manw.* Sea Dict. p. 21.

Block-CARRIAGE is a cart made on purpoſe for carrying of mortars, and their beds, from one place to another.

Truck-CARRIAGES are two ſhort planks of wood, ſupported on two axle-trees, having four trucks, or wheels, of ſolid wood, about a foot and a half, or two foot diameter, for carrying mortars or guns upon battery, when their own *carriages* cannot go; and are drawn by men. *Guill.* Gent. Dict. P. 2. in voc. *carriage.*

CARRIAGE is alſo uſed to denote a ſpace of ground, over which the inhabitants of New France, and other colonies of North America, who trade with the ſavages uſually by means of canoes, are obliged to carry their boats and proviſions, &c. on their ſhoulders. This they are forced to when they come to places in lakes or rivers, covered with willows, or otherwiſe rendered impracticable to paſs by water, till they meet with ſome new place convenient for reimbarking. *Savar.* Dict. Comm. T. 2. p. 1188. voc. *portage.*

CARRIAGES, *(Cycl.)* in agriculture, are of two kinds, the main *carriage*, whoſe mouth is of breadth ſufficient to receive the whole ſtream intended; and leſſer *carriage* ariſing from ſpace to ſpace, out of the former. Dict. Ruſt. T. 1. in voc.

CARRIER, he who undertakes to convey perſons, goods, papers, money, or the like, from place to place, on condition of a certain price, either fixed by authority or cuſtom, or left to private agreement. *Savar.* Dict. Comm. T. 2. p. 1938. voc. *voiturier.*

In Holland *carriers* are called *routiers*, becauſe they always keep the ſame road, or rout; ſetting out, and arriving, at fixed hours. Id. in Supp. p. 1180. voc. *routier.*

CARRIER *pidgeon*, a ſort of pidgeon uſed, when properly trained up, to be ſent with letters from one place to another.

It is larger in ſize than moſt of the other kinds. Its length from the tip of the beak to the end of the tail being often fifteen inches; but its greateſt weight not twenty ounces. Its fleſh is firm, and its feathers cloſe; it is long-necked, and of a better ſhape than moſt other pidgeons. The upper chap of the bill is half covered from the head with a white or blackiſh tuberous furfuraceous fleſh, which projects or hangs over both its ſides, on the upper part neareſt the head, and ends in a point about the middle of the bill. This is called the *wattle*. The eyes are ſurrounded with the ſame ſort of corrugated fleſh for the breadth of a ſhilling, and their iris is red. Their beak is long, ſtrait, and thick; their wattle generally broad acroſs the beak, ſhort from the head toward the point, and tilting forward from the head; and the head narrow, long, and flat; the neck very long and thin, and the breaſt broad; the feather is chiefly black or dun, though there are blues, whites, and pieds.

It has its name from its remarkable ſagacity in carrying a letter from one place to another: though you carry them hoodwinked, twenty or thirty, nay ſixty or an hundred miles, they will find their way, in a very little time, to the place where they were bred. They are trained to this ſervice in Turky and Perſia, and are carried firſt, while young, ſhort flights of half a mile, afterwards more, till at length they will return from the fartheſt part of the kingdom. Every baſhaw has a baſket of theſe pidgeons, bred at the ſeraglio, which, upon any emergent occaſions, as an inſurrection, or the like, he diſpatches with letters, braced under their wings to the ſeraglio, which proves a more ſpeedy method, as well as a ſafer, than any other, only ſending out more than one, for fear of accidents. Lightow aſſures us, that one of theſe birds will carry a letter from Babylon to Aleppo, which is thirty days journey, in forty eight hours. This is alſo a very antient practice; Hirtius and Brutus, at the ſiege of Modena, held a correſpondence with one another by means of pidgeons. And Ovid tells us, that Tauroſthenes, by a pidgeon ſtained with purple, gave notice to his father of his victory at the Olympic games, ſending it to him at Ægina. *Moor*'s Columbarium, p. 28.

CARROBALISTA, in the antient military art, denotes a ſpecies of *baliſta* mounted on wheels, and drawn by horſes; by which it differed from the *manubaliſta*, which being leſſer and lighter was thrown by the hand. *Veget.* l. 2. c. 25. *Aquin.* Lex. Milit. T. 1. p. 172. See BALISTA, *Cycl.* and *Suppl.*

CARROCIUM, or CARROCERUM, in middle age writers, denotes the banner, or chief flag of an army, which was mounted on a kind of chariot, and drawn by oxen. *Aquin.* Lex. Milit. T. 1. p. 172. See BANNER.

CARROT. See the article DAUCUS.

CARUCCA, in antiquity, a ſplendid kind of carr, or chariot, mounted on four wheels, richly decorated with gold, ſilver, ivory, &c. in which the emperors, ſenators, and people of condition, were carried. Vid. *Pitiſc.* Lex. Ant. T. 1. p. 369. *Aquin.* Lex. Milit. T. 1. p. 173.

The word comes from the Latin *carrus*, or Britiſh *carr*, which is ſtill the Iriſh name for any wheel carriage. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *caruca.*

CARRUCA or CARUCA is alſo uſed in middle age writers for a plough. Vid. *Du Cange*, Gloſſ. Lat. T. 1. p. 858. *Kenn.* Gloſſ ad Paroch. Antiq. in voc. *caruca.* See PLOUGH.

CARRUCA was alſo ſometimes uſed for *carrucata*. *Kenn.* Paroch. Antiq. p. 82. ejuſd. Gloſſ. ad eund. See CARRUCATE.

CARRUCAGE, *carucagium*, a kind of tax antiently impoſed on every plough, for the public ſervice. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *carucata.* See CARUCATE, *Suppl.* and HIDAGE, *Cycl.*

CARRUCAGE, CARUCAGE, or CARUAGE, in huſbandry, denotes the ploughing of ground, either ordinary, as for grain, hemp, and flax; or extraordinary, as for woad, dyers weed, rape, and the like. Dict. Ruſt. T. 1. in voc.

CARRUCATE, *carucata*, in our antient laws and hiſtory, denotes a plough-land, or as much arable ground as can be tilled in one year, with one plough. See PLOUGH.

In doomſday inquiſition the arable land is eſtimated in *carrucates*, the paſture in hides, and meadow in acres. See HIDE, and ACRE, *Cycl* and *Suppl.*

Skene makes the *carrucata* the ſame with *hilda*, or *hida terræ*; Littleton the ſame with *ſoc*. Vid. *Skeu.* de Verb. Signif. p. 36. *Cow.* Interpr. in. voc. *carve.* Terms de Ley. p. 44. See SOC. *Cycl.*

The *carrucata terræ*, in the reign of Richard I. was eſtimated at 60 acres [a]; though in another charter of the ſame reign, the *carrucate* is rated at an hundred acres. Fleta, who lived under Edward I. allows nine ſcore acres to a *carrucate*, viz. ſixty for winter tillage, ſixty for ſpring tillage, and ſixty for fallowing. He adds, that if the land lay in two fields, eight ſcore of it made a *carrucate*, one half of it for tillage, the other for fallow [b]. — [a *Dugd.* Monaſt. T. 2. p. 107. b *Flet.* l. 2. c. 72. § 4.]

The meaſure of a *carrucate* appears to have differed in reſpect of place, as well as time. Thus, in the 23d of Edward III. a *carrucate* of land in Burceſter contained 112 acres, and in Middleton 150 acres. *Kenn.* Paroch Antiq. p 471. Ejuſd. Gloſſ. ad eund. *Du Cange*, Gloſſ. Lat. T. 1. p. 859.

By a ſtatute under William III. for charging perſons to the repair of the highways, a plough-land is rated at 50 pounds *per annum*, and may contain houſes, mills, wood, paſture, &c. Stat. 7 and 8. Will. III.

CARRYING, in falconry, ſignifies a hawk's flying away with the quarry.

Carrying is one of the ill qualities of a hawk, which ſhe acquires either by a diſlike of the falconer, or not being ſufficiently broke to the lure. *Cox*, Gent. Recr. P. 2. p. 15. See LURE.

CARRYING, among riding-maſters. A horſe is ſaid to *carry* low, when, having naturally an ill-ſhaped neck, he lowers his head too much. All horſes that arm themſelves *carry* low, but a horſe may *carry* low without arming. A French branch, or a gigot is preſcribed as a remedy againſt *carrying* low.

A horſe is ſaid to *carry* well, when his neck is raiſed, or arched, and he holds his head high and firm, without conſtraint. *Guill.* Gent. Dict. P. 1. in voc.

CARRYING, among huntſmen. When a hare runs on rotten ground (or even ſometimes in a froſt) and it ſticks to her feet, they ſay ſhe *carries*. *Cox*, Gent. Recr. P. 1. p. 17.

CARRYING *wind*, a term uſed by our dealers in horſes to expreſs ſuch a one as frequently toſſes his noſe as high as his ears, and does not carry handſomely. This is called *carrying wind*; and the difference between *carrying* in the wind, and beating upon the hand, is this: that the horſe who beats upon the hand, ſhakes the bridle and reſiſts it, while he ſhakes his head; but the horſe that carries in the wind puts up his head without ſhaking, and ſometimes beats upon the hand. The oppoſite to *carrying* in the wind, is arming and carrying low; and even between theſe two there is a difference in wind.

CART, a vehicle mounted on two wheels, drawn by one or more horſes, uſed for the carriage of various ſorts of heavy things.

The word ſeems formed from the French *charrette*, which ſignifies the ſame; or rather the Latin *carreta*, a diminutive of *carrus*. Trev. Dict. Univ. T. 1. p 1677. voc. *charrette*. *Savar.* Dict. Comm T. 1. p. 688. See CARR.

A *cart* differs from a wain in that the former is drawn by horſes, and has two ſides called *trills*; whereas a wain is drawn by oxen, and has a wain cope.

The parts and apparatus belonging to a *cart* are, the *trill hooks*, and *back band*, which hold the ſides of the *cart* up to the horſe; the *belly band*, paſſing from one ſide, under the horſe's belly, to the other; the *cart raers*, being the two rails on the top of the *cart* [a]; *cart ſtaves*, thoſe that hold the *cart* and the raers together; *cart* body, all that part where the loading is laid for carriage, called, in Suſſex, the *buck*, q. d. belly of the *cart* [b]; *cart ladders*, the crooked pieces ſet over the wheels to keep hay and ſtraw loaden off them; *cart ſaddle*, the leathern or wooden pannel laid on the fillar horſe; the *ſloats*, the under pieces which keep the bottom of the *cart* together; a *trigen*, a pole to ſtop the wheel of a *cart*, when it goes too faſt down a ſteep place [c]. — [[a] Dict. Ruſt. T. 1. in voc. [b] *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. [c] Dict. Ruſt. T. 1. in voc. *cart*.]

Criminals are drawn to execution in a *cart*. Bawds, and other malefactors, are whipped at the *cart's* tail. By the laws of the city, carr-men are forbid to ride, either on their *carts*, or horſes. They are to lead, or drive them on foot, through the ſtreets, on the forfeiture of forty ſhillings. Stat. 1. Geo. I. c. 57. Sect. 8. Abr. T. 5. p. 86. 8vo.

Scripture makes mention of a ſort of *carts*, or drags, uſed by the Jews, to do the office of threſhing. They were ſupported on low thick wheels, bound with iron, which were rolled up and down on the ſheaves, to break them, and force out the corn [a]. Something of the like kind alſo obtained among the Romans, under the denomination of *plauſtra*, of which Virgil makes mention [b].

Tardaque Eleuſinæ matris volventia plauſtra,
Tribulaque, traheæque ——

On which Servius obſerves, that *trahea* denotes a *cart* without wheels, and *tribula* a ſort of *cart* armed on all ſides with teeth, uſed chiefly in Africa, for threſhing corn. The Septuagint and St. Jerome repreſent theſe *carts* as furniſhed with ſaws, in regard their ſurface was beſet with teeth. David, having taken Rabbah, the capital of the Ammonites, ordered all the inhabitants to be cruſhed to pieces under ſuch *carts*, moving on wheels ſet with iron teeth; and the king of Damaſcus is ſaid to have treated the Iſraelites of the land of Gilead, in the ſame manner [c]. — [[a] *Hieron.* Comm. ad Eſai. c. 25. *Calm.* Dict. Bibl. T. 1. p. 366. [b] Georg. I. [c] 2 Sam. c. 12. v. 31. Amos. c. 1. v. 3. *Calm* Dict. Bibl. T. 1. p. 366.]

CARTEL *(Cycl.)* originally ſignifies a placart, or manifeſto in writing, poſted in public places to notify its contents.

The word comes from the Italian *cartello*, or Latin *cartellus*, which ſignifies the ſame; formed by diminution of *charta*, paper. *Du Cange*, Gloſſ. Lat. T. 1. p. 861. voc. *cartellus*. Cruſc. Vocab. T. 2. p. 296. voc. *cartello*.

The uſe of *cartels*, or challenges to fight, is very antient, there being divers inſtances of them in Homer, Virgil, and other Greek and Latin poets [a]. Rymer gives the *cartel* which Edward III. ſent to Philip de Valois, challenging him either to fight him, body to body, or an hundred men againſt an hundred, or army to army, within ten days, before the gates of Tournay [b]. — [[a] Trev. Dict. Univ. T. 1. p. 1476. [b] *Rym.* Fœd. T. 5. Bibl. Choiſ. T. 23. p. 271, ſeq.]

CARTEL alſo denotes a treaty or agreement between two princes or generals, relating to the exchange of priſoners each have taken in war. *Fæſch.* Ing. Lex. p. 154.

There are alſo *cartels* ſettled between princes in time of war, for what relates to commerce, that it may be carried on without interruption, notwithſtanding other hoſtilities.

CARTEL alſo denotes a meaſure of capacity for corn, uſed in divers parts of France, being of different values from 30 to 50 pounds. *Sav.* Dict. Comm. Supp. p. 122, ſeq.

CARTHAMUS, *Baſtard Saffron*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the floſculous kind, and is compos'd of numerous ſmall floſcules, divided into many ſegments at their ends, and ſtanding on the embryo ſeeds, contain'd in a ſcaly and foliaceous cup. The embryos finally ripen into ſeeds which are not winged with down. The ſpecies of *carthamus* enumerated by Mr. Tournefort, are theſe, 1. The *carthamus* of the ſhops, with ſaffron-coloured flowers; and, 2. The *carthamus* of the ſhops, with white flowers. *Tourn.* Inſt. p. 457

Carthamus ſeeds are ſaid to be emetic and cathartic, but at preſent they are very little uſed. Its flowers are ſometimes uſed in medicine, but their chief uſe is in dying.

CARTHUSIAN *(Cycl.)* — The word is formed from *Carthuſianus* or *Carthuſienſis*, a denomination given them in Latin, from a village in Dauphiny called *Chartreuſe*, in Latin *Cartuſium*, *Caturcium*, as ſome ſay, where the firſt monaſtry of this kind was erected. Hence the French ſtill call the religious of this order *Chartrets*, and their convents *Chartreuſes*. An appellation which appears alſo to have formerly obtained in England; whence the name of that celebrated hoſpital, or rather college, in London, the *Charter-houſe*, by corruption from *Chartreuſe*. Dict. Trev. in voc.

The *Carthuſian* habit is all white within, their ſcapular being joined in the ſides by two pieces of the ſame ſtuff. Their prior and procurator, who may go abroad upon the neceſſary affairs of the houſe, appear in a black cloak down to the ground, and a black hood over the white one; the hood not round, but tapering to a point. *Stev.* Suppl. to Dugd. Monaſt. T. 1. p. 239.

CARTHUSIAN *powder*, *Poudre des Chartreux*. See KERMES *mineral*.

CARTILAGE *(Cycl.)* — A *cartilage* is a whitiſh or pearl coloured ſubſtance, which covers the extremities of bones joined together by moveable articulations, increaſes the volume of ſome of them after the manner of epiphyſes, unites others very cloſely together, and has no immediate adheſion or connection with others. The ſubſtance of *cartilages* is more tender, and leſs brittle, than that of bones; but with age they ſometimes grow ſo hard as to become perfectly bony. The *cartilages* which belong to the bones differ from each other in ſize, figure, ſituation, and uſe, and may all be ranked under two general heads: thoſe which are cloſely united to bones, and thoſe which are not immediately connected with them. The *cartilages* united to bones are of four kinds; ſome cover both ſides of the moveable articulations, and are very ſmooth and ſlippery; ſome unite the bones to each other, either ſo firmly as to allow no ſenſible motion, as in the ſymphyſis of the oſſa pubis, and ſtill more in that by which the epiphyſes are joined to the bones; or in ſuch manner as to allow of different motions, as in thoſe by which the bodies of the vertebræ are connected. The firſt eaſily grow hard, but the others appear in ſome degree viſcid, and retain their flexibility.

Some increaſe the ſize and extent of bones, as the cartilaginous portions of almoſt all the true ribs: theſe are articulated with bones; others with *cartilages*, as the ſeptum narium; others ſerve only for borders, as thoſe of the baſis of the ſcapula, and of the criſta of the os ilium, the ſupercilia of cavities, and thoſe of the ſpinal and tranſverſe proceſſes of the vertebræ. Some, in fine, have a ſingular form, as thoſe of the ears, and moſt of thoſe of the noſe; in which laſt, their elaſticity appears moſt ſenſibly. The *cartilages* belonging to the ſecond general claſs, or thoſe not immediately joined to bones, are for the moſt part placed in the moveable joints; and theſe may likewiſe be ſubdivided into ſeveral kinds. Some lie altogether looſe, being neither joined to the articulated bones, nor to the *cartilages* which cover them, but ſlide freely between them in different directions; as thoſe which are placed in the articulation of the tibia with the os femoris; in that of the lower jaw with the oſſa temporum; and in that of the clavicle with the ſternum. Thoſe between the clavicle and acromium, and between the firſt and ſecond vertebræ of the neck, are of the ſame kind. Some are partly joined to other *cartilages*, and partly ſlide between the cartilaginous extremities of the articulated bones, as the *cartilage* at the lower extremity of the radius. There may alſo be reckoned among the *cartilages*, tho' not ſo properly, ſeveral of the ſmall ſeſamoide bones, which remain long cartilaginous; and alſo the cartilaginous portions of tendons, which do the ſame office with the ſeſamoide bones. *Winſlow's* Anat. p. 112.

It is commonly held, that all bones in their original were only *cartilages*, and arrived at the hardneſs of bones by a gradual induration. *Caſt.* Lex. Med. p. 139. See BONE.

Hence it is, that in ſome caſes the *cartilages* themſelves have been

been found offified; of which a famous inſtance happened ſome years ago at Milan, where a malefactor was judged innocent, and ſaved by a miracle, becauſe his aſpera arteria being turned bony, he was not ſuffocated by the hangman's rope. *Chauv.* Lex. Phil. p. 92.

Articulating-CARTILAGES. See JOINT-*Cartilages*.

CARTILAGINOUS *Fiſhes*, thoſe, whoſe ſpine, or back-bone, is of the conſiſtence of a cartilage, being hollow withal, and containing medulla.

Cartilaginous fiſhes are of two kinds; flat, as the raia or ſkate; and long and round, as the aſellus or cod. Vide *Aldrov.* de piſc. l. 3. c. 31. *Caſt.* Lex. Med p. 139.

CARTILAGINOUS *leaf*, among botaniſts. See LEAF.

CARTOUCHE, or CARTOOZE, (*Cycl.*) in architecture, a member or ornament nearly akin to a modillion; from which it only differs in this, that the latter is uſed under the cornice in the eaves of a houſe, and the former in wainſcotting within doors. Some workmen call the *cartoozes* dentils. See DENTILE, *Cycl. Neve*, Build. Dict. in voc. *cartoozes*.

CARTOUCHES, in heraldry, a name given to a ſort of oval ſhields, much uſed by the popes and ſecular princes in Italy, and others, both clergy and laity, for the painting or engraving their arms on. Many ſuppoſe this form derogatory to the honour of the perſon; but tho' the ſquare ſhield, with the rounded and pointed bottom, is more in uſe with us, as alſo with the French and Germans, yet this is ſuppoſed more truly the figure of the Roman ſhield worn by the ſoldiery, and therefore more antient and honourable than either that or the indented ſhield of the Germans. *Niſbet*'s Heraldry, p. 12.

CARTRIDGE (*Cycl.*) — CARTRIDGE-*box*, a wooden or iron caſe, covered with leather, holding a dozen or more muſket *cartridges*, borne by the ſoldier on his belt, hanging a little above the right pocket-hole. *Guill.* Gent. Dict. P. 2, in voc.

CARVA, in botany, a name given by the Indians to one of the kinds of cinnamon tree. This is of all others the moſt eſteemed among them, and ſerves for the moſt purpoſes. They extract camphor and a liquid oil from the roots; they extract oil of cinnamon from the bark, and from the leaves they make another oil, which is called oil of cloves, and ſold as ſuch. The fruits yield them an oil reſembling that of juniper, and afterwards they extract from them a thick, fat ſubſtance, like wax, ſerving them for the making unguents and plaiſters, and alſo for the making their candles. Hort. Malab.

CARVAGE, *carvagium*, the ſame with *carrucage*. *Kenn.* Gloſſ. ad Paroch. Antiq. in voc. *Carucata*. *Cow.* Interpr. voc. *carve*. See CARRUCAGE.

Henry III is ſaid to have taken *carvage*, that is, two marks of ſilver of every knight's fee, towards the marriage of his ſiſter Iſabella to the emperor. *Stow*, Ann. p. 271. *Cow.* Interp. in voc. *carve*.

Carvage could only be impoſed on the tenants in capite. *Tyrr.* Hiſt. of Engl. T. 4. p. 102.

CARVAGE alſo denotes a privilege whereby a man is exempted from the ſervice of *carrucage*.

CARUCATARIUS, in antient law books, he that held land in *ſoccage*, or by plough tenure. *Kenn.* Gloſſ. ad Paroc. Antiq. in voc. See SOCCAGE, *Cycl.*

CARVER, a cutter of figures or other devices in wood. See CARVING.

Carvers anſwer to what the Romans called *ſculptores*, who were different from *cælatores*, or engravers, as theſe laſt wrought in metal. *Pancir.* de Corp. Artif. §. 10. *Pitiſc.* Lex. Ant. T. 2. p. 712. voc. *ſculptores*.

CARVER is alſo an officer of the table, whoſe buſineſs is to cut up the meat, and diſtribute it to the gueſts.

The word is formed from the Latin *carptor*, which ſignifies the ſame. The Romans alſo called him *carpus*, ſometimes *ſciſſor*, *ſcindendi magiſter*, and *ſtructor*. *Pitiſc.* Lex. Ant. T. 1. p. 368. In the great families at Rome, the *carver* was an officer of ſome figure. There were maſters to teach them the art regularly, by means of figures of animals cut in wood. Vid. *Juven.* ſat. 11. v. 133. *Pitiſc.* Lex. Ant. T. 2. p. 867. voc. *ſtructores*. The Greeks alſo had their *carvers*, called Διατροι, *q. d.* deribitores, or diſtributors. In the primitive times, the maſter of the feaſt carved for all his gueſts. Thus in Homer, when Agamemnon's embaſſadors were entertained at Achilles's table, the hero himſelf carved the meat. Of latter times, the ſame office on ſolemn occaſions was executed by ſome of the chief men of Sparta[a]. Some derive the cuſtom of diſtributing to every gueſt his portion, from thoſe early ages when the Greeks firſt left off feeding on acorns, and learned the uſe of corn. The new diet was ſo great a delicacy, that to prevent the gueſts from quarrelling about it, it was found neceſſary to make a fair diſtribution[b]. — [[a] *Athen.* Deipnoſ. l. 1. c. 10. [b] *Pott.* Archæol. l. 4. c. 20.]

CARUI, *the carraway plant*, in botany, the name of a genus of plants of the umbelliferous kind; the characters of which are theſe: the flower is roſaceous, being compos'd of ſeveral heart-faſhioned petals, irregular in ſize, and diſpos'd in a circular form; the cup finally becomes a fruit, compos'd of two ſmall oblong ſeeds, ſtriated and gibboſe on one ſide, and flat and ſmooth on the other. To this it may be added, that the leaves are narrow, and ſtand in pairs on their ribs. The ſpecies of *carui* enumerated by Mr. Tournefort, are theſe; 1. The common *carui*, call'd by ſome meadow cummin; and, 2. The fine-leav'd *carui*, with tuberoſe roots. *Tourn.* Inſt. p. 306.

The ſeed of *carui* is one of the greater hot ſeeds; it is ſtomachic and carminative, and therefore good for the colic, a bad digeſtion, weakneſs of ſight, and dizzineſs of the head *James*, Med Dict. in voc. *carum*.

CARVING, (*Cycl.*) in a general ſenſe, the art or act of cutting or faſhioning a hard body by means of ſome ſharp inſtrument, eſpecially a chiſſel.

In which ſenſe, *carving* includes ſtatuary and engraving, as well as cutting in wood.

CARVING, in a more particular ſenſe, is the art of engraving or cutting figures in wood.

In this ſenſe, *carving*, according to Pliny, is prior both to ſtatuary and painting. *Plin.* Hiſt. Nat. l. 36. c. 5. *Pitiſc* Lex. Ant. T. 2. p. 713, voc. *ſculptura*.

To *carve* a figure or deſign, it muſt firſt be drawn, or paſted on the wood; which done, the reſt of the block not covered by the lines of the deſign, are to be cut away with little narrow-pointed knives. The wood fitteſt for this uſe is that which is hard, tough and cloſe, as beech, but eſpecially box. To prepare it for drawing the deſign on, they waſh it over with white lead, tempered in water, which better enables it either to bear ink or the crayon, or even to take the impreſſion by chalking. When the deſign is to be paſted on the wood, this whitening is omitted, and they content themſelves to ſee the wood well planed. Then wiping over the printed ſide of the figure with gum tragacanth diſſolved in water, they clap it ſmooth on the wood, and let it dry; which done, they wet it ſlightly over, and fret off the ſurface of the paper gently, till all the ſtrokes of the figure appear diſtinctly. This done, they fall to cutting, or *carving*, as above. *Salm.* Polygr. l. 2.

CARVIST, in falconry See FALCON.

CARYATES, Καρυάτες, in antiquity, a feſtival in honour of Diana, ſurnamed Caryatis, held at Caryum, a city of Laconia. The chief ceremony was a certain dance, ſaid to have been invented by Caſtor and Pollux, and perform'd by the virgins of the place.

During Xerxes's invaſion, the Laconians not daring to appear and celebrate the cuſtomary ſolemnity, to prevent incurring the Goddeſs's anger by ſuch an intermiſſion, the neighbouring ſwains are ſaid to have aſſembled and ſung paſtorals or *bucoliſmi*, which is ſaid to have been the origin of bucolic poetry. *Meurs.* Græc. Fer. *Caſtelan* de Feſt. Græc. *Pott.* Arch. Græc. l. 2. c. 20. See CARYATIDES, *Cycl.*

CARUNCULA (*Cycl.*) — Some have given the name *caruncula* to that pendant fleſhy part, called *uvula*, or *columella*. See UVULA, *Cycl.* and *Suppl.*

CARUNCULA is alſo applied to certain fleſhy morſels preternaturally contained in divers parts and humours of the body.

We ſometimes meet with capillary *caruncles* excreted with the urine. *Hippocr.* 4. Aph. 76. See TRICHIASIS.

Celſus alſo ſpeaks of certain *carunculæ* generated in the noſtrils. *Celſ.* de Medic. l. 6. c. 8.

To the head of *carunculæ* alſo belong thoſe fleſhy excreſcences called *polypus's*. *Caſt.* Lex. Med. p. 140. See POLYPUS, *Cycl.* and *Suppl.*

CARUS (*Cycl.*) — Galen deſcribes the *carus* as a privation of ſenſe and motion through the whole body, the reſpiration remaining entire, followed by a profound ſleep, the eyes always cloſed: but ſenſation not ſo abſolutely deſtroyed, but that the patient can feel a puncture with a pin, tho' he is not thereby awakened either to open his eyes or ſpeak. *Gal.* de Loc. Affect. l. 4. c. 2. Item Meth. Med. l. 13. c. 21. *Caſt.* Lex. Med. p. 138.

The *carus* is deſcribed by modern phyſicians, as a drowſy diſeaſe, ſlighter than an apoplexy, but ſeverer than a lethargy, and frequently degenerating into the former, occaſioned by an obſtruction of the courſe and diffuſion of the animal ſpirits from the medulla of the brain, towards the cortex thereof. *Willis*, de Anim. Brut. P. 2. c. 4.

CARYOCATACTES, in zoology, the name of a bird of the magpie kind, of a browniſh colour, all over beautifully variegated with white triangular ſpots, and very full of white feathers about the anus and origin of the tail. The tail and long feathers of the wings are black, but variegated in ſome places with white. It makes the ſame ſort of chattering noiſe with our magpie, and feeds on nuts and other fruits, and is common in the mountainous parts of Germany. *Ray*, Ornitholog. p. 90.

CARYOCOSTYNUM, in pharmacy, a kind of purging electuary, the two principal ingredients of which, that give the denomination to the whole, are cloves, and coſtus. It works briſkly, and fetches the humours from the moſt remote parts; whence, and by reaſon of its warmth, it is preſcribed againſt rheumatic, arthritic, hydropic, paralytic, &c. diſorders. *Quinc.* Pharm. P. 3. §. 6. p. 450.

CARYOPHYLLATA, *avens*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the roſaceous kind, conſiſting of ſeveral petals, diſpoſed in a circular form, and growing from the ſegments of a one-leav'd cup, of a hollowed ſhape. The piſtil ariſes from the center of this cup, and finally becomes a roundiſh fruit, conſiſting of a number of ſeeds, each ending in a ſort of tail.

The ſpecies of *caryophyllata*, enumerated by Mr. Tournefort, are theſe; 1. The common, or ſmall flowered *avens*. 2. The large flowered *avens*. 3. The ground ivy leav'd *avens*. 4. The Virginian *avens*, with ſmall white flowers, and ſcentleſs roots. 5. The marſh or water *avens*, with a purple bending flower. 6. The purple mountain *avens*, with flowers growing one upon another. 7. The purple mountain *avens*, with flowers growing in a triple order on one another. 8. The marſh mountain *avens*. 9. The double flowered marſh mountain *avens*. 10. The leſſer purple water *avens*, with bending flowers. 11. The mountain *avens*, with a drooping yellow flower. 12. The Pyrenean *avens*, with very large and rounded leaves, and drooping flowers. 13. The yellow flower'd alpine *avens*. 14. The purple flower'd alpine *avens*. 15. The white flower'd alpine *avens*. 16. The ſmaller alpine *avens*. 17. The ſmallage leav'd alpine *avens*. 18. The germander leav'd alpine *avens*. *Tourn.* Inſt. p. 294.

The *caryophyllatæ* differ from the ranunculus's in the cup of the flower, and from the cinquefoils in the ſhade of their ſeeds.

Avens is ſuppoſed to be good to dry up catarrhs, and diſſolve coagulated blood.

CARYOPHYLLEOUS, in botany, a term uſed by Mr. Tournefort to expreſs a ſort of flowers of the pink kind, or reſembling the pink flowers in ſhape. Theſe are compos'd of ſeveral petals diſpoſed in an orbicular form, and ariſe from the bottom of the cup as from a ſort of tube. See Tab. 1. of Botany, Claſs 1. and *Tourn.* Inſt. p. 329.

CARYOPHYLLON *Plinii*, the fruit of the caſſia caryophyllata, or cloveberry tree, whoſe bark is uſed in medicine. *C. Bauhin.* Pin. p. 119.

CARYOPHYLLUS, the *pink*. See PINK.

CARYOPHYLLUS *aromaticus*, the *clove ſpice*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the roſaceous kind, and is compos'd of ſeveral petals arranged in a circular form, and placed on a cup, which finally becomes an oval, umbilicated, unicapſular fruit, containing one oblong ſeed. There is no other known ſpecies of this tree, but that which produces the common clove. *Tourn.* Inſt. p. 661.

Clove ſpice are eſteemed ſtomachic, carminative, and alexipharmic. See CLOVE, *Cycl.* and *Suppl.*

CARYOPHYLLUS *marinus*, a name given by Dr. Woodward to a foſſil mycetites, or coralloide body, found in ſeveral parts of Germany.

CARYOTA, in botany, the name of a genus of plants deſcribed by the author of the Hortus Malabaricus, under the name of *ſchunda-pana*. The characters are theſe: it produces male and female flowers in the ſame ear; the male flowers have for their cup the whole compound ſpatha; the flower is divided into three parts, and the petals are very ſmall and ſharp-pointed; the germen of the piſtil is roundiſh, the ſtile is pointed, and the ſtigma ſimple; the fruit is a roundiſh berry, containing only one cell, in which are contained two large and oblong ſeeds, which are cylindric or rounded on one ſide, and flatted on the other. *Linnæi* Gen Pl. p. 515. Muſeum Cliffort. p. 12. Hort. Mal. T. 1. p. 11.

CARYSTIUM *linum*. See LINUM *caryſtium*.

CARYSTIUM *marmor*. See MARMOR.

CARYUS, in the materia medica, a name given by Dioſcorides, and ſome other of the antient Greeks, to the eryngium, or ſea holly, called by us eryngo. It was thus named from its having a ſmall head or cluſter of flowers like a walnut. See ERYNGIUM.

CASA, in antient and middle age writers, is uſed to denote a cottage or houſe.

CASA *Santa*, denotes the chapel of the holy virgin at Loretto.

The *Santa Caſa* is properly the houſe, or rather chamber, in which the bleſſed virgin is ſaid to have been born, where ſhe was betrothed to her ſpouſe Joſeph, where the angel ſaluted her, the Holy Ghoſt overſhadowed her, and, by conſequence, where the Son of God was conceived, or incarnated.

This building, they tell us, was brought in a wonderful manner from Nazareth to Dalmatia, and lodged there upon the top of a hill or rock called Terſatto, on the 12th of May 1291; but that being threatened by the infidels, it was removed again by the ſame angels, who all along guarded it; and they brought it over the ſea, and ſet it down on the firſt land they came at, which was near the city of Ancona; from whence, not pleaſed with the place, they removed it to the hill near Loretto, where it continues to this day; tho' it ſuffered a little diſlocation again, ſometime after its firſt remove; but it was not many paces, and nearer to the plain, beneath the hill, where it ſtill remains. Here, to prevent any new remove, they built a magnificent church over it, in the middle of which the ſacred depoſitum is ſecured, for the duration of the papacy; unleſs ſome invaſion of the Turks ſhould fall upon and diſmantle it.

Ferreri, an hundred years after the pretended tranſlation, ſpeaks of it as ſtill at Nazareth. Vid. Voyag. Hiſt. de l'Ital. Lett liii.

Be this as it will, devout people, 'tis ſaid, have often attempted to bring away a bit of ſtone of this building, as a precious relick; but no ſooner were they got a little diſtance off, than the ſtones diſappeared, and returned ſpontaneouſly to their former place. Bibl. Ital. T. 7. p. 62.

The *Santa Caſa*, or holy chamber, conſiſts of one room, 44 ſpans long, 18 broad, and 23 high: over the chimney, in a nich, ſtands the image called the great *Madona*, or lady, four foot high, made of cedar, and, as they ſay, wrought by ſaint Luke; who was a carver as well as a phyſician. The mantle or robe ſhe has on, is covered with innumerable jewels of ineſtimable value. She has a crown given her by Lewis XIII. of France, and a little crown for her ſon. Vid. Atlas Marit. p. 74, ſeq.

CASCABEL, the knob or button of metal behind the breech of a cannon, as a ſort of handle whereby to elevate and direct the piece. See CANNON.

The diameter of the *caſcabel* is the diameter of the bore of the piece; the neck of the *caſcabel* is the part which joins it to the breech-mouldings. *Moor*, Treat. of Artill. P. 1. c. 1. p. 2. Item. P. 2. c. 1. p. 27. *Guill.* Gent. D. P. 2. in voc.

CASCADE (*Cycl.*) — A natural *caſcade*, falling with a great noiſe, is more properly called a *cataract*. *Ozan*, Dict. Math. p. 550. See CATARACT, *Cycl.*

CASCARILLA, a name by which ſome authors have called the jeſuit's bark: the quinquina or china china of other writers. *Mont.* Exot. p. 8.

CASCA *vela*, in zoology, a name by which the Portugueſe in America call the rattle-ſnake. See RATTLE-*ſnake*.

CASE (*Cycl.*) ſometimes denotes a veſſel or receptacle in form of a tomb, commonly decorated with gold and ſilver, wherein the body of a ſaint, or ſome relicks of it, are preſerv'd. See RELICKS, *Cycl.*

In which ſenſe, the word is formed from the French *chaſſe*. Trev. Dict. Univ. T. 1. p. 1684, voc. *chaſſe*.

Originally theſe *caſes* were made in the figure of little Gothic churches, purſuant to that antient chriſtian maxim, that the ſaints having been the living temples of the Holy Ghoſt, are entitled, after their death, to have their bones encloſed in the figure of the viſible houſe of God. *Davil*, Archit. P. 2. p. 463, ſeq. voc. *chaſſe*.

The *caſe* of St. Genevieve is never brought down without great ceremony, nor except in time of extreme public dangers or calamities. Trev. Dict. Univ. T. 1. p. 1684.

A frame of *caſes*, in printing, uſually conſiſts of two pair, viz. an upper and lower, Roman and Italic. A ſhallow *caſe* ſhews the letter beſt, as being leaſt ſhadowed by the ſides of the boxes. A deep *caſe* has the advantage of holding a great number of letters, ſo that the compoſitor need not diſtribute ſo often; beſides that it does not grow low ſo ſoon. *Hought.* Collect. N° 364. p. 427. Item. N° 366, p. 431.

CASE of a ſilk-worm, is a lodge framed within its web, wherein to depoſite its ova.

CASE is alſo uſed for a certain numerous quantity of divers things: a *caſe* of piſtols implies a brace; a *caſe* of Normandy glaſs contains 120 foot. Dict. Ruſt. T. 1. in voc.

CASE is alſo uſed for a frame ſurrounding a door window, or the like. In which ſenſe we ſay a door-*caſe*, window-*caſe*, &c. *Mox.* Mechan. Exerc. p. 153, ſeq.

CASEI *di cavallo*, the name of a peculiar cheeſe, famous in Italy and many other places, and made of the milk of the female buffalo, that ſpecies being as commonly tamed and kept there as the ox and heifer with us.

CASEOUS, ſomething that partakes of the nature or qualities of cheeſe. See CHEESE, *Cycl.* and *Suppl.*

Milk conſiſts of a *caſeous*, a butyrous, and a ſerous part. See MILK.

Wax, according to ſome naturaliſts, is formed of the *caſeous* parts of the juices of plants, ſeparated by the bees from the ſerous parts, which make the honey. Phil. Tranſ. N° 224. p. 368. See WAX and HONEY.

Cataracts are by ſome divided into milky, and *caſeous*, differing only in the degree of hardneſs or conſiſtence. Mem. de Trev. Oct. 1710. p. 1812. See CATARACT.

Konig gives a caſe of a *caſeous* empyema. Ephem. Acad. N. C. dec. 2. an. 5. obſ. 98. See EMPYEMA, *Cycl.*

CASEMENT, in architecture, the ſame with *cavetto*, which is a hollow moulding; which with ſome is $\frac{1}{4}$, and with others $\frac{1}{6}$ of a circle in compaſs.

CASEMENT is alſo uſed in building for a little moveable window uſually within a larger, being made to open or turn on hinges. We ſay, a ſingle *caſement*, a folding *caſement*, a *caſement* with a lock, with a turn-about or turn-buckle, a *caſement* with a cock-ſpur or pull-back at the hind ſide, wherewith to draw it to. *Neve*, Build. Dict. in voc.

CASHEW-*nut*. See CAJOU.

CASIA, in botany, the name of a genus of plants, of which there are two ſpecies: 1. The Montpelier poetick *caſia*, called the berry-bearing ſhrub oſyrus. 2. The tall myrtle-leav'd Spaniſh *caſia*.

CASING, among hunters, denotes the ſtripping off the ſkin of a hare, fox, or badger. They ſay, *flay* a deer, *caſe* a hare, and all ſorts of vermin. This is done by beginning at the ſnout or noſe of the beaſt, and ſo turning his ſkin over his ears down to the body, and the very tail. *Cox* Gent. Recr. P. 1. p. 15.

CASING of timber-work is beſt done on heart laths, by reaſon the mortar is apt to decay the ſap laths in a ſhort time. 'Tis com-

commonly laid on at two thickneſſes, the ſecond before the firſt is dry. *Neve*, Build. Dict. in voc.

CASINGS, a country word for cow-dung dried, and uſed as fuel Dict. Ruſt. T. 1. in voc.

CASKET, in a general ſenſe, a little coffer, or cabinet. See CABINET, &c.

CASKETS, in the ſea language, are ſmall ropes made of ſinnet, and faſtened to gromets, or little rings upon the yards; their uſe is to make faſt the ſail to the yard when it is to be furled.

Breaſt-CASKETS, are the longeſt and biggeſt of theſe, or thoſe in the midſt of the yard, betwixt the ties. *Guill.* Gent. Dict. P. 3. in voc.

CASPARGUS, in ichthyology, a name given by Salvian, from Ælian, to the fiſh commonly called by authors, ſparus, and by the Italians, ſparo. It is diſtinguiſhed by Artedi by the name of the plain yellowiſh ſparus, with a large annular ſpot near the tail. See SPARUS.

CASQUE, in natural hiſtory, a name given to a kind of murex, called the helmet-ſhell. There are ſeveral ſpecies of this ſhell, and they all approach ſomewhat to a triangular figure, and are ſmoother than the other murexes; yet they have all a ſort of tubercles near the lip.

CASSADA *bread.* See YUCCA.

CASSAMUNAIR, or CASSUMUNIAR, in medicine, an aromatic vegetable drug, brought from the Eaſt Indies, highly valued as a nervine and ſtomachic, and reputed a ſpecific in epileptic and convulſive diſeaſes [a]. It is ſuppoſed by ſome to be a ſpecies of galangal, by others of zedoary: its true name is not known, that of *caſſamunair* being apparently feigned to hide it: of late it has been imported by the name of *bengalle* [b]. — [a *Quinc.* Lex. Phyſ. Med. p. 70. b Vid. Phil. Tranſ. N° 264. p. 580.]

CASSANDRA, in natural hiſtory, a name given by ſeveral authors to a very elegant ſea ſhell of the concha globoſa, or dolium kind, more uſually known under the name of the lyra, or harp-ſhell. It is ſuppoſed to be called *caſſandra*, becauſe of its being found on the ſhores of the iſland of Caſſan. There are three ſpecies of it. See LYRA.

CASSAON, in zoology, the name of a ſmall fiſh of the ſhark-kind, but leſs miſchievous, called cucuri by the Braſilians. See CUCURI.

CASSAVI, or CASSADA, an American root, of whoſe farina, or powder, the natives make bread, tho' its juice be rank poiſon. Some call the root *manioc*, others *yucca*; this being ground, dried, and baked, becomes a nouriſhing bread, under the name of *caſſavi*. Vid. *Acoſt.* Nat. Hiſt. Ind. l. 4. c. 17. See YUCCA.

CASSIA, in botany, the name of a genus of trees, the characters of which are theſe: the flower is uſually compoſed of five petals diſpoſed in a circular form. The piſtil which ariſes from the midſt of theſe finally becomes a pod, which in ſome of the ſpecies is rounded or cylindric, and in others flatted or compreſſed, and divided by tranſverſe partitions into many cells, which contain a pulpy matter, of a blackiſh colour, in which there are lodged many hard ſeeds.

The ſpecies of *caſſia* enumerated by Mr. Tournefort are theſe: 1. The common *caſſia* fiſtula, the Alexandrine, or Levant *caſſia*. 2. The Braſilian *caſſia*. 3. The *caſſia* fiſtula of the iſland of Java, with fleſh-coloured flowers. 4. The American *caſſia*, with flat pods. 5. The ſtinking American *caſſia*, with leaves like the ſenna. 6. The ſtinking American *caſſia*, with ſmooth oblong leaves. 7. The ſtinking American *caſſia*, with large hairy leaves. 8. The ſtinking American *caſſia*, with roundiſh pointed leaves. 9. The ſtinking American *caſſia*, with obtuſe leaves. 10. The ſix leaved American *caſſia*, with bicapſular pods. *Tourn.* Inſt. p. 619.

CASSIA *bark.* The antients had two kinds of this bark; the κασία συριγξ, and the other the *xylocaſia*. We are ſo much miſtaken about theſe words at preſent, as to ſuppoſe they meant two the moſt different things, the one the bark of a tree, the other a fruit; but they were only the names of the thing collected in a different manner. It was a cuſtom with the antients to collect the barks of trees, ſometimes ſeperate from the wood, ſometimes with the wood itſelf, thus: they collected the cinnamon bark, ſometimes ſtripped, ſometimes cut with the wood. The *caſſia* being thus cut ſometimes with, and ſometimes without the wood, had two names to expreſs theſe two ſtates; that with the wood was called *xylocaſia*, and that without the wood κασία σύριγξ. The plain tranſlation of the firſt word is *caſſia lignea*, and that of the other *caſſia fiſtula*; but we have at this time appropriated the *caſſia fiſtula* to the pudding pipe tree, a tree whoſe fruit is a long hollow pipe, or pod, containing a black pulp, which is a gentle cathartic. Thus we have loſt the original ſenſe of the term; it is neceſſary to obſerve, however, in reading the antients, that they do not mean what we do by *caſſia fiſtula*, but only the *caſſia* bark cleared from the wood. See XYLOCASSIA.

CASSIA *caryophyllata.* See CARYOPHYLLUS *aromaticus.*

CASSIA *mellis*, denotes a kind of extract of caſſia uſed for glyſters, having honey mixt with it to make it keep. *Caſt.* Lex. Med. p. 140.

CASSIA is alſo uſed by the antients for aroma. See AROMA.

CASSIA *ſtake*, in the glaſs trade, is that iron with a piece of wood placed on it, on which they lay the glaſs after they have taken it off the pipes, and on which they turn the glaſs, to faſten the pontee to it. *Neri*, Art of Glaſs, Appendix.

CASSIANI, a ſect in the civil law, who adhered to the ſyſtem and interpretations of Caſſius, a celebrated lawyer, in oppoſition to thoſe of Proculus, whoſe adherents were denominated proculiani. The diviſion took its riſe from Q. Tubero, who having two diſciples, Ateius Capito, and Antiſtius Labeo, the former adhered ſtrictly to the precepts of his maſter, and the interpretations of the antient lawyers; while the latter, truſting to his own judgment, took the liberty to vary, and innovate. By ſuch means a kind of ſchiſm was made in the ſcience of the law; which was carried ſtill farther by the diſciples of the two leaders, viz. Maſſurius Sabinus, who ſeconded Ateius, and Nerva, Labeo; the ſucceſſors of theſe were Caſſius and Proculus, under whom the two parties aſſumed the denominations of *Caſſiani* and *Proculiani*; as they afterwards did thoſe of *Sabiniani*, and *Pegaſiani*, under Cœlius Sabinus, who ſucceeded Caſſius, and Pegaſus, Proculus. Vid. *Gravin.* Orig. Jur. civ. l. 1. p. 83. ap. Giorn. de Lett. d' Ital. T. 6. p. 25. *Calv.* Lex. Jur. p. 151.

CASSIANISM is ſometimes uſed for the hereſy of *Semipelagianiſm.* Act. Erud. Lipſ. an. 1690. p. 528. See SEMIPELAGIANISM, *Cycl.*

CASSIDA, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is of the labiated kind; the upper lip reſembles a helmet with two ears, and the lower is divided into two ſegments. The upper part of the flower-cup is creſted, and from the baſe of it there ariſes a piſtil, which is fixed in the manner of a nail to the lower part of the flower. This is ſurrounded by four embryo's which afterwards become ſo many ſeeds, of an oblong form, encloſed in a capſule, which was the cup of the flower; this capſule alſo repreſents very exactly a head armed with a helmet, the upper part of it very well reſembling the creſt of the helmet, and the lower that part of it which receives the chin. The ſpecies of *caſſida* enumerated by Mr. Tournefort are theſe: 1. The *caſſida* of Columna, called ſcutellaria, and lamium exoticum by others. 2. The whitiſh flowered *caſſida*. 3. The large-flowered procumbent Alpine *caſſida*. 4. The tall American *caſſida*. 5. The common blue-flowered water *caſſida*. 6. The common white-flowered water *caſſida*. 7. The ſmaller water *caſſida*, with red flowers. 8. The mallow-leaved American *caſſida*. 9. The procumbent Alpine *caſſida*, with a very large whitiſh flower. 10. The balm-leaved *caſſida*. And, 11. The low American origanum-leaved *caſſida*. *Tourn.* Inſt. p. 182.

CASSIDARIUS, in the antient armories, he who had the care and cuſtody of the *caſſides*, or helmets. *Pitiſc.* Lex. Ant. T. 1. p. 371.

Spon gives an antient inſcription found at Rome, on a tomb erected to a *caſſidarius* of the emperor Domitian.

CASSIDONY, a name given by the Italians and Germans to a ſort of beads made of the yellow and red chalcedony, a very beautiful ſtone, or of an agate ſomething reſembling it in colour. They alſo call the ſtones themſelves by this name; but are by no means determinate in what they mean by the word, not reſtraining it to any one peculiar ſpecies. *Hill*'s Hiſt. of Foſſ. p. 466.

CASSILI, in natural hiſtory, a name given by the inhabitants of the Philippine iſlands to a ſpecies of water raven, called alſo *colocolo.*

CASSINE, in the military language, is a farm-houſe, where a number of ſoldiers have poſted themſelves, in order to make a ſtand againſt the approaches of an enemy.

CASSIOPEIA (*Cycl.*) is otherwiſe denominated *cathedra*, *mulier ſedis*, *ſiliquaſtrum*, *ſella*, *ſolium*, *ſedes regalis*, and *thronus*; by the Arabs, *canis*, or *cerra*, and by the Hebrews, *abenezzam.* Schiller, in lieu of *caſſiopeia*, repreſents St. Mary Magdalen; Harſdorff, Bathſheba; and Weigelius, the cornucopia. *Wolf.* Lex. Math. p. 316.

CASSIS, in antiquity, a plated, or metalline helmet, different from the galea, which was of leather.

CASSIS *lævis*, the *ſmooth helmet ſhell*, a name given by Rumphius, though very improperly, to the genus of ſhells called dolia and conchæ globoſæ; theſe have no alliance at all with the helmet ſhells, and what makes the name ſtill the worſe is, that *caſſis* itſelf is not a generical name, though uſually ſo underſtood, all the caſſides or helmet ſhells being only a peculiar kind of murex, as the figure of their mouths, and their rudiments of ſpines or protuberances evidently make appear. See MUREX.

CASSITERIA, in natural hiſtory, the name of a genus of cryſtals. The word is derived from the Greek κασσιτερος, tin; and expreſſes cryſtals which are influenced in their figures by an admixture of the particles of that metal. See Tab. of Foſſils, Claſs 3.

Theſe are all pyramidal, without columns, and compoſed only of four ſides or planes. Of this genus there are only two known ſpecies. 1. A whitiſh, pellucid one: this is not very common in large ſpecimens, but in very ſmall ones is frequent in the mines of Devonſhire and Cornwall. And, 2. A brown one: this is very well known in Cornwall, and other places where there are tin mines; and contains a great deal of that metal. Its natural colour is a deep brown, but where there is iron in the neighbourhood is often found tinged rediſh.

CASSO-

CASSOWARY, in zoology, the name of an African bird of the oſtrich kind, but not quite ſo tall, though larger bodied; called alſo by many authors *emeu*, *eme*, or *ema*, and *caſoarius*. It has a crown on the middle of its head; and its head and neck are almoſt naked, having only a few hairs, which are ſet ſtraggling; the ſkin is of a purpliſh blue, but toward the bottom of the neck, on the hinder part, it is a little rediſh. At the bottom of the neck there are alſo two fleſhy protuberances, which hang over the breaſt; its mouth opens very wide; its legs are very long and very robuſt; it has three toes on each foot, all placed before; it has the rudiments of wings, but they are very ſhort, and have only five quills each, which are almoſt naked. It has no tail; its body is large, and is thinly covered with browniſh feathers, which have more the appearance of briſtles, than of real feathers, to a ſlight obſerver. It is very common in Africa, and is caught alſo in many parts of the Eaſt-Indies. It feeds on fleſh or vegetables, and is eaſily made tame. *Ray*, Ornithol. p. 105.

CAST is particularly uſed to denote a figure, or ſmall ſtatue of bronze. See BRONZE.

CAST, among wax-chandlers, denotes a laddleful of melted wax, poured on the wicks of candles made by the laddle.

CAST, among founders, is applied to tubes of wax, fitted in divers parts of a mould of the ſame matter, by means of which, when the wax of the mould is removed, the melted metal is conveyed into all the parts which the wax before poſſeſſed.

CAST, among *bowlers*. See BOWLING.

CAST alſo denotes a cylindrical piece of braſs, or copper, ſlit in two, lengthwiſe, uſed by the founders in ſand to form a canal or conduit in their moulds, whereby the metal may be conveyed to the different pieces intended to be *caſt*. *Savar*. Dict. Com. T. 2. p. 392. voc. JET.

CAST, among plumbers, denotes a little brazen funnel, at one end of a mould, for caſting pipes without ſoldering, by means of which the melted metal is poured into the mould.

CAST *of the country*, with miners, the colour of the earth. *Neve*, Build. Dict. in voc.

CAST, in falconry, denotes a ſet or couple of hawks. Dict. Ruſt. T. 1. in voc.

To *caſt* a hawk to the perch, ſignifies to ſet her upon it.

CAST, or CASTE, in ſpeaking of the Eaſtern affairs, denotes a tribe, or number of families, of the ſame rank and profeſſion.

The diviſion of a nation into *caſts* chiefly obtains in the empire of the great mogul, kingdom of Bengal, iſland of Ceylon, and the great peninſula of India oppoſite thereto. In each of theſe, there are, according to father Martin [a], four principal *caſts*; viz. the *caſt* of the *bramins*, which is the firſt and moſt noble; the *caſt* of the *rajas*, or princes, who pretend to be deſcended from divers royal families; the *caſt* of the *choutres*, which comprehends all the artificers; and that of the *parias*, the loweſt and moſt contemptible of all; though Henry Lord, it muſt be obſerved, divides the Indians about Surat in four *caſts*, ſomewhat differently from Martin; viz. into *bramins*, or prieſts; *cuttery*, or ſoldiers; *ſhuddery*, which we call banians, or merchants; and *wyſe*, the mechanics, or artificers [b]. —[a Lett. Edif. T. 5. p. 17, ſeq. b *Lord*, Diſcov. of Sect. of Banians, c. 1. p. 4, ſeq.] See BRAMIN, &c.

Every art and trade is confined to its proper *caſt*, nor is allowed to be exerciſed by any but thoſe whoſe fathers profeſſed the ſame. So that a taylor's ſon can never riſe to be a painter, nor a painter's ſon fall to be a taylor. Though there are ſome employments which are common to all the *caſts*: e. g. every body may be a ſoldier or a merchant. There are alſo divers *caſts* which are allowed to till the ground, but not all. The *caſt* of *parias* is held infamous, inſomuch that it is a diſgrace to have any dealings, or converſation with them. And there are ſome trades in the *caſt* of *choutres* which debaſe their profeſſors almoſt to the ſame rank. Thus ſhoemakers, and all artificers in leather, as alſo fiſhermen, and even ſhepherds, are reputed as no better than *parias*. The Portugueſe committed an irreparable miſtake for want of being acquainted with this diſtinction of *caſts*. On their firſt diſcovery of theſe countries, they dealt, and converſed indifferently with all ſorts, and took *parias* or fiſhermen, without ſcruple, into their ſervice, which gave the reſt an idea of them, as people without honour or ſhame, an idea which they have never yet been able to efface. Another falſe ſtep of the Portugueſe was to oblige the people of the places they conquered to renounce their *caſts*, and conform to the European cuſtoms; which enraged them beyond meaſure. To theſe cauſes chiefly it is, that the modern miſſionaries in thoſe parts, attribute the ſmall ſucceſs of their preaching the goſpel; few, by their own confeſſion, are fairly converted to chriſtianity, except the very ſink of the people, the *parias*, or thoſe who have loſt their *caſt* by their wickedneſs and debauchery. And the number of theſe who are received into the chriſtian congregation, helps ſtill more to excite the averſion of the reſt for Europeans and chriſtianity. *Martin*, Lett. au Pere Gobien. in Lett. Edif. T. 5. p. 19, ſeq.

CASTAGNOLE, in ichthyology, a name given by the Italians to the fiſh called by the generality of authors *chromis*, and reduced by Artedi to the genus of the *ſpari*; he diſtinguiſhes it by the name of the ſparus with the ſecond ray of each belly-fin carried out into a great length. *Willughby*'s Hiſt. Piſc. p. 330. See CHROMIS, and SPARUS.

CASTANEA, the *cheſnut*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the amentaceous kind, being compoſed of a number of ſtamina ariſing from a five-leaved cup, and affixed to a ſlender capillament or axis. Theſe are the male flowers, but the fruit grows in other parts of the tree: theſe are roundiſh, echinated, and open into four parts, and contain *cheſnuts* with their kernels. The ſpecies of *cheſnut* enumerated by Mr. Tournefort are theſe: 1. The common cultivated *cheſnut*. 2. The common wild *cheſnut*. 3. The dwarf cluſter *cheſnut*. 4. The large-leaved American *cheſnut*, with ſlightly-echinated fruit. *Tourn.* Inſt. p. 584.

CASTARON, in botany, a name given by the old Arabian writers to the *ſerrata*, or ſaw-wort. Serapion writes it *cæſtura*, but the plant is the ſame, and the words are both derived from the Greek name of the *ſerratula*, which, according to Dioſcorides, is ceſtrum. See CESTRUM.

CASTELLANY, the diſtrict or extent of land under the juriſdiction of a lord *caſtellan*.

The province of Flanders is divided into ſo many *caſtellanies*, each of which bears the name of the capital, as the *caſtellany* of Liſle, of Ypres, of Gant, &c. The court of *caſtellany* was antiently compoſed of the caſtellan, a fiſcal, procurator, notary, regiſter, &c.

In Poland, a *caſtellany* is a petty government under the adminiſtration of a caſtellan, ſubordinate to the palatine, whoſe palatinate comprehends ſeveral *caſtellanies*. Trev. Dict. Univ. T. 1. p. 1693. voc. *caſtellanie*.

CASTELLARIUS, the keeper, or curator, of a caſtellum.

Gruter gives an antient ſepulchral inſcription in memory of a *caſtellarius*. *Grut.* Inſcr. p. 609. p. 7. Fab. Theſ. p. 486.

CASTELLATION, *caſtellatio*, in middle-age writers, the act of building a caſtle, or of fortifying a houſe, and rendering it a caſtle. See CASTLE.

By the antient Engliſh laws, *caſtellation* was prohibited, without the king's eſpecial licence. *Wilk.* Gloſſ. ad Leg. Angl. Sax. p. 393. *Spelm.* Gloſſ. voc. *kernellare*. *Du Cange*, Gloſſ. Lat. T. 1. p. 871.

CASTIGATION, *caſtigatio*, among the Romans, the puniſhment of an offender by blows, or beating, with a wand or ſwitch. *Caſtigation* was chiefly a military puniſhment. the power of inflicting which on the ſoldiery was given to the tribunes. Some make it of two kinds, one with a ſtick or cane, called *fuſtigatio*: the other with rods, called *flagellatio*; the latter was the moſt diſhonourable. *Lipſ.* de Milit. Rom. l. 5. c 18. *Pitiſc.* Lex. Ant. Rom. T. 1. p. 374. *Schoetg.* Cur. Ant. Lex. p. 281. See FLAGELLATION, *Cycl.*

But Sichterman, on better grounds, diſtinguiſhes *caſtigation* from fuſtigation, reſtraining the former to blows with a wand, the latter to thoſe with a ſtaff. *Sichterm.* de pœn. Milit. Roman. c. 2. Jour. des Scav. T. 41. p. 474. ſeq.

CASTIGATIONS, in a literary ſenſe, denote corrections, or emendations of the text of an antient writer.

CASTILLAN, a gold coin, current in Spain, valued at fourteen rials, and a half.

CASTILLAN alſo denotes a weight uſed by the Spaniards in the weighing of gold, containing the hundredth part of a Spaniſh pound. It is alſo uſed at Buenos Aires, and the mines of Chili and Potoſi. *Savar.* Dict. Comm. T. 1. p. 586.

CASTING is ſometimes uſed for the quitting, laying, or throwing aſide any thing; thus, deer *caſt* their horns, ſnakes their ſkins, lobſters their ſhells, hawks their feathers, &c. annually.

CASTING *of feathers* is more properly called *moulting* or *mewing*.

Some have pretended that deer alſo *caſt* their penis; and are yearly ſupplied with a new one: but experience ſhews this to be a vulgar error. Vid *Brown*, Vulg. Err. l. 3. c. 9. p. 103. See PENIS, *Cycl.* and *Suppl.*

A horſe *caſts* his hair or coat, at leaſt once a year, viz. in the ſpring, when he *caſts* his winter coat, and ſometimes at the cloſe of autumn, he *caſts* his ſummer coat, in caſe he have been ill kept.

Horſes ſometimes alſo *caſt* their hoofs, which happens frequently to coach-horſes brought from Holland, viz. being bred in a moiſt, marſhy country, have their hoofs too flabby; ſo that coming into a drier ſoil, and leſs juicy provender, their hoofs fall off, and others, that are firmer, ſucceed. *Guill.* Gent. Dict. P. 1. in voc.

CASTING is alſo uſed for overthrowing.

In which ſenſe, we ſay to *caſt* a horſe, an ox, or the like. Dict. Ruſt. T. 1. in voc.

CASTING is alſo uſed for diſtributing or diſpoſing the parts of a thing to the beſt advantage.

The *caſting* of a building is more properly called *compartition*. Vid. *Wolf.* Elem. of Archit. P. 1. p. 18. See COMPARTITION, *Cycl.*

Theatrical writers ſpeak of *caſting* a play, *i. e.* diſpoſing the ſeveral parts or characters to proper actors.

CASTING *of drapery*, among painters, a free, eaſy, negligent way of cloathing a figure. *Neve*, Build. Dict. in voc.

CASTING *of timber work*, with builders, is when a houſe being plaiſtered all over on the outſide with mortar, it is ſtruck wet, by a ruler, with the corner of a trowel, &c. to make it look like joints of free ſtone. *Neve*, Build. Dict. in voc.

CASTING *a point of traverſe*, among ſeamen, ſignifies the pricking down on a chart, the point of the compaſs any place bears from you; or finding what point of the compaſs the ſhip bears at any inſtant, or what way the ſhip has made. *Guill.* Gent. Dict. P. 3. in voc.

CASTING *a colt*, denotes a mare's being abortive.

CASTING *a figure*, among aſtrologers, the erecting a celeſtial theme, and dividing the heavens into houſes.

CASTING-*net*, a ſort of fiſhing-net, ſo called becauſe it is to be *caſt* or thrown out, which when exactly done, nothing eſcapes it, but weeds, and every thing within its extent is brought away. Dict. Ruſt. T. 1. in voc.

CASTLE, *caſtellum*, (*Cycl.*) in antient writers, denotes a town or village ſurrounded with a ditch and wall, furniſhed with towers at intervals, and guarded by a body of troops. *Iſid.* orig. l. 15. c. 4. *Fab.* Theſ. p. 485, ſeq.

The word is originally Latin, *caſtellum*, a diminutive of *caſtrum*. *Iſid.* orig. l. 1. c. 2.

Caſtellum originally ſeems to have ſignified a ſmaller fort, for a little garriſon. Though Suetonius uſes the word where the fortification was large enough to contain a cohort. *Suet.* in Vit. Jul. c. 68. *Horſl.* Brit. Rom. l. 1. c. 8. p. 118, ſeq.

The *caſtella*, according to Vegetius, were often like towns, built in the borders of the empire, and where there were conſtant guards, and fences againſt the enemy. *Veget.* l. 1. c. 22. Horſley takes them for much the ſame with what were otherwiſe denominated ſtations. *Horſl.* Brit. Rom. l. 1. c. 7. p. 101.

CASTLE, or CASTLE-*ſteed*, is alſo an appellation given by the country people in the North to the Roman *caſtella*, as diſtinguiſhed from the caſtra ſtativa, which they uſually call cheſters. Horſley repreſents this as an uſeful criterion, whereby to diſcover, or diſtinguiſh, a Roman camp or ſtation. Id. ibid. c. 8. p. 118.

There are divers of theſe *caſtella* on Severus's wall: they are generally ſixty foot ſquare, their North ſide is formed by the wall itſelf, which falls in with them; the intervals between them are from ſix furlongs and an half to ſeven; they ſeem to have ſtood cloſeſt where the ſtations are wideſt.

The neighbouring people call them *caſtles*, or *caſtle-ſteeds*; by which it ſeems probable, that their antient Latin name had been *caſtellum*. Some modern writers call them *mile caſtles*, or milliary *caſtellæ*: Horſley ſometimes *exploratory caſtles*.

In theſe *caſtella* the *areans* had their ſtations, who were an order of men whoſe buſineſs was to make excurſions into the enemy's country, and give intelligence of their motions. *Cambd.* Brit. p. 839.

Between every two *caſtella* there ſeem to have been eight ſmaller turrets, or towers. *Horſl.* loc. cit. See TOWER, *Cycl.* Beſides the fixed *caſtella* there alſo appears to have been moveable ones, made occaſionally of branches of trees and earth, for the defence of camps [a]. Some deſcribe theſe as a kind of moveable wooden forts or towers, which were advanced and drawn back in battle, as occaſion required [b]. But it muſt be owned we have no diſtinct or certain account hereof. — [a *Aquin.* Lex. Milit. T. 1. p. 175. b *Pitiſc.* Lex. Ant. T. 1. p. 372.]

The *caſtle* of St. Angelo, on the banks of the Tyber, oppoſite to Rome, was antiently the mauſolæum of Adrian, formed, in great part, of Parian marble, to which have ſince been ſuperadded fortifications. *Pitiſc.* Lex. Ant. T. 1. p. 184. voc. *arx*.

CASTLE, *caſtellum*, in hydraulics, is uſed for a kind of pavillion, or water-houſe, in which are encloſed the cocks of ſeveral water-pipes with a little baſon, in order to make a diſtribution thereof.

In which ſenſe the antient *caſtella* amount to much the ſame with piſcinæ, or reſervoirs, among us. See RESERVOIR, *Cycl.* Ulpian defines *caſtellum*, a ſort of baſon, moduled out, of certain dimenſions, from which the water was diſtributed by pipes, and carried into the houſes of great men, by grant from the emperor. *Ulpian.* in Pandect. l. 43. de Aqua Cotid. L. 1. *Buddæus* ad Eund.

Vitruvius deſcribes the *caſtellum*, as an appendage of an aquaduct, with a triple emiſſary, for receiving the water, and pipes to convey it thence. *Cumque venerit ad mœnia efficiatur* caſtellum, & caſtello *conjunctum ad recipiendam aquam triplex emiſſarium, collocenturque in* caſtello *tres fiſtulæ æqualiter diviſæ intra receptacula conjuncta, uti cum abundaverit, ab extremis in medium receptaculum redundet.* *Vitruv.* de Archit. l. 8. c. 7.

The *caſtella* of the antient aquæducts are ſtill viſible at Rome, though half ruined. They are lined with a durable kind of cement, which, according to Pliny, ſurpaſſes in hardneſs the ſtones themſelves. It is made of lime ſlacked in wine, and beaten up with hog's greaſe, and the juice of figs or pitch. See AQUÆDUCT, *Cycl.*

Water-CASTLE, a piece of hydraulic work furniſhed with one or more fronts of building, with ſeeming windows and the like, containing a reſervoir which gives play to caſcades, &c. *Davil.* Archit. P. 2. p. 465.

Or, a *water*-CASTLE may be defined a receptacle of the public water furniſhed by an aquæduct, or otherwiſe; contrived to diſtribute and ſend it to different parts.

Modern writers on hydraulics treat of the laws of the efflux of water out of *caſtella* into pipes, canals, &c. Vid. *Herman.* Phoron. l. 2. c. 10. p. 410. p. 427, ſeq.

Signior Poleni has a treatiſe expreſs on *caſtles*, or reſervoirs, whereby the waters of rivers are derived, the ſides of which *caſtles* are made converging. *Polen.* de caſtellis per quæ derivantur fluviorum aquæ, habentibus latera convergentia. Patav. 1718. 4°. Extracts of which are given in Giorn. de Letter. d'Ital. T. 31. Art. 1. p. 1. ſeq. and Act. Erud. Lipſ. An. 1720. p. 402, ſeq.

CASTOR, the *beaver*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of animals, the characters of which are, that they have all the marks of the glires, with feet which have five toes on each, and palms adapted for ſwimming. Under this genus the author comprehends the *caſtor*-kind, the flat tailed, and round tailed, or common water rat. *Linnæi*, Syſtem natur. p. 39. See FIBER.

The beaver, diſtinctively ſo called, has two very different ſorts of hair, the one very ſoft and fine, the other long and thick; the firſt ſerves to defend the creature from the cold, the other to receive the mire in which it often wallows, and to prevent its getting to the ſkin. The teeth of this creature are formed in a very particular manner, and are extremely fit to cut trees, with which they build themſelves lodgings to defend them from the weather, and to breed their young in. The fore-feet are formed exactly like the human hand, and by this means they are able to carry their materials, and work at their habitations: the hinder feet, which are deſtined to be of uſe to them in ſwimming, are on the contrary web'd like thoſe of a gooſe.

The bladders in this animal deſtined for receiving the medicinal ſubſtance called *caſtor*, are diſtinct from the teſticles, and are four large ones, placed about the lower part of the os pubis; two of theſe ſtand above the other two, but cloſely joined to one another, the two upper being to prepare that matter, and the two other to bring it to the greater perfection and unctuouſneſs, and render it of a ſtronger ſcent and deeper colour, as it is always found with this difference in theſe bags from what is in the upper ones. The lower bags, for this reaſon, are of a glandular ſtructure; and under theſe lower bags there is another long one full of a matter, more yellow and liquid, and ſeeming more elaborated than any of the others. This is of a different ſmell from the former, and more than any thing elſe reſembles the yolk of an egg. It is ſaid that the creature uſes this liquor to get itſelf an appetite, and that it gets it out by ſqueezing the bag that contains it with its paws. The people of Canada ſet ginns for theſe creatures, and catch many of them that way; and knowing how fond they are of this liquor, they always anoint the ginns with ſome of it.

It has been generally ſaid that the teſticles of this creature were faſtened to the back-bone, but they are, in reality, not ſo, but placed on the ſides of the os pubis about the groin, and are altogether hid, not appearing at all any more than the penis, till the ſkin is removed: and the penis, contrary to that of a dog, which goes from the os pubis to the navel, deſcends in this animal downwards to the vent of the excrements, at which hole it terminates. Mem. Acad Scienc.

CASTOR more particularly denotes a fixed ſtar, of the ſecond magnitude, in the head of the firſt of the twins. See GEMINI, *Cycl.*

Its latitude Northwards, for the year 1700, according to Hevelius, was 10° 4′ 23″, and its longitude, of Cancer 16° 4′ 14″. It is alſo called *Raſalgenze*, *Apollo*, *Aphellan*, *Avellar*, and *Anelar*. *Hevel.* Firmam. Sobieſc. p. 287. *Wolf.* Lex. Math. p. 317.

Caſtor and *Pollux*, in meteorology, is called by the Spaniards, San Elmo; by the French St. Elme, St. Nicholas, St. Clare, St. Helene; by the Italians, Hermo; by the Dutch Vree Vuuren.

When the meteor ſticks to the maſts, yards, &c. they conclude from the air's not having motion enough to diſſipate this flame, that a profound calm is at hand: if it flutter about, it indicates a ſtorm. *Aubin.* Dict. Mar. p. 356. voc. *elme*.

CASTOREA, in botany, the name given by Plumier to a genus of plants ſince called by Linnæus *duranta*. See the article DURANTA.

CASTRATING *a book*, among bookſellers, is the taking out ſome leaf, ſheet, or the like, which renders it imperfect, and unfit for ſale. The word is alſo applied to the taking away particular paſſages, on account of their obſcenity, too great freedom with reſpect to government, &c.

CASTRATING is alſo uſed among gardeners, in ſpeaking of melons and cucumbers; where it ſignifies the ſame with pruning or pinching of other plants. Trev. Dict. Univ. T. 1. p. 1096. voc. *chaſtrer*. See PRUNING and PINCHING, *Cycl.*

CASTRATION (*Cycl.*) — By the civil law it is made penal in phyſicians and ſurgeons to *caſtrate*, even with conſent of the party, who is himſelf included in the ſame penalty, and his effects forfeited. *Calv.* Lex. Jur. p. 152.

The antients mention two ſorts of *caſtration*, viz. by exſection, where the teſticles were cut out; and colliſion, whereby they were only bruiſed, or rubbed, but ſo as to put a ſtop to their growth, and make them waſte and wither away; the vein which brought them nouriſhment being ruined. This latter operation is uſually performed by putting the patient in a warm

bath, in order to ſoften the parts, and render them more eaſy to be bruiſed and diſſolved. After he has been there ſome time, they compreſs the veins of the neck called the jugulars, and by this means render him ſtupid and inſenſible, as if he were ſeized with an apoplexy; in which ſtate the mutilation is eaſily performed, without his feeling any thing of it. It is uſually performed on young children by the mother or nurſe. Trait. des Eunuch. c. 3. p. 11, ſeq.

Antiently they uſed to give the patient a doſe of opium; and while he was aſleep, by the influence of this, the operation was performed with a knife; but it being found that the greater part of thoſe who were eunuchized in this manner died by the narcotic, recourſe was had to the other method above-mentioned.

The Perſians and other Eaſtern nations have divers methods of making eunuchs different from thoſe which obtain in Europe: we ſay, of making eunuchs, for it is not always done among them by cutting, or even colliſion. Cicuta and other poiſonous herbs do the ſame office, as is ſhewn by Paulus Ægineta. Thoſe eunuchized in this manner are called *thlibiæ*. Beſides which there is another ſort named *thlaſiæ*, in whom the genitals are left intire, and only the veins which ſhould feed them are cut; by which means the parts do indeed remain, but ſo lax and weak, as to be of no uſe. Id ibid. p. 12, ſeq.

Caſtration was for ſome time the puniſhment of adultery. *Valer. Maxim.* l. 6. c. 1. n. 13. See ADULTERY.

By the laws of the Viſigoths ſodomites underwent the ſame puniſhment. *Du Cange*, Gloſſ. Lat. T. 1. p. 873.

CASTRATION, in reſpect of brutes, is called *gelding*, *ſpaying*, &c. See GELDING and SPAYING, *Cycl.*

CASTRATION is alſo uſed by ſome phyſicians for correcting the more violent medicines, eſpecially purgatives. *Helm.* Tr. Pharmac. ac Diſpenſ. Modern. n. 49. *Brun.* Exerc. 1. de Remor. Purg. θ. 38. *Caſt.* Lex. Med. in voc. See CORRECTION, and CORRECTORS, *Cycl.*

CASTRATION alſo denotes the art of retrenching, or cutting away any part of a thing from its whole.

The antients ſpeak of *caſtrating* a bee-hive, by taking out the honey-combs; *caſtrare arbores*, *vites*, and the like, is uſed by Pliny, for the boring a hole in their bottom. *Plin.* Hiſt. Nat. l. 24. c. 8. *Cato*, de Re Ruſt. c. 23. *Fab.* Theſ. p. 486.

CASTREL, a kind of hawk reſembling the lanner in ſhape, but the hobby in ſize. The *caſtrel* called alſo *keſtrel*, is of a ſlow and cowardly kind,; her game is the growſe, though ſhe will kill a partridge. Dict. Ruſt. T. 1. in voc. See HAWK, and FALCONRY, *Cycl.* and *Suppl.*

CASTRENSIANI, or CASTRENSES, in antiquity, an order of ſervants in the Greek emperor's houſhold, to whom belonged the care and ſervice of what related to his table, and clothing.

They were thus called either on account of their attending the emperor, when in camp, or becauſe they obſerved a ſort of camp-diſcipline in the court; or rather becauſe they were conſidered as ſoldiers, were paid as ſuch, and had the privileges belonging to the military body. The *caſtrenſiani* were alſo called *caſtrenſes miniſtri*, and *miniſteriani*. *Pitiſc.* Lex. Ant. T. 1. p. 377. *Du Cange*, Gloſſ. Lat. T. 1. p. 874. Item Gloſſ. Græc. p. 576, & 604. *Schoetg.* Cur. Ant. Lex. p. 282.

To this order belonged the bakers, butlers, waiters, fullers, taſters, &c. They had a head, or ſuperior, who was called *comes caſtrenſis*, which was a Palatine dignity under the chamberlain.

CASTRENSIS, in medicine, an appellation given to certain contagious and epidemic diſeaſes, eſpecially fevers. Vid. *Helm.* de Febr. c. 10. n. 7. *Willis*, de Febr. c. 14. *Caſt.* Lex. Med. p. 141. See CAMP-*diſeaſe*, &c.

CASTRUM *doloris*, in middle-age writers, denotes a catafalco, or a lofty tomb of ſtate, erected in honour of ſome perſon of eminence, uſually in the church where his body is interred; and decorated with arms, emblems, lights, and the like. *Fæſc.* Ing. Lex. p. 161.

Eccleſiaſtical writers ſpeak of a ceremony of conſecrating a *caſtrum doloris*; the edifice was to be made to repreſent the body of the deceaſed, and the prieſt and deacon were to take their poſts, and ſay the prayers after the ſame manner as if the corpſe were actually preſent. *Magr.* Notit. Vocab. Eccleſ. p. 58. See alſo *Du Cange*, Gloſſ. Lat. T. 1. p. 878.

CASUAL, ſomething that happens fortuitouſly, or without any deſign or meaſures taken to bring it to paſs.

CASUAL *revenues*, are thoſe which arrive from forfeitures, confiſcations, deaths, attainders, &c.

CASUAL *theology*, a denomination given by ſome to what is more frequently called caſuiſtry. See CASUISTRY.

Adam Oſiander, chancellor of the univerſity of Tubingen, has publiſhed a ſyſtem of *caſual theology*, containing the ſolution of dubious queſtions, and caſes of conſcience. Theologia caſualis, 6 vol. 4°. Tubing. 1682. Vid. Act. Erud. Lipſ. 1682. p. 282.

CASUALTY, in the tin-mines, a word uſed to denote the earth and ſtony matter which is, by waſhing in the ſtamping-mills, &c. ſeparated from the tin ore, before it is dried and goes to the crazing mill.

CASUARIUS, the *caſſowary* or *Emeu*, a large bird ſomewhat reſembling the oſtrich.

In the Linnæan ſyſtem of zoology this makes a diſtinct genus of birds of the order of the gallinæ; the diſtinguiſhing characters of which are, that there are three toes on each foot, and thoſe placed before, the creature having no hinder toe, and the head has a creſt and naked wattles. *Linnæi* Syſtem. Naturæ, p. 47.

CASUIST, a perſon who profeſſes to reſolve caſes of conſcience.

Eſcobar has made a collection of the opinions of all the *caſuiſts* before him. Trev. Dict. Univ. T. 1. p. 1500.

M. le Feore, preceptor of Lewis XIII. called the books of the *caſuiſts*, the art of quibbling with God [a]; which does not ſeem far from the truth; by reaſon of the multitudes of diſtinctions and ſubtilties they abound withal. The ſame perſon uſed to call Cicero his *caſuiſt*, on account of his book of offices [b]. Mayer has publiſhed a bibliotheca of *caſuiſts*, containing an account of all the writers on caſes of conſcience, ranged under three heads; the firſt comprehending the Lutheran, the ſecond the Calviniſt, and the third the Romiſh *caſuiſts* [c]. — [a] L'Art. de Chicaner avec Dieu. Vid. Nouv. Rep. Lett. T. 28. p. 293. [b] Trev. Dict. Univ. T. 1. p. 1500. [c] Biblioth. Script. Theol. Mor. & Conſcient. annexed to Strauch. Theol. Moral. Griphiſis, 1708. 8vo. Vid. Jour. des Scav. T. 40. p. 461.]

CASUISTICAL *theology*, the ſcience of caſuiſtry. See the article CASUISTRY.

Caſuiſtical theology bears a near affinity to *moral* theology.

CASUISTRY, the doctrine and ſcience of conſcience, and its caſes; the rules and principles of reſolving the ſame; drawn partly from natural reaſon and equity; partly from authority of ſcripture, the canon law, councils, fathers, &c.

To *caſuiſtry* belong the deciſion of all difficulties ariſing about what a man may conſcientiouſly do, or not do; what is ſin, or not ſin; what things a man is obliged to do in order to diſcharge his duty, and what he may let alone without breach of it. Vid. *Du Pin*, Meth. of Stud. Divin. c. 27. p. 304.

CATS-*eye*, among naturaliſts, a kind of precious ſtone, of a lucid texture, whoſe colours are variable, according to the poſition of the ſtone to the light.

Cat's-eye is by the Latins called *oculus cati*, and ſometimes *onycopalus*, as having white zones or rings like the onyx; and its colours variable like opal, from which laſt it differs chiefly by its ſuperior hardneſs. *Grew*, Muſ. Reg. Societ. P. 3. Sect. 1. c. 4. p. 290. See ONYX and OPAL.

The *cat's-eye* is of a gliſtering grey, interchanged with a ſtraw colour, and anſwers the deſcription given by Pliny of the Aſteria, between which and our *cat's-eye* there appears no other difference than that the antients took their denomination from the brightneſs and ſhining of the ſtone, whereas the modern name is taken from the figure of it. *Woodw.* Meth. Foſſ. Claſs. 2. p. 21. See ASTERIA.

CAT-*gut*, a denomination given to ſmall ſtrings for fiddles, and other inſtruments, made of the inteſtines of ſheep or lambs dried and twiſted, either ſingly, or ſeveral together.

Theſe are ſometimes coloured red, ſometimes blue, but are commonly left whitiſh or browniſh, the natural colour of the gut. They are uſed alſo by watch-makers, cutlers, turners, and other artificers. Great quantities are imported into England, and other northern countries, from Lyons and Italy. *Savar.* Dict. Comm. T. 1. p. 1510. voc. *corde.*

CAT-*harpings*, are ſmall ropes running in little blocks from one ſide of the ſhrowds to the other, near the deck: their uſe is to force the ſhrowds, and make them taught, for the more ſecurity and ſafety of the maſts. *Guill.* Gent. Dict. P. 3. in voc.

CAT, or CAT-*head*, in a ſhip, is a ſhort piece of timber, lying aloft right over the hawſe, having at one end two ſhivers, wherein is reeved a rope, with a great iron hook faſtened to it, called *cat-hook*. *Botel.* Sea Dial. 4. p. 112.

Its uſe is to trice up the anchor from the hawſe to the top of the fore-caſtle. *Guill.* Gent. Dict. P. 3. in voc.

CAT's-*head* is alſo a denomination given to a ſort of waſte ſtony lumps, not inflamable, found in coal mines. In theſe there are frequently impreſſions of ferns. Phil. Tranſ. N° 366. p. 970.

CAT-*holes*, in a ſhip, are over the ports, as right with the capſtan as they can be: their uſe is to heave the ſhip a-ſtern upon occaſion, by a cable or a hawſer called ſtern-faſt. *Botel.* Sea Dial. 4. p. 112. *Guill.* Gent. Dict. P. 3. in voc.

CAT-*hooks*. See the article HOOK.

CAT *of mountain*, the name of a beaſt of prey approaching to the leopard kind. See the article *Catus* PARDUS.

CAT-*rope*. See the article ROPE.

CAT-*ſalt*, a name given by our ſaltworkers to a very beautifully granulated kind of common ſalt. It is form'd out of the bittern or leach brine, which runs from the ſalt when taken out of the pan. When they draw out the common ſalt from the boiling pans, they put it into long wooden troughs, with holes bor'd at the bottom for the brine to drain out; under theſe troughs are placed veſſels to receive this brine, and acroſs them are placed certain ſmall ſticks, to which the *cat-ſalt* affixes itſelf in very large and beautiful cryſtals. This ſalt contains ſome portion of the bitter purging ſalt, and is very ſharp and pungent, and is white when powdered, tho' pellucid in the maſs. It is uſed by ſome for the table, but the greateſt part of what is made of it is uſed by the makers of hard ſoap.

CAT-*silver*, a name given to certain fossil substances, usually called also glimmer, and in Latin, micæ. They are various species of the bracteria, or foliaceous talcs, in small spangles. See MICA.

CATABASION, Καταβασιον, in the Greek church, a place under the altar, wherein the relicks are kept.

The word is formed from καταβαινω. I descend; by reason they went down into it. *Du Cange*, Gloss. Gr. T. 1. p. 606. *Schoetg.* Cur. Ant. Lex. p. 283.

CATABATHMOS, Καταβαθμος, in antiquity, a steep valley, dividing Ægypt from Africa. *Sallust.* Bell. Jugurth. c. 20 and 21. Bibl. Choisi. T. 21. p. 367, seq. Fab. Thes. p. 487. *Heder.* Schul. Lex. p. 721, seq.

The word is formed from the Greek, καταβαινειν, to descend, on account of the hastiness and precipitation of its descent.

CATABULENSES, in the middle age, a sort of ministers or servants of the empire, appointed to conduct the public carriage from one *catabulum*, or stage, to another.

The *catabulenses* appear also to have had the charge of conveying the public corn to and from the mills; whence in the Theodosian code they are joined with bakers. *Cujac.* Observ. l. 16. c. 5. *Du Cange*, Gloss. Lat. T. 1. p. 878. *Schoet.* Ant. Lex. p. 283.

CATABULUM, in the middle age, a kind of stable or building, wherein beasts, especially of burthen and carriage, were kept for the public service. See CATABULENSES.

The antient christians were sometimes condemned to serve in the *catabula*, that is, to work at the cleaning of them, attending the beasts, &c. *Du Cange*, Gloss. Lat. T. 1. p. 878. *Schoet.* Lex. Ant. p. 283, seq. *Spelm.* Gloss. Lat. p. 129.

CATAC, in botany, a name by which some authors call agrimony. *Ger.* Emac. Ind. 9.

CATACAUSTIC. See *caustic by* REFLEXION.

CATACLASIS, Κατακλασις, in medicine, denotes a disorder of the eye, wherein the eye-lid is inverted by a convulsion of the muscles that close it; called also campylon. *Cast.* Lex. Med. p. 142. Item. p. 128. voc. *campylon.*

CATACLEIS, Κατακλεις, in anatomy, a cartilaginous bone, or rather a cartilage in the juncture of the omoplata, or shoulder-blade. *Cast.* Lex. p. 142.

CATACOMB (*Cycl.*) — The *catacombs* of Rome have made the greatest noise in the world; but there are such belonging to many other cities: Bishop Burnet[a] describes those of Naples, which he says are without the city, and much more noble and spacious than those of Rome. The like are also said to be in the neighbourhood of all the great towns in that part of Italy: and others have been discovered at Syracuse and Catanea in Sicily, and in the island of Malta[b]. The Roman *catacombs* take particular names from the churches in their neighbourhood, and seem to divide the circumference of the city without the walls, between them, extending their galleries every where under, and a vast way from it; so that all the ground under Rome, and for many miles about, some say for 20 miles, is hollow[c]. The largest, and those commonly shewn strangers, are the *catacombs* of San Sebastiano, those of Saint Agnese, and the others in the fields a little off Saint Agnese: For the *catacombs* in the church-yards of the Vatican, women are only allowed to go into them one day in the year, viz. on Whitsun Monday, on pain of excommunication[d]. — [a *Burn.* Trav. Lett. 4. p. 201. b *Bingh.* orig. Eccles. l. 23. c. 1. §. 3. Ouvr. des Sav. 1688. Maij. p. 38. c Phil. Trans. N° 265. p. 644 and 650. d *Cyprian*, de Eccles. Subterr. §. 13.]

There are men kept constantly at work in the *catacombs*. As soon as these labourers discover a grave, with any of the supposed marks of a saint about it, intimation is given to the cardinal Camerlingo, who immediately sends men of reputation to the place, where finding the palm, the monogram, the coloured glass, &c. the remains of the body are taken up with great respect, and translated to Rome. After the labourers have examined a gallery, they stop up the entry that leads into it; so that most of them remain thus closed; there being only a few left open, to keep up the trade of shewing them to strangers. This they say is done to prevent poeple's losing themselves in these subterraneous labyrinths, which has often happened: but more probably to deprive the public of the means of knowing whither and how far the *catacombs* are carried. *Monro*, in Phil. Trans. N° 265. p. 644. The opinion, that the catacombs were Heathen burying places, is confirmed from hence, that the antient Romans are known to have had such burying places, under the name of *puticuli*; and even in the very places where now the *catacombs* are found[a], that there are divers indications of Heathenism about the tombs in the *catacombs*; such are the names of the persons interred, the formula *diis manibus*, at the head of the inscriptions; the figures of Orpheus, Cupid, and other Heathen deities, which Christians would never have engraved on their dormitories. For the monogram ☧, it proves nothing, since this way was in use among the Heathens before the time of Christianity, as has been shewn by Menckenius, in a dissertation express, published in 1696. Add, that the figures of doves and palms were also frequently used on the tombs of the Heathens; that 'tis impossible the Christians could have had the instruments of torture from the Heathens, since the former durst scarce appear at executions. How much less would they have been able to bring away phials of blood from the execution of their martyrs? Above all, that 'tis no-ways probable the Christians under the Heathen emperors should have been able to dig such vast works, without being perceived by the Heathens. The very earth they dug out must have made mountains, which itself must have discovered them[b]. — [a Vid. *Kirchman.* de Funer. Rom. l. 2. c. 24. b Vid. *Basnage*, Ouvr. des Sc. iv. 1688. Mai, p. 38. *Horn.* Diss. de Catacombis seu Cryptis Sepulchralibus SS. Martyrum. Lipsi. 1703. *Schoetg.* Lex. Ant. p. 285, seq.]

All this may be allowed just, except what relates to the identity of the *catacombs* with the *puticuli*; which Mr. Monro thinks carries less probability with it than the common opinion of the Romanists.

Would Festus have called such immense works as the *catacombs*, by the diminutive name *puticuli*? Would he have confined them to a single place, viz. without the Esquiline gate, when the *catacombs* are found every where about Rome? How could holes, wherein bodies were thrown together in heaps to rot, be confounded with repositories, cut regularly in the face of a long gallery, one over another, sometimes to the number of seven, in each of which a single body is laid, and handsomely done up again, so that nothing could offend the sight of those who went in; especially with the little rooms interspersed in the fashion of chapels, which have all the appearances of being the sepulchres of people of distinction? *Monro*, ubi supra, p. 646.

Monro therefore takes a medium between the two contrary extremes: he supposes the *catacombs* to have been originally the common sepulchres of the first Romans, before the practice of burning was introduced.

CATADIOPTRICAL *telescope*, the same with reflecting *telescope*. See TELESCOPE.

CATADROMUS, Καταδρομος, in antiquity, a stretched sloping rope in the theatres, down which the funambuli walked, to shew their skill. See FUNAMBULUS, *Cycl.*

Some have taken the word to signify the hippodrome, or decursorium, wherein the Roman knights used to exercise themselves in running and fighting on horseback.

But the most natural meaning is that of a rope, fastened at one end to the top of the theatre, and at the other to the bottom, to walk or run down, which was the highest glory of the antient schænobates, or funambuli. Elephants were also taught to run down the *catadromus*[a]. Suetonius speaks of the exploit of a Roman knight, who run down the *catadromus* mounted on an elephant's back[b]. — [a *Xiphil.* l. 61. p. 697. b *Suet.* in Ner. c. 11. p. 5. Vid. *Pitisc.* Lex. Ant. T. 1. b. 378. *Fab.* Thes. p. 488.]

CATADUPA (*Cycl.*) — The appellation *catadupa* seems to have been peculiarly given to a place in Æthiopia joining on Egypt, where the Nile, which here first assumes that name, rushed down a steep rock into the subjacent plain, with a noise so impetuous, that the inhabitants are said to have lost all sense of hearing. *Cic.* de Somn. Scipion. Vid. Etiam *Senec.* Nat. Quæst. l. 4. c. 2. *Ammian. Marcellin.* l. 22. c. 34, &c. 36. *Plin.* Hist. Nat. l. 5.. c. 9. *Vitruv.* de Archit. l. 8. c. 2. *Fab.* Thes. p. 488.

CATAGOGION, Καταγωγιον, a Heathen festival at Ephesus, celebrated on the 22d of January, in which the devotees run about the streets dressed in divers antic and unseemly manners, with huge cudgels in their hands, and carrying with them the images of their gods; in which guise they ravished the women they met with, and abused, and often killed the men, and committed many other disorders, to which the religion of the day gave a sanction. Vid. *Du Cange*, Gloss. Græc. T. 1. p. 607.

Meursius and Castellanus, who wrote *de Festis Græcorum*, have taken no notice of this. *Schoetg.* Lex. Ant. p. 287.

CATAGRAPHA, Καταγραφα, in antiquity, denote oblique figures, or views of mens faces; answering to what the moderns call *profiles*. See PROFILE, *Cycl.* and *Suppl.*

Catagrapha are said to be the invention of Simon Cleonæus, who first taught painters to vary the looks of their figures, and sometimes direct them upwards, sometimes downwards, and sometimes sidewards or backwards. Vid. *Plin.* Hist. Nat. l. 35. c. 8. *Hardou.* Not. ad eund. ib. *Jun.* Paint. of Anc. l. 3. c. 4. p. 290.

CATALEPSIS (*Cycl.*) is the same with what is otherwise denominated *catoche*, or *catochus*, and *gelatio* or *congelatio*. *Cast.* Lex. Med. p. 359, voc. *gelatio.* See CATOCHE, &c.

Some also make it the same with *coma vigil*[a]; others will have it different[b]; tho' wherein the distinction lies is not easy to assign[c]. — [a Vid. *Lang.* Epist. Medic. l. 1. Ep. 25. b Dieter. Jater. n. 863. c *Cast.* Lex. Med. p. 143. *Shaw*, New Pract. Phys. p. 8.] See COMA, *Cycl.*

CATALEPSY (*Cycl.*) — In the history of the royal academy of sciences at Paris, we have an account of a woman who had a surprising *catalepsy*, her members keeping all the postures they were put into, as if she had been made of wax. An. 1738.

CATALOGUE (*Cycl.*) — *Catalogues* of books are digested in different manners, some according to the order of the times when the books were printed, as that of Mattaire; others according

cording to their form and size, as the common booksellers *catalogues*; others according to the alphabetical order of the author's names, as Hyde's *catalogue* of the Bodleian library; others according to the alphabetical order of matters or subjects which are called real or classical *catalogues*, as those of Lipenius and Draudius; lastly, others are digested in a mixed method, partaking of several of the former, as de Seine's *catalogue* of cardinal Slusius's library, which is first divided according to the subjects or sciences, and afterwards the books in each are recited alphabetically. Catalog. Biblioth. Slusian. Rom. 1690, 4to. *Struv.* Introd. Notit. Rei Liter. c. 1. §. 23. Item. Not. p. 113, seq.

Some *catalogues* are valued for the multitude of their books, others for their choice and excellency, others for their manuscripts, and others for the conveniency of their method, and the justness of their arrangment.

The bibliotheca Telleriana excels chiefly in books of theology and ecclesiastical history; that of the Colbertin library, in historical books; that of Bridges, in antient poets; that of Dr. Bernard in mathematical books, &c. The *catalogue* of Nic. Heinsius's library is in great esteem for the exquisite choice of the books [a]: that of the Coislin library [b], composed by Montfaucon, excels in manuscripts, both Oriental and Latin, but chiefly Greek: it is drawn up after the manner of the Vienna library, and contains a notitia or short history of each manuscript, the time when wrote, the copist by whom, the number of leaves, place where it had lain hid, &c.[c] Scavenius's *catalogue* of the royal library at Copenhagen [d], is much esteemed for the orderly method of its digestion; but it has been long scarce. F. Garnier's *catalogue* of the jesuits library at Paris, is not so properly an account of the books in the library, as a plan of a just method of disposing a library. The *catalogue* of the Cordesian library composed by Naude[e], is ranked in the number of the best *catalogues*, by reason of the exactness of the order wherein the books are ranged. The *catalogue* of the Barberin library is valuable on many accounts; as for the number, the splendor, the choice, order and usefulness of the books, &c.[f] But the most applauded of all *catalogues* is that of Thuanus's library, in which are united the advantages of all the rest. It was first drawn up by the two Puteani in the alphabetical order, then digested according to the sciences and subjects by Isham. Bullialdus, and published by F. Quesnel at Paris in 1679 [g]; and reprinted, tho' incorrectly, at Hamburgh, in 1704. The books are here ranged with justness under their several sciences and subjects, regard being still had to the nation, sect, age, &c. of every writer. Add, that only the best and choicest books in every subject are found here, and the most valuable editions. Yet the *catalogue* of M le Telliers, archbishop of Rheims', library [h], made by M. Clement, is not inferior to any published in our age, either on account of the number and choice of the books, or the method of its disposition: On the plan of this, a *catalogue* of the king of France's library was proposed to be published, which we are still in expectation of. One advantage peculiar to this *catalogue*, is the multitude of anonymous and pseudonymous authors detected in it, scarce to be met with elsewhere [i]. Some even prefer it to Thuanus's *catalogue*, as containing a greater variety of classes and books on particular subjects.—[[a] *Morhof.* lib. infra cit. c. 18. §. 10. *Struv.* ubi supr & Not. p. 115. [b] Bibliotheca Coisliniana, olim Segueriana, Par. 1714. fol. [c] *Coler.* Anal. ad *Struv.* lib. cit. p. 117, seq. [d] Designatio Bibliothecæ Regiæ Hafnienſis, Hafn. 1665. 4to. [e] Catalogus Bibliothecæ Cordesianæ, Paris 1643. 4to. *Morhof.* Polyhist. Liter. l. 1. c. 5. §. 7. *Struv.* lib. cit. [f] Index Bibliothecæ quæ Franc. Barberinus's S. R. E. Cardin, &c. Rom. 1681, 2 vol. fol. the title-page indeed mentions 3 volumes; but the 3d, which was to contain the MSS. is not yet published. [g] Bibliotheca Thuanea, Par. 1679, 8vo. 2 vol. and Hamb. 1704, fol. & 8vo. Vid. *Morhof.* Polyhist. Liter. l. 1. c. 5. §. 11, seq. *Baillet*, Jugem. des Scav. T. 2. p. 260. *Struv.* Introd. ad Hist. Liter. c. 1. §. 23. [h] Catalogus Bibliothecæ Pellerianæ, Par. 1693, fol. *Struv.* lib. cit. [i] Vid Act. Erud. Lipsi. 1694, p. 353. *Coller.* Anal. ad *Struv.* p. 116.]

The conditions required in a *catalogue* are, that it indicate at the same time the order of the authors and of the matters, the form of the book, the number of volumes, the chronological order of the editions, the language it is written in, and its place in the library; so as that all these circumstances may appear at once, in the shortest, clearest, and exactest manner possible. In this view, all the *catalogues* yet made will be found to be defective. Draudius's *catalogue* is an alphabetical table of matters divided under four classes, in which are indicated the books which treat on each subject, the year of their edition, name of the editor, title of the work, and form of the volume. Its defects are, that no chronological order is observed; that the works of the same writer are too much dispersed, and that the whole is only a compilation full of faults and ill digested, of the *catalogues* of the Francfort fairs.

Dr. Hyde's *catalogue* of the Bodleian is also disposed according to the alphabetical order, not of the matters, but of the authors only, referred to four classes, and under each book notice is given to which of those classes it belongs. Its defects are, that we cannot by it find all the authors who have treated on any subject; that the anonymous authors cannot be here conveniently introduced; that the order of the editions does not appear; that the forms are confounded, and the translations with the originals.

The *catalogue* of M. le Tellier's library has the advantages of all the former, being disposed in the order of the subjects, and having at the same time an alphabetical index of the authors: besides, that in works printed in several languages, the natural order of texts is observed, by placing the original first, and then the versions, each according to its merit or its antiquity. Lastly, that the chronological order of the editions is exactly observed. Its defects are, that the chronology of the editions is somewhat confused, that we are obliged to seek the writings of the same author in different places, when they happen to be in different forms, and that there wants an alphabetical table of the matters.

The *catalogue* of abbot Faultrier's library, composed by M. Marchand, is disposed according to the order of matters, but in a manner peculiar to itself, in as much as the authors on each subject are also ranged in their chronological order. Its defects are, that the different forms are confounded, as well as the chronology of the texts, and that the exactitude observed in the chronology of the authors is not perceived.

An anonymous French writer has laid down a new plan of a *catalogue*, which shall unite all the advantages, and avoid all the inconveniencies of the rest. Lett. a l'Abbe ***, sur un Nouveau Projet de Catalogue de Bibliotheque. Par. 1712. Vid. Jour. des Scav. T. 52. p. 33, seq.

CATALONGAY, in botany, the name given by some authors to the plant which produces the faba sancti Ignatii, or saint Ignatius's beans of the shops. Pluk. Mont. p. 60.

CATAMENIA, Καταμηνια, in medicine, women's monthly purgations, called also *menses*. *Gorr.* Med. Defin. p. 213. *Drak.* Anthrop. l. 1. c. 23. See MENSES, *Cycl.* and *Suppl.*

CATANADROMI, in Ichthyography, a term of the same signification with the more used word *anadromi*, the distinctive term of a set of fishes, which at times leave the fresh water for the salt, and afterwards return to the fresh water again. *Gesner*, de Pisc. See ANADROMOUS.

CATANANCE, in botany, the name of a genus of plants, the characters of which are these; the flower is of the semifloscular kind, being composed of a number of floscules, standing upon the embryo seeds, and all contained in a general squammose cup. The embryos finally become seeds, crowned with a sort of foliaceous heads, and are contained till ripe in the cup. The species of *catanance* enumerated by Mr. Tournefort, are these: 1. The coronopus-leav'd blue-flowered *catanance*, called by some the cyanus-headed blue succory. 2. The *catanance* with double blue flowers. 3. The broad leav'd yellow-flower'd *catanance*, called the plantain-leav'd stæbe; and, 4. The narrow-leav'd yellow-flowered *catanance*. *Tourn.* Inst. p. 478.

CATAPELTÆ, Καταπελται, in antient writers, sometimes denote arrows, and sometimes engines wherewith either arrows, stones, or even huge pieces of timber were cast. Pliny ascribes the invention of the *catapeltæ* to the Syrians; Plutarch and Diodorus to the Sicilians. *Pott.* Arch. Græc. l. 3. c. 10. p. 95.

It is more frequently written *catapulta*. See CATAPULTA.

CATAPHORA, in a theme of the heavens, an appellation given to the houses falling from the 3d, 6th, 9th, and 12th angles. In which sense the word stands opposed to *anaphora*. *Vital.* Lex. Math. p. 96. See ANAPHORA, *Cycl.*

CATAPHRACTA, Καταφρακτη, in the antient military art, a piece of heavy defensive armour, formed of cloth or leather, fortified with iron scales or links, wherewith sometimes only the breast, sometimes the whole body, and sometimes the horse too, was covered.

The *cataphracta* was in antient use among the Sarmatians [a], Persians, and other barbarians. The Romans also adopted it early for their foot; and according to Vegetius, kept to it till the time of Gratian, when the military discipline growing remiss, and field exercises and labour discontinued, the Roman foot thought the *cataphracta*, as well as the helmet, too great a load to bear, and therefore threw both by, chusing rather to march against the enemy bare-breasted: by which in the war with the Goths, multitudes were destroyed [b].—[[a] *Tacit.* Hist. l. 1. c. 79. [b] *Veget.* de Re Milit. l. 1. c. 20. *Aquin.* Lex. Milit. T. 1. p. 182.]

CATAPHRACTA, Καταφρακτα, among surgeons, denotes a bandage or ligature of the thorax; thus denominated from its resemblance to a Roman breast-plate, called *cataphracta*. *Castel.* Lex. Med. See BANDAGE.

CATAPHRACTÆ *naves*, those armed and covered in fight, so that they could not be easily damaged by the enemy.

The *cataphractæ* naves were covered over with boards or planks, on which the soldiers were placed to defend them. The rowers sitting underneath, thus skreened from the enemies weapons.

CATAPHRACTUS, Καταφρακτος, denotes a thing defended or covered on all sides with armour. *Pitisc.* Lex. Ant. T. 1. p. 379.

CATAPHRACTUS, or CATAPHRACTARIUS, more particularly denotes a horseman, or even horse, armed with a cataphracta. See CATAPHRACTA.

The *cataphracti equites* were a sort of cuirassiers, not only fortified

tified with armour themſelves, but having their horſes guarded with ſolid plates of braſs or other metals, uſually lined with ſkins, and wrought into plumes or other forms. *Pott.* Arch. Græc. l. 3. c. 3. p. 18.

The uſe of the *cataphracti equites*, was to bear down all before them, to break in upon the enemies ranks, and ſpread terror and havock wherever they came, as being themſelves invulnerable and ſecure from danger. But their foible was their unweildineſs, by which, if once unhorſed, or on the ground, they were unable to riſe, and thus fell a prey to the enemy.

CATAPHRACTUS *pogge*, in zoology. See POGGE.

CATAPLASM (*Cycl.*) — CATAPLASMA *é cymino*, the *cummin ſeed cataplaſm*, a form of medicine preſcribed in the late London diſpenſatory, and meant as a ſubſtitute for the theriaca Londinenſis, or London treacle, of former diſpenſatories, which has of late been uſed only externally, and for ſuch purpoſes as it is thought this will better ſerve for. The compoſition is this: take cummin ſeeds half a pound; bay-berries and leaves of ſcordium dried, of each three ounces; of cloves one ounce; honey, three times the weight of the whole; mix all together into a *cataplaſm*. *Pemberton*'s Lond. Diſp. p. 378.

CATAPLASMA *maturans*, a form of medicine in the late London pharmacopœia, ordered to be made in the following manner: take dried figs, four ounces; yellow baſilicon, one ounce; ſtrained galbanum, half an ounce: beat well the figs with a little wine, or ſtrong ſtale beer, and then carefully mix in the ointment, firſt melted with the galbanum. *Pembert.* Lond. Diſp. p. 379.

CATAPOTIA, Καταποτια, dry medicines, in a form fit to be ſwallowed whole; otherwiſe called *pills*. *Caſt.* Lex. Med. p. 145. voc. *Catapoſis*. *Junck.* Conſp. Form. Med. Tab. 3. p. 29.

CATAPULTA (*Cycl.*) — The word is originally Greek, Καταπελτης, formed απο της πελτης, which according to Heſychius, denotes a ſpear or dart. Hence it is ſometimes alſo written *catapelta*. See CATAPELTA.

The *catapeltæ* were alſo denominated οξυβολοι, in regard they threw ſharp wooden weapons, whereas thoſe caſt by the baliſtæ were obtuſe, viz. ſtones. *Felib.* Princ. de l'Archit. p. 368. *Perrault*, Abr. of Vitruv. c. 3. art. 7. p. 156. *Wolf.* Lex. Math. p. 320.

The *catapulta* differed from the baliſta, in that the latter threw ſtones, the former darts and javelins. The authors of the middle age, and even Cæſar himſelf, ordinarily confound the two, uſing the word balliſta for what the antients called *catapulta*. *Lipſ.* Poliorcet. 3. 2. de Laët. Lex. Vitruv. p. 22. *Pitiſc.* Lex. Ant. T. 1. p. 379. See BALISTA.

The *catapulta* conſiſted of two huge timbers, like maſts of ſhips, placed againſt each other, and bent by an engine for the purpoſe; theſe being ſuddenly unbent again by a ſtroke of an hammer, throw the javelins with incredible force. Its ſtructure, and the manner of working it, are deſcribed by Vitruvius, and a figure of it is alſo given by Perrault [a]. M. Folard aſſerts, that the *catapulta* made infinitely more diſorder in the ranks than our cannon loaden with cartridges [b].—[[a] Vid. *Vitruv.* de Archit. l. 10. c. 15. & c. 18. *Perr.* Not. ad eund. p. 335. Item, Abr. of Vitruv. c. 3. art. 7. p. 156. [b] *Folard* Not. ſur Polyb. T. 2. p. 587. 592, ſeq. 601. *Fæſch.* Ing. Lex. p. 162.]

CATAPUTIA, in botany, the name of a ſpecies of ſpurge, called alſo by ſome *lathyris*, and diſtinguiſhed among authors by the name *tithymalus latifolius*. See the article TITHYMALUS.

Some make two ſorts of *cataputia*, the major called alſo ricinus Americanus, and palma Chriſti; and the minor, which, as before ſaid, is a ſpecies of ſpurge. Both agree in their purgative quality, which is ſo violent, that they are rarely ordered, except by empirics [a], tho' the college retains them both [b]. 'Tis a traditionary fable, tho' of great antiquity, that the leaves of *cataputia* being plucked upwards, work by vomit, and when plucked downwards, by ſtool [c].—[[a] Vid. *Quinc.* Pharm. Lect. 4. p. 49. Item, in Diſpenſ. P. 2. Sect. 8. n. 470. *Junck.* Conſp. Ther. p. 42. & 67. [b] Pharm. Coll. Reg. Med. Lond. p. 121. [c] *Brown*, Vulg. Err. l. 2. c. 7. p. 83.]

The leaves of the *cataputia* reſemble thoſe of the plane-tree, but are larger, blacker, and more gloſſy: Its branches, as well as trunk, are hollow like a reed. Of its ſeed is made an oil commended againſt burns, and uſed in the compoſition of ſome plaiſters. *Savar.* Dict. Comm. T. 1. p. 590.

CATARACT (*Cycl.*)—The *cataract* is now generally agreed to be, for the moſt part, the chryſtalline humor rendered opaque. We have the hiſtories of ſome diſſections of cataractous eyes, by Dr. Scheuchzer, in the Act. Phyſic. Medic. Acad. Nat. cur. Tom. 3. Obſ. 36. and by Dr May, in the Commerc. Norimb. 1733. Hebd. 4. §. 3. and by Dr. Agricola in 1735. Hebd. 18. tending to confirm this doctrine. Med. Eſſ. Ed. Abrid. Vol. 2. p. 438, 508.

We have an account by Mr. Monro of an eye of a man who had had a *cataract*. The opaque chryſtalline lens was not ſo large as it commonly is in a ſound eye, and inſtead of being circular, was of a triangular form. Its anterior convexity was ſcabrous and unequal, and of a yellow white colour. Med. Eſſ. Edinb. Vol. 5. Art. 54.

CATARACTA, in zoology, the name of a bird of the larus or ſea-gull kind, very much approaching to the nature of our gannet, but ſmaller, and with ſhorter and weaker claws. It much reſembles the goſhawk. Its back and wings are variegated with brown, yellow, and white; its breaſt and belly are white, variegated with brown ſpots; its wings are long, and when folded, reach to the end of the tail; its legs are grey, its feet webbed, and its claws crooked and ſmall. *Aldrovand.* de Avib.

CATARACTES, in zoology, a name by which ſome authors have called the large ſea-gull; called in Cornwall, where it is very common, the gannet. See GANNET.

CATARIA, *catmint*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is of the labiated kind; the upper lip is roundiſh, erect, and bifid; the lower is divided into three ſegments, the middle one of which is hollowed like a ſpoon, and the others ſurround like wings a remarkable orifice there is between the two lips: the piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower; this is ſurrounded by four embryos, which ripen into as many ſeeds of a roundiſh figure, to which the flower-cup ſerves as a capſule. The ſpecies of *catmint* enumerated by Mr. Tournefort, are theſe: 1. The common great *catmint*. 2. The common ſmaller *catmint*. 3. The common great narrow-leav'd *catmint*. 4. The ſmall alpine *catmint*. 5. The leſſer narrow-leav'd *catmint*. 6. The narrow betony-leav'd *catmint* of Spain, with blue flowers. 7. The narrow betony-leav'd *carmint* of Spain, with white flowers. 8. The Portugal betony-leav'd *catmint*, with tuberous roots. 9. The ſmaller Portugal betony leav'd *catmint*, with fibroſe roots. *Tourn.* Inſt. p. 201, ſeq.

CATARRHS (*Cycl.*) are of as many ſpecies as are the parts on which the rheum or matter falls. Hippocrates enumerates eight kinds of defluxions from the head, viz. on the eyes, noſe, ears, breaſt, abdomen, ſpinal marrow, vertebræ, and muſcles of the loins, and os ſacrum. The moderns only allow of three ſorts under the name of *catarrhs*; the firſt, wherein the matter falls on the noſe, more properly called *coryza*; the ſecond, on the fauces, called *branchus*; and the third on the thorax or breaſt, more particularly denominated a *catarrh*. The ſum of which is couched in the following diſtich,

Si fluit ad Pectus dicatur Rheuma Catarrhus,
Ad fauces branchus, ad nares eſto Coryza. *Caſt.* Lex. Med. p. 146. *Shaw*, New Pract. Phyſ. p. 31. See CORYZA, &c.

Slow CATARRH, that wherein the peccant matter flows gently.

Haſty CATARRH, that wherein it ruſhes on the part with vehemence.

Suffocative CATARRH, a rapid defluxion of a ſerous humour from the head to the organs of reſpiration. *Sylv.* Prax. Med. c. 22. §. 11. *Nent.* Fund. Med. T. 2. tab. 80. p. 146. See SUFFOCATIVE *catarrh*.

Pituitous CATARRHS are aſcribed by Sylvius to a viſcid food, and cold air [a]. Helmont has a treatiſe expreſs *de Deliramentis Catarrhorum*, wherein he pleads for their being thrown out of the conſideration of medicines, and left to nature alone [b].—[[a] *Sylv.* loc. cit. c. 13. §. 14. [b] Vid. *Helm.* de Deliram. Catarrh. Item de Lithiaſi. c. 1.]

CATARRHAL *fever*, a ſecondary or ſymptomatic fever, by means whereof nature endeavours to correct the vitious quality of the lymph, and expel it the body. *Nent.* Fund. Med. T. 2. tab. 136. c. 9. p. 525. *Junck.* Conſp Med. tab. 48. p. 309 See FEVER.

There is alſo a malignant *catarrhal* fever, nearly akin to the petechial fever. *Nent.* loc. cit. c. 10. p. 533. *Junck.* ubi ſupra, tab. 49. p. 317.

CATASARCA, Καταſαρκα, in the Greek church, denotes the undermoſt altar cloth, or that next the table. See ALTAR.

Over the *cataſarca* is the *antimenſa*. *Du Cange.* Gloſſ. Græc. T. 1. p. 613. *Schoet.* Lex. Ant. p. 287, ſeq. See ANTIMENSA.

CATASCOPIUM, in antiquity, an exploratory veſſel, anſwering in ſome meaſure to a brigantine among us. *Gyrald.* de Navig. c. 18. *Pitiſc.* Lex. Ant. T. 1. p. 380. See BRIGANTINE.

We find *cataſcopium* uſed in this ſenſe by Cicero, ad Attic. l. 5. ep. 11.

CATASCOPUS, in antiquity, denotes a ſpy. *Hirt.* de Bell. Afric. c. 26. *Fab.* Theſ p. 490. See SPY.

In eccleſiaſtical writers, *cataſcopus* is ſaid ſometimes to denote an archdeacon. *Jac.* Law Dict in voc.

CATASTA, in antiquity, a wooden ſcaffold, whereon ſlaves were placed for ſale naked, that thoſe diſpoſed to purchaſe, might ſee every limb and part. *Pitiſc.* Lex. Ant. p. 380. *Schoet.* Lex. Ant. p. 288.

Some will have the *cataſta* to have been a ſort of ſtocks, or oblong wooden frame, in which ſlaves for ſale were kept faſt with chains, to prevent their flight. *Plin.* Hiſt Nat. l. 35. c. 18. *Hardou.* Not. ad loc. *Calv.* Lex. Jur. p. 154.

The word was alſo uſed for an elevation, on which perſons were executed; and for an engine of torture, otherwiſe called *equuleus*. *Fabr.* Theſ. p. 490. See EQUULEUS, *Cycl.*

The *cataſta* does not appear to have been the ſame with the equuleus, but rather a kind of frame or ſcaffold, on which the equuleus was mounted, to render the executions more public

and visible. Prudentius calls the cratis, or grid-iron, on which some of the martyrs were broiled, *ignea catasta*. *Pitisc.* Lex. Ant. T. 1. p. 380.

CATASTROMATA, in antient military writers, a sort of scaffolds or floorings in ships of war, whereon the soldiers were posted for their defence in fight.

The *catastromata* appear to have been chiefly erected over the head and stern of the vessel, it being in these parts that the soldiers were most commonly posted. Vid. *Scheff.* de Milit. Naval. l. 2. c. 5. *Aquin.* Lex. Milit. T. 1. p. 186.

CATCH *fly*, in botany. See LICHNIS.

CATCH-*word*, among printers, denotes the first word of a page, which is put also at the bottom of the preceding page, in order to shew how the leaves and sheets follow each other, and facilitate the folding and binding.

The French sometimes only put the *catch-words* at the end of each sheet, or even quire or gathering. *Savar.* Dict. Com. T. 2. p. 1284. voc. *reclame*.

CATCHES, in clock-work, those parts of a clock that hold by hooking, and catching hold.

CATE, in botany, a name given by some authors to the *lycium Indicum*, or Indian thorn. *J. Bauhin*, vol. 1. p. 61. See LYCIUM.

CATECHESIS, Κατηχησις, in a general sense, denotes an instruction given any person in the first rudiments of an art or science, but more particularly in the principles of the christian religion. Journ. Liter. T. 11. P. 2. p. 311.

In the antient church, *catechesis* was an instruction given, viva voce, either to children, or adult Heathens, preparatory to their receiving of baptism. *Fab.* Thes. p 491.

In which sense *catechesis* stands contradistinguished from mystagogica, which were a higher part of instruction given to those already initiated, and containing the mysteries of faith.

Those who give such instructions are called *catechists*, and those who receive them *catechumens*. See CATECHIST.

CATECHESIS is also used for a book containing the rudiments of the christian religion, adapted to the use and instruction of novices. See CATECHISM.

The *catecheses* of St. Cyril, are the principal work of that father. *Du Pin*, Bibl. Eccles. T. 2. p. 134, seq. & p. 144.

CATECHETIC, or CATECHETICAL, something that relates to oral instruction in the rudiments of christianity. See CATECHESIS and CATECHISM.

In the early ages of the church there were *catechetic* schools, wherein sacred learning and philosophy were taught. These were public auditories, distinct from the church, but probably adjoining thereto. In a novel of the emperor Leo, they are called κατηχεμενα, and represented as a sort of edifices belonging to the church. St. Ambrose speaks of these auditories as held in the baptistery. *Bingh.* Orig. Eccles. l. 3. c. 10. §. 4.

CATECHISM, *catechismus*, in its primary sense, an instruction or institution in the principles of the christian religion, delivered viva voce, and so as to require frequent repetitions from the disciple or hearer of what had been said. *Calv.* Lex. Jur. p. 154.

The word is formed from κατηχεω, a compound of κατα and ηχος, q. d. *circum sono*, alluding to the noise or din made in this exercise, or to the zeal and earnestness wherewith things are to be inculcated over and over on the learners.

Antiently the candidates of baptism were only to be instructed in the secrets of their religion by tradition, viva voce, without writing; as had also been the usage among the Egyptian priests, and the British and Gaulish druids, who only communicated the mysteries of their theology by word of mouth. *Calv.* Lex. Jur. p. 155. *Shaftsb.* Char. T. 3. p. 241. not.

CATECHISM is more frequently used in modern times, for an elementary book, wherein the principal articles of religion are summarily delivered in the way of question and answer.

CATECHIST, Κατηχιστης, *catecheta*, he that catechises, *i. e.* instructs novices in the principles of religion. See CATECHESIS.

CATECHIST more particularly denotes a person appointed by the church, to instruct those intended for baptism, by word of mouth, in the fundamental articles of the christian faith.

The *catechists* of churches were ministers usually distinct from the bishops and presbyters, and had their auditories or catechumena apart. Their business was to instruct the catechumens, and prepare them for the reception of baptism. But the *catechists* did not constitute any distinct order of the clergy, but were chosen out of any other order. The bishop himself sometimes performed the office; at other times presbyters, or even the readers or deacons were the *catechists*. Origen seems to have had no higher degree in the church than that of lector, when he was made *catechist* at Alexandria, being only eighteen years of age, and consequently incapable of the diaconate. *Hieron.* de Scriptor. Eccles. in Origin.

The *catechists* are by some Greek authors called Ναυλολογοι, an appellation properly given among mariners to those whose business it was to admit passengers into the ship, and contract with them for their fare. This tallied to the *catechists* duty, which was to shew the catechumens the contract they were to make, and the conditions they were to perform, in order to their admittance into the christian church. *Clem.* Ep. ad Jacob. p. 14.

CATECHUMENUM, Κατηχεμενον, or *catechumenium*, a name given to the upper galleries in the antient churches.

There are two different opinions concerning the reason of this denomination; the first, that of Baronius, Wolfius and Meursius, who hold that it was in those galleries the catechumens were seated during the time of service, or at least that they were catechised there [a]. Du Cange, on the contrary, maintains that women were seated in those galleries, which were denominated *catechumena* from the instructions which that sex there received [b].—[a *Suic.* Thes. Eccles. T. 2. p. 75. seq. b *Du Cange*, Gloss. Lat. T. 1. p. 888, seq. Item, Gloss. Gr. p. 621. Trev. Dict. Univ. T. 1. p. 1507. *Bing.* Orig. Eccles. l. 8. c. 5. §. 7.]

The name *catechumenum* was also given to a sort of schoolhouse near the church, where the *catechumens* met to receive the instructions of the catechists. Leo. Novel. 73. *Bingh.* Orig. Eccles. l. 3. c. 10. §. 4. See CATECHETIC.

CATEGOREMA is defined a noun substantive, so absolute and independent, that it may stand at the head of a class apart. *Chauv.* Lex. Phil.

CATEGOREMA (*Cycl.*) also denotes a term which may be predicated of another.

In which sense it amounts to the same with predicable. *Micræl.* Lex. Phil. p. 245. & p. 1082. See PREDICABLE, *Cycl.*

CATEGOREMA is also frequently used for the same with predicament or category. *Walch.* Lex. Phil. p. 352. See CATEGORY, *Cycl.*

CATEGORIÆ, *prædicamenta*, in literary history. Aristotle has a book extant under the title of Κατηγοριαι, which Curio, Tonstius, Vives, and others, deny to be written by him, and ascribe to Andronicus; but without much foundation, since that work is cited as Aristotle's by Simplicius, Ammonius, and Lucianus. Vid. *Voss.* de Nat. & Const. Log. c. 10. §. 3. *Walch*, Hist. Log. l. 2. c. 1. Sec. 1. §. 6. *Parerg.* Acad. p. 521, seq.

CATEGORIARES, Κατηγοριαρης, a minister in the Greek church, whose business it is to publish or proclaim the feast days. He has also the care of the lights, and to see the church kept clean. *Du Cange*, Gloss. Græc. T. 1. p. 619. *Schoet.* Lex. Ant. p. 290.

CATEGORICAL, in a general sense, is applied to those things ranged under a category. See CATEGORY, *Cycl.*

CATEGORICAL also imports a thing to be absolute, and not restrained to conditions. See ABSOLUTE.

In which sense it stands opposed to hypothetical. *Micræl.* Lex. Phil. p. 246. See HYPOTHETICAL and CONDITIONAL, *Cycl.*

We say a *categorical* proposition, a *categorical* syllogism, &c. See PROPOSITION, SYLLOGISM, &c. *Cycl.*

A *categorical* answer denotes an express and pertinent answer made to any question or objection proposed.

CATEGORUMENUM, Κατηγορεμενον, denotes the predicate, or that part of a proposition which is affirmed of the subject. *Micræl.* Lex. Phil. p. 246. See PREDICATE, *Cycl.*

Some mistakenly call this *categorema*. *Scherz.* Man. Phil. p. 30.

CATEIA, in antient writers, a kind of dart or javelin, in use among the antient Gauls and Germans, made of heavy matter, and therefore not fitted to fly far, but doing great execution where it did reach, having withal an apparatus by which the person who threw it might draw it back again. *Isid.* Orig. lib. 18. c. 7. Lipf. Poliorc. 44. *Du Cange*, Gloss. Lat. T. 1. p. 889. *Pitisc* Lex. Ant. T. 1. p. 290. *Schoet.* Lex. Ant. p 290. It is spoken of by Virgil,

Teutonico ritu soliti vibrare catcias. *Virg.* Æneid. l. 7. v. 741.

CATEMIA, a name given by some of the writers of the middle ages to a soft black stone used in the soldering of silver, and some other metals, and more commonly called *horcus lapis*. We do not at this time know what stone they mean.

CATENA, (*Cycl.*) in a general sense, a chain. See CHAIN, *Cycl.*

CATENA *patrum*, in ecclesiastical writers, denotes a sort of commentary on scripture, composed of separate passages or interpretations of the fathers, reduced to the order of chapters and verses of the book.

The first who used *catena* in this sense, was Thomas de Aquinas. The reason of the appellation seems to be this: that as a chain consists of several links connected together, so do these commentaries consist of a number of different passages, or the sentiments and expositions of different writers, tacked together so as to form one work. Vid. *Fabric.* Bibl. Græc. T. 7. l. 5. c. 17. p 728.

We have *catenæ* of divers kinds and qualities, some compiled with judgment, and methodized with diligence, and others without either. In some *catenæ* the words of the original authors are not copied fairly, but either maimed or adulterated with interpolations; in most of them, the reasons on which divers interpretations are grounded, and which are very necessary to be known, are omitted. Add, that the authors are often confounded, and what was written by one is placed to the account of another. The different opinions of several writers are sometimes also jumbled into one. Some critics reject the whole design of *catenæ* as useless [a]. Yet are not

catenæ, compiled with judgment, without their uſe, as they diſcover to us what has been ſaid on each text of ſcripture by the beſt doctors and interpreters of the antient church, without the trouble of turning over ſo many volumes. Add, that as the authors from whom paſſages are taken are cited in the *catenæ*, a reader is hereby directed to the fountains, where he may find full ſatisfaction. But the chief benefit of *catenæ* is, that in them fragments have been preſerved of many works of the fathers long ſince loſt [b]. Wolfius has a diſſertation on the *catenæ* of the Greek fathers, wherein their uſes are ſpecified at large [c].—[[a] Vid. *le Moyn.* in Proleg. ad Varia Sacra. p. 53, ſeq. *Budd.* Iſag. ad Theol. l. 2. c. 8. § 10. p. 1635, ſeq. [b] Vid *Grab* Pref. ad Spicil. Patr. T. 1. [c] *Wolf.* Diſſ. de Catenis Patrum Græcorum iiſque potiſſimum Manuſcriptis, §. 4. p. 7, ſeq.]

The invention of the method of *catenæ* is attributed to Olympiodorus, deacon of the church of Alexandria, in the fifth or ſixth century, who compiled a *catena* on Job, firſt printed at Lyons in 1586, and ſince at Venice: tho' ſome will have it to be compoſed by Nicetas, archbiſhop of Heraclea, in the eleventh century, and give the honour of the firſt *catena* to Procopius Goræus, whoſe epitome of the comments of various writers on the prophet Iſaiah, were publiſhed in Greek and Latin at Paris in 1580; tho' the reſt, and eſpecially his ἐξηγητικων ἐκλογων ἐπιτομη on the proverbs, remains ſtill in manuſcript. Theſe expoſitions of Procopius, tho' they have not, like the other *catenæ*, the names of the authors cited to each paſſage, yet being compiled out of various authors, may properly enough be ranked in the number of *catenæ* [a]. For Œcumenius's commentaries on the acts, the epiſtles of Paul, &c. tho' much of them be taken from other writers, yet as the author frequently intermixes his own ſentiments, they have leſs title to the appellation of *catenæ*. Procopius was followed in the catenarian method by Nicetas, to whom, beſides the *catena* on Job, is uſually attributed another on Matthew, publiſhed by Poſſinus in 1646, and by Corderius in 1647; tho' F. Simon and Fabricius will not allow either of them to have been written by Nicetas [b].—[[a] Vid. *Fabric.* Bibl. Græc. T. 7. l. 5. c. 17. p. 735, ſeq. [b] *Simon*, Hiſt. Crit. Comment. Vieux Teſt. c. 3. p. 426. *Fabric.* Bibl. Græc T. 7. l. 5. c. 17. p. 765.]

The firſt *catena* of the Latin fathers was Thomas Aquinas's *catena aurea* on the four evangeliſts, which, tho' written in Latin, was compiled both out of Greek and Latin fathers. In ſome editions of his works, this is called *gloſſa continua*; tho' the title given it by the author was doubtleſs *catena*. The ſame method was afterwards purſued by Lipomannus, who compoſed a *catena* on geneſis, exodus, and pſalms, not much eſteemed by the connoiſſeurs.

For the *catenæ* of the Greek fathers, there are ſeveral whoſe authors are unknown; and of thoſe which are known, ſome have paſſed the preſs, while others remain ſtill in manuſcript. Again, of thoſe which have been publiſhed, ſome are only printed in Latin, as the *catenæ* of the Greek fathers on the pentateuch and the canticles; the former tranſlated by Zephyras, the latter by Caraffa; alſo, the golden *catena* on 50 of David's pſalms, and the *catena* of the Greek fathers on the proverbs: others are printed both in Greek and Latin, as the *catena* Græcorum patrum on all the pſalms, publiſhed by Corderius; another on John, and another on Luke, both publiſhed by the ſame editor [a]. Ittigius has given an ample detail of the *catanæ* of the fathers, and their editions, in the order wherein they were publiſhed [b].—[[a] *Budd.* Iſag. ad Theol. l. 2. c. 8. §. 10. p. 1636, ſeq. *Rump.* Crit. Comm. ad Nov. Teſt. §. 52. p. 455, ſeq. [b] *Ittig.* de Biblioth. & Catenis Patrum Lipſ. 1707. 8vo.]

CATERPILLAR, *eruca*, in the hiſtory of inſects. See the article ERUCA.

CATERPILLAR *eaters*, a name given by ſome authors to a ſpecies of worms which are bred in the body of a caterpillar, and eat its fleſh: theſe are owing to a certain kind of fly which lodges her eggs in this animal, and they, after their proper changes, become flies like their parents.

Mr. Reaumur has given us, in his hiſtory of inſects, ſome very curious particulars in regard to theſe little worms. Every one of them, he obſerves, ſpins itſelf a very beautiful caſe, of a cylindric figure, and firm texture, and made of a very ſtrong ſort of ſilk: theſe are the caſes in which this animal paſſes its ſtate of chryſalis; and they have a mark by which they may be known from all other animal productions of this kind, which is, that they have always a broad ſtripe or band ſurrounding their middle, which is black when the reſt of the caſe is white, and white when that is black.

Mr. Reaumur has had the patience and pains of finding the reaſon of this ſingularity, which is this: the whole ſhell is ſpun of a ſilk produced out of the creature's body; this, at firſt, runs all white, and toward the latter end of the ſpinning becomes black. The outſide of the caſe muſt neceſſarily be formed firſt, as the creature works from within; conſequently this is truly white all over, but it is tranſparent, and ſhews the laſt ſpun or black ſilk thro' it. It might be ſuppoſed that the whole inſide of the ſhell ſhould be black: but this is not the caſe; the whole is faſhioned before this black ſilk comes, and this is employed by the creature, not to line the whole, but to fortify certain parts only; and therefore is all applied either to the middle, or to the two ends omitting the middle, and ſo gives either a black band in the middle, or elſe makes a blackneſs at both ends, leaving the white in the middle to appear. It is not unfrequent to find a ſort of ſmall caſes lying about in garden walks which move of themſelves; when theſe are opened, they are found to contain a ſmall living worm. This is one of the ſpecies of theſe *caterpillar eaters*, which as ſoon as it comes out of the body of that animal, ſpins itſelf a caſe for its tranſformation long before that happens, and lives in it without food till that change comes on, and it becomes a fly like that to which it owed its birth. Mem. Acad. Scienc. Par. 1736.

CATERVA, in antient military writers, a term uſed in ſpeaking of the Gauliſh or Celtiberian armies, denoting a body of 6000 armed men. *Veget.* l. 2. c. 2.

The word *caterva*, or *catervarius*, is alſo frequently uſed by antient writers to denote a party or corps of ſoldiers in diſorder or diſarray: by which it ſtands diſtinguiſhed from cohort or turma, which were in good order. *Suet.* in Auguſt. *Aquin.* Lex. Milit. T. 1. p. 187. See COHORT, *Cycl.*

CATHALOGON, in the materia medica, a name by which ſome call the fruit we know by the name of ſaint Ignatius's bean. Pluk. Mant. p. 80. See IGNATIUS's *bean.*

CATHÆRETIC (*Cycl.*) only differs in degree from cauſtic or ſeptic, which are more violent in their operation. *Caſt.* Lex. Med. See CAUSTIC.

CATHARI, Καθαροι, in eccleſiaſtical writers, antient heretics, who made profeſſion of greater purity in diſcipline and ſanctity of life than other chriſtians.

The appellation *cathari* was chiefly given to the ſect of Novatians. *Euſeb.* Hiſt. Eccleſ. l. 6. c. 43. *Epiphan.* Hær. 59. See NOVATIANS, *Cycl.*

In after-times, however, the ſame was alſo applied to ſeveral other ſects, who pretended to extraordinary purity; as the apotactici, who profeſſed to renounce all worldly things; many of the Montaniſts, by reaſon they never admitted any among them who had once renounced the faith, tho' under the cruelleſt torments. Roman catholics alſo give the appellation *cathari*, by way of antiphraſis or irony, to the patarini or Albigenſes. The nonconformiſts in England and Scotland were formerly denominated *puritans*, a word of the ſame import with that of *cathari*. Trev. Dict. Univ. T. 1. p. 1508. See PURITANS, *Cycl.*

Some writers ſpeak alſo of a ſect of *cathariſts*, *catharitæ*, who were a branch of Manichees, infamous for their impurities. Trev. loc. cit.

CATHARMA, Καθαρμα, in antiquity, ſome miſerable or flagitious wretch, ſacrificed to the gods as an expiation for the plague, or other calamity. Such was the prophet Jonas, caſt into the ſea; and ſuch does St. Paul wiſh himſelf to be. Vid. *Budd* in Annot. ad leg. 2. ff. de Pæn. *Calv.* Lex. Jur. p. 502. *Fab.* Theſ. p. 492.

CATHARTIC (*Cycl.*) — A ſafe, pleaſant, gentle, and effectual purgative, or *cathartic* may be at any time prepared in the following manner. Take a quart of Dulwich water, or any other water of a like kind, diſſolve in this over the fire an ounce of manna, and half an ounce of black tamarinds; ſtrain off the liquor, and let it be taken at ſeveral draughts, at an half hour's diſtance or leſs, the whole being drank in an hour and half, or two hours.

The purging mineral waters act with more eaſe, gentleneſs, and ſafety, than any of the ſhop medicines; all that they require is to be either concentrated by boiling away a part, or elſe quickened as in this manner; and a general trial of a purge of this kind would perhaps encourage the practiſers of phyſic to reject almoſt all the common rough purges in uſe. *Shaw's* Lectures, p. 224.

CATHARTIC *extract.* See EXTRACTUM *catharticum.*

CATHARTIC *ſalt*, *ſal catharticum amarum*, a denomination given to what we improperly call *Epſom ſalt.* Vid. Phil. Tranſ. N° 377. p. 348. See EPSOM *ſalt.*

CATHEDRA, Καθεδρα, in a general ſenſe, a chair.

The word is more particularly uſed for a profeſſor's chair, and a preacher's pulpit.

CATHEDRA is alſo uſed for the biſhop's ſee, or throne, in a church. *Pitiſc.* Lex. Ant. T. 1. p. 381.

Ex CATHEDRA, a phraſe uſed in ſpeaking of the ſolemn dictates or deciſions of prelates, chiefly the popes, delivered in their pontifical capacity.

The advocates for the papacy maintain, that the pope is infallible *ex cathedra*, a term of modern theology entirely unknown to the antients. Even thoſe who uſe it do not agree in the explication of it. To ſpeak or pronounce *ex cathedra*, according to ſome, is to ſpeak at the head of a general council: according to others, to ſpeak *ex cathedra*, is to ſpeak agreeably to the ſenſe of ſcripture and tradition: others aſſert that to ſpeak *ex cathedra*, is to pronounce after a ſtrict and mature examination of the thing defined: the moſt common explication of the term *ex cathedra*, is that of Cajetan, Bellarmine, and Du Val, who aſſert that the pope is then judged to ſpeak *ex cathedra*, when he ſpeaks as ſovereign pontiff, or vicar of Chriſt, to teach the church ſomething relating either to faith, or manners, and not as a private perſon [a]. When the proteſtants object errors to divers popes, *ex. gr.* monothelitiſm to pope Honorius, the Romaniſts

Romaniſts have recourſe to the diſtinction *ex cathedra*; and aſſert, that though Honorius had erred in the faith, this is no objection to the infallibility of St. Peter's chair, ſince Honorius in that caſe did not err as pope, or in any ſolemn authentic deciſion pronounced *ex cathedra*, but only as a private doctor, in an epiſtle to Sergius, which he had not fully and maturely enough conſidered [b]. — [a] Vid. *Du Pin.* Trait. de la Puiſſance Eccleſ. & Tempor. Prop. 4. Nouv. Rep. Lett. T. 42. p. 589, ſeq. [b] Remarq. ſur Maimbourg de l' Eſtabliſ. & Prerog. de l' Egliſe de Rome. Nouv. Rep. Lett. T. 12. p. 236.] See INFALLIBLE and POPE, *Cycl.*

CATHEDRATIC *doctor*, *doctor cathedraticus*, denotes a doctor poſſeſſed of a chair or fellowſhip in ſome of the univerſities of Spain.

They ſay a *cathedratic doctor of Salamanca*, of *Alcala*, &c. Trev. Dict. Univ. T. 1. p. 1509.

CATHEDRATICUM, in eccleſiaſtical writers, denotes a ſum of money, amounting to two ſhillings, antiently paid annually by the inferior clergy to their biſhops, or as often as he viſited his dioceſe, *ob honorem cathedræ*, i. e. as an argument of their ſubjection, and for the honour of the biſhop's ſee or *cathedra*. *Du Cange*, Gloſſ. Lat. T. 1. p. 893. *Pitiſc.* Lex. Ant. T. 1. p. 382. Trev. Dict. Univ. T. 1. p. 1509. See CATHEDRA. This was otherwiſe denominated *ſynodaticum*, and in modern writers *procuration*. See PROCURATION, *Cycl.*

CATHEDRATICUM alſo denotes a ſum which biſhops newly ordained gave partly to the biſhops, or patriarchs, by whom they were conſecrated, and partly to the clerks and notaries who officiated therein.

This was alſo called ενθρονιστικον, as being given on account of the throne, or chair, they had now obtained. *Du Cange*, Gloſſ. Lat. T. 1. p. 893. *Pitiſc.* Lex. Ant. T. 1. p. 382.

Biſhops conſecrated by patriarchs or metropolitans, provided their church were not worth leſs than thirty pounds of gold, were to pay an hundred ſolidi by way of *cathedraticum*. *Guther.* de Offic. Dom. Aug. 11. 17.

CATHERINE *(Cycl.)* — The *fraternity of St. Catherine of Sienna*, is a ſort of religious ſociety inſtituted in that city, in honour, and under the patronage, of St. *Catherine* of Sienna, a ſaint famous for her revelations, and for her amours and marriage with Jeſus Chriſt: whoſe wedding ring, given her by her divine ſpouſe, is ſtill preſerved as an unexceptionable relick.

The fraternity of St. *Catherine* give portions yearly to a certain number of maids left unprovided for; who, on condition hereof, accept of huſbands. In order to match them, a fine proceſſion is made of the girls, who are to be thus endowed; and during the march, the young men, who are willing to be ſuitors, preſent them an handkerchief. If the maid return it as ſhe received it, it imports that the offer is rejected. If ſhe tie it in a knot, the bargain is made, and the parents themſelves cannot hinder it: by reaſon ſuch matches are ſuppoſed to come from heaven, and to be made by St. *Catherine* herſelf. Voyag. Hiſtor. de l' Ital. T. 1. Lett. 38. Bibl. Ital. T. 5. p. 152, ſeq.

The ſame fraternity has alſo a privilege of redeeming annually two criminals condemned for murther; and it ſets at liberty the ſame number of debtors, by paying their debts.

CATHETER *(Cycl.)* — Helmont rejects the common metalline *catheter* uſed by Galen and his followers, as cruel, and even noxious; and ſubſtitutes another in its place, made of leather. *Caſt.* Lex. Med. p. 148.

Mr. Hales deſcribes a *catheter* of a new ſtructure, contrived for the more advantageous injection of lithonthriptics into the bladder: its cavity is divided lengthways by a thin partition into two ſeparate channels, which end in two divaricating branches. By one of theſe branches the menſtruum is to be injected into the bladder, in the common, or rather in the hydroſtatical way, while it returns mixed with urine by the other. *Hales* Hæmaſtat. p. 212. Med. Eſſ. Edinb. T. 2. p. 400. See STAFF.

CATHETERISMUS, καθετηρισμος, a chirurgical operation, whereby either ſomething medicinal is injected into the bladder, or ſome foreign body prejudicial to the making of urine, as coagulated blood, a ſtone, or the like, is drawn away; and this by means of a crooked, tubular inſtrument, called a catheter. *Caſt.* Lex. Med p. 148. *Nent.* Fund. Med. P. 1. Tab. 5. §. 3. p. 395. *Junck.* Conſp. Chir. p. 621. See CATHETER, *Cycl.* and *Suppl.*

CATHETOLIPES, in natural hiſtory, the name of a genus of foſſils of the claſs of the ſelenitæ, but differing from the common kinds in the diſpoſition of the conſtituent plates. The word is derived from the Greek καθετος perpendicular, and λεπις a ſcale or plate, and expreſſes a ſet of theſe bodies whoſe plates are arranged perpendicularly. All the known ſelenitæ, except thoſe of this genus, are compoſed of a number of parallel plates, or thin flakes ranged evenly horizontally on one another. Thoſe of this genus are regularly figured bodies, conſiſting of eight planes or ſides, and two truncated ends: their top and bottom are more depreſſed and flatted than any of the other planes; their ends regularly and evenly ſtruck off; and their ſeveral ſides nearly equal to one another; but the angles they make are ſo obtuſe, that the body may eaſily be miſtaken for one conſiſting of only four ſides and two ends.

The ſtructure of theſe bodies is this: they are made up of plates, and thoſe compoſed of arrangements of filaments, running obliquely, ſometimes the whole length of the plate, but oftener making an obtuſe angle by the meeting of two rows of lines, or ranges of filaments; but theſe plates are diſpoſed perpendicularly in the body, and for that reaſon it does not ſplit horizontally, or in a direction parallel to the top and bottom, but perpendicularly to that direction. *Hill*'s Hiſt. of Foſſ. p. 123.

CATHETO-PLATEUS, in natural hiſtory, a term with its oppoſite, which is *plagioplateus*, very much uſed by Artedi, and others who adopt his ſyſtem, in the deſcription of fiſhes: they may be very well explained in Engliſh, by the two familiar words, *compreſſed* and *depreſſed*. The heads of fiſhes are the principal part charactered by theſe terms. Thus the *catheto-plateus*, or compreſſed head of a fiſh, is that ſort of head which is flatted upwards, or ſeems to have had its two ſides ſqueezed together, and neceſſarily is larger in its perpendicular, than in its tranſverſe meaſure. On the other hand, the plagioplateus or depreſſed head is that which is flatted downwards, or ſeems to have its top and bottom, not its two ſides, cruſhed together, and is conſequently much larger in its horizontal meaſure, than in its perpendicular. The ſame terms, in the ſame ſenſe, are alſo uſed to expreſs the ſhape of the body of the fiſh. We have inſtances of the compreſſed or *catheto-plateus* head in the ſalmon, cyprinus, pearch, &c. and of the plagioplateus, or depreſſed head, in the ſcorpæna, ſturgeon, conger, &c.

CATHETUS *(Cycl.)* is ſometimes applied to a line in the Ionic capital, paſſing perpendicularly through the eye or center of the volute. *Vitruv.* Archit. l. 3. c. 3. *Bald.* Lex. Vitruv. p. 23. *Evel.* Account of Archit. p. 23. *Davil.* Courſ. d' Archit. P. 2. p. 446. See VOLUTE, *Cycl.*

This is otherwiſe denominated the axis of the volute.

CATHOLICIANI, in middle-age writers, the officials or miniſters of the catholici, or receivers of the taxes of a dioceſe, ſometimes alſo denominated Cæſariani. *Du Cange*, Gloſſ. Lat. T. 1. p. 894. See CATHOLICUS and CÆSARIANI.

CATHOLICUS, καθολικος, the title of a dignitary, or magiſtrate, under the Roman emperors, who had part of the adminiſtration, and particularly the care and receipt of the revenues and taxes in Roman dioceſes. *Guther.* de Offic. dom. Auguſt. l. 3. c. 18. *Du Cange*, Gloſſ. Gr. T. 1. p. 538. It. Gloſſ. Lat. T. 1. p. 894. *Pitiſc.* Lex. Ant. T. 1. p. 392. *Schoet.* Ant. Lex. p. 292.

The *catholicus* was the ſame with what was denominated by the Latins *procurator*, and *rationalis Cæſaris*. Such was the *catholicus* of the dioceſe of Africa, mentioned in Euſebius, and other antient writers.

CATHOLICUS, among eccleſiaſtical writers, an appellation given to the primates or metropolitan prelates of ſeveral churches in Aſia, ſubject to the ſee of Antioch; but whoſe juriſdiction and dioceſes are of ſuch extent that they have aſſumed the title of catholici, q. d. univerſal biſhops. *Suic.* Theſ. T. 2. p. 13. *Bingh.* Orig. Eccleſ. l. 9. c. 1. §. 12. See PRIMATE and METROPOLITAN, *Cycl.*

Such is the *catholicus* of Armenia, who is ſaid to have above a thouſand biſhops under him. Such alſo was the *catholicus* of Seleucia, to whom the council of Nice gave the power of creating archbiſhops, a privilege otherwiſe reſerved to patriarchs. But the dignity of *catholicus* of Seleucia was afterwards divided, and two *catholici* created inſtead of one, both ſubject to the archbiſhop of Antioch. *Du Cange*, Gloſſ. Græc. p. 539. Item Gloſſ. Lat. T. 1. p. 894, ſeq. *Suic.* Theſ. T. 2. p. 16. ſeq. See PATRIARCH, *Cycl.*

CATHSUM, in botany, a name given by ſome authors to the abrotanum, or ſouthernwood. *Ger.* Emac. Ind. 2.

CATKIN, among botaniſts, a cluſter of flowers affixed to an axis: in ſome caſes, there are ſquammæ on the axis which do the office of cups; in others the flowers are naked. This is otherwiſe called *julus*, and *amentum*.

CATOCHE, or CATOCHUS, in medicine, a kind of waking ſleep; or a vehement diſpoſition of the body to ſleep, without being able to attain it; the eyes ſtill remaining open, and the breathing entire, but the body motionleſs, and in the ſame poſture wherein the patient was firſt ſeized.

The *catoche* is the ſame with *catalepſis*. It differs from the *coma* and *cataphora*, in that the eyes are open in the former, and cloſed in the latter. *Gorr.* Med. Defin. p. 216. voc. Κατοχη. *Caſt.* Lex. Med. p. 150. *Shaw*, New Pract. Phyſ. p. 8. See COMA, *Cycl.*

CATOCHITES, in natural hiſtory, the name of a foſſil mentioned among the antients, as having great virtues in medicine, and in the cure of wounds. It is ſaid to have been found in Corſica, and Pliny records this remarkable property of it, that if the hand were held upon it for ſome time, it would ſtick to it in the manner of glue. Hence it appears to have been a bitumen.

CATOCYSTUS, in natural hiſtory, a name given to one of the general diviſions of the echinodermata, or ſea hedge-hogs. Theſe have their aperture for the anus not at the top of the ſhell, as the anocyſti have it, but in ſome part of the baſe.

For the more accurately diſtinguiſhing theſe into genera, the baſes of the ſhell are to be divided into the regular and irregular. The regular are thoſe which are round or oval; the irregular thoſe which are made with ſinus's and angles.

CATODON, in zoology, the name by which Linnæus calls the *cete*, or whale of Clusius, &c. This, with him, makes a distinct genus of fishes of the order of the plagiuri: the characters of which are, that the back has no fin, and the teeth are all placed in the under jaw. *Linnæi* System Natur. p. 51.

CATODON, in the Artedian system of ichthyology, the name given to a genus of the plagiuri, or cetaceous fishes, the characters of which are these: the teeth are placed only in the lower jaw; there is no fin upon the back; and the fistule is placed either in the head or the snout. The species of this genus are only two. 1. The *catodon*, with the fistule in the snout. This is the whale with no back fin, described by Sibbald; it is about twenty-four foot long, and its head is roundish. The mouth does not open wide, and the fistule resembles a nose placed on the snout. The other is the *catodon*, with the fistule in the neck. This is the *cete* of Clusius, and the great headed two-finned whale of Ray, and is that species called by Purchas a trumpe. It grows to sixty foot long, and between thirty and forty foot thick, and has forty-two teeth in the lower jaw. This was the first species of whale which was found to yield the sperma ceti, and has therefore been called by many the sperma ceti whale. *Artedi*, Gen. Pisc. 50.

The word *catodon* is of Greek origin, and is derived from κατα below, and οδους a tooth; and expresses that the fish has teeth only in the lower part of its mouth.

CATOMUM, or CATOMUS, Κατωμιν, in middle-age writers, denotes that part of the body below the neck, and between the shoulders.

The word is supposed to be originally Greek, formed of κατ' ωμων q. d. *inter scapulas*, between the shoulders: In which sense it amounts to the same with what is otherwise called *interscapulum*, or *interscapulium*, sometimes also *conscapulium*.

Hence also, according to Scaliger, the terms, *catomodiari*, and *catomis cædi*, to denote being beaten on the shoulders, a punishment mentioned to have been inflicted on prodigals, as well as on divers primitive christians. *Scalig.* Epist. 144, & 146. Item in Manil. p. 400. *Gronov.* Observ. 4. 13. *Pitisc.* Lex. Ant. T. 1. p. 383.

Du Cange gives another acceptation of the word *catomus*, which appears to have sometimes denoted a sort of scourge, or rod, made either of iron, or even birchen twigs, wherewith criminals were lashed, which affords a more natural explication of the terms, *catomis cædi*, or *catomodiari*. *Du Cange*, Gloss. Lat. T. 1. p. 8 7

Hence also *catomo suspendi*, to be hoisted up from the ground, in order to be whipped.

CATOPTRITES, in natural history, a name given by some writers to a stone of the marble kind, which, when polished, was capable of serving as a speculum, either flat, and only used to represent the images of things; or concave, and used as our reflecting burning glasses. The hard black marbles were most frequently used for this purpose; but sometimes the redish ones, and sometimes one or other of the jaspers. All these were indiscriminately called by the name *catoptrites*, when put to this use.

CATOPTROMANTIA, Κατοπτρομαντεια, a kind of divination performed with a looking-glass and water, and sometimes with the glass alone. *Pott.* Archæol. Græc. l. 2. c. 18. See HYDROMANTIA.

CATTUTIRPALI, in botany, a name by which some authors call the plant which produces the long pepper used in medicine. Hort. Mal. v 7. p. 27.

CATTE CORONDE, in the language of the Ceyloneſe, prickly cinnamon. This is a bark very much resembling cinnamon, but produced by a tree which differs very much in the shape of the leaves, and is full of sharp thorns, which the true cinnamon tree is not. The bark has nothing either of the taste or smell of cinnamon, though so like it externally. The natives use the root, leaves, and bark of this tree externally, to soften tumors. Philos. Transf. N° 409.

CATTLE, a collective name, importing all quadrupeds, used either in tilling the ground, or for the food of man. See BEAST, *Cycl.* and *Suppl.*

Under *cattle* some include all quadrupeds which associate, or go in herds, as sheep, oxen, horses, hogs, &c. Others define *cattle* to be all tame animals which graze. *Calv.* Lex. Jur p. 683. voc. *pecus*.

Cattle is sometimes divided into great, comprehending oxen, bulls, cows, calves, horses, &c. and small, including sheep, lambs, goats, and the like. *Savar.* Dict. Comm. T. 1. p. 323. Trev. Dict. Univ. T. 1. p. 1002. voc. *beſtail.*

Black CATTLE more particularly denotes the cow kind. These are also denominated *neat cattle*. Phil. Transf. N° 387. p. 200.

The management of *cattle* makes a considerable branch of what is called *husbandry*. See HUSBANDRY.

The diseases of *cattle* make the subject of that art, called by the antients *mulo medicina*, and *veteratoria*, and by us, *farrying*.

The antient riches consisted wholly in the number of *cattle*; whence it is supposed to be, that the Romans called money by a name formed from that of *cattle*, *pecunia* from *pecus*.

The importation of *cattle* into England, whether living or dead is prohibited on pain of forfeiture [a]; but *cattle* may be exported, or even transported, paying the duties [b]. Factors, and those who sell *cattle* for others, are prohibited to buy any, except swine or calves, within eight miles of London. — [a Stat. 3 & 4. Edw VI. c. 19. b 18 Ch. II. c. 2. 22 Ch. II. c. 13. *Jac.* Law Dict. in voc.]

Dr. Maneschelli tells us, that in the plague among the *cattle* in Italy, in 1735, rue, wormwood, garlic, and such other strong smelling plants, hung about their noses and mouths, were esteemed preservatives against the infection. Nitrous medicines, gunpowder, sulphur, and the sharper aromatics did hurt. Bleeding, crude antimony with setons, and a diet of the most mild softening herbs did service. Med. Ess. Edinb. Abrid. Vol. 2. p. 502.

Stealing of *cattle*, or killing them with an intent to steal any part of the carcasses, or assisting in such offences, are now made felony without benefit of clergy. See 14 Geo. II. c. 6. & Sect. 1.

By *cattle*, in this act, is to be understood any bull, cow, ox, steer, bullock, heifer, calf, sheep, and lamb, and no other *cattle* whatever. Stat. 15 & 16. Geo. II. c. 34.

CATTUPHUS, or COSSOPHUS, in ichthyology, a name given by Aristotle, and other of the Greek writers, to the fish called by the Latin writers merula and turdus nigricans. It is a species of the labrus, easily known from all the others by its colour, and called, by authors who acknowledge the generical name labrus, the blueish black labrus.

CATTUS, or CATUS, in the antient military art, a kind of machine or device for covering or screening the men; much, if not intirely, the same with vinea. *Veget.* l. 4. c. 15. *Aquin.* Lex. Milit. T. 1. p. 187. See VINEA, *Cycl.*

CATULUS, in the history of fishes, the name of a sea fish, of which authors describe three species; the major, maximus, and minimus. It is properly of the galeus kind, and has a variously spotted skin, and a wide and large mouth, furnished with strong teeth, sharp-edged, and hollowed inward. The first kind is common in our seas, and often caught on the coast of Cornwall, and the two others principally in the Mediterranean, though sometimes also in our seas. *Aldrov.* de Pisc. l. 3. c. 34.

CATUS *pardus*, in zoology, the name of a beast of prey, called also by some catus montanus, and by us the cat of mountain. It is of the size of a mastiff dog, but it resembles in all respects, the common domestic cat in shape, except that the tail is in proportion to the creature's size, considerably shorter. It is also, if any thing, shorter, in proportion to its length, than our cat, and is of the common colour of that animal, only that it is variegated with black spots. Its throat is white, and its spots are long upon the back, and round upon the sides and legs; the beard or whiskers are plainly the same as in the cat. It is less fierce against the human species than many of the other beasts of prey, and may even be tamed. It naturally grows very fat. *Ray*, Syn. Quad. p. 16.

CATUS *Zibethicus*, in zoology, a name improperly given to the creature which produces the perfume called civet; it not being of the cat, but of the wolf or dog kind. See ZIBETHICUM *animal.*

CATY, CATI, or CATTI, an East-India weight, used especially in China. It is equivalent to one pound five ounces, and two drams English. Lex. Mercat. p 388.

The *cati* is divided into sixteen *taels*, and the *pic* into an hundred *cati's*.

The *cati* is also used in Japan, Batavia, and other parts of the Indies, where it weighs more or less, according as it contains a greater or less number of *taels* [a]: the *cati* of Java is equivalent to 20 *taels*; that of Cambaya, to 27; the *cati* of Siam is double that of China, and amounts to about 150 French pounds [b]. — [a *Savar* Dict. Comm. T. 1. p. 590. b Jour. des Scav. T. 87. p. 679.]

The Chinese also give the denomination *cati* to the Siamese *schan. Savar.* Dict. Comm. T. 2. p. 1489.

CATI is also a small weight whereby the lapidaries of the East weigh their emeralds, equivalent to three grains.

CATI is also a money of account, used in Java, and some of the neighbouring islands, amounting to about 19 florins Dutch money. *Savar.* Dict. Comm. T. 1. p. 590.

In the island of Sumatra *caty* is said to denote a piece of money valued at six shillings, and eight-pence sterling. Lex. Mercat. p. 388.

CAVAGIRO, in zoology, the name of a fish common in the Mediterranean, and brought to the markets in many places. It is something of the eel shape, but thinner and more flatted. It grows smaller by degrees from the head to the tail, and ends in an extremely thin point. The belly is white; but the back, sides, and tail are all red, like the red gurnet. It has no visible scales; its mouth is large, and turned upwards. Its teeth long, slender, and sharp; it has a little above the opening of the mouth, on the hinder part of the upper jaw on each side a black spot; its eyes are large; the fins and tail in the older fish are finely variegated with pale red, yellow, and purple; beside the long back fin it has two pair, one at the gills, the other in the lower part of its body. *Ray's* Ichthyogr. p. 117.

CAVALCADOUR, or CAVALCADEUR, antiently denoted a riding-master; but at present is disused in that sense, and only employed to denote a sort of equerries, or officers who have the direction of princes stables. The French say, *ecuyer cavalcadeur* of the king, the duke of Orleans, &c.

Menage writes it *cavalcadour*, and derives it from the Spaniſh *cavalgador*, a horſeman. *Guill.* Gent. Dict. in voc. Trev. Dict. Univ. T. 1. p 1513. in voc. *cavalcadeur*.

CAVALET, in the glaſs art, a ſmall iron ring which ſurrounds the lumella, or hole in the center of the floor, in the tower of the leer, uſed for annealing glaſs veſſels. *Neri*'s Art of glaſs. p. 242. See LEER.

CAVALLERIA, among the antient Spaniards, a kind of tax, or impoſition on the inhabitants of great towns and cities, for the ſupport of horſemen. *Aquin.* Lex. Milit. T. 1. p. 188.

CAVALRY (*Cycl.*) — The Roman *cavalry* conſiſted wholly of thoſe called equites, or knights, who were a diſtinct order in the diſtribution of the citizens.

As it ſeems hard to conceive that all the Roman horſe in the army ſhould be knights, Sigonius and ſome others have recourſe to a diſtinction between thoſe who ſerved equo publico, who were the knights, and thoſe who ſerved equo privato, below the equeſtrian dignity. But Grævius and others ſhew the conjecture to be without foundation, and that from the beginning of the Roman ſtate till the time of Marius, no other horſe entered the legions but the true and proper knights. *Kennet*'s Rom. Ant. Not. P. 2. l. 4. c. 2. p. 187. See LEGION, *Cycl.*

The chief uſe of the *cavalry* is to make frequent excurſions to diſturb the enemy, intercept his convoys, and deſtroy the country [a]; in battle to ſupport and cover the foot, and to break through, and put the enemy in diſorder; alſo to ſecure the retreat of the foot. Formerly the manner of fighting of the *cavalry* was, after firing their piſtols or carabines, to wheel off, to give opportunity for loading again. Guſtavus Adolphus is ſaid to have firſt taught the *cavalry* to charge thro', to march ſtraight up to the enemy, with the ſword drawn in the bridle hand, and each man having fired his piece, at the proper diſtance, to betake himſelf to his ſword, and charge the enemy as was found moſt advantageous [b]. — [a *Guill.* Gent. Dict. P. 2. in voc. b *Cruſc.* Milit. Inſt. for cavalry. P. 4. c. 8. It. in Addit. Bibl. Univ. T. 3. p. 450.] See BATTLE.

The Grecian *cavalry* were divided into *cataphractæ*, and *non cataphractæ*, i. e. into heavy, and light armed.

Of all the Greeks the Theſſalians excelled moſt in *cavalry*. The Lacedæmonians inhabiting a mountainous country, were but meanly furniſhed with *cavalry*, till, carrying their arms into other countries, they found great occaſion for horſes to ſupport and cover their foot. The Athenian *cavalry*, for a conſiderable time, conſiſted only of ninety-ſix horſemen: after expelling the Perſians out of Greece, they increaſed the number to three hundred, and ſome time after to twelve hundred, which was the higheſt pitch of the Athenian *cavalry*. *Pott.* Arch. Græc. l. 3. c. 3. T. 2. p. 16. ſeq.

The Turkiſh *cavalry* conſiſts partly of ſpahis, and partly of horſemen raiſed, and maintained, by the Zaims and Timariots. *Rycaut*, Preſ. Stat. Ottom. Emp. l. 3. c. 2. & c. 6. See SPAHI, ZAIM, and TIMARIOT, *Cycl.*

CAVATUM *ſal*, in the materia medica, a term uſed by ſome of the old Roman writers, as a name for the fineſt ſort of *ſal gemmæ*.

CAVAZION, or CAVASION, in architecture, the underdigging, or hollowing of the earth, for the foundation of a building. Paladio ſays, it ought to be the ſixth part of the height of the whole building. *Neve*, Build. Dict. in voc. See FOUNDATION, *Cycl.*

CAUCALIS, in botany, the name of a genus of plants, the characters of which are theſe: the flowers are diſpoſed into umbells, and are of the roſaceous kind, conſiſting of ſeveral petals, arranged in a circular form, on a cup which afterwards becomes a fruit compoſed of two ſeeds, of an oblong ſhape, gibboſe on one ſide, furrowed longitudinally with deep lines, and ſurrounded with an edge of a denticulated, and ſomewhat prickly rim. The petals of the flower are heart-faſhioned, and irregular in ſize.

The ſpecies of *caucalis* enumerated by Mr. Tournefort are theſe: 1. The broad-leaved field *caucalis*, with echinated ſeeds. 2. The white-flowered broad-leaved field *caucalis*, with echinated ſeeds. 3. The echinated field *caucalis*, with large flowers. 4. The echinated field *caucalis*, with ſmall flowers, and ſmall fruit. 5. The French *caucalis*, with very large fruit. 6. The dwarf ſea *caucalis*. 7. The great *caucalis*, with the appearance of the wild daucus. 8. The wild daucus-leaved *caucalis*, with large echinated fruit. 9. The ſpignell-leaved Portugal *caucalis*. *Tourn.* Inſt. p. 313.

CAUCII *nummi*, καυκιοι, a baſe ſort of coin, current under the lower empire; thus called becauſe concave, like a little cup, from the barbarous Latin, *caucus* a cup. Haloander and Meurſius are miſtaken in ſaying this coin was ſo called from having the figure of a cup on it. *Du Cange*, Gloſſ. Lat. T. 1. p. 902.

The *caucii* are the ſame with what are popularly called among the Italians, *Medaglie di S. Elena*, ſometimes ſuperſtitiouſly worn by the women. *Paul.* Mantiſſ. ad Beverin. de Ponder. p. 235.

CAUCON, in botany, a name uſed by Pliny, and ſome other authors, for the *Equiſetum*, or horſetail. *Ger.* Emac. Ind. 2.

CAUDA, (*Cycl.*) in a general ſenſe. See TAIL.

CAUDA is ſometimes alſo uſed in anatomy to denote the clitoris. *Caſt.* Lex. Med. p. 151. See CLITORIS, *Cycl.* and *Suppl.*

CAUDA *Capricorni*, a fixed ſtar of the third magnitude, in the tail of Capricorn, called alſo by the Arabs *Dineb Algedi* [a]. Its longitude, according to Hevelius [b], for the year 1700 was 17° 36′ 48″ of Aquarius, and its latitude Southward, 20° 25′ 38″ [c]. —[a *Vital.* Lex. Math. p. 97. b Prodrom. Aſtronom. p. 279. c *Wolf.* Lex. Math. p. 325.]

CAUDA *ceti*, a fixed ſtar of the ſecond magnitude, called alſo by the Arabs, *Dineb Kaetos*. Its longitude in the year 1700, according to Hevelius, was 28° 22′ 14″ of Piſces, and its latitude Southward 20° 44′ 35″. *Hevel.* Prodrom. Aſtron. p. 282. *Wolf.* Lex. Math. 325. *Vital.* Lex. Math. p. 97.

CAUDA *cygni*, a fixed ſtar of the ſecond magnitude in the ſwan's tail, called by the Arabs *Dineb Adigege*, or *Eldegiagich*. Its longitude, according to Hevelius, in the year 1700, was 1° 16′ 45″ of Piſces, and its latitude northward 59° 57′ 23″. *Wolf.* Lex. Math. p. 325. *Vital.* Lex Math. p. 97. *Hevel.* Prodrom. Aſtron. p. 279.

CAUDA *delphini*, a fixed ſtar of the third magnitude, in the tail of the dolphin. Its longitude, according to Hevelius, in the year 1700, was 9° 55′ 17″ of Aquarius, and its latitude Northward 29° 9′ 20″. *Hevel.* Prodrom. Aſtrom. p. 285. *Wolf.* Lex. Math. p. 326. *Vital.* Lex. Math. p. 97.

CAUDA *equina*, in anatomy, a denomination given to the loweſt part of the ſpinal marrow, from the laſt vertebræ of the thorax, to the end of the os ſacrum. *Heiſt.* Comp. Anat. §. 273. It is thus denominated from its form, which is ſuppoſed to reſemble a horſe's tail. Its ſubſtance is fibrous, and very tenacious.

CAUDA *equina* alſo denotes a medicinal herb, whoſe leaves are reputed to have a ſtrengthening virtue. This, in Engliſh, is called the horſe tail. The officinal kind is more particularly called by botaniſts *equiſetum majus*, in Engliſh the great marſh horſe tail. *Quinc.* Diſpenſ. P. 2. Sect. 2. n. 100. See EQUISETUM.

CAUDA *leonis*, a fixed ſtar of the firſt magnitude in the lion's tail, called alſo by the Arabs *Dineb Eleced* [a]. Its longitude, according to Hevelius, in the year 1700, was 17° 27′ 46″ of Virgo, and its latitude Northern 12° 18′ 55″ [b]. — [a *Vital.* Lex. Math. p. 97. b *Hevel.* Prodrom. p. 191. *Wolf.* Lex. Math. p. 326.]

CAUDA *urſæ majoris*, a fixed ſtar of the ſecond magnitude, in the extreme part of the tail of the great bear, called alſo by the Arabs *Alalioth* and *Benenath* [a] Its longitude, according to Hevelius, in the year 1700, was in 22° 39′ 24″ of Virgo, and its latitude Northward 54° 25′ 7″ [b]. — [a *Vital.* Lex. Math. p. 98. b *Hevel.* Prodrom. Aſtron. p. 306. *Wolf.* Lex. Math. p. 327.]

CAUDA *urſæ minoris*, a fixed ſtar of the ſecond magnitude, in the extreme part of the tail of the leſſer bear, called alſo the polar ſtar, and by the Arabs *Alrukabah*. *Vital.* Lex. Math. 4. 98. *Wolf.* Lex. Math. 327.

CAUDISONA *vipera*, in zoology, a name by which authors call the rattle-ſnake, a ſpecies of ſerpent common in many parts of America, and diſtinguiſhed from every thing elſe of the ſerpent kind by the rattle in its tail, and by its dreadful poiſon. See RATTLE-SNAKE.

CAUDIVERBA, in zoology, the name of an animal of the lizard kind, called alſo uromaſtyx, but more commonly known among authors by the name cordylus. See CORDYLUS.

CAVE. *Caves* were doubtleſs the primitive habitations; before men bethought themſelves to erect edifices above ground, they took ſhelter under thoſe. The primitive manner of burial was alſo to repoſite bodies in *caves*, which appears to have been the origin of the catacombs. Phil. Tranſ. N° 244. p. 344. See BURIAL and CATACOMB.

Badmington *caves*, in Wiltſhire, conſiſt of a ſeries or row of uniform holes, wherein pieces of armour are ſaid to have been found, whence they are by many ſuppoſed to have been tombs of antient warriors. Dict. Ruſt. T. 1. in voc. *Badmington.*

Caves long continued the proper habitation of ſhepherds. Among the Romans, *caves*, *antra*, uſed to be conſecrated to the nymphs, who were worſhipped in *caves*, as other gods in the temples. *Cuper.* Apoth. Homer. p. 31. *Pitiſc.* Lex. Ant. T. 1. p. 119. voc. *antra*. *Pott.* Archæol. l. 2. c. 2. p. 192.

The Perſians alſo worſhipped their god Mithras in a natural *cave*, conſecrated for the purpoſe by Zoroaſter. *Stanl.* Hiſt. Philoſ. P. 17. c. 4. p. 1061.

Kircher, after Gaffarellus, enumerates divers ſpecies of *caves*, divine, human, brutal, natural, and artificial. *Kirch.* Mund. Subterr. l. 2. c. 20. p. 118.

Of *natural caves*, ſome are poſſeſſed of a medicinal virtue, as the grotto de ſerpente; others are poiſonous or memphitical; others are replete with metalline exhalations, and others with waters. There are alſo icy *caves*, full of ſnow and cryſtal, as in mount Sora; and the Æolian *caves* which emit a continual wind; petrifying *caves*, replete with a juice which turns into ſtone; aromatic *caves*, which breathe a fragrant ſpicy odor, ſaid to inſpire enthuſiaſm. We are alſo told of ſome *caves* which incite to chaſtity, and others to luſt; ſome are narcotic, and diſpoſe to ſleep; others render perſons wakeful; ſome flow with oil, naphtha, and bitumen; others

are loaden with vitriol, ſalt, and the like. Vid. *Becman.* Hiſt. Orb. Terr. P. 1. c. 7. §. 17. *Kirch.* loc. cit. p. 118, ſeq. Some of theſe *caves* again are near the ſurface of the earth; others deeper hid in its bowels, and inacceſſible to human induſtry. The latter are divided with regard to their contents, into *hydrophylacia*, *pyrophylacia*, and *aerophylacia*. *Kirch.* Mund. Subterr. l. 2. c. 20. p. 118.

Divers oracular *caves* occur among the antients, the fumes of which intoxicated the head, and produced a ſort of furor or madneſs, which was interpreted inſpiration, prophecy, and divination. Such were the ſacred caverns at Delphi, which inſpired the Pythia [a]. Such alſo was the ſybil's cave at Cumæ in Campania, ſtill ſhewn near the lake Avernus: Tho' Borrichius takes this to be of modern date [b], and not the true *antrum ſibyllæ*, ſo finely deſcribed by Virgil [c]. Homer likewiſe gives a deſcription of *αντρον νυμφων*, the *cave* of the nymphs [d], on which Porphyry has a treatiſe ſtill extant, containing many of the ſecrets of the heathen theology, both natural and ſymbolical [e]. — [[a] Nouv. Rep. Lett. T. 12. p. 284. [b] *Borrich.* Diſſ. de Ort. Chem p. 100, ſeq. [c] *Virg.* Æn. l. 6. [d] *Hom.* Odyſſ. l. 13. [e] Vid. *Fabric.* Bibl. Græc. l. 4 c. 27. p. 186. *Holſten.* de Vit. Porphyr. c. 7. ap. *Fabric.* loc. cit. p. 245.]

The *cave* of the nymph Egeria, where Numa held nightly converſations with that deity, is ſtill ſhewn at Rome. Vid. *Piſc.* Lex. Ant. T. 1. p. 827.

The *cave* of Trophonius, originally the manſion of that celebrated Bœotian, became afterwards famous for the oracles which Apollo rendered in it. Pauſanias who viſited it, gives a large deſcription of the ceremonies obſerved by thoſe who entered the *cave* to conſult that god. Vid. *Pott.* Arch. l. 2. c. 10. p. 290, ſeq.

CAVEA, the place in the antient theatres where the ſpectators were ſeated.

The *cavea*, called by the Greeks *κοιλον*, ſtands contradiſtinguiſhed from the ſcena, *σκηνα*, which was the place for the actors.

The *cavea* was divided by partitions into three equal parts, riſing one over another; *ima cavea*, appointed for the people of quality, and magiſtrates; the middlemoſt, *media cavea*, for the commonality; and the uppermoſt, *ſumma cavea*, for the women. *Pott.* Archæol. l. 1. c. 8. p. 42. *Pitiſc.* Lex. Ant. T. 1. p. 384. *Heder.* Schul. Lex. p. 739.

CAVEA alſo denoted the middle part in amphitheatres, otherwiſe called *arena*. *Kenn.* Rom. Ant. Not. P. 2. l. 1. c. 4. p. 44. *Lipſ.* de Amphitheat. c. 2. & 14. *Pitiſc.* l. c. *Schoet.* Lex. Ant. p. 293.

CAVEA was alſo uſed for the cage or den of a wild beaſt, kept for the amphitheatrical ſhews. See CAGE.

CAVEAR (*Cycl.*) — The word is alſo written *caviac*, *cavia*, *kavia*, *caviat*, *cavial*, *caviare*, and *caviary*. It is formed from the Italian *caviale*, or barbarous Greek *καβιαρι*, which ſignifies the ſame. *Menag.* Orig. p. 167. *Skin.* Etym. Ang. in voc. Trev. Dict. Univ. T. 1. p. 1518.

The manner of making the *caviar* is by taking out of the ſpawn of the ſturgeon all the nerves or ſtrings, then waſhing it in vinegar or white wine, and ſpreading it on a table. They dry and ſalt it with the hand, and preſs it in a fine bag, that the liquor may run out; this done they caſe it up in a veſſel with a hole at bottom, that if there be any moiſture left it may run out. In this ſtate being well preſſed and covered, it is fit for ſale. *Hought.* Collect. N° 537. T. 3. p. 282.

Caviar is alſo prepared of the ſpawn of ſome other fiſhes: what we otherwiſe call *botargo* is a *caviar* made from a ſort of mullet caught in the Mediterranean. See BOTARGO.

According to Savary, the beſt *caviar* brought from Muſcovy is that made from the belluga, a fiſh eight or ten feet long, caught in the Caſpian ſea, which is much preferable to that made of the ſpawn of ſturgeon. *Savar.* Dict. Com. Sup. p. 911. voc. *Kaviac.*

CAVEATING, in fencing, the act or art of diſengaging, or ſhifting the ſword from one ſide the adverſary's ſword to the other.

Caveating is a motion whereby a man brings in an inſtant his ſword which was preſented on any ſide of his adverſaries, generally beneath its hilt, to the oppoſite ſide; either from within, to without, or vice verſa; or from having its point high, to be low, or the reverſe; and either on the ſame ſide it is preſented in, or the oppoſite ſide.

Caveating is ſo neceſſary a motion in fencing, that without it, there could be ſcarce any offenſive part, or purſuit. It is withal ſo eaſily performed againſt the ordinary tierce and quart guards, that it gives a conſtant opportunity to make a variety of quick ſubtle feints againſt them, which by reaſon of the ſmall croſs made by the weapons on theſe guards, makes the purſuit very eaſy, and the parade or defence very difficult. See PURSUIT, *Suppl.* and PARADE and FEINT, *Cycl.*

The conſideration of this put Sir William Hope on the ſearch of a new method or guard, which, by reaſon of its greater croſs on the adverſaries ſword, renders the *caveating*, and making feints more ſlow, and conſequently the parade more certain. *Hope*, new Meth. of Fenc. c. 4. Sect. 12. p. 97, ſeq. See FENCING, GUARD, &c *Cycl.*

CAVEDO, in commerce, a long meaſure uſed in Portugal, and equal to 27 $\frac{11}{1000}$ Engliſh inches. [Treat. Pract. Geom. p. 9.

CAVERS, in the language of miners, are any poor people that go about the mines to beg or ſteal ore from the miners. *Houghton's* Compl. Miner, in the explan. of the term.

CAVESON (*Cycl.*) — An iron *caveſon* ſpares a young horſe's mouth in the breaking, ſince by means hereof he is accuſtomed to obey the hand, and bend the neck and ſhoulders, without injuring his mouth. All iron *caveſons* are mounted with a head-ſtall, a throat-band, and two ſtraps, or reins, with three rings: through the middle ring, one rein is paſſed to make a horſe work round a pillar, and through the two ſide rings the two other reins are paſſed, which the rider holds in his hand, or faſtens to his ſaddle, to keep the horſe's head in ſubjection. *Guill.* Gent. Dict. P. 1. in voc. Trev. Dict. Univ. T. 1. p. 1518. Vocab. Cruſc. T. 2. p. 307. voc. *cavezzone.*

CAVETTO (*Cycl.*) is the ſame with what is otherwiſe denominated a caſement. Moxon ſhews how to deſcribe the *cavetto*, both from the oxygon, and the ſemicircle. *Mox.* Mechan. Exerc. p. 268.

CAUHQ-ROY, in natural hiſtory, a name given by the natives of the Eaſt-Indies to a ſort of foſſil which they calcine, and afterwards give in large doſes in the hiccough, and many other complaints. It is alſo uſed in dying. The Indians boil it in water, and dye or ſtain their cloths with it, to make them appear different from others: it is a kind of ochre, or clayey iron ore, and is found in great abundance in the hills, and iron is ſometimes extracted from it. *Woodw.* Cat. for. Foſſ. vol. 2. p. 47.

CAVIA *cobaya*, in zoology, the name by which the Braſilians, and from them many writers, call the creature commonly known among us by the name of the Guinea pig. *Ray's* Syn. Quad. p. 223.

CAVIA. See the article CAVEAR.

CAVIDOS, or CABIDOS, a Portugueſe long meaſure, uſed in the menſuration of cloth, linnen, and the like, equivalent to two foot eleven lines Paris meaſure. *Savar.* Dict. Com. T. 1. p. 506. voc. *cabidos.*

CAVIL, *cavillatio*, is defined by ſome a fallacious kind of reaſon, carrying ſome reſemblance of truth, which a perſon knowing its falſhood, advances in diſpute for the ſake of victory.

The art of framing ſophiſms or fallacies is called by Boethius, *cavillatoria*. *Fab.* Theſ. p. 499.

CAVITY, among anatomiſts and phyſicians, makes a ſpecies of organical conformation, either natural, or morbid. *Caſt.* Lex. Med. p. 151.

CAVITIES *of the bones* are of two kinds; the firſt formed from articulation, called *cotyles* and *glenes*; the ſecond for other purpoſes, called *cells*, *caverns*, *foramina*, *foſſæ* and *ſulci*. *Heiſt.* Comp. Anat. §. 56, ſeq.

CAUK, or CAWK, is uſed by the miners in the peak to denote a coarſe ſort of ſparr [a]; being a ponderous white ſtone found in the lead mines, and which will draw a white line like chalk, or the galactites [b]. — [[a] *Woodw.* Meth. Foſſ. Claſs 2. p. 18. [b] Phil. Tranſ. N° 110. p. 226. item N° 39. p. 770]

The word is formed probably of the German *kaalq*, ſpar. *Woodw.* loc. cit.

Dr. Martyn juſtly cenſures Woodward for calling this ſubſtance a talky ſpar, as it has no flexibility nor elaſticity, which are the characteriſtics of talc. It is properly no other than a ſparry matter, rendered very coarſe, by being mixed with a large portion of earth. In ſome places it is found more clear and tranſparent than in others: it approaches in this ſtate to the nature of cryſtal, and is called baſtard cauk, and bright cauk. Philoſ. Tranſ. N° 407.

It is of a much more denſe and compact nature than galactites, and reſembles cryſtal, except that it wants tranſparence. There is a ſingular proceſs mentioned by Dr. Liſter, which is that of vitrifying antimony by its means. This is done with great readineſs and ſpeed by it, and the glaſs, thus made, will produce ſome effect on other metals, which no other glaſs will, nor indeed any other preparation of antimony. The method of preparing it is this: take a pound of antimony, flux it clear; have in readineſs an ounce or two of *cauk* in a lamp red-hot; put it into the crucible to the melted antimony, and continue it in fuſion; then caſt it into a clean mortar not greaz'd, decanting the clear liquor from the lump of *cauk*. This proceſs gives more than fifteen ounces of glaſs of antimony, like poliſhed ſteel, and bright as the moſt refined quickſilver. The *cauk*, in the mean time, is found to be diminiſhed, not encreaſed in its weight, and will never flux with the antimony, though ever ſo ſtrong fire be given it. This is a very odd mineral, and this learned author ſuppoſes it to be allied to thoſe white, milky, and mineral juices which are found in mines. The effect of both is evidently the ſame; for the milky juice of lead mines vitrifies the whole body of antimony, in the ſame manner that the *cauk* does in this experiment. Phil. Tranſ. N° 110.

That there is ſomewhat very peculiar in the *cauk* is plain from this effect on antimony, which no other thing of this kind is poſſeſſed of; for lapis calaminaris, ſulphur vivum, galactites, mundicta, alum ore, ſpar, and many others thing have been tried with

with antimony in the ſame manner, but not one of them has this effect.

CAUKING, in architecture, ſignifies dove-tailing a-croſs. *Neve*, Build. Dict. in voc. See DOVE-TAILING, *Cycl.*

CAUKING *time*, in falconry, a hawk's treading time. Dict. Ruſt. T. 1. in voc.

CAUKING *irons*, denote iron chiſſels for the purpoſe of *cauking* veſſels. *Guill.* Gent. Dict. P. 3. in voc. *caulking.*

CAUL, or CAULE, among mineraliſts, a rediſh pink-coloured ſtone, found in the ſtrata of the tin mines. Phil. Tranſ. N° 69. p. 2102. *Grew*, Muſ. Reg. Societ. P. 3. Sect. 1. c. 6. p. 321. See TIN.

CAULEDON, καυληδον, or *caulatim*, in ſurgery, is applied to fractures which happen tranſverſely, wherein the parts of the broken bone ſtart aſunder, ſo as not to lye directly againſt each other. *Caſt.* Lex. Med. p. 151. *Gorr.* Med. Defin. p. 217. voc. καυληδον. See FRACTURE.

CAULIAS, καυλιας, an appellation given to the juice drawn from the ſtalk of the ſilphium, contradiſtinguiſhed from that drawn from the root of the ſame plant, which is called *rhizias*. *Lang.* Epiſt. Med. l. 1. Ep. 62. *Salmaſ.* Exerc. ad Solin. p. 354. Schroder makes the *caulias* the ſame with our aſa-fœtida. *Schrod.* Pharmacop. l. 4. cl. 2. n. 172. See ASA.

CAULIFEROUS. Herbs are ſometimes divided into *cauliferous* and acauloſe. See ACAULOSE.

The former are either perfectly *cauliferous*, as cabbage, or imperfectly, as moſſes. *Ray*, Synopſ. Stirp. Britan. p. 25.

CAULIFLOWERS are the produce of a kind of cabbage, and have of late years been ſo far improved in England, as to exceed in ſize and goodneſs any that are raiſed in the reſt of Europe. They are in ſeaſon in the months of May, June, and July, but the ſkill of the gardener can continue them much longer. The manner of propagating them is this:

Having procured ſome good ſeed, you muſt ſow it before the middle of Auguſt, upon an old cucumber or melon bed, ſifting earth over the ſeeds to a quarter of an inch thickneſs: if the weather prove very hot and dry, the beds muſt be ſhaded with mats, and be lightly watered at times. In about a week's time the ſeeds will appear above ground, and they muſt be uncovered by degrees, but not expoſed to too much ſun at firſt. In about a month more they ſhould be pricked out on another old bed, at three inches diſtance, and ſhaded and watered when firſt tranſplanted; but after this this they muſt not be much watered, nor be ſuffered to have too much rain, which will make them black-ſhanked, or rotten in the ſtalks. In this bed they are to remain till the middle of October, when they are to be planted out for the winter ſeaſon: they are then to be planted out in rich beds, and thoſe which are to be early ripe, are to be ſhaded with bell-glaſſes, two under each glaſs, and in February to be planted out again: the reſt are to be at firſt ſet at a greater diſtance, and to ſtand.

When the *cauliflowers* begin to fruit, they muſt be carefully watched, and ſome of the inner leaves muſt be bent down over the flower, to ſhade it from the ſun, which would otherwiſe turn it yellow. The very fineſt of the *cauliflowers*, which are not looſe and frothy about the edges, and very firm, ſhould be ſaved for ſeed; and the flower ſtems, as they ſhoot out, ſupported with ſticks till the ſeeds are ripened, which muſt then be carefully gathered, and dried for uſe. *Mill.* Gard. Dict.

CAULINE *leaf*, among botaniſts. See LEAF.

CAULINE *peduncle*, among botaniſts. See PEDUNCLE.

CAULIS, among botaniſts, the ſtalk, or ſtem of an herbaceous plant; or that part which riſes ſingle above the earth, and from which the branches and leaves ſhoot upward. See PLANT.

In trees and ſhrubs this is properly called *caudex*, or trunk; in herbs *caulis* or ſtalk; in corn and the graſſes, *culmus* or ſtem. *Fab.* Theſ. p. 800. *Bradl.* Dict. Botan. *Mill.* Gard. Dict. in voc.

CAUNGA, in botany, a name given by ſome authors to the areca, the tree of whoſe fruit the terra Japonica of the ſhops is made. Hort. Malab. v. 1. p. 9.

CAURIS, in natural hiſtory, a name given by ſome to the genus of ſhells called by the generality of writers, *porcellana*, and *concha venerea*. It is from a falſe pronunciation of this word *cauris*, that we call theſe ſhells Gowries. See PORCELANA.

CAURSINES, *caurſini*, in the Engliſh hiſtory, denote Italian bankers or money-changers who flocked into England, France, and the Netherlands, about the year 1235, calling themſelves the pope's merchants, but driving no other trade than uſury. They were ſeveral times baniſhed the kingdom for their extortions, and re-admitted by the intereſt and intrigues of the popes. *Mat. Paris*, Hiſt. Angl. p. 403. *Du Cange*, Gloſſ. Lat. T. 1. p. 771. *Spelm.* Gloſſ. p. 130. Trev. Dict. Univ. T. 1. in voc. They are alſo called *caorcini*, *caorſini*, *catarcini*, *cawarſini*, and *corſini*. Some will have the name formed from *Cahors*, a city of France, where they flouriſhed more than ordinary. Others derive it from the *Corſini*, a family of wealthy merchants at Florence.

CAUSALTY, in metallurgy, the lighter parts of ſulphureous and earthy ores of metals carried off in the water uſed in waſhing them, and ſubſiding afterwards from it. *Boerhaave*, Chem. p. 100. n.

In the tin works the *cauſalty* is thrown in heaps upon banks, which in ſix or ſeven years they work over again, and receive a new ſupply of metal from it. Phil. Tranſ. N° 138. p. 952. Dict. Ruſt. T. 2. voc. *tin.* See TIN.

CAUSE (*Cycl.*) — the Romans allowed divers juſt *cauſes*, even of ſuicide: ſuch were the ruin of one's country, grief, wearineſs of life, and long ſickneſs; the only *cauſes* pronounced unjuſt were, when a perſon having deſerved death, choſe to anticipate it, to avoid the infamy of an execution. Cato is repreſented as having been much favoured by the gods, in affording him ſo juſt and legitimate a *cauſe* for quitting this earth. Vid. *Guther.* de jure Manium. l. 1. c. 9. *Pitiſc.* Lex. Ant. T. 1. p. 386.

CAUSE *of a diſeaſe* is defined by Galen to be that, during the preſence of which we are ill, and which being removed, the diſorder immediately ceaſes. *Gal.* de loc. Aff. l. 1. c. 2. *Caſt.* Lex. Med. p. 151.

The doctrine of the *cauſes* of diſeaſes is called ætiology. See ÆTIOLOGY, *Cycl.* and *Suppl.*

Phyſicians divide *cauſes* into procatarctic, antecedent, and continent.

Procatarctic CAUSE, αιτια προκαταρκτικη, called alſo *primitive* and *incipient cauſe*, is either an occaſion which of its own nature does not beget a diſtemper, but happening on a body inclined to diſeaſes, breeds a fever, gout, or the like, (ſuch as are watching, faſting, and the like) or an evident and manifeſt *cauſe*, which immediately produces the diſeaſe, as being ſufficient thereto, ſuch as is a ſword in reſpect of a wound.

This latter is alſo called an *external cauſe*, becauſe frequently happening without the body.

Antecedent CAUSE, αιτια προηγεμενη, a latent diſpoſition in the body, from which ſome diſeaſe may ariſe; ſuch is a plethora in reſpect of a fever, a cacochymia in reſpect of a ſcurvy.

Continent, *conjunct*, or *proximate* CAUSE, that principle in the body which immediately adheres to the diſeaſe, and which being preſent, the diſeaſe is alſo preſent, or which being removed, the diſeaſe is taken away; ſuch is the ſtone in a nephritic patient. *Brun.* Dogm. Med. Gen. P. 1. c. 5. P. 11. c. 7. *Charl.* Exerc. Pathol. 4. *Roſſink.* Ord. & Meth. Spec. l. 2. Sec. 3. c. 2. *Caſt.* Renov. p. 151. *Walc.* Lex. Phil. p. 354. *Micræl.* Lex. Phil. p. 250, ſeq.

Orators and lawyers diſtinguiſh three kinds of *cauſes*, demonſtrative, deliberative, and judicial, of which the laſt alone is properly called a *cauſe*. To theſe the ſchools have added a fourth, viz. the didaſcalic, obtaining in indefinitive queſtions.

Among the Romans, perſons accuſed were ſometimes forced to plead their *cauſe* in chains; eſpecially where there were any apprehenſions of an eſcape or reſcue. *Briſſon.* de Formul. l. 5. p. 472. *Pitiſc.* Lex. Ant. T. 1. p. 386.

Pious CAUSE, among civilians and canoniſts, that whereby ſomething is contributed to religious uſes.

Fiſca CAUSE, that wherein the emperor's revenue is concerned.

Public CAUSES are alſo called criminal ones, by reaſon in theſe latter, the inquiry is uſually concerning ſome crime. *Pitiſc.* Lex. Ant. T. 1. p. 386.

Civil CAUSES were always tried *ſub dio*, and the orators uſed to hire a crowd of applauders. Vid. *Plin.* Epiſt. l. 2. Ep. 14. *Pitiſc.* loc. cit. p. 385. See APPLAUSE.

Liberal CAUSES, *cauſæ liberales*, thoſe wherein the ſtate of perſons was to be decided, viz. whether they were free or ſlaves.

Amiable, or *amicable* CAUSES, *cauſæ amabiles*, thoſe otherwiſe called by civilians *favorabiles*; of which there were four kinds, viz. *cauſes* of liberty, matrimony, dowry, and teſtament.

Capital CAUSES, thoſe wherein life, either natural or civil, was at ſtake. Under capital *cauſes*, the Romans ſometimes alſo included thoſe which did not concern a man's life, but his honour or reputation. *Pitiſc.* Lex. Ant. T. 1. p. 385.

CAUSEWAY (*Cycl.*) — Some derive this from the Latin *calx*, or French *chaux*, as ſuppoſing it primarily to denote a way paved with chalk ſtones. *Ken.* Gloſſ. ad Paroch. Antiq. in voc. *Menage* Orig. Franc. p. 168. *Caſeneuv*, Orig. p. 31. voc. *chauſſée.*

CAUSEWAY, *calcetum*, or *calcea*, more uſually denotes a common hard raiſed way, maintained and repaired with ſtones and rubbiſh.

Devils CAUSEWAY, a famous work of this kind, which ranges thro' the county of Northumberland, commonly ſuppoſed to be Roman, tho' Mr. Horſley ſuſpects it to be of later times. *Horſley*, Brit. Rom. l. 3. c. 2. p. 449.

Giants CAUSEWAY is a denomination given to a huge pile of ſtony columns, in the diſtrict of Coleraine in Ireland. See GIANT'S *cauſeway.*

CAUSTIA, καυσια, in antiquity, a kind of woollen cap uſed by the Macedonians; which was ſo ſtrong as ſometimes to ſerve inſtead of a helmet. Mem. Acad. Inſcript. vol. 2. p. 394, ſeq.

CAUSTIC, καυστικος, (*Cycl.*) in a general ſenſe, ſomething endued with a fiery or burning quality. See BURNING.

The ſtrong *cauſtic*, now generally uſed by our ſurgeons, is prepared in this manner: boil ſoap lyes to a fourth part of their quantity, then ſprinkle in, while they are boiling, lime that has been kept in a veſſel pretty cloſe ſtopped for ſeveral months; continue to add this lime till all the liquor is abſorbed, and the whole is reduced to a paſte, which is to be kept in a veſſel

cloſe

close stopped. The design of thus keeping the lime is, that its acrimony may be a little abated. *Pemberton*'s Lond. Disp. p. 185.

The common *caustic* of quick lime and soap lyes, deserves the preference to any of those composed of acid spirits. It does not give near so much pain, and is not so apt to occasion convulsions, when applied to carious bones. It penetrates better than the dry forms of eroded metals, and does not run so much when it melts, as the more liquid acids do. It either is not absorbed, or its effects are not observed in the blood; whereas mercurial preparations frequently raise an unexpected salivation *Monro*, in Med. Ess. Edinb. vol. 5. art. 24.

Heister says, that the shortest and most approved method of making this is as follows: take pot-ashes and strong quick lime, of each six ounces, powder them separately, and afterwards mix them together in a large glass or earthen vessel, and dissolve them in a large quantity of river water, letting them stand an hour or two that they may dissolve perfectly; the liquor is then to be filtrated thro' a linen cloth from its gross sediment, and evaporated over the fire in an iron pan; the hard mass left from this evaporation is to be put into a crucible, and melted over a strong fire till it flows like oil; it is then to be cast into a mortar or broad pan, and either cut or beat into small pieces before it is quite cold: these are the *caustic* stones. They are to be put into a clean glass, and stopped very close, and kept in a warm place. *Heister*'s Surgery, p. 187.

Arsenical CAUSTIC. See MAGNET.

Lunar CAUSTIC, called also *lapis causticus*, is a preparation of silver, sometimes of copper, usually made by dissolving the metal with spirit of nitre, evaporating two thirds of the fluid, and boiling the rest to an oily consistence, which when cold grows hard. Quinc. Pharmac. P. 2. Sect. 15. p. 252.

CAUSTIC *curves* are usually supposed to be the invention of M. Tschirnhausen; but 'tis only the name he invented. The first mention he made of them was in the year 1682 [a], when he produced no instance but that of the *caustic* in a circle, which he might have learned from Dr. Barrow's *Lectiones Opticæ*, published in 1669. It would have been easy for him to have done the same for any curve, by the help of the radius of curvature published by Huygens in his *Horologium Oscillatorium* in 1673. 'Tis certain this had been done by Sir Isaac Newton as early as the year 1669, as appears from his *Lectiones opticæ* [b], which were read that year at Cambridge, tho' not published till after his death, viz. in 1728 [c].—[[a] Act. Erud. Lipsi. an. 1682. p. 364. [b] *Newt.* Lect. Opt. Sect. 4. [c] Pref. Stat. Rep. Lett. T. 1. p. 50, seq.]

CAUSTIC *fluid*. Some imagine a *caustic* fluid, by which the blood is detained in a fluid state, and by which the red globules are formed. See BLOOD.

CAUSTIC *by reflexion*. See *caustic by* REFLEXION.

CAUSTIC *by refraction* See *caustic by* REFRACTION.

CAUSTICUM *antimoniale*, the name given in the late London dispensatory to what was before called butter of antimony; it is prepared of one pound of antimony, and two pounds of corrosive sublimate, powdered and mixed, and then distilled in a retort with a wide neck, in a gentle sand heat. What ascends into the neck of the retort is to be exposed to the air, that it may run into a liquor. The congealed substance has been used to be called the butter, and when liquified, the oil of antimony. *Pemberton*'s Lond. Disp. p. 234.

CAUSUS, καυσος, in medicine, denotes a burning fever, or a kind of acute continual fever, attended with a vehement heat, and other indications of an uncommon inflammation. *Hoffm.* de Feb. c 52. *Willis* de Feb. c. 11. *Cast.* Lex. Med. p. 152. *Gorr.* Med. Defin, p. 217. voc. καυσος. See FEVER.

CAUTERIZATION, the act of burning or searing some morbid part by the application of fire, either actual or potential. See CAUTERY, *Cycl.* and *Suppl.*

In some places they *cauterize* with burning tow, in others with cotton or moxa, in others with live coals; others use Spanish wax; others pyramidal pieces of linnen, others gold, or silver: Severinus recommends flame blown thro' a pipe: but what is usually preferred among us is a hot iron. See MOXA.

Cauterizing irons are of various figures; some flat, others round, some curved, &c. of all which we find draughts in Albucasis, Scultetus, Ferrara, and others. Sometimes a cautery is applied thro' a capsula, to prevent any terror from the sight of it. This method was invented by Placentinus, and is described by Scultetus. In the use of all cauteries, care is to be taken to defend the neighbouring parts, either by a lamina, defensive plaister, or lint moistened in oxycrate. Sometimes the hot iron is transmitted thro' a copper cannula, for the greater safety of the adjoining parts.

The degrees and manners of *cauterizing* are varied, according to the nature of the disease, and the part affected: In a mortification they *cauterize* more freely than in any other case; in the soft parts more sparingly: in a hæmorrhage, or a caries, they repeat the operation, till an eschar is induced on the vessel, or the humidity of the bone is discharged. *Junck.* Consp. Chir. Tab. 79. p 540, seq. See the following article.

CAUTERY (*Cycl.*) — For the right application of the actual *cautery*, various observations are necessary; in the first place, the surgeon should see that the size and figure of the *cautery* correspond to that of the disordered part, and while the patient is preparing for the operation, to let the *cautery* be heating in the fire, and to secure the sound parts, that it may give no more pain than what is absolutely necessary. In cases of a carious bone, the fleshy parts are to be drawn aside and held out of the way of the iron; and in these cases, as also in large hæmorrhages, it is necessary to have three or four *cauteries* kept hot together, that if one does not finish the operation, there may be no waiting for another.

It has been found that *cauteries* have succeeded in apoplexies when all other means have failed. In this case some apply the *cautery* to the occiput; but others between the first and second vertebræ of the neck; others are for cauterizing the meeting of the coronal and sagital sutures, and others will have it best to be done in the soles of the feet. Which of all these places it succeeds best in, seems yet left to experience to determine. *Heister*'s surgery, p 318.

Potential CAUTERY. See CAUSTIC.

CAUTING *iron*, among farriers, an iron instrument wherewith they cauterize and sear the parts of a horse which require burning. Rust. Dict. T. 1. in voc. See CAUTERIZATION and CAUTERY.

CAUTIO, in the civil law, denotes an assurance or security given or taken for any thing trusted. *Calv.* Lex. Jur. p. 162.

CAUTIONE *admittenda*, in common law, a writ which lies against a bishop, who holds an excommunicated person in prison, notwithstanding he offers sufficient security for obeying the commands of the holy church for the future. *Fitzherb.* Nat. Brev. p. 63. *Cow.* Interp. in voc.

CAUTIONARY *towns*, places of strength, which one prince or power puts in the possession of another, as a security either for the payment of a debt, or performance of some other matter stipulated between them. Rochel, Saumur, and some other cities in France, were allowed to the reformed, for their strength and security. Rouen was given to queen Elizabeth, by Henry IV. of France, as a *cautionary* town or place of retreat for the English army. The *cautionary* towns of Ramekins, Flushing and the Brill, which the Dutch also put into the hands of queen Elizabeth, partly as a curb on the new republic, and partly for the repayment of 8 8,408*l.* sterling, advanced for the service of the states, were sold or given up by king James I. for a trifling consideration, not above a fourth part of what they had been engaged for. *Rapin* Extr. de Rym Fœd. T. 16. Bibl. Anc. Mod. T. 18. p 324, seq.

CAUTO, in botany, a name given by the people of Guinea to a shrub common in that part of the world, a decoction of which they use as a cure for the running of the reins, or a clap. Phil. Trans. N° 232.

CAUTURIER, in anatomy, a name given by the French writers to a muscle of the leg, called by the old writers primus flectentium tibiam, and by the later writers, Cowper, Albinus, &c. sartorius; by Roslan, sutorius.

CAXOU, in metallurgy, a word used to express a chest of ores of silver, or any other metal, that has been burnt, ground, and washed, and is ready to be refined.

CAY, in zoology, the name of a small monkey of the Brasils, an extremely small kind, and of a coal black. It lives only in the thick woods, and is usually found sitting on the boughs of some of the trees which bear pods, the fruit of which it feeds upon. *Ray*'s Syn Quad. p. 155.

CAYMAN, in zoology, the name of a species of crocodile found in the southern parts of America, and on the coast of Guinea, and more usually called by authors by its Brasilian name *jacare*. See JACARE.

CAYMANUM *lapis*, in natural history, the name of a stone found in the beds of rivers in many parts of America, and of a yellowish colour, veined with red and white.

The Indians have an idle tradition, that it is originally found in the stomach of a crocodile, which in their language they call *caymanes*, and thence authors have named it lapis caymanum. The natives of America pretend that it has great virtues in medicine, and particularly that it cures quartans by being applied to the wrists; and to enhance its value, they pretend to take it from the crocodile.

CAYNTANA, in the materia medica, a name given by some authors to the fruit called fagara by other writers. Camell. Syllab. p. 74. See FAGARA.

CAZIC, or CAZIQUE, a general title given by the Spaniards to the petty kings, princes and chiefs of the several countries of America, excepting those of Peru, who are stiled *curatas*.

The French call them *caciques*, a denomination which they also give to the chiefs of the Tartarian hords. *Ozan* Dict. Math p. 376.

The *cazics* in some places do the office of physicians, and in others of priests, as well as captains. The dignity of *cazic* among the Chiites, a people of South America, does not descend to children, but must be acquired by valour and merit. One of the prerogatives annexed to it is, that the *cazic* may have three wives, while the other people are only allowed one. Mem. de Trev. an. 1717. p 25. & p. 27.

Mexico comprehended a great number of provinces and islands, which were governed by lords called *caziques*, dependent on, and tributary to the emperor of Mexico: thirty of these *caziques* or vassals are said to have been so powerful, that they could each of them bring an army of an hundred thousand

ſand men into the field. *Solis*, Hiſt. de la Conq. du Mexique ap. Bibl. Univ. T. 23. p. 202.

CAZIMI, among the Arabian aſtronomers, denotes the center or middle of the ſun. A planet is ſaid to be in *cazimi*, when it is not diſtant from the ſun either in longitude or latitude above 17′, or the aggregate of the ſemi diameter of the ſun's diſk and that of the planet.

This amounts to the ſame with what is otherwiſe called in *corde ſolis*, or in the ſun's heart, which paſſes for a dignity and fortitude of a planet, equal to that of being in its own houſe; whereas in other caſes, a planet's conjunction with the ſun is held detrimental, or a diminution to it; as the ſun, by his ſuperior power, is ſuppoſed to abſorb the virtue of the planet, and even ſcorch or burn it up. *Wolf.* Lex. Math. p. 327. *Vital.* Lex. Math. p. 98.

CEANIDES, or CEANTIDES, in natural hiſtory, a name given by many of the antients to the ſtone more generally known under the name of enchymonites. It was the ſame with our ſparry incruſtations on the walls and roofs of ſubterranean caverns; and, from the opinion of the times, that theſe ſtones brought forth young ones, which was founded on their finding little ones daily produced among them, it became a cuſtom to give this internally to women in labour, as a thing that would, by a ſort of ſympathy, haſten the time.

CEDAR, *cedrus*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the amentaceous kind, conſiſting of a great number of little leaves, furniſhed with a number of apices: this is the male flower. The fruit which grows on other parts of the tree is a roundiſh berry, containing angular kernels, which have each oblong ſeeds. To this it is to be added, that the leaves reſemble thoſe of cypreſs.

The ſpecies of *cedrus* enumerated by Mr. Tournefort, are theſe: 1. The greater cypreſs-leav'd *cedrus*, with yellow berries. 2. The middle-ſized cypreſs-leav'd *cedrus*, with very large berries; and, 3. The tall Spaniſh *cedrus*, with large black berries. *Tourn.* Inſt. p. 588.

This tree is of great beauty, and bears the openeſt expoſures ſo well, that it is a wonder it is not more cultivated in England.

The cones of this tree are brought us from the Levant, and if preſerved entire, will keep their ſeeds many years: theſe cones are to be ſplit open, and the ſeeds picked out with the fingers: theſe are to be ſown and propagated in the ſame manner as the firs. See the article FIR. Only that when the plants begin to ſhoot ſtrong, the leading ſhoot generally inclines to one ſide, and muſt therefore be ſupported by tying it to a ſtake driven upright by its ſide.

Theſe trees ſpread greatly, and the ends of their branches bending down, they ſhew very beautifully their upper ſurface, which looks like a green carpet, and as it plays in the wind makes a very elegant appearance, and is therefore a fine tree for planting on an eminence to terminate a viſta.

They thrive beſt of all in a poor ſoil, and are of very quick growth, as appears very plainly by thoſe fine ones in the phyſic garden at Cheſſea, which were planted in the year 1683, and were then only two foot high, and in the year 1736 were above ten feet in the girth, at two feet above ground. *Miller*, Gard. Dict. in voc.

CEDAR, in building, &c. a denomination given to a ſpecies of the wood of the *cedar*-tree, famous for its duration and incorruptibility.

The tree which bears it, is that popularly called by us the *cedar* of Lebanon, by the antients *cedrus magna*, or the great *cedar*, alſo *cedrelate*, κεδρελάτη, and ſometimes the Phœnician or Syriac *cedar*, from the country where it grows in greateſt perfection. *Plin.* Hiſt. Nat. l. 24. c. 5. *Fab.* Theſ. p. 514. Trev Dict. Univ. T. 1. p. 1529. voc. *cedre*. *Gorr.* Med. Defin. p. 219.

It is a coniferous ever-green, of the bigger ſort, large and tall, bearing large roundiſh cones, of ſmooth ſcales, ſtanding erect, the leaves being ſmall, narrow, and thick ſet.

They ſometimes counterfeit *cedar*, by dying wood of a reddiſh hue; but the ſmell diſcovers the cheat, that of true *cedar* being very aromatic. In ſome places the wood of the cajou tree paſſes under the name of *cedar*, on account of its reddiſh colour, and its aromatic ſmell, which ſomewhat reſembles that of ſantal.

Cedar wood is reputed almoſt immortal and incorruptible, a prerogative which it owes chiefly to its bitter taſte, which the worms cannot endure. For this reaſon it was, the antients made uſe of *cedar* tablets to write on, eſpecially for things of importance, as appears from that expreſſion of Perſius, *Et Cedro digna locutus. Perſ.* Sat. 1. v. 42.

A juice was alſo drawn from *cedar*, with which they ſmeered their books and writings, or other matters, to preſerve them from rotting; which is alluded to by Horace[a]: By means of which it was that Numa's books, written on papyrus, were preſerved entire to the year 535, as we are informed by Pliny[b]. [[a] *Horat.* Ars Poet. v. 331. [b] *Plin.* Hiſt. Nat. l. 12. c. 13. *Fab.* Theſ. p. 514.] See CEDRIA.

Solomon's temple, as well as his palace, were both of this wood. That prince gave king Hiram ſeveral cities for the *cedars* he furniſhed him on thoſe occaſions. Cortes is ſaid to have erected a palace at Mexico, in which were 7000 beams of *cedar*, moſt of them 120 feet long, and 12 in circumference, as we are informed by Herrera. Some tell us of a *cedar* felled in Cyprus 130 foot long, and 18 in diameter. It was uſed for the main maſt in the galley of king Demetrius. Le Bruyn aſſures us, that the two biggeſt he ſaw on Mount Lebanon meaſured one of them 57 palms, and the other 47 in circumference. Trev. Dict. p. 1529, ſeq. *Calm.* Dict. Bib. T. 1. p. 370.

In the temple of Apollo at Utica, there were *cedar* timbers of near 2000 years old; which yet were nothing to that beam in an oratory of Diana at Saguntum in Spain, ſaid to have been brought thither 200 years before the deſtruction of Troy.

Cedar is of ſo dry a nature, that it will not endure to be faſtened with iron nails, from which it uſually ſhrinks, ſo that they commonly faſten it with pins of the ſame wood.

The *cedar* brought from Barbadoes and Jamaica is a ſpurious ſort, of ſo porous a nature, that the wine will leak thro' it. That produced in New-England is a lofty grower, and makes excellent planks, and flooring that is everlaſting. They ſhingle their houſes with it, and uſe it in all their buildings. This is the Oxycedrus of Lycia, which Vitruvius deſcribes as having its leaves reſembling thoſe of cypreſs. *Evelyn.* Sylv. c. 25. §. 14.

The *cedar* of Greece and Aſia was no other than a ſmaller kind of juniper, which having prickly leaves, was by ſome called oxycedrus, and the common juniper was at that time called alſo by the name of *cedar*. The Lycian *cedar* of the Greeks was this juniper kind; but the cedrium and cedrelæum, which were a kind of pitch and an oil ſeparated from it by melting, were not prepared from this *cedar*, but from the Syrian *cedar*, which was a larger ſhrub, and reſembled the cypreſs, and therefore was confounded with that tree, being called by ſome the wild cypreſs. The cedrium was always made from this ſpecies; but the oleum de coda, or code oil, was made from the fruit of the oxycedrus, or prickly-leav'd juniper, called *cedar* by the Greeks, and growing in their own country.

The ſhittim and the almug mentioned in ſcripture, are uſually ſuppoſed to have been kinds of *cedar*.

Johnſton, in his *dendrographia*, is of opinion, that pitch was antiently made of *cedar*, as well as of the pine and fir, grown old and oily. Bp. *Berkeley*, Siris, ſect. 18.

CEDAR *cups*, a ſort of wooden ware brought from the Weſt-Indies. They are made out of the wood of the baſtard *cedar*, and appear of a very cloſe and firm grain; but they are really ſo porous, that when any liquor is pour'd into them, it runs out at the bottom.

CEDILLA, in the Spaniſh and French languages, denotes a ſort of ſmall c, to the bottom of which is affixed a kind of virgula, as ç, to denote that it is to be pronounced like ſ.

The *cedilla* is called by ſome of our printers a *ceceril*. It is uſed before the vowels a, o, and u; as in braços, choça, commença, leçon, deça, &c. In the Spaniſh, it is ſometimes uſed at the beginning of a word, as in çamarra, çurzar, &c. Trev. Dict. Univ. T. 1. p. 1529. *Steph.* Span. Dict. in voc. Mem. de Trev. 1707. p. 1265.

CEDRELATON, in botany, a name given by Pliny to an imaginary tree, and faithfully copied by many authors. The word ſeems evidently formed of *cedrus*, the cedar, and *elate*, the fir-tree; and hence the original author of the blunder has deſcribed it as a large and high cedar, with few branches: and thoſe who have copied from him, have deſcribed it as being of a middle nature, between the cedar and fir. It is eaſy to trace Pliny up to his original authors in his botanical account; and by doing this, in the preſent caſe it is found, that there never was any tree at all called by this name by the authors whom he follows; but that the whole is an error, founded on his reading in ſome of them *cedrelaton* inſtead of cedrelaion, a name by which all the antient Greeks have called the oil of cedar. Pliny taking this for the name of a tree, ſays, that the ſeed was like the cypreſs, and the tree higher than any other cedar. He mentions it in another place alſo, and ſays, that it yields the cedria, or a peculiar kind of pitch, called oil of cedar by ſome. *Pliny*, l. 25. c. 3.

CEDRIA, κεδρία, a reſinous liquor iſſuing from the great cedar tree, or cedar of Lebanon. The word is alſo written *cedrium*, κεδρίον, and *cedrinum*, κεδρινον.

Cedria, when good, yields a ſtrong ſmell, is tranſparent, of a thick fatty conſiſtence, ſo that in pouring it out, it does not fall too faſt or freely, but equally drop by drop. It is poſſeſſed of two oppoſite qualities, viz. to preſerve dead bodies, by its drying and conſuming ſuperfluous moiſture, without damaging the ſolid parts; and to putrify the ſoft and tender parts of living bodies, without exciting any pain. Trev. Dict. Univ. T. 1. p. 1530. *Savar.* Dict. Comm. T. 1. p. 596. *Ruland*, Lex. Alch. p. 137.

The *cedria* is properly the tear of the cedar. Some call it the gum, others the pitch of the *cedar*. The ſame denomination is alſo given to the *cedrelæon*, or oil of the cedars, which differs little from the reſin, except that it is of a thinner conſiſtence. *Gorr.* Med. Defin. p. 219. voc. κεδρίον. *Caſt.* Lex. Med. p. 153. *Fab.* Theſ. p. 514.

CEGINUS, in aſtronomy, a fixed ſtar of the third magnitude, in the left ſhoulder of Bootes. See BOOTES, *Cycl.* and *Suppl.* Its longitude, according to Hevelius, for the year 1700, was 13° 26′ 4″, and its latitude northern 49° 35′ 47″.

Some alſo give this denomination to the ſtar otherwiſe called *cepheus*.

cepheus. *Wolf*. Lex. Math p. 327, ſeq. *Vital*. Lex. Math. p. 99. See CEPHEUS, *Cycl*. and *Suppl*.

CEGOLITES, in natural hiſtory, a name by which ſome authors have called the lapis judaicus, or tecolithus of the antients. See JUDAICUS *lapis*.

CEIMELIA, Κειμηλια, in antiquity, denotes choice or precious pieces of furniture or ornaments, reſerved or laid up for extraordinary occaſions and uſes.

In which ſenſe, ſacred garments, veſſels, and the like, are reputed of the *ceimelia* of a church. Medals, antique ſtones, figures, manuſcripts, records, &c. are the *ceimelia* of men of letters. *Suic*. Theſ. T. 2. p. 81. *Calv*. Lex. Jur. p. 166. *Caſt*. Lex. Med. p. 153.

CEIMELIARCHIUM, Κειμηλιαρχειον, the repoſitory or place where ceimelia are preſerved. *Bingh*. Orig. Eccleſ. l. 8. c. 7. §. 7. *Du Cange*, Gloſſ. Gr. T. 1. p. 628.

CEIMELIOPHYLAX, Κειμηλιοφυλαξ, the keeper or curator of a collection of *ceimelia*; ſometimes alſo denominated *ceimeliarcha*, κειμηλιαρχης.

The *ceimeliarcha*, or *ceimeliophylax*, was an officer in the antient churches and monaſteries, anſwering to what was otherwiſe denominated *chartophylax*, and *cuſtos archivorum*. *Bingh*. Orig. Eccleſ. l. 3. c. 13. §. 3. *Du Cange*, Gloſſ. Græc. T. 1. p 628.

CEIXUPEIRA, in zoology, the name of a fiſh caught in the American ſeas, and eſteemed a very fine and delicate one, tho' of an enormous ſize. It grows to nine or ten feet long, and to the thickneſs of a man's body, but is chiefly eaten while young. Its body is oblong, and its head flatted. Its mouth is but ſmall for the ſize of the fiſh, and it has no teeth in the jaws; but the whole mouth is thick ſet with ſmall tubercles. Its eyes are white, and not large. It has ſix fins, beſide the tail: all its fins are armed with ſoft prickles; and in the ſpace between the head and back-fin, it has eight ſtrong, bony, triangular ſpines, which it can at pleaſure draw in and hide within the fleſh. Its head is bony and ſmooth; and its whole body is covered with ſuch ſmall ſcales, that it appears ſmooth. Its back and ſides are black, and its belly of a fine bright white. Its fins are all black, except the belly ones, which are white, with a rim of black at their edge. *Margrave*'s Hiſt. Braſil.

CELANDINE, in botany. See CHELIDONIUM.

CELANTES, in logic, a denomination given by the peripatetics to the Galenical ſyllogiſm; otherwiſe called calentes. *Walch*. Lex. Phil. p. 338. See CALENTES.

CELARENT, in logic, a mode of ſyllogiſms in the firſt figure, wherein the major propoſition and concluſion are univerſal negative, and the minor or medium univerſal affirmative. E. gr.

CE No bad book ought to be read:
lA Every obſcene book is a bad one:
rEnt. Therefore no obſcene book ought to be read.

Walch. Lex. Phil. p. 359.

CELE, Κηλη, in a general ſenſe, denotes any tumour, but more particularly that proceeding from a rupture or hernia. *Gorr*. Med. Defin p. 224. *Blanc*. Lex. Med. p. 143. See TUMOUR and RUPTURE.

CELERI, a name given by our gardeners to ſome ſpecies of apium. See APIUM.

We have two ſorts of this plant cultivated in our gardens, the Italian *celeri*, and the celeriac.

The ſeeds of this plant ſhould be ſown at two different ſeaſons, the better to continue it for uſe thro' the whole ſeaſon, without its running up to ſeed. The firſt ſowing ſhould be in the beginning of March, in an open ſpot of light earth; but the ſecond ſowing ſhould be in April, in a moiſter ſoil. In about a month's time after ſowing, the plants will come up; they muſt be kept clear of weeds, and if the ſeaſon is dry they muſt be watered. When they have been a month or five weeks above ground, they will be fit to tranſplant. They muſt now be ſet at three inches diſtance, in beds of moiſt, rich earth. In the middle of June ſome of the plants of the firſt ſowing will be fit to tranſplant for blanching; the ſoil in which it is now planted muſt be moiſt, rich, and light.

The manner of planting it at this time is this: you muſt dig a trench of ten inches wide, and eight or nine inches deep, looſening the earth at the bottom, and laying it level; and the earth which comes out of the trench, is to be equally laid on each ſide the trench, to be ready to draw in again to earth the *celeri* as it advances in height. The trenches ſhould be made at three feet aſunder, and the plants ſet in them at ſix inches diſtance. The tops of their leaves, and ends of their roots, are to be cut off when planted; and they are to be watered, to fix the earth to their roots: after this, they require little care but the drawing up the earth to them as they advance in height; it muſt be carefully obſerved in doing this, never to bury the heart of the plant, nor ever to perform it but in dry weather; for if done in wet, the plants will rot. The earth between the trenches is to be uſed, when that that was thrown out in the digging of them is all employed; and ſoon after Midſummer ſome of the firſt ſowing will be ready to cut, and the ſucceeding ones, if rightly managed, will continue it till April or May. Many plantations are indeed to be made out of one ſowing, by pulling up the ſtrongeſt plants firſt, then ſome time after the ſtrongeſt of the remaining, and finally, the leaſt of all, which will be got to a proper growth by that time. *Miller*'s Gardener's Dict.

CELERINUS, in ichthyology, a name by which ſome authors have called the pilchard; called by others the apua membras, and chalcis. *Bellonius*, de Piſc. See the article PILCHARDUS.

CELERINUS is alſo uſed by Bellonius, and ſome other authors, for the common herring. See the articles HALEE and CLUPEA.

CELESTIAL *globe*. See GLOBE, *Cycl*.

CELESTIAL *fire*. See FIRE.

CELETES, or CELETÆ, in antiquity, denote ſingle or ſaddle-horſes; by way of contradiſtinction from thoſe yoked or harneſſed together, called *bigarii*, *quadrigarii*, &c.

The ſame denomination is alſo given to the cavaliers, or riders on horſeback; and hence ſome deduce *celeres*, the name of Romulus's guard. *Aquin*. Lex. Mil. T. 1. p. 191. *Pitiſc*. Lex. Ant. T. 1. p. 388.

CELEUSMA, or CELEUMA, Κελευσμα, in antiquity, the ſhout or cry of the ſeamen, whereby they animated each other in their work of rowing.

The word is formed from the Greek, κελευειν, to call, to give the ſignal.

CELEUSMA was alſo a kind of ſong or formula, rehearſed or played by the maſter, or others, to direct the ſtrokes and movements of the mariners, as well as to encourage them to labour. *Aſcon. Pedian*. in Divinat. Verr. p. 37. See CELEUSTES.

Some diſtinguiſh the *celeuſma* from the ſong, making the former to conſiſt in a ſingle word or formula, ſpoken aloud; as, *rhippape*, to give notice to row; and *oop*, to ſtop. *Pitiſc*. Lex Ant. T. 1. p. 388.

Aquinus, without much foundation, extends the *celeuſma* to the military ſhouts in land armies. *Aquin*. Lex. Mil. T. 1. p. 191, ſeq.

When chriſtianity got footing, hymns and pſalms were ſung in veſſels, by way of *celeuſma*, in which the words *amen* and *halleluja* were frequently repeated. *Bingh*. Orig. Eccleſ. l. 14. c. 2. §. 4. *Fab*. Theſ. p. 517.

CELEUSTES, Κελευστης, in the antient ſhips, the boatſwain or officer appointed to give the rowers the ſignal, when they were to pull, and when ſtop their hands. *Ovid*. Metam. l. 3. v. 618, ſeq. See CELEUSMA.

He was alſo denominated *epopeus*, and by the Romans *portiſculus*; ſometimes ſimply *hortator*. *Fab*. Theſ. p. 517. *Pitiſc*. Lex. Ant. T. 1. p. 388. *Kenn*. Rom. Ant. Not. P. 2. l. 4. c. 20. p. 244.

CELIBACY. The antient Romans uſed all means imaginable to diſcourage *celibacy*. Nothing was more uſual than for the cenſors to impoſe a fine on old batchelors. Dionyſius Halicarnaſſeus mentions an antient conſtitution, whereby all perſons of full age were obliged to marry. But the firſt law of that kind, of which we have any certainty, is that enacted under Auguſtus, called *Lex Julia de maritandis ordinibus*. It was afterwards denominated *Papia Poppæa*, and more uſually *Julia Papia*, in regard of ſome new ſanction and amendments made to it under the conſuls Papius and Poppæus. By this law, divers prerogatives were given to perſons who had many children; penalties impoſed on thoſe who lived a ſingle life, as that they ſhould be incapable of receiving legacies, except from their neareſt relations, and not exceeding a certain proportion, &c. *Pitiſc*. Lex. Ant. T. 1. p. 480. voc. *cælibatus*. *Calv*. Lex. Jur. p. 195. voc. *cælibes*.

CELIBATE (*Cycl*.) is chiefly uſed in ſpeaking of the ſingle life of the clergy, or the obligation they have been ſuppoſed under to abſtain from the uſe of marriage.

In this ſenſe we ſay, the law of *celibate*; monks and religious take a vow of *celibate*, and what is more, of chaſtity.

The church of Rome impoſes an univerſal *celibacy* on all its clergy, from the pope to the loweſt deacon and ſubdeacon. The advocates for this uſage pretend, that a vow of perpetual *celibacy* was required in the antient church, as a condition of ordination, even from the earlieſt apoſtolic ages. But the contrary is evident, from numerous examples of biſhops and archbiſhops, who lived in a ſtate of matrimony, without any prejudice to their ordination or their function. 'Tis generally agreed by antient writers, that moſt of the apoſtles were married: ſome ſay all of them, except St. Paul and St. John: others ſay St. Paul himſelf was married, becauſe he writes to his yoke-fellow, whom they interpret his wife. Be this as it will, in the next ages after the apoſtles, we have accounts of divers married biſhops, preſbyters and deacons, without any reproof or mark of diſhonour ſet on them: *ex. gr*. Valens, preſbyter of Philippi, mentioned by Polycarp; and Chæremon, biſhop of Nilus. Novatus was a married preſbyter of Carthage, as we learn from Cyprian, who himſelf was alſo a married man, as Pagi confeſſes; and ſo was Cæcilius the preſbyter, who converted him; and Numidius, another preſbyter of Carthage. *Bingh*. Orig. Eccleſ. l. 4. c. 5. §. 5.

The reply which the Romaniſts give to this is, that all married perſons, when they come to be ordained, promiſed to live ſeparate from their wives by conſent, which anſwered the vow of *celibacy* in other perſons [a]. But this is ſaid not only without proof, but againſt it. For Novatus, preſbyter of Carthage, was certainly allowed to cohabit with his wife after ordination; as appears from the charge that Cyprian brings againſt him, that he had ſtruck and abuſed his wife, and there-

by

by caused her to miscarry. There seems indeed in some places to have been a tendency toward introducing such a law, by one or two zealots; but the motion was no sooner made, than it was quashed by the authority of wiser men. Thus Eusebius observes, that Pinytus, bishop of Gnossus in Crete, was for laying the law of *celibacy* upon his brethren; but Dionysius, bishop of Corinth, wrote to him, that he should consider the weakness of men, and not impose that heavy burden on them. In the council of Nice, an. 325, the motion was renewed for a law to oblige the clergy to abstain from all conjugal society with their wives, which they had married before their ordination: but Paphnutius, a famous Egyptian bishop, and one who himself never married, vigorously declaimed against it, upon which it was unanimously rejected. So Socrates [b] and Sozomen tell the story. To which all that Valesius [c], after Bellarmin, has to say, is, that he suspects the truth of it.— [[a] *Pagi* Critic. in Baron. an. 248. p. 4. [b] *Socrat.* l. 1. c. 11. *Sozom.* l. 1. c. 23. [c] *Valef.* Not. in Socrat. l. 1. c. 11.]

The council in Trullo held in 692, made a difference in this respect between bishops and presbyters, allowing presbyters, deacons and all the inferior orders to cohabit with their wives after ordination; and giving the Roman church a smart rebuke for the contrary prohibition, but at the same time laying an injunction upon bishops to live separate from their wives, and appointing the wives to betake themselves to a monastic life, or become deaconesses in the church. And thus was a total celibate established in the Greek church, as to bishops, but not any others. In the Latin church the like establishment was also made, but by slow steps in many places. For in Africa even bishops themselves cohabited with their wives at the time of the council of Trullo. *Bingh.* Orig. Eccles. T. 1. l. 4. c. 5. §. 5. seq. *Suic.* Thes. Eccles. T. 1. p. 733.

The *celibacy* of the clergy, however, appears of an antient standing, if not as a matter of command and necessity, yet as of council and choice.

The historian Socrates relates, that in Thessaly the priests were excommunicated who lived with their wives, though married before their ordination; and the same was practised in Macedonia and Greece: he adds, that all the churches of Asia voluntarily observed the same rule [a]. St. Jerome, before Socrates, assures us, that the churches of the East, Egypt, and Rome, that is the three grand patriarchates, and almost all the churches under their jurisdiction, admitted only single persons to the clericate, or if they had wives, they from that time ceased to converse with them as husbands. And St. Epiphanius before Jerom, though in the same age, declares that a person who had been married, though but once, was not admitted to be either deacon, priest, or bishop, during his wife's life, unless he abstained from her: and that if any thing contrary hereto be allowed in certain places, it is contrary to the rule of the church, and only connived at out of condescension for human weakness. By which it may seem as if there were then some decree or canon which established *celibate* [b]. — [[a] *Socrat.* Hist. Eccles. l. 5 c. 22. [b] *Walk.* Disc. on celibacy of clergy. §. 20. seq. Trev. Dict. Univ. T. 1. p. 1538, seq. *Suic.* Thes. T. 1. p. 733.]

CELIDOGRAPHIA, the description of the spots which appear on the faces of the sun and planets. See SPOT.

The word is formed from the Greek κηλις, *macula*, spot, and γραφω, I describe.

Signior Bianchini has published a *celidographia* or description of the spots of the sun. Vid. Bibl. Ital. T. 7. p. 82. Act. Erud. Lipsi. An. 1729. p. 493.

CELIMIA, in the materia medica, a name given by the modern Greeks to the calamine or lapis calaminaris. The Arabians called this substance climia, and sometimes calimia; and celimia was but a very small change from this.

CELL, *cella*, (*Cycl.*) in antient writers, denotes a place or apartment usually under ground, and vaulted; in which were stored up some sort of necessaries, as wine, honey, wheat, and the like; according to which it was peculiarly denominated *cella vinaria*, *oleria*, *mellaria*, *penaria*, &c. *Cic.* de Senect. c. 16. *Fab.* Thes. p. 517.

The word is formed from the Latin *celare*, to hide, or conceal.

CELLA was also used for the lodge, or habitation of a common woman or prostitute, as being under ground; hence also denominated *fornix*.

Intravit calidum veteri centone lupanar,
Et cellam vacuam. —— *Juv.* Sat. 6. v. 121.

On which place an antient scholiast remarks, that the names of the whores were written on the doors of their several *cells*; by which we learn the meaning of *inscripta cella*, in Martial. *Mart.* Epigr. l. 11. Ep. 46. *Fab.* Thes. p. 517.

CELLA was also applied to the bed-chambers of domestics, and servants; probably as being low and narrow.

Cicero inveighing against the luxury of Antony, says, the beds in the very *cellæ* of his servants were spread with pompous purple coverlets.

CELLA is also applied to the members or apartments of baths. *Cic.* Philip. 2. c. 27. *Fab.* Thes. p. 518. See BATH.

Of these there were three principal called *frigidaria*, *tepidaria*, and *caldaria*. To which may be added a fourth called *cella affa*, and sometimes *sudatoria*. Vid. *Pallad.* de re Rust. l. 1. c. 40. *Salmas.* Observ. ad Vopisc. *Fab.* Thes. p. 518.

CELLA was also applied to the *adyta*, or inmost and most retired parts of temples, wherein the images of the gods to whom the edifices were consecrated, were preserved. In this sense we meet with *cella Jovis*, *cella Concordiæ*, &c. Pub. Victor calls them *delubra*; and Pliny by a more comprehensive name *ædes*. *Plin.* Hist. Nat. l. 35. c. 10.

The Roman capitol, we are told by Dionysius, had three such *cellæ*, or chapels; the middlemost of which was sacred to Jupiter, that on the right hand to Minerva, and that on the left to Juno. *Fab.* Thes. p. 518.

CELL is also used for a lesser or subordinate sort of monastery, dependent on a great one, by which it was erected, and continues still to be governed. The great abbies in England had most of them *cells* in places distant from the mother abbey, to which they were accountable, and from which they received their superiors.

The alien priories in England were *cells* to abbies in Normandy, France, Italy, &c. *Stev.* Suppl. to Dugd. T. 2. p. 230.

The name *cell* was sometimes also given to rich and considerable monasteries not dependent on any other. Such was that called *cella vetus*, erected by Otho, surnamed the rich marquess of Misnia, in the middle of the 12th century, the most splendid abby in that country. Vid. Jour. des Scav. T. 33. p. 263, seq.

CELLAR, *celarium*, in antient writers, denotes the same with *cella*, viz. a conservatory of eatables, or drinkables. See the article CELLA.

Cellar differs from a vault, as the latter is supposed to be deeper, the former being frequently little below the surface of the ground. See VAULT, *Cycl.*

In which sense, *cellarium* only differed from *penus*, as the former was only a store-house for several days, the latter for a long time [a]. Thus it is, the *Bactroperitæ*, a sort of antient cynics, are said by St. Jerom to carry their *cellar* about with them [b]; [[a] *Serv.* ad Æn. l. 1. v. 704. [b] *Hieron.* in Math. c. 10 *August.* Confess. l. 9. c. 8. *Fab.* Thes. p. 519.] See the article BACTROPERITÆ.

CELLARIUM also denoted an allowance of bread, wine, oil, or other provision furnished out of the *cella*, to the use of the governor of the province, and his officers, &c.

In which sense the word amounts to much the same with *annona*. See ANNONA.

CELLARS, in modern building, are the lowest rooms in a house, the ceilings of which usually lye level with the surface of the ground on which the house is built. *Neve*, Build. Dict. in voc.

Cellars, and other places vaulted under ground, were called by the Greeks *hypogæa*: the Italians still call them *fundi delle case*. *Vitruv.* de Archit l. 6. c. 11. *Fe ib.* Princ. Archit. p. 369.

CELLARER, or CELLERER, *cellerarius*, or *cellarius*, an officer in monasteries, to whom belong the care and procurement of provisions for the convent.

The denomination is said to be borrowed from the Roman law, where *cellerarius* denotes an examiner of accounts and expences: Ulpian defines it thus: *cellerarius*, *id est*, *ideo præpositus ut rationes salvæ sint*. Trev. Dict. Univ. T. 1. p. 1539.

The *cellerarius* was one of the four obedientiarii, or great officers of monasteries: under his ordering was the pistrinum or bakehouse, and the bracinum, or brewhouse. In the richer houses there were particular lands set apart for the maintenance of his office, called in antient writings, *ad cibum monachorum*.

The *cellerarius* was a great man in the convent.

In archbishop Winchelsey's statutes for the priory of Christ Church at Canterbury, 'tis said the great *cellerarius* ought to be the father of the monastery. He had a *subcellerarius* under him, to assist and bear part of the burthen. He held a hall or halimote, conventus aulæ, to which resorted a great number of inferior officers specified by Somner. Abbots were oftener taken out of the *cellerarii*, than out of any other order of people. Vid. *Somn.* Antiq. Canterb. p. 201, seq.

The origin of *cellerers* seems to be civil: the appellation was first given to an officer of lay-lords, who had the care and management of their domestic affairs; answering to what is now called a steward, major-domo, or intendant. After them, bishops and abbots affected to give the same title to their agents. Philip of Savoy, notwithstanding his high birth, was *cellerer* of the archbishop of Vienne in 1243.

The *cellerer* was properly the person who had the direction of what related to the belly, which comprehended all eatables and drinkables: *qui cellæ vinariæ & escuariæ præsit*. His whole office in antient times, had a respect to that origin: he was to see his lord's corn got in, and laid up in granaries; and his appointment consisted in a certain proportion thereof, usually fixed at a thirteenth part of the whole; together with a furred gown. The office of *cellerer* then only differed in name from those of bailiff and minstrel; excepting that the *cellerer* had the receipt of his lords rents through the whole extent of his jurisdiction. Trev. Dict. Univ. T. 1. p. 1539. Journ. des Scav. T. 88. p. 47.

CELLARER was also an officer in chapters, to whom belonged the care of the temporals, and particularly the distributing of bread, wine, and money to the canons, on account of their attendance in the choir. In some places he was called *cellarer*, in others *burser*, and in others *currier*. Trev. Dict. Univ. T. 1. p. 1540.

CELLEPORÆ, in botany, the name of a genus of marine plants, the characters of which are, that they are of the ſubſtance of the lithophyta, and have oblong creeping hollows in ſeveral parts.

CELLULÆ, in the colon, a ſort of ſpaces wherein the excrements continue ſome time before they are voided. See COLON and EXCREMENT.

CELLULANUS, a monk inhabitant, or reſident in a cell. *Fab.* Theſ. p. 518. See CELLA.

He is alſo denominated *concellaneus* and *ſyncelliſta*, by which are imported the relation of fellow monks, or thoſe who live in the ſame cell or convent. *Du Cange*, Gloſſ. Lat. T. 1. p. 916. *Magr.* Not. voc. Eccleſ. p. 61.

CELLULAR, or CELLULOSE, an appellation given by Ruyſch, to the ſecond coat of the inteſtines; in which fat is often found. *Heiſt.* Comp. Anat. §. 211. p. 104.

Wharton alſo takes notice of a *celluloſe* coat in the meſentery, wherein fat is contained. See MESENTERY, *Cycl.*

Heiſter thinks that a *celluloſe* coat may alſo be added to the three coats in the human bladder, by reaſon fat is often found between the outermoſt and muſcular coat, where it is ſecreted, collected, and preſerved in little adipoſe cells. Id. ibid. in Not. p. 353. See BLADDER, *Cycl.* and *Suppl.*

CELSIA, in botany, the name of a genus of plants, the characters of which are theſe: the perianthium is divided into five oblong and obtuſely pointed ſegments, which remain after the flower is fallen. The flower conſiſts of one petal; the tube is extremely ſhort; the limb is very plane, and lightly divided into five ſegments of a rounded figure; the two lower ones of theſe are ſmaller than the two upper, and the ſingle ſegment that ſtands at the bottom is largeſt of all. The ſtamina are four capillary filaments which ſtand near the ſmaller ſegments of the flower, and two of them are longer than the others, and are woolly on the outer ſide; the antheræ are ſmall and roundiſh; the germen of the piſtil is roundiſh; the ſtyle is capillary, and of the length of the ſtamina; and the ſtigma is obtuſe. The fruit is a roundiſh bilocular capſule, compreſſed and pointed at the top, and is fixed in the baſe of the flower. The ſeeds are ſmall, numerous, and of an angular figure; the receptacles are hemiſpheric. It is evident, from the characters, that this genus of plants differs extremely from the verbaſcum, or mullein. *Linnæi* Gen. Plant. p. 298.

CELTIS, the *nettle-tree*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the roſaceous kind, being compoſed of ſeveral petals arranged in a circular form, and filled with very ſhort ſtamina. The piſtil ariſes from the cup, and finally becomes a fruit or berry, containing a roundiſh kernel.

The ſpecies of *celtis* enumerated by Mr. Tournefort are theſe: 1. The *celtis* with black fruit. 2. The *celtis* with pale purple fruit. And, 3. The American *celtis*, with citron-like leaves of a gold colour underneath, and with red fruit. *Tourn.* Inſt. p. 612.

CEMENT. See the article CÆMENT.

CEMENTATION. See CÆMENTATION.

CEMENTATION *of gold*. See GOLD.

CEMETERY, *cœmeterium*, (See COEMETERIUM, *Cycl.*) denotes a place ſet apart, or conſecrated, for the burial of the dead. *Bingh.* Orig. Eccleſ. l. 23. c. 1. §. 1. ſeq. See BURIAL, and BURYING.

The word is originally Greek, κοιμητηριον, formed of κοιμαω, dormio, I ſleep.

In which ſenſe *cemetery* amounts to the ſame with dormitory, ſepulchre, ſepulchretum, &c. It is ſometimes alſo called *polyandrium*, q. d. a concourſe of a multitude of men [a], and *andropolis*, or the city of men [b]. —[[a] Vid. *Du Cange*, Gloſſ. Lat. T. 4. p. 338. voc. *polyandrium*. [b] Id. ibid. T. 1. p. 198. voc. *andropolis*.]

Antiently none were buried in churches or church-yards: it was even unlawful to inter in cities; inſtead of which they had *cemeteries* without the walls [a]. Theſe were held in great veneration among the primitive chriſtians. The council of Elvira prohibited the burning of torches or tapers in the day time in *cemeteries*. The practice of conſecrating *cemeteries* is of ſome antiquity [b]: the biſhop walked round it in proceſſion, with the crozier, or paſtoral ſtaff, in his hand, the holy water pot being carried before, out of which aſperſions were made [c]. In the early ages, the chriſtians held their aſſemblies in the *cemeteries*, as we learn from Euſebius and Tertullian, the latter of whom calls thoſe *cemeteries* where they met to pray, *areæ*. Valerian ſeems to have confiſcated the *cemeteries*, and places deſtined for divine worſhip, which were reſtored again to the chriſtians by Gallian: In the reſcript of that emperor, which is preſerved by Euſebius, *cemeteries* and places of worſhip are uſed as ſynonymous terms [d]. It being here the martyrs were buried, the chriſtians choſe thoſe places to have churches in, when leave was given them by Conſtantine to build. And hence ſome derive that rule which ſtill obtains in the church of Rome, never to conſecrate an altar, without putting under it the relicks of ſome ſaint [e]. —[[a] *Suic.* Theſ. T. p. 3002. [b] Vid. *Bingh.* Orig. l. 23. c. 2. §. 1. [c] *Lobin.* Hiſt. de Bret. T. 2. p. 208. [d] *Bingh.* Orig. Eccleſ. l. 8. c. 1. §. 9. Item l. 23. [e] *Tillem.* Hiſt. des Emper. T. 3. p. 282, ſeq. Trev. Dict. Univ. T. 1. p. 1812.]

CENCHRAMIDEA, in botany, a name given by Plukenet to a genus of plants afterwards called by Plumier and Linnæus cluſia. *Plukenet*, Alm. 257. f. a. See CLUSIA.

CENCHRAMUS, in zoology, a name by which ſome authors have called the emberiza alba, called in Engliſh, the bunting. *Ray*'s Ornithol. See EMBERIZA *alba*.

CENCHRIS, in zoology, the name given by many authors to the keſtrel, or windhover, a ſpecies of hawk, of the long-winged kind called the tinnunculus, and by ſome in Engliſh, the *ſtannel*. *Ray*'s Ornithol. p. 50. See TINNUNCULUS

CENCHRIS is alſo the name of a ſpecies of ſerpent, ſo called becauſe of its ſmall ſpots, which reſembled the ſeeds of millet. It grows to five feet, or more, in length, and is conſiderably thick and large, and grows very taper at the tail. It is of a greeniſh yellow colour, and is yelloweſt toward the belly. It is found in the iſlands of the Archipelago, particularly in Lemnos and Samos. *Ray*'s Syn. Anim. p. 290.

CENCHRUS, in botany, the name given by Linnæus to a genus of plants, called by Micheli panicaſhella, the characters of which are theſe: the cup conſiſts of a number of involucra, collected into a ſort of head. Theſe are jagged and echinated, and each of them contains three calyxes: the perianthia are bivalve glumes of a hollowed and pointed figure, each containing two flowers, and are ſhorter than thoſe flowers. The flowers are ſome male and others of the hermaphrodite kind. Each flower is bivalve, the valves being pointed, hollow, and without awns, and the inner one ſmaller than the outer. The ſtamina are three in each flower, and are long pointed filaments, each ſuſtaining a ſagittated apex. The piſtil in the hermaphrodite flowers is formed of a roundiſh germen, a ſlender ſtyle of the ſame length with the ſtamina, and two oblong hairy ſtigmata: this is ſucceeded by a ſingle ſeed to every flower, which is of a roundiſh ſhape. *Linnæ*, Gen. Pl. p. 492. *Michel.* Plant. Gen. 31.

CENEGILD, in the Saxon antiquities, an expiatory mulct, paid by one who had killed a man, to the kindred of the deceaſed. The word is compounded of the Saxon *cinne*, i. e. *cognatio*, relation, and *gild*, *ſolutio*, payment.

CENEONTLATOTI, in zoology, the name of an American bird deſcribed by Nieremberg, and called by that author avis polyglotta. It is famous for the different modulations of its voice, and excels even the nightingale in melody. See the article POLYGLOTTA *avis*.

CENNING, *cenninga*, or *kenninga*, in our antient books, denotes notice given by the buyer to him of whom he had bought, that the thing purchaſed was claimed by another; that he might appear and avow, or warrant his bargain. *Du Cange*, Gloſſ. Lat. T. 1. p. 919. *Spelm.* Gloſſ. p. 131.

The word is formed of the Saxon *cennan*, auctorem advocare, to call an author.

CENOTAPH (*Cycl.*) amounts to the ſame with monument, properly ſo called; and ſtands diſtinguiſhed from ſepulchre, in which a corpſe is actually depoſited. *Florent* Ict. leg. 42. D. De religioſ. monumentum — Si corpus vel reliquiæ inferantur, fiet ſepulchrum; ſi vero nihil inferatur erit monumentum memoriæ cauſa factum, quod Græci κενοταφιον appellant.

Cenotaphs are honorary tombs, erected either to perſons buried in another place, or to thoſe who have received no burial, and whoſe relicks cannot be found, as being killed in battle, loſt at ſea, or the like [a]. Among the antients the ſame privileges and religious regard were allowed to theſe *tumuli inanes & honorarii*, as to real tombs [b]. Card. Norris has a treatiſe expreſs on the *cenotaphs* of the Cæſars, Caius and Lucius, which are ſtill ſeen at Piſa [c]. —[[a] *Lamprid.* in Alexand. c. 63. Cenotaphium in Gallia, Romæ ampliſſimum ſepulchrum meruit. *Fab.* Theſ. p. 521. [b] *Kenn.* Rom. Ant. Not. P. 2. l. 5. c. 10. p. 359. [c] Cenotaphia Piſana Caii & Lucii Cæſarum diſſertationibus illuſtrata. Venet. 1681. fol. Act. Erud. Lipſ. 1683. p. 113, ſeq.] See BURIAL.

CENOTZQUI, in zoology, the name of an American bird deſcribed by Nieremberg, and called avis evocatrix nivis, becauſe it always is very clamorous before ſnow falls, and afterwards becomes ſilent. It is a very beautifully variegated bird. Its breaſt is yellow; its legs are whitiſh; its belly is variegated with white and black; the under ſides of its wings are white and grey, and their upper ſides yellow and blackiſh, and at their hinder parts grey ſpotted with black; the tail is black and white underneath, and black and yellow on its upper ſide; the head is black, and is ſurrounded with a circle of grey, and variegated between with a line of yellow. It lives as well in the colder as hotter climates, but is principally ſeen among the mountains. It has a very remarkable way of twiſting its head about; ſo that without moving its body, it eaſily ſees every way round it. There is another ſpecies of it a little differing in the diſpoſition of the colours, which ſome call liceto. *Ray*'s Ornithol. p. 305. See LICETO.

CENSAL, in the Mediterranean parts, denotes a regular or eſtabliſhed broker, authoriſed to negotiate between merchant and merchant. *Savar.* Dict. Comm. T. 1. p. 601. Trev. Dict Univ. p. 1546. *Aub.* Dict. Mar. p. 181.

CENSER, in antiquity, a kind of veſſel wherein incenſe was burnt to the gods.

Cenſer is chiefly uſed in ſpeaking of the Jewiſh worſhip. In the

the Greek and Roman affairs it is more frequently called thuribulum, λιβανωτὸς, and acerra. *Pitiſc.* Lex. Ant. T. 2. p. 957. voc. *turibulum.* See ACERRA.

The Jewiſh *cenſer* was a ſmall ſort of chaffing diſh, covered with a dome, and ſuſpended by a chain. Joſephus tells us that Solomon made twenty thouſand gold *cenſers* for the temple of Jeruſalem, to offer perfumes in, and fifty thouſand others to carry fire in. Trev. Dict. Univ. T. 2. p. 1156. voc. *encenſoir.*

CENSIO, in antiquity, the act, or office of the cenſor. Vid. *Calv.* Lex Jur. p. 168. *Fab.* Theſ. p. 522. See CENSOR, and CENSUS.

Cenſio included both the rating, or valuing a man's eſtate; and the impoſing mulcts and penalties.

CENSIO *haſtaria*, a puniſhment inflicted on a Roman ſoldier for ſome offence, as lazineſs or luxury, whereby his haſta or ſpear was taken from him, and conſequently his wages, and hopes of preferment ſtopped. *Feſt.* in voc. *Aquin.* Lex. Mil. T. 1. p. 192. Miſcel. Lipſ. T. 9. Obſ. 183. §. 4.

CENSITUS, a perſon cenſed, or entered in the cenſual tables. See CENSUS. *Fab.* Theſ. p. 529.

In an antient monument found at Ancyra, containing the actions of the emperor Octavius, we read

Quo luſtro civium Romanorum
Cenſita ſunt capita quadragies
Centum millia & ſexaginta tria.

CENSITUS is alſo uſed in the civil law for a ſervile ſort of tenant, who pays capitation to his lord for the land he holds of him, and is entered as ſuch in the lord's rent-roll. In which ſenſe, the word amounts to the ſame with *capite cenſus*, or *capite cenſitus.* Vid. l. 11. Cod. tit. de Agricolis, Colonis & Cenſitis. *Fabr.* Theſ. p. 525. See CAPITE *cenſi.*

CENSOR (*Cycl.*) — Beſides the taſk of holding the cenſus and luſtrum, which was purely miniſterial, the *cenſors* of antient Rome had the particular cognizance and inſpection of all the citizens, and in conſequence of it, a power to cenſure or animadvert upon any vice or immorality, in all orders of men whatſoever; which they took an oath to diſcharge without favour or affection. But this power reached no farther than to inflict ſome public mark of ignominy, on lewd and vicious perſons, in proportion to the ſcandal which they had given, by degrading or ſuſpending them from the privileges of that particular rank which they held in the city. This was their proper juriſdiction, and the foundation of their power over the ſenate; by virtue of which they frequently purged it of ſome of its unworthy and profligate members, by leaving out of the new roll the names of thoſe ſenators whom they found unworthy to ſit in that auguſt aſſembly, for the notoriety of their crimes; which they uſed commonly to aſſign as the cauſe of their inflicting this diſgrace [a]. There are many examples of ſenators thus expelled by the *cenſors*, generally for good reaſons, yet ſometimes through mere peeviſhneſs, envy or revenge [b]: but in ſuch caſes, there was always the liberty of an appeal to the final judgment of the people. So that the cenſorian power, properly ſpeaking, was not that of making or unmaking ſenators, but of enrolling only thoſe whom the people had made; and of inſpecting their manners, and animadverting upon their vices; over which they had a ſpecial juriſdiction delegated by the people. Their rule of cenſuring ſeems to have been grounded on an old maxim of the Roman policy, injoining, *that the ſenate ſhould be pure from all blemiſh, and an example of manners to all the other orders of the city:* as we find it laid down by Cicero [c] in his book of laws, which were drawn, as he tells us, from the plan of the Roman conſtitution. — [[a] *Cic.* pro Dom. 51. *Liv.* 4. 8. Id. 39. 42. [b] *Liv.* 39. 37. [c] *Cic.* de Leg. 3. *Middlet.* of Rom. Senat. p. 59, ſeq.]

The *cenſors* were generally men of the firſt dignity in the city, and always of conſular rank; ſo that their acts had naturally a great weight: and the ſeverity of their diſcipline was conſidered by the honeſt of all orders, as a great guard and ſecurity to the republic: and when they acted even on ſpiteful and peeviſh motives, yet the parties injured would not always take the trouble of going through a trial, ſince they could be relieved without it, either by the next *cenſors* [a], or otherwiſe, as ſhall be more particularly mentioned hereafter. But if any of theſe animadverſions continued to have a laſting effect, it was always owing to an univerſal approbation of them from all the orders of the city: for whenever they appeared to be violent or groſly unjuſt, neither the ſenate nor the people would endure them for a moment [b]. — [[a] *Aſcon.* in Divinat. 3. [b] *Middleton*, lib. cit. p. 68.]

The office of *cenſor*, at its firſt inſtitution, was deſigned to be *quinquennial*, or to continue in the ſame hand for five years; but this length of magiſtracy, unknown before to Rome, was reduced ſoon after to one year and an half, by a law of Mamercus Æmilius the dictator. *Middlet.* l. c. p. 70.

The *cenſors* continuing in their office for eighteen months only, if we ſuppoſe them, with the generality of writers, to have been created every five years, the office muſt have lain dormant for three years and an half. *Middlet.* l. c. p. 106. See CENSUS and LUSTRUM.

It was one part of the cenſorian juriſdiction to fill up the vacancies of the ſenate, upon any remarkable deficiency in their number, with new members from the equeſtrian order, who had not yet born any magiſtracy: but this was not done arbitrarily, or without the conſent and approbation of the people. For by obſerving the manner of proceeding on ſome extraordinary occaſions, we may collect the legal and regular method in ordinary caſes. For example [a], after the battle of *Cannæ*, the ſenate being greatly exhauſted, and no *cenſors* in office, a dictator was created for the ſingle purpoſe of filling up the vacancies, who preſently aſcended the roſtra, and in the preſence of the people aſſembled in the forum, ordered all thoſe who remained alive of the laſt cenſorian liſt, to be firſt called, and enrolled anew; then thoſe who, ſince that time, had born a curule magiſtracy, but had not been enrolled, each according to the order of his creation; then thoſe who had been ædiles, tribunes of the people, or quæſtors; and laſtly, thoſe of the equeſtrian rank, who had born no magiſtracy at all, but had ſignalized themſelves in the war, and taken ſpoils from the enemy: and having thus added one hundred and ſeventy-ſeven new ſenators to the laſt roll, with the univerſal approbation of the people, he laid down his office [b]. Upon another occaſion likewiſe, when Sylla the dictator, after the deſtruction made by his civil wars and proſcriptions, found it neceſſary to fill up the exhauſted ſenate with three hundred knights, he gave the choice of them to the people in an aſſembly of their tribes [c]. — [[a] *Middleton*, of Rom. Sen. p. 8. [b] *Liv.* l. 23. 23. [c] *App.* de Bell. Civ. l. 1. p. 413. *Middleton*, l. c. p. 10.]

The power of the *cenſors* being naturally odious and unpopular, was generally exerciſed with temper and caution, unleſs when an extraordinary licence and corruption of the times ſeemed to demand a particular ſeverity and enforcement of diſcipline. The cenſures, however, of theſe magiſtrates were not perpetual or irreverſible, nor conſidered as bars to any future advancement; for what was inflicted by one *cenſor*, was ſometimes reverſed by the other; and what was done by them both, by an appeal to the people, or by the ſucceeding *cenſors*, who commonly reſtored the diſgraced party to his former dignity; or elſe by obtaining a ſecond time, any of the magiſtracies abovementioned, the perſon ſo diſgraced entered again into the ſenate, and was enrolled of courſe by two *cenſors*. Thus we find ſome who had ſuffered the cenſorian note of infamy, choſen *cenſors* afterwards themſelves. *Cicero*, pro Cluent. 42. It. 43. *Val. Max.* l. 2. 9. 9. *Middlet.* l. c. p. 10.

The ſeverity of the cenſorſhip of L. Gallius and Corn. Lentulus furniſhed a pretext to P. Clodius, for procuring a law to prohibit the *cenſors* from ſtriking any one out of the roll of the ſenate, or diſgracing him in any manner upon the report of common fame, or the notoriety of any crime, till he had been formally accuſed, and found guilty by the common judgment of both the *cenſors.* *Dio.* l. 37. p. 66. E. *Middlet.* l. c. p. 79.

Beſides this taſk of enrolling the ſenators, and inſpecting their manners, it was a part likewiſe of the cenſorian juriſdiction, to let out to farm all the lands, revenues, and cuſtoms of the republic; and to contract with artificers for the charge of building and repairing all the public works and edifices, both in Rome, and the colonies of Italy [a]. Now in this branch of their office it is certain that they acted merely under the authority of the people, and were prohibited by law to let out any of the revenues, except in the roſtra, under the immediate inſpection, and in the very preſence of the people [b]. — [[a] *Liv.* 29. 37. *Polyb.* l. 6. 464. C. [b] *Cic.* de Leg. Agrar. 1. 3. Ib. 2. 21. *Liv.* 41. 2. *Middlet.* l. c. p. 83, 85.]

In the general cenſus and review of the city, held by them every five years, though every ſingle citizen was particulary ſummoned and enrolled by name in his proper tribe, as a freeman of Rome, yet that ſolemn enrollment, as Cicero tells us, did not confirm any man's right to a citizenſhip, but ſignified only, that he had paſſed for a citizen at that time [a]; becauſe the proper power of determining that right reſided always in the people [b]. — [[a] *Cic.* pro Arch. 5. [b] *Liv.* X. 52. *Middlet.* l. c. p. 85, 86.]

The *cenſor* was originally called indifferently by this name, or that of *cenſitor*; tho' in after-times a diſtinction was made, the appellation *cenſitor* being reſtrained to thoſe who performed the office of cenſing or aſſeſſing the people in the provinces; and that of the *cenſor* reſtrained to the magiſtrates of Rome. *Fab.* Theſ. p. 526.

The office continued to the time of the emperors, who aſſumed the authority of it to themſelves, but without the name, calling themſelves inſtead of *cenſors*, *morum præfecti* [a]: tho' Veſpaſian and his ſons took a pride to be called *cenſors*, and put this among their other titles on their coins [b]. Decius attempted to reſtore the dignity to a particular magiſtrate [c]. After this we hear no more of it till Conſtantine's time, who made his brother *cenſor*; the laſt who ſeems to have enjoyed the office [d]. — [[a] *Plut.* in Cat. Major. *Fab.* Theſ. p. 523. [b] *Walk.* on Coins and Medals, P. 1. c. 9. §. 7. [c] *Trebell.* Poll. in Decio. [d] *Walk.* loc. cit. *Fab.* Theſ. loc. cit. Trev. Dict. Univ. T. 1. p. 1547. *Pitiſc.* Lex. Ant. Rom. T. 1. p. 392, ſeq. *Schoetg.* Ant. Lex. p. 299.]

CENSORIAL, *cenſorius*, ſomething that relates to the office of cenſors. See CENSOR.

In which ſenſe we meet with *cenſoria nota*, or *animadverſio*, *cenſoria virgula*, &c.

CENSORIAL *law*, *cenſoria lex*, denotes a law paſſed or enacted by the cenſors *Cic.* Ep. 1. ad Quint. Frat. l. 1.

CENSORIAL *man*, *homo cenſorius*, a perſon who has born the dignity, and ſerved the office of cenſor. *Cic.* de Orat. l. 2. c. 89.

CENSORIAL *note*, *virgula cenſoria*, among the antient grammarians and critics, denoted a note or mark of reprobation, affixed to thoſe paſſages of a book or writing, which the critic diſapproved or condemned. *Quintil.* Inſt. Orat. l. 1. c. 2. *Fab.* Theſ. p. 524.

CENSUAL *books*, *libri cenſuales*, thoſe wherein the cenſus was taken down. Leg. 4. Cod. de Agric. & Cenſit. *Fab.* Theſ. p. 526.

CENSUALES, in a ſubſtantive ſenſe, denoted the clerks or public ſcribes who wrote the *cenſual* books. *Fab.* Theſ. p. 526. *Pitiſc.* Lex. Ant. T. 1. p. 394.

CENSUS *(Cycl.)* — The *cenſus* among the old Romans was held, as is commonly thought, every five years; but this muſt not be taken to be preciſely true: on the contrary, Dr. Middleton has ſhewn, that both the *cenſus* and luſtrum were for the moſt part held irregularly and uncertainly, at very different and various intervals of time. *Middleton* of the Roman Senate, p. 107, ſeq. See LUSTRUM.

The *cenſus* was an excellent expedient for diſcovering the ſtrength of the ſtate: by it they learnt the number of the citizens, how many were fit for war, and who for offices of other kinds; how much each was able to pay of taxes towards the charge of the war.

The *cenſus*, according to Salmaſius, was peculiar to the city of Rome. That in the provinces was properly called *profeſſio* and ἀπογραφή. But this diſtinction is not every where obſerved by the antients themſelves. *Salmaſ.* de Mod. Uſurar.

In the provinces, the *cenſus* not only ſerved to diſcover the ſubſtance of each perſon, but where, and in what manner and proportion, tributes might be beſt impoſed.

CENSUS was alſo uſed for the book or regiſter wherein the profeſſions of the people were entered.

In which ſenſe, the *cenſus* was frequently cited and appealed to, as evidence in the courts of juſtice *Marcell.* J. C. Leg. 10. de Probat. &. Præſumpt. *Fab.* Theſ. p. 525.

CENSUS is alſo uſed to denote a man's whole ſubſtance or eſtate.

CENSUS *ſenatorius*, the patrimony of a ſenator, which was limited to a certain value; being at firſt rated at eight hundred thouſand ſeſterces, but afterwards, under Auguſtus, enlarged to twelve hundred thouſand. *Suet.* in Cæſar. c. 41. *Torrent.* ad loc.

CENSUS *equeſter*, the eſtate or patrimony of a knight, rated at four hundred thouſand ſeſterces, which was required to qualify a perſon for that order, and without which no virtue or merit was available. *Suet.* in Cæſar. c. 33. *Plin.* Hiſt. Nat. l. 33. c. 1. Witneſs Horace,

Si quadringentis ſex ſeptem millia deſunt
Eſt animus tibi, ſunt mores, & lingua, fideſque;
Plebs eris. Hor. l. 1. ep. 1.

CENSUS was alſo uſed for a perſon worth an hundred thouſand ſeſterces, or who was entered as ſuch in the cenſual tables, on his own declaration. *Aſcon.* ad Verr. Ciceron.

In which ſenſe, *cenſus* amounts to the ſame with *claſſicus*, or a man of the firſt claſs: tho' Gellius limits the eſtate of thoſe of this claſs to an hundred twenty-five thouſand aſſes [a]. By the Voconian law, no *cenſus* was allowed to give by his will above a fourth part of what he was worth to a woman [b].— [a *A. Gell.* Noct. Att. l. 7. c. 13. *Fab.* Theſ. p. 525. [b] *Cic.* in Verr. 3. *Kenn.* Rom. Ant. Not. P. 2. l. 3. c. 34.]

CENSUS was alſo uſed to denote a tax or tribute impoſed on the ſubjects of the empire. *Du Cange*, Gloſſ. Lat. T. 1. p. 920.

CENSUS *agrorum* was a tax or impoſt on lands and poſſeſſions.

CENSUS *capitis* denoted a perſonal tax or tribute, impoſed on perſons, and called alſo capitation. *Bingh.* Orig. Eccleſ. l. 5. c. 3. §. 2. See CAPITE *cenſi*.

CENSUS *dominicatus*, in writers of the lower age, denotes a rent due to the lord.

CENSUS *duplicatus*, a double rent or tax, paid by vaſſals to their lord on extraordinary or urgent occaſions; as expeditions to the holy land, &c.

CENSUS *eccleſiæ Romanæ*, was an annual contribution, voluntarily paid to the See of Rome by the ſeveral princes of Europe.

CENSUS *ficcus*, that paid in money. *Du Cange*, Gloſſ. Lat. T. 1. p 921, ſeq.

CENSUS *magiſter*, among the Romans. See MAGISTER *cenſus*.

CENTAURS, *(Cycl.)* in mythology, a kind of fabulous monſters, half men, half horſes.

The poets feign that the *centaurs* were the ſons of Ixion and a cloud. The reaſon of this fancy is, that the caſtle to which they retired was called Νεφέλη, which ſignifies cloud. *Pind.* Pyth. Od. 2.

This fable is differently interpreted: ſome will have the *centaurs* to have been a body of ſhepherds and herdſmen, rich in cattle, who inhabited the mountains of Arcadia, and to whom is attributed the invention of bucolic poetry.

Palæphatus, in his book of incredibles, relates, that under the reign of Ixion, king of Theſſaly, a herd of bulls on mount Theſſaly run mad, and ravaged the whole country, rendering the mountain inacceſſible; that ſome young men who had found the art of taming and mounting horſes, undertook to clear the mountain of thoſe animals, which they purſued on horſeback, and ſhot with arrows, and thence gained the appellation of *centaurs*. This ſucceſs rendering them inſolent, they inſulted the Lapithæ, a people of Theſſaly; and becauſe when attacked they fled with great rapidity, it was ſuppoſed they were half horſes and half men. *Palæphat*, de incred. l. 1. *Serv.* ad Virg. Geor. l. 3. v. 115. *Oroſ.* l. 1. c. 13. *Fab.* Theſ. p. 527. Trev. Dict. Univ. T. 1. p. 1550.

The *centaurs* in reality were a tribe of Lapithæ, who inhabited the city Pelethronium, adjoining to Mount Pelion, and firſt invented the art of breaking horſes, as is intimated by Virgil. *Virg.* Geor. l. 3. v. 115.

Pliny aſſures us he ſaw a *centaur*, which had been ſent out of Egypt to the emperor Claudius, preſerved in honey. He adds, that the ſame emperor mentioned another born in Theſſaly, and which died the ſame day [a]. St. Jerom, in his life of the hermit Paul, relates that St. Anthony had ſeen a *centaur*; but the father ſuſpects, that it was rather ſome illuſion of the devil [b].— [a *Plin.* Hiſt. Nat. l. 7. c. 3. [b] *Voſſ.* de Idolal. l. 1. c 15. *Fab.* Theſ. p. 528.]

CENTAUR, in aſtronomy, is called by divers others names, *Typhon*, *Pholos*, *Chiron*, *Phyllyrides*, *Semivir*, *Minotaurus*, *Albeze* and *Aſmeath*. Schiller, in lieu of the *centaur*, repreſents Abraham and Iſaac.

The ſtars in the *centaur* have been obſerved by Dr. Halley [a] and F. Noel [b]. Bayer repreſents it in his *uranometria*, tab. R r. and Hevelius in his *firmamentum ſobieſcianum*, fig. X x. [c] [a *Hevel.* Prodrom. Aſtron. p. 315. [b] *Noel.* Obſerv. Math. & Phyſ. p 50, ſeq. [c] *Wolf.* Lex. Math. p. 328]

CENTAURIUM *majus*, *great centaury*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the floſculous kind, being compoſed of a number of tubular floſcules, divided into ſeveral ſegments at the ends; theſe all ſtand upon the embryo fruits, and are all contained in one common ſcaly cup: the embryos finally ripen into ſeeds, which are winged with down. To this it is to be added, that all the plants of this genus are large, and in that obviouſly different from the jaceas.

The ſpecies of *great centaury* enumerated by Mr. Tournefort, are theſe: 1. The *great centaury*, with the leaves divided into many ſegments. 2. The *great centaury*, with undivided leaves. 3. The artichoak-leav'd *great centaury*. 4. The yellow-flowered alpine *great centaury*. 5. The African *great centaury*, with deeply divided leaves. 6. The degenerate African divided-leav'd *centaury*. 7. The purple-flowered *great centaury*, with divided leaves. 8. The *great centaury*, with hoary elecampane leaves. 9. The *great centaury*, with narrow elecampane leaves. 10. The pine-headed low, hoary, *great centaury*. 11. The woolly mullein-leav'd alpine *great centaury*, with ſcarce any ſtalks. 12. The low, jagged-leav'd, woolly, Portugal *great centaury*. 13. The great Portugal *centaury*, with coronopus leaves. *Tourn.* Inſt. p. 449.

Great centaury. The root and leaves of the plant are eſteemed vulnerary and aſtringent: they are given in infuſion, in dyſenteries, profluvia of the menſes, and hæmorrhages of all kinds. The common people alſo are very fond of the root in France, as a remedy for bruiſes, and for diſſolving coagulated blood. Schroder alſo gives it great praiſes as a deobſtruent: he tells us it is of excellent uſe in diſtemperatures of the liver, and in obſtructions of the meſeraic glands. He preſcribes the root in powder.

CENTAURIUM *minus*, *ſmall centaury*, (See CENTAURY, *Cycl.*) in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the infundibuliform kind, conſiſting of one leaf, and divided into ſeveral ſegments at the edge: the piſtil ariſes from the cup, and perforates the lower part of the flower, and is afterward changed into a fruit of an oval or cylindric figure, which naturally ſeparates lengthwiſe into two parts, and uſually contains a number of very ſmall ſeeds.

The ſpecies of *ſmall centaury*, enumerated by Mr. Tournefort, are theſe: 1. The common *ſmall centaury*. 2. The long-ſtalk'd *ſmall centaury*. The ſtalks of this ſometimes grow to two ells long. 3. The white flowered *ſmall centaury*. 4. The ferrugineous flowered *ſmall centaury*. 5. The blue flowered *ſmall centaury*. 6. The branched *ſmall centaury*, with a large, elegant and open purpliſh-red flower. 7. The common-branched *ſmall centaury*. 8. The long and narrow-leav'd *ſmall centaury*. 9. The ſhort and narrow-leav'd *ſmall centaury*. 10. The ſhorteſt narrow-leav'd *ſmall centaury*. 11. The creeping Portugal ſea narrow-leav'd *ſmall centaury*, with cluſtered flowers. 12. The red-flowered ſpiked *ſmall centaury*. 13. The broad, bluiſh green-leav'd, deep-red flowered, ſpiked *centaury*. 14. The white flowered, ſpiked, *ſmall centaury*. 15. The ſmalleſt purple-flowered *centaury*. 16. The ſmall American ſea *centaury*, with large blue flowers. 17. The ſmall African pink-leav'd *centaury*, with a bright red flower. 18. The perfoliate, yellow-flowered *centaury*. 19. The ſmaller perfoliate yellow *centaury*, with leaves like thoſe of the yellow vetch. 20. The leaſt perfoliate yellow *centaury*. 21. The trefoil perfoliate yellow *centaury*. 22. The leaſt yellow marſh *centaury*. 23. The perfoliate

perfoliate yellow *centaury*, with an alated ſtalk. *Tourn.* Inſt. p. 122.

CENTAURIUM *minerale*, among Chemiſts, a name given by ſome to the panacea of antimony, called alſo by Glauber, *purgans univerſale*; the preparation of which is given by Jungken. Vid. *Jungk.* Lex. Chym. Pharm. P. 1. p. 186, ſeq. See PANACEA.

CENTAUROIDES, in medicine and pharmacy, the ſame with *gratiola*. *Quinc.* Diſpenſ. P. 2. Sect. 4. n. 310. See GRATIOLA.

Others give the denomination to the greater *centaury*. See CENTAURIUM.

CENTENARIUS, or CENTENARIO, in the middle age, was an officer who had the government or command, with the adminiſtration of juſtice, in a village. The *centenarii*, as well as vicarii, were under the juriſdiction and command of the court. We find them both among the Franks, Germans, Goths, Lombards, &c. Trev. Dict. Univ. T. 1. p. 1552. voc. *centenier*.

CENTENARIUS is alſo uſed for an officer who had the command of an hundred men; more frequently called centurion. *Veget.* l. 2. c. 13. *Calv.* Lex. Jur. p. 170. See CENTURION, *Cycl.*

CENTENARIUS, in monaſteries, was an officer who had the ſuperintendance of an hundred monks. *Bingh.* Orig. Eccleſ. l. 7. c. 3. §. 7.

CENTENARIUS was alſo uſed for a perſon worth an hundred thouſand ſeſterces; otherwiſe called *cenſus*. *Calv.* Lex. Jur. p. 170. See CENSUS.

CENTENINUM *ovum*, among naturaliſts, denotes a ſort of hen's egg, much ſmaller than ordinary, vulgarly called a *cock's egg*; from which it has been fabulouſly held that the cockatrice or baſiliſk was produced. *Brown*, Vulg. Err. l. 3. c. 7.

The name is taken from an opinion, that theſe are the laſt eggs which hens lay, having laid an hundred before; whence *centeninum*, q. d. the hundredth egg.

Theſe eggs have no yolks, but in other reſpects are like common eggs, having the albumen, chalazas, membranes, &c. in common with others.

In the place of the yolk is found a body reſembling a little ſerpent coiled up, which doubtleſs gave riſe to the tradition of the baſiliſk's origin from hence. Vid. *Valliſn.* Prim. Raccolt. d' Oſſervaz. p. 66, ſeq. Giorn. de Letter. d' Ital. T. 5. p. 173.

Their formation is probably aſcribed by Harvey to this, that the yolks in the vitellary of the hen are exhauſted before the albumina. *Harvey* de Generat. Animal. Exerc. 12.

M. La Peyronie has carried the hiſtory of the *ova centenina* to a greater length, as well as certainty: a hen was brought to him which for a conſiderable time laid no other eggs: the ſame hen was alſo obſerved to crow like a cock, and to render by the cloaca a thin yellow matter, much like the yolk of an egg diluted in water. Upon opening her, ſhe was found hydropical; a bladder as big as the fiſt, full of water, was found contiguous to the oviduct, which it preſſed and crouded in ſuch manner, as not to leave the cavity thereof above five lines in diameter; ſo that a common egg, ſuch as it is when it falls from the ovary into the tube, could not paſs without burſting, by which the yolk was let out, and diſcharged another way. Mem. Acad. Scienc. an. 1710. p. 730, ſeq.

CENTER (*Cycl.*) — CENTER *of the equant*, in the old aſtronomy, a point in the line of the aphelion; being ſo far diſtant from the *center* of the excentric, towards the aphelion, as the ſun is from the *center* of the excentric towards the perihelion.

CENTER *of gravity*. When any number of bodies move in right lines with uniform motions, their common *center of gravity* moves likewiſe in a right line with an uniform motion: and the ſum of their motions eſtimated in any given direction, is preciſely the ſame as if all the bodies, in one maſs, were carried on with the direction and motion of their common *center of gravity*. Nor is the *center of gravity* of any number of bodies affected by their colliſions or actions on each other. *Mac Laurin*, Account of Sir Iſ. Newton's Diſcov.

CENTERING *of an optic glaſs*, the grinding it ſo as that the thickeſt part is exactly in the middle.

One of the greateſt difficulties in grinding large optic glaſſes is, that in figures ſo little convex, the leaſt difference will put the center two or three inches out of the middle [a]. Dr. Hook notes, that tho' it were better the thickeſt part of a long object glaſs were exactly in the middle, yet it may be a very good one when it is an inch or two out of it [b].—[[a] Phil. Tranſ. N° 4. p. 57. [b] Id. ibid. p. 64, ſeq.]

M. Caſſini the younger has a diſcourſe expreſs on the neceſſity of *well centering the object glaſs* of a large teleſcope, that is, of grinding them ſo, that the center may fall exactly in the axis of the teleſcope. Mem. Acad. Scienc. an. 1710. p. 299, ſeq.

CENTESIMA *uſura*, that wherein the intereſt in an hundred months became equal to the principal; *i. e.* where the money is laid out at one per cent. per month, anſwering to what in our ſtile would be called 12 per cent. for the Romans reckoned their intereſt not by the year, but by the month. *Briſſ.* de Verb. Signif. p. 117. *Calv* Lex. Jur. p 170.

CENTESIMATION, *centeſimatio*, the puniſhing every hundredth man.

Macrinus ſometimes decimated, and ſometimes *centeſimated* the ſoldiers. The latter term ſeems to have been introduced by himſelf, to the honour of his clemency, as being contented to *centeſimate* thoſe who deſerved decimation, or viceſimation. *Pitiſc.* Lex. Ant. T. 1. p. 398. *Calv.* Lex. Jur. p. 170.

CENTGRAVIUS, in middle age writers, the ſame with centenarius. *Calv* Lex. Jur. p. 171. See CENTENARIUS.

CENTILOQUIUM, denotes a collection of an hundred ſentences, opinions, or ſayings.

The *centiloquium* of Hermas contains an hundred aphoriſms, or aſtrological ſentences, ſuppoſed to have been written by ſome Arab, falſely fathered on Hermes Triſmegiſtus. It is only extant in Latin, in which language it has been ſeveral times printed. *Fabric* Bibl Græc. l. 1 c. 9. §. 5.

The *centiloquium* of Ptolemy is a famous aſtrological piece, frequently confounded with the former, conſiſting likewiſe of an hundred ſentences or doctrines, digeſted into ſhort aphoriſms, entitled alſo in Greek καρπὸς, as being the fruit or reſult of the former writings of that celebrated aſtronomer, viz. his *quadripartitum* and *almageſtum*; or rather, by reaſon that herein is ſhewn the uſe of aſtrological calculations. Cardan, Argol, and ſome others, deny it to be the work of Ptolemy, and aſcribe it to Hermes, or ſome later writer: but Voſſius and Fabricius ſhew this opinion is founded on a miſtake. *Voſſ.* de Scient. Mathem. c. 37. §. 10. *Fabric.* Bibl. Græc. l. 1. c. 9. § 6. *Vital.* Lex. Mathem. p 99, ſeq.

CENTINODIUM, an officinal plant, popularly called knotgraſs; by the botaniſts *polygonum*; reputed an aſtringent and vulnerary. Vid *Gorr.* Med. Defin. voc. πολυγονον. *Quinc.* Diſpenſ. P. 2. Sect. 2. n. 101. See POLYGONUM.

CENTIPES. See the article SCOLOPENDRA.

CENTNER. See HUNDRED *decimaſtic*.

CENTONARII, in antiquity, a ſort of officers or operators, whoſe buſineſs was to make *centones*, or coats patched of leather and cloth, wherewith to cover the vineæ under which the beſiegers made their approaches, as well as the towers and machines uſed to batter the place, and prevent their being ſet on fire by the enemy. In the Theodoſian code we have a title, *de centonariis & dendrophoris*. And in antient inſcriptions, the *centonarii* are joined with the *tignarii*, or carpenters, *ferrarii* or ſmiths, &c. who made but one company, under the denomination of *collegium fabrorum & centenariorum*. *Pitiſc.* Lex. Ant. T. 1. p. 398. *Aquin.* Lex. Milit. T. 1. p. 14.

CENTRATION, *centratio*. See CONCENTRATION, *Cycl.* and CONCENTRATING, *Suppl.*

Paracelſus uſes the word *centratio*, for the change or converſion of a ſaline principle into a corroſive and ulcerating quality. According to him, a *centrum ſalis* is the beginning of ulcers. *Caſt.* Lex. Med. in voc.

CENTRINE, in zoology, the name by which moſt authors call the porcus piſcis. It is properly of the galeus kind, but much thicker and ſhorter than any other of that genus, and from head to tail is ſomewhat of a triangular figure; its broad and flat belly making one ſide of the triangle, and its two ſides, which meet at the back, the other two. It is of a duſky brown colour; its head is ſmall for the ſize of the body, ſomewhat compreſſed, and full of rough tubercles: the eyes are of an elliptic figure, the pupils black, and the iris green: its mouth is ſmall, and placed in the under part of its head, as in all the galei: it has three rows of teeth in the upper jaw, and in the under only one, which contains nine teeth, the middle one of which is placed upright, the others ſlanting to the right and left. *Aldrov.* de Piſc. l. 3. c. 141.

It has its name of porcus piſcis either from the ſhape of its back, which riſing into a ridge reſembles that of a hog, or from his loving like the hog to wallow in mud.

CENTRINES, in phyſiology, a ſpecies of inſects hatched in the wild fig-tree, and uſed in caprification. *Plin.* Hiſt. Nat. l. 17. c. 27. See CAPRIFICATION.

CENTRISCUS, in zoology, the antient name for the common little prickly fiſh, which we call in Engliſh the ſtickleback, or barnſticle, uſually known among authors by the names of pugnitius, and aculeatus piſciculus. *Ray*'s Ichthyog. p. 341. See the article PUGNITIUS.

CENTUMMORBIA, in botany, a name uſed by ſome authors for the common moneywort or nummularia, from its ſuppoſed virtues. *Ger.* Emac. Ind. 2.

CENTUMVIRI, in antiquity, an order of judges, to the number of an hundred and upwards, under the Roman prætors.

The *centumviri* were a body of men choſen three out of each tribe; ſo that their number amounted to five more than their name imports: their buſineſs was to judge of matters relating to teſtaments, tutorage, inheritances, and ſuch other matters of leſſer weight and moment, as the prætors committed to them. Their body was afterwards increaſed to an hundred and eighty. Vid. *Cic.* de Orat. l. 1. c. 38. *Kenn.* Rom. Ant. Not. P. 2. l. 3. c. 13. & 16.

The *centumviri* were called together by ſetting up a ſpear; at firſt, by thoſe who had diſcharged the office of quæſtor; afterwards, by the decemviri. *Suet.* in Auguſt. c. 36. See alſo *Briſſ.* de Verb. Signif. p. 117. *Calv.* Lex. Jur. p. 171. *Pitiſc.* Lex. Ant. T. 1. p. 399, ſeq.

CENTUNCULUS, in botany, a name uſed by ſome authors for the gnaphalium, or cudweed. *Ger.* Emac. Ind. 2.

CENTUNCULUS, in the Linnæan ſyſtem of botany. This makes a diſtinct genus of plants, the characters of which are theſe: the cup is a wide perianthium, divided into four oval and pointed ſegments, and remaining after the flower is fallen; theſe alſo are larger than the ſegments of the flower. The flower is compoſed of a ſingle petal, in form of a roundiſh tube, with a rim divided into four ſegments of an oval figure: the ſtamina are four filaments nearly of the length of the flower: the antheræ are ſimple: the germen of the piſtil is roundiſh, and ſituated in the tube of the flower: the ſtile is ſlender, of the length of the flower, and remains when the petal is fallen; the ſtigma is ſimple: the fruit is a globoſe capſule, containing only one cell, which ſplits open horizontally: the ſeeds are ſmall, numerous and roundiſh. *Linnæi* Gen. Plant. p. 47.

CENTURIAL *inſcriptions*, a denomination given by ſome to thoſe inſcriptions inſerted in the face of Severus's wall, which make mention of the centuries and cohorts by whom ſuch parts of the wall are ſuppoſed to have been erected. In which ſenſe, *centurial inſcriptions* ſtand contradiſtinguiſhed from *legionary*. *Horſl.* Britan. Rom. l. 1. c. 8. p. 127.

CENTURIATA *comitia*, in antiquity. Thoſe aſſemblies of the Romans, wherein the people gave their votes by centuries. *Fab.* Theſ. p. 532. *Calv.* Lex. Jur. p. 173. See COMITIA.

CENTURIATOR, an appellation given to certain learned Germans of the city of Magdeburg, who in the early days of the reformation compoſed a body of church hiſtory, divided into centuries of years. *Sagittar.* Introd. Hiſt. Eccleſ. c. 13. §. 2, ſeq. See CENTURY.

Baronius is ſaid to have written his Annals by way of oppoſition to the *centuriators* of Magdeburg. *Sagitt.* lib. cit. c. 14. §. 1. ſeq.

CENTURY (*Cycl.*) — The marquiſs of Worceſter has publiſhed a *century* of inventions: Dr. Hook has given a decimate of inventions, as part of a *century*, of which he affirmed himſelf maſter. 'Tis remarkable, that both in the *century* of the former, and the decimate of the latter, we find the principle on which Savary's fire engine is founded. Vid. *Waller.* Life of Hook, p. 21. prefixed to his poſthum. Work.

Among the Romans, the denomination *century*, *centuria*, was given to the horſemen or equites belonging to each tribe, which at firſt were only 100; but the ſame name, *centuria equitum*, was retained when the number was afterwards doubled, and even tripled [a]: juſt as it was with the word tribe, which at firſt denoted a third part of the people; but was ſtill retained, after the people were divided into ſix parts [b].—[[a] *Liv.* l. 1. c. 36. [b] *Var.* de Ling. Lat. l. 4. Mem. Acad. Inſcr. T. 2. p. 101, ſeq.]

CENTURY is alſo a denomination given to the leſſer claſſes or orders, into which the Roman people were divided by Servius Tullius, for the conveniency of giving their ſuffrages. *Liv.* l. 1. c 43. *Fab.* Theſ. p. 532.

CENTURY, in chronology. Cave gives particular denominations to the ſeveral *centuries* of the church, from the perſons, ſects, &c. who prevailed therein. The firſt *century* is called the Apoſtolic age; the ſecond, the Gnoſtic; the third, the Novatian; the fourth, the Arian; the fifth, the Neſtorian; the ſixth, the Eutychian; the ſeventh, Monotheletic; the eighth, the Iconoclaſtic; the ninth, the Photian; the tenth, the Obſcure; the eleventh, the Hildebrandine; the twelfth, the Waldenſian; the thirteenth, the Scholaſtic; the fourteenth, the Wickleſian; the fifteenth, the Synodal; the ſixteenth, the Reformed age. Vid. *Cave* Chartophyl. Eccleſ. ejuſd. Hiſt. Liter.

CENTURIES *of Magdeburg*. This work is highly extolled by Mountague, Caſaubon, Hornbeck, and other proteſtants, both as to the matter, method, learning and impartiality: on which account, ſome will have it the moſt excellent work the church of late ages has produced. Sturmius cenſures the ſtile, as not ſufficiently hiſtorical: others remark other failings and overſights: many Romaniſts damn the whole, as an infamous compoſition of lies; particularly Baronius, who calls the centuriators a thouſand raſcals, ſlaves, &c. See CENTURIATOR. The *centuries* were publiſhed at Baſil in many volumes, from the year 1561 to 1574; they have been ſince collected, reviſed, and publiſhed together in 1624, by Lud. Lucius, profeſſor at Baſil, in three volumes folio; who is cenſured by ſome, and applauded by others, for omitting the prefaces, dedications, &c. to the ſeveral *centuries*. Moller, in an expreſs diſſertation on the Magdeburg *centuries*, charges them with other corruptions, and alterations of the text; from which, however, they are generally acquitted.

CENTUSSIS, a Roman coin, containing an hundred aſſes. Vid. *Beverin* Synt. de Ponder. p. 39. *Macrob.* Saturn. l. 3. c. 17. *Fab.* Theſ. p. 532. See As, *Cycl.*

CEOAN, in zoology, the name of a bird, common in the Spaniſh Weſt-Indies, and deſcribed by Nieremberg, who alſo calls it avis nivea. It is a little larger than our largeſt thruſh, and very remarkable for the facility with which it learns to imitate the human ſpeech. Its breaſt, belly and ſhoulders are yellowiſh; near the tail it has ſome grey feathers intermixed; the tips of its wings and tail are alſo grey underneath, but its whole upper part is of a browniſh black: its beak is ſmall and yellowiſh, and its feet are yellow: the upper part of its throat is white, with a few black feathers intermixed with it: its natural note is ſomewhat like the human laugh. *Ray*'s Ornithol. p. 304.

CEPA, the *onion*, in botany, &c. See ONION.

CEPÆA, in botany, a name given by ſome authors to the common anagallis aquatica, or water-brook-lime *Ger.* Emac. Ind. 2.

CEPHALÆA. See HEAD-ACH.

CEPALALGIA. See HEAD-ACH.

CEPHALALGIA *Hiaco-hæmatitica*, a name given by ſome medical writers to that ſpecies of head-ach, called by others the clavus hyſtericus.

CEPHALOIDES, Κεφαλοειδης, a denomination given by ſome writers, who diſcover virtues in plants from their ſignatures, to thoſe which bear any reſemblance to a human head; ſuch are the poppy, piony, and the like. *Caſt.* Renov. p. 156.

CEPHALOMANTIA, Κεφαλομαντεια, an antient ſpecies of divination, or method of foretelling futurity, by a dead man's head or ſkull. *Prator.* Alectryom. c. 5. *Fabric.* Bibl. Antiq. c 12. p. 413.

CEPHALONOMANTIA, Κεφαλονομαντεια, a method of divination, or revealing ſecrets, by means of an aſs's head broiled on the coals.

The word is compounded of the Greek κεφαλη, head, and ονος, aſs, and μαντεια, divination.

After muttering a few prayers, the names of ſeveral perſons ſuſpected of a theft, or the like, were repeated over: he at whoſe name the aſs's jaws made any motion, or the teeth began to chatter, was held for convicted. *Potter*, Archæol. Græc. l. 2. c 18. p. 352.

CEPHALOPONIA, Κεφαλοπονια, a denomination given by ſome to the *cephalalgia*, or head-ach. *Caſt.* Renov. p. 156. *Blanc.* Lex. Med. p. 145. See HEAD-ACH.

CEPHALUS, in ichthyology, a name given by Ariſtotle, Ælian, Appian, and others, to the mugil or mullet, called alſo by ſome capito. Theſe words being generally underſtood as the names of the chubb, it has occaſioned much confuſion among the later writers, to find them thus applied to a fiſh of an extremely different kind. Gaza has tranſlated the *cephalus* of Ariſtotle, by the word capito. It is plain, indeed, by the context, and by the general conſent of the Greek writers, that he means the mullet by his *cephalus*; but this tranſlation has made many think that he was writing on the chubb.

CEPHALUS is alſo a name given by ſome naturaliſts to the ſargus, called alſo gardo, and gardon; a fiſh very little, if at all, differing from our roach. *Ray*'s Ichthyogr. p. 260.

CEPHEUS (*Cycl.*) is alſo known by the names of *Ceginus*, *Iaſides*, *Chegnius*, *Cancans*, *Keiphus*, *Vir Regius*, *Dominus Solis*, *Flammiger*, *Incenſus*, *Sonans*, *Phicares* and *Cheichius*. *Vital.* Lex. Math. p. 101. *Wolf.* Lex. Math. p. 335.

Schiller, in lieu of *cepheus*, repreſents St. Stephen; Harſdorff, king Solomon; Weigelius, the arms of Holſtein.

CEPION, Κηπιων, in antiquity, the name of a particular air, invented by a diſciple of Terpander, and deſigned to be played on the *cithara*. Mem. Acad. Inſcript. T. 14. p. 360, ſeq. See CITHARA, *Cycl.*

CEPIONITES, in natural hiſtory, a name given by Pliny, and other antient writers, to a ſpecies of ſtone, ſeeming to approach to the nature of the jaſper. Pliny tells us, that there were many kinds of it, ſome more pellucid than others, and ſome colourleſs; others variegated with green, and the other colours of the jaſpers and agates: they were all uſed in the ornamenting houſes; and the leaſt beautiful ſerved, when well poliſhed, to make ſpeculums of.

CEPITES, in natural hiſtory, a name uſed by the antients to expreſs a gem which gave the repreſentation of the ſeveral cluſters of plants and flowers in the beds of a garden, with naked veins, expreſſing the walks between. The common text of Pliny is unintelligible, where he gives the deſcription of this ſtone; but Salmaſius has reſtor'd it from ſome old copies, ſo as to make it ſenſe, and expreſſive of this meaning. The ſtone was probably no other than a peculiar kind of that agate which the antients called dendrites, and we the mocoa ſtones. What gave it a right to this appellation muſt have been, that the delineations of trees did not ſtand ſingle in it, as they uſually do in our mocoa ſtones, but were arranged in different compartments with veins of the white matter, of which the variegations in that agate are uſually compoſed, running irregularly between them. This might all be done in the common courſe of nature in this ſtone; for we well know, that all its delineations of trees are only the effect of ſo many cracks, and that theſe cracks never go thro' the white or more opake veins of the ſtone; ſo that if among a cluſter of theſe flaws there run ſome of theſe veins, they muſt naturally divide them into ſeveral compartments, and would themſelves, by their various courſe, reſemble the winding walks uſually faſhioned to run between the beds of flower plats.

CEPOLAPITES, in natural hiſtory, a name given by ſome to the ſtone properly called cepites, a kind of mocoa agate. See CEPITES, ſupra.

CEPPHUS, in zoology, the name of a bird of the larus or gull kind; but, except in its feet and beak, very much reſembling the common duck. It is a moderately large bird, but is ſo thick feathered, that it appears much more ſo than it really is.

It is of a variegated colour, of a mixture of white, brown, and yellow; but the long wing and tail feathers are black: its legs are greeniſh; but the membrane which connects the toes is brown. *Al'drov.* de Avib.

CEPULA, a name by which Geſner and ſome other authors have called the common tænia. It is derived from the Italian cepole; the common name of the ſame fiſh in the markets of Rome. *Geſner* de Piſc p. 106.

CEPUS, in zoology, a name given by ſome to thoſe monkeys of the ſmaller kind, which have more or leſs green among their other colours. There is a very pretty kind of this, which is for the moſt part of a reddiſh colour, but has a great deal of green on its back, and of a greeniſh grey on its breaſt, belly, and the inner part of its legs. *Ray*'s Syn. Quad. p. 157.

CERACHATES, in the natural hiſtory of the antients, the name of a ſpecies of agate of a plain yellow colour, and very much reſembling yellow wax; found alſo frequently to this day, and called by Dr. Hill the achates flaveſcens, without any farther addition, as being never variegated with any other colour than the ſeveral ſhades of yellow. It is naturally of a pure, but not very bright yellow, and ſo exactly reſembles yellow wax, that a rough piece of it at a yard's diſtance is ſcarce to be diſtinguiſhed from a piece of wax: it is conſiderably hard, but has not much tranſparence. We have it from the Eaſt-Indies, as alſo from New Spain, and ſome other parts of America, and our jewellers ſometimes work it into toys of ſmall value. *Hill*'s Hiſt. of Foſſ. p. 486.

CEROFERARIUS, in eccleſiaſtical writers, an inferior order of miniſters in the antient church, appointed to walk in certain parts of the office with lighted tapers in their hands.

The *ceroferarii* are repreſented by Iſidorus, as the ſame with what were otherwiſe denominated *acolythi*. *Iſid.* Orig. l. 7. c. 12. See ACOLYTHI.

Their buſineſs was to light the tapers, and march before the deacon, &c. when the goſpel was to be read, or the eucharift adminiſtered, as a demonſtration of the joy cauſed by the goſpel light. *Du Cange*, Gloſſ. Lat. T. 1. p. 937. *Pitiſc.* Lex. Ant. T. 1. p. 408. *Magr.* Vocab. Eccleſ. p. 63.

Bingham maintains, that the *ceroferarii*, or taper-bearers in the latter ages, were not ſo properly a particular ſpecies of *acolythi*, as the ſucceſſors of the antient acolythi under another name, and with a great diminution of their office. *Bingh.* Orig. Eccleſ. l. 3. c. 3. §. 4.

The word is formed of the Latin *cereus*, a taper or wax candle, and *fero*, I bear.

CEROTUM, Κηρωτον, in the antient pharmacy, the ſame with cerate. See CERATE, *Cycl.*

CERAMIUM, Κεραμιον, an antient meaſure, anſwering to what was otherwiſe called *amphora* and *cadus*. *Beverin* Synt. de Ponder. p. 135. *Caſt.* Lex. *Gorr.* Med. Defin. p. 221. See AMPHORA, &c.

CERASTES, the *horned ſnake*, in zoology, the name of a ſpecies of ſerpent, which has on its forehead two protuberances, looking like ſhells, but of a more ſolid texture, and from their reſemblance of horns, have given it its name: theſe are often no larger than grains of barley: its teeth are like thoſe of the viper, and are placed in the ſame order: it is of the number of viviparous ſerpents, and is remarkable among the ſerpent claſs for its long enduring thirſt. It is found in Lybia and Arabia, particularly about the town of Suez. *Belon.* Obſ. l. 2. c. 54.

CERASTES was alſo a name given by the antient Greeks to a ſtag when at its full growth, or at the end of its fourth year. Theſe authors had peculiar names for this creature in every year of its growth; in the firſt, they called it nebros; in the ſecond, pattalea; in the third, dicrotus; in the fourth, cladius; and at the end of the fourth, when they ſuppoſed it to be come to its full maturity, *ceraſtes*. The interpreter of Apollonius tells us, that author means by the word *ceraſtes*, a large and full grown ſtag with great horns. The modern huntſmen have taken up the old cuſtom, of giving names to this animal according to the growth of its horns.

CERASUS, the *cherry tree*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the roſaceous kind, or compoſed of ſeveral petals arranged in a circular form: the piſtil ariſes from the cup, and finally becomes a roundiſh or heart-faſhioned fleſhy fruit, containing a ſtone of the ſame ſhape with its kernel.

The ſpecies of *cherry* enumerated by Mr. Tournefort, are theſe: 1. The garden *cherry*, with round red and ſharp taſted fruit. 2. The garden *cherry*, with large round red fruit. 3. The *cherry* whoſe fruit has no ſtone. 4. The late acid *cherry*, with blood-red juice. 5. The late inſipid *cherry*. 6. The late *cherry*, with very long and foliated pedicles. 7. The great heart *cherry*. 8. The watery *cherry*. 9. The white ſweet *cherry*. 10. The great wild *cherry*, with ſweet blackiſh juice. 11. The Sicilian *cherry*, with cheſnut-coloured fruit. 12. The *cherry* with great red turbinated fruit. 13. The round, gloſſy, black *cherry*. 14. The *cherry* with great oblong and crooked black fruit. 15. The *cherry* with a large fruit, carinated on each ſide. 16. The early *cherry*, with a ſmall, oblong, inſipid fruit. 17. The May *cherry*, with a hard ſweet fruit. 18. The wild cluſter birds *cherry*, with fruit not eatable. 19. The wild cluſter *cherry*, with red not eatable fruit. 20. The garden cluſter *cherry*. 21. The cluſter *cherry*, with ſmall very red fruit. 22. The garden *cherry*, with roſe-coloured flowers. 23. The double-flowered garden *cherry*. 24. The great double-flowered wild *cherry*. 25. The northern Engliſh *cherry*, with a ſmall, red, late ripening fruit. 26. The wild *cherry*, with a ſmall heart-faſhioned fruit. 27. The wild bitter *cherry*, ſuppoſed to be the mahaleb: and, 28. The round-leav'd alpine *cherry*. *Tourn.* Inſt. p. 625. See CHERRY.

CERATE (*Cycl.*) — See CERATUM.

CERATIAS, Κεραΐας, among antient naturaliſts, denotes a horned comet. *Plin.* Hiſt. Nat. l. 2. c. 25. *Vital.* Lex. Math. p. 101.

The word is Greek, formed from κερας, cornu, a horn. Such is that ſaid to have appeared when Xerxes paſſed his army into Greece. *Fab.* Theſ. p. 536.

CERATION, among the antients. See CERATIUM.

CERATITES, a name given by many authors to the ſubſtance more uſually called by authors *unicornu foſſile*, and found in great plenty in the caverns of Hart's foreſt in Germany. *Hill*'s Hiſt. of Foſſ. p. 360. See UNICORNU *foſſile*.

CERATIUM, or CERATION, a name given by the antient phyſicians to a ſmall weight. The *ceration* is properly the name of a tree called the carob, or ſiliqua dulcis, the ſweet pipe tree: this tree bears a long pod, in which are contained ſeveral ſeeds among the pulp: theſe ſeeds are alſo called *ceration* and jembut by the Arabians, and being dried, they were uſed as a weight to proportion the doſes of medicines: thus the ſmall weight which took its origin from them, was called *ceration*; as that ſmall weight, which took its origin from a grain of barley, was called granum. *Galen.*

CERATIUM was alſo a ſmall ſilver coin, the third part of an obolus, and the ſame with what the Romans called *ſolis*. *Pitiſc.* Lex. Ant in voc. *ceratium.*

CERATOCARPUS, in botany, a name given by Buxbaum to a new genus of plants, the characters of which are, that the leaves are ſlender and graſſy, the flowers apetalous, and having no cup, but ſtanding upon the embryo fruit: the fruit, when ripe, is of a triangular figure, reſembling that of the ſhepherd's purſe, but running out into horns, and compoſed of two valves. Each of theſe fruits contains only one ſeed, and that of a very ſingular figure: it is long and ſlender, and not flat, but rounded, and each of its extremities is bent round in the manner of an arch, which are held together in their approach to one another by a membrane; the root is fibroſe and annual, the ſtalk woody and branched, the leaves rigid and hollowed along the middle, and the flowers are yellow. It grows in marſhy places near the Caſpian ſea, and in the neighbourhood of Aſtracan; and toward autumn the ſtalks are uſually torn up by the winds, and blown about the marſhes in great abundance. Act. Petrop. v. 1. p. 244.

The author named it *ceratocarpus*, horned fruit, from the ſeed veſſels running out into two horns: he obſerves, that the deſcription of the ceratoides of Tournefort's corollary approaches to this plant in many points, but differs ſo much in others, that either Tournefort muſt mean another plant, or elſe he muſt have informed himſelf but very imperfectly as to this.

CERATOIDES, Κεραλοειδης, in anatomy, the cornea tunica. *Caſt.* Renov. p. 158. See CORNEA, *Cycl.*

CERATOIDES is alſo a denomination given to the os hyoides, or bicorne. *Drak.* Anthrop. l. 3. c. 15. p. 351. See HYOIDES, *Cycl.*

CERATOMALAGMA, Κεραλομαλαγμα, a cerate or cerecloth. *Caſt.* Renov. p. 158. *Blanc.* Lex. Med. p. 146. *Earchuys.* Pharm. Synopſ. p. 49. See CERATE, *Cycl.*

CERATONIA, a name given by ſome botanical authors to the carob tree.

CERATOPHYLLUM, in botany, the name by which Linnæus calls a genus of plants, called by others dichotophyllum, and hydroceratophyllum. The characters are theſe: the flowers are ſome male, others female, on the ſame plant: in the male flowers the cup is divided into many ſegments, which are pointed, and equal in ſize. There are no petals: the ſtamina are ſlender filaments, double in number to the ſegments of the cup, being uſually ſixteen or twenty, and are ſcarce conſpicuous: the antheræ are oblong, erect, and longer than the cup. In the female flowers the cup and corolla are the ſame as in the male: the germen of the piſtil is compreſſed, and of an oval figure: there is no ſtile, but the ſtigma is obtuſe and oblique: the fruit is an oval nut, of a pointed figure, and having only one cell. Vaillant deſcribes one ſpecies of this genus, the ſeeds of which have three ſpines, one ſtanding forward, and the other two behind. *Linnæi* Gen. Pl. p. 459. *Vaill.* Act. Germ. 1719 *Dillen* Gen. 3.

CERATUM *epuloticum*, a name given in the late London diſpenſatory to the compoſition commonly called Turner's cerate, and there ordered to be made in this manner: take oil olive, a pound; yellow wax and prepared calamy, of each half a pound; melt the wax in the oil, and when the mixture begins to congeal again, ſprinkle in the powder, and continue ſtirring it till the whole is cold. *Pemberton*'s Lond. Diſp. p. 376.

CERATUM *mercuriale*, a form of medicine preſcribed in the late London pharmacopœia, and ordered to be made in the following

ing manner: take yellow wax and tried hog's lard, of each half a pound; quickſilver, three ounces; ſimple balſam of ſulphur, a dram: melt the wax and lard, and then add to them gradually the quickſilver, firſt well divided by the balſam of ſulphur. *Pemberton*'s Lond. Diſp. p. 376.

CERAULA, Κεραυλης, in antiquity, a kind of muſician, who blows or plays on the horn.

In which ſenſe, the word amounts to the ſame with the Latin *cornicen*.

The *ceraulæ* ſeem to have been originally employed in making a mournful kind of muſic at funerals; but they were afterwards transferred into the army. *Salmaſ.* Exerc. ad Solin. p. 123. *Aquin.* Lex. Mil. T. 1. p. 197.

CERAUNIA, CERAUNIAS, or CERAUNIUS *lapis*, in natural hiſtory, a ſort of flinty figured ſtone, of no certain colour, but of a pyramidal or wedge-like figure; popularly ſuppoſed to fall from the clouds in thunder ſtorms, and to be poſſeſſed of divers notable virtues, as of promoting ſleep, preſerving from lightening, &c. *Vater.* Phyſ. Exper. P. 2. Sect. 5. c. 8. Th. 13. *Caſt.* Lex. *Lemeri*, Trait. des Drog. p. 207.

The word is formed from the Greek, κεραυνος, *thunder-bolt*.

The *ceraunia* is the ſame with what is otherwiſe called the thunder-ſtone or thunder-bolt, and ſometimes alſo *ſagitta*, or arrow's head, on account of its ſhape.

The *ceraunia* are frequently confounded with the ombriæ and brontiæ, as being all ſuppoſed to have the ſame origin *Plin.* Hiſt. Nat. l. 37. c. 10. See BRONTIA and OMBRIA.

The generality of naturaliſts take the *ceraunia* for a native ſtone, formed among pyrites, of a ſaline, concrete, mineral juice. Mercatus and Dr. Woodward aſſert it to be artificial, and to have been faſhioned thus by tools.

The *ceraunia*, according to theſe authors, are ſicilices, or heads of the antient weapons of war, in uſe before the invention of iron; which, upon the introduction of that metal, growing into diſuſe, were diſperſed in the fields thro' this and that neighbouring country. Some of them had poſſibly ſerved in the early ages for axes, others for wedges, others for chizzels, but the greater part for arrow-heads, darts and lances. *Mercat.* Metalloth. Arm. 9. loc. 12. c. 16. *Woodw.* Lett. 3. on Meth. Foſſ. p. 38, ſeq. Ejuſd. Catal. For. Foſſ. p. 51, ſeq.

The *ceraunia* is alſo held by Pliny for a white or chryſtal coloured gem, which attracted lightning to itſelf. What this was is hard to ſay. *Plin.* Hiſt. Nat. l. 37. See CERAUNUS *albus*, infra.

Prudentius alſo ſpeaks of a yellow *ceraunia*[a], by which he is ſuppoſed to mean the carbuncle or pyropus[b].—[[a] *Prudent.* Pſychom. v. 470. [b] *Fab.* Theſ. p. 536.]

CERAUNIA, in botany, is uſed by ſome authors for orpin. *Ger.* Emac. Ind. 2.

CERAUNIAS *albus*, in natural hiſtory, a name given by Pliny to a gem or precious ſtone, of the nature of the aſteria, but ſomewhat inferior to it in beauty. Pliny tells us, that it was a very bright gem, of a cryſtalline appearance, but with a caſt of bluiſh, and that it was found in Caramania. Solinus gives us much the ſame account, but makes Germany the place of its origin. It is indeed written Germania in ſeveral of the old copies of Pliny, but the moſt correct have it as it is printed, Caramania; and Caramania was a country from which the Romans had many gems.

CERAUNITES, in natural hiſtory, a name given by ſeveral writers to the belemnites. See the article BELEMNITES.

CERBERUS, among chemiſts, denotes *mercury*. See MERCURY.

The name *cerberus* is alſo given by ſome to a famous purging powder, more uſually called *pulvis cornachinus*, and *pulvis comitis Warwicenſis*. *Caſt.* Renov. p. 158.

CERBERUS *chemicus*, in chemiſtry, a phraſe uſed by Hoffman and others to expreſs the common nitre or ſalt-petre, which they have called alſo *ſal infernalis*.

CERCASI, in the Eaſtern military orders, are a body of horſe in the ſervice of the grand ſignior. See *Pocock*'s Egypt, p. 166.

CERCELE, (*Cycl.*) in heraldry. The croſs *cercele* differs from the croſs anchored, as the latter turns but a little rounding, whereas the former turns quite round. *Coats*, Dict. Herald. p. 71, ſeq. See ANCHORED, *Cycl.*

CERCIS, in botany, the name given by Linnæus to the genus of plants called ſiliquaſtrum by Tournefort, Rivinus, and others. See SILIQUASTRUM.

CERCOPITHECUS, in natural hiſtory, the name of a ſpecies of long-tailed monkeys.

The word is derived from the Greek κερκος, a tail, and πιθηκος, a monkey.

Aldrovandus, Marcgrave, and others, have given the figures and hiſtories of many of the *cercopitheci*. The former of theſe authors ſpeaks of ſome as large as maſtiff dogs, having tails five cubits long. In Braſil there is a yellowiſh kind, which ſmells of muſk. As theſe monkeys climb trees, if in danger of falling, they ſave themſelves not only by their feet, but by their tails, wrapping them round the boughs of trees. The Zygantes in Africa eſteem their fleſh a good meat. *Grew*'s Muſæum, p. 10.

Among the various ſpecies of this animal, authors have particularly deſcribed the great-bearded kind, and two large ones without beards, which are different from all that we know by the peculiar names which have been given them by the inhabitants of the places where they are found.

The great bearded monkey is a very elegant and neat creature; its hairs are ſhort, and very bright and gloſſy: its breaſt and the fore part of its belly are white, and it has a white beard hanging down from its chin, of a hand's breadth long, and pointed at the end: its tail is of the ſhape that the monkeys tails uſually are, and does not end in a bunch of hair, as that of the bearded monkey called exquima. *Ray*'s Syn. Quad. p. 159

Of the two bearded ones, the firſt has long hair of a yellowiſh colour; its breaſt and all its belly are white; its tail is not very hairy, and looks indeed as if the hair had been ſtripped off from it all the way, except at the very extremity, where there is always a bunch of longer hairs. The other is larger than this; its noſe is all over brown, and its head ornamented with white hairs; its neck and breaſt are cloathed with long hairs, like the mane of a lion, and theſe are of a whitiſh colour; thoſe of the reſt of its body are of a pale yellowiſh tawny colour. The monkeys deſcribed under the names they are known by among the inhabitants, are, the guariba, cagui, ſagouin, cay, caitaia, macaquo, exquima, bugee, elawandum, and wandru; which ſee under their ſeveral heads.

CERCOSIS, Κερκωσις, in medicine, a preternatural extention and tumidity of the female clitoris, as to project beyond the labia pudendi *Caſt.* Lex. in voc. See CLITORIS.

CEREALES *ædiles*, two officers of antient Rome, erected under Julius Cæſar, appointed to have the ſuperintendency of the corn and grain for the proviſion of the city. They alſo preſided in the cerealia *Vives* in Auguſt. de Civit. Dei, l. 7. c. 20. *Hoſtin* de Orig. Teſt. p. 148. *Pitiſc.* Lex. Ant. T. 1. p. 404, ſeq. *Calv.* Lex. Jur. p. 173. See ÆDILE, *Cycl.*

CEREALES *ludi*, ſolemn ſports held in honour of Ceres, wherein the matrons repreſented the grief and lamentation of Ceres for the loſs of her daughter Proſerpine, and her travels to find her again.

The *ludi cereales* were borrowed by the Romans from the Greeks, and were held in the circus for eight days, from the 12th of April to the 19th incluſive. In them were repreſented combats, and races of horſe, and other diverſions; as alſo with a grand proceſſion of men, women, and gods, called *pompa cerealis*. *Kenn.* Rom. Ant. Not P. 2. l. 5. c. 7. *Fab.* Theſ. p. 538.

Pompa CEREALIS, or *circenſis*, a ſolemn proceſſion of the perſons who were to engage in the exerciſes and combats of the *ludi cereales*, accompanied with the magiſtrates and ladies of quality, as alſo with the ſtatues of the gods, which were carried in ſtate chariots. *Kenn.* Rom. Ant. Not. P. 2. l 5. c. 7.

CEREALIA *ſemina*, an appellation given by ſome to what we call *legumina* or pulſe. *Caſt.* Renov. p. 159.

CEREBELLUM (*Cycl.*)—Willis and Boerhaave ſuppoſe the *cerebellum* to be the ſeat of the vital principle: but this opinion is liable to difficulties. The obſervations of M. de la Peyronie ſhew, that wounds in the *cerebellum* of dogs are not immediately mortal; and we have more than one account of perſons living with a ſchirrhous *cerebellum*. See Phil. Tranſ. N° 474. Sect. 3. and Mem. de l'Acad. Royale des Scienc. 1705.

CEREBRUM (*Cycl.*)—The brain in fiſh, in general, is very ſmall, in reſpect to the great ſize of their heads. The internal or medullary part is brown, but the external or cortical part is fattiſh and whitiſh. The olfactory nerves may be traced with great eaſe, running in a ſtrait line from the brain to the noſtrils.

CEREBRUM *jovis*, in ichthyology, a name given by Ennius the poet to a peculiar fiſh of the labrus kind, called by the generality of authors ſcarus: it is diſtinguiſhed by Artedi from the other ſpecies of the ſame genus, by the name of the labrus, qui ſcarus auctorum eſt.

CEREFOLIUM. See CHERVIL.

CEREIS, in botany, a name uſed by ſome authors, and ſuppoſed to have been uſed by the antients for the *ſiliquaſtrum*, or Judas tree. *Ray*'s Hiſt. v. 1. p. 1717.

CERELÆUM, Κηρελαιον, a compoſition of wax and oil. See WAX.

Some alſo give the denomination to the *oleum ceræ*, otherwiſe called *butter of wax*. *Caſt.* & *Blanc.* Lex. Med.

CEREMONIAL, *ceremoniale*, a book in which is preſcribed the order of the ceremonies to be obſerved in certain actions and occaſions of ſolemnity and pomp.

The *ceremonial* of the Roman church is called *ordo Romanus*.

The Roman *ceremonial* was firſt publiſhed by the biſhop of Corcyra, in 1516; at which the college of cardinals were ſo ſcandalized, that ſome of them voted to have the author as well as book burnt, for his temerity in expoſing the ſacred ceremonies to the eyes of the profane people. The majeſty half divine, which they aſcribed to the public worſhip, would become contemptible, and have the common fate of human things, when viewed too near. Vid. *Mabill.* Muſ. Ital. T. 2. Ouvr. des Scav. Marſ. 1689 p 76, ſeq.

CEREMONIAL is alſo uſed for the ſet or ſyſtem of rules and ceremonies which cuſtom has introduced for regulating our behaviour, and which perſons practiſe towards each other, either

out of duty, decency, or civility. Trev. Dict. Univ. T. 1. p. 1567.

CEREMONIAL, in a more particular ſenſe, denotes the manner wherein princes and their embaſſadors uſe to receive, and treat one another. The *ceremonial* is a kind of law introduced by compact, cuſtom, preſcription, &c. which ſovereigns and their embaſſadors are to obſerve at their interviews, that none of them may either receive more or leſs marks of reſpect than they are entitled to. Some diſtinguiſh three occaſions on which the *ceremonial* is to take place: viz. when princes meet in perſon; when they write to each other; and when they ſend embaſſadors.

The original of the *ceremonial* is ambition, or the affectation of a dignity above others, to which by degrees the quality of right has been annexed, and the title of prerogative or precedency given.

There are endleſs diſputes among ſovereigns about the *ceremonial:* ſome endeavouring to be on a level, and ſome to be ſuperior, to others. Numerous ſchemes have been propoſed for fixing the place and rank of each prince, but they have not been accepted of by any, except ſome alternate princes, as they are called in Germany. The chief of the expedients which have been propoſed for this purpoſe, are 1mo, to accommodate the difference by compromiſe, or alternation, ſo that one ſhall precede now, another the next time; or one in one place, and the other in another; 2do, by ſeniority, ſo that an elder prince in years ſhall precede a younger without any other diſtinction. Vid. *Callieres*, Maniere de Negocier avec les Souverains, c. 10. *Walch.* Lex. Phil. p. 360. See PRECEDENCY, *Cycl.*

CEREMONIAL is more particularly uſed in ſpeaking of the laws and regulations given by Moſes, relating to the worſhip of God among the antient Jews.

In which ſenſe it amounts to much the ſame with what we otherwiſe call *levitical* law, and ſtands contra-diſtinguiſhed from the *moral*, as well as the *judicial* law.

'Tis diſputed whether the obſervation of the ſabbath be a *ceremonial*, or a moral law. See SABBATH, *Cycl.*

The *ceremonial* law preſcribed the forms, uſages, rites, &c. relating to ſacred places, utenſils, prieſts, levites, prophets, congregations, garments, feaſts, ſacrifices, ſabbaths, &c.

Moſt of the *ceremonial* laws which God gave the Jews had ſome relation to thoſe idolatrous cuſtoms which had been eſtabliſhed among them before the publication of the levitical law. God thought fit to adopt ſuch things as the Jews before held for ſacred, and appropriate them to his worſhip, but with ſuch reſtrictions as would for ever diſtinguiſh his religion from that of the falſe gods. *Saurin.* Diſſert. on Old Teſt. P. 1. Diſſ. 53. p. 460.

By the multitude of external obſervances Moſes aimed to check the inclination which the Hebrews diſcovered to idolatry, and oppreſs them, as it were, with the yoke of ceremonies; that they might be induced to deſire their liberty, and the coming of their great deliverer with more ardour. *Calm.* Dict. p. 377.

Some have dared to call in queſtion the wiſdom and equity of many of the *ceremonial* laws! Spencer has a learned work on the Jewiſh *ceremonial* laws, and the reaſons of them; wherein he endeavours to aſſign reaſons of each ceremony, worthy of the wiſdom of God [a]. The principal view in them all, was to ſerve as a preſervative againſt idolatry. But there was alſo a political view in many of them, viz. to keep the Jews ſeparate from the neighbouring nations [b]; to which may be added a typical reaſon, viz. to ſerve as figures of a new and ſpiritual law, and to ſhadow out Chriſt. This laſt reaſon appeared ſo eſſential to Origen, that without it the laws given to the Jews appeared to him unworthy of God, and inferior to thoſe of the Greeks and Romans [c]. — [a De legibus Hebræorum ritualibus & earum nationibus. Nouv. Rep. Lett. T. 6. p. 430. [b] *Pfaff.* Theol. P. 2. c. 3. §. 4. [c] *Orig.* Homil. 7. in Levit. c. 10.]

CEREMONY (*Cycl.*) — We have an ample and magnificent account of the religious *ceremonies* and cuſtoms of all the nations in the world, repreſented in figures deſigned by Picart, with hiſtorical explications, and divers curious diſſertations, &c. *Ceremonies* & Coutumes religeuſes de tous les Peuples du Monde, 6 vol. Fol. Amſt. 1723. Mem. de Trev. 1720. p. 2160, ſeq.

M. Porree in 1646, publiſhed a hiſtory of antient *ceremonies*, tracing the riſe, growth, and introduction of each rite into the church, and its gradual advancement to ſuperſtition therein. Traite des anciennes *Ceremonies*, Amſt. 1646. 12°. Nouv. Rep. Lett. T. 54. p. 128, ſeq.

Many of them were borrowed from judaiſm, but more as it ſhould ſeem from heatheniſm. Some will have the introduction of pagan rites into chriſtianity to have been contrived by the intrigues and avarice of the clergy, who found their advantage in reviving and propagating impoſtures, which had been of old ſo profitable to their predeceſſors. Others alledge, that the genius of Rome was ſo ſtrongly turned to fanaticiſm and ſuperſtition, that they were forced, in condeſcenſion to the humour of the people, to accommodate and dreſs up their new religion to the modes and fopperies of the old one. 'Tis on this laſt principle that ſeveral of their own writers defend the adoption of heathen *ceremonies*. *Aringh.* Rom. Subterr. T. 1. l. 1. c. 21. *Middl.* Let. from Rome p. 68, ſeq.

The near conformity obſervable between the *ceremonies* and obſervances of the Jews and Egyptians, has occaſioned a ſtrong diſpute, whether the Jewiſh *ceremonies* be imitations of thoſe practiſed by the Egyptians, or the Egyptian *ceremonies* copied originally from the Jews. Among the antient Romans the Jewiſh and Egyptian ſuperſtitions were commonly confounded, and held equally odious. *Sueton.* in Tiber. c. 36. *Tacit.* Annal. l. 2.

Marſham maintains, in his canon chronicus, that in many things, as in the *ceremony* of circumciſion, Moſes imitated the Egyptians; in which opinion he ſeems followed by Spencer *de legibus Hebræorum ritualibus*; and in his diſſertation *de Urim & Thummim*, where the levitical worſhip and prieſthood are deduced from the Egyptian. In this God is ſuppoſed to have condeſcended to the weakneſs of the Jews, and to prevent their communication with the Egyptians, giving them the ſame laws and rites among themſelves. This ſyſtem Witſius in his Egyptiaca has endeavoured to refute. Others maintain that the Jewiſh rites were the originals from which all the heathen cuſtoms were borrowed. Of which number are Huetius in his *demonſtratio evangelica*, and his *quæſtiones Alnetanæ de concordia rationis & fidei*; Bochart in his *Phaleg*; Voſſius *de idolatria*; and others. *Walch.* Lex. Phil. p. 362. *Calm.* Dict. Bibl. T. 1. p. 377.

Dr. Middleton has given a fine diſcourſe on the conformity between the popiſh and pagan *ceremonies*, which he exemplifies in the uſe of incenſe, holy water, lamps, and candles before the ſhrines of the ſaints, votive gifts or offerings round the ſhrines of the deceaſed, &c. In effect, the altars, images croſſes, proceſſions, miracles and legends; nay even the very hierarchy, pontificate, religious orders, &c. of the preſent Romans, he ſhews are all copied from their heathen anceſtors [a]. Who then can doubt of the idolatry of popery, when we ſee the preſent people of Rome worſhipping at this day in the ſame temples, at the ſame altars; ſometimes the ſame images, and always with the ſame *ceremonies* as the old Romans [b]? — [a *Middlet.* Lett. from Rome. p. 15, ſeq. See alſo *Fabric.* Biblioth. Antiq. c. 4. §. 6. [b] Id. ibid. p. 69, ſeq.]

CEREMONY is alſo applied to thoſe reſpects and honours which people pay to each other, out of mere civility and good breeding. China is the land of *ceremonies*. The Chineſe have annexed ſuch an idea of reſpect and gravity to certain garments, that the miſſionaries dare not ſay maſs without their boots on. Mem. de Trev. 1724. p. 1792.

Habit of CEREMONY denotes the ornaments and external badges of a profeſſion, dignity, or office.

Officers of CEREMONY, thoſe whoſe buſineſs is to ſee the cuſtomary *ceremonies* duly obſerved in actions of pomp and ſolemnity. Such are marſhals, ſerjeants at arms, &c.

In our court is a maſter and aſſiſtant of the *ceremonies:* the French have a grand maſter of the *ceremonies*, as well as a maſter and aſſiſtant. In churches of the Romiſh communion there are alſo maſters of the *ceremonies*, to ſee that every thing be performed as preſcribed in the ritual.

CEREPOLLUM, in botany, a name uſed by Pliny to expreſs the gingidium, an umbelliferous plant of the nature of the chervil or cerefolium; and it is very probable that this name is only a falſe ſpelling of that word. Columella makes the *cerepollum* and gingidium different, but it may only be that in different ages they applied theſe names to different ſpecies of the ſame genus of umbelliferous plants. Neophytus tells us, that the gingidium of the antients was called by the later writers biſacutum, a name very well expreſſing its ſeeds which are long and ſlender, and are pointed at both ends.

CEREUS. See TORCH-*thiſtle.*

CERIGO, in natural hiſtory, a name by which many authors have called that remarkable American animal called the opoſſum. See OPOSSUM.

The Americans in ſome places call this animal in their language carigueya; and it is probable that this name *cerigo* is only a corruption of that word, though it be received generally in the world as a proper name, and uſed as ſuch by Maffei, Barlæus, Nieremberg, and many others.

CERINTHE, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: the cup is a perianthium divided into five equal ſegments, and remaining after the flower is fallen: the flower is compoſed of a ſingle petal, which forms a thick cylindric tube, with a bellied mouth, divided into five ſegments at the extremity, and naked and open at the end; the ſtamina are five very ſhort tapering filaments; the antheræ are acute and erect. The germen of the piſtil is divided into four parts; the ſtyle is ſlender, and of the length of the ſtamina; and the ſtigma is obtuſe. The fruit is compoſed of two oval bodies, plane on the inſide, and gibboſe on the out; each having a rim round the edge, and containing two cells, which do not open. The ſeeds are ſingle, roundiſh, and pointed. The eſſential character of this genus is the open mouth of the flower. *Linnæi* Gen. Plant. p. 61. See HONEY-*wort.*

CERINTHE, among the antients, was uſed by ſome to expreſs that ſubſtance called by others ambroſia and ſandarach, and by ſome

erithace. This is a yellow matter collected into lumps on the thighs of the hinder legs of bees, and is ſuppoſed by the generality of the world to be real yellow wax. This, however, is an error, ſince it has none of the qualities of wax, and is only the farina of flowers which the bees probably feed upon, and which after having paſſed through their bowels becomes wax. See WAX.

CERITES, the *wax-ſtone*, a name uſed by ſome old authors for that yellow agate uſually called cerachates. See the article CERACHATES.

CERNUA, in ichthyography, the name of a ſmall freſh water fiſh, called by others the *aurata*, *aſpredo*, and *perca minor*, or *ſmall pearch*, and in Engliſh the *ruffe*. It is very much of the ſhape and figure of the common pearch, ſeldom, at its utmoſt growth being known to exceed ſix inches; and it differs in this alſo, that it has none of thoſe black tranſverſe lines with which the back and ſides of the common pearch are variegated. Its ſcales are moderately large, and are ſo bent and fimbriated, or ſerrated at their edges, that they make the whole fiſh very rough. It has alſo a very large quantity of a viſcous matter adhering to its ſcales. Its back is of a yellowiſh green; its ſides are of a pale and obſcure yellow, but about its gills it is of a fine bright gold colour. Its belly is white; and its back, ſides, and fins, except thoſe under the belly, are variegated with black ſpots. Its mouth is moderately large, and its jaws rough, in the manner of a file; and it has one long back fin, the anterior rays of which are rigid and prickly. It is caught in many of our rivers, as the Yare at Norwich, &c. *Willughby*'s Hiſt. Piſc. p. 334.

CEROCHYTOS, Κηροχυτος γραφη, in antiquity, a method of painting in wax, melted and coloured with pigments for the purpoſe, and applied with pencils. *Plin.* Hiſt. Nat. l. 35. c. 11. & l. 21. c. 14. *Du Cange*, Gloſſ. Gr. T. 1. p. 647.

The word is compounded of κηρος, *cera*, wax, and χυω, *fundo*, I melt down.

CEROMA (*Cycl.*) — The name *ceroma* is ſometimes applied by antient phyſicians to a cerate or cerecloth. *Blanch.* Lex. Med. p. 148.

The champions ready to engage in the palæſtra having ſtripped themſelves naked, were firſt anointed with oil, then ſtrewed over with duſt, to which was laſtly added wax. From the laſt ingredient, this compoſition was denominated κηρωμα, *ceroma*, from *cera*, wax. *Fabr.* Theſ. p. 535.

CEROMANTIA, κηρομαντεια, an antient method of divination, by means of wax melted over a veſſel of water, and let drop in three diſtinct ſpaces, obſerving the figure, ſituation, diſtance, and concretion of the drops. *Pott.* Arch. Græc. l. 2. c. 18. p. 353. See DIVINATION, *Cycl.*

CEROSTROTUM, κηροστρωτον, in antient writers, denotes a ſort of picture compoſed of pieces of horn; anſwering to what among us is called Moſaic work. *Plin.* Hiſt. Nat. l. 11. c. 37. *Vitruv.* de Architect. l. 4. c. 6. *Fab.* Theſ. p. 535. See MOSAIC, *Cycl.*

Some write the word *ceroſtratum*, and ſuppoſe it primarily to denote a ſort of pavement compoſed of pieces of wood, inlaid and joined with ſlips of horns, variouſly coloured and figured. *Pitiſc.* Lex. Ant. T. 1. p. 408.

Salmaſius will alſo have *ceroſtrata* to denote a method of painting, or enamelling with wax, otherwiſe called *cerochytos*. *Salmaſ.* Exerc. ad Solin. p. 231. C. See CEROCHYTOS.

CERPASUS, in natural hiſtory, a name given by Uranius to a poiſonous drug of the Abyſſines; probably the ſame with the *carpaſus* of the Greeks.

CERRUS, in botany, a name given by many authors to the ægilops, or bitter oak; or oak that has large acorns, and a prickly cup. *Aldrov.* Dendr. p. 253.

CERRUS, in ichthyology, a name given by ſome of the old writers, Pliny, Martial, and others, to the fiſh called by the generality of writers ſmaris, by ſome mæna candida. It is of the ſparus kind, according to the Artedian ſyſtem, and is diſtinguiſhed from the other fiſhes of that genus by its having a black ſpot in the middle of each ſide, and the pectoral and tail fins red. See the article SPARUS.

CERTHIA, in zoology, the name of a bird made by Linnæus a diſtinct genus of the order of the picæ. The characters of this are, that the bill is not flat at the end, but round in figure, and pointed, and ſomewhat hooked, and the tail rigid. There is but one known bird of this ſpecies, which is the reptatrix, or creeper. *Linnæi* Syſtem. Naturæ, p. 45.

This ſmall bird is called in Engliſh the creeper, from its climbing and running up the branches of trees, which it does in the ſame manner with the woodpecker, and has thence by ſome been ranked among the birds of that genus, but improperly; its toes being placed as in the generality of birds, and not two of them behind, as is the diſtinguiſhing character of the woodpecker or picus kind.

It is an extremely ſmall bird, ſcarce exceeding the wren in ſize; its beak is long, hooked, ſlender and ſharp; its tongue is not longer than the beak, as it is in all the woodpeckers, but it terminates, as in thoſe birds, in a bony point; its throat, breaſt, and belly are white; its rump of a tawney colour, and its back of the ſame, but mottled a little with white, as is alſo the head, but this is of a ſomewhat more duſky and deep colour. It has on each ſide a white ſpot over the eye; its long wing feathers are ſome all over brown, others brown tip'd with white; the ſmaller feathers of its wings are blackiſh, and its tail is very long in proportion to its ſize, and is ſtiff and rigid, as in the woodpecker kind; all the feathers of it are of a browniſh colour. It climbs trees exactly as the woodpecker, in which it greatly aſſiſted by the rigidity of its tail. It builds in holes of trees, and lays a great number of eggs, ſometimes eighteen or twenty. *Ray*'s Ornithol. p. 100.

CERVICARIA, in botany, a term uſed by ſome authors to expreſs the thapſia of the ſhops, or leſſer libanotis of Theophraſtus. *J. Bauhin*, V. 3. p. 164.

CERVICARIA is alſo a name given by ſome to the trachelium. *Ger.* Emac. Ind. 2.

CERVICEM *flectentium primus*, in anatomy, a name given by Spigelius, and ſome others, to a muſcle of the neck, called by Cowper, Winſlow, and Albinus, by a much ſhorter name, the longus colli.

CERVICIS *tertius*, in anatomy, a name given by Fallopius and others, to a muſcle called by Albinus tranſverſalis cervicis, and by Winſlow, tranſverſalis magnus.

CERVIX (*Cycl.*) — CERVIX *of the ſcapula*, denotes the head of the ſhoulder blade, or that upper proceſs whoſe ſinus receives the head of the humerus. *Drake*, Anthrop. l. 4. c. 6. p. 406. See the article SCAPULA, *Cycl.*

CERUSE, (*Cycl.*) or CERUSS, is the ſame with what we popularly call *white lead*, though ſometimes a diſtinction is made, and the appellation *ceruſe* reſtrained to the purer, clearer, and finer ſort, by way of oppoſition to the coarſer, which is called ſimply *white lead*. *Smith*, Art of paint. p. 15, ſeq.

The manner of preparing *ceruſe* in quantities at Venice is deſcribed by Sir Phil. Vernatti. The plates for this purpoſe are large, and about the thickneſs of a knife's back, and rolled up, but ſo as that the ſurfaces no where touch. Each roll is put in a ſeveral pot, wherein it is upheld by a little bar from the bottom, that it may not touch the vinegar, which is alſo put into the pot, to effect the converſion. The pots are then covered with a plate of lead as cloſe as may be, and over this with a board; after which they are let down into a bed of horſe dung, big enough to contain 400 pots. After three weeks continuance the pots are taken up, the plates unrolled, laid on a board, and beaten with battledores till all the flakes come off, which, when they prove good, are hard, thick, and weighty; when otherwiſe, porous and light, and ſometimes black or burned, if the dung proves not well ordered: ſometimes alſo there will be no flakes, or *ceruſe* at all. From the beating table it is carried to the mill, ground with water between two ſtones to an almoſt impalpable fineneſs: laſtly, it is moulded into ſmall parcels, and expoſed to the ſun to dry, and harden for uſe. *Vernatti* in Phil. Tranſ. N° 138. p. 935, ſeq.

CERUSS, in medicine, is uſed externally in ointment, or dry powders, ſprinkling it on old ulcers, watery running ſores, &c. Inwardly it is accounted poiſonous, or at leaſt very dangerous.

CERUSE, in the manufacture of China. — The Chineſe make an uſe of this preparation of lead, which it is eaſier to ſee the advantages of, than to comprehend the manner in which they are brought about. The China veſſels, when they have been baked and finiſhed as to the matter, and even covered with their varniſh, will yet receive into their very ſubſtance, the colours which thoſe people mix up with an addition of *ceruſe*; and, as ſome of the old accounts ſay of copperas and ſaltpetre; but though theſe latter ingredients had uſe to be added, the *ceruſe* alone ſupplies their place at this time, at leaſt in very many things. It would be worth while to try an admixture of *ceruſe* with the colours uſed in painting on glaſs, and this, after a ſecond baking, might perhaps be found to incorporate itſelf in the ſame manner that it does into China ware, and recover the long loſt ſecret of letting in the ſtrongeſt colours without hurting the tranſparence. Obſerv. ſur l' Aſie.

CERUSE *of antimony*, a preparation of the regulus of that mineral, powdered, mixed with ſpirit of nitre, and diſtilled in a retort till no more fumes will riſe. What remains at the bottom being pulverized and waſhed ſweet, makes the *ceruſa antimonii*, a medicine preſcribed as a diuretic, and by ſome reckoned equal to the mineral bezoar. Some prepare the *ceruſe* by fuſing and fulminating the regulus with nitre in ſubſtance; the produce of which is a fixed powder called the *ceruſe* of antimony. *Quinc.* Diſpenſ. P. 2. Sect. 15. p. 276. *Teichmey*, Inſt. Chem. P. 2. c. 11. p. 165. & c. 17. p. 232. *Stahl.* Phil. Princ. Chem. P. 2. Sect. 4. n. 154.

CERVULA, or CERVULUS, in middle-age writers, a kind of ſport, celebrated by pagans, and after their example, by the chriſtians, on New Year's Day; when they run about in maſquerade, dreſſed in imitation of deer, and other beaſts. We find divers cenſures of the fathers, and decrees of councils againſt the obſervance of this ceremony. Even litanies were compoſed, and faſting preſcribed, for that day, *ad calcandam gentilium conſuetudinem*. *Du Cange*, Gloſſ. Lat. T. 1. p. 940. Item Gloſſ. Græc. p. 638. *Bingh.* Orig. Eccleſ. l. 20. c. 1. §. 3. *Spelm.* Gloſſ. p. 133.

CERVUS, the *ſtag*. In the Linnæan ſyſtem of zoology, this makes a diſtinct genus of animals, the characters of which are, that they are of the order of the pecora, and have horns hairy while young, but growing ſmooth afterwards, renewed every year, ſolid, and growing from the points. Theſe are gene-

rally branched, and the females ſeldom have them. The creatures of this genus are the ſtag, the camelopardalis, the capreolus, the rein deer, the tragelaphus, the hippelaphus, and the elk. *Linnæi* Syſtem. Natur. p. 41. See DEER.

CERVUS *volans*, in natural hiſtory, a name given by authors to the ſtag fly, or ſtag-horned beetle, a very large ſpecies of beetle with horns ſloped, and ſomewhat like thoſe of a ſtag. It is of a blackiſh colour, and its horns are uſually of the ſame colour, though in ſome of a purpliſh caſt, and in ſome few they have been found of the colour of red coral. They are an inch and half, or more, in length, when full grown. Theſe are of great uſe to the creature, as it can at pleaſure cloſe their points together, and take faſt hold of any thing with them, as a crab or lobſter does with the end of its claws. The eyes are hard, prominent, and of a pale colour; and near theſe it has two pair of antennæ; ſo that the horns in this creature are a ſingular thing, and are not antennæ of a particular kind. It has ſix legs, of which the firſt pair are much the ſtrongeſt and longeſt. The males of this ſpecies are much ſmaller than the females. This is the kind of ſtag-beetle uſually found in Eſſex, and ſome other counties; but beſide this we have another ſpecies which is produced of a hexapode worm, frequently found in old wood. This ſpecies is of a deeper black than the former, and its horns ſend out only one branch. *Ray*'s Hiſt. Inſ. p. 74.

CERYX, in natural hiſtory, a name by which Pliny, and other old authors have called the three genera of ſhell fiſh, ſince diſtinguiſhed under the names of buccinum, purpura, and murex. This, however, is a confuſion that has obtained alſo in later times; and though we have long had theſe three names, yet ſcarce any author has avoided the confounding the ſeveral ſhells ſignified by them, till a late French author, who, from the ſhape of the mouth, and ſome other obvious and invariable characters, has eſtabliſhed the three genera, or, as he calls them, families, in ſuch an exact manner, that want of obſervation alone can occaſion errors in regard to them hereafter. Hiſt. Nat. Eclair. p 281. See BUCCINUM.

CERYX, in antiquity. The *ceryces* were a ſort of public miniſters, appointed to proclaim, or publiſh things aloud in aſſemblies.

The *ceryces* among the Greeks, anſwered to the *præcones* among the Romans. See PRÆCO.

Our cryers have only a ſmall part of their office and authority. There were two kinds of *ceryces*, civil and ſacred.

Civil CERYCES. Thoſe appointed to call aſſemblies, and make ſilence therein; alſo to go on meſſages, and do the office of our heralds, &c. *Feith.* Antiq. Homer. l. 2. c. 5. p. 128. *Lakemak.* Ant. Græc. Sacr. P. 2. c. 2. §. 3.

Sacred CERYCES, Ἱεροκηρυκες, were a ſort of prieſts whoſe office was to proclaim ſilence in the public games, and ſacrifices, publiſh the names of the conquerors, proclaim feaſts, and the like. *Pollux.* in Onomaſt. l. 4. c. 12. §. 91.

The prieſthood of the *ceryces* was annexed to a particular family, the deſcendants of *Ceryx*, ſon of Eumolpus. To them it alſo belonged to lead ſolemn victims to ſlaughter. *Lakemak.* Antiq. Græc. Sacr. P. 2. c. 1. §. 3.

Before the ceremonies began they called ſilence in the aſſembly, by the formula, Ευφημειτε σιγη πας εσω λεως, anſwering to the *favete linguis* of the Romans. When the ſervice was over, they diſmiſſed the people with this formula, Λαων αφεσις, *Ite miſſa eſt.*

CESARE, in logic, a mode of ſyllogiſms in the ſecond figure, wherein the major propoſition, and concluſion, are univerſal negatives, and the minor an univerſal affirmative. Such is,

CE No man who betrays his country deſerves praiſe.
SA Every virtuous man merits praiſe.
RE Therefore no man who betrays his country is virtuous.

Walch. Lex. Phil p. 368.

CESIS, in botany, a name by which ſome authors expreſs the common daucus ſylveſtris, wild carrot, or birds neſt. *Ger.* Emac. Ind. 2.

CESSATION, the act of intermitting, diſcontinuing, or interrupting the courſe of any thing, work, action, or the like. *Calv.* Lex. Jur. p. 177. Trev. Dict. Univ. T. 1. p. 1579.

CESSATION *of arms*, an armiſtice, or occaſional truce. See TRUCE, *Cycl.*

When the commander of a place finds things reduced to an extremity, ſo that he muſt either ſurrender, or ſacrifice the garriſon and inhabitants to the mercy of the enemy, he plants a white flag on the breach, or beats the chamade; on which a *ceſſation* of arms, and hoſtilities commences, to give room for capitulation. See CAPITULATION, *Cycl.* and *Suppl.*

CESTRATUM, a work enamelled, or painted with a ceſtron. The word is alſo written *ceroſtrotum* and *ceroſtratum*. *Plin.* Hiſt. Nat. l. 11. c. 37. *Vitruv.* Archit. l. 4. c. 6. *Turneb.* Adverſ. l. 13. c. 24. *Salmaſ.* Exerc. ad Solin. p. 545. *Pitiſc.* Lex. Ant. T. 1. p. 410. See CEROSTROTUM.

CESTREUS, in zoology, the name of a fiſh of the mullet kind, but having a much ſmaller and narrower head, and its ſides variegated with much ſhorter longitudinal lines; it is eaten in many places, but is accounted much inferior to the mullet. *Geſner.* de Aquat. p 650. See the article MUGIL.

CESTRON, Κεστρον, in antiquity, the inſtrument wherewith they painted, or enamelled, in horn, or ivory. *Plin.* Hiſt. Nat. l. 35. c. 11. *Fab.* Theſ. p. 545. *Pitiſc.* Lex. Ant. T. 1. p. 410.

CESTROPHENDONA, in the antient military art, a compound kind of dart, or miſſive weapon, balanced with feathers like an arrow, and caſt by a large ſling; uſed chiefly by the Macedonians, in their wars under Perſeus, with the Romans.

The word is compoſed of κεστρον, a ſort of dart called by the Latins *tragula*, and σφενδονη, *funda*, a ſling. *Liv.* l. 42. §. 65. *Lipſ. Poliorcet.* 4. Dial. 3. *Pitiſc.* Lex. Ant. T. 1. p. 410. *Aquin.* Lex. Mil. T. 1. p. 199.

CESTRUM, κεστρον, in the materia medica of the antients, a name given to a plant often mentioned, but very ill explained to us by the generality of writers. Dioſcorides ſays, that the Greeks called it alſo pſuchrotrophon from its growing in damp places, and that the Latins called it betony or ſerrata, and ſome roſemary. It ſeems very ſtrange to us to hear the ſame plant called by three names, which, with us, expreſs three ſuch very different ones; but when we examine the deſcription, we find that what we call roſemary is wholly left out of the number; for its leaves are ſaid to be ſinuated, or cut in, and indented about the edges. They generally uſe the oak leaves as the moſt known leaf to reſemble them to, but theſe are not ſo deeply or ſo acutely cut as thoſe of the *ceſtrum*; and as to the identity of the plant mentioned by the other two names, we have not only this account of Dioſcorides to prove it, but Apuleius confirms it, and Pliny expreſly ſays, that the ſame plant which was called by the Gauls betony, was called by the Romans in his time ſerrata. The whole queſtion therefore turns, whether this was the plant called at this time betony, or that called ſerratula; but the deſcription helps us out in that, and the leaves of our betony not being ſinuated at all, it remains evident, that our ſaw wort, or ſerratula, is the *ceſtrum* and pſuchrotrophon of the Greeks, and the betonica or vettonica of the Latins, and ſometimes their roſmarinus.

Pliny and Apuleius ſeem indeed to have perplexed this enquiry by ſaying, that the leaves of betony or *ceſtrum* were like thoſe of the dock; but it is plain that in this caſe they have not diſtinguiſhed between betonica and brittanica; nay, Pliny himſelf in one place makes theſe the ſame, ſpeaking of betony, and ſo does Apuleius; they ſay the plant called betony or brittanica was called *ceſtrum*, &c. by the Greeks. This explains their mentioning the leaves to be like docks; for Dioſcorides in his deſcription of the brittanica ſays, that its leaves are like thoſe of the dock, which is very juſt, this plant being the great hydrolapathum, or water dock, but no way reſembling the betony.

CETACEOUS, (*Cycl.*) in a proper ſenſe, denotes only thoſe large fiſh which are viviparous, or breed their young within their own bodies, and have no gills, but lungs, with which they breath like quadrupeds, having but one pair of fins, and giving ſuck to their young. *Ray*, Coll. Loc. Word. p. 98. *Hought.* Collect. N° 531. T. 3. p. 272, ſeq.

Theſe ſcarce differ in any thing from quadrupeds, except the want of feet. They have no air bladder, but are enabled by the air they receive into the lungs in reſpiration, to render their bodies equiponderant to water. *Ray*, Wiſd. of Creat. P. 1. p. 26. See AIR *bladder.*

CETACEOUS, in the ordinary uſe, is alſo extended to all larger fiſh, called by the Latins *belluæ marinæ*, or ſea beaſts.

In which view, *cetaceous* fiſhes are divided into greater, including the whale kind, properly ſo called; and leſſer, to which belong the porpoiſe, ſhark, dog fiſh, &c. Theſe latter are more properly called *cartilaginous* fiſhes.

The ſea fox is ranked by authors in the claſs of *cetaceous cartilaginous* fiſhes, not flat, called alſo *galeolæ*; whoſe ſpecific difference conſiſts in this, that they have two livers, five gills, or branchiæ, on each ſide, and tufts hanging from the fins, which in the males are under the belly on each ſide the navel. Jour. des Scav. T. 2. p. 214. See GALEOLA.

Of the *cetaceous* kind, properly ſo called, there are divers ſpecies: ſome without teeth, or tube to caſt up water; others with teeth and a water tube; and others with a large long horn. *Hought.* loc. cit.

CETERACH, an officinal, agglutinant plant; the ſame with what is otherwiſe denominated *aſplenium* and *ſcolopendrium*. Pharm. Coll. Reg. Med. Lond. p. 121. *Gorr.* Med. Defin. voc. ασπληνιον. *Quinc.* Diſpenſ. P. 2. Sect. 2. n. 113. See ASPLENIUM and SCOLOPENDRIUM.

This plant ſtands recommended as an excellent diuretic, and a promoter of the menſes. The whole plant is to be uſed, and ſhould be gathered in the month of September. It is given by ſome in jaundices, in quartan agues, and in obſtructions of the ſpleen; but it is much neglected in the preſent practice. In ſome parts of Eſſex, where it is common on the walls of their churches, and on the tombs in the church yards, the common people tell us wonders of its effects in the ſtone. *Dale*, Pharm.

CETRA, in antiquity, a ſmall leathern ſhield, uſed by the antient Spaniards, Moors, and even Britons. Vid. *Tacit.* Vit. Agricol. c. 36.

The African *cetræ* are ſaid by Pliny to have been impenetrable, and made of elephants ſkins. *Plin.* Hiſt. Nat. l. 11. c. 39. *Pitiſc.* Lex. Ant. *Aquin.* Lex. Milit. T. 1. p. 199.

The *cetra* was much the ſame with the *pelta*. Whence Livy calls the Macedonians *peltaſtæ*, *cetrati*. *Liv.* l. 28. c. 5. Id. ib. l. 31. c. 36. See PELTA.

CETUS, (*Cycl.*) in aſtronomy, is alſo called *cete*, *balæna*, *draco*, *leo*, *urſus marinus*, *bellua*, *monſtrum marinum*, *piſtrix*, *ophus*, *orphas*, *elkaitos*, or *elketos*. *Vital.* Lex. Math. p. 83. voc. *belæna*. *Wolf.* Lex. Math.

Schiller, in lieu of piſces, repreſents the parents of the virgin Mary, viz. Joachim and Anna: Schickard, the fiſh which ſwallowed Jonas; Wigelius, the pope's triple crown and keys; alſo the croſs of the Teutonic knights.

Cetus is repreſented by the poets as the ſea monſter which Neptune, at the ſuit of the nymphs, ſent to devour Andromeda, for the pride of her mother, and which was killed by Perſeus. In the mandible of *cetus* is a variable ſtar, which appears and diſappears periodically, paſſing thro' the ſeveral degrees of magnitude, both increaſing and diminiſhing, in about 333 days. *Hevel.* in Phil. Tranſ. N° 66, p. 2028. *Marald.* in Mem. Acad. Scienc. an. 1719. p. 122, ſeq.

CETUS, in zoology. See CETACEOUS and WHALE.

CEVADILLA, in botany, a name uſed by ſome authors for the hordeum cauſticum Indicum, or Indian cauſtic barley. *Park.* Theat. p. 1625.

CHAA, in botany, a name given by ſome authors to the tea-tree. *C. Bauhin.* Pin. p. 247.

CHACK, in the manege, is taken in the ſame ſenſe, as *beat upon the hand*; it is applied to a horſe when his head is not ſteady, but he toſſes up his noſe, and ſhakes it all of a ſudden, to avoid the ſubjection of the bridle. Turkiſh horſes have this fault frequently. We ſay, they beat upon the hand; and the beſt bits, nor the beſt hand, can never fix their heads. Croats or Croatian horſes, are alſo ſubject to *chack* upon the hand; which proceeds from this, that their bars are too ſharp and ridged, or edged, ſo that they can't bear the preſſure of a bit, tho' never ſo gentle. If a horſe had not too ſenſible, or too tender a mouth, he would not beat upon the hand: but in order to fix and ſecure his head, you need only to put under his noſe-band a ſmall flat band of iron, bent archwiſe, which anſwers to a *martingale*. This will hinder him to beat upon the hand, but will not break him of the habit; for as ſoon as the *martingale* is taken off, he will fall into the ſame vice again. *Guil.* Gent. Dict. in voc.

CHADCHOD, in Jewiſh antiquity. Ezekiel[a] mentions *chadchod* among the ſeveral merchandizes which were brought to Tyre. The old interpreters not very well knowing the meaning of this term, continued it in their tranſlation. St. Jerom acknowledges that he could not diſcover the ſignification of it. The Chaldee interprets it pearls; others think that the onyx, ruby, carbuncle, chryſtal, or diamond is meant by it[a].—[a *Ezek.* xxvii. 16. b *Calmet.* Dict. Bibl. in voc.]

CHÆLÆ *cancrorum*. See CRABS *claws*.

CHÆROPHYLLUM, *chervil*, in botany, &c. See CHERVIL.

CHÆRUS, in ichthyology, a name given by Strabo, and ſome other of the old Greek writers, to the fiſh we now call the capriſcus. Rondeletius and Salvian were the firſt who properly deſcribed this fiſh. See the article GOAT-*fiſh*.

CHÆTODON, in ichthyology, the name of a genus of the acanthopterygious fiſhes, the characters of which are theſe: the branchioſtege membrane on each ſide contains four or five ſmall bones: the body is compreſſed, broad, thin, and ſhort: the back has but one fin, which reaches all along it: the tail is large, and there are in all ſix fins beſide it: the mouth is ſmall, the lips may be opened and extended, but naturally they cover a part of the teeth: the teeth in the jaws are oblong, contiguous to each other, and flexile: the ſcales are rough; and the eyes are not covered with the ſkin of the head. The ſpecies of this genus are theſe; 1. The black *chætodon*, variegated with yellow lunulated ſpots. This is a Braſilian fiſh, called the puru, or acarauna major. 2. The *chætodon*, with a forked tail, and a prickle on each ſide near the tail. This is the acarauna of the Braſilians: its ſcales are black. 3. The ſquare *chætodon*, with many ſpines about the head. This is the ſquare acarauna, or nauti s vitula. 4. The black *chætodon*, with two ſpines upon the head, and four crooked tranſverſe lines on each ſide. This is the guarerua of the Braſilians. *Artedi*, Gen. Piſc. 36.

The name is originally Greek, and is derived from χαῖτα, a thin filament, and ὀδους, a tooth, and expreſſes that the teeth may be divided into thin and fine filaments, reſembling briſtles.

CHAFE, or CHAFING *of a rope*, in the ſea language, is ſaid of a rope that is galled or fretted, or when the rope rubs againſt any thing.

The cable is chafed in the hawſe, ſignifies that it is fretted or begun to be worn out there. *Guill.* Gent. Dict. P. 3. in voc.

CHAFF. Great uſe is made of *chaff* in ſome places of Italy to preſerve ice: the ice-houſe for this purpoſe need only be a deep hole dug in the ground on the ſide of a hill, from the bottom of which they can eaſily carry out a drain, to let out the water which is ſeparated at any time from the ice, that it may not melt and ſpoil the reſt. If the ground is tolerably dry, they do not line the ſides with any thing, but leave them naked, and only make a covering of thatch over the top of the hole: this pit they fill either with pure ſnow, or elſe with ice taken from the pureſt and cleareſt water; becauſe they do not uſe it as we do in England, to ſet the bottles in, but really mix it with the wine. They firſt cover the bottom of the hole with *chaff*, and then lay in the ice, not letting it any where touch the ſides, but ramming in a large bed of *chaff* all the way between: they thus carry on the filling to the top, and then cover the ſurface with *chaff*, and in this manner it will keep as long as they pleaſe.

When they take any of it out for uſe, they wrap the lump up in *chaff*, and it may then be carried to any diſtant place, without waſte or running. Phil Tranſ. N° 8.

CHAFERY, in the iron works, the name of one of the two principal forges. The other is called the *finery*. When the iron has been wrought at the finery into what is called an ancony or ſquare maſs, hammered into a bar in its middle, but with its two ends rough, the buſineſs to be done at the *chafery* is the reducing the whole to the ſame ſhape, by hammering down theſe rough ends to the ſhape of the middle part. *Ray's* Engliſh Words.

CHAFFERS, in our ſtatutes, ſeems to ſignify wares or merchandize. 3 Edw. IV. c. 4.

The original French of the ſtatute is *chaffares*.

CHAFFING of the fleſh in infants. See INFANT.

CHAIN (*Cycl.*) The *chain* of 66 feet, commonly called *Gunter's chain*, is very convenient for ſurveying. It is divided into 100 links, each of which conſequently will be $7\frac{92}{100}$ inches; whence it is eaſy to reduce any number of thoſe links to feet, or any number of feet to links Treat. Pract. Geom. p. 5. This *chain* is entirely adapted to Engliſh meaſures; and its chief convenience is in finding readily the numbers contained in a given field. Where the proportions of ſquare feet and acres differ, the *chain*, to have the ſame advantages as Gunter's *chain*, muſt alſo be varied. Thus in Scotland, the *chain* ought to be of 74 feet, or 24 Scotch ells, if no regard be had to the difference between the Scotch and Engliſh foot; but if regard be had to this difference, the Scotch *chain* ought to conſiſt of $74\frac{2}{3}$ Engliſh feet, or 74 feet 4 inches, and $\frac{8}{3}$ of an inch. This *chain* being divided into 100 links, each of theſe will be $8\frac{2368}{10000}$ inches. Treat. Pract. Geom. p. 6. See FOOT and ACRE.

CHAINS, in ſhip-building, are thoſe irons to which the ſhrowds of the maſts are made faſt to the *chain-walls*. *Guill.* Gent. Dict. P. 3. in voc.

CHAIN-WALLS, in a ſhip, are the broad timbers which are made jetting out of her ſides, to which, with *chains*, the ſhrowds are faſtened, and by them ſpread out, the better to ſecure the maſts. *Guill.* Gent. Dict. P. 3. in voc. *Manwar.* Seam. Dict. in voc.

CHALASTICUM *ſal*, in the materia medica, a name given by ſome writers to the ſal gemm. The antient Greek writers uſed the word *chalaſtica* as a general epithet for all thoſe medicines which acted as reſolvents and diſcutients; and this ſalt having much of that power, became diſtinguiſhed by that name.

CHALAZIAS, in natural hiſtory, the name of a ſmall ſtone, deſcribed by Pliny and other antient writers, and ſaid to have been of the ſize and colour of a common hail-ſtone, and of the hardneſs of the diamond. It was probably no other than the ſmall pebble cryſtals of the Indies, which are at this time frequent on the ſhores of rivers there, from the bigneſs of a large pin's head to that of a pea; and as they lie in great cluſters together, without any other ſtones among them, they make a ſort of coarſe ſand, which much reſembles a cluſter of hail-ſtones. The more imaginary accounts of this ſtone are, that it had the coldneſs of hail, and that it retained that coldneſs even in the fire; and ſome have added, that it was of power to avert hail-ſtones from any place where it was kept. Theſe idle opinions are too much of a piece with the accounts the writers of the middle ages give of the virtues of the gems, and ſtones in general.

CHALAZITES, in natural hiſtory, a name given by ſome to the chalazias.

CHALCANTHUM, (*Cycl.*) in natural hiſtory, a name uſed by many authors to ſignify the ſubſtance called by others *chalcitis*. See CHALCITIS.

Dr. Hill has uſed the word *chalcanthum* as the generical name of a ſet of foſſils, the characters of which are; that they are compound or metallic ſalts, of a coarſe and irregular ſtructure, conſiderably hard, and naturally impure and opake; in which they differ from the native vitriols, which are fine, of a regular ſtructure, and naturally pure and pellucid.

CHALCANTHUM, in medicine, a name given by ſome to all kinds of vitriol in general. Vitriol conſiſts of an inſipid phlegm, earth, or ochre, ſome metal, mineral ſulphur, an acid ſpirit or ſalt, and ſome portion of a volatile aërial ſalt: that it contains water, needs no great proof, ſince no ſaline ſubſtance can cryſtallize without it, and diſtillation will convince any one that it exceeds all the other principles in quantity. The earth or ochre may be thus ſeparated; diſſolve vitriol in common water, a yellow powder will ſoon ſeparate from it, and ſubſide to the bottom of the veſſel. It has appeared ſtrange to ſome, that the more water there is uſed in the lixivium, the greater quantity of ochre or yellow earth will ſubſide; but this is plainly owing to this cauſe, that the weaker the lixivium is, the leſs able it is to ſuſtain heterogene particles, ſuch as earth. Phil. Tranſ. N° 103.

The vitriol, when made ever ſo pure, ſtill retains a part of this earth, which is therefore not an accidental foulneſs of it, but an innate and neceſſary ingredient in its compoſition: vitriol, twenty times diſſolved and filtred, and re-cryſtallized each time,

leaves

leaves this earth in every operation, and will ſo as long as it continues to be vitriol. Every time of the purification makes it indeed yield leſs and leſs ochre, but it ſeems as if it would always yield ſome. Baſil Valentine pretends indeed that it will, after a vaſt number of ſolutions, yield no more earth, and that then only it is fit for the ſeveral operations and wonderful experiments which he relates of it. But this is probably not true; and if it were, it ſhould ſeem to prove no more, than that vitriol, when diveſted of this earth, was a ſubſtance different from what it was before; that is, that it ceaſed to be vitriol, in the proper ſenſe of that word.

If the abſence of this earth could make this ſalt fit for purpoſes, which in its natural ſtate it was not fit for, it follows, that it muſt be a very eſſential part of its compoſition in that ſtate.

CHALCANTHUM *chlorum*, in the materia medica, a name given by ſome of the old Greek writers to the melanteria, a yellowiſh vitriolic mineral, which turned black on being wetted with common water.

CHALCEDONIUS, the name of a medicine deſcribed by Galen, and directed by him to be infuſed into the ears, in inveterate diſorders of that part. *Caſt.* Lex. in voc.

CHALCEDONY, (*Cycl.*) in natural hiſtory, the name of a genus of the ſemi-pellucid gems, the characters of which are theſe: they are obſcurely-tranſparent ſtones, of an even and regular, not tabulated ſtructure, of a ſemi-opake cryſtalline baſis, and variegated with different colours, but thoſe ever diſperſed in form of miſts or clouds, and, if nicely examined, found to be owing to an admixture of various coloured earths, but imperfectly blended in the maſs, and often viſible in diſtinct moleculæ.

It has been doubted by ſome, whether the antients were at all acquainted with the ſtone we call *chalcedony*, they having deſcribed a chalcedonian carbuncle and emerald, neither of which can at all agree with the characters of our ſtone; but we are to conſider, that they have alſo deſcribed a chalcedonian jaſper, which ſeems to have been the very ſame ſtone, as they deſcribe it by the word turbida, which extremely well agrees with our *chalcedony*.

There are four known ſpecies of the *chalcedony*. 1. A bluiſh white one. This is the moſt common of all, and is found in the ſhape of our flints and pebbles, in maſſes of two or three inches or more in diameter: it is of a whitiſh colour, with a faint cloud of blue diffuſed all over it, but always in the greateſt degree near the ſurface. This is a little leſs hard than the oriental onyx. The oriental *chalcedonies* are the only ones of any value; they are found in vaſt abundance on the ſhores of rivers in all parts of the Eaſt-Indies, and frequently come over among the ballaſt of the Eaſt-India ſhips. They are common in Sileſia and Bohemia, and other parts of Europe alſo; but with us are leſs hard, more opake, and of very little value. 2. The ſecond ſpecies is the dull milky-vein'd *chalcedony*. This is a ſtone of little value, and is ſometimes met with among our lapidaries, who miſtake it for a kind of nephritic ſtone. It is of a ſomewhat yellowiſh white or cream colour, with a few milk-white veins. This is principally found in New Spain. 3. The third is a browniſh, black, dull and cloudy one, known to the antients by the name of the ſmoaky jaſper, or jaſpis capnitis. This is the leaſt beautiful ſtone of all this claſs; it is of a pale browniſh white, clouded all over with a blackiſh miſt, as the common *chalcedony* is with a blue. It is common both in the Eaſt and Weſt-Indies, and in Germany, but is very little valued, and ſeldom worked into any thing better than handles of knives. See the article CAPNITIS.

4. The fourth and laſt ſpecies is the yellow and red *chalcedony*. This is greatly ſuperior to all the reſt in beauty, and is in great repute in Italy, tho' very little known with us. It is naturally compoſed of an admixture of red and yellow only, on a clouded cryſtalline baſis, but is ſometimes found blended with the matter of the common *chalcedony*, and then is mixt with blue: it is all over of the miſty hue of the common *chalcedony*. This is found only in the Eaſt-Indies, and there not plentifully. The Italians make it into beads, and both they and the Germans call theſe *caſſidonies*; but they are not determinate in the uſe of the word, but call beads of ſeveral of the agates by the ſame name. *Hill*'s Hiſt. of Foſſ. p. 465.

CHALCEDONY, in the glaſs trade. See GLASS-*chalcedony*.

CHALCEMBOLON, Χαλκεμβολον, in antiquity, a ſhip, the roſtrum of which was of braſs.

The word is compounded of χαλκος, braſs, and εμβολον, roſtrum. *Pitiſc.* Lex. Ant. in voc.

CHALCHUS, in ichthyology, a name given by the antient Greeks to the fiſh which we call the doree. It ſeems to have obtained both theſe names from its colour; the one from the word *chalcos*, braſs, and the other from *doree*, gilded. See FABER.

CHALCIDICA *lacerta*, a ſort of ſerpent, ſo called from its reſemblance in colour to the chalcedony. Its bite is ſucceeded by a pellucid tumour, which has a kind of ſhining blackneſs at the margin. Drank in wine, it cures its own bite, according to Paulus Ægineta. It is alſo called *ſeps*. *Caſt.* Lex. in voc.

CHALCIDICUM, in antiquity, ſometimes denoted a dining-room. See CHALCIDIC, *Cycl.*

CHALCIS, in ichthyology, a name by which ſome have called the pilchard; called by others celerinus, and apua membras. *Rondel.* de Aquat. p. 85. See the article PILCHARDUS.

CHALCIS was alſo the name given by Ariſtotle, Ælian, Appian, and the other Greek writers, to the common herring. See the article CLUPEA.

CHALCITARIUM, in the materia medica of the antients, a name given by the Greeks of the middle ages to the colcothar, or calcanthum. Some have applied it to the chalcitis alone, but others make it expreſs the vitriols in general. It is derived from the Arabian word colcothar, which is ſometimes written chabcuthar; from this to chalcitis is but a ſmall change, and from chalcitis this word *chalcitarium* is formed by theſe writers, according to the cuſtom of their times, of adding to words a termination, which ſeemed to make them diminutives of the words they were formed of, tho' no ſuch thing was really meant, but it was merely the cuſtom of the times. Thus they called the plant orchis, orchidium, and ſo in numerous other inſtances. *Myrepſus*, *Ætius*.

CHALCITIS, (*Cycl.*) in natural hiſtory, the name of a foſſile ſubſtance, very well known by name among the modern authors, but ſeeming to have been perfectly underſtood but by few of them. Many have accounted it a native pure red vitriol, which is by no means the caſe; and the generality have eſteemed it one of the loſt foſſils of the antients, tho' its name ſtill ſtands in the preſcription for the Venice treacle. This is, however, as erroneous an opinion as the other, the true *chalcitis* of the antients being yet exiſtent, and in the Turkiſh dominions commonly known, and in frequent uſe as a medicine. It is a ſoft and friable ſubſtance, of a very irregular ſtructure, and is conſiderably heavy, and is found at different depths in the earth in looſe maſſes of different ſizes, from an ounce to two or three pounds in weight. It is uſually of a flatted ſurface, and undulated or clouded with various lines: it breaks with a ſmall blow, and is then uſually ſeen to be compoſed of various ſeries of ſhort, waved, and undulated ſtriæ; there are often five or ſix ſeries of theſe in a piece of three quarters of an inch thick; but other parts of the ſame maſs are ſometimes quite plain, and have no appearance of theſe ſtriæ. It is of a browniſh red colour, much reſembling that of unpoliſhed copper: if put into the fire, it burns firſt to a duſky orange colour, and afterwards to a deep purple; and if boiled in water, its ſaline part is diſſolved, and may be afterwards ſeparated from the liquor, in form of cryſtals of a greeniſh vitriol, but of a faint tendency toward a rhomboidal figure, which is the ſhape proper to thoſe of the blue vitriol; ſo that this ſubſtance properly is a mixt ore of the cupreous and ferrugineous vitriol. The Turks calcine it in a ſtrong fire, and afterwards give it internally as a powerful aſtringent, and, it is ſaid, with great ſucceſs.

There is no doubt but that this is the very ſubſtance deſcribed by the antient Greeks, under the name *chalcitis*; the deſcription of Dioſcorides perfectly agreeing with, and very well expreſſing it; he ſays expreſsly, that *chalcitis* was of the colour of copper, friable, not ſtony, and marked with ſhining ſtreaks or veins. He accounts it one of the more ſlightly corroſive medicines, and recommends the external uſe of it in collyriums, and in hæmorrhages, in an eryſipelas, and in the herpes. But the antients ſeem not to have known the uſe of it internally ſo early as in theſe times; tho' among the Romans it was well known alſo in internal preſcription, and made an ingredient in the famous theriaca andromachi. *Hill*'s Hiſt. of Foſſ. p. 605.

CHALCITIS, among the Arabians. The words *chalcitis* and *colcothar*, were of the ſame ſignification; they expreſſed a vitriolic mineral, which Aviſenna tells us was yellow. It was a kind of what he calls *alzagiat*, or *zagi*, a word expreſſing all the vitriolic minerals in general: the other ſorts of which were, the calcadis, which was white; the calcanthum, which was green; and the ſory, which was red. *Aviſenna*.

CHALCOLIBANON, a word mentioned in the apocalypſe of St. John, and very much miſunderſtood by the intepreters, who generally render it braſs; but the word will bear no ſuch ſignification. When the name of a metal is prefixed to ſome other word, it only denotes the thing mentioned after the metal to be of the colour of that metal. This word is formed of the Greek chalcos, χαλκος, braſs, and olibanum, frankincenſe. We have many parallel compounds, and all underſtood in the ſame way, the name of the metal only expreſſing the thing to be of its colour: thus chryſomela are apples of the colour of gold, &c. This, therefore, can only ſignify frankincenſe of the colour of braſs, that is, yellow. Some interpret it to ſignify a kind of braſs, which was dug out of Mount Lebanon in Syria; but there are many reaſons againſt this: in the firſt place, we do not find by any of the antients that there ever were any mines of copper in Mount Lebanon; and, in the next, if this had been the ſenſe to be expreſſed, the word would not have been *chalcolibanos*, but libanochalcos. This all parallel compound words will evince; and among the reſt, the common compound of the name of this metal, uſed to ſignify braſs, which being called mountain copper, was not expreſſed by the word chalcoreos, but oreochalcos, which by degrees ſoftened into orichalcum, and among the Romans into aurichalcum, a name erroneouſly ſuppoſed to have been formed of the word aurum, gold, and chalcos, copper. It is plain, however, that the Greeks meant nothing of gold by it, for they have mentioned a white orichalcum or

braſs,

braſs, as well as a yellow one; which Ariſtotle gives us the manner of making, and ſays, that it was prepared by adding a certain earth to copper while in fuſion, as the yellow braſs was by adding calamine.

Chalcolibanos, therefore, ſignifies no more than braſs-coloured frankincenſe. The Greeks called one ſort of frankincenſe olibanum xanthum, that is, reddiſh olibanum. A ſecond kind they called by a name formed of a metal, and the name of the thing itſelf, with the name of the metal prefixed, as in this word, argyrolibanum; this was white. The third kind, a yellow, was called *chalcolibanon*. This word is compounded ſo like the former, argyrolibanum, that this alone might lead any one to the right meaning of it.

Pliny divides the frankincenſe into male and female, the one white, the other yellowiſh: this latter is probably the *chalcolibanos* of the apocalypſe. And even Arethas, who has given the other explanation of braſs of Lebanon to this word, acknowledges, that it may be underſtood of olibanum, one kind of which, he obſerves, is of the colour of that metal. It is plain alſo from the hymns of Orpheus, that this word *chalcolibanos* was in uſe among the Greeks as a name of olibanum or male frankincenſe; for he orders the uſe of it under this very name for a ſuffumigation, in the addreſs to Latona and Apollo, and to ſome other of the deities.

CHALCOMUIA, the *braſs-fly*, in natural hiſtory, the name of a fly, whoſe wings are of the colour of poliſhed braſs. It is of the carnivorous kind, feeding on other flies, beetles, and on the bodies of ſerpents when dead; whence it has been alſo called by ſome ophioborus; others have called it Heſycius.

CHALCOPHTHONGUS, in natural hiſtory, a word uſed by Pliny, and other writers, as the name of a peculiar ſpecies of marble, which was very hard, and of a deep black colour, and when ſtruck upon, ſounded like braſs. It is alſo called by ſome chalcotes, and chalcoponus. The antients, who had a great opinion of the ſympathetic and hidden virtues of ſtones, recommended this to people upon the ſtage, who acted in their tragedies, always to be worn about them, to preſerve the voice clear. It was alſo eſteemed a ſpecific to prevent incontinency, and the young ſingers, in their public diverſions, were in the ſame manner adviſed to wear it, to keep them in abſtinence from thoſe things which would hurt and break their voices. The antients were fond of theſe imaginary virtues in ſtones, and our writers of the middle ages have handed down all their traditions.

CHALCOSMARAGDUS, in natural hiſtory, a name given by the antients to what they called a ſpecies of the emerald, found about the copper mines of the iſland of Cyprus, and of a duſky appearance, and vein'd with yellow.

The antients were very indeterminate in the characters of the gems, and one or other of them have called almoſt every green ſtone in the world an emerald. This was probably only a dirty green ſpar or cryſtal tinged with copper, and ſuch as we daily find about our own copper mines.

CHALCUS, Χαλκῦς, among the antient Greek phyſicians, a weight of about two grains, the ſame as æreolus or æreolum. *Caſt.* Lex. in voc.

CHALEF, in the botanical writings of the antient Arabs, the name of a tree often occurring, and ſeldom explained, tho' that be a very neceſſary taſk, as the other plants they deſcribe are often compared to this; and we are left in the dark, after all the accounts, by not knowing what the *chalef* was. Some have ſuppoſed it to be the bay-tree; others, mint; and others, the quince tree: three very different things, and all equally wrong interpretations. The beſt account we have of the *chalef* or *chalaf*, is in the writings of Proſper Alpinus on the Egyptian plants. He tells us, that it is a kind of willow, growing in Egypt and in Meſopotamia. This agrees very well with all that we know concerning the *chalef* of the antients, and ſerves to explain the account Dioſcorides gives of his hydropiper, which from every thing elſe that was ſaid of it, was ſuppoſed to be the common arſmart; but this has been doubted by many, becauſe Aviſenna, who deſcribes it under the name of zinziber caninum, or dog's ginger, calls its leaves oblong, and like thoſe of the *chalef*. While *chalef* was underſtood to mean the bay or quince tree, this could not be ſuppoſed to be the arſmart; but when we find that *chalef* is a willow, this very circumſtance pleads as much in favour of its being the arſmart, as it before ſeemed to make againſt it, the leaves of our perſicaria or arſmart being very like thoſe of the willow. Thus the explaining of one word often explains many more.

CHALINOS, Χαλινος, in antiquity, the bit, or that part of a bridle which is put into the mouth of a horſe: but it was, among the antient phyſicians, alſo uſed to expreſs that part of the cheeks, which, on each ſide, is contiguous to the angles of the mouth. *Blanc.* & *Caſt.* Lex. in voc.

CHALIZA, in the Jewiſh cuſtoms, the ceremony whereby a woman who is left a widow, pulls off her brother-in-law's ſhoes, who ſhould eſpouſe her, and by this means is allowed to be at liberty to marry whom ſhe pleaſes. The word ſignifies *extractio* vel *exuviæ*. *Calm.* Dict. Bibl.

CHALK (*Cycl.*)—The hard, dry, and firm *chalk*, is much the propereſt for burning into lime; but the ſoft unctuous *chalk* is greatly the beſt for lands, becauſe it diſſolves with froſt and rain in the manner of marl. This ſort of *chalk* uſed inſtead of marl by way of a manure, is a very fine improvement for ſome ſorts of land, eſpecially the firſt time it is laid on. It changes the very nature of the ſoil, and makes it rich for a time, but it ſoon exhauſts itſelf, and requires dunging to keep it in heart afterwards. A ſecond chalking will prove of very little benefit to thoſe lands which ſucceeded ever ſo well with the firſt, unleſs they have lain a long time to recover themſelves after it. It is from hence that the farmers have their trite ſaying, that *chalk* makes a rich tenant, but a poor landlord.

The beſt method therefore of uſing *chalk*, is to mix one load of it with two loads of dung or mud; this will make it not only a temporary, but a laſting advantage to the ground. It is the beſt improvement for ſowre and cold lands, and is obſerved always to do moſt good to thoſe lands that lie fartheſt off from any natural beds of it; the ground near *chalk* beds partaking of their nature, tho' there is no *chalk* diſtinguiſhable in them by the eye. The common method of *chalking* lands, is to lay twelve or fourteen load of *chalk* upon every acre, and this will ſometimes make the land bring very rich crops for fourteen or fifteen years together.

'Tis beſt to *carry the chalk upon a lay* a year or two before it is plowed up; by this means it will ſweeten the ſurface of the earth, and will not work ſo much downwards, as it will if plowed up at firſt. It makes corn yield well; and when laid upon graſs ground, it makes the graſs ſweet and rich; and cattle that feed upon it grow fat ſoon. The cows alſo that feed in theſe paſtures, are obſerved to give better milk than ordinary.

They have a very eaſy way of digging *chalk* in Kent. It lies on the ſides of hills, and the workman undermines it as far as he thinks proper, then digging a trench at the top, as far diſtant from the edge as the undermining goes at bottom, they fill this with water, and that ſoaks thro' in the ſpace of one night, and the whole flake falls down at once.

In other parts of the kingdom, *chalk* generally lies deeper, and they are often forced to dig for it to conſiderable depths, and draw it up in buckets; yet in theſe places, it ſells cheap enough at the mouth of the pit to be worth buying, even to carry a great way, for manure. *Mortimer*'s Huſbandry.

Black CHALK, a name given by the painters to a ſpecies of ochreous earth, with which they draw on blue paper, and other ſubſtances. It is very improperly called *chalk*, being more of the nature of the Cologn earth than any other known ſubſtance, but containing much leſs vegetable matter than that.

It is found in the earth in broad flat pieces, from two to ten foot long, and from four inches to twenty in breadth; generally flat, but ſomewhat riſing in the middle, and thinner toward the edges, and commonly lies in large quantities together. While in the earth, it is moiſt and flaky, but being dried, it becomes conſiderably hard, and very light; but always breaks in ſome particular direction; and if attentively examined when freſh broken, appears of a ſtriated texture. It is of a fine black colour, of a cloſe even ſtructure, and rough and duſty ſurface. It adheres firmly to the tongue, and is ſomething harſh to the touch. It breaks tolerably eaſy between the fingers, and ſtains the hands. It ſinks in water, in which it differs from the nature of the Cologn earth, and makes no effervеſcence with acids. When put into the fire, it readily takes fire, and burns to a fine white ſubſtance, harder than before, and ſeeming as if made of a mixture of tobacco-pipe clay and wood aſhes. This calcined ſubſtance on trial yields a ſmall quantity of an alkaline ſalt; and all experiments prove it to be partly of vegetable, partly of foſſile origin. It is dug in Spain, Italy, and ſome parts of the German dominions. *Hill*'s Hiſt. of Foſſ. p. 66.

Red CHALK, an earth much uſed by painters and artificers, and common in the colour-ſhops of London, and elſewhere. It is properly an indurated clayey ochre, and is dug in Germany, Italy, Spain, and France, but in the greateſt quantity in Flanders. Its characters by which it is diſtinguiſhed from other red earths, are theſe: it is of a fine, even, and firm texture, very heavy, and very hard, of a pale red on the outſide, but when broken, of a deep duſky chocolate colour within. It adheres firmly to the tongue, is perfectly inſipid to the taſte, and makes no effervеſcence with acids. *Hill*'s Hiſt. of Foſſ. p. 62.

CHALK *land*. Barley and wheat will ſucceed very well on the better ſort of *chalky land*, and oats generally do very well on any kind of it.

The natural produce of this ſort of land in weeds, is that ſort of ſmall vetch called the tine tare, with poppies, May-weed, &c. Saint foin and hop-clover will generally ſucceed tolerably well on theſe lands; and where they are of the better ſort, the great clover will do. The beſt manure for theſe lands is dung, old rags, and the ſheep dung left after folding them on it. If rain happens to fall upon theſe lands juſt after the ſowing, the earth will bind ſo hard after it, that the ſhoots from the ſeed cannot pierce thro' it, and the greater part of the crop will be by this means loſt. In Hertfordſhire they manure their *chalk lands* with pidgeons dung, aſhes, and ſoot, and with ſome horſe dung: and in Oxfordſhire they uſe no other manure than half-rotten dung, with which they mix ſand; and this, they ſay, prevents the earth from binding. They generally ſow theſe lands there with wheat, meſlin, and barley, only after

after wheat, they ſow peaſe and vetches; in the ſowing of theſe, they are particularly forced to wait for fair weather, becauſe of the land's binding. *Mortimer*'s Huſbandry.

CHALK-*ſtones*, in medicine, is uſed for the concretions of calcarious matter in the hands and feet of people violently afflicted with the gout Lewenhoek has been at the pains of examining theſe by the microſcope. He divides them into three parts. The firſt part is compoſed of various ſmall parcels of matter, looking like grains of white ſand: this is harder and drier, and alſo whiter than the reſt. When examined with large magnifiers, theſe are found to be compoſed of oblong particles, laid cloſely and evenly together: tho' the whole ſmall ſtones are opake, theſe component parts of them are pellucid, and reſemble pieces of horſe hair cut ſhort, only that they are ſomewhat pointed at both ends. Theſe are ſo extremely thin, that Mr. Lewenhoek computes that a thouſand of them placed together would not amount to the ſize of one hair of our heads. The whole ſtones in this harder part of the *chalk*, are not compoſed of theſe particles, but there are confuſedly thrown among them ſome broken parts of other ſubſtances, and in a few places ſome globules of blood, and ſmall remains of other juices.

The ſecond kind of *chalky* matter is leſs hard and leſs white than the former, and is compoſed of fragments or irregular parts of thoſe oblong bodies which compoſe the firſt or hardeſt kind, and theſe are mixed among tough and clear matter, interſperſed with the ſmall and broken globules of blood diſcoverable in the former, but in much greater quantity. And the third kind appears red to the naked eye, and when examined with glaſſes, is found to be a mere tough and clammy white matter, in which a great number of globules of blood are interſperſed; theſe give it the red appearance it has. Phil. Tranſ. N° 168. p. 906.

CHALKING, in our old laws, ſeems to be ſome duty laid on merchandize; what it was particularly we do not find: but in the rolls of parliament it is ſaid, the merchants of the ſtaple require to be eaſed of divers new impoſitions, as *chalking*, ironage, wharfage, &c. Rot. Parl. 50 Edw. III. ap *Blount* Law Dict. in voc.

CHALYBEATE *waters*. See MINERAL *waters*.

CHALYBEATE *wine*, *vinum chalybeatum*. See WINE.

CHAMA, in natural hiſtory, the name of a large genus of bivalve ſhells, the characters of which are theſe: it is uſually ſmooth, tho' in ſome places a little rugoſe, and has in ſome few a number of ſpines. The valves of the ſhell are equal, elate, and convex, and the mouth gaping, not cloſing faſt, and even in all parts, as in the oiſter.

The fiſh contained in this genus of ſhells, have all a hot taſte like that of pepper, and enflame the mouth in a troubleſome manner. The French have hence called them flames and flammets, and in ſome parts of the ſame nation they are called lavignons and pelourdes.

The Greek word for this ſpecies of ſhell is μονοκερωμα; but this is followed in no other language. The antients uſed the ſeveral ſpecies of this ſhell to engrave figures on; and as they thought proper, could give the ſeveral parts of the engraved figure the colours of the ſeveral coats of the ſhell, by cutting deeper or leſs deep into it. Thus they could give the fleſh of a man its natural white, and his garments a blue or a yellow, according to the nature of the ſpecies of *chama* they worked on. We find ſeveral of theſe antique works; and it is thought by ſome, that this was the firſt invention of that ſort of engraved gem, which we call camea.

It has been a very common error of authors to confound many of the ſpecies of the *chamæ* and oiſters together; but there are ſufficient obvious diſtinctions to guard againſt this, notwithſtanding ſome ſlight external reſemblance. The *chamæ* areuſually ſmooth on the ſurface, and both ſhells are convex, and that more than the under ſhell of the oiſters, and they do not faſten themſelves to one another, or to other ſubſtances, as the oiſters do.

The moſt remarkable ſpecies in the genus of *chamæ* are, 1. The coucha veneris, commonly miſtaken for a cockle. This has two rows of ſpines, very oddly placed about its mouth, and its ſides are deeply ribbed and furrowed. 2. The violet *chama*, of a truncated form. 3. The old woman ſhell. This is wrinkled and prickly.

The *chama* is not only confounded with the oiſter, but many writers have alſo confounded it with the tellinæ and the pectines. But theſe errors are all eaſily avoided, by paying a proper regard to the characters of each genus. The *chama* is of a rounder figure than the tellina, which is uſually oblong, and it is alſo thicker than the generality of tellina; and it is diſtinguiſhed from the pecten by having its ſhell tranſverſe and very deep, whereas thoſe of the pecten are uſually ſlight and longitudinal. The pecten alſo is uſually auriculated, the *chama* never is ſo.

The ſpecies of the *chama* being very numerous, it is proper to diſtinguiſh them under ſeveral general heads.

1. Of the oblong, plain, and tranſverſly ſtriated *chama*, the cabinets of the curious afford us the following ſpecies: 1. The Arabic or lettered *chama*, ſo called becauſe its figures are ſuppoſed to repreſent the Arabic characters. 2. The brown ſpotted Arabic *chama*. 3. The virgated *chama*. 4. The *chama* with deep tranſverſe ſtriæ.

2. Of thoſe *chamæ* which are of an oblong figure, elate, and ſtriated from the apex, we find the following ſpecies. 1. The grey *chama*. This, when its outer coat is taken off by poliſhing, becomes of a purple colour, and is kept in many cabinets as a different ſpecies, under the name of the amethyſtine *chama*. 2. The yellow *chama*. 3. The reddiſh *chama*. 4. The variegated *chama*.

3. Of the rounder ſhaped equilatera' *chamæ*, we have the following ſpecies: 1. The *chama* called the ſea nut. 2. The fill *chama*. 3. The granulated *chama*. 4. The reticulated *chama*. 5. The hurdle *chama*. The ridges in this ſpecies run ſo among one another, as to give it the appearance of a hurdle of ſticks wound together. 6. The painters *chama*, ſo called from its being uſed by the painters in many places to keep their colours in. 7. The cancellated *chama*. 8. The coarſe buckram *chama*. 9 The rugated *chama*. 10. The cheſnut *chama*. 11. The optic *chama* of Rumphius. 12. The punctuated *chama*. 13. The variegated *chama*. 14. The red faſciated *chama*. 15. The thin yelloviſh *chama*. 16. The faſciated amethyſtine *chama*. 17. The thick, white, plicated, Weſt-Indian *chama*. 18. The milk-white *chama*, called galades by Rondeletius. 19. The *chama* pelorides of Bellonius, ſo called becauſe frequent about Peloro. 20. The *chama* glycymeris of Ælian, ſo called becauſe it is of a clean black colour. 21. The *chama* trachea, which is very rough on the ſurface. 22. The pepper *chama*, ſo called from its violent taſte of pepper. 23. The *chama læia*, or light *chama*. This is remarkable for the thinneſs of the ſhell. 24. The tyger's tongue *chama*, a rough ſpecies, ſo called by Rumphius. 25. The thin, white, reticulated *chama*.

4. Of thoſe *chamæ* which have unequal ſides, and are called *chamæ* venereæ, we have the following ſpecies: 1. The amethyſtine mutilated *chama*, with an oval hollow. 2. The occidental *concha veneris*, with rows of ſpines. 3. The oriental *concha veneris*. This has no ſpines, but a number of wrinkles. 4. The ſmooth amethyſtine *concha veneris*, with an oval aperture. 5. The ſmooth white *concha veneris*, with a purpliſh oval aperture. 6. The white ſmooth *concha veneris*, with a grey oval aperture. 7. The ſmooth white *concha veneris*, with a brown oval aperture. 8. The mutilated *chama*, with a ſtriated apex. 9. The brown, tranſverſely, ſtriated, mutilated *chama*. 10. The variegated, agate-coloured *chama*. 11. The wrinkled *chama*, called the old woman ſhell, with prickles. 12. The larger amethyſtine *chama*, of the iſland of Rondo. 13. The great grey *chama* of Canada, of a ſilvery white, with a bluſh of red within. 14. The great grey *chama* of Senegal: this is white within. 15. The irregular ſtriated *chama*: and, 16. The white *chama* with a few ſpots. Hiſt. Nat. Eclaire, p. 322.

CHAMÆBALANUS, in botany, a name given by many of the Greek authors to the apios, from its having numerous tubera among its roots, buried under the ground. Some have explained the ſame word as a name of the bulbocaſtanum or earth nut, but it is wrong to confound two roots of ſuch very different characters together, and it does not appear that the Greek authors of note ever uſed it in any other ſenſe but as the name of the apios. The name pſeudo-apios has indeed been given by ſome to the bulbocaſtanum roots, but it was a name founded on ignorance, and likely to produce great errors. See Tab. of Shells, N° 18.

CHAMÆBATOS, in the materia medica, the name given by ſome to the common dewberry-buſh, or rubus. *Dale* Pharm. p. 423. See RUBUS.

CHAMÆCERASUS, the *dwarf honeyſuckle*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is of a tubular form, and divided into two lips, the upper one divided into many ſegments, the under one whole, and of the ſhape of a tongue. Theſe flowers ſtand each on its ſeveral cup, and are placed two on the ſame pedicle. The cup finally becomes a fruit, compoſed of two berries placed cloſe together, and containing each a ſingle roundiſh, but flatted ſeed.

The ſpecies of *chamæceraſus* enumerated by Mr. Tournefort, are theſe: 1. The alpine *chamæceraſus*, with a double red fruit marked with two ſpots. 2. The alpine *chamæceraſus*, with a double black fruit. 3. The mountain *chamæceraſus*, with a ſingle blue fruit. 4. The buſh *chamæceraſus*, with a double bright red fruit. *Tourn.* Inſt. p. 609.

CHAMÆCERASUS is alſo uſed by Dioſcorides, and ſome of the old botaniſts, for the alkekengi, or as we call it, the winter cherry. It had this name from its fruit greatly reſembling a cherry, and the plant not growing up to a tree, but riſing only a little way from the ground. Care muſt be taken in the reading the botanical writers, to diſtinguiſh when this plant is meant by the name *chamæceraſus*, and when the ſhrub.

CHAMÆCLEMA, in botany, a name by which ſome authors call the ground-ivy. *Boerh.* Ind. 172.

CHAMÆDAPHNE, in botany, a name by which Pliny and ſome other authors call the *vinca pervinca*, or periwinkle, and others the ſpurge laurel. *Ger.* Emac. Ind. 2.

It is alſo uſed by Columna, and ſome other authors, for the broad-leav'd *ruſcus*, commonly called the Alexandrian bay, *laurus Alexandrina*. See RUSCUS.

CHAMÆDAPHNE is alſo the name given by Buxbaum to a new genus of plants, not obſerved by former botaniſts, and found

frequently

frequently in boggy places, in the northern parts of the world. The flowers conſiſt of one leaf each, and are of the globoſe campaniform kind; the fruit is divided into five cells, and contains very numerous, and very ſmall ſeeds, of a roundiſh ſhape; and the whole plant, in its manner of growth, much reſembles our Solomon's ſeal. One thing very ſingular is obſerved in this plant, which is, that it retains its leaves all the winter, but ſheds them in the middle of ſummer. In the latter end of May, and beginning of June, the flowers are ſeen to wither, and at this time there ariſe a number of new ſhoots from the alæ of the lower leaves; theſe all riſe up to bear leaves, and by the middle of July are well covered with them. In the mean time the old leaves fall off, and the ſtalks of the former year are left naked, except that they have the fruit on them. The new ſhoots have, beſides leaves, the buds of the next year's flowers, and thoſe ſo perfect, that on opening them the minute parts of the ſtamina may be perceived. In Auguſt and September, when the cold comes on, the leaves become blackiſh, and the whole plant ſeems to be decaying; but in the ſucceeding ſpring, as ſoon as the ſun has appeared bright for a few days, the leaves re-aſſume their former green, the whole plant ſeems to revive, and is ſoon ſeen covered with flowers, and exhibiting a beautiful appearance. The ſtalks of the former year die down to the origin of theſe new ones; ſo that though the plant annually grows ſeveral inches in height, yet it is never the taller for its great age, as much dying of the height of a former year as is added anew for the ſucceeding one. Act. Petrop. V. 1. p. 243.

Buxbaum, who firſt deſcribed this plant, called it chamedaphne, the dwarf bay, from its low ſtature, and its reſemblance to the common bay-tree in the ſhape of its leaves, which are oval and pointed.

CHAMÆDROPE, in botany, a name given by ſome of the antient writers to the common germander. See GERMANDER.

CHAMÆDRYS. See GERMANDER.

CHAMÆLEON *thiſtle*, in botany, the name of a kind of thiſtle, of which there are two kinds deſcribed by Dioſcorides, and others of the antient Greeks, and called the white and the black *chamæleon* thiſtles. The white *chamæleon* is an innocent plant, its root eſculent, and a gum which exſudates from it in the hot countries, not only innocent but agreeable, the women uſing it to perfume their breath, and chewing it in their mouths as we do maſtick.

It may ſeem ſtrange to ſome to find this plant thus mentioned as a ſafe, eſculent, and uſeful one; whereas Pliny and many other writers have declared it to be a poiſon. The later authors are to be excuſed in this, as having followed Pliny. The error of this author who has miſled the others may be eaſily diſcovered by tracing his accounts up to the Greeks from whom he borrowed the greater part of what we find in him, and whom he often, as in this caſe, has copied careleſsly, and tranſlated badly.

The Greeks in general have ranked birdlime among the ſlow poiſons, and the name of birdlime with them is ἶξος, ἰξὸς in the maſculine, or ixias, ἰξίας in the feminine: the latter, however, is moſt uſed. Some of the antients obſerving the viſcous gum exſudated from the white *chamæleon*, called it from this the birdlime *chamæleon*, or ixias *chamæleon*, by way of diſtinction from the other, or black kind, which did not yield this viſcous gum. It is plain that they meant only to expreſs the viſcous nature of birdlime, not its poiſonous quality, by this word, the gum itſelf being known to be ſafe, and in common uſe among the women of their time. Notwithſtanding however, that they call birdlime always ἡ ἰξίας, uſing the word alone as a ſubſtantive, and that of the feminine gender, and the *chamæleon* thiſtle that yielded this ὁ ἰξίας χαμαιλέων. The word ixias there uſed as a maſculine adjective; yet ſubſtantive or adjective, maſculine or feminine, ixias was ixias with Pliny, and he has tranſlated it into the poiſon, whether ſpoken of the birdlime, in which ſenſe the Greeks from whom he copies uſed it, as the name of a poiſon, or as the name of the *chamæleon*, in which ſenſe they eſteemed it the name of an eſculent plant.

The Arabian phyſicians call the poiſon ixias, that is birdlime, and the eſculent ixias, or *chamæleon* thiſtle, by the ſame name *aldebac*; but this is probably owing to the error of the tranſlator of Dioſcorides into Arabic; for Aviſenna, in his chapter of artanita, excuſes his own errors, by frankly confeſſing that he uſed this tranſlation, not the original; and we may find by his blunders in that chapter, that he did not underſtand Greek. Scribonius Largus, in his treatiſe of poiſons, unwilling to admit the ixias, falls into the ſame error with Pliny, and the old Arabian tranſlator of Dioſcorides, and ſays, that there is much danger in the ixias which ſome writers call the *chamæleon* thiſtle. It is probably owing to this error that the later writers on the materia medica, have all mentioned the lachrymæ or tears of the white *chamæleon* as a poiſon, whereas there is no account that at all favours this among the antients; for they all mention the maſtich of the *chamæleon*, as they call it, as a ſafe and pleaſant ſubſtance. They caution people againſt the black *chamæleon* thiſtle indeed, as an unſafe plant, but this never yields this viſcous ſubſtance, but only the white kind. Nicander diſtinguiſhes them in this manner, and Galen even preſcribes the white *chamæleon* as a remedy againſt the poiſon of the ixias or birdlime. No one ſure can be ſo hardy as to aſſert that the author here preſcribes the poiſon itſelf in a ſecond doſe againſt the firſt. See IXIAS.

CHAMÆLUCE, in botany, a name by which ſome authors have called the colt's foot, or tuſſilago. *Ger. Emac. Ind.* 2. See TUSSILAGO.

CHAMÆACTE, in botany, a name given by ſome authors to the dwarf elder. *Dale* Pharmac. p. 319

CHAMÆMELUM, *chamæmile*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the radiated kind; the diſk is compoſed of floſcules, and the outer edge of ſemifloſcules, all ſtanding upon embryo ſeeds, and all incloſed in one common ſquammoſe cup. The embryo's finally ripen into ſeeds, and are affixed to the thalamus of the flower. To this it is to be added, that the leaves are finely divided, and the whole face and appearance of the plant has ſomething peculiar, which readily diſtinguiſhes it from the other plants with radiated flowers.

The ſpecies of *chamæmile* enumerated by Mr. Tournefort are theſe: 1. The common *chamæmile*. 2. The noble or ſweet-ſcented *chamæmile*. 3. The double-flowered, ſweet-ſcented *chamæmile*. 4. The yellow-flowered *chamæmile*, with naked flowers. 5. The common, ſcentleſs *chamæmile*. 6. The ſcentleſs *chamæmile*, with double flowers. 7. The ſtinking *chamæmile*, called cotula fœtida. 8. The double-flowered, ſtinking *chamæmile*. 9. The ſea ſtinking *chamæmile*. 10. The ſcentleſs ſea *chamæmile*. 11. The ſmall, hairy, Spaniſh, white-flowered *chamæmile*. 12. The ſouthernwood-leaved, Alpine *chamæmile*. 13. The great *chamæmile*, with very fine leaves, and red ſtalks. 14. The double-flowered, fine-leaved, red-ſtalked, great *chamæmile*. 15. The ſcentleſs, Alpine *chamæmile*, with fine leaves, and large flowers. 16. The narrow-leaved, mountain *chamæmile*. 17. The wormwood-leaved, ſea *chamæmile*. 18. The ſweet-ſcented corn *chamæmile*, with wormwood-like leaves. 19. The flixweed-leaved *chamæmile*. *Tourn.* Inſt. p. 494.

The common *chamæmile* is digeſtive, laxative, and emollient; it mitigates pain, and promotes the menſes and urine; the leaves dried are ſaid to anſwer theſe purpoſes better than any other part of the plant: for all others, the flowers are uſed. Theſe are given in infuſion, as a gentle emetic, very large quantities of the infuſion being drank warm. They are alſo uſed in emollient decoctions, and are a general ingredient in clyſters. The people who furniſh the apothecaries with them uſually ſell the double flowers, but the ſingle ones have greatly more virtue. It is very remarkable of the flowers of this plant that like thoſe of the common yarrow, they yield by diſtillation a fine ſky-blue oil.

CHAMÆNERIUM, or CHAMÆNERION, in botany, the name of a large genus of plants, commonly called *lyſimachiæ ſiliquoſæ*, or podded willow herbs.

The characters of the *chamænerions* are theſe: the flower is of the roſaceous kind, being uſually compoſed of four leaves, diſpoſed in a circular order; from the center of the flower ariſes a piſtil, which very often ſplits into four parts, and the cup, which is of a cylindric figure, and uſually ſurrounded by four leaves, finally becomes a fruit divided into four cells, and opening into four parts, when ripe. This contains a great number of ſeeds, each of which is winged with down, and affixed to a placenta.

The ſpecies of *chamænerion* enumerated by Mr. Tournefort are theſe: 1. The common, broad-leaved, beautiful, purple *willow-herb*, called *anagra* by ſome authors. 2. The broad-leaved *chamænerion*, with white flowers. 3. The broad-leaved, Alpine *chamænerion*. 4. The narrow-leaved, purple, Alpine *chamænerion*. 5. The narrow-leaved, Alpine *chamænerion*, with white flowers. 6. The narrow-leaved, Alpine *chamænerion*, with variegated flowers. 7. The hairy *chamænerion*, with large violet-coloured flowers. 8. The hairy *chamænerion*, with a large purple flower. 9. The large hairy *chamænerion*, with ſmall red flowers. 10. The leſſer hairy *chamænerion*, with ſmall flowers. 11. The Alpine *chamænerion*, with leaves growing three at every joint. 12. The Alpine *chamænerion*, with ſhining, dentated leaves. 13. The ſmaller Alpine *chamænerion*, with leaves like thoſe of the prunella. 14. The great ſmooth *chamænerion*. 15. The great ſmooth *chamænerion*, with white flowers. 16. The great, ſmooth, almond-leaved, Sicilian *chamænerion*. 17. The leſſer ſmooth *chamænerion*. 18. The leſſer ſmooth *chamænerion*, with white flowers. 19. The ſmooth, narrow-leaved *chamænerion*. 20. The origanum leaved *chamænerion*. *Tourn.* Inſt. p. 302.

CHAMÆPITYS, *ground pine*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is of the one lip'd kind; this lip is divided into three ſegments; the middle of theſe is bifid, and there are ſmall jags ſupplying, in ſome ſort, the place of an upper lip. The piſtil ariſes from the bottom of the flower, and is ſurrounded by four embryos, which finally become four oblong ſeeds, and are contained in an open capſule, which was the cup of the flower. To this alſo it is to be added, that the flowers of the *ground pines* grow ſcatteredly in the alæ of the leaves, and are not placed verticulately.

The ſpecies of *ground pine* enumerated by Mr. Tournefort are theſe: 1. The ſweet-ſmelling *ground pine*, with ſerrated leaves. 2. The white-flowered, ſweet-ſcented *ground pine*, with ſerrated leaves. 3. The yellow-flowered, ſweet-ſcented

ground

ground pine, with ſerrated leaves. 4. The common, yellow-flowered *ground pine*, with bifid leaves. 5. The Portugal, trifid-leaved *ground pine*, with roſe-coloured flowers. *Tourn.* Inſt. p. 208.

Chamæpitys, or *ground pine*, though highly extolled as an aperient, cephalic, and nervous medicine, is however little uſed, except as an ingredient of the *theriaca*, and ſome other officinal compoſitions.

CHAMÆRHODODENDROS, in botany, the name of a genus of trees, the characters of which are theſe: the flower is compoſed of only one leaf, and is of a tubular, and ſomewhat funnel-like ſhape. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower. This finally becomes an oblong fruit, divided into five cells, and finally burſting into ſo many capſules, which are all affixed to an axis, and contain ſmall ſeeds.

The ſpecies of *chamærhododendros* enumerated by Mr. Tournefort are theſe: 1. The ſmooth Alpine *chamærhododendros*. 2. The hairy Alpine *chamærhododendros*. 3. The ſerpyllum-leaved Alpine *chamærhodadendros*. 4. The Indian *chamærhododendros*, with large crimſon flowers.

CHAMÆRIPHES, in botany, a name given by Pontedera to a genus of plants called by Linnæus *chamærops*. *Ponteder.* 10. See CHAMÆROPS.

CHAMÆROPS, in botany, the name of a very ſingular genus of plants, which produce diſtinct plants, ſome hermaphrodite, and ſome only male flowers. The characters are theſe: in the hermaphrodite flower the general cup is the whole ear, which is compreſſed and bifid; but beſide this each flower has its ſeparate perianthium, which is very ſmall, and divided into three parts. The flower is in the ſame manner divided into three parts, and theſe are of a coriaceous ſubſtance, and oval figure; they ſtand erect, and have a ſharp point bending a little backward; the ſtamina are ſix compreſſed and pointed filaments, very ſlightly cohering at the baſe; the antheræ are very ſlender and double, and grow to the inner ſide of the filaments; the piſtil has three roundiſh germina, to which are joined as many diſtinct ſtylus's, which do not fall off with the flower; the ſtigmata are acute; the fruit is compoſed of three globoſe berries, each being unilocular, and containing a ſingle roundiſh ſeed. The male flowers reſemble the female in their whole ſtructure, except that they have in the place of the ſtylus a gibboſe, impervious receptacle, which terminates in ſix ſtamina. *Linnæi* Gen. Pl. p. 513. *Ponteder.* 10.

CHAMÆROPS is alſo uſed by Pliny, and ſome other of the old authors, for the low, or dwarf palm, called by others the palmites. *Ger.* Emac. Ind. 2.

CHAMANIM, in the Jewiſh antiquities, is the Hebrew name for that which the Greeks call *Pyreïa*, or *Pyrateria*; and St. Jerom in Leviticus has tranſlated *ſimulachra*, in Iſaiah, *delubra*. Lev. c. xxvii. v. 30. Iſai. c. 27. v. 9.

Theſe *chamanim* were, according to rabbi Solomon, idols expoſed to the ſun upon the tops of houſes. Abenezra ſays, they were portable chapels or temples, made in the form of chariots, in honour of the ſun.

What the Greeks call Pyræia, were temples conſecrated to the ſun and fire, wherein a perpetual fire was kept up. They were built upon eminences, and were large encloſures, without covering, where the ſun was worſhipped. Herodotus and Strabo ſpeak of them; and the Guebres or worſhippers of fire in Perſia and the Indies have ſtill theſe *Pyræïa*. Strabo ſays, that in his time there were many of theſe temples to be ſeen in Cappadocia, conſecrated to the goddeſs *Anaita*, and the god *Homanus*. *Anaita* is in all probability the moon, and *Homanus*, the ſun. *Herodot.* l. 1. p. 87. *Strabo*, l. 15.

The word *chamanim* is derived from *chaman*, which ſignifies *to warm, to burn*. *Calm.* Dict. Bibl. in voc. *chamanim*.

CHAMARIM, a word mentioned in ſeveral places of the Hebrew bible, and generally tranſlated *the prieſts of the idols*, or *prieſts cloathed in black*, becauſe *chamar* ſignifies black or blackneſs. St. Jerom [a] in the ſecond book of kings, renders it *aruſpices*. In Hoſea [b], and Zephaniah [c], he tranſlates it *ædituï*, churchwardens; but the beſt commentators are of opinion, that by this word we are to underſtand the prieſts of the falſe gods, and in particular of the worſhippers of fire; becauſe they were, as they ſay, dreſſed in black; or perhaps the Hebrews gave them this name in deriſion, becauſe, as they were continually employed in taking care about the fewel, and keeping up the fire, they were as black as ſmiths or colliers. — [a 2 Kings xxiii. 5. b c. x. v. 5. c c. i. v. 4.]

We find prieſts among thoſe of Iſis called *melanephori*, that is to ſay, that wear black; but whether this might be by reaſon of their dreſſing in black, or whether it were becauſe they wore a certain black ſhining veil, in the proceſſions of this goddeſs, is not certain.

Camar, in Arabic, ſignifies the moon: Iſis is the ſame deity. Grotius thinks the Roman prieſts called *camilli*, came from the Hebrew *chamarim*. They, among the heathens, who ſacrificed to the infernal gods, were dreſſed in black. *Calmet.* Dict. Bibl.

Viäi egomet nigrâ ſuccinctam vadere pallâ
Canidiam pedibus nudis, paſſoque capillo. *Horat.* l. 1. Sat. 8.

CHAMÆXYLON, in botany, a name by which ſome authors have called the gnaphalium, or cudweed. *Ger.* Emac. Ind. 2.

CHAMBERDEKINS, in our old ſtatutes, a denomination for certain Iriſh beggars, which by ſtatute were to leave England within a certain time [a]. They were called in the ſtatute [b] *chamberdeukynz*, and ſaid to be clerks mendicants [c]. Blount [d] ſays they are called *chamber deacons* in the parliament roll. — [a Terms de ley. in voc. b 1 Hen. 5. c. 8. c *Clercs irroyis mendinaunts*. d Law Dict. in voc.]

CHAMBER (*Cycl.*) — CHAMBERS *of the king*, *regiæ cameræ*, in our old records, is uſed for the havens or ports of the kingdom. *Selden.* Mar. Clauſ. p. 242. ap. *Blount.* Law Dict.

CHAMELÆA, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of only one leaf divided into three ſegments, and that ſometimes ſo deeply as to appear on a ſlight view, a three leaved flower. The piſtil finally becomes a tricoccous fruit, or one compoſed of three kernels, covered and held together by a thin ſkin, and containing within them oblong ſeeds.

The ſpecies of *chamelæa* enumerated by Mr. Tournefort are theſe: 1. The common *chamelæa*. 2. The white-flowered *chamælea*, with box-like, blackiſh green leaves. *Tourn.* Inſt. p. 651.

CHAMELEIA, in natural hiſtory, a word uſed by ſome authors as a name for a peculiar ſpecies of chama, but by others as a name for all thoſe chamæ which have ſmooth ſurfaces, which are a very great number. See CHAMA.

CHAMELEON, in zoology, the name of a ſmall animal, of which many ſtrange things have been reported, ſome true, ſome falſe.

It is of the claſs of oviparous quadrupeds, and approaches much to the lizard kind, but that its head and back are not depreſſed and flatted as in the lizards, and that the legs are longer.

There are four diſtinct ſpecies of this animal. 1. The Arabian kind, which is ſmall, and hardly exceeding the green lizard in ſize: this is of a whitiſh colour variegated with yellowiſh and rediſh ſpots. 2. The Ægyptian, which is twice as large as the Arabian, and is of a middle colour between the whitiſh hue of the Arabian and a fair green: this changes its colour to a paler or deeper yellow. 3. The Mexican. And fourthly, a kind ſometimes ſhewn about as a ſight, and met with by J. Faber Lynceus at Rome, which differed from all the others. The Arabian and Mexican *chameleons* ſeldom exceed ſix inches in length; the Ægyptian is nine or more; its head is large, but the thickneſs of its body is not to be determined, as the creature alters that at pleaſure, as it more or leſs inflates its body; and this inflation not only goes through the whole body, but into the legs and tail. This inflation is not at all like the breathing of other animals, for the body when thus puffed out will remain ſo two hours, only gradually and inſenſibly ſinking all the time, and afterwards will be inflated again, but that much more quickly than it ſubſided. It is able a long time to continue either of theſe ſtates, but more frequently remains empty for a conſiderable ſpace, in which time, though before it appeared in good caſe, it looks miſerably lean and lank, and its back-bone may be ſeen perfectly, its ribs counted, and even the large tendons of the feet diſtinctly obſerved by the naked eye through the ſkin. The back-bone, however, is not ſerrated as many have affirmed, but makes, in this its lean ſtate, a plain ſharp ridge, and the whole animal looks ſo miſerably meagre, that it has not unaptly been called a living ſkin. The head is very like that of ſome fiſhes, and is joined almoſt immediately to the breaſt, the neck being extremely ſhort, and has at the ſides two cartilaginous eminences, in the manner of fiſhes. It has a creſt ſtanding up in the middle of the forehead, and two others over the eyes, and between the creſts there are two remarkable depreſſions, the noſe and mouth running from the eyes with a double edge to the end of the ſnout, reſemble thoſe of a frog: at the extremity of the noſe there are two perforations, which ſeem to ſerve as noſtrils; the mouth being always kept cloſe ſhut, and the creature appearing to have no power of reſpiring but by means of theſe. Its mouth is furniſhed with teeth, or rather with continued denticulated bones. Theſe are of no ſervice to the creature in eating, ſince it preys on flies, and ſwallows them whole; but may ſerve for its defence in holding faſt a ſtick in its mouth, which, according to Ælian, this creature does, placing the ſtick croſs-ways, to prevent its being ſwallowed by ſerpents.

The ſtructure and motion of this creature's eyes is very ſurprizing; they are very large, and ſet in large cavities, appearing to be large ſpheres, of which one half ſtands out of the head, and is covered with a thin ſkin, perforated with a ſmall hole at the top, through which is ſeen a very vivid and bright pupil, ſurrounded with a yellow iris; this hole is properly a longitudinal ſlit, which the creature opens more or leſs wide at pleaſure, and the eye ſeems fixed to this eyelid ſo as to follow all its motions, not turning round within it, as in other creatures. The motion of the eyes of this creature is not leſs ſingular than their ſtructure, ſince it can turn them ſo as to ſee what paſſes either far backward, on either ſide, or directly behind it, without at all moving the head, which is fixed to the ſhoulders, and the creature can give one eye all theſe motions while the other is perfectly ſtill. The trunk of the body is properly all breaſt, for the creature has no belly, its ribs being continued to the ilia; the feet have all five toes, two behind, and three before, the hinder ones being as large as the others. This creature moves as ſlow as the tortoiſe, which appears very ſingular, as its legs are ſufficiently long, and it has no great weight of body to carry; but it is ſaid, that on trees, in its wild ſtate,

it

it moves very nimbly. Its tail when inflated is round as that of a rat or ſnake, when empty, it is very lank, and has three longitudinal ridges running along it, which are owing to the apophyſes of the ſpine. This tail is a great ſafety to the creature on trees, as it twiſts it round the branches when in any danger of falling. See Tab. of Quadrupeds and Serpents, N°29. The accounts given by the antients, and later writers, of the long hollow tongue of the chameleon, which it can dart with ſuch celerity to take flies, by means of a ſpongy nodule at the end, is found on experience, of thoſe who have kept the creature alive, to be true. Thoſe among the former therefore, who ſuppoſed the *chameleon* lived on the air only, were greatly miſtaken; ſome, of late, have alſo favoured this opinion becauſe of the long time the creature will live without food; but this is the caſe with all the ſerpent kind alſo, which yet we know to eat ſolid food when they can get it. *Ray*'s Syn. Quad. p. 276. See CAMELEON.

As to the change of colour in this creature, on its approaching different objects, the accounts are erroneous; it is indeed liable to changes of colour from other cauſes, as from cold, ſickneſs, and the like, but not from any external object.

CHAMEPITYS. See CHAMÆPITYS.

CHAMOIS, in zoology, is uſed by ſome, particularly the French, for the creature from whoſe ſkin the *chamois* leather is made. See Tab. of Quadrupeds and Serpents, N° 8. and RUPICAPRA.

CHAMOS, or CHEMOSH, the idol or god of the Moabites.

The name of *Chamos* comes from a root which, in Arabic, ſignifies *to make haſte*, for which reaſon many believe *Chamos* to be the ſun, whoſe precipitate courſe might well procure it the name of ſwift or ſpeedy. Others have confounded *Chamos* with the god *Hammon*, adored not only in Libya, and Egypt, but alſo in Arabia, Ethiopia, and the Indies. *Lucan*. Pharſ. l. 9. Macrobius ſhews that Hammon was the ſun, and the horns with which he was repreſented denoted his rays Calmet is of opinion that the god Homanus and Apollo Chomeus, mentioned by Strabo and Ammianus Marcellinus, was the very ſame as *chamos*, or the ſun. Theſe deities were worſhipped in many of the eaſtern provinces. Some, who go upon the reſemblance of the Hebrew term *Chamos* with the Greek *comos*, have believed *Chamos* to ſignify the god Bacchus, the god of drunkenneſs, according to the ſignification of the Greek *comos* St. Jerom, and with him moſt interpreters, take *Chamos* and *Peor* for the ſame divinity. But it ſeems that Baal Peor was the ſame as Tammuz or Adonis; ſo that *Chamos* muſt be the god whom the heathens call the ſun.

They who derive this word from the Hebrew *camos*, with a caph, mem, and ſamech, pretend that it ſignifies the hidden god, or Pluto, whoſe abode is in hell. In this ſenſe it will ſignify the ſame as Tammuz, and is taken for Adonis; becauſe this god was adored as one that had been concealed and buried in a coffin, then raiſed from the dead, and appearing alive again. But the god *Chamos* is never written in ſcripture after the manner we have been ſpeaking of, ſo as to ſignify the hidden god. *Calm*. Dict. Bibl.

Farther particulars may be ſeen in Calmet's diſſertation on Baal Peor and *Chamos*, prefixed to his comment on the book of Numbers.

CHAMPADA, in natural hiſtory, the name of a tree common in the woods of Malacca, and bearing a fruit much valued by the natives. It is a large tree, very full of branches, and theſe are very knotty, and, when cut, throw forth a thick and acrid juice like that of the tithymal. The fruit grows on the trunk and thick branches of the tree: the firſt appearance toward this is a large button or bud; this by degrees opens into a flower conſiſting of a great number of leaves, among which, when open, are ſeen the rudiments of the fruit; this appears very ſmall at firſt, but it ſoon grows to a very conſiderable bigneſs, being, when ripe, twelve or fourteen inches long, and as much in circumference; it is ſhaped much like a melon. The rind is green, and is all over divided into ſmall pentagons, in the center of each of which is a ſmall black ſpot. The pedicle is thick and woody, and entering into the ſubſtance of the fruit, it divides itſelf into ſeveral branched fibres, which run through the whole ſubſtance of it, and meet in a point at the end. Within this large fruit there are contained a large number of kernels of the ſize of our common cheſnuts, all hanging together in bunches, ſo as to reſemble a cluſter of grapes; theſe are confined in a narrow compaſs, being preſſed firmly upon one another while the fruit is whole, but as ſoon as this is cut or burſt open, they fly farther aſunder, and hang to the ſtalks like grapes that are placed at a diſtance on the bunch, as ſome of our oblong kinds are. The people of Malacca are very fond of this fruit; they ſuck the pulpy matter which ſurrounds the kernels, and which is of a ſweet and luſcious taſte, but of a diſagreeable raw ſmell. The Indians are very fond of this fruit, as well for its qualities, as its taſte, for it is very heating, and when taken in large quantities, will inebriate people in the ſame manner as ſtrong liquors. The kernels are much of the nature of our cheſnuts, but of a leſs agreeable taſte; they are eaten by way of food rather than as a delicacy, and the common way of eating them is boiled in water. Mem Acad Scienc. Par. 1699.

CHAMPAGNE, in heraldry, a name given by Ferne, and ſom other writers to a line differing from the common lines, an called alſo *urdee*, and by Upton, *vere*, from its reſemblance to the ends of the figures of that ſort of fir which is called *vair* by the heralds. See URDEE.

CHAMPART, in our old cuſtoms, a duty, or tenure, by which the tenant was to pay part of the fruits of the ground to the lord [a]. It is alſo written *chaumpert* [b], and in the middle age Latin is called *campipars*, *camparcium* [c]. — [a *Blount*. Law Dict. b Vid. *Du Cange*, Gloſſ. Lat. Tom. 1. p. 726. c *Du Cange*, loc. cit.]

CHANCERON, in natural hiſtory, a name given by the French writers to the ſmall caterpillar that eats the corn, and does vaſt miſchief in their public granaries. The butterfly which produces this creature has white wings with black ſpots in them. The caterpillar, when firſt hatched, is one of the ſmalleſt that we are acquainted with. It ſpins a great number of fine threads, as ſoon as hatched from the egg, and in many of theſe it faſtens itſelf to every thing that lies near it.

Toward the latter end of ſummer theſe caterpillars leave the corn, and mount up the walls of the granary, where they ſearch for a proper place of reſt, and when they have pitched upon ſuch a one, they eat their way into it, and burying themſelves in a hole, they cover their whole body with a web of ſilk of their own ſpinning, and there change into a ſort of browniſh red chryſalis's. Theſe remain the whole winter without life or motion, but in the months of April and May the butterflies hatch out of them, and the males and females couple together, immediately after which the female lays her eggs, and the foundation is laid for a new progeny, who, during the remainder of the ſummer, are to deſtroy and ſpoil the corn, under the form of caterpillars. The female thruſts out a ſort of tube from her tail, by means of which ſhe opens a way into the grain, and lodges her egg, which in fifteen or ſixteen days hatches into the caterpillar; as ſoon as hatched, it begins to eat, and devouring greedily, it ſoon marks the place where it lies by a quantity of the huſks which it leaves there. *Deſlandes*, Trait. Phyſ.

CHANCERY (*Cycl.*) — Appeals from the decrees of the court of *chancery* may be brought into the houſe of lords. See HOUSE *of lords*.

The juriſdiction of this court was impugned about the time of its original creation [a], and even in the reign of queen Elizabeth it was ſtrongly holden by the judges of the common law courts, that the chancellor could not by his decree ſequeſter the party's lands, that is, he could only *agere in perſonam*, but not *in rem*; and agreeably hereunto it was reſolved 16. Eliz. in the caſe of Coleſton and Gardener, that if a man killed a ſequeſtrator in the execution of ſuch proceſs, it was no murder [b]. — [a Vid. New Abr. Law. Vol. 1. p. 588. b Cro. Eliz. 651. 4 Inſt. 84. 1. Rol. Rep. 86. 190. Lit. Rep. 166.]

Alſo in the reigns of queen Elizabeth, and king James the firſt, there are ſeveral ſtrong opinions, that a court of equity could not examine, or give any redreſs in a cauſe after judgment at law; and that ſuits in equity, to relieve againſt a judgment at law, are within the ſtatutes, which makes it a premunire to appeal to any foreign court, eſpecially if the end thereof be to controvert the very point determined at law, or to ſeek relief after judgment in a caſe wherein the law may relieve, as againſt exceſſiveneſs of damages But ſuch opinions ſeem now to be wholly exploded. Vid. Caſ. Eq. Abr. p. 130.

The antient rule for the juriſdiction of the extraordinary court of *chancery*, was confined to frauds, accidents, and truſts; and though at this day, by its power of granting injunctions, it curbs the juriſdiction of other courts, and thereby has ſwallowed up the greateſt part of the buſineſs of the common law; yet it is ſtill under ſome of theſe notions, that it exerciſes a juriſdiction in relieving againſt forfeitures, penalties, where a compenſation can be made, in preventing multiplicity of ſuits, decreeing a ſpecific execution of agreements, aſſiſting defective conveyances, &c. But in no caſe will it relieve againſt an act of parliament, nor directly againſt a fundamental rule or maxim of the common law, nor retain a ſuit where the party appears to have a plain and adequate remedy at law. Three things, ſays my lord Coke, are to be adjudged in a court of equity. 1°. All covins, frauds, and deceits, for which there is no remedy by the ordinary courſe of law. 2°. Accidents, as when a ſervant, obligor, or mortgagor, is to pay money on a certain day, and they happen to be robbed in going to pay it. 3°. Breaches of truſt and confidence. 4 Inſt. 84.

Upon this foundation, that a court of equity could not relieve againſt a maxim of the common law, it was formerly holden, that one executor could not compel the other to account; that one joint tenant could not ſue his companion; that if an obligee loſt his bond, he was without remedy: ſo where the leſſer entered upon his leſſee, and ſuſpended his rent, it was held that he had no remedy: ſo where the party became remedileſs by his own act, as by paying money without an acquittance: ſo where one on valuable conſideration promiſed to make a leaſe, it was held that the party could not ſue on this promiſe in equity, becauſe he might have an action on the caſe. But theſe laſt opinions are now of no weight or authority, as appears by daily experience. Vid. New Abrid. vol. 1. p. 590. All matters of truſt are particularly within the juriſdiction of the court of *chancery*. Vid. Caſ. Eq. Abrid. p. 131. See the article COURT.

CHANE, in ichthyology, a name given by Ariſtotle, Athenæus, and the other Greek writers, to the fiſh called by other authors *hiatula chauna*, and *chaunus*. It is truly a ſpecies of the labrus, and is diſtinguiſhed by Artedi by the name of the forked-tailed labrus, with the lower jaw longer than the upper, and with black tranſverſe lines on the ſides. See the articles CHAUNA and LABRUS.

CHANFRIN, in the manege, is the fore-part of a horſe's head, extending from under the ears, along the interval between the eye-brows, down to his noſe. *Guill.* Gent. Dict. in voc.

CHANGE, in the manege. To *change* a horſe, or *change* hand, is to turn or beat the horſe's head from one hand to the other, from the right to the left, or from the left to the right. You ſhould never *change* your horſe without puſhing him forward upon the turn; and after the turn, puſh him on ſtreight, in order to a ſtop. *Guill.* Gent. Dict. in voc.

CHANGE *of ſpecies*, in huſbandry. See SPECIES.

CHANGES *of inſects*. See TRANSFORMATION.

CHANNA, in zoology, the name of a fiſh caught in great plenty in the Mediterranean, and brought to market in Italy, and elſewhere, among the ſea pearch, which it ſo nearly reſembles, that it would not be diſtinguiſhable from it, but that the ſea pearch is bigger, and has only broad tranſverſe lines on its back, whereas the *channa* has them both tranſverſe and longitudinal. It has a very wide mouth, and its lower jaw is longer than the upper, ſo that its mouth naturally falls open. Its eyes are ſmall, and its teeth very ſharp: its back is of a blackiſh red: it has ſeveral longitudinal lines of a reddiſh hue, and its tail is marked with reddiſh ſpots. *Bellon.* de Aquat.

There is an obſervation, that in all the fiſh of this kind which have been examined by naturaliſts, there have been found none but females. This is as old as the days of Ariſtotle. Whether it be true in fact, would require many obſervations: if it ſhould prove ſo, the whole ſeems to end in this; that the *channa* is no diſtinct ſpecies, but only the female of ſome other fiſh. *Geſner*, de Piſc. p. 260.

There is another fiſh, not unlike this, called *cannadella*, or rather *channadella*, which at Marſeilles is known by the name of *channa*. Vid. *Caſt.* Lex. in voc.

CHANNADELLA, in ichthyology, a name given by Bellonius and others to a ſpecies of the labrus, called alſo *ſachettus*, and *hepatus piſcis*. It is diſtinguiſhed by Artedi by the name of the *labrus*, with the lower jaw longer than the upper, with a forked tail, and with black tranſverſe lines on each ſide. See the article LABRUS.

CHANNEL (*Cycl.*)—CHANNEL, in the manege, is uſed for that concavity in the middle of the lower jaw of a horſe, where the tongue lies. This hollow being bounded on each ſide by the bars, terminates in the grinders or maxillary teeth. The barbles grow in this *channel*. *Guil.* Gent. Dict. in voc.

CHANTOR, (*Cycl.*) in the Jewiſh antiquities. In the temple of Jeruſalem there was a great number of Levites, who were employed in ſinging the praiſes of God, and in playing upon inſtruments before his altar. In the reign of David there were four thouſand ſinging men, with their heads and preſidents.

The *chantors* and Levites who were employed in ſinging, playing upon inſtruments, and other functions of the temple, had no habits diſtinct from the reſt of the people. Nevertheleſs, in the ceremony of removing the ark to the temple of Jeruſalem built by Solomon, the *chantors* appeared dreſſed in tunics of byſſus or fine linnen [a]. Joſephus remarks, that in king Agrippa's time they obtained the favour from that prince of wearing a linnen robe in the temple, like the prieſts. Agrippa believed it would be for the honour of his reign, to ſignalize it by ſo conſiderable a change as this. The other Levites, employed in different exerciſes under the command of the prieſts in the temple, procured likewiſe commiſſion to learn to ſing, to the end that they might enjoy the ſame privileges with their brethren [b].—[a 2 Chron. v. 12. b *Calmet.* Dict. Bibl.]

CHAOMANTIA, amongſt the enthuſiaſtical chymiſts, is the art of making preſages from obſervations on the air. *Ruland.* & *Johnſ.* ap *Caſt.* Lex. in voc.

CHAOS (*Cycl.*)—CHAOS, in the phraſe of Paracelſus, imports the air. It has alſo ſome other ſignifications amongſt the alchemiſts. Vid. *Caſt.* Lex. in voc.

CHAOASES, an order of horſe in the ſervice of the grand ſignior. Theſe and the muteferriker were originally the guards of the ſultans in Egypt, and their leaders were his two vizirs, that always accompanied him. They now always go out with the baſha.

The body of the *chaoaſes* ſeem originally to have been the guard out of which the ſultan uſed to ſend perſons to execute his orders. *Pocock*'s Egypt, p. 166.

CHAPE *of a fox*. See BRUSH *of a fox*.

CHAPELET, in the manege, a couple of ſtirrup leathers, mounted each of them with a ſtirrup, and joining at top in a ſort of leather buckle, called the head of the *chapelet*, by which they are made faſt to the pummel of the ſaddle, after being adjuſted to the rider's length and bore. They are uſed both to avoid the trouble of taking up or letting down the ſtirrups every time that a gentleman mounts on a different horſe and ſaddle, and to ſupply what is wanting in the academy ſaddles, which have no ſtirrups to them. *Guill.* Gent. Dict. in voc.

CHAPELRY, *capellania*, is uſed for a certain precinct belonging to a chapel, having the ſame relation to it that a pariſh has to a church. *Blount* Law Dict. & in Terms de Ley, in voc.

CHAPERON *of a bit-mouth*, in the manege, is only uſed for ſcatch mouths, and all others that are not canon-mouths, ſignifying the end of the bit that joins to the branch juſt by the banquet. In ſcatch-mouths the *chaperon* is round, but in others 'tis oval: and the ſame part that in ſcatch and other mouths is called *chaperon*, is in canon-mouths called *fronceau*. *Guill.* Gent. Dict. in voc.

CHAPITERS, in architecture, the crowns or upper parts of a pillar. See CAPITAL, *Cycl.*

CHAPOTENSIS, in writers of the middle age, a kind of coin. We do not find any certain account of its value. Du Cange inclines to think it the ſame as the *chatus*. See CHATUS.

CHARA, in botany, the name given by Linnæus to a genus of plants, reſembling the horſetails in general appearance, and called by ſome hippuris. The characters of the genus are theſe: the cup is very ſmall, and conſiſts of two leaves. Vaillant deſcribes a monopetalous flower in this cup; but others ſay there is no flower or corolla at all. There is no appearance of ſtamina, but the ſingle anthera or apex is of a globoſe figure, and is affixed to the cup: the germen of the piſtil is of an oval figure: there is no ſtile, but the ſtigma are three in number, and are very broad: the ſeed is ſingle, and of an oval oblong figure. *Linnæi* Gen. Plant. p. 508. *Michel.* 56. *Vaillant*, A. G. 1719. T. 3. *Dillen*, Gen. 2.

CHARABE, or CARABE, is ſometimes uſed for amber, as alſo for the juice of the poplar tree. Vid. *Caſt.* Lex. in voc.

CHARACTER (*Cycl.*) In Roman inſcriptions, we meet with the *characters* ⅠↃ and ∞, uſed to expreſs a thouſand. The uſual note of a thouſand, is either I between two CC's, (direct and reverſed) thus, CIↃ, or elſe X, thus, CXↃ. The former figure, when cloſed at top, exactly reſembles an antient M, thus, ↀ; and the latter, when ſhut up, the figure of 8, inclined thus ∞.

We alſo find in ſome inſcriptions, the *character* ⊗, which is X between CↃ's, but cloſed on all ſides. But the learned Dr. Taylor ſeems to ſuſpect the accuracy of the copy of the inſcription from whence this *character* is taken. See Phil. Tranſ. N° 482. Sect. 2. P

As to the origin and uſe of the *character* X, ſo often met with on the coins, utenſils, and manuſcripts of the antients, ſee X. *Hebrew* CHARACTERS. See HEBREW.

CHARACTERS *of fiſhes*, *characteres piſcium*, are thoſe marks by which each particular fiſh is diſtinguiſhed from thoſe other ſpecies of the ſame genus to which it belongs, and by which it is to be referred to its genus. Theſe *characters* are the eſſential foundation of all the natural diviſions in this part of hiſtory, and by means of theſe alone the young ſtudent is led to the real knowledge of the bodies under conſideration, whether, according to the works of other authors, or ſome new ſyſtem of his own. The naturaliſts of former ages did not pay a ſufficient regard to theſe marks, and conſequently could not hit upon the natural diviſions of bodies, but had recourſe to the artificial diſtinctions taken from accidents or variable properties in them, and the general external appearance uſually gave rules to them; hence the uncertainty and confuſion of the diviſions of the old authors, and method and regularity of thoſe of the moderns. *Artedi* de Piſc. See the article GENERICAL *name*.

CHARADRIUS, in zoology, a name by which Geſner and Aldrovand have called the œdicnemus, a bird very improperly called in Engliſh the ſtone curlew. *Aldrov.* l. 13. c. 15. See ŒDICNEMUS.

CHARADRIUS, in the Linnæan ſyſtem of zoology, is a diſtinct genus of birds, of the order of the ſcolopaces; the diſtinguiſhing character of which is, that the feet have each three toes, and the point of the bill is cylindrical. *Linnæi* Syſt. Nat. p. 47. See Tab. of Birds, N° 45.

Ælian fabulouſly relates, that the ſight of the *charadrius* cures a perſon of the jaundice. It is alſo called *galgalus* and *hiaticula*. Vid. *Aldrov.* Ornithol. l. 20. c. 67. who deſcribes this bird. *Caſt.* Lex. in voc.

CHARAIMS, a ſect of the Jews in Egypt. They live by themſelves, and have a ſeparate ſynagogue; and as the other Jews are remarkable for their eyes, ſo theſe are for their large noſes, which run thro' all the families of this ſect. Theſe are the antient Eſſenes. They ſtrictly obſerve the five books of Moſes, according to the letter, and receive no written traditions. It is ſaid that the other Jews would join the *Charaims*, but thoſe not having obſerved the exact rules of the law with regard to divorces, theſe think they live in adultery. *Pocock*'s Egypt, p. 177.

CHARANTIA, in botany, a name by which ſome authors have called the male balſam. *Ger.* Emac. Ind. 2.

CHARAX, in ichthyology, a name given by Ælian, Appian, and many other of the Greek writers, to the fiſh called by later writers the caraſſius. See CARASSIUS.

It is properly a ſpecies of the cyprinus, diſtinguiſhed by the name of the cyprinus, with twenty rays in the back fin, and with the linea lateralis ſtrait. *Artedi* Gen. Piſc.

CHARBON, in the manege, ſignifies that little black ſpot or mark that remains after a large ſpot, in the cavity of the corner

ner teeth of a horſe. About the ſeventh or eighth year, when the cavity fills, the tooth being ſmooth and equal, it is ſaid to be raſed. *Guil.* Gent. Dict. in voc.

CHARCOAL (*Cycl.*)—Mathematical inſtrument-makers, engravers, &c. find *charcoal* of great uſe to poliſh their braſs and copper plates, after they have been rubbed clean with powdered pumice ſtone. Mr. Boyle ſays, that the more curious burn it a ſecond time, and quench it in a convenient fluid. Plates of horn are poliſhable the ſame way, and a gloſs may be afterward given with tripoly. *Boyle*'s Works, abr. vol. 1. p. 147.

CHARGE (*Cycl.*)—The common allowance for the *charge* of powder of a piece of ordnance, is half the weight of the ball. In the Britiſh navy, the allowance for thirty-two pounders is but ſeven-ſixteenths of the weight of the bullet. But a late author is of opinion, that if the powder in all ſhip-cannon whatever was reduced to one third of the weight of the ball, or even leſs, it would be a conſiderable advantage, not only by ſaving ammunition, but by keeping the guns cooler and quieter, and at the ſame time more effectually injuring the veſſels of the enemy. With the preſent allowance of powder, the guns are heated, and their tackle and furniture ſtrained, and this only to render the bullet leſs efficacious. For a bullet which can but juſt paſs thro' a piece of timber, and loſes almoſt all its motion thereby, has a much better chance of rending and fracturing it, than if it paſſed thro' with a much greater velocity. Vid. *Robins*, Propoſ. for increaſing the ſtrength of the Britiſh navy, p. 17 to 20.

CHARGE, in the ſea language, is ſometimes uſed for burden; thus *a ſhip of charge* is ſuch as draws much water, or ſwims deep in the ſea: tho' ſometimes an unweildy ſhip, that will not ware nor ſteer, is called a ſhip of *charge*. *Guill.* Gent. Dict. P. 3. in voc.

CHARGED (*Cycl.*)—CHARGED *cylinder*, is that part of the chaſe of a gun where the powder and ball are contained. *Guill.* Gent. Dict. P. 2. in voc.

CHARIOTS (*Cycl.*)—CHARIOTS *of war*, in antiquity. The antients made uſe of *chariots* in war. Theſe were of different kinds; but the moſt terrible were thoſe armed with pikes and ſcythes, thus; the beam to which the horſes were faſtened was armed with pikes, having iron points to them which projected forward; the yokes of the horſes had likewiſe two long points of three cubits: to the axle-tree alſo were fixed iron ſpits, armed at their extremities with ſcythes; between the ſpokes of the wheels were placed javelins, and the very fellies of the wheels were furniſhed with ſcythes, which tore every thing they met with to pieces.

The axle-tree was longer than uſual, and the wheels ſtronger, that they might be able to reſiſt the ſhock of the motion, and the *chariot* be leſs ſubject to overturn. The driver's ſeat was a kind of little tower, made of very ſolid wood, and raiſed breaſt high. The charioteer was armed all over, and covered with iron. Sometimes ſeveral men well armed were put in theſe *chariots*, who fought with darts and arrows. *Diodor.* Sicul. l. 17. *Q. Curt.* l. 4. *Xenoph.* Cyropæd. l. 6.

CHARIOTS, in the Heathen mythology, were ſometimes conſecrated to the ſun: and the ſcripture obſerves, that Joſiah[a] burnt thoſe which had been offered to the ſun by the kings his predeceſſors. This ſuperſtitious cuſtom was an imitation of the Heathens, and principally of the Perſians, who had horſes and *chariots* conſecrated in honour of the ſun. Herodotus, Xenophon, and Quintus Curtius[b], ſpeak of white *chariots*, crowned, which were conſecrated to the ſun, among the Perſians, which in their ceremonies were drawn with white horſes, conſecrated to the ſame luminary[c].—[[a] 2 Kings xxiii. 11. [b] *Herodot.* l. 7. *Xenoph.* Cyropæd. l. 8. *Q. Curt.* l. 3. [c] *Calmet.* Dict. Bibl.]

CHARISIA, Χαρισια, in the Heathen theology, a wake or night-feſtival inſtituted in honour of the graces. It continued the whole night, moſt of which time was ſpent in dancing; after which, cakes made of yellow flower, mixed with honey, and other ſweet-meats, were diſtributed among the aſſiſtants.

CHARISIA is ſometimes alſo uſed to ſignify the ſweet-meats diſtributed on ſuch occaſions. *Pitiſc.* in voc.

CHARISIUS, Χαρισιος, in the Heathen theology, a ſurname given to Jupiter.

The word is derived from χαρις, gratia, *i. e.* grace or favour; he being the god by whoſe influence men obtain the favour and affection of one another. On which account the Greeks uſed at their meals to make a libation of a cup to Jupiter *Chariſius*. *Pott.* Archæol. Græc. T. 2. l. 4. c. 20.

CHARLOCK, *rapiſtrum*, in huſbandry, a very troubleſome weed among corn, being more frequent than almoſt any other. There are two principal kinds of it; the one with a yellow flower, the other with a white. Some fields are particularly ſubject to be over-run with it, eſpecially thoſe which have been manured with cow-dung alone, that being a manure very favourable to the growth of it. The farmers in ſome places are ſo ſenſible of this, that they always mix horſe-dung with their cow-dung, when they uſe it for arable land. See RAPISTRUM. When barley, as is often the caſe, is infeſted with this weed to ſuch a degree as to endanger the crop, it is a very good method to mow down the *charlock* in May, when it is in flower, cutting it ſo low as juſt to take off the tops of the leaves of the barley with it: by this means the barley will get up above the weed; and people have got four quarters of grain from an acre of ſuch land, as would have yielded them ſcarce any thing without this expedient. Where any land is particularly ſubject to this weed, the beſt method is to ſow it with graſs ſeed, and make a paſture of it; for then this plant will not be troubleſome, it growing no where where there is a coat of graſs upon the ground. *Mortimer*'s Huſbandry, p. 319.

CHARNUB, in the materia medica, a name given by ſome of the antient writers to the ſiliqua dulcis, or carob tree. The Arabian phyſicians mention two kinds of this; the Syrian, and Nabathæan; the firſt they call aljembut, and the other alnabat. Aviſenna tells us, that the firſt of theſe was a purge, and was given with ſucceſs in pains of the bowels; and the other an aſtringent, given in profluvia of the menſes.

CHARONIUS, Χαρωνειος, *charonean*, is uſed as an epithet for caves, ſome of which are found in Italy, and in other parts of the world, where the air is ſo loaded with a poiſonous vapour, that animals cannot live in them even a few moments. *Caſt.* Lex. in voc.

CHARRE, an Engliſh name for a fiſh of the truttaceous kind, of which there are two ſpecies, diſtinguiſhed by the red *charre*, and the gilt *charre*; the former of which is called by the ichthyographiſts *umbla minor*, and the latter, the *carpio lacus benaci*.

Red CHARRE, called by the Welch *torgoch*, is a large fiſh, longer and ſlenderer in its general ſhape than the trout. The back is of a duſky olive-colour, and is ſpotted with obſcurely white ſpots: the belly is not carried to an edge, but is about a finger broad: this, in moſt of theſe fiſhes, is of an elegant red, ſometimes deeper, and ſometimes paler; but in ſome, particularly in the female, it is white. The ſcales are very ſmall, and the ſide lines running from the gills to the tail are perfectly ſtrait: the belly fins are red: the opening of the mouth is wide, and the jaws are nearly of the ſame length, the lower being only a very little longer than the other, and more pointed: the teeth are ſmall and ſharp. It is caught in the lakes of Wales, and is eſteemed a very fine fiſh; but its fleſh does not boil ſo red as that of the trout. *Willoughby*, Hiſt. Piſc. p. 197.

Gilt CHARRE is ſomething like the trout in figure, but it is broader, and its belly is prominent, eſpecially when the fiſh is large: the uſual ſize is about a foot in length, which it rarely exceeds. The ſcales are very ſmall, and the back is variegated with black ſpots. Its belly and the lower parts of its ſides are of a fine bright ſilver colour: the ſkull is pellucid, and the noſe bluiſh. This is very common in ſome of the lakes of Italy, but is not peculiar to that kingdom, as has by ſome been imagined, being frequent in ſome foreign, and in ſome of the Northern lakes; and there is no doubt, but that the fiſh there caught, and called the gilt *charre* and the carpio lacus benaci, are entirely the ſame fiſh. It is a very finely flavoured fiſh, and much valued at great tables. *Willoughby*, Hiſt. Piſc. p. 197.

CHARRING denotes the reducing vegetables to charcoal. See CHARCOAL, *Cycl.*

CHARTARIUS, the ſame with *chartophylax*. See CHARTOPHYLAX, *Cycl.*

CHARTERER is in ſome places, as Cheſhire, uſed for a freeholder. *Blount* Law Dict. in voc.

CHARTOPHYLACIUM, a place where records were kept. See CHARTOPHYLAX, *Cycl.*

CHARYBDIS, a word uſed by Dr. Plot to expreſs certain openings which he ſuppoſes in the bottom of the ſea, by which its waters are received and conveyed by a ſubterranean circulation to the origin of fountains and ſprings. The fluxus moſchonicus, or maalſtrome on the coaſt of Norway, is ſuppoſed to be owing to ſome ſuch ſubterranean indraught; and it is advanced alſo, that the Mediterranean ſea could not be emptied of the vaſt quantities of waters it receives, but muſt overflow the land of Egypt, unleſs ſwallowed by ſome ſuch *charybdis*, which is either in ſome part of the baſon of that ſea, or near the mouth of it; in which caſe, it may be the occaſion of that ſtrong under-current, deſcribed by all thoſe who have treated of this ſea. An immenſe *charybdis*, placed near the Strait's mouth, may be hid under the immenſity of waters there; but as it would abſorb the deep waters continually, and that in large quantities, it would neceſſarily cauſe ſuch an under-current there. *Plot*, de Orig. Font.

CHASCUSA, or CASCUSA, in the botanical writings of the antients, a name given by the Greeks to the antirrhinum of the Latin writers. It has been ſuppoſed by ſome, that the *ceſcuſa*, or *chaſcuſa*, was the ſame with the phyteuma of Dioſcorides; but that author tells us the phyteuma was prickly, and had leaves like the ſtruthium, which was a kind of thiſtle uſed in the dying of wool: whereas Pliny tells us, that the *chaſcuſa*, or antirrhinum has leaves like thoſe of flax, that is, ſmooth, narrow, and oblong.

CHASING (*Cycl.*)—In *chaſing* at ſea, theſe rules are generally obſerved: if the *chaſed* be found any thing to the windward, the *chaſer* is to bring all his tacks aboard, and to ſhape his courſe to meet her at the neareſt angle. If the *chaſed* be to the leeward, then the *chaſer* may come in with her, except ſhe bear upright before the wind, and ſo outſail her; or that ſhe bring herſelf cloſe by a wind, and the *chaſer* prove the more

leeward

leeward ſhip, and ſo loſe her that way. If the *chaſe* be found right a-head, and ſo the *chaſer* be put to a ſtern-*chaſe*, then the beſt ſailor ſhall carry it, if there be ſea-room and day-light Being come up cloſe with the *chaſe*, endeavour to croſs her fore-foot, and by that means you will both hinder her way, and avoid the fury of her ordnance, (except thoſe in her *chaſe*) and uſe your own, if required, to more advantage; and that as well your *chaſe*-pieces, at your firſt getting up within reach, as your broadſide and quarter-pieces, as you paſs thwart her hawſe, and ſcour her decks from ſtem to ſtern. If ſhe makes away from you, ply your guns, as many as poſſible, at her ſails, yards, maſts, and general tackling; and being near, ſpare not your caſe-ſhot, or croſs-bar ſhot, to make the greater damage. *Guill.* Gent. Dict. P. 3. in voc. See alſo *Manwar*. Seam. Dict.

CHASME, or CHASMOS, Χασμη, or χασμος, among antient phyſicians, denotes oſcitation, or gaping. Hippocrates informs us, that long reſpiration is a cure for continual oſcitation. *Caſt.* Lex. in voc. See CHASME.

CHASTE-*tree*. See the article VITEX.

CHASTISEMENTS, or CORRECTIONS, in the manege, are the ſevere and rigorous effects of the aids; for when the aids are given with ſeverity, they become puniſhments. *Guill.* Gent Dict. in voc.

CHATE, in botany, a name given by ſome authors to a ſpecies of wild cucumber, called by others *cucumis Ægyptius rotundifolius*, the round-leav'd cucumber of Egypt. See CUCUMIS.

CHAT-PARD, in natural hiſtory, a creature of the leopard kind. See CATUS *pardus* and LEOPARD.

The French academicians, who diſſected this creature with great care, found a defect of ſpermatic veſſels, and other parts abſolutely neceſſary to generation, and this not proceeding from caſtration, but from ſome other cauſe.

The ſterility which is ordinary in ſome of thoſe animals which are born of two different ſpecies, muſt have in this ſubject a very particular cauſe.

That which renders mules ſteril, is not the defect of any of the organs neceſſary to generation; in regard that the difference which may be found in the conformation of a mare, and of that of a ſhe-aſs, cannot, as ſome pretend, be a ground of this cauſe of ſterility; the mare, in which ſomething is deficient that is found in the ſhe-aſs, not being however deſtitute of any of the parts abſolutely neceſſary to engender, becauſe it doth engender, and the difference of the organs being not the cauſe of barrenneſs; for as much as the difference of organs which is between the ſpecies of horſes and aſſes, hinders not the breeding of mules, which are the product of both ſpecies. Whence Ariſtotle, following Empedocles, imputes this defect only to the temperament of thoſe animals, whoſe parts have contracted a hardneſs that renders them incapable to contribute to a new mixture. So that if it be true, that moſt of the animals which are produced by the mixture of two kinds, are notwithſtanding furniſhed with the organs of generation; it is probable, that the defect of theſe organs in this *chat-pard* was peculiar and accidental. The mule ſeems to be the only animal which the confuſion of ſpecies has rendered barren; and if ſo, there muſt neceſſarily be ſomething particular in thoſe animals that have engendered it, which is not found in others; and that is, perhaps, as Ariſtotle thinks, the hardneſs of the matrix in mares and aſſes, which, like an earth, is rendered ſteril by dryneſs; whereas that reaſon has no place in leopards, foxes, and the like, which animals are fruitful enough to tranſmit to their poſterity the ſtrong diſpoſitions they have for generation, notwithſtanding the reſiſtance which the mixtures of the ſpecies may bring with it. *Pitfield*'s Hiſt. of Animals.

CHATUS, in middle-age writers, a kind of gold coin. Peireſe ſays, *Nota, qu' audit an* 1465. *les eſpeces de monnoies, qui couroient pour lors, etoient telles; ſçavoir*, Arnulfius, *valants un ducat & demi preice.* 98 *ducats faiſoient* 2081. *Trois* Lions *valoient* 71. *Trois eſcus, un Florin de pape, & un* florin chatti *valoient* 8 ff. 1 s.

CHATUS was alſo called by ſome French writers, *mailles au chat*.

Du Cange makes it a queſtion, whether the *chatus* was the ſame coin as the *chapotenſis*, and ſuppoſes that the latter might be formed from *chati pictavenſes*; in French, *chats de poitou*. See Gloſſ. Lat. in voc.

CHATZINZARII, in church hiſtory, heretics of Armenia, who worſhipped the croſs, *chazus* ſignifying the croſs in the Armenian tongue. *Hofm.* Lex. in voc.

CHAULIODONTA, Χαυλιοδοντα, among antient naturaliſts, is applied to thoſe animals, the teeth of which grow to a great length out of their mouths; as the boar, and the elephant. *Galen* de Uſ. Part. l. 1. c. 2. *Caſt.* Lex. in voc.

CHAUMPERT. See CHAMPART.

CHAUNTER. See CHANTOR, *Cycl.* and *Suppl.*

CHAURUS, or CHORUS, among the Romans, the North-Weſt wind, or that which blew between the wind called *favonius* and the North. *Hofm.* Lex. in voc.

CHAUSSE' *trop-haut*, in the manege: a white-footed horſe is ſaid to be ſuch, when the white marks run too high upon the legs. *Guill.* Gent. Dict. P. 1. in voc.

CHAYQUARONA, in zoology, a name given by the Portugueſe to a fiſh of the turdus kind, caught on the Braſilian ſhores, and more frequently called by authors by its Braſilian name, piraumbu. *Ray*'s Ichthyogr. p. 328. See PIRAUMBU.

CHECKER-*courſe*, in brick-making. See BRICK.

CHEEK (*Cycl.*)—The wounds of the *cheeks*, if ſmall, may be cured by means of the dry ſuture; but if very large, will require the bloody one, to bring their lips together: they are then eaſily healed with vulnerary balſams. But if it happen that one of Steno's ſalivary ducts is wounded in its paſſage acroſs the *cheek* from the parotid gland, the conſtant diſcharge of ſaliva into the wound will prevent the cure, till the duct is perforated in the internal part of the *cheek*, to make a paſſage for the ſaliva into the mouth. This method is propoſed by Cheſelden in his anatomy. *Heiſter*'s Surg. p. 81.

CHEEKS, in ſhip building, are two pieces of timber, fitted on each ſide of the maſt, at the top, ſerving to ſtrengthen the maſts there. The uppermoſt bail or piece of timber in the beak of a ſhip, is called the *cheek*. The knees which faſten the beak-head to the bow of the ſhip, are called *cheeks*; and the ſides of any block, or the ſides of a ſhip's carriage of a gun, are called *cheeks*.

Upper and lower CHEEKS, are thoſe pieces of timber on each ſide of the trail-board. *Guill.* Gent. Dict. P. 3. in voc. See TRAIL-BOARD, *Cycl.*

CHEEKS *of a mortar*, or BRACKETS, in artillery, are made of ſtrong planks of wood, bound with thick plates of iron, and are fixed to the bed by four bolts; they riſe on each ſide of the mortar, and ſerve to keep her at what elevation is given her, by the help of ſtrong bolts of iron which go thro' both *cheeks*, both under and behind the mortar, betwixt which are driven coins of wood; theſe bolts are called the bracket-bolts, and the bolts which are put one in each end of the bed, are the traverſe-bolts, becauſe with hand-ſpikes the mortar is by theſe traverſed to the right or left. *Guill.* Gent. Dict. P. 2. in voc.

CHEESE (*Cycl.*)—The Laplanders make a ſort of *cheeſe* of the milk of their rain deer, which is not only of great ſervice to them as food, but on many other occaſions. It is a very common thing in theſe ſevere climates to have a limb numbed and frozen with the cold; their remedy for this is, the heating an iron red hot, and thruſting it thro' the middle of one of theſe *cheeſes*; they catch what drops out, and with this anoint the limb, which ſoon recovers it. They are ſubject alſo to coughs and diſeaſes of the lungs, and theſe they cure by the ſame ſort of medicine: they boil a large quantity of the *cheeſe* in the freſh deer's milk, and drink the decoction in large draughts, warm, ſeveral times a day. They make a leſs ſtrong decoction of the ſame kind alſo, which they uſe as their common drink for three or four days together at ſeveral times of the year. They do this to prevent the miſchiefs they are liable to from their water, which is otherwiſe their conſtant drink, and is not good; tho' to prevent miſchief from it, they often drink ſuch as has had both fleſh and fiſh boiled in it. Their taſte is not delicate, and their diſeaſes, as well as their remedies, are few. *Scheffer*'s Lapland.

CHEEVANCE. See CHEVISANCE.

CHEGGIO, in botany, a name given to a ſort of lacteſcent plant, common in Cambaya. It is reported by authors, and by the people of the country, that thoſe knobs and beards of this plant which grow facing the north, are a very noble medicine in the cure of apoplexies and other nervous diſorders, but that thoſe knots and beards of the ſame plant which look ſouthward are poiſonous. Redi proved ſome of this famous plant, and gave it ſeveral fair trials, but found the hiſtory of its nature and effects wholly falſe. *Redi* Experienz.

CHEILOCACE, among phyſicians, literally ſignifies the *lip-evil*. It is a ſwelling of the lips, to which the inhabitants of northern countries, eſpecially children, are ſaid to be very ſubject; particularly thoſe in England and Ireland, if we may credit Caſtellus. *Caſtel.* Lex. Med. in voc. who quotes *Arn. Bootii* de affectib. omiſſ. c. 10.

CHEKAO, in natural hiſtory, the name of an earth found in many parts of the Eaſt Indies and ſometimes uſed by the Chineſe in their porcelain manufactures It is a hard and ſtony earth, and the manner of uſing it is this: they firſt calcine it in an open furnace, and then beat it to a fine powder. This powder they mix with large quantities of water, and ſtirring the whole together, they let the coarſer part ſubſide, and pouring off the reſt, yet thick as cream, they leave it to ſettle, and uſe the matter at the bottom, which is found in form of a ſoft paſte, and will retain that humidity a long time. This ſupplies the place of the earth called hoache, in the making that elegant ſort of China ware which is all white, and has flowers which ſeem formed by a mere vapour within its ſurface. The manner of their uſing it is this: they firſt make the veſſel of the common matter of the manufacture; when this is almoſt dry, they paint upon it the flowers, or whatever other figures they pleaſe, with a pencil dipt in this preparation of the *chekao*; when this is thoroughly dry, they cover the whole veſſel with the varniſh, in the common way, and bake it as uſual. The conſequence is, that the whole is white; but the body of the veſſel, the figures, and the varniſh, being three different ſubſtances, each has its own particular white, and the flowers being painted in the fineſt white of all, are diſtinctly ſeen thro' the

the varnish upon the vessel, and seem as if traced by a fine vapour only. The hoache does this as well as the *chekao*, and has beside this the quality of serving for the making the porcelain ware, either alone, or in the place of the kaolin: the *chekao* has not this property, nor any other substance beside this hoache, which appears to be the same with our steatites or soap-rock. Observat sur les Coutumes de l'Asie.

CHELA, χηλη, in medicine, has several significations. It imports a forked probe, mentioned by Hippocrates, lib. ii. *de morbis*, used in extracting a polypus of the nose. But in Rufus Ephesius, cap. 4. χηλαι, *chelæ*, implies the extremeties of the cilia, which touch each other when the eyes are shut. But the most frequent signification of *chelæ* is claws, particularly those of the crab.

Chelæ further signifies fissures in the heels, feet or pudenda. *Cast.* Lex. Med. in voc.

CHELANDIUM, in middle age writers, is used for a kind of vessel or ship [a]. It is also called *chelandrium*, *chelindrus*, *chelindra*, *salandra*, and *salandria*, and by the Byzantine writers, χελανδιον [b]. The salandria is mentioned by Ditmar [c] as a vessel of great length, carrying oars, and 150 seamen. It seems to have resembled an Italian galley [d].— [[a] *Du Cange*, Gloss. Lat. T. 1. p. 959. [b] Ibid. [c] L. 3. p. 33. ap. *Du Cange*, loc. cit. [d] *Du Cange*, Ibid.]

CHELANDURUS, χελανδυρος, in middle age writers, a small kind of *chelandium*. *Du Cange*, Gloss. Lat. T. 1. p. 959. See CHELANDIUM, supra.

CHELAZIUM, a name used by some authors for a moveable tubercle in the eye-lid, commonly called in English a stithe or stye. *Heister*'s surgery, p. 436.

CHELERIA, in botany, a name given by Haller and Linnæus to a genus of plants, the characters of which are these: the perianthium is composed of five equal lanceolated leaves. There are no petals; but there stand within the cup five very small roundish and emarginated nectaria, disposed in a circular order. The stamina are ten subulated filaments, five of which are affixed to the nectaria. The antheræ are simple: the germen of the pistil is of an oval figure; the stiles are three, and stand open: the stigmata are simple. The fruit is an oval capsule, composed of three valves, and divided into three cells. The seeds are numerous, convex on one side, and angular on the other.

The nectaria of this genus shew, that they are of kin to the sedums or houseleeks, but in the fruit it differs altogether from the sedums, and rather approaches to the nature of the lychnis; it would therefore be very improper to confound it with either of those genera. *Linnæi* Gen. Plant. p. 196.

CHELIDON, in ichthyology, the name given by many of the old Greek writers to a kind of flying fish, called by some authors milvus and hirundo, and by some accipiter, or the hawk fish. It is properly a species of trigla, and is distinguished by Artedi by the name of the trigla, with the head a little aculeated, and with a singular fin near the pectoral fins. This method of reducing the fish to their true genera, and distinguishing thereby their proper specific names, is the only method of truly knowing them. The arbitrary names of milvus and hirundo carry so little idea of the peculiar fish with them, that they may be as well applied to one species as another; and accordingly we find two or three different species of the trigla called milvus, &c. by different authors.

CHELIDONIA, among the Romans, a name given to the wind more commonly called *favonius*. *Hofm.* Lex. in voc. See FAVONIUS.

It was only called *chelidonia* for a fortnight in the middle of February, because at that time the swallow makes its first appearance. Id. ibid.

CHELIDONIUM, *celandine*, in botany, the name of a genus of plants, the characters of which are these: the flower consists of four leaves, which are disposed in form of a cross: the pistil arises from the cup of the flower, and finally becomes a unicapsular pod, containing roundish seeds.

The species of *celandine* enumerated by Mr. Tournefort, are these; 1. The common large *celandine*. 2. The oak-leav'd great *celandine*. 3. The oak-leav'd great *celandine*, with variegated leaves. 4. The great *celandine*, with both the leaves and flowers very finely divided. *Tourn.* Inst. p. 231.

Boccone has very strongly recommended this plant as a specific in the cure of consumptions: he proposes the taking it in infusion, or drinking its juice, and says enough in its praise to recommend it at least to a fair trial, which would be easily made in a country where consumptions are so common. *Boccon.* de Plant.

CHELIDONIUS, *(Cycl.)* in botany, a name given by some writers to the *anemone*. Some have pretended, that the anemonies used in garlands and other ornamental things among the antients, were called by that name alone, and that the others were called chelidonii; but this is not warranted by sufficient testimony: on the contrary, it appears that some authors have called all these plants anemonies; others have called them all chelidonii; others, all adonides; and so on. Those used in medicine seem to be no way really different from the others. See the articles ADONIAS, ANEMONE, &c.

This name has, however, led some into the error of supposing the common *chelidonium majus*, or great celandine of the antients, was a species of anemone. Athenæus seems to give into this opinion; but they are of too different a nature for any body who ever saw them both, to suppose them allied to one another. The reason of the name chelidonius being given to the anemone, seems to have been its flowering about the time of the swallows coming from their winter retreats.

CHELIDONIUS, in the history of insects, the name of a fly called the swallow-fly, by reason of its swift flight. It is in most parts of a brown colour, and has black prominent shoulders, a black head, and short black antennæ. The wings are silvery, and edged with black. It often sits a long time together on the leaves of plants; but is very quick-sighted, and when any person comes near it it is gone in a moment, and usually takes such long flights, that it is not easily caught afterwards.

CHELIDONIUS *lapis*. See SWALLOW-*stone*.

CHELINDRA, in middle-age writers, a kind of vessel or ship. *Obligavit se imperator ad centum* chelindras *& quinquaginta galeias ducendas ultra mare. Mat. Paris* An. 1238. ap Du Cange Gloss. Lat. T. 1. p. 959. & *Blount*, Law Dict. See the article CHELANDIUM.

CHELON, in zoology, the name of a fish of the mullet kind, and much resembling the common mullet in its general shape, but its eyes are more prominent, and its head smaller. It has also its side lines, which run from the head to the tail, very evenly ranged, and placed at equal distances, and its lips are remarkably thick and prominent. It is of the size of the common mullet. *Willughby*, Hist. Pisc. p. 276.

CHELONE, in botany, a name by which Linnæus and Dillenius have called a genus of plants, which Gronovius in his Virginia has called anonymos. The characters are these: the perianthium is very short, and remains after the flower is fallen: it is composed of one leaf, divided into five erect and oval segments: the flower is one-leav'd, and is of the labiated kind: the tube is cylindric, and marked with four ridges, and is placed under the cup: the stiles are four in number; they are pointed, crooked, and of the heigth of the stamina: the stigmata are hoary, and are placed longitudinally on the stile. The fruit is composed of a coriaceous crust, made square by four membranes, placed in the manner of wings at its four ridges; this contains one bony nut, which has four cells, and contains as many oblong kernels. *Linnæi* Gen. Plant. p. 249.

CHELYDRUS, in natural history, a species of serpents, the same with the chersydrus. *Hofm.* Lex. in voc. See CHERSYDRUS.

CHELYSMA, in antiquity, a thick piece of wood which the Greeks fixed to the keels of their ships, to save them from being worn or broken. It was also called *cuneus*. *Pitisc.* Lex. Ant. in voc.

CHEMA, χημη, according to Blancard, is the name of a certain measure sometimes mentioned by the Greek physicians, and which he thinks contained two small spoonfuls. But it must be observed, that the Athenians had two *chemas*, the larger of which weighed three drams, and the lesser two; which latter is equivalent to the thirtieth part of the *cotyle* or half pint. It is not improbable, that, by the *chema*, a certain measure is denoted, containing as much as a certain sea-shell, called *chama*, holds. The determined weight of this quantity cannot be accurately ascertained, in consequence of the different specific gravities of different substances: just as, at present, the word *spoonful* is used in a vague and undetermined sense, especially with respect to substances, of which 'tis a matter of indifference whether a little more or a little less be used. *Blanc.* Lex. Med. Renov. in voc.

CHEME, among the Romans, was a liquid measure, containing the fifth part of a *cyathus*. *Pitisc.* Lex. Ant. in voc. See CYATHUS.

CHEMIN *des rondes*, in fortification. See WAY *of the rounds*, *Cycl.*

CHEMISTRY *(Cycl.)*—*Commercial* CHEMISTRY is used to denote the application both of technical and philosophical *chemistry*, to the establishing, supporting, or improving any branch of trade or commerce. *Shaw*'s Lectures, p. 413.

Oeconomical CHEMISTRY, the application of philosophical, technical, or commercial *chemistry*, to the service and accommodation of the affairs of a family. *Shaw*'s Lect. p. 413.

Philosophical CHEMISTRY. Philosophic *chemistry* consists of three parts, viz. invention, rationale, and experiment; whence we may define it to be a particular exercise of the rational and inventive faculties of the mind, leading to experiments, and thence to the discovery of causes, so as to form axioms that shall rationally account for phænomena, and discover rules of practice for producing useful effects. And thus philosophical *chemistry* is not only the key to all the other parts, but it discovers of itself the causes of many natural phænomena, as particularly, earthquakes, volcanoes, vegetation, the growth of minerals, and the like.

This branch of *chemistry* also explains the general forms and qualities of bodies, whereon their properties and effects depend; as volatility and fixedness, fluidity and firmness, colours, tastes, odours, effervescences, fermentation, solution, precipitation, congelation, extraction, and the like.

To this part of *chemistry* it also belongs to bring new inventions to the test, to discover their validity or insufficiency. Thus when any hint is started for a new trade, or method invented

vented for the improvement of an old one, before any attempt is made to apply it in the larger way, it ſhould be experimented in miniature; as the aſſay-maſter tells the owner of an ore whether it will be worth the erecting large works for it, or not. *Shaw*'s Lect. p. 414.

Technical CHEMISTRY. By technical *chemiſtry* is meant the application of philoſophical *chemiſtry* to the immediate ſervice of arts, ſo as by its means to invent, form, aſſiſt, promote, or perfect them in the large way of buſineſs. *Shaw*'s Lectures, p. 413.

Theory of CHEMISTRY. See THEORY.

CHEMOSIS, χημωσις, ſometimes corruptly written χυμωσις, in medicine, a diſeaſe of the eyes, proceeding from an inflammation, when the white of the eye ſwells above the black, and overtops it to ſuch a degree, that there appears a ſort of hiatus or gap between them, whence it takes its name. Galen calls it a red and carnous inflammation of the cornea tunica. Vid. *Gorr.* Def. Med. p. 507. and *Caſt.* Lex. Med. in voc.

Dr. Burghart, in a *chemoſis* where the cornea was already burſt, dilated the opening, and extracted the cryſtalline lens, which had come forward before the iris. The lens was ſo changed and ſuppurated, that it reſembled a piece of white amber: after extracting it, the pain of the eye became milder. Med. Eſſ. Edinb.

CHENCE, in old cuſtoms, ſeems to be much the ſame as amabyr. *Blount.* Law Dict. See AMABYR, *Cycl.*

Fauſſe CHENILLES, *baſtard caterpillars*. See FAUSSE.

CHENISCUS, among the antients, an ornament in the form of little geeſe, uſed on the prows and ſterns of their ſhips. *Hofm.* Lex. in voc.

CHENOCOPRUS, χηνοκοπρος, *gooſe-dung*, in medicine, is accounted very acrimonious and reſolvent, and therefore preſcribed with ſucceſs in the jaundice. The greeniſh dung is eſteemed the beſt. It is gathered in the meadows in ſpring time, and being dried with a moderate heat, and pulveriſed, is given from half a dram to a full dram at a doſe. It is recommended alſo in the ſcurvy, and other diſeaſes. Vid. *James*, Med. Dict. in voc.

CHENOPODIUM, in botany, the name of a genus of plants, the characters of which are theſe: the flower has no petals, but is compoſed only of a multitude of ſtamina ariſing from a many-leav'd cup. The piſtil finally becomes a flat orbiculated ſeed, which is contained in a ſtar-faſhioned capſule, which was the cup.

The ſpecies of *chenopodium* enumerated by Mr. Tournefort, are theſe: 1. The *chenopodium* commonly called *gooſe-foot*. 2. The *gooſe-foot*, with more pointed leaves. 3. The *chenopodium*, with white ſinuated leaves, commonly called wild ſinuated atriplex. 4. The ſtinking *chenopodium*, called the ſtinking orache. 5. The leſſer narrow-leav'd jagged *chenopodium*. 6. The jagged-leav'd *chenopodium*, with purple tops. 7. The jagged *chenopodium*, with great tops. 8. The triangular-leav'd *chenopodium*. 9. The beet-leav'd *chenopodium*. 10. The American *chenopodium*, with ſilvery ſerrated leaves. 11. The blite-leav'd American *chenopodium*. 12. The *chenopodium* called botrys and oak of Jeruſalem, with ſinuated leaves. 13. The Mexican *botrys*. 14. The hairy, flax-leav'd *chenopodium*. 15. The annual procumbent *chenopodium*, with ſhort capillaceous leaves. 16. The tall Spaniſh *chenopodium*, with deltoide leaves. *Tourn.* Inſt. p. 506.

CHENSERS, in our ſtatutes, is uſed for ſuch as paid tribute or *cenſe*, quit-rent or chief-rent. *Blount.* Law Dict. in voc.

CHERAMIS, χηραμις, in antiquity, a medical meaſure. According to Erotian on Hippocrates, it was the hollow of a ſhell fiſh called *myax*, and took that name from χηραμος, which ſignifies a hollow place. It frequently occurs in Hippocrates, and ſeems not much different from the *chema*, which in Galen's exegeſis is expounded by it. Cornavius alſo explains *cheramis* by the meaſure of a *chema*; and Calvus on another paſſage expounds it by a pugil. Vid. Foeſ. p. 678. *Caſt.* Lex. Med. in voc. See CHEMA.

CHEREF, a title aſſumed by the emperors of Morocco. See CALIPHATE.

CHEREM, among the Jews, is uſed to ſignify a ſpecies of annihilation. See ANNIHILATION.

The Hebrew word *cherem* ſignifies properly to deſtroy, exterminate, devote, anathematize. *Calm.* Dict. in voc.

CHEREM is ſometimes likewiſe taken for that which is conſecrated, vowed or offered to the Lord, ſo that it may no longer be employed in common or profane uſes. No devoted thing that a man ſhall devote unto the Lord, of all that he hath, of man and beaſt, and of the field of his poſſeſſion, ſhall be ſold or redeemed; every devoted thing is moſt holy to the Lord: none devoted, which ſhall be devoted of men, ſhall be redeemed, but ſhall ſurely be put to death. There are ſome who aſſert, that the perſons thus devoted were put to death; whereof Jepththa's daughter is a memorable example. Judg. xi. 29, &c. *Calm.* Dict. Bibl. in voc.

CHEREM is alſo uſed for a kind of excommunication in uſe among the Jews. See NIDDUI.

CHERMITES, or CHERNITES, in the natural hiſtory of the antients, a name given by many to a ſpecies of very bright and white marble or alabaſter, which ſeems to have been the ſame with that called afterwards lygdinum marmor. See LYGDINUM.

CHERNIBS, χερνιψ, in antiquity, a veſſel wherein people uſed to waſh their hands before they went to attend religious ſervice. The word is derived from χειρ, the hand, and νιπτω, to waſh.

CHERRY (*Cycl.*)—The ſeveral ſorts of *cherry* trees are propagated by binding or grafting the ſeveral kinds into ſtocks of the black or wild red *cherries*, which are ſtrong ſhooters, and of a longer duration than any of the garden kinds. The ſtones of theſe two kinds are ſown in a bed of light ſandy earth in autumn, and the young ſtocks produced from them are to remain where they riſe till the ſecond autumn after their ſowing, when in October they ſhould be planted out into a rich earth, at three foot diſtance from row to row, and at about ten inches diſtance in the rows. The ſecond year after the planting out, they will be fit to bud, if they are intended for dwarfs, but if they are intended for ſtandards, they will not be tall enough till the fourth year; for they ſhould be budded or grafted near ſix feet from the ground. The grafting is uſually performed in ſummer, and the head of the ſtock is to be cut off in the beginning of the March following, about ſix inches above the bud; and if the bud has ſhot well, and there is any fear of its being diſplaced by winds, it muſt be gently tied up to the part of the ſtock left above it. The autumn afterwards, theſe trees will be fit to remove, and be ſet where they are to remain; or they may be left two years. Many, when they plant theſe trees in their places, lop off a great part of their heads, but this is an injury that often kills them; and when they eſcape, they ſeldom get well over it for four or five years. If the trees are intended for walls, it is adviſable to plant dwarfs between the ſtandards, that theſe may cover the lower part of the wall, while the others ſpread over the upper part; and when the dwarfs riſe to fill the whole walls, the ſtandards ſhould be taken entirely away. When theſe trees are taken up from the nurſery, the dead fibres of the roots muſt be carefully taken off, and the upper part of the ſtock which is above the bud, muſt be cut off cloſe down to the back part of it: the bud muſt be placed directly from the wall. *Cherry* trees thrive beſt on a dry hazley loam, and in a gravelly ſoil are very ſubject to blights, and ſeldom ſtand long good. They ſhould be placed at fourteen feet aſunder, with a ſtandard tree between each two. In pruning theſe trees, their ſhoots ſhould never be ſhortened, for they moſtly produce their fruit from their extreme part. All the foreright ſhoots are to be diſplaced, and the others trained horizontally; and where there is a vacancy in the wall, the branches being ſhortened, will throw up a ſhoot or two to fill it. *Mill.* Gard. Dict. See the article CERASUS.

CHERSA, called alſo *fecula*, in ſome medical writers, ſignifies a root reduced to a farinaceous powder. This way of preparation ſome condemn [a], as exhauſting the virtues of the drug, and rendering it good for nothing; others defend it [b].—[[a] Vid. *Zwoelfer.* Animad. ad Pharm. Aug. *Etmul.* ad Ludovic. Diſſ. Pharm. [b] *Wedel.* Pharm. Acroamatic. l. 2. §. 3. c. 2. p. 317, ſeq. *Caſt.* Lex. in voc.]

CHERSÆA, χερσαια, *earthy*, an epithet of one of the three ſpecies of aſps. It is mentioned by Galen and Ægineta. *Caſt.* Lex. in voc.

CHERSETUM, in old cuſtoms, is uſed for *churcheſſet*. See CHURCH-SCOT, *Cycl.*

CHERSYDRUS, χερσυδρος, an amphibious ſerpent; ſo called, becauſe it lives firſt in watery places, whence it is called *hydrus*; after which it ſhifts its habitation, and lives on dry ground, and thence has its compound appellation *cherſydrus*. Vid. *Aldrov.* l. 1. de Serp. & Drac. c. 17. *Caſt.* Lex. Med. in voc.

CHERT, in natural hiſtory, a name given by ſome of our miners to a peculiar fine kind of ſtone found in ſtrata, but of the hardneſs and ſmoothneſs of flint. It is called alſo in ſome places *whern*, and by ſome authors *nicomia*. See NICOMIA.

Dr. Martyn, when he examined the mines of Derbyſhire, found great quantities of this ſtone, and that in ſome places varying from its common colours and manner of appearance. In ſome places, inſtead of the thin ſtrata which this ſtone uſually forms, he found it in beds of three or four yards thick, and ſometimes much more. Such thick ſtrata of it he alſo found in the peak of Derbyſhire. He obſerved, that they were always found among ſtrata of limeſtone, and that ſometimes the *chert* did not form regular ſtrata, but lay in large looſe nodules. In many places the *chert* was black, and in others of a dark greeniſh colour, much like what painters call ſap green, which is a preparation of the juice of buckthorn berries; the workmen hence call them black *cherts*, and green *cherts*. Phil. Tranſ. N° 407.

CHERUB, or CHERUBIM *(Cycl.)* — The term *cherub* in Hebrew is ſometimes taken for a calf or an ox. Ezekiel ſets down the face of a *cherub*, as ſynonymous to the face of an ox [a]. The word *cherub* in Syriac and Chaldee, ſignifies to till or plough, which is the proper work of oxen. *Cherub* alſo ſignifies ſtrong and powerful. Grotius ſays, that the *cherubims* were figures much like that of a calf. Bochart thinks likewiſe, that the *cherubims* were more like to the figure of an ox than to any thing beſides; and Spencer is of the ſame opinion. Laſtly, St. John [b] in the Revelations calls *cherubims*, beaſts. Joſephus ſays [c], the *cherubims* were extraordinary creatures, and of a figure unknown to mankind. Clemens of Alexandria [d] believes that

that the Egyptians imitated the *cherubims* of the Hebrews in the repreſentation of their ſphinx's and their hieroglyphical animals. All the ſeveral deſcriptions which the ſcripture gives us of *cherubims* differ from one another; but all agree in repreſenting them as a figure compoſed of various creatures, as a man, an ox, an eagle, and a lion. Such were the *cherubims* deſcribed by Ezekiel [e]. Thoſe which Iſaiah ſaw [f], and are called *ſeraphims* by him, had the figure of a man with ſix wings, with two whereof they covered their faces, with two more they covered their feet, and with the two others they flew. Thoſe which Solomon placed in the temple of Jeruſalem [g], are ſuppoſed to have been pretty nearly in the ſame form. Thoſe which St. John deſcribes in the Revelations, were all eyes before and behind, having each ſix wings. The firſt was in the form of a lion, the ſecond of a calf, the third of a man, and the fourth of an eagle. — [[a] Ezek. i. 10. compared with Ezek. x. 14. [b] Rev. iv. 6. 7. [c] Antiq. l. iii. c. 6. p. 83. [d] *Clem. Alexandr.* l. 5. Stromat [e] Ezek. i. 5. ſeq. & x. 20, 21. [f] Cap. vi. ver. 2. [g] 1 Kings vi. 23.]

The figure of the *cherubims* was not always uniform, ſince they are differently deſcribed in the ſhapes of men, eagles, oxen, lions, and in a compoſition of all theſe figures put together. Moſes likewiſe calls theſe ſymbolical or hieroglyphical repreſentations, which were repreſented in embroideries upon the veils of the tabernacle, *cherubims* of coſtly work [a]. Such were the ſymbolical figures which the Egyptians placed at the gates of their temples, and the images of the generality of their gods, which were commonly nothing but ſtatues compoſed of men and animals [b]. — [[a] Exod. xxvi. 1. [b] Vid. *Calmet.* Dict. Bibl.]

Omnigenumque deum monſtra, & latrator Anubis. Virg. Æneid. 8.

CHERUBIM. See CHERUB.

CHERVIL, *chærophyllum*, in botany, the name of a genus of umbelliferous plants, the characters of which are theſe: the flower is of the roſaceous kind, compoſed of ſeveral leaves irregular in ſize, and diſpoſed in a circular form on a cup, which afterwards becomes a fruit compoſed of two ſeeds, reſembling the beak of a bird, not ſtriated, but ſometimes rough, ſometimes ſmooth, and gibboſe on one ſide, and flat on the other.

The ſpecies of *chervil* enumerated by Mr. Tournefort are theſe: 1. The common cultivated *chervil*. 2. The wild perennial, hemlock-leaved *chervil*, called by authors the ſmooth-ſeeded myrrhis. 3. The wild *chervil*, with ſhort hairy ſeeds. 4. The Sicilian *chervil*, with leaves like ſlixweed, and with hairy ſeeds. 5. The wild *chervil*, with ſtalks ſwelling into knots at the joints, called by ſome the rough-ſeeded, knotty-ſtalked myrrhis *Tourn.* Inſt. p. 314.

The common garden *chervil* flowers in May and June. Its leaves and ſeeds are uſed in medicine; the ſeed contains the principal virtue of the plant, and is eſteemed a great medicine in jaundices and dropſies. It is very certain that it is a powerful diuretic, and a promoter of the menſes. It reſolves coagulated blood, and generally diſpoſes the perſon to ſleep. It is uſed alſo externally in fomentation in colicky pains and retention of urine.

The leaves of this plant are what the good women call *ſweet fern*, from which they diſtil a water, and eſteem it a very great remedy for colics.

CHESSE-*trees*, in ſhip-building, are two ſmall pieces of timber with a hole in them, on each ſide of the ſhip, a little before her looſ; their uſe is for the main tack to run thorough, and hale it down to. *Guill.* Gent. Dict. P. 3. in voc.

CHEST-*rope*, in a ſhip, is the ſame with the gueſt or gift-rope, and is added to the boat-rope, when the boat is towed at the ſtern of the ſhip, to keep her from ſhearing, i. e. from ſwinging to and fro.

CHEST-*works*. See CAISSON, *Append.*

CHEVALER, in the manege. A horſe is ſaid to *chevaler*, when in paſſaging upon a walk, or a trot, his far fore-leg croſſes or over-laps the other fore leg every ſecond time or motion. *Guill.* Gent. Dict. P. 1. in voc.

CHEVAN, See CHIUN.

CHEVANTIA, in our old law writers, is uſed for a loan or advance of money upon credit.

CHEVAUX *de friſe*. See CHEVAL *de friſe*, *Cycl.*

CHEVILS, or KEVILS, in ſhip-building. See KEVILS.

CHEVIN, a name uſed in ſome parts of England for the chubb. *Willughby*, Hiſt. Piſc. p. 255. See CAPITO.

CHEVISANCE, in the law of England is ſaid to be an agreement, or compoſition, or bargain between a creditor and debtor; but it ſeems chiefly to denote an indirect gain, in point of uſury, &c. In our ſtatutes it is often mentioned, and moſt commonly uſed for an unlawful bargain or contract. See the ſtatutes againſt uſury. Anno 12° Annæ.

The word is ſaid to be derived from the law French *chevir*, to come to the end, or finiſh any thing, in the ſame ſenſe as the modern French uſe *achever*. Terms de Ley, & *Cowel.* Interpr. in voc.

CHEVRETTE, in artillery, an engine to raiſe guns or mortars into their carriages; it is made of two pieces of wood of about four feet long, ſtanding upright upon a third, which is ſquare; they are about a foot aſunder and parallel, and are pierced with holes exactly oppoſite to one another, having a bolt of iron, which being put through theſe holes, higher or lower at pleaſure, ſerves with a hand-ſpike, which takes its poiſe over this bolt, to raiſe any thing by force. *Guill.* Gent. Dict. P. 2. in voc.

CHEWING *balls*, a ſort of balls contrived for horſes to *chew*, not ſwallow at once; not intended as food, but as incentives to appetite, and on other medicinal occaſions very uſeful to the creature. The receipt now moſt eſteemed for theſe balls is this: take liver of antimony, and of aſſa fœtida, of each one pound; wood of the bay-tree, and juniper wood, of each half a pound; pellitory of Spain, two ounces: let all theſe be powdered together; then add as much fine grape verjuice as is neceſſary to make the whole into a paſte. This is to be formed into balls of about an ounce and half weight, which are to be dried in the ſun. Theſe are the *chewing* balls, and theſe are to be uſed one at a time in the following manner. The ball is to be wrapped up in a linnen rag, and a thread is to be faſtened to this, in ſuch manner that it may be tied to the bit of the bridle, and kept in the mouth: when the bridle is taken off, the horſe will immediately eat, and when one ball is conſumed another is to be tied up, and put in its place till the intent is anſwered.

CHIA *terra*. See TERRA *Chia*.

CHIASMOS, χιασμὸς, in antient Greek medical writers, is the concourſe or meeting of any two things under the form and figure of a croſs, or the letter x *chi*, whence it is named. The adverbs *chiaſti* χιαστὶ, and *chiaſticos*, χιαστικῶς, ſignify the ſame thing: thus the optic nerves are ſaid to meet χιαστικῶς, ſo as to croſs each other. Vid. *Caſtel.* Lex. Medic. in voc.

CHIASTOS, χιαστὸς, the name of a bandage in Oribaſius, ſo called from its reſembling a croſs, or the letter x. *Caſt.* Lex. Med. in voc.

CHIASTOS, in rhetoric, the ſame with what is otherwiſe called diallelos. See DIALLELOS.

CHIAUSI, among the Turks, officers employed in executing the vizirs, baſhaws, and other great men; the orders for doing which the Grand Signior ſends them wrapped up in a black cloth, on the reception of which they immediately perform their office. *Hofm.* Lex. in voc.

CHICK-*weed*. See the article ALSINE.

CHICUATLI, in zoology, the Indian name of a bird deſcribed by Nieremberg, and by him called *noctua canora*. Its beak is long, black, and ſlender; its head is marked with undulated ſtreaks of yellow near the eyes. Its breaſt and belly are of a whitiſh colour, and it has ſome black feathers intermixed with white ones on the throat; its back is variegated with black, yellow, and grey. It is found principally among the mountains. It generally is found running about the ground, and is eaſily bred in cages, and feeds on any thing that is offered it. It is moſt frequent in the hotter climates, and is uſually fat and of good nouriſhment. *Ray's* Ornithol. p. 305.

CHIEPA, in zoology, a name uſed by ſome authors for the fiſh more uſually known by the name of the *alauſa*, and called in Engliſh the ſhad, or the mother of herrings. *Willughby*, Hiſt. Piſc. p. 227. See the articles SHAD and AGONUS.

CHIFFIR, or CHIFIR, according to Libavius [a], in the preparation of the philoſophers ſtone, is called *lapis animalis*, as the mineral is called *chaos minerale*. Johnſon ſays, that the *chifir minerale* is by ſome interpreted gold, but that he rather takes it to be any ſulphur of the metalline kind [b]. — [[a] Synt. Art. Chym. c. 8. [b] *Caſtel.* Lex. Med. in voc.]

CHIFUNG, among the Chineſe, the name of an herb found about Canton, by which the ſailors pretend to know how many ſtorms will happen every year. This they do from the number of knots or joints, for according as theſe are more or leſs in number, ſo will the number of ſtorms be; and from the diſtances of the knots from the root, they determine what months the ſtorms will fall in. *Hofm.* Lex. in voc.

CHILD (*Cycl.*) — *Petrified* CHILD. Bartholine, Paré, Licetus, and many other writers, give an account of a *petrified child*, which has ſeemed wholly incredible to ſome people. The *child* however, which they deſcribe, is ſtill in being, and is kept as a great rarity in the king of Denmark's muſeum at Copenhagen. The woman who went big with this lived at Sens in Champaign in the year 1582; it was cut out of her belly, and was univerſally ſuppoſed to have lain there about twenty years: That it is a real human fœtus, and not artificial, is evident to the eye of any obſerver, and the upper part of it, when examined, is found to be of a ſubſtance reſembling the gypſum or ſtone of which they make the plaiſter of Paris; the lower part is much harder; the thighs and buttocks being perfect ſtone, of a rediſh colour, and as hard as common quarry ſtone; the grain and ſurface of this part appears exactly like that of the calculi, or ſtones taken out of human bladders; and the whole ſubſtance examined ever ſo nearly, and felt ever ſo carefully, appears to be abſolute ſtone. It was carried from Sens to Paris, and there purchaſed by a goldſmith of Venice; and Frederick the Third, king of Denmark, purchaſed it at Venice of this man for a very large ſum, and added it to his collection of rarities. Philoſ. Tranſ. N° 285. p. 1400.

Expoſing of CHILDREN. See the article EXPOSING.

Naming of CHILDREN. See the article NAMING.

Proviſion for ſoldiers CHILDREN. See SOLDIER.

Overlaying of CHILDREN. This is a misfortune which frequently happens; to prevent which the Florentines have contrived an inſtrument called arcuccio. See ARCUCCIO.

CHILD- *blains*. See PERNIONES.

CHILIARTÆ, in church hiſtory, the ſame with millenarii. See MILLENARII, *Cycl.*

CHILIAGON, in geometry, a regular plane figure of 1000 ſides and angles. Though the imagination cannot form a diſtinct idea of ſuch a figure, yet we may have a very clear notion of it in the mind, and can eaſily demonſtrate, that the ſum of all its angles are equal to 1996 right ones; for the internal angles of every plane figure are equal to twice as many right angles as the figure hath ſides, except thoſe four which are about the center of the figure, from whence it may be reſolved into as many triangles as it has ſides. The author of *L' Art. de Penſer*, p. 44, 45. brings this inſtance to ſhew the diſtinction between imagining and conceiving. See NOTION.

CHILTENHAM *water* contains a neutral purgative ſalt, ſomewhat reſembling Glauber's ſal mirabile. It contains no alkaline, nor acid ſalt, no iron, copperas, nor brimſtone. They are thought uſeful in lax conſtitutions, where the humours are alcaleſcent, but hurtful when aceſcent. See Phil. Tranſ. N° 461. Sect. 21. and the remarks.

CHILON, Χειλων, among the Greek phyſiologers, one who has great lips, called by the Latins *labeo*. Thus alſo among the ſpecies of fiſhes under the claſs of *capitones*, ſome are called *chilones*, that is *labeones*. *Caſtel.* Lex. in voc.

CHIMALATH, in botany, a name given by ſome authors to the great *corona ſolis*, or ſun-flower.

CHIMERA (*Cycl.*) is uſed in writers of the middle age for a kind of veſſel or ſhip. It ſeems to have been leſs than the chelandium. *Du Cange*, Gloſſ. Lat.

CHIMPANZEE, in natural hiſtory, the name of an Angolan animal very much approaching to the human figure, but of a fierce diſpoſition, and remarkably miſchievous. In the year 1738, we had one of theſe creatures brought over into England by the captain of a ſhip in the Guinea trade; it was of the female ſex, and was two foot four inches high: it naturally walked erect, and was hairy on ſome part of the body and limbs, and of a ſtrong muſcular make. It would eat very coarſe food, and was very fond of tea, which it drank out of a cup with milk and ſugar, as we do; it ſlept in the manner of the human ſpecies, and in its voice made ſome imitation of the human ſpeech, when people ſpeak very haſtily, but without any articulate ſounds. The males of this ſpecies are very bold, and will fight a man, though they ſee him armed. It is ſaid that they often ſet upon, and raviſh the negro women when they meet them in the woods. The creature we ſaw here was but about twenty months old, and very tame; the parent had it in her arms in the country, and did not part with it till ſhe was killed with a ſpear by one of the moors: ſhe was five feet high. Act. Eruditor. Germ. Ann. 1739.

CHINA *ware*. See PORCELANE, *Cycl* and *Suppl.*

Gilding on CHINA. See GILDING *on China.*

Party CHINA. See PARTY.

CHIN-COUGH (*Cycl.*) — In the *chin-cough* Dr. Huxham uſes the common evacuations, and propoſes to correct the lentor of the blood, and to ſtrengthen the nerves and ſtomach by mercurials, the cortex and proper ſtomachics. Obſ. de Aere & morb. Epid.

Dr. Burton declares againſt bleeding, vomiting, and purging in the *chin-cough*, except in very urgent caſes; the medicine which he ſays, has had great ſucceſs, is a ſcruple of fine powder of cantharides, and as much camphor, mixed with three drams of the extract of jeſuits bark. Of this mixture he gives eight or nine grains to children every third or fourth hour, in a ſpoonfull of ſome ſimple water, or ſome julep, in which a little balſam of capivi had been diſſolved. He ſays this method is not proper in ſuch *chin-coughs* as proceed from thin ſharp rheum, but, he believes, that in the *chin-cough* from a tough viſcid phlegm, it will ſcarce ever fail, at leaſt it has not failed yet. Med. Eſſ. Edinb.

CHINE, in the manege, is uſed for the back-bone, or the ridge of the back of a horſe. The French call it *echine*, and the antient Italian maſters *eſquine*. *Guill.* Gent. Dict P. 1. in voc.

CHIO *pear*, a name given to a ſmall ſpecies of pear called alſo by ſome the baſtard muſk pear, from its reſembling the little muſk pear in its ſweet flavour. Its ſkin is yellow ſtreaked with red, it is of a roundiſh ſhape, and does not hang in cluſters, but ſingly on the tree.

CHIPPING, a phraſe uſed by the potters and China-men to expreſs that common accident both of our own ſtone and earthen ware, and the porcelain of China, the flying off of ſmall pieces, or breaking at the edges. Our earthen wares are particularly ſubject to this, and are always ſpoiled by it before any other flaw appears in them. Our ſtone wares eſcape it better than theſe, but leſs than the porcelain of China, which is leſs ſubject to it than any other manufacture in the world. The method by which the Chineſe defend their ware from this accident, is this: they carefully burn ſome ſmall bambou canes to a ſort of charcoal, which is very light, and very black; this they reduce to a fine powder, and then mix it into a thin paſte, with ſome of the varniſh which they uſe for their ware. they next take the veſſels when dried, and not yet baked, to the wheel, and turning them ſoftly round, they, with a pencil dipt in this paſte, cover the whole circumference with a thin coat of it: after this, the veſſel is again dried, and the border made with this paſte appears of a pale greyiſh colour when it is thoroughly dry. They work on it afterwards in the common way, covering both this edge and the reſt of the veſſel with the common varniſh. When the whole is baked on, the colour given by the aſhes diſappears, and the edges are as white as any other part; only when the baking has not been ſufficient, or the edges have not been covered with the ſecond varniſhing, we ſometimes find a duſky edge, as in ſome of the ordinary thick tea cups.

It may be a great advantage to our Engliſh manufacturers to attempt ſomething of this kind. The willow is known to make a very light and black charcoal; but the elder, tho' a thing ſeldom uſed, greatly exceeds it. The young green ſhoots of this ſhrub, which are almoſt all pith, make the lighteſt and the blackeſt of all charcoal; this eaſily mixes with any liquid, and might be eaſily uſed in the ſame way that the Chineſe uſe the charcoal of the bambou cane, which is a light hollow vegetable, more reſembling the elder ſhoots than any other Engliſh plant. It is no wonder that the fixed ſalt and oil contained in this charcoal ſhould be able to penetrate the yet raw edges of the ware, and to give them in the ſubſequent baking a ſomewhat different degree of vitrification from the other parts of the veſſel, which, tho' if given to the whole, it might take off from the true ſemivitrified ſtate of that ware, yet at the edges is not to be regarded, and only ſerves to defend them from common accidents, and keep them entire.

The Chineſe uſe two cautions in this application; the firſt in the preparation; the ſecond, in the laying it on. They prepare the bambou canes for burning into charcoal, by peeling off the rind. This might eaſily be done with our elder ſhoots, which are ſo ſucculent, that the bark ſtrips off with a touch. The Chineſe ſay, that if this is not done with their bambou, the edges touched with the paſte will burſt in the baking: this does not ſeem indeed very probable; but the charcoal will certainly be lighter made from the peeled ſticks, and this is a known advantage. The other caution is, never to touch the veſſel with hands that have any greaſy or fatty ſubſtance about them; for if this is done, they always find the veſſel crack in that place. Obſ. ſur les Cout. de l'Aſie.

CHIPOTENSIS, the ſame with *chapotenſis*. See CHAPOTENSIS.

CHIPPINGAVEL, or CHEAPINGAVEL, in our old writers, toll paid for buying and ſelling. *Blount.*

CHIRAMAXIUM, in antiquity, a kind of chariot or conveyance, which was drawn by men inſtead of horſes. *Pitiſc.* Lex. Ant. in voc.

The word is derived from χειρ, the hand, and αμαξα, a chariot.

CHIRCHSED. See CHURCH-SCOT, *Cycl.*

CHIRITES, in natural hiſtory, a name given by authors to a ſtone reſembling the human hand. The accounts we have of it ſay, that it is of a white colour, and of the nature of gypſum or plaiſter-ſtone, and that it repreſents the palm of the hand, with the fingers, and their nails on the other ſide. This ſeems to have been a name given to ſome ſingle ſpecimen in a cabinet of ſome collector; for it is certainly no diſtinct ſpecies of foſſil, but a mere luſus naturæ, in the configuration of ſome accidental piece of gypſum. Imagination will do much in aſſiſting reſemblances of this kind; and if one would give way to it, we might name in this manner ſtones of one kind or other from all the parts of the human body. As theſe, however, are not different ſpecies, this way of giving them peculiar names is of great hurt to the ſtudy of foſſils, as it confounds the memory with unneceſſary diſtinctions.

CHIRONIA, in botany, a name by which ſome have called the black bryony. *Ger.* Emac. Ind. 2.

CHIRONIUM, in medicine, is ſometimes uſed to ſignify a great ulcer, and of difficult cure. *Blanc.*

CHIRONOMI, Χειρονομοι, on the Grecian ſtage, were thoſe actors who performed without uſing words, by the motions of the hand. *Hofm.* Lex. in voc. See CHIRONOMIA.

CHIRONOMIA, in antiquity, the art of repreſenting, by the motions of the hand and other geſtures of the body, any paſt tranſaction, whether of true or fabulous hiſtory. This made a part of a liberal education among the antients: it had the approbation of Socrates, and was ranked by Plato among the political virtues. *Pitiſc.* Lex. Ant. in voc.

CHIROTHECA. See GLOVE, *Cycl.* and *Suppl.*

CHISELY *land*, in agriculture, a term appropriated to that ſort of land which breaks, when it is turned up by the plough, into pieces like the chips made by the ſtone-cutter's chizzel in the hewing of ſtones. It is of a middle nature, between the ſandy land that falls off from the plough-ſhare, like bran or ſaw-duſt, and the clayey, that is raiſed in large glebes.

It is of ſeveral colours, grey, brown, reddiſh, and blackiſh, and uſually contains a large quantity of ſand, and no ſmall number of pebbles. *Moreton's* North. p. 39.

CHITSEE, in botany, the name of a Chineſe tree, called alſo *ſetſe*. See SETSE.

CHI-TUA, in the materia medica, a name uſed by ſome authors for a kind of lignum aloes, which is rediſh, and of a very fine ſcent. *Dale*, Pharm. p. 448.

CHIVAGE. See CHEVAGE, *Cycl.*

CHIUDENDO, in the Italian muſic, to end, finiſh, or conclude; as *chiudendo col ritornello, col l' aria*, ſignifies to end with a ritornello, or ſome paſſage which has been before ſung in ſome part of the piece. Vid. *Broſſ.* Dict. Muſ. in voc. See RITORNELLO, *Cycl.*

CHIVEN, in zoology, a name given by many to the muſcicapa, or fly catcher, a ſmall bird little bigger than the wren. *Aldrovand.* de Avib. See MUSCICAPA.

CHIUM *marmor*, in the natural hiſtory of the antients, the name of a black marble, called alſo the lapis obſidianus. It is very hard, and of a fine black, and beſide the many uſes which the antients put it to, is well known among our goldſmiths by the name of the touch-ſtone, moſt of them being furniſhed with nothing better for that purpoſe than a piece of this, though the baſaltes, which might be had plentifully enough, is greatly preferable for thoſe uſes; any black marble, however, that is tolerably hard will do.

This is a very fine and elegantly ſmooth marble, of a compact texture, and fine gloſſy black, but ſhewing no glittering particles, when freſh broken, as moſt others of the black marbles do. It is extremely hard, and cuts very difficultly, but is capable of the higheſt poliſh of any marble. The antients had it from Æthiopia, and the iſland of Chios; we have it from Italy. *Hill*'s Hiſt. of Foſſ. p. 466.

CHIUM *vinum*, Χιον οινον, *Chian* wine, or wine of the growth of the iſland of Chios, now Scio, is commended by Dioſcorides [a], as affording good nouriſhment, fit to drink, leſs diſpoſed to intoxicate, endued with the virtue of reſtraining defluxions, and a proper ingredient in opthalmic medicines. Hence Scribonius Largus [b], directs the dry ingredients in collyria for the eyes, to be made up with *Chian wine*. — [a Lib. 5. c. 10. b *Caſtel.* Lex. in voc.]

CHIUN, or CHEVAN, in Hebrew antiquity. We meet with this word in the prophet Amos, cited in the Acts of the Apoſtles. St. Luke reads the paſſage thus: *Ye took up the tabernacle of Moloch, and the ſtar of your god Remphan, figures which ye made to worſhip them* [a]. The import of the Hebrew is as follows; *Ye have born the tabernacle of your kings, and the pedeſtal* (the Chiun) *of your images, the ſtar of your gods, which ye made to yourſelves*. The Septuagint in all probability read *Rephan* or *Revan*, inſtead of *Chiun* or *Chevan*, and took the pedeſtal for a god. Others are of opinion, that three falſe deities are to be diſtinguiſhed here, Moloch, *Chiun*, and Remphan. Others again affirm, that the three mean only one god, adored under ſo many different names, and that this god was Saturn and his planet. Salmaſius and Kircher aſſert that Kiion is Saturn, and that his ſtar is called Keiran among the Perſians and Arabians, and that Remphan or Rephan ſignified the ſame thing among the Egyptians. They add, that the Septuagint, who made their tranſlation in Egypt, changed the word *Chiun* into that of Remphan, becauſe they had the ſame ſignification. M. Baſnage, in his book intitled *Jewiſh Antiquities* [b], after having diſcourſed a good deal upon *Chion* or Remphan, concludes that Moloch was the ſun, and *Chion*, *Chiun*, or Remphan, the moon [c]. — [a Act. vii. 43. b Tom. 2. p. 576, 581, 610, 614, 617. c *Calmet.* Dict. Bibl.]

CHIUREA, in natural hiſtory, a name given by Cardan, Oviedo, and ſome others to the *opoſſum*. See OPOSSUM.

CHLÆNA, in antiquity, a kind of thick, ſhaggy, upper garment; its uſe was very antient, for we find Homer makes his heroes firſt put off their *chlænæ*, and afterwards their tunics, or coats.

CHLAMYDULA, in antiquity, a ſmall upper garment worn by children. See CHLAMYS, *Cycl.*

CHLIASMA, χλιασμα, in medicine, a warm fomentation of the moiſt kind; as πυρια (pyria) is of the dry kind. *Caſtel.* Lex. in voc.

CHLOEIA, χλοεια, in the Greek antiquity, a feſtival celebrated at Athens, in honour of Ceres, to whom, under the name *Chloe*, χλοη, i. e. graſs, they ſacrificed a ram. *Pott.* l. 2. c. 20. T. 1. p. 438.

CHLOREUS, in zoology, a name by which Turner and ſome others have called the common yellow-hammer, or emberiza lutea. See YELLOW-*hammer*.

CHLOREUS, in zoology, is alſo a name by which ſeveral authors, and particularly many of the earlieſt writers, have called the *galbula*, a very elegant and beautiful bird of the thruſh kind, almoſt all over yellow. *Aldrovand.* de Avib. See GALBULA.

CHLORIS, in ornithology, the name of the bird commonly called in Engliſh the greenfinch, a well-known bird of the ſize of a common ſparrow, and remarkable for its green colour, whence it has its name, and for the largeneſs of its beak, in which it approaches to the coccothrauſtes; it builds in our hedges, and feeds on the ſeeds of vegetables.

CHLORITES, in natural hiſtory, a name given by the antients to a green ſtone ſeeming to have been a jaſper, but ſo pellucid as to approach to the nature of the coarſer emeralds. There has been an idle tradition of its being found in the ſtomach of a water-wagtail, and many imaginary accounts have been given of its virtues. The old writers had a like opinion of the animal origin of the lycodontes, or buſonitæ, which they ſuppoſed were found in the head of an old toad; but we may at preſent be as well aſſured of the *chlorites* being found in the earth as we are of the lycodontes, or buſonitæ, being the foſſile teeth of the wolf fiſh.

CHOANA, χοανη, in antient anatomiſts, a cavity in the brain like a funnel, called alſo πυελος or pelvis. *Caſt.* Lex. in voc.

CHOASPITES, a name given by the antients to a ſpecies of the chryſopraſius, a gem of a mixed colour between yellow and green. It was called *choaſpites* from the name of a river in which it was frequently found.

CHOENICIS, χοινικις, in the antient ſurgery, the trepan, ſo called by Galen and Ægineta, and mentioned by Celſus, where he calls it *modiolus*. Lib. 7. c. 3. *Caſtel.* Lex. in voc.

CHOENIX, χοινιξ, an Attic dry meaſure, containing three *cotylæ*, or one Sextarius and an half, which is two pounds and a quarter [a]. Its mark was a χ with a ι over it [b]. — [a *Caſtel.* Lex. in voc. b *Gorr.* Def. Med. p. 508.]

The *choenix* likewiſe contained the forty eighth part of a medimnus, and was otherwiſe called *hemerotrophis*. *Pitiſc.* Lex. Ant. in voc. See HEMEROTROPHIS.

CHOERINÆ, Χοιρινοι, in antiquity, a kind of ſea-ſhells, with which the antient Greeks uſed to give their ſuffrage, or vote. *Pott.* l. 1. c. 2. T. 1. p. 119.

CHOEROGRYLLUS, the hedge hog. This animal is declared to be unclean by the law of Moſes. The legiſlator ſays, that the hedge hog chews the cud, but as it divides not the hoof it is judged unclean. Levit. xi. 5.

The Hebrew *ſchaphan* is not very well underſtood by us; ſome ſay it is the hare, others the rabbit: but Moſes had before ſpoken of the hare, and the rabbit does not chew the cud. It cannot therefore be either of theſe animals, nor can it be the *chœrogryllus*, or hedge hog, becauſe it does not chew the cud. Bochart believes it to be a kind of large rat common in Arabia, good to eat, and called aliarbucha. Theſe animals chew the cud, dwell in rocks, and go in troops; qualities which the ſcripture aſcribes to the *ſchaphan*. *Calmet.* Dict. Bibl.

CHOES, in antiquity, an Athenian feſtival in honour of Bacchus, celebrated in the month Antheſterion. Vid. *Hofm.* Lex. in voc.

CHOIR (*Cycl.*) — CHOIR *muſic*, *muſica chorale*, muſic ſung in a chorus, as in churches. It is ſometimes uſed for *muſica piena*, *canto fermo*, or what we call *plain chant*, or *ſong*.

CHOIROS, in ichthyology, a name given by Ariſtotle and others of the old Greek writers to the cernua or acerina of the Latins, called by us the ruffe. This fiſh has been called by a great variety of names, but it is properly a ſpecies of pearch, and is diſtinguiſhed from the others of that genus by Artedi under the name of the pearch with only one fin on the back, and with a cavernous head. See PERCA.

CHOLIC. See COLIC.

CHOLOBAPHIS, in natural hiſtory, a name given by ſome of the antient Greeks to a peculiar kind of emerald which was inferior to many others, and was of a colour tending to yellow. Pliny tells us that the worſt emeralds were thoſe which had the colour of gall, or of braſs, as the text is uſually explained; but this is erroneous, for what is uſually printed *æris*, is properly *acris olei*. This is a name given by the Latins to the omphacium of the Greeks, that is the oil of unripe olives; this was of a coarſe greeniſh colour, with a tinge of yellow, and we are told by all the old writers that there were emeralds of this colour, from which thoſe which were more yellow were diſtinguiſhed by the names cholos and *cholobaphis*. Some ſuppoſe that the word *chole* ſhould be ſpelt *chloere*, but this is reducing it to no diſtinctive meaning at all; this word only ſignifying green, and that being the colour of all the emeralds that were of any value among the antients who uſed the word. It is plain that the Romans called all the green cryſtals found in copper mines by the name of emeralds, for they expreſs in their deſcriptions all the defects we find in theſe cryſtals, ſuch as their having hairs, or ſubſtances like hairs within, as alſo ſalts and the like.

CHOLOMA, or CHOLOSIS, in antient medical writers, ſignifies, according to Galen, any diſtortion of a member, or depravation of it with reſpect to motion. It is taken alſo, in a particular ſenſe, for halting or lameneſs of a leg, ariſing from luxation. *Hipp.* 6 Aph. 80. *Caſt.* Lex. in voc.

CHOLOSIS. See CHOLOMA.

CHOMER. See CORUS.

CHONDRILLA, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the ſemifloſcular kind, being compoſed of a number of ſemifloſcules, each ſtanding on an embryo ſeed, and all contained in a cup of a cylindric form, and ſeeming tubular: the embryos finally ripen into ſeeds, winged with down.

The ſpecies of *chondrilla* enumerated by Mr. Tournefort, are theſe: 1. The viſcous, field, ruſhy-ſtalk'd *chondrilla*. 2. The annual hawkweed-leav'd *chondrilla*. 3. The ſonchus-leav'd *chondrilla*, with pale yellow flowers. 4. The great ſonchus-leav'd *chondrilla*, with purple flowers. 5. The leſſer ſonchus-leav'd *chondrilla*, with purple flowers. *Tourn.* Inſt p. 475.

CHONDROPTERYGII, in natural hiſtory, a name given by Artedi and Linnæus to one of the great claſſes or families of the fiſhes; the characters of which are, that the rays of the fins are not bony, but cartilaginous. *Artedi* Gen. Piſc. *Linnæi* Syſt. Nat p. 51.

The bones of the body of theſe fiſhes are alſo cartilaginous, and the mouth in moſt of the ſpecies is placed in the lower part of the body.

The word is derived from the Greek χόνδρος, a cartilage, and πλευγιον, a wing or fin. Of this order are the ſcate, ſturgeon, lamprey, &c.

CHONDROS, χόνδρος, in antient medical writers, the ſame as alica. Vid. *Gorr.* Def. Med. See ALICA.

It ſignifies alſo ſome grumous concretion, as of maſtich, or frankincenſe. *Caſt.* Lex. in voc.

It is, beſides, the Greek word for a cartilage. *Gorr.* ubi ſupra.

CHONDROSYNDESMUS, in antient medical writers, ſignifies a cartilaginous ligament. *Galen.* de Temper. l. 1. c. 9. *Caſt.* Lex in voc.

The word is Greek, χονδροσυνδεσμος, derived from χονδρος, a cartilage, and συνδεσμο, a ligament.

CHOPIN, a liquid meaſure uſed in Scotland, being the half of their pint. Treat. Pract. Geom. p. 113.

CHORAGIUM, in antiquity, was uſed to denote the funeral of a young unmarried woman. Some think it ſhould be writ *coragium*, from κορα, puella, and αγω, duco. But Pitiſcus chooſes rather to derive it from *chorus*; becauſe a chorus or company of virgins always attended ſuch funerals. *Pitiſc.* Lex. Ant. in voc.

CHORAGIUM ſignified alſo the tiring or dreſſing room belonging to the ſtage; and ſometimes was taken for the dreſs itſelf.

CHORAGUS, in antiquity, he who had the ſuperintendence of the chorus, whoſe buſineſs it was to take care they obſerved the rules of the muſic, and performed their parts with decorum. *Pitiſc.* Lex. Ant. in voc.

CHORAGI were likewiſe certain Athenian citizens choſen annually, who were obliged to be at the expence of players, ſingers, dancers and muſicians, as often as there was occaſion, at the celebration of their public feſtivals. *Pott.* Archæol. Græc. l. 1. c. 15. T. 1. p. 86.

CHORAIC *muſic*, *muſica choraica*, a ſort of muſic, proper for dancing, by the variety of its different motions.

CHORAL, *choralis*, ſignifies any perſon that, by virtue of any of the orders of the clergy, was in antient times admitted to ſit and ſerve God in the choir. *Blount* & *Cowel.*

Dugdale, in his hiſtory of St. Paul's church, ſays, that there were with the chorus formerly ſix vicars *choral* belonging to that church. *Blount.*

CHORD (*Cycl.*)—To find the number of vibrations made by a muſical *chord* or ſtring, in a given time, its weight, length, and tenſion being given. Let N repreſent the weight of the *chord*; L its length; P the tenſion, or weight equivalent to it, by which the *chord* is extended; and D the length of a given pendulum; *p* the circumference of a circle, the diameter of which is 1: then will the number of vibrations made by the given *chord*, while the pendulum vibrates once, be expreſſed by $p\sqrt{\frac{DP}{LN}}$ [a]. If we take L for the number of inches and decimals contained in the length of the *chord*, and the proportion of the tenſion to the weight of the *chord*, as n to 1, then will the number of vibrations of the *chord* in one ſecond be $\frac{355}{113}\sqrt{\frac{39.2\,n}{L}}$. Where $\frac{355}{113}$ denotes the proportion of the circumference to the diameter of the circle; and 39. 2 the length of a pendulum vibrating ſeconds, in inches and decimals of an inch, Engliſh meaſure. This laſt expreſſion coincides with Mr. Euler's rule [b], only we here expreſs in Engliſh what he gives in Rhinland meaſure. To illuſtrate this rule by an example; ſuppoſe the length of the *chord* to be 18. 7 inches, its weight 6 ½ grains, and the tenſion or weight extending this *chord* to be 8 lb troy, or 46080 grains. Then $a = 18.7$, & $n = \frac{46080}{6.2} = 7432$. The number of vibrations therefore by the rule will be $\frac{355}{113}\sqrt{\frac{39.2\times 7432}{18.7}} = 392$.—[a *Taylor* Method. Increm. Prop. 23. b Tentam. Nov. Theor. Muſ. p. 6, 7. See alſo *Mac Laurin*'s Fluxions, Sect. 929.]

By logarithms the rule may be thus expreſſed, $\frac{L+W}{2} + C = V$.

Where L is the logarithm of the ratio of a pendulum, vibrating ſeconds, to the length of the given ſtring; W the logarithm of the ratio of the tenſion to the weight of the ſtring; C the logarithm of the ratio of the circumference of a circle to its diameter, or 0.4971500; and laſtly, V = logarithm of the required number of vibrations in one ſecond. In every *chord*, the number of vibrations in a given time will be as $\sqrt{\frac{n}{a}}$, that is, as the ſquare root of the extending weight divided by the weight of the *chord*, and its length. If therefore *chords* be of the ſame length, their vibrations in a given time will be as the ſquare roots of the extending weights, divided by the weights of the *chords*. If *chords* be equal in length and weight, their vibrations will be as the ſquare roots of their extending weights or tenſions; and if the tenſions be equal, and the *chords* differ only in length, their vibrations will be as the ſquare roots of their lengths, multiplied by their weight: that is reciprocally as the lengths of the *chords*, becauſe the weights of the *chords* will in this caſe be proportional to their lengths. *Euler*, ibid. p. 7.

Mr. Euler informs us [a], that he found the *chord*, making 392 vibrations in a ſecond, to be at uniſon with the key called *a* in inſtruments, that is an octave and ſixth major above the loweſt C in our harpſichords or vio oncellos. Conſequently the note C, being to *a* as 3 to 10, will make 118 vibrations in one ſecond. And the higheſt C, or c''', as Mr. Euler ca ls it, being four octaves above the loweſt c. will vibrate 1888 times in one ſecond of time. Mr. Euler ſuppoſes the limits of the human ear to be, with reſpect to gravity, two octaves lower than C; and with reſpect to acuteneſs, two octaves higher than c''' [b].—[a *Euler*, ibid. p. 7. b Ibid p 8. §. 13.]

CHORD is ſometimes alſo uſed for accord. Thus we ſay the common *chords* to ſuch a baſs note, meaning its third, fifth and octave.

Line of CHORDS. A *line of chords* is thus made; let the quadrant of a circle be divided into 90 degrees, then to its ſubtenſe, or to the *chord* of 90 degrees, transfer the *chord* of every arch of the quadrant; and theſe *chords*, ſet off on the *chord* of 90°, and marked reſpectively with the number of degrees in the correſponding arch, do conſtitute what is called the *line of chords*. Treat. Pract. Geom.

CHORDA *membranæ tympani*. See CHORD, *Cycl.*

CHOREA *ſancti viti*. See VITI *chorea*.

CHORIZANTES, the name of a ſect in Germany, an. 1374, ſaid to be demoniacs that aſſembled in ſtreets and churches. *Du Cange*, Gloſſ. Lat. in voc.

We may ſuppoſe that their enemies called them demoniacs, on account of ſome heterodoxy. Du Cange does not mention any of their tenets.

CHOROIDES (*Cycl.*)—Some creatures, ſuch as the porcupine and ſea calf, have the optic nerves inſerted into the axis of their eyes. This fact, according to Dr. Porterfield, overturns Mariotte's hypotheſis of the *choroid*'s being the principal and immediate organ of ſight. Vid. Med. Eſſ. Edinb. vol. 3. art. 12.

Mr. Le Cat ſtrenuouſly defends Mariotte's opinion, that the *choroid* coat, and not the retina, is the immediate organ of viſion. The retina, according to him, is to the *choroid* what the epidermis is to the ſkin. Med. Eſſ. Edinb. Abr. vol. 2. p. 482.

CHORO *ſpezzato*, in the Italian muſic, is often met with inſtead of *tutti* or *da capella*, which mean the grand chorus. *A doi*, *a tre*, *a quatro chori*, is for two, three, or four choruſſes. When after the name of a part we find *primo*, 1° *choro*, we muſt underſtand that it is to be played in the firſt chorus; if 2°, II^do, or *ſecondo choro*, the part muſt be ſung or played in the ſecond chorus. And conſequently it ſhews, that the compoſition is for eight voices or different parts. Vid. *Broſſ.* Dict. Muſ. in voc.

CHOUAN, in the materia medica, the name of a ſmall ſeed, called by ſome alſo carmine ſeed. It is a very light and chaffy ſeed, in a great meaſure reſembling worm ſeed, of an acid taſte, and a yellowiſh green colour, but is larger than worm-ſeed. It is brought into Europe from Turkey, and many parts of the Eaſt, and the choice ſhould be made of ſuch as is largeſt, cleaneſt, of the greeneſt colour, and leaſt full of ſpecks or holes. It is not uſed in medicine, but is of ſome value among the people who make carmine for the painters. It is called ſantonium viride, or the green worm ſeed, in our catalogues of the materia medica, but is unknown in the ſhops. *Lemery*'s Dict. of drugs.

CHOUS, in the Eaſtern military orders, the title of the meſſengers of the divan of janiſaries. There are ſeveral degrees of honour in this poſt. When a perſon is firſt advanced to it, he is called a *cuchuk*, or little *chous*; after this he is advanced to be the *alloy chous*, that is, the meſſenger of the ceremonies; and from this, having paſſed thro' the office of *petelma*, or procurator of the effects of the body, he is advanced to be the *bas chous*. *Pocock*'s Egypt, p. 168.

CHOUX, in natural hiſtory, a name given by the French to a ſpecies of ſhell fiſh of the cordiform or bucardium kind. The French are very fond of a ſort of cabbage which they call *chouxe decoupé*, cut and curled cabbage, and this ſhell which is full of tranſverſe laminæ which riſe above the ſurface, and are of an undulated form, very much reſembles the leaves of that cabbage; it is truncated at the end, and is covered with longitudinal ribs, which are eight or nine in number, and being hollowed, not ſolid, repreſent ſo many tubes; theſe hollows, however, do not penetrate into the ſhell, whoſe cavity is uniform, theſe hollows only reaching to the thin cover of the whole fiſh. Pliny mentions this peculiar ſpecies of ſhell, and other naturaliſts have not omitted the hiſtory of it. Fabius Columna has elegantly deſcribed it, and Liſter has given a figure of it twice over, in two different parts of his book. There is another ſpecies leſs elegant, and wanting the hollowed ribs. *F. Columna*, de Purpura, c. 17. p. 36. *Charl.* Exercit. p. 64. See CORDIFORMIS.

CHRABRATE, in natural hiſtory, a name given by the writers of the middle ages to a pellucid ſtone, ſaid to have great virtues againſt diſorders of the liver, and ſpleen, and many other imaginary qualities. It appears by their deſcriptions to have been no other than the common pebble chryſtal.

CHREMPS, in ichthyology, a name given by the eldeſt Greek writers to the fiſh ſince called chromis. It is a ſpecies of the ſpari, and is diſtinguiſhed by Artedi by the name of the ſparus with the ſecond ray of the belly fins very long.

CHRIST-

CHRIST-*thorn*, in botany. See PALIURUS.

CHRISTOGENON, Χριστογενὼν, in the Greek church, a faſt of forty days, immediately preceding Chriſt's nativity. *Hofm.* Lex. in voc.

CHRISTOMACHI, Χριστομαχοι, in church hiſtory, a deſignation given to all ſorts of heretics who deny the divinity of our ſaviour, or hold heterodox opinions concerning his incarnation. *Hofm.* Lex. in voc.

The word comes from the Greek Χριστὸς, *Chriſt*, and μαχομαι, *I fight*, or *oppoſe*.

CHRISTOPHORIANA, the herb *chriſtopher*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the roſaceous kind, or compoſed of ſeveral petals arranged in a circular form; the piſtil ariſes from the center of the flower, and finally becomes a ſoft fruit or berry, uſually of an oval figure, and containing ſeeds often adhering to one another in a double order.

The ſpecies of *chriſtophoriana* enumerated by Mr. Tournefort are theſe: 1. The common branched *chriſtophoriana*, with racemoſe fruit. 2. The American racemoſe *chriſtophoriana*, with white berries. 3. The racemoſe American *chriſtophoriana*, with red berries. 4. The racemoſe American *chriſtophoriana*, with red berries ſtanding on long foot-ſtalks. *Tourn.* Inſt. p. 299.

CHRISTOPHORUS *piſcis*, a name by which ſome have called the faber, or as we call it, the doree, or jaune doree, the gilded fiſh.

It has obtained its name of *Chriſtopher* fiſh from an old traditional ſtory, that when St. Chriſtopher walked through the ſea with our Saviour, he ſeized on one of the fiſh of this ſpecies, which ever ſince has been commemorated in the whole ſpecies by the marks of his thumb and finger on the two ſides. *Ray*'s Ichthyogr. p. 294. See the article FABER.

CHROÆ, χροαι, in the muſic of the antients. See COLOURS, GENUS, and SPECIES.

CHROMA, (*Cycl.*) in the botanical writings of the antients, a word uſed to expreſs a famous root brought from Syria into Greece, and uſed by the women of that country to paint their cheeks red. It was alſo called *rhizium* and *fucus*, and by the Latins *radicula*. Pliny calls it *lanaria radix*, but very improperly, for that name confounds it with the ſtruthion of the Greeks, which was a very different plant. The Greeks themſelves ſeem to have known nothing of the plant whoſe root this *rhizium* or *chroma* was, and have left us no deſcriptions of it; but it ſeems, by their account of the root itſelf to have been the common anchuſa or alkanet, which grows in great plenty in Syria, and has its colour very high and elegant, and is fit for all the purpoſes to which the Greeks employed it, in painting the fleſh, &c.

CHROMA, in the Italian muſic. The Italians take this term from the Greeks, but uſe it to ſignify a note or character of time, by us called a quaver, and when the word ſemi is added thereto, it means our ſemiquaver. Eight of the former are contained in a bar, and ſixteen of the latter in common time. *Broſſ.* Dict. Muſ. in voc.

CHROMA is alſo a graceful way of ſinging, or playing, with quavers and trilloes. Vid. *Broſſ.* Dict. Muſ. in voc.

CHROMA alſo ſometimes ſignifies the ſame as the chromatic dieſis or ſemitone minor. Vid. Miſcel. *Berol.* T. 1. p. 279, 280. See DIESIS.

CHROMA is alſo uſed to ſignify the genus chromaticum. In this ſenſe we find it uſed by Ariſtoxenus [a], and in Ptolemy's harmonics [b]. — [[a] p. 44. Edit. Meibom. [b] Vid. *Wallis* Append. ad Ptolem. Harm. p. 166.]

CHROMATIC (*Cycl.*) — The moderns have been much perplexed to underſtand the different ſpecies of *chromatic* muſic in uſe among the antient Greeks. Moſt of our muſicians have no other notion of the *chromatic*, than of a melody proceeding by ſemitones major, and minor. This is what Broſſard ſays of it [a]. But this is not ſufficient to convey a true notion of the *chromatic*. It is but in one ſpecies of the *chromatic* that we proceed by a ſemitone major and minor; in one of the other two ſpecies, no ſemitone major occurs, and in the other no ſemitone minor; and this laſt ſpecies is uſed among the moderns; ſo that it is not univerſally true that our *chromatic* muſic proceeds by ſemitones major and minor. Dr. Pepuſch has given us a clearer light in this affair; his doctrine is as follows:

The antients diſtinguiſhed three ſorts of *chromatic*, which were denoted by the names, *molle*, *ſeſquialterum*, and *toniæum*.

The *chromaticum molle* was a diviſion of the diateſſaron, or fourth, into three intervals, which were two ſubſequent ſemitones minor, and the interval, which is the complement of theſe two to the fourth; and this interval will be found equal to a third minor added to an enharmonic dieſis. This ſpecies is not to be met with among the moderns [b].

The *chromaticum ſeſquialterum*, or *hemiolium* [c], was a diviſion of the fourth into a ſemitone major, a ſemitone minor, and a third minor. This is mentioned by Ptolemy as the *chromatic* of Didymus. It occurs in modern compoſitions [d].

The *chromaticum toniæum*, or *tonicum* [e], was a diviſion of the fourth into a ſemitone major ſucceeded by another ſemitone major, and the complement of theſe two to the fourth, which is the interval, commonly called a ſuperfluous tone [f]. This often occurs in modern muſic. — [[a] Dict. de Muſique, p. 19. [b] Phil. Tranſ. N° 481. p. 272. [c] *Wallis*, Append. Ptolem. Harm. p. 164. [d] Phil. Tranſ. ib. [e] *Wallis*, ibid. [f] Phil. Tranſ ibid.]

CHROMATIC is alſo applied by ſome to the ſcience of colours. *Caſtel.* Math. univer p. 76, 77.

Chroma originally ſignifies colour, but has been applied by muſicians to ſounds.

CHROMIS, in zoology, the name of a little fiſh caught frequently in the Mediterranean. It ſeldom exceeds three inches in length, and is moderately thick; it is of a duſky brown colour, but is variegated by a number of longitudinal lines of a paler and brighter colour. Its ſcales are large; its head ſmall; and its noſe ſhort; its mouth is ſmall, and its teeth very minute; it has only one back fin, which is very long, and has its anterior ray, or nerves, prickly, the hinder ones ſoft and flexile. The tail is forked; the fin behind the anus is ſupported by twelve rays, the two foremoſt of which only are rigid and prickly; the firſt but ſmall and ſhort, the ſecond very long and ſharp. Its ſide lines are dotted, and do not, as in other fiſhes, run from the gills to the tail, but terminate a little beyond the back fin. *Aldrovand.* de Piſc. l. 2. c. 14. p. 167. *Geſner*, de Piſc. p. 264.

Artedi, who has very accurately examined this fiſh, does not allow it a diſtinct generical name, but makes it only a ſpecies of his genus of the ſpari, calling it the ſparus with the ſecond ray of each belly fin carried to a great length.

CHROMIS is alſo the name by which Bellonius, and ſome others, have called a large fiſh caught in the Mediterranean, more uſually known by the name of umbra, and brought to market in Italy while young and ſmall. *Geſner.* de Piſc. p. 1230. See UMBRA.

CHRONOSCOPE is ſometimes uſed for a pendulum to meaſure time. See PENDULUM, *Cycl.*

CHRYSAETOS, the *golden eagle*, a large and beautiful bird of prey. Its weight is uſually twelve pounds; his general colour a cheſnut brown, with a number of white ſpots, there are but few of them on the back, but a large number on the belly; his feet are feathered to the toes, and yellow. He is extremely bold and fierce, and will ſeize upon almoſt any thing for prey; his voice is clear and ſhrill, and often he makes a moaning noiſe.

That ſpecies of eagle which we call ſimply the eagle, without any addition, is of this kind, and is properly characterized by the name of *chryſaetos cauda annulo albo cincta*; a tranſverſe white line on its tail being its moſt obvious diſtinction. *Willughby*'s Ornithol. p. 28.

CHRYSALIS *of the ſilk-worm*. See FEVE.

CHRYSANTHEMUM, *corn marygold*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the radiated kind; the diſk is made up of floſcules, and the outer border of ſemifloſcules; theſe all ſtand upon the embryo ſeeds, and are contained in a ſquammoſe, ſemi-orbicular cup; the embryos finally ripen into ſeeds, which are uſually of an angular or ſtriated appearance, and ſometimes very ſlender and ſharp-pointed.

The ſpecies of *chryſanthemum* enumerated by Mr. Tournefort are theſe: 1. The *chryſanthemum* with leaves like feverfew. 2. The great *chryſanthemum*, with deeply-divided leaves, and large flowers, called the Cretic *corn marygold*. 3. The Cretic *chryſanthemum*, with the petals of the outer circle fiſtulous. 4. The double-flowered Cretic *corn marygold*. 5. The *chryſanthemum*, with flowers partly yellow and partly white. 6. The *chryſanthemum* with double flowers, partly yellow and partly white. 7. The great *corn marygold*, with large ſulphur-coloured flowers. 8. The *corn marygold*, with finely divided leaves, and red joints to the ſtalk. 9. The great *corn marygold*, with leaves divided into numerous ſmall ſegments. 10. The *corn marygold*, with blueiſh, green, leſs-divided leaves. 11. The common *corn marygold*, with ſulphur-coloured flowers. 12. The broad leaved *corn marygold*. 13. The little *chryſanthemum*, called by ſome the little, broad-leaved, yellow daiſy. 14. The Portugal *chryſanthemum*, with maudelin leaves. 15. The Portugal *chryſanthemum*, with narrow, ſerrated leaves. 16. The dwarf ranunculus-leaved American *corn marygold*. *Tourn.* Inſt. p. 491.

CHRYSANTHERINUS *lapis*, in natural hiſtory, a name given by old writers to a ſtone famous for its imaginary virtues of preventing children from ſickneſſes during the time of dentition, by being worn round the neck by way of necklace; we have no farther account given us of it by authors, than that it was a very brittle ſtone, and not eaſily worked into form.

CHRYSITES, a name given by the antients to yellow litharge, ſuch as we call litharge of gold. We diſtinguiſh this only in regard to the colour, and ſo did the antient Greeks; but Aviſenna and the reſt of the Arabians have uſed this word only for the name of ſuch litharge as was made from gold, of whatever colour that happened to be; the reſt they called all by the name of argyrites, as themſelves tell us, whether it was made of ſilver, copper, or even of the marcaſite melted, and refined by lead. See KLIMIA.

CHRYSOBALANUS, in botany, the name of a genus of plants called by Plumier *icaco*, the characters of which are theſe: the perianthium conſiſts of one leaf, and is plane and permanent, and divided into five ſegments. The flower conſiſts of five

plane,

plane, oval, and expanded petals: the ſtamina are a number of erect, hairy filaments, placed in a circular direction; the antheræ are ſmall; the germen of the piſtil is of an oval figure, and the fruit is a large oval berry, having only one cell, in which is lodged a rugoſe and friable nut of an oval figure marked with five lines running its whole length. *Linnæi* Gener. Plant. p 237. *Plumier*, Gen. 5.

CHRYSOCERAUNUS *palvis*, is ſometimes uſed for *aurum fulminans*. See AURUM *fulminans*, *Cycl.*

CHRYSOCERI, χρυσοκεροι, in antiquity, a deſignation given to oxen deſigned for ſacrifices. They were ſo called from their horns being gilded.

CHRYSOCOLLA, (*Cycl.*) in the materia medica of the antients, the name of a fine green arenaceous powder, properly one of the ſaburræ, and found at this day in many parts of the world.

It is of a very elegant colour, ferments violently with aqua fortis, and is wholly diſſolved by it, and tinges it with a blueiſh green; and being calcined it loſes all its green colour.

It is now found on the ſhores of the Red Sea, on thoſe of ſome parts of America, and in Ruſſia; and that found at this time has all the properties of that mentioned by the antients. It ſerves to the ſoldering of gold and other metals, and given internally is a violent and dangerous emetic. *Hill*'s Hiſt. of Foſſ. p. 580.

CHRYSOCOLLA was alſo the name given by the antient Arabians to the gum ammoniacum of the Greeks. The plain interpretation of the word *chryſocolla* is gold glue, and in this ſenſe it was uſed for the ſubſtance employed in the ſoldering gold together; but here it is only uſed to expreſs a golden colour, which had the property of adhering like glue to the paper it was laid upon. Aviſenna tells us, that this gum was uſed to ſtain books and papers, and that the colour it gave was a gold yellow, which nothing would take off. This could not be the ſame with our ammoniacum. Pliny tells us of the two kinds of ammoniacum uſed by the antient Greeks, the one of which was brittle and pure, and the other tough and foul; it is poſſible that the latter of theſe, which is the kind called phyrama, may be the ſame with the ammoniacum now uſed, but the other kind called thrauma, or thrauſton, which was of a rediſh brown, and very brittle, could not be ſo. Neophytus endeavours to reconcile both deſcriptions to our gum ammoniacum in its different ſtates; but while he does this, he forgets that the characters of the thrauſtum are ſo different, that the thing cannot be the ſame with ours, even if both the kinds mentioned by the Greeks were the ſame, which does not appear at all probable.

CHRYSOCOME, in botany, a name by which ſome authors call the ſtæchas citrina, or goldylocks. *Parkinſon*, Herb. p. 79.

CHRYSOGONON, or CHRYSOGONUM, in botany, a name by which ſome authors have expreſſed the moth mullein, or blattaria. *Ger.* Emac. Ind. 2. See BLATTARIA.

CHRYSOGONUM, in the materia medica, is alſo the name of a Syrian plant, called the red turnep, the leontopetalon coſta ſimplici of Tournefort. *Park.* Theatr. p. 683. See LEONTOPETALON.

CHRYSOLACHANON, in botany, a name by which Pliny, and ſome other authors have expreſſed the white garden beet. *Ger.* Emac. Ind. 2.

CHRYSOLITE, (*Cycl.*) the name given by the moderns to a gem which was called the topaz by the antients. All the modern jewellers, and thoſe of ſeveral ages before them, have agreed in calling this gem the *chryſolite*; and the true *chryſolite* of the antients, which had its name from its fine gold yellow colour, they now univerſally call the topaz.

The *chryſolite* of our times, the topaz of the antients, is even in its moſt pure and perfect ſtate, a gem of but ſmall beauty, and of no great value. It is found of various ſizes, and ſome of the coarſer pieces of it are vaſtly larger than any of the other gems are ever found to be; its moſt frequent ſize, however, when perfect, is about the bigneſs of a nutmeg. It is found of very various figures, but never columnar, or in the form of cryſtal; it is in ſome places found ſmall, and in roundiſh, or irregular, pebble-like maſſes, and in others generally oblong and flatted, and is always of a rude ſurface, and leſs bright than any other of the native gems. Its colour is a dead green, with a faint admixture of a pale yellow; it has theſe different tinges in the ſeveral ſpecimens in different degrees of mixture, but its moſt uſual colour is that of an unripe olive, with ſomewhat of a braſſy colour mixt with it, and ſometimes is a pale and duſky green obſcured by a mixture of brown, and with a ſlight caſt of the ſame braſſy yellow. It is much ſofter than any of the pellucid gems; its fineſt pieces do not excel cryſtal in hardneſs, and its coarſer are greatly ſofter; it takes a good poliſh, however, and in ſome of its finer ſpecimens makes a tolerable figure, though greatly inferior to the other gems. *Hill*'s Hiſt. of Foſſ. p 598. Our jewellers take very little notice of it, and inſtead of having two or three names for it, as they have for moſt other of the gems, they call it very often a praſius, and the leſs accurate among them often call the chryſopraſius a *chryſolite*.

The *chryſolite* is found in New Spain, and in ſeveral parts of Europe, as Sileſia, Bohemia, &c. The American, however, are greatly ſuperior to the European, but are uſually ſmall; the Bohemian are large, but very few of them are of a good colour, or free from flaws.

CHRYSOPAGION, in natural hiſtory, a name by which ſome of the middle ages have called the gem deſcribed by Pliny, under the name of the chryſolampis. All that Pliny tells us of this gem is, that it was very bright, and was of a pale yellow colour by daylight, but of a flame colour in the night; but this has been improved by thoſe who have copied it, into a ſtory of ſhining in the dark, and loſing its luſtre by day-light. Many ſtones of the coloured kind have a different appearance by day-light, and when viewed with a candle; and all that Pliny ſeems to have meant by this paſſage, is, that the ſtone was plainly of a yellow colour by day-light, but had ſomething of rediſh mixed with it, when viewed by candle light; it was probably either of the topaz, or of the hyacinth kind. Salmaſius is of opinion that it was only a foul kind of the chryſopraſius, of which Pliny ſays, that ſome of them were full of ſpecks, and of a variable colour.

CHRYSOPETRON, in natural hiſtory, a name given by Pliny and others, to the yellower kind of the antient topaz, that is, our chryſolite. The old authors have diſtinguiſhed two kinds of this gem, according as the green or yellow colour predominated in the mixture: when the yellow bore the ſway, they called it *chryſopetron*, the golden ſtone; when the green was moſt predominant, they called it praſiodes. Some, inſtead of the word *chryſopetron*, have it *chryſopteron*, and ſome only *chryſoteron*, which, leaving out the word ſtone or gem, ſignifies only more yellow, or gold-coloured. Orpheus, or the author of the hiſtory of gems, under his name, calls the green topazes hyaloides, or glaſſy; many have ſuppoſed the word hyaloides to ſignify only tranſparent as glaſs; but this, and many other paſſages of the antients prove, that it was alſo uſed for glaſs-coloured, that is green.

CHRYSOPHRYS, in ichthyology, a name given by the antient Greek and Latin authors to a fiſh called at this time the aurata; it is a ſpecies of ſparus. See the articles AURATA, and SPARUS.

CHRYSOPILON, in natural hiſtory a name given by ſome antients to a ſpecies of the beryl, which had a yellowiſh tinge.

CHRYSOPIS, the *golden eye*, in natural hiſtory, the name of a ſpecies of fly, ſo called from the beautiful gold colour of its eyes. It is a long-bodied fly, with extremely thin and tranſparent wings of a ſilvery colour, with green ribs or nerves; the body is green, and the antennæ very ſlender, and blackiſh. This is a very ſlow flyer, and is common in gardens; it is frequently found on the common elder; it is of a very ſtrong ſmell.

CHRYSOPRASUS, in chriſtian antiquity, the tenth of thoſe precious ſtones which adorned the foundation of the heavenly Jeruſalem [a], the colour of it was green, much like that of a leek, but ſomething inclining to that of gold, as its name imports [b]. — [a Revelat St. John. b *Calm.* Dict. Bibl.]

CHRYSOSPLENIUM, *golden ſaxifrage*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is of a rotated form, and divided into ſegments at the edge; there is no flower cup, but the piſtil riſes immediately from the center of the flower, and ripens into a two-horned, membranaceous capſule, which contains a great number of very minute ſeeds.

The ſpecies of this genus enumerated by Mr. Tournefort are three: 1. The large, auriculated-leaved, *golden ſaxifrage*. 2. The ſmaller, rounder leaved, *golden ſaxifrage*. And, 3. The *golden ſaxifrage*, with leaves ſtanding on long foot-ſtalks. *Tourn.* Inſt. p. 146.

CHRYSOXYLON, in botany, a name given by ſome to the Scytharion, or Scythicum lignum, a wood famous for its beautiful yellow colour, and in tinging the hair yellow. This was one of the many ſubſtances called by the name of thapſum by the antient Greeks from its colour, the word thapſus ſignifying a pale yellow, and being applied by theſe authors to every thing that had that colour in itſelf, or could give it to other things. See the article THAPSUM.

CHRYSTAL. See CRYSTAL.

CHRYSTALLINE (*Cycl.*) — The veſſels of the *chryſtalline* humour of the eye are all the branches of an artery, which being ſent off from the artery which enters at the central part of the retina, paſſes through the vitreous humour, and when it reaches the *chryſtalline*, diſperſes its branches along the ſurface of the lens like radii, till they are exceeding minute when they pierce into its ſubſtance. Med. Eſſ. Edinb Vol. 1. p. 337.

CHTHONIA, χθονια, in antiquity, a feſtival kept in honour of Ceres, called *Chthonia*. For the ceremonies obſerved in it, ſee *Pott.* Archæol. l. 2. c. 20.

CHUBB, the Engliſh name for the fiſh called the *capito* and *cephalus* by authors, and by ſome of the antient Romans *ſqualus*. It is, according to the Artedian ſyſtem, a ſpecies of the cyprinus, and is the fiſh called by the French the vilain and teſtard. See the articles CEPHALUS, CAPITO, and CYPRINUS.

The reſorts of this fiſh are eaſily found, for they are generally holes overſhaded by trees, and the fiſh will be ſeen floating in ſuch almoſt on the ſurface of the water in a hot day in great numbers. They are but a poor fiſh for the table, and are very full of bones, but they entertain the angler very much, and are of the number of thoſe that are eaſily taken. The beſt manner of fiſhing for him is thus: prepare a very ſtrong rod of a ſufficient length; fix to the hook a graſshopper; place yourſelf ſo as to be perfectly out of ſight of the fiſh, and drop in the bait about two foot from the place where a large *chubb* lies; if he does not ſee the angler he very ſeldom fails biting, and is immediately taken, but he is ſo ſtrong a fiſh that he

ſhould be taken out carefully, after a great deal of playing, otherwiſe the tackle will be in danger; a beetle, or any large fly will anſwer the purpoſe in the place of a graſshopper, and if there are none of them to be had, the method of fiſhing muſt be altered, and the line be long enough for fiſhing at the bottom. In March and April this fiſh is to be caught with large red worms; in June and July with flies, ſnails, and cherries; but in Auguſt and September the proper bait is good cheeſe pounded in a mortar, with ſome ſaffron, and a little butter; ſome make a paſte of cheeſe and Venice turpentine for the *chubb* in winter, at which ſeaſon this fiſh is better than at any other; the bones are leſs troubleſome in this ſeaſon, and the fleſh is more firm and better taſted; the row is alſo well flavoured in general. The angler muſt keep his bait for this fiſh at the bottom in cold weather, and near the top in hot, and the fiſh will bite eagerly.

CHUCHIA, in zoology, a name given by Cardan, Oviedo, and ſome others to the opoſſum. See OPOSSUM.

CHUM-*owl*, in zoology, a name given by many to the bird called the caprimulgus, or goat-ſucker, a very beautiful owl of the ſhape of the cuckow. *Ray*'s Ornithol. p. 70. See the article CAPRIMULGUS.

CHUNNA, in the Salic law, is uſed for an hundred; or rather an hundred pence or denarii: the pecuniary penalties of that law are eſtimated by *chunnæ*, and reduced to *ſolidi*, by reckoning forty *denarii* to the *ſolidum*. *Du Cange*, Gloſſ. Lat. in voc.

CHURCHESSET. See CHURCH-SCOT, *Cycl.*

CHURR-*worm*, a name given by ſome to the gryllotalpa. See GRYLLOTALPA.

CHYLE (*Cycl.*) — Some think that all the groſs ſecretions are from the *chyle*; and particularly that *pus* is the product of the *chyle*, and not of the blood or ſerum. See Phil. Tranſ. N° 427. §. 2.

CHYMICA *materia*. See MATERIA *chemica*.

CHYMICAL *oils*. See *chemical* OIL.

CHYMOLOGI, among the botanical ſtudents, ſuch as have employed their time in inveſtigating the qualities and properties of plants from their taſte and ſmell. *Linn.* Fund. Bot. p. 3.

CHYTLA, χυτλα, in antiquity, a liquor made of wine and oil, and ſometimes uſed in divination. *Pott.* Archæol. Græc. l. 2. c. 18.

CHYTRI, among the Athenians, a feſtival in honour of Bacchus and Mercury, kept on the thirteenth of the month Antheſterion. *Hoſm.* Lex. in voc.

CIBDELOPLACIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek κιβδηλος, impure, and πλαξ, a cruſt. The bodies of this genus are terrene ſpars, that is, are compoſed of ſpar, debaſed by a very large admixture of earth, and are not therefore of the leaſt brightneſs or tranſparence, and are found formed into thin cruſts, coating over vegetable and other extraneous bodies in form of incruſtations. Of this genus there are five known ſpecies, ſome of them uſed in medicine, and diſtinguiſhed by particular names. 1. A greyiſh white friable one, with a tuberous ſurface. This is found in England, Ireland, aud Germany; ſometimes incruſting various bodies in ſprings, and ſometimes in marl pits. 2. A ſmooth, friable, whitiſh brown one, found in the marl pits of Derbyſhire, and in ſome ſprings in Northamptonſhire. 3. A hard, pale brown, thick and rough one, which is the oſteocolla of the ſhops. See OSTEOCOLLA. 4. A white, grey, friable one, called the foſſile unicorn by authors. See UNICORNU *foſſile*. 5. A whitiſh brown tuberoſe, and unequal coraliform one, called erdmangon by the Germans. This is very common in the brick clay pits about London, and is ranged by Dr. Woodward very oddly among the cruſtated, ferrugineous bodies: the workmen call this *race* or *rance*. *Hill*'s Hiſtory of Foſſils, p. 356.

CIBDELOSTRACIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek κιβδηλος, fouled or adulterated with extraneous matter, and οστρακον, a cruſt, or ſhell.

The bodies of this genus are cruſtaceous ſpars, ſo highly debaſed with earth, that they appear to the naked eye mere earths; they are deſtitute of all brightneſs or tranſparence, and are formed into thin plates, and uſually found incruſting over the ſides of fiſſures of ſtone.

Of this genus there are ſeven known ſpecies. 1. A hard browniſh white one much of the nature and ſtructure of the oſteocolla of the ſhops, and found in many parts of Germany, coating over the tops and ſides of ſubterraneous caverns. 2. A hard and whitiſh one, with thin cruſts, and a ſmooth ſurface. This is found in many parts of Germany and England on the ſides and roofs of caverns. 3. A hard, pale, brown one, with very numerous thin cruſts, found alſo in many parts of England. 4. A white, light, and friable one, found in Germany and England. 5. A light, hard, pale brown one, with a ſmooth ſurface. This is very common in form of incruſtations on moſs, and other ſubſtances, in ſeveral of our ſprings. 6. A whitiſh friable one, with a rougher ſurface, found in form of cruſts in the caverns on Mendip hills, and in incruſtations on vegetable bodies in many parts of Glouceſterſhire. And, 7. A browniſh white friable one, with a duſty ſurface, found frequently in Ireland. *Hill*'s Hiſt. of Foſſ. p. 349.

CIBORIA, κιβωρια, in antiquity, the large huſk of Egyptian beans, which are ſaid to have been ſo large as to ſerve for drinking cups, whence they had their name *ciborium*, ſignifying a cup, in the Egyptian language. *Pitiſc.* Lex Ant. in voc.

CIBORIUM, in eccleſiaſtical writers, the covering for the altar. This covering is ſupported by four high columns [a], and forms a kind of tent for the euchariſt, in the Romiſh churches. Some authors call it *turris geſtatoria*, and others *pyxis* [b]. But the *pyxis* is properly the box in which the euchariſt is preſerved. — [a *Du Cange*, Gloſſ. Lat. b *Magri*, vocaboli eccleſ.]

CIBUS *ferialis*, in antiquity, an entertainment peculiar to a funeral; for which purpoſe, beans, parſley, lettuce, bread, eggs, lentils, and ſalt were in uſe. *Pitiſc.* Lex. Ant. in voc.

CICADA, the *balm cricket*, in zoology, the name of an inſect common in Italy, and ſome other parts of the world; but not found in England. It has large wings, and makes a loud noiſe, ſomething like that of the cricket. See Tab. of Inſects, N° 5. and HARVEST-*fly*.

They are recommended by ſome in medicine as remedies for colics, powdered, and mixed with pepper; or burnt to aſhes alone, are given in nephritic caſes. *Dale*, Pharm. 357. *Schroder*, Pharm. 196.

CICADA *aquatica*, the *water graſshopper*, a name very injudiciouſly given by Rondeletius to an animal found frequently in ſtanding waters. It is of a greyiſh colour, with ſix legs, and the appearance of the rudiments of wings; it is remarkable for having alſo a ſort of maſk before the face, which it removes or lifts up at pleaſure. It is a poor defenceleſs animal, and is a prey to almoſt all the other water animals, even to many that are ſmaller than itſelf; it has no ſort of relation to the graſshopper; but is the hexapode, or worm ſtate of one of the libellæ, or dragon flies. See LIBELLA.

This inſect has ſix legs, and the hinder pair are much longer than the others, and are uſed in ſwimming as oars, in the manner of thoſe of the notonecta.

CICADULA, in natural hiſtory, the name given by Mr. Ray to a ſmall ſpecies of inſect, called by Swammerdam, *locuſta pulex*, and found in May and June on the ſtalks and leaves of plants, involved in a ſpumous white matter, commonly called cuckow ſpit. This ſpume is not exſudated, as ſome ſuppoſe, from the plant, but from the mouth of the animal, and if it be well wiped away, without injuring the creature, more will be immediately ſeen iſſuing out of its mouth, till there is as large a quantity of it as before.

There are ſeveral ſpecies of this animal, and while they lye in froth they are of the ſhape of a louſe, ſome being of a whitiſh, ſome of a yellowiſh, and ſome of a green colour. Their hinder legs are ſomewhat larger than the others, and there is an appearance of the rudiments of wings at the ſhoulders. They often change their ſkins while they live in this froth, and only creep at this time; but when they leave the plant, they hop and fly, having large wings which cover the whole body. *Ray*'s Hiſt. Inſect. p. 67.

CICATRISANTIA, in medicine. See CICATRISIVE, *Cycl.*

CICATRIX (*Cycl.*) — In large wounds, where there has been a a loſs of ſubſtance, an even *cicatrix* is not to be expected without great care in the ſurgeon. When an even thick and white matter appears in the wound, it is to be dreſſed either every day, or every other day, as occaſion ſhall require: the ſuperfluous matter muſt at every dreſſing be wiped away with a very light hand; and it is indeed much better to leave ſome of it in the wound, than to treat that roughly in the taking it away; for wiping the wound too roughly hinders the growth of new fleſh; but a little matter being left, only performs the office of oil or balſam, in keeping the parts moiſt. Theſe rules being obſerved, new fleſh will preſently ſpring up, and the wound unite: but that an even *cicatrix* may be procured, the ſurgeon muſt endeavour by degrees to harden the new fleſh by the application of a dry lint, covered with a tight bandage. When this does not prove ſufficient, it may be proper to uſe ſome of the drying balſams, or drying powders, ſuch as tutty, lapis calaminaris, maſtich, colophony, &c. Rectified ſpirit of wine is frequently uſed for this purpoſe alſo, with great ſucceſs, for it carries a very great aſtringent and drying virtue with it. *Heiſt.* Surg. p. 41. See WOUND.

CICATRIZING, in medicine. See CICATRISIVE, *Cycl.*

CICER, the *chich pea*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the papilionaceous kind, and its piſtil finally becomes a ſhort pod, which ſeems as if inflated with wind, and contains ſeveral ſeeds, ſomewhat reſembling in ſhape the head of a ram.

The ſpecies of *cicer* enumerated by Mr. Tournefort, are theſe: 1. The common white-flowered cultivated *cicer*. 2. The cultivated *cicer*, with purpliſh red flowers, and red ſeeds. 3. The cultivated *cicer*, with brown ſeeds. 4. The cultivated *cicer*, with deep red ſeeds. 5. The cultivated *cicer*, with black ſeeds. See Tab. 1. of Botany, Claſs 10. *Tourn.* Inſt. p. 389.

The antient Hebrews made uſe of *chich peaſe* as their common proviſion, when they took the field. They parched them, and ſo eat them. At this day in Egypt, when people undertake a journey, they lay in a good ſtock of *chich peaſe*, parched in a frying

frying pan. Bellonius [a] assures us, that at Grand Cairo and Damascus there are abundance of shops where people do nothing else but fry pease, it being a sort of provision with which they furnish travellers. In Ethiopia they take barley with them, roasted in the same manner. In Turkey they lay in a stock of rice on these occasions, which they prepare and shell. The Hebrew term *cali*, signifies properly any thing roasted in general; and by it is understood roasted pease, rice or barley. Some will have even coffee to be meant by it [b].—[[a] *Bellon.* l. 2. c. 52. [b] *Calm.* Dict. Bibl.]

CICERBITA, in botany, a name given by some authors to the common sonchus, or sowthistle. *Ger. Emac.* Ind. 2.

CICERONIASTRI, or CICERONIANI, an appellation given by way of contempt to those moderns, who dispute the propriety of all expressions and words not found in Cicero.

Their pretences are certainly ill founded; for as Cicero has not written on every subject, it is impossible his works should contain proper terms and expressions for every thing. It must indeed be allowed, that this truly illustrious author is an excellent standard for the purity of Latin diction, but not the only one. *Voss.* Rhet. l. 4. p. 14.

CICERUM *lapis*, the *chich stone*, in natural history, a name given by some authors to a sort of small round stones, of the nature of the pisolithe or pea-stones, but smaller than those usually are, and of a dusky grey colour. They very exactly resemble the fruit of the cicer or chich pea, and are found in great abundance near the Old Jerusalem. See PISOLITHUS.

CICERELLUS, in ichthyology, a name given by Boccone, and some other authors, to the ammodytes or sand eel, the tobianus of Schoneveldt. See AMMODYTES.

CICHORIUM, *succory*, in botany, the name of a genus of plants, the characters of which are these: the flower is of the semiflosculous kind, being composed of a great many semifloscules, which stand upon the embryo fruits, and are contained in a common cup, which afterwards contracts itself so as to form a sort of capsule, containing a number of angular, umbilicated, and somewhat wedge-like or cuneiform seeds.

The species of *succory* enumerated by Mr. Tournefort, are these: 1. The common weed *succory*. 2. The *succory*, with rose coloured flowers. 3. The white flowered *succory*. 4. The wild *succory*, with leaves scarce at all divided. 5. The common garden *succory*. 6. The garden *succory*, with jagged flowers. 7. The white flowered garden *succory*. 8. The broad-leav'd *succory*, or common endive. 9. The white-flowered *endive*. 10. The narrow-leav'd *endive*. 11. The white-flowered, narrow-leav'd *endive*. 12. The curled leav'd *succory*. 13. The cretic prickly *succory*. 14. The cretic *succory*, without thorns. See Tab. 1. of Botany, Class 1. and *Tourn.* Inst. p. 478.

The common *succory* stands recommended by most of the medical writers, as one of the best known aperients and detergents: it is prescribed in all diseases of the liver, and is a powerful diuretic. Schroder tells us, that it has also great virtues attributed to it against hæmorrhages; but it is not much regarded at present in that light.

CICINDELA, in natural history, the name of the glow-worm. See the article PYROLAMPIS.

CICINDELA *volans*. See GLOW-*worm*.

CICLA, in botany, a name given by some to the white beet. *C. Bauhin.* p. 118.

CICLA, in ichthyology, a name given by Artedi, and other late writers, to a species of fish called *chichle* by Aristotle and Ælian, and *turdus minor* by the generality of late writers. Artedi has taken its size as an article of distinction, and has distinguished it by the name of the *cicla palmaris*. The eyes have a fine yellow iris; the tail is broad, and is not forked at the end. The fish is broad, and somewhat resembles the sea tench: the head, back, tail and fins are of a dusky grey colour: the sides are of a pale whitish grey; and the belly is white, spotted with black. It seldom exceeds a hand's breadth in length.

This is the character of the more usual species of the *cicla* called turdus minor. But there is another larger fish truly of this kind, called by Artedi, by way of distinction, *cicla cubitalis*. This is the *turdus major* of authors, called by the Venetians tordo and verdone. It is of a longer shape than the former, and its colour is all over either of a fine green, or a bright red; but there are some small blue spots on the back, and the sides and belly are ornamented with a confused set of the same sort of spots, only that they are much smaller. *Artedi*, Ichthyol. See the articles TORDONE and TURDUS.

CICONIA, in zoology, the name by which authors call the stork, a bird much approaching to the nature of the heron, of which there are three kinds; the white, the black, and the grey Brasilian kind, called maguari. See MAGUARI.

The white stork is larger than the common heron, but its neck is shorter and thicker. Its head, neck, breast and belly are white: its rump, and the outer feathers of the wings are black: its tail is white, and its beak long and reddish. Its legs also are red.

The black stork is somewhat smaller than the white. Its head, neck, back and wings are black, with a greenish cast among it: the belly, breast and sides are white, and the beak and legs are green. Many are of opinion, that this is the bird mentioned by Ovid under the name of mergus. *Ray*'s Ornithol. p. 212.

In the Linnæan system of zoology, the *ciconia* makes a distinct genus of birds of the macrorynchæ or long-beak'd kind, the characters of which are, that the claws are smooth and roundish. *Linnæi* Syst. Natur. p. 45.

CICUTA, *hemlock*, in botany, the name of a genus of plants, the characters of which are these: the flower is umbelliferous, and of the rosaceous kind, being composed of several heart-fashioned petals, irregular in size, disposed into a circular form. The cup finally becomes a roundish fruit, composed of two seeds, striated and gibbose on one side, and flat and smooth on the other.

The species of *hemlock* enumerated by Mr. Tournefort, are these: 1. The common great broad-leav'd *hemlock*. 2. The common great *hemlock*, with narrower leaves: and, 3. The parsly-leav'd *hemlock*, called by some *cicutaria*, and fool's parsly. *Tourn.* Inst. p. 306.

There are not wanting authors among the Germans, who recommend the seed of the common *hemlock* against obstructions in the spleen; but as we have already remedies enough in the same intention, which are not suspected as poisonous, it is best to be contented with them, till a great many more trials have been made of this new medicine than we have accounts of at present.

CICUTARIA, in botany, the name of a genus of the umbelliferous plants, the characters of which are these: the flower is of the rosaceous kind, being composed of several petals, arranged in a circular form around a cup, which afterwards becomes a fruit composed of two seeds, which are considerably thick, long, gibbose, and, as it were, of a lunated form, and very deeply striated. To this it is to be added, that the leaves much resemble those of hemlock.

The species of *cicutaria* enumerated by Mr. Tournefort, are these: 1. The broad-leav'd stinking *cicutaria*. 2. The broad-leav'd Thapsia-like *cicutaria*. *Tourn.* Inst. p. 312.

CIDARIS, the mitre used by the Jewish high priests. Whenever there is mention of the high priest's mitre, the Hebrew word made use of to express it is always *miznepheth*; and *mygbaoth* is used to signify the bonnet belonging to common priests. The rabbins say the same thing is meant by both these terms, and that the bonnet used by priests in general was made of a piece of a linnen cloth sixteen yards long, which covered their heads like an helmet or a turban: and they allow no other difference to be between the high priest's bonnet, and that of other priests, than this, that one is flatter, and more in the form of a turban, whereas the other worn by ordinary priests rose something more in a point. Exod. xxviii. 4.

The form of these bonnets is not now well understood, the descriptions which are given us of them being so various and different. Moses expressly tells us, that the high priest's tiara was made of *schesh*, that is cotton, and that of other priests of linen only. The tiara and the priests bonnets were tied with a ribbon, which Ezekiel calls crown; but that used by the high priest was richer, and remarkable for the plate of gold, with the name of God engraven on it, which was placed in the fore-part of the tiara, and covered some of the high priests forehead; the ribbon was tied behind his head. Lastly, the Hebrew term *migbaoth*, whereby the bonnet of the common priests was expressed, and which St. Jerome translates *mitra*, intimates, that this bonnet had some resemblance with an helmet. And that of *miznepheth*, which denotes the high priest's tiara, and is translated *cidaris* by the same Jerome, was probably of another form, and perhaps like those streight tiara's which were worn by the kings of Persia [a]. We see in Isaiah that the kings of Judah wore a bonnet on their heads called *zenuph*, which is derived from the same word as *miznepheth*. [[a] *Xenophon.* de Expedit. de Cyri.]

It is to be observed, that the Hebrew priests never appeared in the temple without covering their heads. And still at this day it is reckoned an incivility in the East, and a mark of contempt, for any man to pull off his hat or turban to another, or to shew his naked head before any one. *Calm.* Dict. Bibl.

CIDARIS, in conchyliology. See TURBAN *shell*.

CIERGE, in conchyliology, a name given by the French to a sea shell, a species of voluta. This is of the colour of common yellow wax, without any variegations on the surface; but when its rough coat is taken off, it makes a very different appearance, having the zones and colours of the onyx. It is preserved in many cabinets in this state, under the name of the onyx shell. See the article VOLUTA.

CIGALE, in natural history, the French name for the cicada, particularly for the large kind, called *acheta* by the antients. See HARVEST-*fly*.

CIGNE, in conchyliology, the swan shell, a name given by the French virtuosi to a species of voluta, which, beside this name, is known by two other very different ones, *cierge* and *onyx*, and is taken by the generality of collectors for three different shells. When it has its natural coat on, it is of a rough surface, and yellow colour, much like that of common wax, whence it is called cierge, or the wax shell. When this coat is just taken off, it appears of a very beautiful white, and is then called the *cigne*, or swan shell; and when it is polished farther down, so as to shew its inner structure, it appears zoned in the manner of the onyx, and is then called the onyx shell.

CIGALON, in natural hiſtory, the name by which the French writers call the ſmaller ſpecies of cicada, as they do the larger the cigale. The antients were acquainted with two ſpecies of cicada, a great one, and a ſmaller one: the laſt of theſe they called *tettigonia*, and the firſt *acheta*. It has been uſually ſuppoſed, that the *cigalon* of the moderns was their tettigonia: but Mr. Reaumur obſerves, that we have in reality three kinds of them, a large, a middling, and a ſmall one; and that the large was their acheta, the middle one their tettigonia, and that the *cigalon*, or ſmall one, which is about the ſize of a hornet, was wholly unknown to them. See HARVEST-*fly*.

CILIATED *leaf*, among botaniſts. See LEAF.

CILICIA *terra*, in the natural hiſtory of the antients, a bituminous ſubſtance, tho' called an earth, which, by boiling, became tough like bird-lime, and was uſed inſtead of that ſubſtance to cover the ſtocks of the vines, for preſerving them from the worms. It probably ſerved in this office in a ſort of double capacity, driving thoſe animals away by its nauſeous ſmell, and entangling them if they chanced to get among it. *Hill*'s Theophr. p. 119.

CILICIUM, a ſort of habit made of coarſe ſtuff, of a black or dark colour, formerly in uſe among the Hebrews, in times of mourning or diſtreſs. It was called *cilicium*, becauſe it came from Cilicia, or rather becauſe the Cilicians invented this kind of habit, made of goat's hair, and uſed principally in camps and ſhips, by ſoldiers and mariners. The Septuagint and Hebrew call that ſackcloth, which St. Jerome tranſlates *cilicium*, either becauſe ſacks were made of this ſort of ſtuff, or becauſe haircloths were ſtrait and cloſe like a ſack. St. John, in the revelations, ſhews plainly, that theſe ſackcloths or haircloths were black, when he ſays that *the ſun became black as ſackcloth made of hair*. The old monks were often cloathed with theſe haircloths. *Calmet* Dict. Bibl.

CIMELIANTHUS, in natural hiſtory, a name given by authors to a ſpecies of the *oculus beli*. It is deſcribed to be of a white colour, reſembling that of marble, with a yellow pupil in the middle. It was found on the ſhores of the Euphrates.

CIMEX, in natural hiſtory, the name of a genus of inſects, the characters of which are theſe: the head is ſmall: the back, toward the ſhoulders, is broad, and is covered with a cruſtaceous ſubſtance: its ſhoulders are of an angular make, and its wings partly cruſtaceous, partly membranaceous, and are ſo formed, that they exhibit the figure of a croſs, where they meet at the middle of the back; and they have a long proboſcis, which is bent under the belly, and always lies ſtrait, not in a ſpiral form.

Mr. Ray divides the *cimices* into two kinds, thoſe of a ſhorter, and thoſe of a longer and narrower make. Of the firſt kind he deſcribes eight ſpecies: 1. The great green *cimex*. This is broad and ſhort, and its legs and belly are of a paler green than its back. 2. The brown ſhort-bodied *cimex*, with prominent ſhoulders, and a large yellowiſh red ſpot in the center of the croſs on the back. This ſeems to be the ſecond of Mouffet, and is all over of a brown colour, legs, belly and head, as well as back. 3. The duſky grey *cimex*, with a ſomewhat longer body, with acute ſhoulders, and a ſmall pale yellow ſpot in the center of the croſs on the back. 4. The duſky brown *cimex*, without ſpots, with a long head, and very long red antennæ, and with a body growing narrow beneath the ſhoulders. 5. The ſmall round-bodied *cimex*, variegated with a deep ſhining black and white. 6. The ſmall flat-bodied blue *cimex*. 7. The ſmall flat-bodied reddiſh *cimex*. 8. The ſmall flat-bodied *cimex*, with a line of yellow under the belly. *Ray*'s Hiſt. Inſect. p. 54. *Mouffett*, Hiſt. Inſect.

Of the other kind of *cimices*, which have longer and narrower bodies, Mr. Ray mentions five kinds: 1. The ſmall red *cimex*, variegated with black ſpots. 2. The great red *cimex*, variegated with black, in ſtreaks as well as ſpots. This is three quarters of an inch long, and is only variegated on and about the ſhoulders. 3. The long-bodied flat *cimex*, with black and red variegations. 4. The ſmall red bellied *cimex*, with a ſingle black ſpot in each triangle of the back. 5. The ſhort winged *cimex*, with the violently ſtinking ſmell. This is about half an inch long. Its antennæ are as long as its body, and are compoſed of three joints: the body is rounded and full: the head is ſmall: the wings do not reach to more than half the length of the body. It is of a brown colour, but has a line of white running down its middle.

Beſide theſe, there are two ſpecies of water *cimices*: the firſt has a long body, and its ſhoulders are black; the wings, and the triangle under the ſhoulders are of a ſhining brown, and the hinder pair of legs are very long, and ſerve as oars. The other is ſmaller, and is of a rounded, but depreſſed figure. Its colours are black and a ſhining yellow: the antennæ are very ſhort, and the legs do not ſeem made for ſwimming.

Beſide all theſe, which are properly of the *cimex* kind, there is another ſet of inſects mentioned by Mr Ray, as nearly approaching to them, and deſcribed under the name of cimiciformes muſcæ. *Ray*'s Hiſt. Inſect. p. 55. See the article CIMICIFORMIS.

CIMICIFORMIS *muſca*, in natural hiſtory, a name given by Mr. Ray to a kind of inſects, partly of the fly, and partly of the *cimex* kind. See CIMEX. Of theſe there are eleven ſpecies deſcribed in his hiſtory: 1. A brown one of half an inch long, with a ſhining body. 2. A black one, with large and round ſpots, of a much deeper black. 3. A large one, with a ſmall head. The croſs upon the back is ſcarce viſible in this ſpecies. Its colour is black. 4. A black-headed one, with ſhoulders variegated with black and yellow. 5. A ſmall one, with brown ſhoulders, and a white line in the middle. 6. A browniſh grey one, with a very elevated neck. 7. A green kind, with black and yellow ſtreaks upon the ſhoulders. 8. A green kind, with a black triangle under the ſhoulders, terminating in a yellow point. 9. A black-bodied kind, with bluiſh wings, and a large yellow ſpot at the end of the triangle at the ſhoulders. 10. A long and ſlender kind, variegated with black and red. 11. A large kind, half an inch long, with blackiſh wings and a purple body. Theſe are all found about our hedges in dry places, and are a beautiful ſet of inſects. *Ray*'s Hiſt. Inſect. p. 56.

CIMOLIA *terra*, in natural hiſtory, a name by which the antients expreſſed a very valuable medicinal earth; but which later ages have ſuppoſed to be no other than our common tobacco-pipe clay and fuller's earth. See the articles PIPE-*clay* and FULLER's *earth*.

The *cimolia terra* of the antients was found in ſeveral of the iſlands of the Archipelago, particularly the iſland Cimolus, from which it had its name, and which is now called Argentiere, and was uſed with great ſucceſs in the St. Anthony's fire, inflammations, and other external affections of a like kind, being applied by way of a cataplaſm to the part. They alſo uſed, as we do, what we call *cimolia*, or fuller's earth, for the cleaning of cloaths. This earth of the antients, tho' ſo long diſregarded, and by many ſuppoſed loſt, is however yet very plentiful in Argentiere, Sphanto, and many other of thoſe iſlands, and is a marl of a lax and crumbly texture, and a pure bright white colour, and very ſoft to the touch. It adheres firmly to the tongue, and if thrown into water, raiſes a little hiſſing and ebullition, and moulders into a fine powder. It makes a conſiderable efferveſcence with acids, and ſuffers no change of colour in the fire. Theſe are the characters of what the antients called ſimply the *terra cimolia*: but beſide this, they had from the ſame place another earth, which they therefore called by the ſame general name, but diſtinguiſhed by the epithet purple, *purpuraſcens*. This they deſcribed to be fattiſh, cold to the touch, of a mixed purple colour, and nearly as hard as a ſtone. And this was evidently the ſubſtance we now call ſteatites, or the ſoap rock, common in Cornwal, and alſo in the iſland of Argentiere or Cimolus. *Hill*'s Hiſt. of Foſſ. p. 36.

CIMOLIA *alba*, the officinal name of the earth of which we now make tobacco-pipes. Its diſtinguiſhing characters are, that it is a denſe, compact, heavy earth, of a dull white colour, and very cloſe texture; it will not eaſily break between the fingers, and ſlightly ſtains the ſkin in handling. It adheres firmly to the tongue; melts very ſlowly in the mouth, and is not readily diffuſible in water. It is found in many places. That of the iſle of Wight is much eſteemed for its colour. We have vaſt plenty of it alſo near Pole in Dorſetſhire, and near Weddenſbury in Staffordſhire. *Hill*'s Hiſt. of Foſſ. p. 18.

CINÆDA, in natural hiſtory, the name of a ſtone found in the head of a fiſh, and of a whitiſh colour, and oblong figure. The antients ſuppoſed it preſaged tempeſts when its ſurface looked duſky and obſcure; and, on the contrary, fair weather, when it looked bright and clear.

CINÆDOLOGIA, among the antients, a kind of ſatyrical poetry, the chief ſubject of which were the cinædi. *Hofm.* Lex. in voc.

CINÆDUS, in antiquity, is uſed to ſignify a dancer or pantomime.

At firſt they performed only on the ſtage, but afterwards were admitted to the entertainments of princes. *Pitiſc.*

CINÆDUS, in zoology, the name of a fiſh common in the Archipelago, about the ſhores and rocks, ſuppoſed by many to be the ſame ſpecies with the alpheſtes, and of the turdus kind, only with its back fin prickly all its length. It is of a yellowiſh hue all over, blended and variegated with an admixture of purple; its ſcales are rounded and indented, and its teeth very ſtrong and firm, and diſpoſed in two rows in each jaw, and are long and ſharp. *Bellonius* de Aquat. p. 132.

CINARA, *artichoak*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the floſculous kind, or compoſed of numbers of ſmall floſcules, which are divided into many ſegments at the end, and ſtand upon embryo ſeeds, and are contained in a ſcaly, and uſually a prickly general cup. The ſeeds are winged with down; to this it is to be added, that there is a peculiar appearance and habit of the plant, by which it is readily diſtinguiſhed from the common thiſtles.

The ſpecies of *cinara* enumerated by Mr. Tournefort are theſe: 1. The common ſmooth-leaved garden *cinara*. 2. The common ſmooth garden *cinara*, with purple heads. 3. The prickly garden *cinara*. 4. The large Engliſh *cinara*. 5. The prickly *cinara*, with eatable ſtalks. 6. The broad leaved wild *cinara*. 7. The wild Bætic *cinara*. 8. The wild Cretic *cinara*. And, 9. The ſmalleſt Portugal *cinara*, with the appearanc

pearance of the carline, and with blue flowers. *Tourn.* Inſt. p. 132. See ARTICHOAK.

CINCHONA, in botany, the name by which Linnæus calls the tree which produces the jeſuits bark; this is a peculiar genus of plants, the characters of which are theſe: the cup is a ſmall perianthium, compoſed of one leaf, divided into five ſegments, and remaining after the flower is fallen. The flower conſiſts of one petal, and is of a funnel ſhape; it is a long and cylindric tube, terminating in a wide expanded edge, which is divided into five ſerrated and pointed ſegments; the ſtamina are five ſmall filaments, and the apices oblong, and placed within the tube of the flower; the piſtil conſiſts of a roundiſh germen placed below the cup, a ſtyle which is of the length of the flower, and a thick oblong ſimple ſtigma; the fruit is a roundiſh capſule, at the top of which ſtands the cup by way of a crown; this capſule contains two cells, and when ripe opens longitudinally into two parts. The ſeeds are very numerous, and are oblong, compreſſed, and ſurrounded with a foliaceous edge. *Linnæi* Gen. Plant. p. 529.

CINCLUS, in zoology, a name by which ſome authors have called the bird more uſually known by the name tringa. *Bellonius*, de Avib. See TRINGA.

CINCLUS is a name alſo given by ſome to the bird called in Engliſh the greater reed ſparrow, and by the generality of authors junco. *Turner.* See JUNCO.

CINCLUS *prior*, is alſo a name given by Aldrovandus to a bird the ſame with what we call the ſtint. See STINT.

CINCLUS *minor*, is with that author the name of a bird more commonly called tringa minor, and known in England by the name of the ſandpiper. *Aldrovand.* Tom. 3. p. 492. See the article TRINGA.

CINCLUS *tertius*. See GIAROLO.

CINEFACTION. See CINERATION, *Cyc.*

CINERARIA, in botany, a name by which ſome authors have called the jacobæa maritima, or ſea ragwort, becauſe of the grey colour of its leaves. *Ger.* Emac. Ind. 2.

CINERARIUS, in antiquity, an officer retained by the women, whoſe buſineſs it was to provide aſhes proper for tinging the hair with a deep yellow colour. He was otherwiſe called *ciniflo*.

CINERARIUS is alſo uſed to ſignify one who paid a veneration to the aſhes and relicks of martyrs and ſaints.

CINERES *Ætnæ*, a name given by authors to a duſty and ſaline ſubſtance thrown out of mount Ætna, in form of powder, and reſembling aſhes. After an eruption of this mountain, theſe ſaline aſhes are found ſcattered about the opening itſelf, down the ſides of the mountain, and over the country for ten miles, or more, round; thoſe aſhes, which are found thrown to the diſtance of eight or ten miles, are generally taken up in form of a very dry duſt, almoſt inſipid to the taſte. But what lie upon, and round about the ſkirts of the mountain are very different; they are never dry, though they lie many months expoſed to the ſun's heat, which is very great there, but always feel damp and wet, and are compoſed of larger or ſmaller lumps, and not of a fine powder, as the more diſtant are. They are of a very ſtrongly vitriolic taſte, reſembling that of our common green copperas. From this taſte, and from the great quantities of matter reſembling a ſort of crocus Martis, and with theſe a great abundance of ſulphur, which is burnt away, and the vaſt quantities alſo which are ſublimed about the mouths, and left unburnt, it appears, that the common pyrites is contained in vaſt abundance in the bowels of the mountain, ſince green vitriol and ſulphur are its produce, and nothing is ſo eaſy as to calcine it with the purple powder reſembling crocus Martis, which is the third ſubſtance ſo frequent there. This gives great weight to the opinion of thoſe who believe all the eruptions of the burning mountains in the ſeveral parts of the world to be owing to this mineral. See the articles PYRITES and VOLCANO.

CINIFLO, in antiquity, the ſame with *cinerarius*. See CINERARIUS.

CINNABAR *of antimony* (*Cyc.*) — It is evident both from the manner of preparing this medicine, and from experiments and obſervations made on it, that theſe three principles exiſt in it, mercury, ſulphur of antimony, and an acid ſpirit impregnated with a vitriolic ſulphur. That mercury does chiefly conſtitute this *cinnabar*, is evident from its weight, which is nearly equal to that of common precipitate. Mercury revived from *cinnabar* of antimony is greatly to be preferred to that obtained by any other means, both for amalgamating with metals, and for all uſes in medicine; for this mercury is perfectly freed and depurated from its metallic, terrene, and heterogeneous particles, by the ſulphur of antimony.

The manner of reviving mercury from *cinnabar* of antimony is variouſly delivered by different authors, but moſt of them prefer the uſe of pot aſhes to any thing elſe on the occaſion. Hoffman, however, who has written expreſly on the ſubject, ſays, that filings of ſteel or copper are greatly to be preferred to theſe ſalts. In the making *cinnabar* of antimony it ſhould be ſublimed often in order to render it quite pure, and perfect; and afterwards when it is to be given internally, it ſhould be powdered extremely fine, ſince in the common way of giving theſe medicines groſly ground, they can only exert their operations in the primæ viæ, it being impoſſible for them ever to reach the lacteals, and thence to be received into the maſs of blood. Many ways have been thought of for the exalting the virtues of this excellent medicine, ſuch as ſolution, fixation, and the drawing a tincture from it. Solution in acid menſtrua is wholly to be condemned, for it renders it corroſive and dangerous to be taken internally; and the other inſipid and æthereal diſſolvents which many chymiſts boaſt of, are not yet known. The only medicinal preparation that has been contrived of *cinnabar* on this plan, is that by pouring ſweet ſpirit of vitriol on it. This makes only a ſlight and ſuperficial ſolution, but the liquor becomes very rich, in virtues far exceeding the *cinnabar* itſelf when taken in powder.

Many ways have been attempted to fix *cinnabar* by means of common ſalt, oil of ſulphur, and oil of vitriol; and Hoffman gives a method of doing this in ſo perfect a manner, by means of ſpirit of nitre and oil of vitriol, that the mercury of it will not tinge gold white, and a piece of the *cinnabar* thus fixed being thrown upon burning charcoal, will burn all away, leaving no remainder. Cnefelius boaſts of a preparation of *cinnabar* of this kind with which he cured the gout; and by his own accounts this ſeems to be the very preparation; and the ſame preparation has been found an excellent cure for ſtubborn quartans, mixed with extract of bark, gentian, and ſalt of wormwood.

The drawing a tincture from *cinnabar* of antimony ſeems impracticable for many reaſons; all that is pretended to be done of this kind being in reality only drawing a tincture from one part, not from the whole of the medicine, and therefore ſuch a tincture cannot be expected to contain all its virtues.

Cinnabar is the beſt of all correctors of opium, and an excellent preparation of this kind is publiſhed by the ſame author.

Cinnabar is by ſome much dreaded as a medicine, in all caſes of inflammation, hæmorrhages, and the like diſtemperatures of the body, but Stahl reports from repeated experience that it is one of the greateſt of all medicines in theſe very caſes, nothing more efficaciouſly quieting the violent emotions of the blood, or ſupplying ſo happily the place of opiates; his general preſcription in hæmorrages, headachs, and other the like affections, being nitre, crabs eyes, and *cinnabar*. *Frid. Hoffman*, Differt. de Cin. Ant.

CINNAMOLOGUS, in the writers of natural hiſtory among the antients, the name given to a bird which built its neſt either in the cinnamon tree, or upon rocks and precipices, with the broken branches of that tree. The antients have a great many idle traditions concerning this bird; ſome ſay it is the phœnix, and others that it is a peculiar ſpecies of fowl. The aſſertors of the latter opinion bring the accounts of ſome of the old writers to countenance it, who ſay, that the fineſt and moſt valuable cinnamon was that collected by this bird for this purpoſe, and that it built its neſt on inacceſſible rocks and precipices, from whence the natives daily beat it down with ſtones and arrows, and found a conſtant ſupply from what the old ones brought to ſupply the place of what they threw down. Avienus, and many other authors, however, plainly expreſs themſelves of this bird as the ſame with the phœnix; and it is pretty certain, that all that have written intelligibly have been of that opinion. The common opinion of the phœnix building its neſt of ſpices, ſeems to have given birth to all the idle ſtories that we hear of this bird in Pliny and other credulous authors.

CINNAMON *tree*, in botany. See the article WINTERANUS *cortex*.

CINNAMUM, the name given by many of the old writers on the materia medica to *cinnamon*. It is evident, from a ſtrict examination of the writings of the antients, that *cinnamum* and *cinnamomum* were ſynonymous words, and always uſed to expreſs the ſame thing; but the barbarous ages that ſucceeded theſe, obſerving that there was great difference in ſtrength and virtue between the bark of the trunk of the tree, which came to them in thick pieces, and the bark of the young branches which came in thin quills, determined to diſtinguiſh theſe by the names of *cinnamum* and *cinnamomum*; ſo that in their writings the word *cinnamum* is always to be underſtood of the coarſe and large *cinnamon* of the tree; and the word *cinnamomum* with them only means the bark of the young branches. Macer tells us, that there were three kinds of *cinnamon* in uſe in his time, but that the ſmalleſt and fineſt was the beſt.

The Arabian writers when they treat of *cinnamon*, have three words by which they expreſs it; theſe are *felicha*, *daſini*, and *karfe*. The laſt word is tranſlated, by the writers of the middle ages, *cinnamomum*, the word darſini is tranſlated *cinnamum*, and the word felicha is rendered caſſia lignea; but this is not at all warrantable from the writings of the Arabian authors, for all that they mean by the three words is to expreſs three ſorts of *cinnamon*, differing in value and goodneſs, not to take in either the caſſia lignea, or the bark of the trunk of the *cinnamon* tree. The *cinnamum* or *cinnamomum* of the antients agrees leſs with this account than the writings of the Arabians; for what the earlieſt writers meant by *cinnamomum* was not a mere bark, but the young ſhoots of the tree covered with their bark, and the wood and bark were ſold together, and uſed ſo by the phyſicians. The Greeks called this alſo καρφη. from whence the Arabians have derived their name kerfe, which they attribute to all kinds of *cinnamon*. See CINNAMON, *Cyc.*

CINNOR. See KINNOR, and CINYRA.

CINNUS, in the antient medicine, a drink made of the decoction of wheat, to which was added some flower of barley, honey, and wine.

CINQUEFOIL, *quinquefolium*, in botany, the name of a genus of plants, the characters of which are these: the flower is of the rosaceous kind, consisting of several petals arranged in a circular form; the cup is one-leaved, but divided into several segments; from this arises a pistil which finally becomes a fruit of a globular figure, composed of a number of seeds, and covered in part by the cup. To this it is to be added that the leaves grow in regular numbers on the stalks, and are always more than three on each, by which it is distinguished from the strawberry.

The species of *cinquefoil* enumerated by Mr. Tournefort are these. 1. The upright Alpine *cinquefoil*, with silvery leaves, jagged at the ends. 2. The great, upright, white-flowered *cinquefoil*. 3. The larger-flowered, upright, white *cinquefoil*. 4. The lesser white-flowered *cinquefoil*. 5. The lesser white-flowered *cinquefoil*, with narrower leaves. 6. The common larger creeping *cinquefoil*. 7. The common smaller creeping *cinquefoil*. 8. The yellow-flowered small *cinquefoil*, with leaves of a silvery white underneath. 9. The woolly, small creeping yellow-flowered *cinquefoil*. 10. The small, golden-flowered, creeping Alpine *cinquefoil*. 11. The common upright *cinquefoil*, with leaves silvery underneath. 12. The upright yellow-flowered *cinquefoil*. 13. The upright, white-flowered *cinquefoil*. 14. The great upright *cinquefoil*, with soft hairy leaves. 15. The smaller *cinquefoil*, with pale yellow flowers. 16. The low Canada *cinquefoil*. 17. The upright hairy yellow-flowered mountain *cinquefoil*. 18. The late flowering, creeping Alpine *cinquefoil*. And, 19. The Pyrenæan *cinquefoil*, with leaves hairy underneath. *Tourn.* Inst. p. 296.

CINQUEFOIL *root*, in the materia medica, the name of a root which is an ingredient in several of the officinal compositions. The plant which produces it is the common *cinquefoil*, which grows every where by way sides. The root consisting of a cortical, and ligneous or sticky part, the cortical only is used. It is esteemed drying and astringent, and antifebrific. Some have given it in agues in as large doses as the cortex, and have cured with it. It stops fluxes of the bowels, and is good in disorders of the lungs, and in the fluor albus, and gonorrhœas, either in men or women. It is, however, very little regarded in the present practice.

CINQUE PORT *net*. See NET.

CINTRE, in building, the mould on which an arch is turned; popularly called *centre*, sometimes also *cradle*. *Davil.* Cours. d' Archit. P. 2. p. 477. *Neve*, Build. Dict. in voc.

CINYRA, in the Jewish antiquities, a musical instrument. This and the Hebrew *cinnor*, which is generally translated *cithara*, *lyra*, or *psalterium*, are the same. It was made of wood, and was played on in the temple of Jerusalem. Josephus [a] says, that the *cinyra* of the temple had ten strings, and that it was touched with a bow. In another place he says that Solomon made a great number of them with a precious kind of metal called *electrum*, wherein he contradicts the scripture [b], which informs us that Solomon's *cinnors* were of wood [c]. — [[a] Antiq. l. vii. c. 20. p. 243. ibid. l. viii. c. 2. [b] 1 Kings x. 12. [c] *Calmet*, Dict. Bibl.]

CIONES, Κίονες, in antiquity, a kind of idols very common, being only oblong stones erected pillar-wise; whence also they had their name. *Pott.* Archæol. l. 2. c. 2. T. 1. p. 190.

CIRCADA, a tribute antiently paid to the bishop or archdeacon, for visiting the churches. *Du Fresne. Blount.*

CIRCÆA, a plant called in English the *enchanter's nightshade*. This, in the Linnæan system of botany is a separated genus of plants, the characters of which are, that the calyx or flower cup is a perianthium composed of two leaves, which are oval, concave, and bent downwards, and which fall off with the flower. The flower is composed of two petals, rounded and notched like a heart, equal to one another in size, spread open, and rather shorter than the cup. The stamina are two erect, and longitudinal capillary filaments of the same length of the cup, and are terminated by two roundish antheræ; the pistil is composed of a turbinated germen placed under the receptacle; the style is single, threadlike, and of the same length with the stamina, and the stigma which terminates it, is of an orbicular form. The fruit is a hairy, and oval, turbinated capsule, bivalve, and containing two cells, and naturally opening from the base all along to the extremity. The seeds are contained one in each cell of the fruit, and are oblong, and narrower on their under than on their upper part. *Linnæi* Gen. Plant. p. 3.

The characters of the *circæa*, according to Tournefort, are these: the flower consists of only two leaves, which stand upon a two-leaved cup, which finally becomes a pear-fashioned fruit, divided into two cells, and containing oblong seeds.

The species of *circæa* enumerated by this author are these. 1. The common, or larger, *circæa*. 2. The broad-leaved, white flowered, Canada *circæa*. And, 3. The least *circæa*. *Tourn.* Inst. p. 301.

CIRCEA. See the article CIRCÆA.

The name *circea* is given by some to the mandrake, or common mandragora. *Ger.* Emac. Ind. 2

CIRCIAS *anas*, in zoology, the name of a fresh-water fowl of the duck kind, but smaller than any other species, and known in English by the name of the *summer teale*. It is all over of a dusky yellowish brown, the back a little variegated with white at the tips of the feathers, and the belly diluted with a cast of grey; on the lower part of the belly there are some large black spots. The legs are blueish, and the feet black; it feeds on herbs that grow in fresh waters. *Ray*'s Ornithol. p. 291.

CIRCERELLUS, in zoology, a name used by some authors for the fish usually called ammodytes, or the sand eel. *Boccone*, Mus. de fisci. p. 129. See AMMODYTES.

CIRCITOR, in the antient military discipline, one whose business it was to go the rounds. See ROUNDS, *Cycl.*

CIRCITOR is also used to signify a hawker, or pedlar, who goes about from place to place to vend his goods. *Pitisc.*

CINCINNALIS, in botany, a name given by some authors to the adiantum or maiden-hair. *Ger.* Emac. Ind. 2.

CIRCLE (*Cycl.*) — CIRCLE *of dissipation*. See the article DISSIPATION.

CIRCLE *of curvature*, in geometry, that *circle* the curvature of which is equal to that of any curve at a certain point. See CURVATURE.

It is also called the *circle* of equi-curvature.

CIRCOLO *mezzo*, in the Italian music, is a diminution of four quavers or semiquavers, or notes of equal value, which represent a semi-circle proceeding by conjoint degrees.

CIRCUITS (*Cycl.*) — There are three *circuits* in Scotland, viz. South, West, and North, which the *lords of justiciary* go twice a year, viz. in May and October. See CIRCUIT, *Cycl.* and JUSTICIARY, *Suppl.*

CIRCULATION (*Cycl.*) — The curious in microscopic observations have found an easy method of seeing the *circulation* of the blood in the bodies of animals: for these enquiries it is necessary to choose such animals as are small, and easily manageable, and which are either wholly, or in part, transparent.

The observations we may make by this means are preferable to any others we can have recourse to; since in dissections the animal is in a state of pain, or dying; whereas in animals small enough to be thus viewed, all is left in its usual course, and we see what nature does in her own undisturbed method.

In these creatures also, after viewing, as long as we please, the natural state and current of the blood, we may by pressure and several other ways, impede its course, and by putting various mixtures into the creature's water, induce a morbid state, and finally see the creature die, either by means of this or by any other method, and we may thus accurately observe all the changes it undergoes, and see what occasions the trembling pulse, &c. of dying people. *Baker*'s Microscope, p. 117.

In several of these little creatures also, we are able not only to discover the general course of the blood, but are able perfectly to distinguish the figure and circumstances of the globules of which it is compounded, and the alterations they suffer when they pass out of larger into smaller vessels; for many of the vessels at the extremities are so small, that even the minutest single globules of the blood cannot get through them, without being pressed out of their orbicular into an oval or oblong figure, and the larger of these fine vessels first compress the larger or complex globules of the blood, and then divide them into their smaller constituent globules.

It is amazing to see how careful providence has been to prevent the blood from running into concretions, or coagulations, which might be dangerous to life, even by the very disposition of the vessels it is to run through, which, whether separating or uniting, are so contrived as to cause the globules to come frequently together, with a brisk collision or striking against one another. The arteries which convey the blood from the heart to the extremities, continually lessen as they recede from their source, and the globules of blood must rush with force against one another, as they are driven on impetuously; and the veins which bring it back from the extremities to the heart, enlarging all the way as they go on, and the streams of several continually running into one another, each of these ingresses causes new commotions, capable, though not of dissolving the natural compages of the blood, yet of dividing its unnatural coagulations

The current of the blood in small animals, that is, its passing on through the vessels, either from, or towards the heart, is very easily seen by the microscope; but its *circulation*, that is, its running to the extremities of the parts, and thence returning, is more difficult, because the vessels where this should be seen are so extremely minute, as not easily to come under a regular observation.

The larger arteries are easily distinguishable from the veins by the motion of the blood through them, which, in the veins, is always smooth and regular; but in the arteries, by several propulsions in the manner of pulsation. But this difference is not to be seen in the more minute vessels, in all which, as well arteries as veins, the motion of the blood seems even and regular. The transparent membrane, or web, between the toes of a frog's hinder foot, is a very proper object to observe the *circulation* of the blood in. *Baker*'s Microscope, p 122.

The tails, or fins, of fishes are also very fine objects; and when the fish is very small, these are very manageable, and

afford a view of a great number of veins, and arteries, with a very quick and beautiful ſucceſſion of blood through them. The tail of a flounder may be very conveniently placed before the double microſcope on a plate of glaſs, and its body being ſupported by ſomething of equal height, the fiſh will lye ſtill, and the *circulation* may be ſeen very agreeably. In the minuteſt veſſels, thus examined, the blood always appears pale or colourleſs, but in the large ones it is plainly red. The arteries uſually branch out extremely before they join the veins to carry the blood back to the heart; but this is not always the caſe, for Mr. Lewenhoek has obſerved, that on each ſide of the little griſtles, which give a ſtiffneſs to the tail of a flounder, there may be ſeen a very open communication of the veins and arteries; the blood running toward the extremities, through arteries, and returning back again through veins, which were evidently a continuation of thoſe arteries, and of the ſame diameter with them. The whole fiſh on the tail of which this examination was made, was not more than half an inch in length; it is eaſy to conceive how ſmall the tail muſt therefore be, and yet in it there were ſixty-eight veſſels which carried or returned the blood; and yet theſe veſſels were far from being the moſt minute of all. How inconceivably numerous then muſt the *circulations* in a whole human body be? Mr. Lewenhoek is of opinion, that a thouſand different *circulations* are continually carried on in every part of a man's body in the breadth of a finger nail. See Tab. of microſcopical objects, Claſs 1.

The tail of a newt, or water-lizard affords alſo a very entertaining proſpect of the *circulation* of the blood through almoſt numberleſs ſmall veſſels; but no object ſhews it ſo agreeably as one of theſe animals while ſo young as not to be above an inch long; for then the whole body is ſo very tranſparent, that the *circulation* may be ſeen in every part of it, as well as in the tail; and, in theſe objects, nothing is more beautiful than the courſe of the blood into the toes, and back again, where it may be traced all the way with great eaſe. Near the head there are alſo found three ſmall fins, which afford a very delightful proſpect: theſe are all divided like the leaves of polypody, and in every one of the branches of theſe, the blood may be very accurately traced, running to the end through the artery, and there returning back again by a vein of the ſame ſize, and laid in the ſame direction; and as the veſſels are very numerous and large in this part, and the third or fourth magnifyer may be uſed, there are ſometimes ſeen thirty or forty channels of the running blood at once; and this the more as the globules of blood in the newt are large, and are fewer in number, in proportion to the quantity of ſerum, than in any other animal and their figure, as they are protruded through the veſſels, changes in a very ſurpriſing manner. *Baker*'s Microſcope, p. 122.

Dr. Nichols has contradicted the received doctrine of the motion of the heart, and of the *circulation* of the blood, both in adults and fœtus's. The *circulation* of the blood, according to him, depends on ſix motions: 1°, Of the right auricle. 2°, Right ventricle. 3°, Pulmonary artery. 4°, Left auricle. 5°, Left ventricle; and, 6°, Of the aorta. Of theſe, the firſt, third and fifth, are ſynchronous, as are likewiſe the ſecond, fourth and ſixth; but the firſt, third and fifth are aſynchronous to the reſt: and therefore

The two auricles, The two ventricles, The two arteries } are alternately { relaxed, contracted.

See *Nichols*, Compend. Anat. & Prælect. xv. ap. Med. Eſſ. Edinb. vol. 3.

As for the *circulation* of the blood in fœtus's, we refer to the author himſelf, in his Prælect. xxiv. and to the Medic. Eſſ. Edinb. Abrid. vol. 2. p. 436, 437. where it is obſerved, that the doctor's opinion concerning the *circulation* of the blood in born and unborn animals, is ſo different from what has prevailed ſince Harvey's time, that it were to be wiſhed he would add the experiments and other proofs that can be brought to ſupport his doctrine.

According to Mr. Queſnay, the motions of the heart, and the *circulation* of the liquors, depend on the motion of the lungs, which ſending the blood forcibly into the left auricle, revive and increaſe its elaſticity and contraction by this ſhock, which the auricle communicates to the ventricle, which affects the arteries in the ſame way; and theſe do the ſame to the veins which act upon the right auricle, and that upon its ventricle: and thus the *circulation* is continued. L'Œconomie Animale, p. 227. ap. Med Eſſ. Edinb.

CIRCULATION *in plants*. Blair is of opinion, that there are certain parts of plants which have their peculiar juices, and maintain a *circulation* in themſelves, independent of the reſt of the plant. The fleſhy and thick roots of ſome plants, and the fruits of others, are of this number of peculiar parts. This is analogous to what we ſee in ſome parts of animal bodies alſo. On this ſcheme, the bark, the wood, and the pith of a tree, may be compared to the bones, the ſkin, and the marrow of animals: while the nouriſhment is ſent in abundance to one part of theſe, it is allowed more ſparingly to the reſt. Thus while a young tree ſhoots out its tender boughs in ſpring, the juice aſcends upward to them from the root; but when theſe have acquired their due length, the motion of the ſap is determined upward with leſs violence, and the bark and wood are nouriſhed and increaſed by it. This is the reaſon why in ſpring trees grow in height, and in autumn increaſe in thickneſs. *Blair*'s Tentam. Botan.

Subterranean CIRCULATION. Dr. Plot is one of the many authors who have argued for a ſubterranean *circulation* of water, by means of which many ſprings and rivers are ſupplied with that water which they give again to the ſea. It is probable, indeed, that many of the ſmaller ſprings are ſupplied by rains, only where the country and ſituation are favourable: but the larger rivers, and the ſprings which ſupply them, muſt have their origin from ſuch a ſubterranean *circulation*, ſince all the water that falls in a year in the whole earth, is not one five hundredth part the quantity of that diſcharged into the ſea at the mouths of rivers, as appears by careful and moderate calculations. There are ſome ſprings which ebb and flow with the ſea: theſe cannot be doubted as to their origin, which is evidently from that body of water whoſe motions they are influenced by. Nor is the caſe much leſs clear in regard to thoſe lakes which have ſalt water and ſea fiſh in them, and yet have no communication with any ſea by any known cut or paſſage.

The number of ſhell-fiſh and parts of ſea animals dug up in ſeveral places, at great depths at land, are alſo urged by ſome as proofs of ſuch ſubterranean paſſages of the ſea water; but theſe are too univerſally diſtributed thro' the ſtrata of the earth, to have been brought in this manner, and are therefore rather ſuppoſed to be owing to the great change made in the earth at in the days of Noah.

CIRCUMAGENTIUM *femoris primus*, in anatomy, a name given by Spigelius, and ſome others, to a muſcle of the thigh, called by Riolan and ſome others the iliacus externus, but more generally, from its ſhape, the pyriformis and pyramidalis.

CIRCUMAGENS *interior*, in anatomy, a name given by Spigelius and others to one of the muſcles of the eyes, called by Albinus and others the obliquus ſuperior oculi, and trochlearis muſculus. See TROCHLEARIS.

CIRCUMCELLIONES, in church hiſtory, a ſet of heretics who went about from town to town, calling themſelves the vindicators of the public liberty. *Hofm.* Lex. in voc.

CIRCUMGYRATION, the wheeling motion of any body round a center.

CIRCUMPOTATIO, in antiquity, a funeral feaſt, provided in honour of the dead.

This was very frequent among the antient Romans, as well as among the Athenians. Solon at Athens, and the decemviri at Rome, endeavoured to reform this cuſtom, thinking it abſurd that mirth and drunkenneſs ſhould mingle with ſorrow and grief. *Pitiſc.* Lex. Ant. in voc.

CIRCUMSCRIBED *figure*, in geometry. See CIRCUMSCRIBING, *Cycl.*

CIRCUMSCRIBED *hyperbola*, one of the ſecond order, according to Sir Iſaac Newton, which cuts its aſymptotes, and contains the parts cut off within its own ſpace. *Stone*, Math. Dict. See HYPERBOLA, *Cycl.*

CIRCUMSCRIPTION. See CIRCUMSCRIBING, *Cycl.*

CIRCUMSPECTE *agatis*, the title of a ſtatute made ann. 13 Edw. I. relating to prohibitions, preſcribing certain caſes to the judges, wherein the king's prohibition lies not. *Blount.* Law Dict. in voc.

CIRCUS, in zoology, a name by which Bellonius and ſome others have called the milvus æruginoſus, or moor buzzard. *Bellon.* de Avibus. See the article MILVUS.

CIRLUS *ſtultus*, in zoology, the name of a bird of the hortulanus kind, and of the ſize and ſhape of our common yellow-hammer. The hinder part of the head and the back are of a ferrugineous colour, variegated with large black ſpots: the fore-part of the head has a very large grey ſpot: the breaſt and belly are of a ferrugineous colour, without any variegation: the tail and the long feathers of the wings are black, but are tipped at the extremities with the colour of the back: the wings have ſome ſmall white ſpots alſo; and the tail has two feathers on each ſide which are variegated with white. *Aldrov.* Hiſt. Avium, l. 18. c. ult.

CIRRIS, in zoology, the name of a ſmall ſpecies of heron, called by ſome the ardea hæmatopus, or the red-legged heron. It is very ſmall: its neck is ſhort for a bird of the heron kind, and it is all over of a yellowiſh cheſnut colour, deeper below, and paler on the back and wings: its tail is ſo ſhort that it ſeems to have none; and its head and neck have black variegations on their yellowiſh feathers. Its legs and feet are very beautifully red. *Ray*'s Ornithol. p. 206.

CIRSIUM. See *gentle* THISTLE.

CIRSOS, Κιρσος, in medical writers, is uſed for *varix*. See VARIX, *Cycl.*

CIRRUS (*Cycl.*) — CIRRUS, in ichthyology, a name given by authors to certain oblong and ſoft appendiculæ hanging from the under jaw of fiſhes, or from other parts about the mouth, in the manner of little worms, and uſually of a cylindric figure, or nearly ſo. Theſe *cirri* are in ſome fiſh hollow at the root; in others they are not ſo: in thoſe which are hollow at the root, the cavity never runs quite thro'. The way of finding it is by introducing a hog's briſtle or a hair into it; but this cannot be forced thro' to the point, nor can any fluid matter be expreſſed out of them.

Theſe

These *cirri* often afford characters of distinction to several kinds of fishes, and differ in the several species in regard to number, size, and proportion. As to number; 1. in the greater part of fishes there are none. 2. In some of the gadi, and some other fish, there is only one *cirrus*; and, 3. They are more than one, as in the mullet, sturgeon, and cyprinus nobilis.

In regard to situation, they are in some placed on the under jaw, as in the gadi, liggri, &c. 2. In others, they are placed at the angles of the mouth, as in the barble, the cyprinus, nobilis, &c. and, 3. In some they are placed both on the upper and under jaw, as in the silurus, cobitis, &c.

In regard to their differences in proportion, they are, 1. In most fishes small, and much shorter than the head, as in the gadi, mullets, &c. 2. They are in some longer than the whole head, as in the case of the two upper *cirri* of the silurus. The use that these *cirri* are of to the fish, is little more known than that of the antennæ of insects. If nature had given them only to those fishes which had the eyes placed on the upper part of the head, then they might be supposed to serve to distinguish prey at the bottom, while the eyes were directed to such as offered itself nearer the surface: but as the several kinds of fish which have them are of different kinds, and have their eyes in various directions, this use cannot be allotted them. It is possible they may be of use to the fish, in giving it the first notice of any distant motion of the water, which they may perceive by their hanging posture sooner than any other part, and thus give notice of the neighbourhood of prey, or of the approach of an enemy. *Artedi*, Ichthyol.

CIRRUS, in antiquity an ornament added to the edges and borders of garments, much in the manner of the *fimbriæ* or fringes, only that these were single, and run along the borders of the dress; whereas the *cirri* were knotted together, and hung down from the extremities of the robe. *Pitisc.* Lex. Ant in voc.

CIRRUS, among botanists, expresses the little fibres which plants send out from their stalks, and by which they are attached to other bodies. See STALK.

CISLEU, the ninth month in the ecclesiastical year, and the third in the civil or political year among the Hebrews: it answers pretty nearly to our November. *Calm* Dict. Bibl.

CISSAMPELOS, in botany, the name of a genus of plants, called by Plumier *caapeba*. The characters of the genus, as collected by Linnæus from that author, are these: the flower consists of four oval petals, which are flat and expanded. The fruit which succeeds the female flowers is a globose berry, containing only one cell, with a single rugose seed. This fructification is at present very little known; and it is much to be wished, that some accurate observer would take a stricter account of it upon the spot. *Plumier*, 29. *Linnæi* Gen. Plant p. 517.

CISSITES, in natural history, a name given by the antients to that species of the flinty ætites, or eagle-stone, which is covered with the common white coat of the flints. Pliny mentions it as found principally about Captos, and being externally of a white colour, and rattling when shaken.

CISSUS. This is properly in the Greek writers the name of the ivy. They write it κισσος. But the word κισθος, *cistus*, when the θ is changed into an σ by the Cretan and Cyprian dialect, is also κισσος, *cissus*.

The commentators on Pliny have been strangely confounded, about goats eating ivy, and the ivy of the antients bearing great red flowers, and instead of the stinking gum it affords with us, yielding the sweet labdanum in Cyprus: but all this is reconciled by knowing, that Pliny translated it all from Theophrastus, and mistook the *cissus* in this place of the text to mean ivy, whereas it really means *cistus*. See CISTUS.

CISSYBIUM, in antiquity, a drinking cup, most in use among country people. It was so called either because it was made of the wood of ivy, or was usually crowned with its leaves.

CISTERN (*Cycl.*) — Antiently there were *cisterns* all over the country in Palestine. There were some likewise in cities and private houses. As the cities for the most part were built on mountains, and the rains fell regularly in Judea at two seasons of the year only, in spring and autumn, people were obliged to keep water in *cisterns* in the country, for the use of their cattle, and in cities, for the conveniency of the inhabitants. There are *cisterns* of very large dimensions to be seen still at this day in Palestine, some whereof are an hundred and fifty paces long, and fifty-four wide. There is one to be seen at Ramah of two and thirty paces in length, and eight and twenty in width. Wells and *cisterns*, fountains and springs, are generally confounded in the scripture language. *Calmet* Dict. Bibl.

If the farmers of England would fall into the method used in Spain, and at Amsterdam, Venice and other places, of saving the rain-water of the whole year, or at least so much of it as would be necessary, in *cisterns*, they would have always water for their cattle in the summer droughts, and many thousand acres of land, now left useless, might be turned to profit.

The best way of preserving the water for the service of the house, is in *cisterns* in the cellars. These may be made with brick or stone, joined with plaister of Paris, which will keep out the wet very well; or with a kind of mortar made of slaked sifted lime, with linseed oil, and tow or cotton. A bed of good sound clay may be laid at the bottom, and on this the bricks for the floor, and then the walls may be raised in the same manner, only leaving spaces behind them, into which clay is to be rammed in the like manner. Thus it will be a clay *cistern*, faced with brick; and the bricks will keep the clay moist, and prevent it from cracking, tho' it be not full of water. This will do in any shadowy place, as well as in cellars: and thus may a *cistern* be made in a garden, in some shady place, and covered over, which may receive the water running from the walks, and will retain it at hand, for the service of the garden, all the year.

Where there is want of water for the cattle in the fields, the way is to dig a pond in some place into which there is a descent; then cover the bottom and sides with a double coat of tough clay, each six inches thick, and each very well rammed: then to cover the bottom with large stones, which will keep the clay moist, and prevent its cracking, when not covered with water. But this is a troublesome thing; for if there happen to be a crack in any part, it is often found necessary to go over the whole work again before the pond will hold a drop of water.

Another method of making a pond hold water, is to daub it over with clay and mortar mixed together, and then with mortar alone. This has an advantage over the other way, in that if any crack happen, it may be mended by a cement of clean hair and tallow, mixed with slaked lime and the yolks of eggs, well beat together. This applied to the crack, will close it safely, without the necessity of undoing the whole work, as in the other case.

In chalky countries it is common to find a low place on the downs, and digging a hole by way of a pit there, they cover the bottom evenly with the chalk rubbish, and when it is wetted by the rain, they ram it well, and afterwards drive cattle into it, and fold sheep in it: the consequence of all which trampling is, that the bottom at length becomes so firm, that it holds the water perfectly well. By one or other of these means, *cisterns* or reservoirs may be made in all countries: and our farmers, if they would carefully try one or the other of them, as their land most required, would not have so much to complain of from droughts. *Mortimer*'s Husbandry, p. 299.

CISTUS, in botany, the name of a genus of plants, the characters of which are these: the flower is of the rosaceous kind, composed of several petals, arranged in a circular form. The pistil arises from the cup of the flower, and finally becomes a roundish or pointed multicapsular fruit, which, when ripe, opens at the top, and generally contains a number of small seeds.

The species of *cistus* enumerated by Mr. Tournefort, are these: 1. The larger male *cistus*, with a roundish leaf. 2. The larger male *cistus*, with a longish leaf. 3. The male *cistus*, with shorter leaves. 4. The Portugal *cistus*, with large hoary leaves. 5. The small *cistus*, with long hoary leaves. 6. The male *cistus*, with curled and undulated leaves. 7. The female, erect, sage-leav'd *cistus*, with upright shoots. 8. The low, procumbent, sage-leav'd, female *cistus*. 9. The ladanum *cistus* of Montpelier. 10. The Spanish willow-leav'd ladanum *cistus*, with white flowers. 11. The Spanish willow-leav'd ladanum *cistus*, with white flowers with black spots. 12. The bay-leav'd ladanum *cistus*. 13. The large ladanum *cistus*, with leaves like the black poplar. 14. The smaller ladanum *cistus*, with leaves like the black poplar. 15 The broad-leav'd cretic ladanum *cistus*. 16. The hairy ladanum *cistus*. 17. The narrow, olive-leav'd, ladanum *cistus* 18. The common, narrow leav'd, ladanum *cistus*. 19 The rough, rosemary-leav'd, ladanum *cistus*: and, 20. The smooth, rosemary-leav'd ladanum *cistus*. *Tourn.* Inst. p. 259.

The several species of this beautiful shrub are to be propagated by sowing their seeds on a gentle hot bed, or on a warm border of common rich earth in March. When the plants are grown to be three inches high, they should be transplanted either into small pots, or into a border of rich earth, placed at ten inches distance. They will require some screening from hard weather for the first winter, and must be watered at times. In the spring following, they must be very carefully removed, with as much as possible of their own earth about them, and be placed where they are to remain. They are very bad plants to remove when old.

They may also be propagated by cuttings, planting them in a rich bed, and shading them with mats, and watering them carefully for two months: they will by that time have taken root, and may be treated as the seedling plants of the same age. *Mill.* Gard. Dict.

CISTUS, in the writings of the antient Greeks. The Greeks wrote this word κισθος, *cisthus:* and, as the word in the Latin tongue is only the Greek name with a Roman termination, it undoubtedly ought to be spelt *cisthus*, not *cistus*. The antient writers have been subject to many misrepresentations from the near resemblance of this word κισθος, *cisthus*, to κισσος, *cissus:* the former being the name of the plant we call *cistus*, a shrubby herb, with leaves like sage, and a large flower resembling a rose; and the other, the name of the common ivy that climbs upon our walls and trees. Pli-

ny has been deceived by the near reſemblance of the two words, and has given the qualities of ivy to the *ciſtus*, and thoſe of *ciſtus* to the ivy: but he is the more excuſable in this, ſince we find the two names uſed indiſcriminately, tho' certainly by a miſtake of the copyiſts, in the books of Theophraſtus.

This author certainly meant it of the *ciſtus*, that it was of two kinds, the male and female; ſo he expreſſes the having two colours in the flowers, red and white; for he never could give us this account of the ivy: yet his tranſcribers have given κιττος, *ciſſus*, ivy, not *ciſthus*, or *ciſtus*, for the name of the plant of which the author ſays this. Theophraſtus, in another place, ſays, that the male *ciſtus* has a flower in all reſpects reſembling a roſe, but that it is ſingle, and has no ſmell: this alſo is attributed to the *ciſſus* by the copies; and from this is derived that ſtrange error of Pliny, who ſays, that the ivy has a large purple flower, like the ſingle wild roſe. It is true, indeed, that Pliny gives the word hedera here, which has no alliance with, or reſemblance to the name of any other plant, and therefore it could not eaſily be believed that he could mean any other. But when we find that Pliny, who was himſelf no botaniſt, but only a compiler of the opinions of others, tranſlated this paſſage from ſo warrantable an author as Theophraſtus, and that the copyiſts of Theophraſtus had given the word *ciſſus* inſtead of *ciſthus* in the place, which word *ciſſus* might very juſtly, in the general, be tranſlated *ivy*, we find Pliny, as a collector (which is the light in which all judicious people look upon him) to be very pardonable. The variation in the orthography of the word κισθος, *ciſthus*, may be indeed juſtified, as to the ſtrictneſs of grammar, by the uſe of one of the Greek dialects, which turns θ into σ: thus the word αθανα is written by ſome ασανα, and Θεος, Σεος. But in a caſe where the uſe of this dialect was wholly unneceſſary, and where it brought in ſo much confuſion, by rendering the names of two different plants the ſame, it is not to be imagined that ſo correct a writer as Theophraſtus, or ſo judicious a botaniſt as he appears to be throughout his whole treatiſe of plants, would have himſelf indulged the uſe of it.

Paulus Ægineta has a chapter about *ciſſus*, which is not to be underſtood as the name of ivy, but of the *ciſtus*; and Theocritus, when he tells us that the *ciſſus* flowers like the roſe, evidently means the *ciſtus*, not the ivy. The Greek writers of later times have added yet to the confuſion, by calling the common wild or dog roſe *ciſſus*; but this is more rarely met with. The old ſcholiaſt on Theocritus gives the *ciſſus* and cynorrhodon as ſynonymous words. See the article HEDERA.

CITADINESCA, in natural hiſtory, a name given by ſome writers to the Florentine marble, which is ſuppoſed to repreſent towns, palaces, ruins, rivers, &c. Theſe delineations are merely accidental, and are uſually much aſſiſted by the imagination, tho' the natural lines of a ſtone may ſometimes luckily enough repreſent the ruins of ſome antient building, or the courſe of a river. We have in England a kind of ſeptaria, or ludus helmontii, which has ſometimes delineations of this kind conſiderably beautiful, tho' very irregular. The Florentine marble, as we ſee it wrought up in the ornaments of cabinets, &c. owes a great deal to the ſkill of the workmen, who always pick out the proper pieces from the maſs, and diſpoſe them in the work ſo as to make them repreſent what they pleaſe.

CITHARA. See KINNOR.

CITHAROEDUS, in antiquity, the ſame with *cithariſta*. The *citharoedi* had the preference of all other muſicians, from whom they were diſtinguiſhed by an embroidered cloak, which was peculiar to them. *Pitiſc.* Lex. Ant. in voc.

CITHARUS, in zoology, the name of a fiſh common in the markets of Rome and Venice, and frequent in the German and Mediterranean ſeas. It is a flat fiſh, of the turbut kind; but it is covered with large ſcales. *Geſ.* p. 269.

CITILLUS, in zoology, the name of a ſmall animal of the mouſe kind, which lives in caves and holes of the earth. Its body is of the ſhape of the common weaſels, very long and thin: the tail is very ſhort. Its colour is a pale ſilvery grey, like that of ſome rabbits. It reſembles the mole in its want of external ears; but it has apertures which ſerve it to the ſame purpoſe, in the manner of birds. They live together in communities, great numbers being uſually found in the ſame cave, with a large ſtore of nuts, cheſnuts, and other fruits. Their fleſh is very well taſted, and their ſkin much uſed in cloathing in the cold countries. They are found not only in the very cold climates, but in Bohemia, Auſtria, and Hungary. *Ray*'s Syn. Quad. p 220.

CITIZEN (*Cycl.*) — The Romans were antiently ſo particularly careful to preſerve even their common *citizens* from any mixture of ſervile blood, that they prohibited all marriages between them and freed ſlaves, or their children. And it was decreed, as a ſpecial privilege and reward to one Hiſpala, of libertine condition, for her diſcovery of the impieties of the bacchanalian myſteries, that a *citizen* might take her to wife, without any diſgrace and diminution of his rights[a]. Theſe diſtinctions, indeed, began to be diſregarded towards the end of the republic, with reſpect to the ordinary *citizens*, but were kept up to the laſt, with regard to the ſenate[b]. — [a *Liv.* xxxix. 19. b *Middlet.* of Rom. Sen. p. 105.] See the article SENATOR.

CITRAGO, in botany, a name given by ſome authors to the common garden balm. *Ger.* Emac. Ind. 2.

CITREÆ *menſæ*, in antiquity, tables made of the wood of the citron-tree, very beautiful, and greatly eſteemed by the antient Romans. See CITREUM.

Many people have ſuppoſed this citrum to be the ſame with the cedar, and have judged partly from the ſimilitude of ſounds between *citreæ* and *cedreæ menſæ*, that theſe works of the antients were all made of cedar: but the Greeks diſtinguiſh them every where, calling the cedar, cedrus, κεδρος, not thya; nor did they ever confound the two trees together.

CITREUM, the *citron tree*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form. The piſtil ariſes from the cup, and finally becomes an oblong fruit, with a very thick pulp, divided into ſeveral cells, and containing juicy matter, and veſicles with callous ſeeds. To this it is to be added, that the leaves are ſimple, not heart-faſhioned at the bottom, as thoſe of the orange.

The ſpecies of *citron* enumerated by Mr. Tournefort, are theſe: 1. The common *citron*. 2. The ſweeter taſted *citron*. 3. The great-fruited *citron*. 4. The *citron* of Corcyra: and, 5. The Cretic *citron*. *Tourn.* Inſt. p. 620. See CITRON.

CITRIL, in zoology, a name given by many to the citrinella, or verzellino, a bird common in Italy, and kept in cages for its beauty and fine notes: called by many authors alſo thraupis. See the following article.

CITRINELLA, in zoology, the name of a ſmall bird, common in Italy, and very much reſembling our common linnet in ſhape. Its head and back are green; its rump of a greeniſh yellow, and its neck, with ſomewhat of the hindmoſt part of the head, grey. In ſome birds of this ſpecies, the head, the upper part of the neck, and the ſhoulders, are of a variegated colour, with a mixture of brown and yellowiſh green. Its breaſt and belly are all green in the female, but in the male the upper part of the breaſt and the belly are yellow: the tail is black, tipped with green; and the wings are alſo black, tipped ſometimes with green, ſometimes with white. Its beak is very ſhort and ſtrong, and its feet fleſh-coloured, or whitiſh. It ſings very finely, and is kept in cages in many parts of Italy. *Ray*'s Ornithol. p. 193.

CITRINUS, in natural hiſtory, the name of a peculiar ſpecies of ſprig cryſtal, which is of a beautiful yellow. Many of the common cryſtals, when in the neighbourhood of lead mines, are liable to be accidentally tinged yellow, by an admixture of the particles of that metal; and all theſe, whether finer, or coarſer, have been too frequently confounded together, under the name *citrine*; but Dr. Hill has aſcertained this to be a peculiar ſpecies of cryſtal, different from all the other kinds in form, as well as colour, and diſtinguiſhed by the name of *ellipomacroſtylum lucidum flaveſcens pyramide brevi*. It is never found colourleſs, like the other cryſtals, but has great variety of tinges, from that of deeper ochres to a pale lemon colour. It is very plentiful in the Weſt Indies, and is found in ſome parts of Bohemia. Our jewellers have learnt from the French and Italians, who are very fond of it, to call it *citrine*, and often cut ſtones for rings out of it, particularly out of the pyramid, which is always finer than the column, and theſe, after they have paſſed through two or three hands, are generally miſtaken for topazes. *Hill*'s Hiſt. of Foſſ. p. 180.

CITRON (*Cycl.*) — We have ſeveral ſpecies of this tree in the greenhouſes about London; their culture and management is the ſame with that of the orange, ſee ORANGE; but they are tenderer and ſhould have a warmer ſituation in winter, otherwiſe they are ſubject to caſt their fruit; they ſhould alſo continue a little longer in the houſe in ſpring, and be carried ſooner into it in autumn, and have a warmer, and better-defended ſituation in ſummer. *Miller*'s Gardner's Dict. See CITREUM.

CITRON *wood*, the wood of an American tree, called by the natives candle-wood, becauſe being cut into ſplinters, it burns like a candle. The tree is frequent in the Leeward iſlands, and grows to a conſiderable ſize; the leaves are like thoſe of the bay tree, but of a finer green; the flower is ſweet and much like thoſe of the orange; the fruit ſucceeding theſe is black, and of the ſize of a pepper-corn. The trunk is ſo like the yellow ſaunders in colour, that there was once an opinion that it was the ſame tree, and much of it was imported into Europe, and ſold as ſuch; but they were ſoon found to be different, the true ſaunders being of a ſweet ſcent, and but moderately heavy and reſinous, but the *citron* wood conſiderably heavy, very oily, and of a ſtrong ſmell. It is of no known uſe in medicine, but is uſed in France and Germany by the turners, being a firm fine grained wood, and taking a fine poliſh, and with age becoming of a very beautiful brown. *Pomet*'s Hiſt. of Drugs, p. 64.

CITRUL, *citrullus*, in botany, a name given to a genus of plants otherwiſe called *anguria*. See ANGURIA.

The

The ſeeds of this plant have the ſame medicinal virtues aſcribed to them with the gourd. See GOURD.

CITRUM. The antient Romans had a ſort of tables made of an elegant wood, and called *citrum*; theſe have been ſuppoſed by ſome to be made of the wood of the *citron* tree, and by others of the cedar; but it appears plainly that they were made of neither, but of a wood peculiar for its fineneſs, and very different from both. The antient Greeks have deſcribed the cedar under the name κεδρος, and the *citron* tree under the name *malus medica*; and beſide theſe they have deſcribed another tree under the name of *thya*. This was different from both the others, and was that which afforded the wood of which the fine *citreæ menſæ* of the Romans were made, the Greeks calling them thyina. Though Theophraſtus, however, never confounds the thya and cedrus together, yet Ariſtotle is by ſome ſuſpected to have done ſo; and either that is the caſe, or elſe Vitruvius has miſtaken him, for he has tranſlated what he ſays of the cedrus to the name of the *citrum*, the Latin name of the thya. Ariſtotle ſays, that there is a ſpring near Carthage, on which there ſwims an oil ſmelling like the ſaw duſt or ſhavings of the cedrus, and Vitruvius has tranſlated it ſmelling like the ſhavings of the *citrum*.

The more modern writers of the Mooriſh hiſtory tell us, that about mount Atlas, and in ſome of the iſlands on the coaſts of Africa, there grow cedars which much reſemble the cypreſs tree; and of the wood of their trunk, they at this time make very beautiful tables, and of a large price. The name cedar is become very uncertain in its ſignification, and we at preſent call the junipers of the Weſt Indies the Virginia and Bermudas, cedars. It is poſſible that this cedar of the Africans which grows like the cypreſs, may be the *citrum* of the Latins, and thya of the Greeks, and that the *citreæ* and *thyinæ menſæ* may have been made of its wood. Vitruvius alſo tells us of trees reſembling the cedar in their growth, and the cypreſs in their leaves. Theſe muſt be different from both, and muſt have a peculiar name, and might probably have been the trees called *thya* by the Greeks, and *citra* by the Latins, of which theſe famous tables were made.

The words cedrus and *citrum* ſeem to have been ſtrangely confounded together by writers of various nations. The Arabian phyſicians call the pitch of the cedar tree, not cedrum, as might have been ſuppoſed, but *citran*, as if it came from the *citrum*; and the modern Greeks and Latins have called the *citron* fruit κεδρομηλα, and cedromela, not citromela, as if they grew upon the cedar, not the *citron* tree. Neophytus and Iſidore always uſe theſe words in this ſenſe. Athenæus is of opinion that the words are properly the ſame in their origin, and that the *citrum* is a new corruption of the word cedrium, as the old writers ſometimes call the cedrus. But this is an unwarrantable opinion. It is ſcarce certain that the word *citrum* is properly Latin for the tree which bears the *citron* fruit, they having always called this medica malus, and expreſſed only the tree of whoſe wood they made tables, &c. by the name *citrum*. Juba is the firſt of the Greek writers who has called the *citron* tree by the name *citrum*. He ſeems to expreſs its having been called by that name by ſome of the Romans; and the whole confuſion will be found at length to turn upon this: The Romans originally gave the name of the *citrum* to the unknown tree whoſe wood they received from Africa for making their tables; after this finding that the *citron* fruit, or medica malus came alſo in great abundance from the ſame country, they haſtily concluded, that it grew upon the tree whoſe wood they ſo much valued, and called it the *citrum* fruit. Theſe fruits were alſo called the Heſperian apples, and Pliny ſeems of opinion, that a tree very like that which produced the *citron* wood bore theſe, though not wholly the ſame: he ſays it was called by the ſame name. The antients called theſe fruits the Heſperides, the mala medica, and mala Aſſyria, as they received them from Aſſyria, Media, and other places. Vid. *Vitruv.* l. 2. c. 11.

CITULA, in ichthyology, a name given by Paulus Jovius, and others to the fiſh we call the doree, and the generality of authors faber. Pliny calls it zeus, and Artedi has hence made zeus the generical name, comprehending this, and ſeveral other ſpecies, under this arrangement. The faber is called the zeus, with the prickly belly, and with the tail rounded at the end. This is the true ſpecific name of the *citula*.

CIVES, in botany, a very ſmall ſpecies of onion, which never produces any bulbs, and ſeldom grows above ſix inches high in the blade, which is very ſmall and ſlender, and grows in tufts and bunches. This uſed to be in great requeſt for ſallads in ſpring, as being milder than other onions which had ſtood the winter, but at preſent it is not much regarded. The way of propagating it is by parting the roots in autumn, and planting them, at ſmall diſtances, three or four in a hole, they will ſtand the winter very well, and be fit for uſe early in the ſpring.

CIVET-*cat*. See ZIBETHICUM *animal*.

CLADEUTERIA, κλαδευτηρια, in antiquity, a feſtival celebrated at the time of pruning the vines. It was likewiſe called *biſbæa*. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 409.

CLADIUS, in natural hiſtory, a name given by the antients to the ſtag, or deer, when four years old; in this year, or at the end of it, it was alſo called *ceraſtes*. The Greeks had names for all the years growth of this animal up to its perfection: in the firſt year they called it *nebrus*; in the ſecond *pattalea*; in the third *dicrotus*; and in the fourth *cladius*, or *ceraſtes* toward the end of that year. This name the creature retained all its life afterwards, it being ſuppoſed at its full maturity at that time.

CLAIM (*Cycl.*) — CLAIM *of liberty*, a ſuit or petition to the king in the court of Exchequer, to have liberties and franchiſes confirmed there by the king's attorney-general. Co Ent. 93.

CLAKIS, in zoology, a name given by the people of Lancaſhire, and ſome other places, to the bernacle, a ſmall ſpecies of wild gooſe. See BERNACLE.

CLAMATOR, in antiquity, was uſed to ſignify a domeſtic officer, whoſe buſineſs was to call the gueſts to dinner.

CLAMOR *bellicus*, in antiquity. See HUZZA, and SHOUT.

CLAMP-*nails* are ſuch nails as are uſed to faſten on *clamps* in building and repairing of ſhips.

CLAMPONNIER, or CLAPONNIER, in the manege, a long-jointed horſe, that is, one whoſe paſterns are long, ſlender, and over pliant. *Guill.* Gent. Dict. in voc. *Corneille*, Dict. des Arts in voc. *claponnier*.

The word is obſolete, and is properly applicable only to the ox kind: for *la claponniere* in French, is in them what the paſtern is in a horſe. *Guil.* & *Corneille* Dict. des Arts, ibid.

CLANDESTINA, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, and is of the perſonated kind, being tubular in its lower part, and in its upper, divided into two lips, the upper of which is ſingle and arched, the lower is divided into three ſegments; the cup is tubular, and crenated at the edge, and from it there ariſes a piſtil, which perforates the lower part of the flower, and finally becomes a longiſh unicapſular fruit, which is endued with an elaſtic force, and burſts open with violence, when ripe, diſcharging many roundiſh ſeeds.

The ſpecies of *clandeſtina* are; 1. The blue-flowered *clandeſtina*. And, 2. the *clandeſtina* with white flowers, which is properly only a variety of the former. *Tourn.* Inſt. p. 652.

CLANGULA, in zoology, the name of a ſpecies of duck found about the ſea coaſts, and called in Engliſh the golden eye. Its body is ſhort and thick; its head large, and its neck ſhort; its beak is ſhort and broad, and is all over black; its head is of a very obſcure and duſky green, yet gloſſy, and there is a large white ſpot at each angle of the beak; the iris of the eyes are of a beautiful yellow; the neck, ſhoulders, breaſt and belly are white, and the back black; the wings are black and white, and the tail is wholly black; the legs are very ſhort, and the feet very broad, and both are of a ſaffron colour; the hinder toe is ſmall, but is edged on each ſide by a membrane, which adds much to its breadth. See Tab. of Birds, N° 50. and *Ray*'s Ornitholog. p. 282.

CLAP (*Cycl.*)— CLAP-*board*, a board cut, in order to make caſks or veſſels.

CLAP-*net*, in birding, a ſort of net contrived for the taking of larks with the looking-glaſs, by the method called daring, or doring. The nets are ſpread over an even piece of ground, and the larks are invited into the place by other larks faſtened down, and by a looking-glaſs compoſed of five pieces, and fixed in a frame, ſo that it is turned round very ſwiftly, backwards and forwards, by a cord pulled by a perſon at a conſiderable diſtance behind a hedge. See DORING.

CLAR, or CLAER, in metallurgy, bone aſhes perfectly calcined, and finely powdered, kept purpoſely for the covering the inſides of coppels. *Cramer*, Art of Aſſ. p. 53. See COPPEL.

CLARAMONT *powder*, the name of a medicinal powder, very famous in Venice, and ſome other places, for its virtues in ſtopping hæmorrhages of all kinds, and in the cure of malignant fevers. It has its name from the perſon who firſt found out its virtues, and who has written a book expreſly about it. It is a white earth found near Baira, not far from Palermo, and is thence called alſo by ſome writers, *Terra de Baira*. *Boccone.*

CLARETUM, in pharmacy. See CLARET, *Cycl.*

CLARIAS, or CLARIAS *Niloticus*, in zoology, the name of a fiſh of the muſtela kind, common in the Nile, and brought to market at Memphis, and in many other parts of Egypt, but of an inſipid taſte, and eaten only by the poorer ſort of people. Its common ſize is a foot in length, and the thickneſs of a man's arm; its head is ſomething like that of the uranoſcope, and is large and fleſhy; the ſpace between the eyes is large, and the eyes themſelves are large alſo, and are placed as in the before-mentioned fiſh; it has two long beards of half a foot each; the upper jaw has two rows of teeth, and the under one is only notched like a file; the tail is broad and forked, and has externally two horny appendages of a round figure, and a hand's breadth in length, in which it differs from all other fiſhes. *Bellonius.*

CLARIGATIO, in Roman antiquity, a ceremony that always preceded a formal declaration of war. It was performed in this manner; firſt four heralds crowned with vervain were ſent to demand ſatisfaction for the injuries done the Roman ſtate. Theſe heralds, taking the gods to witneſs that their demands were juſt, one of them, with a clear voice, demanded reſtitution within a limited time, commonly thirty three days; which being expired, without any reſtitution made, then the *pater patratus*, or prince of the heralds, proceeded to the enemies frontiers, and declared war.

CLARIGATIO is alſo uſed for the apprehending a man, and holding him to bail. The Greeks called this action *androlepſion*.

CLARINO, in the Italian muſic, ſignifies a trumpet; thus, *a doi clarini*, added to any compoſition, denotes that it was made for

for two trumpets. *Broſſ.* Dict. Muſ. in voc. See the articles TRUMPET and CORNET.

CLARISSIMI, among the Romans, a title of honour belonging to the third rank of nobility under the emperors. See the article SPECTABILES.

CLARK-*goose*, in natural hiſtory, a ſpecies of wild-gooſe found in Zetland. Phil. Tranſ. N° 473. Sect. 8.

CLARY, *horminum*, in medicine, &c. See HORMINUM.

CLASMIUM, in natural hiſtory, the name of a genus of foſſils of the claſs of the gypſums, the characters of which are, that they are of a ſoft texture, and of a dull and opake look, being compoſed, as all the other gypſums, of irregularly arranged flat particles.

The word is derived from the Greek κλασμα, a fragment, or ſmall particle, from the flaky ſmall particles of which theſe bodies are compoſed: of this genus there is only one known ſpecies; this is of a tolerably regular and even ſtructure, though very coarſe and harſh to the touch. It is of a very lively and beautiful pale red in colour, and is found in thick roundiſh maſſes, which, when broken, are ſeen to be compoſed of irregular arrangements of flat particles, and emulate a ſtriated texture. It will neither give fire with ſteel, nor ferment with acids, but calcines very freely and eaſily, and affords a very valuable plaiſter of Paris, as do all the purer gypſums. It is common in Italy, and is greatly eſteemed there; we have of it alſo in ſome parts of Derbyſhire, but with us it is not particularly regarded, but burnt among the reſt. *Hill*'s Hiſt. of Foſſ. p. 117.

CLATHARUS, in botany, a name given by Micheli, and continued by Linnæus, to a genus of muſhrooms, the characters of which are theſe: they are always of a roundiſh figure, and have a reticulated and hollowed body, as if full of windows, with ramifications every where annexed.

CLATHRI, in antiquity, bars of iron, or wood, uſed in ſecuring doors and windows.

There was a goddeſs that preſided over *clathri*, called *Clathra*. *Pitiſc.* Lex. Ant. in voc.

CLATTE, in heraldry, a term borrowed from the French, to expreſs ſuch lines as are ſometimes found in the old paintings, and engravings of arms. Theſe lines are of an irregular kind, and not reducible to any other proper lines of heraldry, as the engrailed, indented, embattled, or the like. *Niſbet*'s Heraldry, p. 22.

CLAVARIA, in botany, the name given by Vaillant, and continued by Linnæus, to a genus of fungus's, the characters of which are, that they grow perpendicularly, and have a ſimple and uniform ſurface; theſe have been called alſo by the ſame Vaillant, under ſome ſmall varieties in the ſpecies, *corallo-fungus*, and by Tournefort *coralloides*. Dillenius has called them *fungoides*. From this confuſion of names among the other authors, may appear the uſe of the new names given to the genera of plants by Linnæus, ſince no body hereafter will fail to know what is meant by the word *clavaria*, whereas fungoides was a name common to this genus, and to many others in different authors, every thing having been called by it that was of a fungous ſubſtance, and manner of growth, and yet differed from the common muſhrooms in figure: and the other name coralloides is uſed by Dillenius in a very different ſenſe, he making it a claſſical character for a large ſeries of moſſes, including under it all thoſe that are of a tough texture, and want leaves, ſuch as the horned moſs, the branched heath moſs, the cup moſs, and many others, which form diſtinct genera under the name of cup coralloides, ſhrub coralloides, horned coralloides, and the like.

CLAVARIUM, in antiquity, an allowance the Roman ſoldiers had for furniſhing nails to ſecure their ſhoes with. They raiſed frequent mutinies, demanding largeſſes of the emperors under this pretence. *Pitiſc.* Lex. Ant. in voc.

CLAVATA *veſtimenta*, in antiquity, habits adorned with purple *clavi*, which were either broad or narrow. See CLAVUS.

CLAUDENS *palpebras*, in anatomy, a name given by Spigelius, and ſome others, to one of the muſcles of the face, called by Albinus and Winſlow, *muſculus orbicularis palpebrarum*, and by others *ſphincter palpebrarum*.

CLAVICULÆ, *clavicles (Cycl.)* — The two *clavicles* are ſituated tranſverſely, and a little obliquely oppoſite to each other, about the ſuperior and anterior part of the thorax, between the ſcapula and the ſternum. Each *clavicle* reſembles in ſome meaſure an Italic *S*, being a long bone irregularly cylindric, bent forwards near the ſternum, and backwards near the ſcapula, as if it were made up of two arches joined end-wiſe in oppoſite directions, that which lies on the fore part of the breaſt being the largeſt. The *clavicles* are each divided into a body, or middle part, and two extremities, one anterior, inferior, and internal, which may be termed the pectoral or ſternal extremity, the other ſuperior, poſterior, and external, which may be named the humeral, or ſcapular extremity. The pectoral extremity is the thickeſt, and is of a triangular figure, eſpecially near the end, where it is a little enlarged, and ſhews a cartilaginous ſurface, with three angles, of which the loweſt is the moſt prominent, and is turned a little toward the cavity of the thorax; near theſe angles there are ſeveral muſcular and ligamentary impreſſions, one of which near the inferior angle is ſometimes raiſed like a tubercle. The humeral extremity is flat and broad, and two ſides may be conſidered in it, one ſuperior, the other inferior; as likewiſe two edges, one anterior, the other poſterior, and a ſmall articular ſurface.

The upper ſide has ſeveral inequalities, and in the lower there is a kind of oblong, rough oblique, tuberoſity. The poſterior edge is convex, thick, and uneven, being that of the ſmall arch of the *clavicle*: the anterior edge is concave, thin, and ſmooth, every where except near the great arch, where it has a rough impreſſion. The articular ſurface terminates this extremity, being cartilaginous, turned obliquely forward, and of an oval figure, like that of the acromium, with which it is articulated. The body or middle portion, which, together with the pectoral extremity, forms the great curvature of the *clavicle*, is not ſo thick as the extremities; it is a little flatted both on the upper and lower ſides, and therefore two edges may likewiſe be diſtinguiſhed in it; the upper ſide is pretty even, the lower ſomething rougher, and a little depreſſed by a ſuperficial channel. The edges are rounded, the anterior being convex, the poſterior concave; the inner ſubſtance of the extremities is cellular, the reſt is more ſolid, conſiſting of very thick ſides, with a narrow cavity more or leſs, filled with reticular bony filaments. *Winſlow*'s Anatomy, p. 76.

Mr. Weitbrecht has deſcribed and delineated a ligament, which had not been obſerved by anatomical writers, ſtretched from the poſterior part of the anterior extremity of each *clavicle*, behind the ſternum, to the ſame part of the other *cavicle*, which makes the articulation of the ſternum and *clavicles* ſtronger. See Comment. Acad. Petrop. Tom. 4. p. 255.

Fracture of the CLAVICLE. The *clavicle* is extremely ſubject to be fractured, both from its tranſverſe poſition, and from its ſmallneſs. Whether it happens to be broken near the humerus, or near the ſternum; its end that is next the humerus always deſcends lower than the other from the weight of the arm which was before ſuſtained by the *clavicle* and head of the ſternum; and notwithſtanding that part of it next the ſternum remains immoveable by the deſcent of its other end, it can ſcarce happen but they will in ſome degree collapſe over one another.

The reduction of a fractured *clavicle* is not very difficult, eſpecially when the fracture is tranſverſe, nor is it uſual for the humerus, with the fragment of the *clavicle*, to be ſo far diſtorted as not to be eaſily reduced by the fingers. The difficulty, however, is much greater to keep the bone in its place when the fracture has been reduced; and that moſt of all when the bone has been broken obliquely. For this there are two reaſons; for the circular bandages, with which the bones of the arms, and other extremities are uſually held very firm, cannot be applied here, by reaſon of the form and diſorder of the part, and then the weight of the depending arm ſoon pulls to pieces what the ſurgeon has been replacing.

This fracture is to be reduced in the following manner: the patient muſt be placed on a low ſeat, and an aſſiſtant is to thruſt his knee againſt the middle of the patient's back, between his two ſhoulders; then laying hold of the heads of both the patient's arms with his hands, he muſt pull them gently and gradually backwards, by which means the *clavicles* will be properly extended: while this is doing, the ſurgeon muſt ſtand before, and endeavour to replace the bone with both his hands, ordering the aſſiſtant to hold the bone in that poſition; he is then to apply a narrow and thick compreſs, ſo as to fill up the cavities above and below the *clavicle*; upon theſe he is to lay two more narrow compreſſes made in the form of an X; over all theſe he is to apply a piece of paſte-board, accommodated to the ſhoulders and neck, and firſt ſteeped in ſpirit of wine, or oxycrate; then he muſt place a ball under the arm, or elſe bind it ſeveral times with a thick roller, to prevent the humerus from ſubſiding; and laſtly, the whole is to be properly bound up, and the arm ſuſpended by a ſaſh or ſling hung acroſs the ſhoulder, about the neck. The plaiſters that have been uſed to be employed on this occaſion, have, of later years, been found to be wholly uſeleſs. Whenever there are any looſe ſplinters of the bone that are entirely ſeparated, which, though they ſhould not wound, or hurt the fleſh, yet will obſtruct the meeting of the *clavicle*, it ſeems altogether requiſite to open the ſkin, and remove them before the reduction of the bone, treating the wound as uſual: but if there ſhould be any ſplinters which ſtill adhere to the bone, and prick the adjacent parts, and impede the reduction, they muſt be alſo either taken off with the forceps, or elſe forced back into their places, by which they may be again united to the bone. But to divide the parts, and remove the fragments requires great caution, leſt ſome of the large ſubclavian veins, or arteries, be wounded in the operation, and thereby a fatal hæmorrhage be produced. *Heiſter*, Surg. p. 120.

Luxated CLAVICLE. The *clavicles* are but ſeldom diſplaced, by reaſon of their ſtrong ligaments: but they may be diſlocated, however, either from the top of the ſternum, or proceſſus acromion of the ſcapula, to which they are naturally connected. This may be occaſioned either by a fall or a blow, or by the lifting ſome great weight. With regard to the cure, the ſooner aſſiſtance is had, the more eaſily may the reduction of the *clavicle* be performed: but loſs of time in this caſe is of the utmoſt conſequence, inveterate luxations of the *clavicle* being found

found incurable. The *clavicles* may be diſlocated in two manners from the ſternum, either internally toward the larynx, or externally upon the breaſt. When the firſt caſe happens, a cavity may be generally perceived upon the part affected, and the trachea, with the carotid veins, and arteries and nerves, and the œſophagus, which are all together, will be very much diſturbed or compreſſed. On the contrary, when it is luxated forward upon the breaſt, it ſhews itſelf by a preternatural tumour, inſtead of a cavity, in that place.

The *clavicles*, when luxated, are to be replaced by the patient's being ſet in a low ſeat, and an aſſiſtant's thruſting his knee againſt the middle of his back, between his ſhoulders, and laying hold of the heads of both his arms, and pulling them gently backwards. By this means the *clavicles* will be extended, and are in that ſtate eaſily replaced. When this is done, it muſt be carefully regarded to remove the injuries of the neck. If any kind of luxation requires an accurate retention by bandage, it muſt certainly be this of the *clavicle*, eſpecially when the luxation has happened ſome time before the reduction; for beſide that the *clavicles* have ſcarce any muſcles to ſupport them, their ligaments are uſually ſo much ſtretched and weakened in this caſe, that they are in no wiſe ſufficient to ſuſtain the weight of the arms. Such luxations of the *clavicles* as happen near the proceſſus acromion, are generally much more difficult to diſcover, and have been too often miſtaken, even by ſurgeons, for luxations of the humerus. Whenever this luxation happens, the ſuperior part of the ſcapula ſticks up; but in the place, when the *clavicles* are ſeparated from the acromion proceſs, a cavity may be obſerved: moſt acute pains alſo ariſe from this luxation, and the arm can by no means be lifted up. If therefore the luxated *clavicle*, in this caſe, is not timely reduced, it is no wonder that the uſe of the arm is entirely loſt afterwards. A ſtrict bandage continued about the part for forty days, to make the diſunited bones again coaleſce, will be found of great ſervice in theſe caſes, and, indeed, is the principal part of the cure. The bones may be replaced by the before-adviſed manner of extenſion, but nothing can keep them ſo but a proper and accurately applied bandage. *Heiſter*, Surg. p. 158.

CLAVICYMBALUM, in antiquity, a muſical inſtrument with thirty ſtrings. *Hoſm.* Lex. in voc.

Modern writers apply the name to our harpſichords.

CLAVI *veſtium* were flowers or ſtuds of purple, interwoven with, or ſowed upon, the garments of ſenators and knights; only for diſtinction, the former uſed them broad, and the latter narrow. *Pitiſc.* Lex. Ant. in voc.

CLAVUM *veneris*, in botany, a name given by ſome authors to the water lilly, or nymphæa. *Ger.* Emaç. Ind. 2.

CLAVUS *annalis*, in antiquity. So rude and illiterate were the Romans towards the riſe of their ſtate, that the driving or fixing a nail was the only method they had of keeping a regiſter of time; for which reaſon it was called *clavus annalis*. There was an antient law, ordaining the chief prætor to fix a nail every year on the ides of September; it was driven into the right ſide of the temple of Jupiter Opt. Max. towards Minerva's temple. *Pitiſc.* Lex. Ant. in voc.

This cuſtom of keeping an account of time, by means of fixing nails, was not peculiar to the Romans, for the Etrurians likewiſe uſed to drive nails into the temple of their goddeſs Nortia, with the ſame view. Vid. *Liv.* l. 7. c. 3.

CLAVUS *hyſtericus*, in medicine, a name given to a peculiar ſpecies of head-ach, more frequently attacking women than men, and with them uſually owing its origin to a ſuppreſſion of the menſtrual diſcharges. In ſome caſes, the pain is leſs violent, and only attends people during the three or four firſt days of the menſtrual diſcharge. In others, the pain is more violent, and almoſt continual; and when to the common cauſes of it there is added a venereal taint, which is no uncommon caſe, it becomes then the moſt terrible of all pains in the head.

Signs of it. Theſe are a piercing pain about the forehead or temples, reſembling that of a nail driven into the head: this pain ſometimes alſo extends itſelf over the whole head: with this there generally is a ſenſation of pain about the ſagittal ſuture in particular, and a remarkable coldneſs there: often there is an inflation and redneſs of the face, with a noiſe and ringing in the ears. To theſe there are not unfrequently added a ſlight fever, a chillneſs of the extremities, a remarkable laſſitude, and want of appetite, with frequent eructations and nauſeas, and a coſtiveneſs of the bowels. It generally returns about the time of the menſes; or in caſes where it is continual, it rages with more than ordinary violence at that time. Among the women, thoſe are moſt ſubject to it who live ſedentary lives, and feed high, and who are naturally paſſionate, and of a haſty temper. *Junker*'s Conſp. Med. p. 106.

Cauſes of it. Among the natural cauſes of this terrible pain, the moſt powerful are, an excretion of blood toward the head, and a ſtoppage of the menſes, and of the diſcharges by the hæmorrhoidal veins, by injudicious treatment.

Prognoſtics from it. Nothing gives phyſicians greater trouble, or more expoſes the inſufficiency of the art of healing, than the head-achs to which women are ſubject. The manner of life of the patients is, however, more in fault in theſe obſtinate caſes, than either the nature of the diſeaſe, or the ſkill of the preſcriber: high living, and idleneſs, have too many charms, to be quitted eaſily by thoſe who can enjoy them; and, therefore, while the cauſe always ſubſiſts, the cure can be only palliative or temporary, the diſorder always returning after a time: yet it is certain by experience, that the moſt terrible and inveterate diſorders of this kind may be removed ſo as not to return, by the uſe of proper medicines, and a thorough change in the diet and manner of life of the patient.

Method of cure. The firſt care in this reſpect is to keep the bowels lax, for they are almoſt always naturally coſtive in this diſeaſe: emollient clyſters are the moſt proper means of this; and where purges are required beſide, they muſt always be of the moſt gentle and leaſt vellicating kind. After theſe, the violent emotions of the blood are to be quieted by powders of nitre, antimony diaphoretic, crab's eyes, and cinnabar; and if there be a ſpiſſitude in it, the neutral and diuretic ſalts are to be given, in a ſcruple at a time, every day. Tartarum vitriolatum alone, given in this manner, frequently has a very great effect. If it be found neceſſary, beſide this, a gentle opiate may be ſometimes given, ſuch as a ſmall doſe of the ſtorax pill: and externally, ſpirit of wine and camphor is not a little ſerviceable. By way of prevention, it is extremely proper to bleed at ſpring and autumn every year: and above all things, to keep regular in regard to the menſtrual diſcharges. Gentle purges are to be given at times, and neceſſary exerciſe above all things to be adviſed; and this ſhould always be the more inſiſted upon, the more averſe the patients are to it, and the more they love to indulge in a ſedentary courſe. *Junker*'s Conſp. Med. p. 110.

CLAWS (*Cycl.*) — Claws is alſo uſed for a cloſe or ſmall meaſure of land. *Blount.*

CLAYS, (*Cycl.*) in natural hiſtory, earths principally uſed in the potter's trade. Their diſtinguiſhing characters are theſe: they are firmly coherent, weighty and compact; ſtiff, viſcid and ductile to a great degree while moiſt; ſmooth to the touch, not eaſily breaking between the fingers, nor readily diffuſible in water, and when mixed in it, not readily ſubſiding from it. *Hill*'s Hiſt. of Foſſ. p. 17.

Clay *lands*. See Land.

CLEAT, in ſhip-building, a piece of wood faſtened to the yard-arm of a ſhip, to keep the ropes from ſlipping off the yard. *Manwayring.*

CLEAVERS, in botany and medicine. See Aparine.

CLEFT (*Cycl.*) — Green timber is very apt to ſplit and cleave in ſeveral places, after it is wrought into form; and theſe cracks are a very diſagreeable ſight in it. The common method of the country carpenters, is to fill up theſe cracks with a mixture of greaſe and ſaw-duſt; but the neateſt way of all is the ſoaking both ſides well with the fat of beef broth, and then dipping pieces of ſponge into the ſame broth, and filling up all the cracks with them: they ſwell out ſo as to fill the whole crack, and accommodate themſelves ſo well to it, that the deficiency is hardly ſeen. *Mortimer*'s Huſbandry, vol. 2. p. 104.

CLEIDION, in antiquity, the ſame with *clavicula*. See Clavicul*æ*, *Cycl.* and *Suppl.*

CLEIDOMASTOIDEUS, in anatomy, a name given by Albinus to a muſcle, called by others ſimply *maſtoidæus*, and by Euſtachius *ſeptimus caput moventium*. See the articles Mastoidæus and Head.

CLEMA, in antiquity, a ſpecies of vine, a twig of which was the enſign of a centurion's office. *Hoſm.* Lex. in voc.

CLEMATITIS. See Virgin's *bower*.

CLEOME, in botany, a name given by ſome to the ſea-holly, or eringo. *Ger.* Emac. Ind. 2.

CLERODENDRUM, in botany, the name of a genus of plants, the characters of which are theſe: the perianthum is compoſed of one leaf divided into five ſegments, of an oval figure, ſharp-pointed, and broader than the tube of the flower: theſe remain after the flower is fallen. The flower conſiſts of one petal, and is of the labiated kind: its tube is ſlender and long; its upper lip is hollow, erect, bifid and obtuſe, and its under lip of the ſame length, but bent, and divided into three equal ſegments. The ſtamina are four capillary filaments, much longer than the flower, but two of them ſomewhat ſhorter than the others. The antheræ are ſimple: the germen of the piſtil is roundiſh: the ſtile is of the length, figure and ſituation of the ſtamina; and the ſtigma is ſimple. The fruit is a roundiſh drupe, ſtanding upon a very large cup, and containing a ſingle roundiſh ſeed. In the Hortus Malabaricus, the flower is ſomewhat differently deſcribed, and the fruit is ſaid to contain three or four ſeeds; the mouth of the flower is oblong, and inflated, and is convex above, and plane underneath: the limb is ſmall, and is ſhut: the upper lip is obtuſe, and emarginated, and the under lip is of the ſame ſize with the upper, but is lightly trifid. The ſtamina are four filaments, hid beneath the back of the flower: the two ſide ones are a little ſhorter than the others. The antheræ are of an oval figure, and hairy. There ſtands alſo between the upper pair of ſtamina, a rudiment of a fifth, in form of a ſmall point. This makes a very obvious mark of diſtinction for this plant. The germen of the piſtil is oval, the ſtile is capillary, and of the length of the ſtamina, and the ſtigma is obtuſe. The fruit is an oval capſule, longer than the cup, and containing two cells. The ſeeds are numerous, and of a roundiſh figure, and are ſurrounded with a foliaceous edge. *Linnæi* Gen. Plant. p. 290.

Burman. Zeyl. 29. Hort. Mal. vol. 2 p 25. *Linnæi* Gen. Plant. p. 287. *Dillen*, Hort. Elth. Gen. 11. *Gronov.* Virgin p. 71, 72.

CLEROTI, Κληρωτοι, among the Athenians, a kind of public arbitrators. See DIÆTETÆ.

CLETHRA, in botany, the name of a genus of plants, the characters of which are these: the perianthium is small and permanent, and is composed of five erect, hollowed, and oval leaves. The flower is composed of five oblong and broad petals, somewhat longer than the leaves of the cup. The stamina are ten subulated filaments, of the length of the flower: the antheræ are oblong and erect, and open at the points: the germen of the pistil is roundish: the stile is capillary, erect, and permanent, and grows after the flower is fallen: the stigma is obtuse, and divided into three segments. The fruit is a roundish capsule, surrounded by the cup: it is composed of three valves, and has three cells, in which are contained a number of seeds of an angular figure. *Gronov.* Virgin. p. 43. *Linnæi* Gen. Plant. p. 187.

CLETHRITES *lapis*, a name given by the antients to such pieces of fossil wood as shewed a grain resembling that of the wood of the alder.

CLEW *of the sail of a ship*, is the lower corner of it which reaches down to that earing where the tackles and sheets are fastened; so that when a sail is made goring, or sloping by degrees, she is said to have a *great clew:* and a ship is said to have a *great clew*, when she has a very long yard, and so has much canvas in her sails.

CLEW-*garnet*, in ship-building, a rope fastened to the *clew* of the sail, and from thence running in a block seized to the middle of the main and fore-yard. Its use is to hale up the *clew* of the sail close to the middle of the yard, in order to its being furled.

CLEW-*line* is the same to the top-sails, top-gallant-sails, and sprit-sails, that the *clew-garnet* is to the main-sail and fore-sail, and has the very same use. In a gust of wind, when a topsail is to be taken in, they first hale home the lee *clew-line*, and by that means the sail is taken in much easier.

CLIFFORTIA, in botany, the name of a shrub given by Dillenius, and continued by Linnæus. The characters are these: it produces male and female flowers. In the male flower, the cup is a perianthium, composed of three oval, pointed, and hollow leaves, which stand open. There are no petals, but in this cup stand about thirty stamina, which are erect capillary filaments, of the length of the cup. The antheræ are double, and are oblong, obtusely pointed, compressed, and placed in an erect position. In the female flowers, the cup is a three-leaved erect perianthum: the leaves are all equal in size, and are of an oval pointed figure; but they stand upon the germen of the pistil, and remain there after the stamina are fallen. The flower has no petals, but has a pistil of an oblong form, standing under the cup; two long plumose and very slender stiles, and simple stigmata. The fruit is an oblong capsule, of a cylindric form, containing two cells, and remains crowned with the cup. The seeds are contained one in each cell, and are very slender, oblong, and of a cylindric form. This shrub has been supposed by some allied to the mercurialis in its male and female fructification; but they appear extremely different on a close inspection; and indeed the leaves of the cup remaining on the fruit in this, are an obvious distinction. *Linnæi* Gen. Plant. p. 484. *Dill.* Elth. 31. fol. 5.

CLIFT, in the manege, a deficiency in the new, soft, and rough uneven hoof that grows in horses feet, upon the hoof-cast. *Guill.* Gent Dict. in voc.

It is also called *chink*, *crack*, or *chop*, and by the French *avalure*. *Guill.* Gent. Dict. & Dict. de Richelet. in voc. *avalure*.

CLIFTS, in timber. See CLEFTS.

CLIMACIDES, Κλιμακιδες, among the Greeks, were women servants who assisted their mistresses to get on horseback, by serving as steps for them to ascend by. *Hofm.* Lex. in voc.

CLIMATARCHÆ, Κλιματαρχαι, were governors of provinces to the Greek emperors. *Hofm.* Lex. in voc.

CLIMATE *for plants*. See TEMPERATURE.

CLIMIA of the Arabs. See KLIMIA.

CLINCH *of a cable*, is that part of it which is bent about the ring of the anchor, and then seized or made fast.

CLINCH-*bolts*, in a ship, are such as are *clinched* with a rivetting hammer at those ends which come through.

CLINCHING, in the sea language, a kind of slight calking used about the ports on a prospect of foul weather: it is done by driving a little oakum into their seams, that the water may not come in at them.

CLINIC *baptism*. See BAPTISM.

CLINKERS, among brickmakers. See BRICK.

CLINOPODIUM, in botany, the name of a genus of plants, the characters of which are these: the flower consists of one leaf, and is of the labiated kind: the upper lip is erect, roundish, and usually bifid, and the lower is divided into three segments. The pistil arises from the cup, and is fixed in the manner of a nail to the hinder part of the flower: it is surrounded by four embryos, which afterwards ripen into so many seeds of an oblong figure, to which the flower-cup serves as a calyx. To these marks it may be added, that the flowers always grow verticillately round the stalks.

The species of *clinopodium* enumerated by Mr. Tournefort, are these: 1. The taller, large-leaved, origanum like *clinopodium*. 2. The low, small-leaved, origanum-like *clinopodium*. 3. The white-flowered, origanum-like *clinopodium*. 4. The Basil-like, field *clinopodium*. 5. The mountain *clinopodium*. 6. The spiked and verticillate Portugal *clinopodium*. 7. The hyssop-leaved Alpine *clinopodium*. *Tourn.* Inst. p. 194.

CLIPEUS, in natural history, the name of a class of the echinodermata, which are very depressed and flat, and in some measure resemble a shield. Of this class there are only two known species.

The first is the discoide echinites of Plot, and the second that of Longius, which has a little higher top. *Klein*'s Echinod.

CLITONES, the eldest, and all the sons of kings. This word is often met with in our antient authors. *Blount.*

CLITOREA, in botany, the name of a genus of plants, including the *ternatea* of Tournefort and Dillenius, the *clitorius* of the last author, and the *phaseoli species* of Rivinus The characters are these: the cup is an erect perianthium, consisting of one leaf, of a tubular form, and divided into five segments at the end. The flower is of the papilionaceous kind: the vexillum is very large, strait and expanded, and is marginated and undulated at the edges. The alæ are of an oblong figure; they are strait, obtuse, and somewhat shorter than the vexillum. The carina is shorter than the alæ, and is of a roundish foliated form The stamina are diadelphous filaments, and the antheræ are simple. The germen of the pistil is oblong; the stile points upwards, and the stigma is obtuse. The fruit is an extremely long pod, of a compressed figure, composed of two valves, and pointed at the end. The seeds are very numerous, and kidney-shaped. *Linnæi* Gen. Plant. p. 350. *Tournefort*, A. G. 1706. *Dillen.* Gen. 10. Hort. Eltham. p. 76. *Rivin.* 4.

CLITORIDIS *musculus*, a name given by Verheyen to the muscle of the female pudenda, usually called *erector clitoridis*. This is the only muscle that is proper to this part; the other, called the inferior *clitoridis*, being properly a sphincter vaginæ, or as Albinus calls it, constrictor cunni.

CLITORIDIS *inferior*, in anatomy, a name given by Riolanus, and many others, to a muscle of the female pudenda, called the vaginæ constrictor, and sphincter vaginæ; by Albinus, the constrictor cunni.

CLITORIS (*Cycl.*) — This part is thought by some to have been first discovered by modern anatomists; but Dr. Tronchin quotes several antient authors who knew the *clitoris*, and proves that Bonaciolus mentioned it before Columbus or Fallopius. See his Origine ancienne de la physique nouvelle.

CLONARIUM, in botany, that small pedicle which supports every separate flower, or fruit in a cluster, as every grape in a bunch, every berry in a corymbus of ivy, &c. Dioscorides has used this word in his description of the hydropiper or arsmart, which is the zinziber caninum of the Arabians. He says, the fruit stands on botryoide clonaria; and the interpreters and translators of his works having applied this term to the young shoots, and misunderstood its meaning so far as to make it stand for a branch full of leaves, have quite perverted the sense, and rendered the whole chapter unintelligible, by making the description not agree with the plant. Avisenna, who professedly copies the account of Dioscorides, has in the same manner destroyed the merit of his translation, and makes the description of his zinziber caninum not agree with our arsmart, tho' that be evidently the plant meant by it.

CLOSE-*fights*, aboard a ship, are such bulk-heads as are in a fight put up fore and aft in the ship, that the men may stand behind them secure, and fire upon the enemy; and if the ship is boarded, scour or clear the decks.

CLOSE-*quarters*, on board a man of war. See QUARTERS.

CLOSH, in our old customs, an unlawful game, forbidden by stat. 14. Edw. IV. c. 3. & 33. Hen. 8. c. 9. It is said to have been the same with our *nine-pins*, and is called *closh-coyls* by the 33d Hen. VIII. *Blount* & *Cowel.*

CLOT-*bird*, in zoology, a name by which the common œnanthe is called in many parts of England. See ŒNANTHE.

CLOTH *incombustible*. See INCOMBUSTIBLE *cloth*.

Hair CLOTHS, in military affairs. See HAIR.

CLOUD (*Cycl.*) — From the observable motions of the *clouds* it appears, that there are different currents in the air at the same time, and in the same quarter, under one another. Phil. Transf. N° 458. p. 537.

CLOUDS *magellanic*. See MAGELLANIC *clouds*.

CLOVES (*Cycl.*) — This spice acquires weight by imbibing water, which it will do at some considerable distance. The Dutch, who trade in *cloves*, make a considerable advantage by knowing this secret. They sell them always by weight; and when a bag of *cloves* is ordered, they hang it several hours before they send it in, at about two foot distance over a vessel of water. They carefully watch the time when the *cloves* have imbibed the proper quantity, that the fraud may pass undiscovered. This will add many pounds to the weight, which the unwary purchaser pays for on the spot. This is often practised in the spice islands, and sometimes in Europe: but the degree of moisture must be more carefully watched in the former place; for there a bag of *cloves* will in one night's time attract so much water, that it may be pressed out of them by squeezing them with the hand.

CLOVE-

CLOVE, in commerce, is uſed for the two and thirtieth part of a weigh of cheeſe, *i. e.* eight pounds. 9 Hen. VI. c 8. *Blount & Cowel.* See WEIGH, *Cycl.*

CLOVE-*july-flowers*, a ſpecies of caryophyllus, greatly recommended as cordials, and given in diſorders of the head, palpitations of the heart, and in nervous complaints of all kinds. See CARYOPHYLLUS.

CLOVE-*tongue*, a name uſed by ſome Engliſh writers, for the common black hellebore, the root of which is uſed in medicine. *Ger.* Emac. Ind. 4.

CLOVER *graſs*. See TREFOIL and TREFOLIUM.

CLOUTS, in gunnery, are thin plates of iron nailed on that part of the axle-tree of a gun-carriage, which comes through the nave, and thro' which the linſpin goes.

CLOYED. The ſeamen, when any thing is got into the touch-hole of a great gun, ſo that they cannot with a priming iron make way for the powder to be put in to prime her, ſay *the touch-hole is cloyed*: wherefore when guns are nailed, &c. they ſay they are *cloyed*.

CLUB *antennæ*, in natural hiſtory, a name given by naturaliſts to ſuch of the horns or antennæ of butterflies as repreſent a *club*, being larger at the extremities than at the origin.

CLUPEA, in the Artedian ichthyology, the name of a fiſh, the characters of which are theſe. It is one of the genus of the malacopterygii, or ſoft-finned kind. The branchioſtege membrane contains on each ſide eight bones. The belly is very acute, or, as it were, ſerrated, from the ſingular ſituation of the ſcales; and the back-fin is placed ſomewhat nearer to the ſnout than to the tail. *Artedi*, Gen. Piſc. 5.

The ſpecies of this genus, enumerated by Artedi, are theſe: 1. The *clupea*, with the lower jaw longer than the upper, and without ſpots. This is our common herring. There are ſmall teeth in both jaws, as alſo on the tongue and palate: the vertebræ are fifty-ſix in number, and the appendices of the pylorus are ſeventeen. 2. The *clupea* of four inches length, with the lower jaw longer than the upper, and the belly very ſharp. This is the fiſh we call the ſprat, and vulgarly ſuppoſe to be only a young herring. The vertebræ in this fiſh are only forty eight in number, and the points of the belly-ſcales are more acute than in the herring. 3. The *clupea*, with the apex of the upper jaw divided into two parts, variegated on each ſide with black ſpots. This is the *clupea*, *alauſa* or *aloſa*, and *thriſſo* of authors, and is called by us the ſhad. The lower jaw is longer than the upper, but the upper only has teeth. The vertebræ are in number fifty-five; the ribs thirty of a ſide: the ſcales of the belly are aculeated, and are in number from thirty-five to thirty-ſeven. There are on each ſide five, ſix, or ſeven black ſpots near the back. The appendices of the pylorus are eighty in number. 4. The *clupea*, with the upper jaw the longeſt. This is the anchovie or encraſicholus of authors. The vertebræ are forty-five or ſix. See Tab. of Fiſhes, N° 39. *Artedi* Gen. Piſc. 4.

CLUSIA, in botany, the name of a genus of plants, the characters of which are theſe. The perianthium is compoſed of five roundiſh, hollow, and expanded leaves, and the flower is compoſed of five very large, roundiſh, aud expanded petals. The nectarium is globoſe: it conſiſts of one leaf, and encloſes the germen, and is open at the top to give way to the ſtigma. The ſtamina are extremely numerous ſimple filaments, ſhorter than the flower: the antheræ are ſimple: the germen of the piſtil is of an oval, oblong figure. There is ſcarce any ſtile. The ſtigma is ſtellated, plane, obtuſe, and divided into ſix ſegments. The fruit is an oval capſule, containing ſix cells, with a number of oval ſeeds in each. *Linnæi* Gen. Plant. p. 229. *Plum.* Gen. 10. *Pluk.* p. 257.

CLUSTER *polype*. See POLYPE.

CLUTIA, in botany, a name given by Boerhaave to a genus of plants, the characters of which are theſe. In the male flower, the cup is a perianthium of the bigneſs of the flower, compoſed of five oval obtuſe leaves, which are hollow, and ſtand open. The flower is compoſed of five petals, which ſtand very wide open, and are of a cordated figure, with plain ungues, ſhorter than the cup. There are in this flower five external and five internal nectaria: the external ones are tripartite, oblong, open, of the ſame length with the ungues of the petals, and are diſpoſed in a circular form within the petals. The internal nectaria ſtand between the others, and are a ſmall ſort of glands, with an aperture, diſcharging honey at their tops. The ſtamina are five filaments, placed within the ſtile, and ſtanding at a diſtance from the petals: the antheræ, which theſe ſupport, are round, and turn about upon them: the piſtil has no germen: the ſtile is very long, of a cylindric figure, and truncated, and produces the ſtamina in its middle. In the female flower, the perianthium and the petals are the ſame as in the male; but the external nectaria are only double, and appear roundiſh. Their ſize and ſituation are the ſame as in the male, and there are in thoſe flowers no internal nectaria. The piſtil is a roundiſh germen, crowned with three bifid ſtiles of the length of the flower, and theſe terminated by obtuſe ſtigmata. The fruit is a globular capſule, compoſed of three cells, and having ſix furrows running along it; in each of the cells is contained a ſingle ſeed, which is roundiſh, and has a ſort of appendage at one of its extremities. *Linnæi* Gen. Plant. p. 488. *Boerh.* Ind. Alt. p. 318. Hort. Amſt. 1. 91.

CLYDON, Κλυδων, in medical writers, is uſed for the fluctuation of food taken into the ſtomach, ariſing from the laxity or weakneſs of its fibres, and of the abdominal muſcles. *Blanc.*

CLYMENUM, in botany, the name of a genus of plants, the characters of which are in all reſpects the ſame with thoſe of the lathyrus; only in this plant there grow but two leaves on each rib, whereas on the *clyme* there are ſeveral pairs, the rib finally terminating in a clavicle or tendrill.

The ſpecies of *clymenum* enumerated by Mr. Tournefort, are theſe: 1. The Spaniſh *clymenum*, with a variegated flower, and a ſmooth pod. 2. The Spaniſh *clymenum*, with a variegated flower, and jointed pod: and, 3. The common, wild, blue-flowered *clymenum*, called the vetch lathyrus. *Tourn.* Inſt. p. 396.

CLYPEOLA, in botany, the name given by Linnæus to a genus of plants, called by Tournefort and others *jonthlaſpi*. *Linnæi* Gen. Plant. p. 315. See JONTHLASPI.

CLYSSUS, in chemiſtry, a compound extract, either made from ſeveral different ſimples, or from the ſeveral ſimple preparations of the ſame ſubſtance mixed together: as when from wormwood, or any other plant, we draw the water, ſpirit, oil, ſalt, and tincture; and afterwards, according to the rules of art, unite all theſe again into a maſs compounded of them all, and containing the joint virtues of them all. *Boerhaave's* Chem. p. 171.

To this claſs are reducible many of the nobleſt productions of the art, as the more curious ſapos, and many others.

CLYSTERS, (*Cycl.*) in medicine. See ENEMA.

CNEORUM, in botany, a name uſed by many authors for a ſpecies of convolvulus, uſually diſtinguiſhed among botanical writers by the name of *convolvulus argenteus umbellatus erectus*; the upright, umbellated, ſilvery bind-weed. See CONVOLVULUS.

In the Linnæan ſyſtem of botany, the *cneorum* makes a diſtinct genus of plants, the characters of which are that the cup is a perianthium, with three notches, very ſmall, and remaining after the flower is fallen. The flower is compoſed of three petals, which are oblong ſtrait, pointed, concave, placed erect, and very quickly falling off. The ſtamina are three pointed filaments, ſhorter than the flower: the antheræ are very ſmall: the piſtillum has an obtuſe germen, divided into three lobes: the ſtile is erect, firm, and of the length of the ſtamina: the ſtigma is broad and trifid. The fruit is a dry berry, ſomewhat round, but made of three lobes, and containing three cells. The ſeeds are ſingle and round. *Linnæi* Gen. Plant. p. 9.

The *cneorum* is called chamælea by Tournefort and others. See CHAMÆLEA.

CNICUS, *ſaffron-flower*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the floſculous kind, or compoſed of ſeveral ſmall floſcules, divided into ſegments at their ends: theſe are placed upon the embryo ſeed, and are all collected into one head, and ſurrounded by a common cup, furniſhed with large outer leaves. The embryo fruit finally ripen into ſeeds, winged with down.

The ſpecies of *cnicus* enumerated by Mr. Tournefort, are theſe: 1. The rough blue-flowered *cnicus*. 2. The blue-flowered perennial *cnicus*. 3. The wild hairy *cnicus*, called carduus benedictus. 4. The meadow *cnicus*, with acanthus leaves, and yellow flowers. 5. The meadow *cnicus*, with acanthus leaves, and purple flowers. 6. The ſpear-leav'd *cnicus*, with very ſtrong prickles. 7. The white-ſpotted *cnicus*, with purple flowers. 8. The white-flowered, white-ſpotted *cnicus*. 9. The yellow-flowered *cnicus*, called the yellow atractilis. 10. The low, prickly, purple-flowered *cnicus*. 11. The low, blue-flowered, mountain *cnicus*. 12. The blue mountain *cnicus*, with weaker thorns. 13. The little *cnicus*, with cancellated heads, and woolly ſeeds. 14. The hoary, many-headed *cnicus*, with yellow thorns. 15. The Spaniſh, ſtinking-tree *cnicus*. 16. The Spaniſh *cnicus*, with large laciniated leaves: and, 17. The blue-flowered Spaniſh *cnicus*, with calcitrapa leaves. See Tab. 1. of Botany, Claſs 12. *Tourn.* Inſt. p. 450.

CNIMODACTYLÆUS, in anatomy, a name given by Spigelius, and ſome others, to a muſcle of the foot, generally known by the name of the extenſor digitorum pedis. See EXTENSOR, *Cycl.*

COA, in natural hiſtory, the name given by Plumier to a genus of plants, called by Linnæus hippocratea. See the article HIPOCRATEA.

COACERVATE *vacuum*. See VACUUM, *Cycl.*

COACH, (*Cycl.*) in the navy, a ſea term for the council-chamber on board a flag-ſhip.

COAGULATION (*Cycl.*) — *Chymical* COAGULATION is performed by ſix different agents in the general operations in chemiſtry, and by each of theſe in ſeveral manners.

1. It is performed with water, by congealing, cryſtallizing, and precipitating; as in the mercurius vitæ, and ſome other ſuch preparations.

2. With oil, which, by the force of fire, unites to itſelf ſulphur, ſalts, and metals.

3. With

3. With alcohol, upon the ſpirit of ſal armoniac, the white of eggs, the ſerum of the blood, &c.

4. With acid and alkali, growing ſolid together, as in the tartarum vitriolatum.

5. With fixed alkali, as in milk. And, 6. With acid ſalts, as in milk, ſerum, and whites of eggs. *Boerh.* Chem. P. 2. p. 338.

COAGULUM *aluminoſum*, *alum curd*, a form of medicine, preſcribed long ſince by Riverius, and now taken into the London diſpenſatory. It is ordered to be made by putting whites of eggs into a pewter or earthen veſſel, and ſtirring them about with a large lump of alum till they are coagulated *Pemberton's* Lond Diſp. p. 379.

COAL (*Cycl.*)—The common pit *coal* contains a large quantity of ſal armoniac. The mouths of our ſubterranean fires in the *coal* countries all afford it, and it is even found in brick-kilns, where nothing but *coal* is burnt with the clay. It may appear ſtrange indeed to ſome, that this black ſubſtance ſhould yield ſo white and fine a ſalt; but chemiſts know, that all volatile ſalts whatever may be freed from their fœtor and intenſe colour, by tranſmuting them into a ſal armoniac, by the mediation of an acid, as the ſpirit of ſalt, vitriol, or alum; after ſublimation with which, they become white, ſweet, and pure. The reaſon of this change is, that tho' the ſalts always carry over ſome of the fœtid oil with them in a ſtate of volatility, yet being thus in a manner fixed, the fœtid oil muſt by force of fire riſe firſt, leaving the ſubſequent ſal armoniac without ſmell: tho' it is ſtill a doubt, whether the ſalt be the better or the worſe for this labour. Phil. Tranſ. N° 130.

COAL-*balls*. In the country of Liege, they uſe a kind of balls made of *coal* and clay, for firing. Theſe balls are made with $\frac{1}{3}$ of clay, without ſand or gravel, and $\frac{2}{3}$ of *coal*-duſt, well mixed, and formed either into round balls, or into bricks. This *coal*-duſt being the refuſe of the mine, makes this ſort of firing cheap. See Phil. Tranſ. N° 460. Sect. 3.

COAL-*mines*. Wilfully ſetting *coal*-mines on fire, is by ſtatute felony without benefit of clergy. 10 Geo. II. c. 32. §. 6.

COAL-*ſpirit*. *Coals* diſtilled in a retort not only afford a phlegm, and black oil, but a ſpirit, which is apt to force the lute and break the glaſſes, and will catch fire at the flame of a candle. We are told that bladders may be filled with this ſpirit, which may be kept a conſiderable time. If the bladder be pierced with a pin, and ſqueezed near the flame of a candle, the ſpirit will take fire, and afford an amuſing ſpectacle. See Phil. Tranſ. N° 452. Sect. 5.

COAMINGS, in ſhip-building, are thoſe planks, or that frame, which raiſe up the hatches higher than the reſt of the deck. Loop-holes for muſkets to ſhoot out at, are often made in the *coamings*, in order to clear the deck of the enemy when a ſhip is boarded.

COANE, among the Greeks, a name given to a pecular ſpecies of tutia or tutty, which was always found in a tubular form. It had its name from κωνη, a word uſed to expreſs a ſort of cylindric tube, into which the melted braſs was received from the furnace, and in which it was ſuffered to cool. In cooling, it always depoſited a ſort of recrement on the ſides of the veſſel or tube, and this was the tutty called *coane*.

COATS, in a ſhip, are pieces of tarred canvas put about the maſts at the partners. They are alſo put about the pumps at the decks, that no water may go down there; and they are alſo uſed at the rudder's head.

COATI, in zoology, the Braſilian name for an animal of the dog or fox kind, common in many parts of America, and ſometimes kept for curioſity with us, and called the rackoon. See Tab. of Quadrupeds, N° 20. and the article RACKOON.

COATING, in chemiſtry. See LORICATION.

COBALT, *cobaltum* (*Cycl.*)—*Cobalt* is a denſe, compact, and ponderous mineral, very bright and ſhining, and much reſembling ſome of the antimonial ores.

It is ſometimes found of a deep, duſky, bluiſh black, very heavy and hard, and of a granulated ſtructure, looking like a piece of pure iron, when freſh broken. At other times, it is more compact and heavy, of a very even texture, and not granulated, or compoſed of any ſeparate moleculæ, but reſembling a duſky maſs of melted lead, not an ore.

The inner part, when freſh cut or broken, is in ſome ores found much more beautiful than in either of theſe ſtates, being of a fine bright ſilvery grey, and of a beautiful and evenly ſtriated ſtructure; the ſtriæ all running great lengths, but being all variouſly inflected and undulated, and in ſome parts broken. Theſe are the more uſual appearances of *cobalt* in its ore: but beſide theſe, it is ſubject to an alteration in the bowels of the earth, by means of ſubterraneous fires and ſulphur, which reduce it to a body which cannot be ſuppoſed at firſt ſight the ſame with *cobalt*, tho' it prove to be exactly the ſame ſubſtance, on a chemical analyſis.

In theſe ſtates, inſtead of the lead-like appearance of the common kind, it is of a fine florid red colour, tho' ſometimes debaſed by accidental mixtures to a grey, black, or yellow, either wholly, or in part: and in this ſtate it has two ſubordinate diſtinctions, as it appears ſometimes in form of a compact maſs of an uniform texture, and ſometimes in a ſtriated and beautifully ridged maſs, reſembling the fibraria. The three firſt ſtates of *cobalt*, are commonly called *cobalt* ore, without any diſtinction; but the firſt of theſe red kinds is called by the Germans kupffer nicol, and the latter, or ſtriated one, the flower of *cobalt*.

Cobalt is found in Germany, Saxony, Bohemia and England. Ours is but a poor kind, but is met with in conſiderable plenty on Mendip-hills. The German *cobalt* generally contains a large quantity of biſmuth, and the Bohemian of ſilver.

The world is obliged to Kunkell, for the hiſtory of the ſeveral arſenics, zaffre and ſmalt, which are all the produce of *cobalt*. See ARSENIC, &c.

The *cobalt* is roaſted in a reverberatory furnace, and the flowers, which it yields in great abundance, are collected in long wooden funnels, which ſupply the place of chimnies, on the inſides of which it ſticks in form of ſoot, and from this ſoot or flower are made all the ſeveral ſorts of arſenic or ratſbane. If this is only reſublimed, or but barely melted in a covered veſſel, the ſubſtance which we call white arſenic or common ratſbane is produced. If a tenth part of ſulphur be mixed with them, and they are ſublimed together, the product is our yellow arſenic; and the red arſenic is made by adding to the flowers only one fifth of ſulphur, and a little copper ſlag.

When the flowers or ſoot of *cobalt* is all diſcharged, the remaining matter is powdered very fine, and being mixed with three times the weight of common flints in powder, and wetted with water, the whole concretes into a ſolid maſs, and is what is called zaffer. See ZAFFER.

Two parts of this being fuſed with three parts of common ſalt, and one part potaſh, the whole becomes a beautiful blue ſubſtance, called ſmalt. See SMALT.

The ſprinkling the powder of the calx of flints and *cobalt*, for the making them into zaffer, giving them a pretty firm coaleſcence, and even the hardneſs of a common ſtone, perſons who were unacquainted with the proceſs, have taken zaffer for a native mineral. *Hill's* Hiſt. of Foſſ. p. 625.

COBALT is alſo uſed by ſome to expreſs that ſuffocative vapour or damp in mines, which often proves fatal to the miners. It is common among the Germans to ſay on this occaſion, that the *cobalt* roſe and choaked them.

COBITIS, in zoology, the name of a ſmall freſh-water fiſh, commonly called in Engliſh the loach. It very much reſembles our common gudgeon, both in figure and colour, but it is much ſmaller, about two inches being its uſual length, and three, or a little more, the utmoſt that it ever arrives at. Its body is ſoft and ſlippery; its tail flat and broad, and it has either extremely minute ſcales, or none at all. It is of a brown colour, ſpotted all over with black ſpecks, and it has three pair of beards at its upper jaw. It is caught in freſh waters in many parts of the world, and is eſteemed by many a very delicate fiſh, eſpecially when very young and ſmall. *Willughby*, Hiſt. Piſc. p. 265.

The generical characters of the *cobitis*, according to Artedi, are theſe: the head and the body are both of a compreſſed form: the fiſh is of the malacopterygious kind: the back and belly fins are placed at the ſame diſtance from the roſtrum or ſnout: there are always cirri at the mouth, and the body is always ſpotted.

The ſpecies of this fiſh enumerated by Artedi, are theſe: 1. The *cobitis*, with a forked ſpine under each eye. 2. The ſmooth and ſpotted *cobitis*, with a cylindric body. 3. The bluiſh *cobitis*, marked with five black lines on each ſide, running longitudinally on the body. This is the fiſh called miſgum and fiſgum at Nuremberg and Ratiſbon. It has ten or more cirri at the mouth. *Artedi* Gen. Piſc.

The word *cobitis* is truly Roman, and uſed by the beſt authors to expreſs the ſame fiſh we now call by it; but its derivation is uncertain.

COBITIS *aculeata*, called alſo *cobitis oxyrynchus*, a ſmall freſh-water fiſh of the loach kind, but armed with two prickles on the coverings of each of its gills, by means of which it moves nimbly about among the ſtones. *Willughby*, Gen. Piſc. p. 265. See DACOLITHUS.

COBIUS, in ichthyology, a name given by Ariſtotle, Ælian, Appian, and the other Greek writers, to the gobius marinus, or ſea gudgeon of authors, diſtinguiſhed by Artedi by the name of the blackiſh variegated gobius, with fourteen rays on the ſecond fin of the back. It is called by the French goulerot, or boulerot. See GOBIUS.

COBIUS *leucoterus*, in ichthyology, a name given by Ariſtotle, Athenæus, and ſome other of the old Greek writers to the fiſh called *gobius albus* by later authors. It is a genuine ſpecies of the gobius, and is diſtinguiſhed by Artedi by the name of the gobius with the ventral fin blue, and the rays of the anterior back fin riſing above the membrane. This is a ſufficient diſtinction from all the other gobii. See GOBIUS.

COBOB, the name of a diſh among the Moors. It is made of ſeveral pieces of mutton wrapt up in the cawl, and afterwards roaſted in it; the poorer people, inſtead of the meat, uſe the heart, liver, and other parts of the entrails, and make a good diſh, though not equal to the former. Philoſ. Tranſ. N° 251.

COBRA *de las cabeças*, in zoology, the Portugueſe name for an American ſpecies of ſerpent of the amphiſbena kind, whoſe bite is very fatal. It lives under ground, and feeds on ants. See the article IBIJARA.

COBRA *de coral*, in zoology, the name of a ſpecies of ſerpent found in America, and called by the natives *ibiboboca*; it is about two foot long, and has a great deal of a fine red in its variegations. See IBIBOBOCA.

COBRA *de cipo*, in zoology, the name given by the Portugueſe in America to a ſpecies of ſerpent more uſually known by its Braſilian name *boitjapo*. See the article BOITJAPO.

COBRAS *de capello*, in zoology, the Portugueſe name of a peculiar ſpecies of ſerpent, called by authors *ſerpens indicus coronatus diademate, ſeu conſpicillo inſignis*, and by us, the *ſpectacle ſnake*, from a ſtrange reſemblance on the back of his head and neck to a pair of ſpectacles. It grows to ſomewhat more than the ſize of our viper; its ſnout is long; its head flat or depreſſed; its bite is very terrible. It is thought by many that there is a ſtone in the back part of its head, which is a remedy for the bite; but the ſtones commonly ſold with us, under the name of *lapides cobræ de capello*, are well known to be all artificial compoſitions.

COBRE *vega*, in zoology, the name of a ſpecies of ſnake found in the Weſt Indies, and called alſo *ibijara*. It is of the amphiſbena kind, being equally thick at both ends. It lives under ground, and its bite is very fatal. *Ray*'s Syn. Anim. p. 289. See IBIJARA.

COBRE *de verd*, in zoology, the name given by the Portugueſe in America to a ſpecies of ſerpent called by the natives, and from them by moſt authors, *boiobi*. See the article BOIOBI.

COCCEIRA, in botany, a name by which ſome authors have called the coco nut tree, the *palma nucifera indica* of moſt writers. *Piſo*, p. 63.

COCCODES, in natural hiſtory, a name given by Mercatus to thoſe ſtones of the *ammites* kind, whoſe grains are very large. Vid. *Mercat.* Metaloth. Arm. 9. c. 58. p. 318. See the article AMMITES.

COCCOTHRAUSTES, in zoology, the name of a very remarkable bird, conſiderably larger than the chaffinch, very ſhort bodied, and large-beaked, whence it is called in Engliſh the *groſs-beak*, or *hawfinch*. Its head is very large in proportion to its body, and its great beak tapers from a very thick baſe to a ſharp point, reſembling the ſhape of a funnel; its feet are of a pale red; at the baſis of the beak there is a ſeries of fine orange-coloured feathers, and between the back and the eyes it is black; the reſt of the head is of a rediſh yellow; the neck is grey; the back of a rediſh brown; the middle parts of all the feathers being whitiſh, and the rump of a greyiſh yellow. Its breaſt and ſides are of a greyiſh red; but under the tail, and in the middle of the belly it is whiter.

It is common in Germany, and lives there in the woods and mountains all ſummer, in winter it comes into the flat country. It is never ſeen in England, except in the winter months; it feeds on the kernels in the ſtones of fruits, as cherry-ſtones, and the like, and breaks theſe with great dexterity; it will alſo eat the ſeeds of many different plants. *Ray*'s Ornithology, p. 178.

COCCOTHRAUSTES *criſtata*, in zoology, the name by which naturaliſts call the bird uſually known among us by the name of the *Virginia nightingale*, it being truly a *coccothrauſtes*, though called by the improper name *nightingale*. *Ray*'s Ornithol. p. 179. See NIGHTINGALE.

COCCULUS *indicus*, a ſmall roundiſh fruit of the Eaſt Indies. It is little uſed in the ſhops, being eſteemed poiſonous. Fiſhermen have a way of mixing it with paſte: this the fiſh ſwallow greedily, and are thereby rendered lifeleſs for a time, and float on the water. The good women uſe it with ſtaveſacre, for deſtroying vermin in childrens head. Brewers have uſed it alſo in their brewing; but this is expreſly prohibited by act of parliament.

COCCUS, in botany, the name of a genus of plants called in the Hortus Malabaricus, *teuga*; the characters are theſe. It produces male and female flowers on the ſame plant. The male flowers have the whole ear for their cup. The flower is divided into three ſegments, which are of an oval figure, and ſharp-pointed; the ſtamina are ſix ſingle filaments, of the length of the flower; the apices are oblong and incumbent. The germen of the piſtil is ſo ſmall in theſe flowers as to be ſcarce viſible. The ſtyle is ſhort and thick, and is obſcurely trifid, and the ſtigma is ſmall. Theſe flowers never produce any fruit, yet they are not ſimply male flowers, but a ſort of hermaphrodite ones, the female organs of which are always abortive. The female flowers grow on the ſame ſpike with the male. They are divided in like manner into three parts, but the ſegments are very ſmall; the germen of the piſtil is of an oval figure, and terminates in a ſhort-pointed ſtyle; the ſtigma is ſmall, and is divided into three parts. The fruit is very large, and membranaceous; it is of a ſomewhat rounded figure, but with ſome obſcure traces of a trigonal form; the ſeed is a very large nut of an oval form, pointed, trivalve, and obtuſely trigonal, as the fruit is; it has three holes in the baſe, and the kernel is hollow. *Linnæi* Gener. Plant. p. 514. Hort. Mal. l. 1. 4.

COCCUS, in the writings of the antients, a name given by ſome authors to that fine ſhining red colour uſed to illuminate the capital letters in manuſcripts, and more generally known by the name of *encauſtum ſacrum*, from its being uſed in the ornamenting the manuſcript bibles, and its reſembling the fine red glow of the enamel of that colour.

COCCUS *maldivia*, the maldivia nut, in the materia medica, the name of the fruit of the *palma maldivienſis* of Johnſton, an oval-figured fruit, of a ſweet taſte, and famous for its virtues in nervous diſorders. *Dale*, Pharm. p. 276.

COCCUS *Polonicus*, an inſect which may properly enough be called the *cochineal* of the Northern part of the world. As the cochineal loves only the hot climates, this creature affects only the cold ones. It is collected for the uſe of dyers, but the crops of it are much ſmaller, more difficultly made, and the drug itſelf greatly inferior to the true cochineal. It is commonly known by the name of *coccus Polonicus*, or the ſcarlet grain of Poland. Poland is indeed the place where it is gathered in greateſt abundance, but it is not the only one; it is found in many other of the northern countries, and may very poſſibly be produced in ſome of the more temperate ones, where it is not known, as it is very much hid by nature from the eyes of common obſervers.

This kermes of Poland, if it may be ſo called, is found affixed to the root of a ſmall plant, and uſually to the ſame plant, which has been thence called the *polygonum cocciferum*. Authors have informed us of the ſame berry, as it is often called, alſo growing at the roots of the mouſe ear, rupture-wort, pimpernel, and pellitory of the wall, and that it is in no other than dry ſandy places, that it is found at the roots of theſe plants. Breynius, in 1731, printed at Dantzick, a very curious account of this production, which proves it inconteſtably to be an animal, and give us many reaſons for knowing it to be of the progall-inſect claſs. *Reaumer*, Hiſt. Inſ. Vol. 4. p. 111.

Toward the end of June, the *coccus Polonicus* is found in a ſtate to be gathered. Every one of the creatures is then nearly of a ſpherical form, and of a fine violet colour; ſome of them, however, are not larger than poppy ſeeds, and others of the ſize of a pepper corn, and each of them is lodged either in part, or entirely in a ſort of cup, like that of an acorn. More than half the ſurface of the body of the animal is uſually covered by this cup. The outſide of this covering is rough, and of a blackiſh brown, but the inſide is ſmooth, poliſhed, and ſhining. On ſome plants they find only one or two of theſe, and on others more than forty; and they are ſometimes placed near the origin of the ſtalks of the plant.

Breynius began his obſervations on the animals in this ſtate, ſeveral of them being put into veſſels of glaſs; and by the 24th of July there was produced from every one of them a hexapode or ſix legg'd worm, with two antennæ on its head. Several of theſe were kept a fortnight, and ſhewed no inclination to eat any thing. They run about, however, very ſwiftly for ſome time, but then began to be more quiet, drew up their bodies ſhorter, and ceaſed to run about any longer. They were now of a purple colour; but in this ſtate, though they did not walk about, their bodies were ſubject to various contortions. At length, when they were become wholly motionleſs, their bodies became covered with a fine down; this was white, and formed them a perfect covering, which was ſometimes of a ſpherical, ſometimes of an irregular figure; it was always, however, very elegant, and the downy matter plainly enough tranſpired out of the animal's body, as is the caſe in the other progall-inſects. The creatures remained in this ſtate of reſt, and covered with this down, for five or ſix days; but at the end of that time every one of them laid more than a hundred and fifty eggs. Theſe eggs were depoſited upon the paper on which the animals were placed, and were enveloped, in ſome meaſure, with a downy matter. Id. Ibid. p. 113.

When the creatures had laid all their eggs, they died, and about the 24th of Auguſt there came from every egg a ſmall inſect, which, to the naked eye, appeared no other than a ſmall long, red point; it might be obſerved, however, very plainly to move about. Theſe young animals lived about a month, though all the time wholly without ſuſtenance.

Mr. Breynius was induced, at firſt, to believe, that theſe animals came to be in a ſtate to produce perfect eggs, from whence young ones would be hatched, without any congreſs with the male; but farther obſervations convinced him of the error of this opinion. He ſaw afterwards a ſort of very ſmall flies with two white wings, bordered with red, produced from ſeveral of the cocci. Theſe flies are plainly of the ſame kind with the male gall-inſects. Ibid. p. 114.

It has been before obſerved, that theſe *cocci* differ in ſize. It is the ſmall ones not larger than poppy-ſeeds which produce theſe flies; the others give the worms deſcribed before; and one obſervation of Mr. Breynius's gives a plain proof that theſe flies are the male inſect of the ſpecies, ſince all thoſe of the females which had been a day, or two, accompanied by theſe flies, quickly covered themſelves with down, and began to lay their eggs, whereas thoſe which had not this commerce with the flies, remained in the ſame ſtate, or elſe got only a very thin and ſlight covering of down, and never laid any eggs. This is a very ſtrong proof, and, indeed, ſuch as could not have been expected; ſince in other inſects, the want of a male does not prevent the female from laying her eggs; the only conſequence is that they are barren. Ibid p. 115. & ſeq.

All that is wanting from farther obſervation to make the hiſtory of this creature compleat, is to be informed of that part of its life which it paſſes between the time of its being hatched from the egg, and that of its being found in its caſe at the

roots of the plants, and in a condition to be gathered for uſe. The analogy of the life of other animals of this kind, gives us, however, no room to doubt but that they, ſoon after their coming from the egg, fix themſelves to ſome plant, and there grow and continue to receive their nouriſhment; but how after this they acquire the ſhape of a ball lodged in a cup, requires a nice future obſervation. Ib. p. 117.

COCCYGÆUS *anterior*, a muſcle fixed, by a broad inſertion, in the anterior portion of the ſmall tranſverſe ligament at the upper part of the foramen ovale of the os innominatum; from thence it runs between this great ligament and the muſculus obturator intimus, with which it is often confounded by anatomiſts, and contracting in breadth, it is inſerted in the lower part of the os coccygis. *Winſlow*'s Anatomy, p. 250.

COCCYGÆUS *poſterior*, a muſcle fixed to the inner, or concave edge of the two firſt vertebræ of the os ſacrum, to the inner and lower edge of the ligamentum ſacro-ſciaticum, and to the ſpine of the os iſchium; from thence, contracting in breadth, it is inſerted in the inſide of the os coccygis, above the anterior. *Winſlow*'s Anatomy, p. 250.

COCCYGIS *os* (*Cycl.*) — This is in ſome meaſure an appendix to the os ſacrum; its figure is in ſome degree like that of an inverted pyramid a little bent forward toward the pelvis. The anterior ſide is flat, the poſterior a little convex; the four or five pieces it is made up of are ſomething like falſe vertebræ; they are uſually joined by cartilages more or leſs pliable, and ſometimes all the pieces are entirely cemented together. The firſt piece is the largeſt, and on each ſide of its baſis there are ſometimes ſmall apophyſes, or cornua, which are cloſely joined to the extremity of the os ſacrum. It has alſo ſometimes a kind of tranſverſe apophyſes with ſmall notches on their upper part, which joining with thoſe of the laſt piece of the os ſacrum, form a pair of holes ſituated in the ſame row with the other large ones. The other pieces of the *os coccygis* are a kind of irregular ſquares, diminiſhing in ſize as they deſcend, ſo that the laſt is like a ſeſamoide bone. *Winſlow*'s Anatomy, p. 61. The *os coccygis* may be thruſt inwards by a violent fall or blow, and it is often puſhed outward in hard births. When this happens it is uſually attended with violent pain and inflammation about the lower part of the ſpine; abſceſſes form in the inteſtinum rectum, and the fæces are conſtipated, or ſuppreſſed. The replacing this bone is not very difficult, if an able ſurgeon is applied to in time. If it be thruſt outwards, it muſt be depreſſed into its right place by the thumb; after which compreſſes dipt in warm wine, or ſpirit of wine, are to be applied to the part; theſe are to be made broad above, and narrow below, that they may fill up the poſterior ſinus of the nates; and theſe may be conveniently held on by the T bandage.

When the *os coccyx* happens to be luxated inwards, the fore-finger is to have its nail cut cloſe, and being dipt in oil, is to be introduced up the anus, and muſt be thruſt in as far as poſſible, that it may the more readily drive out the depreſſed bone: the other fingers being placed externally, are to conduct the bone into its right poſture. When the bone is replaced, the patient muſt reſt ſome time upon a bed, and when he ſits up, it muſt be in a chair with a hole in its bottom, leſt the affected part ſhould otherwiſe be compreſſed or diſturbed. *Heiſter*, Surg. p. 157.

COCCYGIS *oſſis muſculi*. Theſe are ſmall, thin, radiated muſcles, lying on the inner, or concave ſide of the os ſacrum, and neighbouring parts of the pelvis. They are four in number, two on each ſide, one placed more forward, the other more backward; for which reaſon the firſt muſt be termed *coccygæus anterior*, five *Iſchio-coccygæus*, and the other *coccygæus poſterior*, five *ſacro-coccygæus*. *Winſlow*'s Anatomy, p. 249.

COCCYX, in ichthyology, a name given by Ariſtotle and the other old Greek writers to the fiſh called *cuculus* and *lyra* by other authors. It is a ſpecies of the trigla, diſtinguiſhed by Artedi by the name of trigla all over red, with a bifid ſnout, and the coverings of the gills ſtriated. See the articles CUCULUS, and TRIGLA.

COCETUM, among the antients, a kind of drink made of honey and poppies. *Pitiſc.* Lex. Ant. in voc.

COCHINEAL (*Cycl.*) — Beſides the uſes of *cochineal* enumerated in the *Cyclopædia*, it has many medicinal virtues aſcribed to it, being eſteemed a great cordial, ſudorific, alexipharmic, and febrifuge. For the hiſtory of *cochineal*, ſee the article PROGALL *inſect*.

COCHLEA, (*Cycl.*) the name of a very large family of ſea ſhell-fiſh, which are divided by authors into three diſtinct genera from the figure of their mouths, ſome of which are circular, ſome ſemicircular, and ſome oval. Theſe are expreſſed by the generical names, *cochleæ lunares*, *cochleæ ſemilunares*, and *cochleæ ore depreſſo*. The two former genera ſee under the articles LUNARIS *cochlea*, and SEMILUNARIS *cochlea*.

The characters of the third are theſe; it is an univalve ſhell of a broad figure with a conoide baſe, and an elevated ſummit, or ſometimes a plane and depreſſed one. It is umbilicated, and of a pearly colour within, and has a mouth of an oval figure, ſometimes furniſhed with teeth, ſometimes without any. The conic figure of theſe ſhells uſually diſtinguiſhes them at firſt ſight from all the other kinds.

Some of the ſpecies of this genus have their apex elevated to a conſiderable height, and forming ſeveral ſpiral turns. Theſe are properly called *ſabots* by the French, and *trochi* by the authors of other nations. Others have the apex leſs elevated, and are more of the common ſhape of ſnails. And finally, ſome of them have the apex quite depreſſed. This is enough to ſhew that in ſhells, in general, the elevation of the apex is no genuine character of a genus. Among the *trochi* there is one ſingle ſpecies which is umbilicated, the others are none of them ſo; and hence this forms a very grand diſtinction. Rondeletius obſerves that this genus of *cochleæ* was called trochus from the reſemblance of ſome of the ſpecies to the ſhape of a boy's top, which he whips about. *Rondelet.* de Aquat. *Aldrovand.* de Teſtac.

The ſpecies of the *trochus* are theſe: 1. Of the exerted-headed, there are theſe. 1. The variegated or marbled *trochus*. 2. The punctuated *trochus*. 3. The green *trochus*. The ſecond and third ſpecies aſſume very different appearances when they have paſſed through the hands of the poliſher, and are preſerved in the cabinets of collectors in ſuch a ſtate as to be with difficulty known; the marbled *trochus* appearing elegantly ſmooth, and ſpotted with red and white, and the other, or green *trochus*, loſing all its diſtinguiſhing colour, and appearing wholly like mother of pearl. Beſide theſe, there are ſome ſpecies remarkable for their tuberoſities, and thence called knotted *trochi*. Of theſe there are, 1. The green kind. 2. The red, knotty *trochus*. 3. The grey, knotted *trochus*. And, 4. The yellow one.

Of thoſe *trochi* which have the apex leſs exerted, and have a larger and rounder mouth, and are umbilicated, we have the following ſpecies. 1. The widow *trochus*. 2. The magpye *trochus*. 3. The tiger *trochus*. 4. The ſharp-headed *trochus*, with exerted ribs. 5. The *trochus* furniſhed with tubera, and prickles. 6. The lamp, or pagod *trochus*. 7. The white *trochus*, with high ribs. 8. The *trochus*, with a regular ſeries of ſpines. 9. The rough *trochus*, with an operculum. 10. The rough button *trochus*, with teeth in the mouth. 11. The ſpur *trochus*, with ſpines diſpoſed in a regular circle. 12. The leſs aculeated ſpur *trochus*. 13. The golden *trochus*, with a ſilver umbo; this, when robb'd of its outer coat, by poliſhing, appears all over ſilvery. Theſe are the known ſpecies of *trochi* with exerted apices.

Of the *trochi* with depreſſed apices we have only the following known ſpecies. 1. The antique lamp *trochus*, with a wide and flat mouth. 2. The red and white lin'd *trochus*. 3. The *trochus*, with a dentated mouth. 4. The *trochus* called St. Hubert's horn, with a folded lip. 5. The hollow-headed *trochus*, with yellow ſtreaks. 6. The all yellow, hollow-headed, *trochus*. 7. The flat-mouthed ladder *trochus*. 8. The brown *trochus*, veined with white and yellow. And, 9. The whitiſh *trochus*, with yellow lines and ſpots.

From the figures of theſe ſeveral ſpecies of ſhells, it will be eaſily ſeen that the name *trochus*, according to the common derivation of the word, very badly expreſſes the ſeveral kinds, ſome of which are of that figure, and ſome no way approaching to it. They are much better expreſſed by the name *cochlea ore depreſſo*, which conveys an idea of an abſolute diſtinction, which takes place in them all, and in no other ſhells. See Tab. of Shells, N° 5, 6, 7. Hiſt. Nat. Eclair. p. 260.

COCHLEA *of the ear*. The parts to be diſtinguiſhed in this in its true ſituation, are the baſis, the apex, the ſpiral lamina, the half ſeptum, by which its cavity is divided into two half canals; the ſpindle round which the *cochlea* turns; and laſtly, the orifices and union of the two ducts. The baſis is turned directly inward, toward the internal foramen auditorium; the apex outward; and the axis of the ſpindle is nearly horizontal; but in all of theſe allowance muſt be made for the obliquity of the os petroſum, in which they lie. The baſis of the *cochlea* is gently hollowed, and towards the middle is perforated by ſeveral ſmall holes. The ſpindle is a kind of ſhort cone, with a very large baſis, which is the middle of the baſis of the *cochlea*; through its whole length runs a double ſpiral groove, which, through a microſcope, ſhews a great number of pores. The *cochlea* makes about two turns and a half from the baſis to the apex, and the two ducts being ſtrictly united together, through their whole courſe, form an entire common ſeptum, which muſt not be confounded with the half ſeptum, or ſpiral lamina, as is often done. The firſt of theſe may be properly termed the common ſeptum, the other the particular, or half ſeptum; both of them are cloſely joined to the ſpindle, being thicker there than in any other place. The common ſeptum is compleat, and ſeparates the turns entirely from one another, whereas the half ſeptum in the ſkeleton is only a ſpiral lamina, the breadth of which is terminated all round by a very thin border lying in the middle cavity of the *cochlea*. In a natural ſtate there is a membraneous half ſeptum, which completes the partition between the two ducts. The two half canals turn jointly about the ſpindle, one being ſituated toward the baſis of the *cochlea*, the other toward the apex; for which reaſon, one of them may very well be termed the internal, the other the external; the uſual diviſion of them into the upper and lower flight, not being agreeable to the natural ſtate, but liable to convey a falſe idea of it. The ſpiral volute of the *colchea* begins at the lower part of the veſtibulum, runs from thence forward to the top, then backward down to the bottom, afterwards upward and forward, and ſo on from the baſis, which is

turned inward, to the apex which is turned outward. It is eaſy hence to know to which ear a *cochlea* has belonged, when it is ſeen prepared. The two half canals communicate fully at the apex of the *cochlea*. Their ſeparate openings are toward the baſis, one of them being immediately into the lower part of the veſtibulum, the other into the feneſtra rotunda. Theſe two openings are ſeparated by a particular turning. *Winſlow*'s Anatomy, p. 51.

COCHLEARIA, *ſcurvy-graſs*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of four leaves, and is of the cruciform kind; the piſtil ariſes from the cup, and becomes afterwards a ſeed veſſel of a roundiſh figure, divided by an intermediate membrane, to which there adhere valves on each ſide. The ſeeds contained in this capſule are roundiſh.

The ſpecies of *cochlearia* enumerated by Mr. Tournefort are theſe: 1. The common, round leaved *ſcurvy-graſs*. 2. The great, Dutch, long-leaved *ſcurvy-graſs*. 3. The *ſcurvy-graſs* with ſinuated leaves. 4. The ivy-leaved *ſcurvy-graſs*. 5. The procumbent Daniſh *ſcurvy-graſs*. 6. The little, erect, Daniſh *ſcurvy-graſs*. 7. The tall *ſcurvy-graſs*, with leaves reſembling thoſe of woad called by authors, woad-leaved lepidium, and dittander. 8. The dock-leaved *ſcurvy-graſs*, commonly known by the name of horſe-radiſh. *Tourn.* Inſt. p. 215. See SCURVY-*graſs*.

COCK (*Cycl.*) — *Gor* COCK. See GOR *cock*.

Game COCK. See the article GAME.

Wood-COCK. See WOOD-*cock*.

COCK *of the mountain*, or COCK *of the wood*, an Engliſh name for the great tetrao, or urogallus major. See the article UROGALLUS.

COCK-*boats*, ſmall boats uſed in rivers, or near the ſhore, which are of no ſervice at ſea, becauſe too tender, weak and ſmall.

COCK *paddle*, the Scotch name for the lumpus, or ſea-fiſh, common on the Engliſh coaſts, and called the lump-fiſh, or ſea owl. *Willughby*'s Hiſt. Piſc. p. 208.

COCK *water* is a ſtream of water brought in a trough, through a long pole, in order to waſh out the ſand of the tin-ore into the *launder*, while it is bruiſing in the coffer of a ſtamping mill. See TIN.

COCKS aboard a ſhip, are little ſquare pieces of braſs, with holes in them, and put into wooden ſhivers, to keep them from ſplitting and galling by the pins of the blocks in which they move.

COCKATOON, a name uſually given to the white macaw, but more properly belonging to the whole macaw tribe. See MACAW.

COCKERINGS, an exaction, or tribute, in Ireland, now reduced to chief rents. *Blount.* See BONAGHT.

COCOI, in zoology, the name of a very beautiful bird of the Braſils, of the heron kind. It is of the bigneſs of the common ſtork; its head is of a mixt colour of black and grey, and it has, on the back part of it, a creſt of a very beautiful ſtructure, of the ſame colour, from which there hang two feathers of five fingers breadth long, and of a blackiſh grey colour; its back, belly, wings, and neck, are of different variegations of black and grey, and on the lower part of its throat has ſeveral very long, and very beautiful feathers of the ſame colour. Its fleſh is very well taſted. *Marggrave*'s Hiſtor. Braſil.

COCROTALEON, in natural hiſtory, a name given by the antients to an animal generated between the hyæna and the lioneſs. This animal is deſcribed as having many of the qualities of the mantichora; and it ſeems with ſome to be only another name for the ſame beaſt. It is called alſo *leococrotta*, and *leucocrotta*, and ſometimes ſimply *crocotta*, or *cocrotta*. *Pliny*. See the article LEOCROCOTTA.

CODFISH is the largeſt of the genus of the *aſelli*, called *aſellus maximus* by authors, and ſometimes, *aſellus varius*, *ſive ſtriatus*. The characters by which this is diſtinguiſhed from other fiſhes of the ſame genus are theſe: its colour on the back and ſides is a duſky olive colour, variegated with yellow ſpots; its belly is white; its ſides have a long white line running their whole length, from the gills to the tail, which, at the abdomen, is curved, but elſewhere is ſtrait; its ſcales are very ſmall, and adhere firmly to the ſkin; its eyes are large; at the angle of the lower jaw there hangs a ſingle beard, which is ſhort, ſeldom exceeding a finger's length; its tongue is broad; it has ſeveral rows of teeth, one of which is much longer than all the others. Among theſe there are ſome moveable teeth, as in the pike; and in the palate, near the orifice of the ſtomach, and near the gills, it has ſmall cluſters of teeth. It has three back fins, two at the gills, and two at the breaſt, and two others behind the anus; and the tail is plain. *Willughby*'s Hiſt. Piſc. p. 165.

This fiſh, according to its age, the places where it is caught, or cured, and other accidents, has alſo ſeveral names given it. From the various places, it is called the *haberdeen*, from Aberdeen in Scotland; the *green-fiſh*, from Greenland; the *north-ſea cod*, from the northern ocean; and the *iceland-fiſh*, from Iceland. From other cauſes, it is called *ſtock-fiſh*, from the neceſſity of beating it with ſticks, before it is fit to be dreſſed; *barrelled cod*, when cured, and put up in barrels; and, when young, a *codling*. *Willughby*'s Hiſt. Piſc. p 166.

According to the Artedian ſyſtem, it is a ſpecies of gadus, and it is diſtinguiſhed from the other ſpecies of that genus by having beards at the mouth, the upper jaw longeſt, and the tail not forked. See GADUS.

CODA, in the Italian muſic, literally ſignifies a *tail*, but is uſed often at the end of a canon, for two or three meaſures to cloſe with, after having repeated it ſeveral times. The *coda* ſerves only to end the piece, which, without it, might be carried on to infinity. *Broſſ.* & *Graſſineau*, Dict. Muſ. in voc.

CODA *lancea*, in zoology, the name given by the Italian authors to the ſpecies of duck called by others the *anas caudacuta*, and vulgarly known, in ſome parts of England, by the names of the *cracker*, or *ſea pheaſant*. It differs from all other birds of the duck kind in the ſhape of its tail, which has two feathers longer than the reſt, and ending in a point. *Ray*'s Ornithol. p. 290. See CRACKER.

CODAGA, *bark*, a name given to that otherwiſe called *coneſſi*, or *coneſti*. See CONESSI.

CODDAM *pulli*, in botany, a name by which ſome authors have called the tree which produces the gamboge, the gutta gamba of the ſhops. Hort. Mal. V. 1. p. 41.

CODDY *moddy*, in zoology, the Engliſh name of a common water fowl of the larus, or gull kind, and diſtinguiſhed by the name of the *larus fuſcus*, or *larus Hybernus*, by authors.

It is a moderately large bird, weighing above a pound; its neck, breaſt, and belly are all white, except that there is a little brown about the throat; its head is white, variegated with brown ſpots; its back is grey, and its rump white; its tail and wings are variegated with black and white, and its hinder toe is very ſmall. *Ray*'s Ornithol. p. 266.

CODEX, in antiquity, a kind of puniſhment by means of a clog, or block of wood, to which ſlaves, who had offended, were tied faſt, and obliged to drag it along with them; and ſometimes they ſat on it cloſely bound.

CODON, κώδων, in antiquity, a cymbal, or rather little braſs bell, reſembling the head of a poppy. They were faſtened to the trappings and bridles of horſes.

CODON is alſo uſed to ſignify the orifice of a trumpet.

COEFFICIENT (*Cycl.*) — COEFFICIENTS *of the ſame order*, in algebra, is a term ſometimes uſed for the *coefficients* prefixed to the ſame unknown quantities, in different equations;

Thus, in the equations, $\begin{cases} ax + by + cz = m \\ dx + ey + fz = n \\ gx + hy + kz = p \end{cases}$

The *coefficients*, *a*, *d*, *g*, are of the ſame order, being the *coefficients* of *x*; alſo *b*, *e*, *h*, are of the ſame order, being the *coefficients* of *y*, &c. The *coefficients* alſo that affect no unknown quantity, are ſaid to be of the ſame order. Vid. *Mac Laurin*'s Algebr. p. 81.

Oppoſite COEFFICIENTS, ſuch as are taken each from a different equation, and from a different order of *coefficients*. Thus, in the foregoing equations, *a*, *e*, *k*, and *a*, *h*, *f*, as alſo *d*, *b*, *k*, are *oppoſite coefficients*. *Mac Laurin*, ibid. p. 81, 82.

COELICOLOR, in natural hiſtory, a name given by ſome to the opal. See OPAL.

COELOMA, in medicine, a hollow and round ulcer, in the horny tunic of the eye. *Blancard.*

COEMTIONALES, among the Romans, an appellation given to old ſlaves, which were ſold in a lot with others, becauſe they could not be ſold alone. *Hofm.* Lex. in voc.

COENOBIUM, κοινόβιον, the ſtate of living in a ſociety, or community, where all things are in common. Pythagoras is thought to be the author, or firſt inſtitutor of this kind of life, his diſciples, though ſome hundreds in number, being obliged all to give up their private eſtates, in order to be annexed to the joint ſtock of the whole. The Eſſenians among the Jews, and Platoniſts, are ſaid to have lived in the ſame manner. Many of the Chriſtians alſo have thought this the moſt perfect kind of ſociety, as being that in which Chriſt and his apoſtles choſe to live. *Hofm.* Lex. in voc. See COENOBITE, *Cycl.*

COES, among miners, are little houſes which the miners make over their mines to lay ore in. *Houghton*'s Compl. Miner, in the explication of the terms.

COFFEE (*Cycl.*) — Mr. Boyle mentions an inſtance of a perſon to whom *coffee* always proved emetic. Works abr. Vol. 1. p. 95. It is alſo known to be purgative to others.

COGNIOL, in zoology, a name given by ſome to the fiſh more uſually called *colias*, a kind of mackrel, differing from the common kind in nothing but that it is much ſmaller. *Willughby*'s Hiſt. Piſc. p. 181. See COLIAS.

COGNITIVE is ſometimes applied to that faculty or power of the human mind, by which we know any thing, or are enabled to diſtinguiſh truth from falſity.

Latin writers uſe the term *facultas cognoſcitiva* in the ſame ſenſe. *Wolf.* Phil. Rat. Sect. 1.

Hobbes has made uſe of the term *cognitive* power, for the power of knowing, or conceiving, in contradiſtinction to *motive* power, or appetite. Hum. Natur. p. 4, 5. Edit. 1651.

COGNITIONIBUS *mittendis*, in law, a writ to any of the king's juſtices of the common pleas, who has the

power of taking a fine, and who, having taken a fine, defers to certify it, commanding him to certify the same. Reg. Orig. 684. *Blount* and *Cowel*.

COGNOVIT *actionem*, in law, is where a defendant acknowledges or confeſſes the plaintiff's cauſe againſt him to be juſt and true, and after iſſue, ſuffers judgment to be entered againſt him without trial.

COGS, *cogones*, a kind of boats, or veſſels, uſed in the rivers Ouſe and Humber. Stat. 23 Hen. VIII. c. 18. *Blount*.

COGWARE, is ſaid to be a ſort of coarſe cloaths, made in divers parts of England, of which mention is made in 13 R. 2. c. 10.

COHOBATE, in chemiſtry. See COHOBATION, *Cycl.*

COHORS *equitata*, in old inſcriptions, has perplexed ſeveral antiquaries, who have been taught to conſider the *cohorts* as appropriated to the foot ſervice, as the *alæ* and *turmæ* were to the horſe. Mr. Horſeley, in particular, imagines, the *cohors prima Claudia equitata*, which he had met with, was intended to intimate that this *cohort* had been promoted from the foot to the horſe ſervice; but when, by another inſcription, he was led to conſider that corps as conſiſting of a thouſand horſe, his difficulty is increaſed to that degree, that he knows not what to affirm upon it. But the learned Dr. Taylor thinks there is an eaſy ſolution of this difficulty.

The auxiliary, or provincial *cohorts* were either entirely, or purely, foot, like the legionary, or ordinary *cohorts*; or elſe they had a mixture of both kinds of militia, as appears from Gruter, DLXXIV. 5. This latter ſort, as they could not properly be ranked under either denomination of horſe, or foot, being made up of both, ſeem to have appropriated to themſelves the diſtinguiſhing title of *cohortes equitatæ*, corps of infantry with a mixture of horſe. And of this term we find frequent mention in inſcriptions, as in *Gruter* DXXXIV. 2. DXXXIV. 4. DL. 4. DL. 5. *Reineſ.* VI. 128.

Hyginus alſo, *de caſtrametatione*, gives us a full and deciſive proof of this denomination, and of the number of which ſuch *cohorts* conſiſted. Theſe troops conſiſted of a thouſand men, part horſe, and part foot, and were hence called *milliariæ*. The proportion of the horſe to the foot was 240 to 760. His words are; *Habet* cohors equitata *milliaria pedites ſeptingentos ſexaginta, centurias decem, equites ducentos quadraginta, turmas decem.* Vid. Phil. Tranſ. N° 482. Sect. 3. See COHORT, *Cycl.*

COHORS *milliaria*. See above COHORS *equitata*.

COHUAGIUM, a tribute paid by thoſe who meet promiſcuouſly in a market, or fair: *cohua* ſignifying a promiſcuous multitude of men in a fair, or market, probably from the French *cohue*. *Blount*.

COILE, on board a ſhip. See QUOIL, *Cycl.*

COILON, κοιλον, *cavea*, in antiquity, that place of the Greek theatres which was appointed for the ſpectators. It conſiſted of three parts, placed in equal dgrees, one above another; the loweſt of which belonged to magiſtrates and perſons of quality; the middle to the commonalty; and the uppermoſt to the women.

Theſe theatres being open at top, porticos were erected behind the *cavea*, where the audience might retire for ſhelter, in caſe of rain. *Pott.* Archæol. Græc. l. 1. c. 8. p. 42.

COIN (*Cycl.*) — To take the repreſentation of a *coin* on paper, card, or paſte-board. See MEDAL.

COIN, or QUOIN, in artillery, a wedge of wood, ſerving to raiſe, or lower, the breech of a gun. See QUOIN, *Cycl.*

COINS, on board a man of war. See QUOINS, *Cycl.*

COIN *moulds*. See MOULDS.

Cantic COIN, or QUOIN. See QUOIN, *Cycl.*

Canting-COINS, on board a ſhip, little ſhort pieces of wood, or billets, cut wedge-like, to lie betwixt the caſks.

Standing-COINS, on board a ſhip, billets, or pipe-ſtaves, to keep the caſks from ſtirring, or giving way.

Standing-coins are made of barrel boards, about four inches broad, and of a fit length to be driven in between the ends of a caſk, about two or three hoops from the Chine hoops, to keep the buts from jogging. *Harris* and *Manwayring*.

CO-INDICATIONS, in medicine, ſigns which do not indicate by themſelves alone, but together with other things, circumſtances, &c. help the phyſician to form a judgment.

COINING, in the tin-works, is the marking the tin, when caſt into blocks, or ſlabs, with the figure of the lion rampant. This is done by the king's officer. The king's cuſtom is four ſhillings for every hundred weight. *Ray*'s Engl. word. p. 124.

COINUS, κοῖνος, in natural hiſtory, a name given by ſome writers to the genus of ſhells called *porcellana* and *concha venerea*. See the article PORCELLANA.

COJUMERO, in ichthyology, a name given by ſome to the *manati*, or *ſea-cow*.

COLAPTICE, the art of carving, or cutting, the reſemblances and figures of natural things in ſtone. The term for the artiſt is *lithoxos*.

COLASISI, in natural hiſtory, a name given by the people of the Philippine iſlands to a very ſmall, but very beautiful ſpecies of parrot, common in that part of the world, and called by others *cuſi* and *gula ſiſi*.

COLCHICUM, in botany. See MEADOW *ſaffron*.

The ſeveral ſpecies of this plant are very valuable in a flower garden, as they are in their beauty in autumn, when moſt other plants are dead. The flowers come up, and are blown ſome time before the green leaves appear, which makes ſome people call them naked ladies; the green leaves come up in winter, and in ſpring are extended to a great length; in May, theſe leaves begin to decay, and ſoon after this is a proper time to take up, and tranſplant the roots. The roots ſhould be kept above ground till the middle of Auguſt, at which time, if they are not planted, they will produce their flowers as they lie out upon the ground. For the manner of planting the roots of this ſort of plants, ſee the article TULIP; and for that of raiſing them from ſeeds, for the ſake of producing varieties of the flower, ſee XIPHION.

COLCHIUM, in medicine. The general conſent of authors condemns the root of the *colchicum* as a poiſon, on account of its acid and corroſive quality: yet it is evident that the antients eſteemed it greatly: they called it hierobulbus. Some even gave it internally, in caſes where it was neceſſary to make the patient vomit, it being eſteemed a very good emetic: and others ordered its uſe externally, bruiſing it, and applying it to places where there were fixed and violent pains.

Wedelius recommends it as an alexipharmic, and has written a treatiſe expreſsly on this ſubject. He frankly confeſſes to have taken his knowledge of its virtues from an obſcure author, who, in a treatiſe of the plague, recommends it internally as a very beneficial medicine, and tells us, that people were ſo well acquainted with its virtues, that they took it in conſiderable doſes, and wore it about their necks, as a preſervative againſt the infection. Wedelius lived in a time when dyſenteries, with petechial malignant fevers, attended with deliriums and inflammations of the jaws, were very frequent; and on the credit of this author he ventured to give it internally, under a proper guard of other roots, and ſuch things as might obtund its acrimony. Plantane root and bezoar were the two things he at length found moſt efficacious for this purpoſe; and this compoſition of three ingredients, he called arcanum duplicatum catholicum, and the peſtilential alexipharmic. This he gave in moderate doſes, and found ſo great effects from it, that the root before eſteemed poiſonous, and expunged from the liſt of remedies, was again taken in as a part of the materia medica; and the author publiſhed the ſecret, by which he had had ſo much greater ſucceſs than other phyſicians of the time. On farther trials, he found the virtues of this medicine were not confined to the peſtilential and petechial fevers alone, but he gave it with the ſame ſucceſs in the ſmall pox, the purple fever, and even in the worſt kinds of the meaſles. *Wedelius* de Colchico.

COLCOTHAR (*Cycl.*) — COLCOTHAR *of vitriol*, after the action of the fire being dulcified, or the metallic parts precipitated by an alkali, or by zink, or any other of the imperfect metals, and ſublimed with ſal armoniac, in either caſe an inflammable ſuphur is prepared in the operation, and may be ſeparated both from the ſublimed flowers, and from the caput mortuum. This, and the ſulpherous ſmell of ſpirit of vitriol, together with the ſulphur produced by oil of vitriol and ſpirit of wine, prove abundantly what has been ſuſpected by ſome, that vitriol contains ſulphur as one of its principles, and a natural and neceſſary part of its compoſition. Phil. Tranſ. N° 103.

Mr. Le Fevre propoſes an eaſy way of making *colcothar of vitriol*: he mixes two parts of filings of iron with one of ſulphur, and a little water. After the acid of the ſulphur has diſſolved the iron, he expoſes the paſte to the air, and it changes into *colcothar*.

COLCUICUILTIC, in zoology, the American name of a bird of the partridge kind, deſcribed by Niremberg. It is variegated with black, white and red, and is a very beautiful bird. Its colours are for the moſt part diſpoſed not in ſpots, but in longitudinal lines on the back; but on the belly they are rather in form of ſmall and ſhort ſpots. Its legs and feet are blue. It is a well-taſted bird. *Ray*'s Ornithol. p. 314.

COLD (*Cycl.*)—It is affirmed by Olaus Magnus and others, that in ſome parts of Ruſſia and Livonia, hares, foxes, and partridges change their colours, and become white, in the depth of winter, by reaſon of the great *cold*. Mr. Boyle ſeems to confirm theſe relations. See his Work abr. vol. 1. p. 672. and vol. 2. p. 43, 44.

Mr. Reaumur having made ſeveral very curious experiments on the different degrees of *cold*, produced by the mixing the ſeveral ſalts and other bodies with ice, in the making artificial congelations, determined, when he knew exactly what the degrees were, to try their effects upon animal life in many creatures. He tried his experiments on ſeveral ſpecies of inſects, freezing their juices; the conſequence of which was, as might be expected, their loſing all their ſoftneſs, and becoming wholly rigid and hard.

Among the caterpillar kinds, this gentleman found that ſome ſpecies became frozen by a *cold* of ſeven or eight degrees on the thermometer; while others, very much ſmaller, bore without freezing a *cold* of ſeventeen degrees, which is three degrees

degrees more than that of the ſevere winter of 1709: and, unhappily for us, theſe long-lived ones are of the moſt common kinds, and ſuch as do us the greateſt injuries. We have therefore no room to believe, that the *cold* of any of our winters can be ſo great as to rid us of theſe miſchievous animals. Mem. Acad. Scienc. Par. 1734.

Cold is the deſtroyer of all vegetable life, when increaſed to an exceſſive degree; and it is hard to ſay how much increaſe of it the hardier of them are, or are not able to bear. We find many of our garden plants and flowers, which ſeem to be very ſtout and hardy, go off at a little increaſe of *cold* beyond the ordinary ſtandard. In the ſevere winter in 1683, Mr. Robarts tells us, that the artichoaks and colliflowers all periſhed; and that the odoriferous ſuffrutices, ſuch as thyme, ſage, lavender, cotton, and the like, were generally killed, very few eſcaping, except ſuch as had been planted the preceding year, and were therefore ſo low as to have the advantage of a covering of ſnow over them; which is the defence nature has given to the natives of the coldeſt countries, and proves ſuperior to any thing that can be invented by art for their preſervation. In the corn fields, ſuch parts of them as had remained covered with ſnow, had eſcaped very well, the corn all looking freſh and vigorous, after the melting of it in the ſpring: but when the lands had lain ſo expoſed that the ſnow had melted off, the crop was generally deſtroyed, and the farmer obliged to new ſow the place. Phil. Tranſ. N° 165. See FROST.

COLD, in medicine. To prevent the catching of *cold*, the jeſuits bark is recommended in the philoſophical tranſactions. Phil. Tranſ. N° 478. p. 3. See PERUVIAN *bark*.

COLD *water*. See WATER.

COLDSHIRE *iron* is ſuch as is brittle when it is cold. See the article IRON.

COLE-*fiſh*, an Engliſh name for a fiſh of the whiting kind, called by authors *ajellus niger*, and in Cornwall, and ſome other parts of England, the *rawlin pollack*. It is a long and thin fiſh, for one of this genus, more reſembling the whiting pollack than any other ſpecies; but differing in the length and thinneſs of its body, and in the ſide-lines which run from the gills to the tail: theſe in the whiting pollack are raiſed into an arch under the firſt back-fin, and in the *cole-fiſh* are ſtrait, and are very broad and white. It is of a darker colour than the others of theſe ſpecies, yet looks, tho' blackiſh, very bright and ſhining, and has none of thoſe yellowiſh lines, which mark the ſides of the whiting pollack. The fins are all of a bluiſh black colour, and the eyes large and protuberant; the ſcales very ſmall: and, as in the cod the upper jaw is longer than the under; in this, on the contrary, the under is longer than the upper. This has alſo no beard. It is very common on the coaſts of Northumberland, Yorkſhire, and other northern counties of England, and is called the *cole-fiſh*, or coal-fiſh, from its blackneſs. It is ſomething of the taſte of the cod, but much inferior to it. *Willughby*'s Hiſt. Piſc. p. 168.

COLE-*mouſe*, in zoology, the name of a ſmall bird of the titmouſe kind, diſtinguiſhed from all the reſt by being the ſmalleſt of all the titmouſe kind, and having a white ſpot on the back part of its head. *Ray*'s Ornithol. p. 176. See the article PARUS.

COLE-*pearch*, in natural hiſtory, a name given to a ſmall fiſh, much eſteemed about Dantzick and other places, for its delicate flavour. It is very like the common river-pearch, but that it does not grow ſo large, and has a greater variety of colours, and its head is proportionably larger. Phil. Tranſ. N° 83.

COLE-*ſeed*, the ſeed of the naphew or napus, propagated in many parts of England to great advantage, for the oil expreſſed from the ſeeds. It is much ſowed in the moory land in the fen countries. The freſheſt mould is found beſt for it, or what the farmers call a luſty ſoil, which is newly broken up, and has been long at reſt. They commonly give two tilths to the ground they ſow with *cole-ſeed*; but if they manure it, then only one. They lay on the manure a little before they begin to plow; and, plowing in the morning, ſow that very day. The time of ſowing is June, July, and Auguſt: July is the beſt month. They ſow the ſeed over furrow, a peck to an acre, and cruſh harrow it: they then have a crop that time twelvemonth, which they ſheer or reap as they do wheat, diſpoſing it into little heaps. When it has lain about a fortnight upon the ground, they thraſh it upon a ſail-cloth, with common flails; then winnow it, and afterwards ſend it to the mills. *Moreton*'s Northampt. p. 484.

This ſeed is principally brought from Holland, though it is very good when taken from our own plants, for growth as well as other uſes. The ſowing this ſeed is a very advantageous piece of huſbandry. It loves rich and fat lands, and ſucceeds very well on marſh and fen lands, and particularly on ground newly recovered from the ſea. The ranker the land is for *cole-ſeed* the better; but it will do on any that is dry and warm. The beſt ſeed is that which is largeſt, faireſt, and of the cleareſt colour. It is very apt to be mouldy, if not kept very dry. It is to be ſown in the end of June, or beginning of July: the land being fallowed in May, muſt be twy-fallowed in June, and muſt be laid very ſmooth and even before it is ſown: the ſeed is finally to be ſown the ſame day that the land is plowed, and about a gallon is ſufficient for an acre.

Some ſow it for the ſake of the ſeed; others by way of a winter food for the cattle in the months of January, February and March, when other food is wanting. It will do very well in poor lands for this purpoſe; but the richer grounds only will make it rank enough for ſeed. If the winter be mild, it will after feeding grow again, and afford a ſecond winter's ſupply, and after cutting up the ſtump, will ſhoot out young ſprouts, very ſweet, and in great abundance.

When it is kept for ſeed, it is to be reaped in the manner of wheat, as ſoon as one half of the ſeed looks brown: it is to be left a fortnight to dry on the ground, never turning it, for fear of ſhedding the ſeed; and when this time is over, it is to be gathered up in large ſheets, and carried to the barn for immediate thraſhing; or it may be thraſhed in the field on a large ſheet. Its common produce is five quarters of ſeed from an acre, and the value of this is about five pounds.

The land where this has grown, is very well prepared by it for wheat; tho' ſome ſow oats upon it, as what ſucceeds beſt of all after it. When the oil is preſſed out of the ſeeds, they uſe the remaining cakes in ſome places as firing; but in others they give them to their cows and other cattle in winter, when other food is ſcarce. In ſome places, they mix the powder of theſe cakes with water, and give it to their calves till they are three or four days old, inſtead of milk, and it does as well for them, till they are able to eat graſs or hay. It is a good method to burn the ſtubble on the *cole-ſeed* lands, for it is ſo ſtumpy that it is of no uſe to plow it in. *Mortimer*'s Huſbandry.

COLIAS, in zoology, the name of a ſpecies of mackrel, caught very plentifully in the Mediterranean and ſome other ſeas, and never growing to near the ſize of the common mackrel; but differing from that in no other particular. The Italian fiſhermen call this ſpecies cogniol. *Bellon.* de Piſc. p. 86.

COLIC (*Cycl.*) — Medical writers diſtinguiſh the *colics* into ſeveral ſpecies: 1. The flatulent or pituitous *colic*. This is diſtinguiſhed by an unuſual inflation and diſtenſion of the abdomen, attended with a rumbling and noiſe of the guts, and with eructations and other ſymptoms of wind, eſpecially in the beginning of its period.

2. The bilious *colic*. This is attended with an acrid and gnawing pain and twiſting, as it were, of the bowels, and dreadful pain, as if they were wounded and cut with ſharp inſtruments. This often is the effect of violent paſſion, and is then always attended with head-achs, and often with a violent diarrhœa.

3. The hæmorrhoidal and nephritic *colic*. Theſe are diſtinguiſhed by a ſpaſtic contraction of the abdomen, and a compreſſion as it were of it; and in theſe caſes, there are uſually no ſtools. This alſo is attended with pains in the head, and with laſſitudes, and frequent returns of chillneſs and of febrile heats.

4. The hyſteric *colic*. In this caſe the bowels are always bound, and there are tenſive pains, and a retraction, as it were, of the navel. There is alſo a ſenſation of rolling about of the bowels; but this is perceived moſtly in the ſmaller inteſtines; whereas in common *colics* it is the larger that are principally affected.

5. The convulſive *colic*. This differs from the former only in degree, being known by remarkable twiſtings and contortions of the colon and other bowels, felt quite up to the ſcrobiculum cordis.

6. The iliac paſſion, or miſerere mei, is uſually accounted a ſpecies of *colic*: but this is ſingly treated of under its proper name. *Junker*'s Conſp. Med. 1. 563. See the articles MISERERE *mei* and ILIACA *paſſio*.

Signs of the colic. Theſe are in general vehement and laſting pains, felt above and about the region of the navel: they give a ſenſation of a volution and twiſting about of the inteſtines, and ſometimes of ſo violent a tenſion, that it ſeems as if they would burſt: and often there are noiſes and tremors within the abdomen. To theſe are joined ſymptoms of the greateſt anxiety, and general uneaſineſs; and often there are ſudden chillneſs and ſhiverings of the body, with cold ſweats, and attempts to vomit; with theſe there uſually is a flatulence, and obſtinate coſtiveneſs of the bowels: ſometimes, on the contrary, there is a violent purging; but this is very rarely the caſe, except in the bilious and hæmorrhoidal *colics*; and in the laſt of theſe, this is uſually attended with a teneſmus, and with bloody ſtools. Theſe are the ſymptoms of *colics* in general. Thoſe peculiar to the ſeveral kinds, are deſcribed under thoſe heads.

Perſons ſubject to colics. Theſe are diſeaſes that attack both ſexes, but in general the women are more ſubject to them than the men, and they are the more violent, and uſually of longer duration in that ſex than in the other. In women they uſually appear gentle, and often trifling at firſt; but they gain ſtrength by time, and often become convulſive. The perſons of that ſex, peculiarly ſubject to *colics*, are thoſe of a ſanguine temperament, and ſuch as have had obſtructions of the menſes. Women in child-bed are alſo very ſubject to flatulent *colics*, when the belly has not been properly bound round after delivery: in this caſe, the *colics* not only are troubleſome during the month of lying-in, but often become habitual, and do not leave them afterwards. In men, the middle-age is more ſubject to *colics*, than either the young or old periods of life; and people are moſt ſubject to fall into them who have been ſubject to irregularities in the hæmorrhoidal diſcharges, and who have nephritic complaints. Men are often thrown into the bilious

colic by violent paſſions of anger, eſpecially if they eat or drink immediately afterwards, or they themſelves be of a *coleric* temperament.

Prognoſtics in colics. The oftener any perſon has been afflicted with *colics*, the more ſubject they are to return on any ſlight occaſion, and the more likely to become habitual. All *colics* that attack perſons with a chillneſs firſt, are more violent than thoſe which do not, and they often are either attended at the very firſt with an inflammation, or have one come on ſoon afterwards. In general alſo, *colics* attended with coſtiveneſs are worſe than thoſe in which the patients have ſome ſtools. Reachings to vomit are always bad ſymptoms in *colics*, and give a ſuſpicion of the caſe turning to a miſerere or iliac paſſion: but this is to be obſerved, that when the patient has juſt before eaten very heartily, and drank much, eſpecially of cold liquors, then ſuch reachings are natural, and are not to be accounted the bad ſymptoms they are at other times. In women, when the reachings are violent, there is always danger of a vomiting of blood. The more violent the pains of the *colic* are, the more danger there is of their bringing on convulſions. A *colic* ariſing from a ſtoppage of the menſes, and attended with a ſtagnation of blood about the viſcera, when it is of long ſtanding, threatens the coming on of a quartan, a dropſy, or a cachexy. And a hæmorrhoidal *colic*, when ariſing from a retropulſion of the gout or ſciatica, by wrong medicines, is always a caſe of great danger. This, however, always happily goes off, if there come on a diſcharge of blood, or even of a ſerous matter, from the hæmorrhoidal veins. Sometimes alſo it goes off at once, but very unhappily, by a ſudden regurgitation of the matter upon the viſcera, eſpecially upon the liver; the conſequences of which are, obſtructions of that viſcus, aſcites, hectics, or dropſies. Sometimes alſo this *colic* goes off by the appearance of ſcorbutic ſpots on the body, in different parts.

The bilious *colic*, if the offending matter be not immediately evacuated, after its acrimony has been obtunded by a proper medicine to fit it for evacuation, too often brings on dangerous inflammatory fevers. In *colics* which have held the patient a long time, a hiccough coming on is a very bad omen. Finally, a *colic*, when improperly treated with opiates and anodynes, often brings on a palſy.

Method of cure. The general method which holds good in all kinds of *colics*, is, firſt to attemperate the painful ſpaſms of the bowels, and to carry off whatever peccant matter is lodged in them. To this purpoſe glyſters, made of ſuch ingredients as the nature of the particular caſe requires, are very proper, and after theſe gently laxative medicines are to be given, ſuch as rhubarb, ſena, glauber's ſalt, and calomel. After theſe, carminative medicines and the digeſtive ſalts are to be given internally; and externally may be applied bags with carminative ingredients, ſuch as the roots of iris, cyprus, angelica, with flowers of pennyroyal, chamæmile and lavender, and ſeeds of aniſe, caraway and cummin; and, finally, the oils of caraways, and the like, may be rubbed in on the abdomen, and the ſtomachic and carminative plaiſters applied, and fomentations of warm herbs, with the heat of a brick or ſtone boiled in water, or of a bladder half filled with warm water. After the pain and other ſymptoms have been by theſe means removed, the parts are to be reſtored to their natural tone by the volatile ſalts, mixt with alcaline tinctures, by gentle chalybeates, and by warm carminative and aromatic medicines; and externally, by the nervine and corroberating applications before deſcribed. This is the general method in all *colics*. For the particular kinds, in

The flatulent and mucous colic, carminative and emollient glyſters are to be injected, compoſed of decoctions of chamæmile flowers, marſhmallows, and a mixture of the elixir proprietatis, or common ſalt, by way of ſtimulus; and after this the carminative medicines, ſuch as angelica root, winter's bark, aniſe and caraway ſeeds, and cloves, with the other ſpices, are to be given, with intermediate doſes of laxative medicines; and to theſe medicines may be added occaſionally, the digeſtive ſalts, ſuch as vitriolated tartar, with nitre and cinnabar, and the ſpirit of tartar, and ſweet ſpirit of nitre, with the eſſence of orange peel, &c.

In the bilious colic, the attemperating and abſorbent medicines are to be given, as nitre, mother of pearl, calcined cryſtal, oil of almonds, and manna, with the broths of white meats, and the carminative ſeeds. If theſe things are thrown up by vomit, recourſe muſt be had to clyſters, and to applications of warm things to the abdomen, ſuch as are before deſcribed.

In the hæmorrhoidal and nephritic colic, glyſters are to be frequently given of oil of olives and linſeed, with a little nitre. After this, warm broths, with oil of ſweet almonds, are to be drank in frequent draughts, and powders compoſed of nitre, crab's eyes, and cinnabar, are to be given at frequent intervals, and if the pains are vehement, a ſmall doſe of theriaca, or of the ſtorax pill, may be given with the powder, to be taken at night. When the violence of the fit is over, the gentle alexipharmics are to be given, with ſtrengthening medicines, to reſtore the due tone of the parts. Externally, fomentations may be applied to the rectum, and cataplaſms of the leaves of mullein and mellilot, on which the patient may ſit while they are warm; and heat may be applied to the abdomen by bladders half filled with water, or milk made of a due warmth, and by bricks heated a little, and by bags containing carminative and nervine ingredients. Liniments may alſo be rubbed in of the oils of nutmeg and bays, and ſpirit of wine and camphor, particularly in the part where the pain is moſt violent.

In the hyſteric colic, clyſters are frequently to be injected, made of decoctions of the herb veronica in broth, with a little oil of dill and common ſalt. When the patient is averſe to clyſters, and the caſe is not violent, warm baths for the feet, and the ſitting over the ſteam of warm water, will ſometimes prove ſufficient, and gentle purges of decoctions of ſena, and the like, are to be given, or a gentle doſe of the reſin of jalap, diſſolved with the yolk of an egg in ſome of the uterine waters: after theſe, alexipharmics and carminatives are to be given, ſuch as the roots of pimpernel and angelica, with aniſe, and the other warm ſeeds. If the caſe is violent, the attemperating nitrous medicines may be given, and with them gentle anodynes; and, finally, ſuch things as will reſtore the due tone of the parts. The perſon ſhould be kept in a gentle warmth during the whole time of the diſeaſe, and ſpirit of caſtor may be occaſionally rubbed in on the abdomen.

By way of preſervative from the hæmorrhoidal and hyſteric *colic*, it is very proper to bleed in the foot at the ſpring and autumn ſeaſons, and proper uterine medicines ſhould be taken to keep up the menſtrual diſcharges; and to prevent ſuppreſſions of the hæmorrhoidal, leeches ſhould be applied to the parts, and the bowels ſhould be carefully kept gently lax. *Junker*'s Conſp. Med. p. 573.

This diſtemper has ſometimes taken its riſe from concretions formed on plumb-ſtones lodged in the guts. See Medic. Eſſ. Edinb. vol. 1. art. 32. Abridgm. vol. 2. p. 214.

Colic pains ſometimes ariſe from viſcidities in the inteſtines; and the vitrum antimonii ceratum has been found ſucceſsful in ſuch caſes. See VITRUM *antimonii ceratum.*

COLIC-*ſhell*, in natural hiſtory, a name given by ſome to the porcellana, or concha venerea, from its ſuppoſed virtue in curing that diſeaſe.

COLIC-*ſtone*, in natural hiſtory, the name given by ſome modern authors to a ſtone found in New Spain, and ſome other parts of America, and eſteemed of great virtues there in the cure of the colic, and in diſeaſes of the womb. It is a ſpecies of jaſper very nearly approaching to the lapis nephriticus, and called by the natives *tlayotic*, and by the Spaniards, *piedra de hyada*. It is of a conſiderable weight and hardneſs, and is of a duſky green colour, without any variegations. The Indians cut it into various forms, ſometimes of men, ſometimes of their idols; ſometimes alſo they figure it into long and even columns, and ſometimes into round and flat pieces. All theſe are nicely poliſhed, and thoſe of the laſt ſhape are what are principally uſed in the cure of the colic. They wet theſe with their ſpittle, and then rubbing them, till hot, with their hands, they apply it to the navel in a fit of the colic; and they ſay, that it immediately carries it off, by determining the humors to paſs off, either upwards, or downwards, or both ways. They ſometimes cut it into flat plates alſo, with two holes cut at each end, by means of which it may be worn, tied to the wriſt by a ribband, and it is ſuppoſed thus to be a preſervative from all diſeaſes of this kind, and from many others.

COLIN, in zoology, the name of an American bird, called by moſt authors a quail, but ſuppoſed by Nieremberg to be rather a ſpecies of partridge. There are ſeveral diſtinct ſpecies of this bird, ſome of which are of a brown colour, and have creſts on their heads; others are of the ſame colour, but ſmaller, and without creſts; others larger than either of theſe, and of a yelloviſh colour, but with the head variegated with black and white. They are all very common in the Spaniſh Weſt Indies, and are very well taſted, and much valued at table. *Ray*'s Ornithol. p. 304.

COLIPHIUM, a name given by Athenæus, and ſome other authors, to coarſe bread made of meal with the bran among it, and ſuch as is eaten by the poorer people in moſt countries.

The word is derived from the Greek κῶλον a limb, and ἴφι ſtrength, and is a very expreſſive word, as this ſort of bread makes people robuſt and ſtrong, and is greatly preferable to any other kind for people of ſtrong conſtitutions, who uſe hard labour, or much exerciſe.

COLIPHIUM was alſo a kind of food compoſed of bread, new cheeſe, and roaſted fleſh, which Pythagoras taught the athletæ to uſe, who before had been uſed to live on figs. *Pitiſc.* Lex. Ant. in voc.

COLITES, in natural hiſtory, a name given by ſome writers to a ſtone ſuppoſed to imitate the human penis, or teſtes, ſeparately, or both together. It is a very idle thing in writers to give names to ſtones on ſuch merely accidental figures; this being no other than a common pebble, which, in the almoſt infinite variety of ſhape into which they are formed, has chanced to aſſume this. When ſtones have been formed in ſhells, or from part of animals, their figure is as determinate and certain as that of the body they owe their origin to; ſuch ſtones are therefore properly called by names expreſſing the thing they owe their form to; as bucardites, for the name of a ſtone, found in, and preſerving the exact figure of the cockles called bucardia; and mytulites, for a ſtone found in, and repreſenting, the ſhape of a muſcle; but when a ſtone acci-

dentally reſembles the figure of a hand, a foot, or any other part of the body, it can never be neceſſary to name it as a diſtinct foſſil.

COLLARS, (*Cycl.*) in antiquity, were not only worn by way of ornament, but alſo as amulets, againſt incantations, &c. See AMULET and BRACELET.

COLLAR, in ſhip-building, a rope faſtened about her beak-head, into which the dead man's eye is raiſed that holds the main ſtay. There is alſo a *collar*, or garland, about the main maſt head, which is a rope wound about there, to ſave the ſhrouds from galling.

COLLAR *of the plough*, a term uſed by our farmers to expreſs a ring of iron, which is fixed to the middle of the beam, and ſerves to receive the ends of two chains, the lower one called the tow chain, and the upper one called the bridle chain. The lower chain is fixed at its other end to the box, and the upper, or bridle chain, to the ſtake which runs parallel with the left hand crow-ſtaff. Theſe chains, by means of this *collar*, and their other inſertions, ſerve to join the head and tail of the plough together. In ſome places the bridle chain is not fixed to the *collar*, but to the beam itſelf, by means of a pin; and this is the better way on many accounts. *Tull*'s Huſbandry. See the article PLOUGH.

COLLATERALIS *penis*, in anatomy, a name given by Spigelius, and ſome other writers, to a muſcle of the penis, now generally called the *erector*. See ERECTOR.

COLLATION, *collatio*, συμβολη, in rhetoric, is uſed for compariſon. See COMPARISON, *Cycl.*

But Scaliger diſtinguiſhes, alledging, that in *collation*, one thing is compared to another that has preceded it; and that the contrary happens in compariſon. That to which any thing is compared is called protaſis, and that which is compared, is called antapodoſis. *Voſſ.* Rhet. l. 5. p. 381.

COLLATIONE *facta uni poſt mortem alterius*, in law, a writ directed to the juſtices of the common-pleas, commanding them to iſſue their writ to the biſhop, for the admiſſion of a clerk, in the place of another preſented by the king, who died during the ſuit between the king and the biſhop's clerk: for, judgment once paſſed for the king's clerk, and he dying before admittance, the king may beſtow his preſentation on another. Reg. Orig. 31. *Blount*, and *Cowel.*

COLLATIONE *heremitagii*, in law, a writ whereby the king conferred the keeping of an hermitage upon a clerk. Reg. Orig. 303, 308. *Cowel.*

COLLECTION, *collectio*, in logic, a term uſed by ſome for what is commonly called *ſyllogiſm*, and *ratiocination*. See SYLLOGISM, and RATIOCINATION, *Cycl.*

COLLECTORS, in botany, ſuch ſtudents as have attempted the knowledge of plants, without reducing it to any certain ſcience, being barely employed about the obſerving, or getting together the various ſpecies. *Linnæi*, Fund. Bot. p. 1.

COLLEGE (*Cycl.*) — COLLEGE *of juſtice*, in Scotland. See SESSION.

COLLET, in the glaſs trade, that part of a glaſs veſſel, which, in the making, ſticks to the hollow iron by which the metal is firſt taken out of the melting pot. This is broken off before the veſſel is faſhioned, and is never ſeen in the leaſt mark, when finiſhed. *Neri*'s Art of Glaſs, p. 447. Theſe they throw together, and afterwards grind them down, and put into the green glaſs metal, for the pureſt green glaſs, but never into any other, though they be the product of the fineſt virgin metal. *Merret*'s Notes on *Neri*, p. 277.

COLLET, among jewellers, the ſmall horizontal plane, or face, at the bottom of the brilliant. *Jeffries* on Diamonds.

COLLICIÆ, in anatomy, is uſed by ſome, as Steno, for the *carunculæ lacrymales*. See CARUNCULA, *Cycl.*

COLLIERY (*Cycl.*) — The moſt remarkable *colliery*, or coal-work, that we have ever had in this iſland, was that wrought at Burrowſtoneneſs, under the ſea. The veins of coal were found to continue under the bed of the ſea in this place, and the colliers had the courage to work the vein near half way over; there being a mote half a mile from the ſhore, where there was an entry that went down into the coal pit, under the ſea. This was made into a kind of round key, or mote, as they call it, built ſo as to keep out the ſea, which flowed there twelve feet. Here the coals were laid, and a ſhip, of that draught of water, could lay her ſide to the mote, and take in the coal

This famous *colliery* belonged to the earl of Kinkardin's family. The freſh water which ſprung from the bottom and ſides of the coal pit, was always drawn out upon the ſhore by an engine moved by water, that drew it forty fathom. This coal pit continued to be wrought many years, to the great profit of the owners, and the wonder of all that ſaw it; but, at laſt, an unexpected high tide drowned the whole at once, aud the labourers had not time to eſcape, but periſhed in it. Phil. Tranſ. N° 93.

COLLUCIANISTÆ. in church hiſtory, a deſignation given to the Arians, from the martyr Lucian, a preſbyter of Antioch. *Hofm.* Lex. in voc.

COLLURIO, in zoology, a name by which ſome authors have called the lanius, or butcher bird, a very ſmall ſpecies of hawk, not larger than a thruſh, but a great deſtroyer of ſmall birds. *Ray*'s Ornithol. p. 52. See the article LANIUS.

COLLUTION, *collutio*, in medical writers, is ſometimes uſed for the waſhing of the mouth, particularly, when done to clean or faſten bad or looſe teeth; or free the gums, &c from ulcers.

COLLYBUS, in antiquity, the ſame with what is now called the rate of exchange. See EXCHANGE, *Cycl.*

COLLYRÆ, or COLLYRIDES, in antiquity, a certain ornament of hair, worn by the women on their necks. It was made up in the form of the ſmall, roundiſh cakes, called *collyræ*. *Pitiſc.* Lex. Ant. in voc.

COLLYRIUM *Samium*. See SAMIUM *collyrium*.

COLMESTRE, in zoology, the name of a bird of the lagopus kind, more uſually called *otomo*, and ſuppoſed not to differ from the lagopus, otherwiſe than by its changing its colour, in the ſummer months. *Ray*'s Ornithol. p. 127. See OTOMO and LAGOPUS.

COLOBIUM, among the antients, a kind of upper garment, without ſleeves, which was longer than the tunic. *Hofm.* Lex. in voc.

COLOBOMA, in medical writers, is uſed for the præternatural growing together of the lips, or eyelids, or for the adhæſion of the ears to the head. *Blancard.*

COLOCOLO, in natural hiſtory, a name given by the people of the Philippine iſlands to a ſpecies of bird, called alſo there *caſſili*, and by ſome authors, the water raven, *corvus fluviatilis*. It is very much of the ſhape of a common raven, but is truly an amphibious bird, living more of its time under water than in the air; it is black in colour; its neck is remarkably long; and it feeds on fiſh, which it hunts under water, as they do one another; it feeds likewiſe on frogs, ſerpents, and ſhell-fiſh. It is common to ſee it under water in clear rivers, where it ſeems perfectly at eaſe, and runs about with great ſwiftneſs; at times it comes up to the ſurface, and dries its wings in the air and ſunſhine. Phil. Tranſ. N° 285. p. 1896.

COLOCYNTHIS, in botany, the name of a genus of plants of the gourd kind, of which there are many ſpecies, the *coloquintida* of the ſhops being the pulp of one of them. The characters which diſtinguiſh this genus from the others of the ſame claſs, are, that the leaves are very deeply divided, and the fruit is not eatable, but of an intolerable bitterneſs.

The ſpecies of this plant enumerated by Mr. Tournefort are theſe: 1. The great, round-fruited *colocynth*, the pulp of which is the common *coloquintida* of the ſhops. 2. The ſtriated, round-fruited *colocynth*. 3. The great, round, green-fruited *colocynth*. 4. The ſmall, round-fruited, *colocynth*. 5. The ſmall, variegated-fruited *colocynth*. 6. The great, variegated-fruited, *colocynth*. 7. The orange-fruited *colocynth*. 8. The rough-leaved, long fruited, *colocynth*. 9. The ſmooth-leaved, long-fruited, *colocynth*. 10. The turbinated, pear-faſhioned, *colocynth*. 11. The pear-faſhioned *colocynth*, with variegated leaves. And, 12. The flat-fruited *colocynth*. *Tourn.* Inſt. p. 107.

Colocynth frequently purges by eroſion, whence the conſequence is often a number of bloody ſtools. And hence ſome have affirmed, that it purged by reaſon of the great quantity of volatile ſalt it contained; and that, from the ſame principle, it rendered the blood fluid, and prevented coagulations of it. Experiment, however, does not prove this, nor has it any ſuch power upon the humors out of the body; for being put into recent blood, and recent milk, it is not able to prevent the coagulation of either, at the common time: and hence, as well as from many other obſervations, it appears much more probable, that it abounds in a highly acrid ſalt, by means of which it is able to open the mouths of the veſſels, and, by this means, to produce that effect. The antients had another opinion of the cauſe of theſe effects: they thought that it was not capable of concoction, or any alteration, by the juices in the ſtomach, but that, being of a ſpungy, and porous nature, it there remained a ſort of ſpunge, and fixing itſelf to the ſides of the inteſtines, exulcerated there, and cauſed all its bad ſymptoms by that means. And it has been obſerved of later years that when given in infuſion, it has not all thoſe ill effects, nor, indeed, ſcarce any of them, which it has when given in ſubſtance; but its inſupportable bitterneſs renders it ſcarce poſſible to be taken this way, and therefore it is ſtill preſcribed in ſubſtance, becauſe it may be better diguiſed in form of pills, or the like. The difference is, that when a medicine is given in ſubſtance, it is given in all its force; whereas, in infuſion, there is no one menſtruum that can be uſed, which can ſo perfectly extract all its virtues, but that much will be left in the reſidue; and therefore, the infuſion, as in this caſe, will be much the gentler medicine. This purge, though ſo rough, and miſchievous alone, yet is of great uſe, when mixed with other purgatives, as it carries them farther than they could otherwiſe go, and diſlodges viſcous and pituitous humors, from the moſt diſtant parts.

In the common analyſis by chemiſtry, there appears no principle predominant in this fruit, by which its violent effects may be accounted for. Diſtilled by the retort, it yields firſt a phlegm; then a phlegm with an acid ſalt diſſolved in it; after this, a phlegm leſs acid, and containing a quantity of an urinous alkaline ſalt, which ſtrongly affects the ſmell. Theſe three liquors bring over with them a fætid oil, and the fixed ſalt drawn from the remainde in the retort, was of the nature

ture of the reſt of the ſorts of that kind. Mem. Acad. Par. 1701.

The kernels, or ſeeds, of this fruit, which are carefully thrown away by the apothecary, according to the direction of the diſpenſatory writers, when treated in the ſame manner, yield much the ſame principles with the pulp, except that the laſt running liquor contains much leſs volatile ſalt than that of the pulp, as is not only ſenſible by its want of ſmell, but by its fermenting very ſlightly with acids, whereas that from the pulp ferments very ſtrongly. As theſe ſort of analyſes give, however, but little light into the nature of bodies, Mr. Boulduc tried many other experiments upon it; he fermented it with muſt, or new wine, and then diſtilling it in a balneum mariæ, he obtained a very penetrating ſpirit, which poſſeſſed all the bitterneſs of the *colocynth*, and made an extract from the reſiduum. The bitter ſpirit proved a purge, but operated roughly, occaſioning gripings and naufeas.

The quantities uſed in this proceſs were four ounces of *colocynth*, and ſix pints of muſt, and from the remainder of the diſtillation well clarify'd, there was made two ounces of an extract; the quantity proving plainly that a large portion of the eſſential ſalts of the wine remained with the matter of the *colocynth* This extract is the ſafeſt and beſt of all the preparations of *colocynth*; it purges gently, and without irritation, in a doſe of ten or twelve grains.

Colocynth, infuſed in rain water, yields only an inſipid phlegm by diſtillation, but the remainder yields a very fine extract of a tolerably mild purgative virtue; a pound of the pulp of *colocynth* thus yields two ounces and an half of extract, and the remaining maſs of the *colocynth* does not appear to contain any reſin. It is uſual to attribute the violence of all purgative medicines to their abounding in reſinous parts. To try whether this was the caſe in this ſimple, Mr. Boulduc finiſhed his experiments on it by making an extract from it, by means of ſpirit of wine. Eight ounces of the clean pulp yielded only half an ounce of a reſinous extract, and the reſiduum yielded two ounces of a coarſe extract, by means of water, but this was of a bad conſiſtence, and would ſcarce hang together. Mem. Acad. loc. cit.

Either of theſe extracts, given alone, proved troubleſome medicines: and all that appeared from this, and from the whole, was, that in order to have the virtues of this fruit in a gentle, and ſafe manner, its ſaline and reſinous parts muſt be left together, and only ſeparated from its terreſtrial and mucilaginous ones, by means of long fermentation with muſt or water, before its being evaporated into an extract; for that all its violent effects are owing to theſe terreſtrial and mucilaginous particles. See COLOQUINTIDA, *Cycl.*

COLOGN *earth*, a ſubſtance uſed in painting, much approaching to amber in its ſtructure, and of a deep brown. It has generally been eſteemed a genuine earth, but has been diſcovered to contain a great deal of vegetable matter, and indeed, is a very ſingular ſubſtance.

It never conſtitutes an entire ſtratum in the earth, but is lodged among other ſtrata in large flat detached moſſes. It is moderately dry, while in the earth, and of a ſoft crumbly texture. When dried, it is of a deep, duſky brown, of a very cloſe, compact, and fine ſtructure, and very remarkably light; it is of a ſmooth, even ſurface, dry, but not harſh to the touch, crumbles eaſily to pieces between the fingers, and ſlightly ſtains the hands; it adheres firmly to the tongue, and is of a very auſtere and aſtringent taſte, but not at all reſembling the aſtringency of the boles, or any thing elſe of the mineral kingdom, but plainly reſembling the taſte of oak bark It makes no efferveſcence with acids; if thrown into water, it ſwims on the ſurface, till thoroughly wetted; and if brought into contact with burning coals, it takes fire, and burns of itſelf, till reduced to yelloviſh aſhes.

It is eaſy to diſcern from this account, that though this is generally eſteemed an earth, and known to the world by no other name, it is no pure native foſſile, but contains more vegetable, than mineral matter, and owes its origin to the remains of wood which has been long buried in the earth. It is dug in Germany and France: the quantities conſumed in painting, in London, are brought from Cologne, where it is found very plentifully; but our own kingdom is not without it, it being found near Birmingham, and on Mendip hills in Somerſetſhire; but what has been yet found there is not ſo pure or fine, as that imported from Cologn. *Hill*'s Hiſt. of Foſſils, p. 64.

COLONEL (*Cycl.*) — Formerly, inſtead of *colonel*, the French uſed the word *coronel*; and this old ſpelling comes nearer to our common way of pronouncing the word *colonel*.

COLONUS, an huſbandman, or villager, who was bound to pay yearly a certain tribute, or at certain times of the year, to plough ſome part of the lord's land; and from hence comes the word *clown*, who is called by the Dutch *boor*. *Blount*.

COLOR, in the antient muſic. See COLOURS.

COLOR *conchiliacus*. See CONCHILIACUS *color*.

COLOR *Indicus*. See INDICUS *color*.

COLORATURA, in the Italian muſic, is uſed to denote all ſorts of variations, trillos, diminutions, &c. that can render a ſong agreeable. *Broſſ.* Dict. Muſ. in voc. See TRILLO, DIMINUTION, &c.

COLOURS (*Cycl*) — The greateſt perfection in the art of *colours*, would be to find the means of preparing the fineſt *colours*, without the uſe either of acid or alkaline ſalts, which uſually ſubject the *colours* to change, or eſe are apt to prey upon the cloth, canvas, &c. as we ſee in verdigreaſe, the blue and green chryſtals of copper, &c. It appears highly probable, that the Indians, for making the fine bright and durable *colours*, wherewith their chinces and callicoes are ſtained, make uſe of metalline ſolutions; for ſome ſtained callicoes, brought from thence, having been kept for forty or fifty years, the bright *colours* have been obſerved to eat out the cloth, exactly in the ſame manner as acid ſpirits, which diſſolve metals, are found to do. *Shaw*'s Lectures, p. 186.

Since theſe, then, are the inconveniences attending ſuch *colours*, we ought to ſearch for menſtruums with which to extract *colours*, which are neither acid, nor alkaline; and for ſuch metalline calxes, precipitates, or powders, as will not loſe their *colours*, by being well waſhed to get out their ſalts: to prepare certain metalline matters by mere calcination, or the bare aſſiſtance of ſize; and laſtly, to look out for native *colours*, wherein no ſaline matter abounds.

Mr. Geoffroy has given a very curious proceſs for the making two clear, ſpirituous, inflammable liquors, which differ very little in taſte and ſmell, and being mixt together give a fine carnation *colour*, without any ſenſible fermentation.

To make the firſt of theſe liquors, put a ſmall handfull of dried red roſes into a glaſs bottle, pour on them rectified ſpirit of wine, till it covers them an inch; let this ſtand in a cold infuſion four or five hours; then pour off the liquor, which will be clear and colourleſs, as when put on. The ſecond liquor is made by dropping into rectified ſpirit of wine ſo much oil of ſulphur, by the bell, or ſpirit of vitriol, as will be borne in it without giving it any very ſenſible acidity when taſted. When theſe liquors are thus prepared, let a ſmall quantity of the latter be dropped into ſome of the former, and the whole will become of a fine carnation *colour*, though there is no fermentation, nor any other change perceived in it, but barely that of *colour*. If, inſtead of this laſt liquor, there be added to the firſt a few drops of the ſpirit of ſal armoniac, the whole will become green.

Make a ſlight infuſion of galls in water, ſo as not to *colour* the water; make alſo a weak ſolution of green vitriol in water, ſo that it may appear colourleſs; mix theſe two colourleſs liquors together, and an inky blackneſs is immediately produced; add to this black liquor a little oil of vitriol, and the liquor becomes pellucid and colourleſs again; then add to this a little ſalt of tartar, and the whole is black again.

Put a little bruiſed camphor into rectified clear oil of vitriol; ſhake the mixture, and it will become black, and the camphor will be diſſolved; add to this a little water, and the liquor becomes clear, and the camphor is found ſeparated at top, in its own form, and native whiteneſs.

Infuſe lignum nephriticum in cold water, and pour off the clear liquor. This held up againſt the light, appears of a fine yellow, but viewed from the light, of a beautiful blue; a little ſpirit of nitre put to this liquor, makes it loſe the power of reflecting the blue rays, and a little oil of tartar, afterwards added, recovers that power again.

Logwood, infuſed in water, gives a red colour. Put to this a little ſpirit of urine, and it becomes of a fine purple; and drop in afterwards a little ſpirit of ſalt, and it becomes of a pale red.

A beautiful blue tincture may be made from filings of copper, by digeſting them in ſpirit of urine, hartſhorn, or the like. The addition of oil of vitriol deſtroys the blue *colour*; and a little ſpirit of ſalt turns it green.

Pellucid oil of vitriol, mixed with pellucid oil of turpentine, produces a thick red balſam. And common oil, mixed with fair water, by means of a little wax, and continued rubbing turns into a thick white balſam, called cold cream.

Oil of vitriol, diſtilled from quickſilver, leaves a white powder behind, which, if water be poured on it, becomes yellow.

Diſſolve quickſilver in ſpirit of nitre, and to part of it add ſpirit of urine, and a white powder is precipitated; to another part of the ſolution add oil of tartar, and a yellow powder falls to the bottom.

Dip a new pen in ſpirit of vitriol, and write with it on common blue paper, and the letters will appear red.

A pellucid ſolution of ſaccharum Saturni being written with on paper, becomes inviſible, when dried; but the bare fumes of an infuſion of quick lime, and orpiment, in water, will render the inviſible writing black and legible.

Volatile ſalt of ſal Armoniac, which is white, mixed with cryſtals of copper, which are green, produce a fine purple. *Shaw*'s Lectures, p. 173 — 176.

The original and ſimple, as well as the mixt, *colours* are producible by mixture. Thus, if the ſun's rays paſs through two pieces of glaſs, the one blue, and the other yellow, and be afterwards received upon a white paper, the *colour* there ſeen, is green. The dyers make cloth blue with woad, and then turn it green by the yellow herb called luteola, or dyer's weed.

weed. To a yellow ſolution of gold in aqua regia, add a blue one of copper in ſpirit of urine, and the mixture becomes green. The painters every day practiſe this art of producing new colours by mixture.

Metalline and mineral matters are reducible to a conſiderable degree of ſubtlety, or ſmallneſs of parts by fire, or dry calcination, ſo as to leave them durably poſſeſſed of their native or adventitious *colours*. Thus lapis lazuli, by being calcined, becomes the fine rich blue called ultra-marine; light ochre, by the ſame treatment, becomes a light red, or fleſh colour, the moſt uſeful fleſh-colour in painting. Lead, by calcination, becomes durably red, and iron durably brown; but a proper method ſeems wanting for the dry calcinations of the nobler metals gold and ſilver; though for the uſes of gilding, theſe are eaſily prepared by dipping linnen rags in their reſpective ſolutions, and then drying, and burning them to aſhes, whereby a dry and fine metalline powder is procured. *Shaw*'s Lectures, p. 187.

COLOURS from metals. See METAL.

Gold COLOUR. See GOLD.

COLOURS, *colores*, χρόαι, in the antient muſic, was uſed to ſignify the muſical ſpecies belonging to a genus. *Wallis*'s Append. ad Ptolem. Harm. p. 165.

In this ſenſe the chromatic genus was ſaid to have three *colours*; and the diatonic two. The enharmonic having no ſubordinate ſpecies, had but one *colour*. Hence the antients reckoned three genera, and ſix *colours* in muſic; that is, ſo many different diviſions of the diateſſaron, or fourth. *Wallis*, ibid. See GENUS, ENHARMONIC, CHROMATIC, and DIATONIC.

COLOURING *of glaſs*. See GLASS.

COLOURING *of earthen ware*. See GLAZING.

COLOURING *of porcelane*. See STAINING.

COLOURING *of ſpirits*. See SPIRITS.

COLPISCIS, a name given by ſome to the *falx Venetorum*, or ſickle fiſh, commonly called the marmot fiſh by the people of Venice. *Willughby*'s Hiſt. Piſc. p. 117. See FALX.

COLT, in zoology. See FOAL.

COLT *evil*, a diſeaſe incident both to horſes and geldings. It is an unnatural ſwelling of the yard and cods, proceeding from wind, or elſe through the abundance of ſeed in horſes. It happens to geldings for want of natural heat. Dict. Ruſt. in voc.

COLT'S-*foot*, in botany. See TUSSILAGO.

COLTIE, among the timber merchants, a word uſed to expreſs a tree which has a defect in ſome one of its annual circles, which renders it unfit for many of the uſes it might have been otherwiſe fit for. In this caſe ſome one of the annual circles near the center, is perceived by the eye to be thicker than the reſt, and its ſap veſſels larger. It has an appearance much different from that of the others, and is ſo looſely connected both to its inveſtient, and inveſted circles, that on ſawing a tranſverſe piece of the trunk off, it will ſlip out from the others, and ſo leave the heart looſe, and the reſt hollow, ſeeming to have been only fitted, not connected, to the others. In ſplitting the wood for other uſes, it yet more readily drops out, and the timber of ſuch a tree is therefore much leſs fit for general uſe than that of others. It is not eaſy to ſay to what accident, in the growth of the tree, this is owing, but it ſeems probable that it expoſes the tree to other accidents; in particular Bobart ſeems to think, that among the trees which were ſplit by the hard froſt, in the year 1683, while other trees of the like ſizes and kinds eſcaped, this *coltineſs* might be the occaſion of the miſchief, as well as their being wind-ſhaken, or lagged. Phil. Tranſ. N° 165.

COLUBRINUM *lignum*. See LIGNUM *Colubrinum*.

COLUMBA, the *pidgeon*. In the Linnæan ſyſtem of zoology this makes a diſtinct genus of birds, of the order of the paſſeres, the general characters of which are, that the tongue is whole and even; the beak ſtrait, and ſcurſy at the baſe; the noſtrils long, and covered externally with a membrane. *Linnæi* Syſtem. Natur. p. 48.

COLUMBA *Greenlandica*, in zoology, a name given by authors to a ſmall, well-taſted, water-fowl, called in Engliſh, the *ſea turtle dove*. See TURTLE *dove*.

COLUMBA *marina*, the *ſea dove*, in zoology, the name of an Eaſt Indian fiſh, and appearing to be a ſpecies of the orbis, or moon-fiſh. It has its name from its head, and prominent cheſt, reſembling that of the dove; it has no ſcales, but is variegated with ſeveral very oddly placed marks on the back and ſides. It is a ſcarce fiſh, and not much valued, being but an ill-taſted one. *Ray*'s Ichthyogr. Append. p. 5.

COLUMBA is alſo the name of a military order inſtituted by John I. of Caſtile, about the year 1379. *Hiſm.* Lex. in voc.

COLUMBINA, a name given by Actuarius, and ſome other medical writers, to the verbena, or common vervain. *Ger.* Emac. Ind. 2.

COLUMBINES, *aquilegia*, in botany. See AQUILEGIA.

The manner of propagating theſe flowers is either by ſowing, or parting the old roots, but the old roots being very apt to degenerate, the ſowing them is much the beſt method.

The ſeeds muſt be ſown in a nurſery bed in Auguſt or September, and in the March following, the plants will appear above the ground, at which time they muſt be carefully cleared of weeds, and watered gently at times, if the dryneſs of the ſeaſon requires it. In the beginning of May, they will be ſtrong enough to tranſplant, and muſt then be placed at eight inches diſtance, in beds of good, freſh, undunged earth, and they muſt here be alſo kept cleaned from weeds, and watered as they may require it; at Michaelmas they may be removed into the borders of the flower-garden, and in the May following they will flower. *Mill* Gard. Dict.

COLUMELLA, in natural hiſtory, a name given by Mr. Lhuyd to the mycetitæ, or fungitæ, a ſort of ſea corals, when found foſſile, as they very frequently are, in beds of clay, or lodged in ſtone. See FUNGITÆ.

COLUMELLA, in anatomy. See UVULA, *Cycl.*

COLUMELLÆ *muſculus teres*, a name given by Morgagni, and ſome others, to the muſcle called by Albinus *azygos uvulæ*.

COLUMNARIS, in botany, a name given by ſome to the tall, milky bell flower, the *campanula latifolia*. *Ger.* Emac. Ind. 2.

COLUMNARIUM, in Roman antiquity, a heavy tribute, demanded for every pillar of a houſe. It was firſt laid on by J. Cæſar, in order to put a ſtop to the extravagant expences laid out on ſumptuous buildings. *Pitiſc.* in voc.

COLUMNEA, in botany, the name of a genus of plants, deſcribed by Plumier and Linnæus; the characters of which are theſe. The perianthium conſiſts of one leaf, divided into five erect, and pointed, ſegments, and remains after the flower is fallen. The flower is compoſed of only one petal, and is of the gaping, or ringent kind; the tube is long, and ſomewhat bellied, and the verge is divided into two lips. The upper lip is erect, hollow, and undivided, and the lower is divided into three lanceolated ſegments; the ſtamina are four filaments, two of which are longer than the reſt, and they are all hid under the upper lip of the flower; the antheræ are ſimple; the germen of the piſtil is roundiſh; the ſtyle is ſlender, and of the length of the upper lip of the flower; and the ſtigma is bifid and acute. The fruit is a globoſe berry, containing two cells, ſtanding on the cup, and being of its ſize; the ſeeds are numerous, and oblong, and are contained in large receptacles. *Plumier*, Gen. 33. *Linnæi* Gen. Plant. p. 296.

COLURE (*Cycl.*) — It is diſputed over what part of the back of aries the equinoctial *colure* paſſed in the time of Hipparchus. Sir Iſaac Newton, in his chronology, takes it to have been over the middle of the conſtellation. Father Souciet inſiſts on its having paſſed over the dodecatemorion of aries, or midway between the rump and firſt of the tail. We have ſome obſervations, in the Philoſophical Tranſactions, N° 466. concerning the poſition of this *colure* in the antient ſphere, from a draught of the conſtellation aries, in the Aratæa publiſhed at Leyden and Amſterdam 1652; which ſeem to confirm Sir Iſaac's opinion; but the antiquity and authority of the original draught may ſtill remain in queſtion.

COLUTEA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the papilionaceous kind, and from its cup there ariſes a piſtil, which finally becomes a membranaceous capſule, inflated in the manner of a bladder, and contained in kidney-ſhaped ſeeds.

The ſpecies of *colutea* enumerated by Mr. Tournefort are theſe. 1. The common bladder *colutea*. 2. The *colutea*, with red bladders. 3. The purple-flowered, Æthiopian *colutea*. 4. The Syrian, dwarf *colutea*, with violet-coloured flowers. And, 5. The bladder *colutea* of La Vera Cruz. *Tourn.* Inſt. p. 649.

COLYMBIS, in zoology, a name given by Bellonius to a ſpecies of duck, remarkable for a large tuft of feathers behind its head, and thence called by us the tufted duck, and known among authors by its Venetian name *capo negro*. *Aldrovand.* de Avib. See CAPO *negro*.

COLYMBUS, the *diver*, in the Linnæan ſyſtem of zoology, the name of a diſtinct genus of birds, of the order of the anſeres; the diſtinguiſhing characters of which are, that they have a pointed beak, and that their feet are placed far behind. *Linnæi* Syſtem. Natur. p. 46. See DIVER.

COLYTEA, in botany, is uſed by ſome to denote the *arbor Judæ*, or *ſiliquaſtrum*. *Ray*'s Hiſt. V. 1. p. 1717. See SILIQUASTRUM.

COMARCHIOS, Κωμαρχικὸς, in antiquity, the name of a particular air, or tune, deſigned to be ſung at entertainments. Mem. Acad. Inſcrip. p. 359.

COMARIS, in lithology, a name given by the Greek writers to the ſelenitis, or aphroſelene. See the article SELENITIS.

They called this ſtone alſo cupholithos.

COMARUM, in botany, the name of a genus of plants, the characters of which are theſe. The perianthium is very large and coloured. It conſiſts only of one leaf, divided into ten ſegments, which are alternately ſmaller one than the other, and remain after the flower is fallen. The flower conſiſts of five oblong pointed petals, much ſmaller than the ſegments of the cup to which they are fixed. The ſtamina are twenty filaments inſerted into the cup; they are of the length of the flower, and are of a ſubulated figure. The antheræ are lunular in figure, and very ſoon fall; but the ſtamina are permanent. The germina of the piſtils are very numerous; they are ſmall, roundiſh, and collected together in a head; the ſtyles are ſimple and ſhort, and placed at the ſides of the germina; and the ſtigmata are ſimple. The common receptacle of the ſeeds is of the figure of a ſcrotum, and is fleſhy, and very large and permanent. The ſeeds are numerous and pointed,

pointed, and ſo placed that they cover the receptacle. *Linnæi* Gen. Plant. p. 222.

COMBINATORY *diſtillation*. See DISTILLATION.

COMBINATORY *muſic*, *muſica combinatoria*, that part of muſic which teaches the manner of combining ſounds variouſly; that is, of changing their place and figure in different manners. See MUSIC.

COMEDONES, a name given to a ſpecies of worm, with which the children of Miſnia, and ſome other countries, are terribly afflicted; and of which Hoffman, in his treatiſe of endemial diſeaſes, gives this account: children in the country are frequently ſeized with a ſort of tabes, which ſo deſtroys their fleſh, that they appear merely like ſhadows. The common people generally ſuppoſe theſe children to be under the influence of witchcraft, but ſuch as have enquired more narrowly into the diſtemper, have found that it is owing to certain worms, reſembling black hairs, or cords, lodged under the ſkin. When the ſkin is rubbed with honey, in a bath, or any warm place, they will appear and come out; but when it is contracted by cold, they keep concealed within.

COME *ſopra*, in the Italian muſic, literally ſignifies *as above*, and is uſed when any foregoing part is to be repeated. *Broſſ.* Dict. Muſ. in voc.

COMET (*Cycl.*) — *Tails of* COMETS. See TAILS *of comets*.

COMETITES, in natural hiſtory, a name given by ſome writers to a kind of aſtroites, which has ſtars much larger than thoſe of the common kind, and therefore called comets.

COMFREY, *ſymphytum*, in botany, &c. See SYMPHYTUM.

Comfrey root is a famous vulnerary, both externally, and internally. It is a noble balſamic and agglutinant, and given with ſucceſs in diarrhæas from dyſenteries, and ſpittings of blood. The beſt way of taking it is in decoction, or ſyrup, but the decoction muſt not be too ſtrong.

COMIOLA, in botany, a name given by ſome of the old Roman authors to the plant commonly called luteola, or dyer's weed. It grows in moſt parts of the world. The Greeks, of old, uſed it in dying yellow, as we do at this time, and called it *cymene*, and ſometimes *thapſia*, that word ſignifying, with them, ſeveral different things which had the property of dying yellow. It was called alſo by ſome *robia*, or *rubia*; but thoſe who gave it this name have always diſtinguiſhed it by ſome peculiar epithet from the common *rubia*, or madder. Paulus Ægineta mentions it as an herb uſed in dying cloths; and Neophytus, and ſeveral others, give it a place among the things uſed to tinge the hair.

COMITATU *commiſſo*, in law, a writ, or commiſſion, by which a ſheriff is authorized to take upon him the charge of the county. Reg. Orig. 295. *Blount* and *Cowel*.

COMITATU *et caſtro commiſſo*, a writ by which the charge of a county, together with the keeping of a caſtle, is committed to the ſheriff. Reg. Orig. ibid. *Blount* and *Cowel*.

COMITIA (*Cycl.*) — COMITIA *centuriata*. Servius Tullius, the ſixth king of Rome, in order to correct the inconvenience of the *comitia curiata*, inſtituted a new diviſion of the people into ſix claſſes, according to a cenſus, or valuation of their eſtates: then he ſubdivided theſe claſſes into one hundred and ninety-three centuries, and contrived to throw a majority of theſe centuries, that is, ninety-eight of them, into the firſt claſs of the richeſt citizens. By which regulation, though every man voted now in his century, as before in his curia; yet, as all matters were decided by a majority of the centuries, ſo the ballance of power was wholly transferred into the hands of the rich; and the poorer ſort deprived of their former weight and influence in the affairs of ſtate [a]: which wiſe inſtitution was ever after obſerved, through all ſucceeding ages, in the elections of the principal magiſtrates, and the determination of all the principal tranſactions of the republic [b]. — [[a] *Liv.* l. 1. c. 43. *Dionyſ.* Halic. l. 4. c. 20, 21. [b] *Middleton*, of Rom. Sen. p. 27, 28.]

COMITIA *curiata*. Romulus inſtituted the *comitia curiata*, or the public aſſemblies of the people, called to vote in their ſeveral curiæ; and it is agreed by all, that the matters ſubjected to their deciſion, were the choice of all the magiſtrates, and the right of making laws, war, and peace: an ample juriſdiction, and in the moſt important articles of government, yet not wholly abſolute, according to Dionyſius, unleſs the ſenate concurred with them. *Dionyſ. Halic.* l. 2. c. 14. *Middlet.* of Rom. Sen. p. 26.

This method of tranſacting all the greater affairs by the people, aſſembled in their curiæ, after it had ſubſiſted through five ſucceſſive reigns, was found to be inconvenient; ſo that Servius Tullius inſtituted the *comitia centuriata* above mentioned. *Middleton*, of Rom. Sen.

COMITIAL *days*. Paulus Manutius is of opinion, that there were certain days on which the Roman ſenate might regularly be aſſembled, and others, on which it could not: and that theſe laſt were called *comitial* days, and marked under that name in the kalendars, as days wholly deſtined, and ſet apart by law, for the aſſemblies of the people [a]. But Sigonius contends, that the ſenate might meet on any of thoſe days, unleſs when the people were actually aſſembled, and tranſacting buſineſs on them; and conſequently that the title of *comitial* denoted ſuch days only, on which the people might be legally aſſembled, not ſuch on which they were of courſe to be aſſembled [b]. — [[a] De Senatu Rom. [b] Vid. *Joh. Sarium Zamoſc.* de Senatu Rom. l. 2. 7. written by Sigonius under the name of his diſciple. *Middlet.* of Rom. Senat. p. 138, ſeq.

The truth of the matter ſeems to be this, that though the days called *comitial* were regularly deſtined to the aſſemblies of the people, yet, the ſenate alſo might not only be convened on the ſame, after the popular aſſemblies were diſſolved, but had the power likewiſe, whenever they found it expedient, to ſuperſede and poſtpone the aſſemblies of the people to another day; and, by a particular decree, to authoriſe their own meetings upon them, for the diſpatch of ſome important affair, therein ſpecified. *Middlet.* ib.

COMITIALIS *morbus*. See MORBUS *comitialis*.

COMITIUM, in antient Rome, that part of the forum where the comitia always aſſembled. It was in this place that the roſtra were placed. See COMITIA, *Cycl.* and *Suppl.*

COMMA, (*Cycl.*) in muſic. It is aſſerted in the Cyclopædia, that the *comma* is the ſmalleſt of all ſenſible intervals of tune; but this is a miſtake, if it be meant that the ear cannot diſtinguiſh any thing leſs; for the diminution of fifths in temperate ſcales is very ſenſible, though this diminution be leſs than $\frac{1}{4}$ of a *comma* in harpſichords and organs. See TEMPERAMENT.

The *comma* is about $\frac{1}{56}$ of an octave. Vid. *Euler*, Tent. Nov. Theor. Muſic. p. 106.

COMMA *of Pythagoras*, is the difference between ſix tones major, and the octave; or between 19 octaves, and 12 twelfths. It will therefore be expreſſed by the proportions $\frac{531441}{524288} = \frac{9^6}{8^6} : \frac{2}{1} = \frac{3^{12}}{2^{19}}$. The ſmall figures written above the larger, ſignify the exponents of their powers. See EXPONENT, *Cycl.* and *Suppl.*

COMMELINA, in the Linnæan ſyſtem of botany, the name of a diſtinct genus of plants, the characters of which are, that the flower cup is a ſpatha, in form of a heart, very large, compreſſed, and ſhutting together, and remaining after the flower is fallen. The flower is compoſed of ſix petals, the three exterior ones ſmall, of an oval form, hollow, and reſembling a perianthium; the three inner ones interwoven with one another, large, roundiſh, and coloured. This flower has alſo three nectaria which reſemble ſtamina, of the figure of a croſs, placed on filaments, and each in an horizontal direction. The ſtamina are three bent and pointed filaments, in figure reſembling the filaments of the nectaria, but placed below them. The antheræ are of an oval figure; the germen of the piſtillum is roundiſh; the ſtyle is pointed, and of the length of the ſtamina, and the ſtigma is ſingle; the fruit is a naked capſule, of a ſomewhat roundiſh figure, but marked with three lines, divided into three cells, and having three valves. The ſeeds are placed ſingly in each cell of the capſule, and are roundiſh. *Linnæi* Genera Plantarum, p. 11.

COMMENTACULA, among the Romans, the rod which the flamins carried in their hands, when going to ſacrifice. *Hofm.* Lex. in voc.

COMMENTARIENSIS, among the Romans, an officer who had the keeping of the priſon, and was to obey the *triumviri capitales*. *Hofm.* Lex. in voc.

COMMISSARY (*Cycl.*) — COMMISSARY *of horſes*, an officer in the artillery, appointed to have the inſpection of the artillery horſes, to ſee them muſtered, and to ſend ſuch orders as he receives from the commanding officer of the artillery, by ſome of the conductors of horſes, of which he has a certain number for his aſſiſtants.

COMMISSARY *of proviſions*, is he who has the inſpection of the bread, and proviſions of the army.

COMMISSARY *of ſtores*, an officer in the artillery, who has the charge of all the ſtores, for which he is accountable to the office of ordnance; he is allowed an aſſiſtant, clerks, and conductors, under him.

COMMISSION (*Cycl.*) — COMMISSIONS *of charitable uſes* go out of the chancery to the biſhop and others, where any lands given to charitable uſes are miſemployed, or there is any frauds or diſputes concerning them, to enquire of, and redreſs the abuſe, &c. 43 Eliz. c. 4.

COMMISSION *of lunacy*, a commiſſion out of chancery to enquire whether a perſon repreſented to be lunatic, be ſo or not; that, if lunatic, the king may have the care of his eſtate, &c. 17 Ed. II. c. 10.

COMMISSION *of ſewers*, is directed to certain perſons to ſee drains and ditches well kept, and maintained, in the marſhy and fenny parts of England, for the better conveyance of water into the ſea, and preſerving the graſs upon the land. Stat. 23. Hen. VIII. c. 5. 13. Eliz. c. 9.

COMMITMENT, the ſending of a perſon to priſon by warrant or order, who hath been guilty of any crime or offence. It may be by the king and council, by the judges of the law, juſtices of peace, and other magiſtrates, who have authority by the laws and ſtatutes of the realm to do it, which muſt be exactly purſued. Every *commitment* to priſon ought generally to be made by warrant, under the hand and ſeal of him who commits the party, and the cauſe of *commitment* to be expreſſed in the warrant, &c.

COMMODAVIENSIS, an appellation given by ſome authors to a ſpecies of lapis calaminaris found in Bohemia. But as it yields

yields no zink, Mr. Marggraf denies it to be true calamine. See the article ZINK.

COMMOIGNE, in law, a word ſignifying a fellow-monk, that lives in the ſame convent. 3 Inſt. 15. *Blount.*

COMMON, (*Cycl.*) *communis*, κοινος, in the antient muſic, was an appellation given to the ſeventh ſpecies of the diapaſon. *Euclid.* Introd Harm. p. 16. Edit. Meibom. See DIAPASON.

COMMON *bench.* The court of *common pleas* was antiently called *common bench.* *Blount* and *Cowel.*

In law books and references, the court of common pleas is writ C. B. from *communi banco*: and the juſtices of that court are ſtiled *juſticiarii de banco.*

COMMON *chords*, in muſic, is ſometimes uſed to denote the third, fifth and octave of any note, conſidered as a baſs.

COMMON *day*, in plea of land, ſignifies an ordinary day in court, as *octabis hillarii*, *quindena paſchæ*, &c. It is mentioned in 13 Rich. II. ſtat. 1. c. 17. and in the ſtatute 51 Hen. III. concerning general days in bank. *Blount* and *Cowel.*

COMMON *diviſor*, in arithmetic, that number which exactly divides any two other numbers, without a remainder.

COMMON *meaſure*, in arithmetic, a number that exactly meaſures two other numbers, without a remainder. And the greateſt number that can meaſure any two other numbers, is called their greateſt *common meaſure*; thus 4 is the greateſt common meaſure of 8 and 12.

COMMON *pleas.* This court was originally eſtabliſhed for the determination of pleas merely civil, and was at firſt ambulatory, and removed with the king wherever he went: but was fixed to one place by magna charta, cap. 11. *Communia placita non ſequantur curiam noſtram ſed teneantur in aliquo certo loco.*

The juriſdiction of this court is founded on original writs, iſſuing out of the chancery, which are the king's mandates for them to proceed on to determine ſuch and ſuch cauſes [a]. But this is to be underſtood when the cauſe is between common perſons; for when an attorney, or any perſon belonging to the court, is plaintiff, he ſues by writ of privilege, and is ſued by bill, which is in nature of a petition; both which originally commence in the *common pleas*, and have no foundation in the chancery.—[[a] 4 Inſt 99. [b] 4 Inſt. ibid.]

This court, Sir Edward Coke ſays, is the lock and key of the common law in *common pleas*; for herein are real actions, whereupon fines and recoveries do paſs; as alſo all other real actions by original writs; alſo *common pleas*, mixt or perſonal, in divers of which the king's bench has a concurrent juriſdiction with this court [a]. But the juriſdiction of each court is at this day ſo well eſtabliſhed, that as the court of king's bench cannot determine a mere real action, ſo neither can the court of *common pleas* enquire of felony or treaſon [b].—[[a] 4 Inſt. ibid. [b] Vid. 2 *Hawk.* P. C. p. 2.]

This court, without any writ, may, upon a ſuggeſtion only, grant prohibitions, to keep as well temporal as eccleſiaſtical courts within their bounds and juriſdiction. See 4 Inſt. 99. and *Vaughan*'s Reports, p. 157.

In term time, this court may award a habeas corpus by the common law, for any perſon committed for any cauſe under treaſon or felony; and thereupon diſcharge him, if it ſhall clearly appear by the return, that the commitment was againſt law, as being made by one who had no juriſdiction of the cauſe, or for a matter, for which, by law, no man ought to be puniſhed. Vid. *Vaugh.* 154, ſeq 2 *Jones* 14.

Houſe of COMMONS. The *houſe of commons*, in Forteſcue's time, who wrote during the reign of Henry VI. conſiſted of upwards of three hundred members: in Sir Edward Coke's [a] time their number amounted to 493. At the time of the union, there were five hundred and thirteen members for England and Wales, to which forty-five repreſentatives for Scotland were added; ſo that the whole number of members is at this day 558.—[[a] 4 Inſt. fol. 1.]

COMMUNICATION, *communicatio*, in rhetoric, the ſame with *anacoenoſis.* See ANACOENOSIS.

COMORTH, in our ſtatutes, is uſed for a contribution or ſubſidy. It is ſaid to be derived from the Britiſh *cymorth*, *ſubſidium.*

The ſtat. 4 Hen. IV. c. 27. and 27 Hen. VIII. c. 6 prohibit the levying any ſuch in Wales, or the Marches.

It is ſaid this *comorth* was gathered at marriages, and when young prieſts ſaid their firſt maſſes, and ſometimes for redemption of murders or felonies. *Blount.*

COMOSANDALOS, Κομοσανδαλος, in antiquity, a crown of flowers worn in the feſtival chthonia. *Pott* Archæol. See the article CHTHONIA.

COMPAGES *circularis montium*, a term deviſed by Kircher to expreſs what he in other places calls the annularity, or annular diſpoſition of mountains, which he ſays run in continued chains, forming belts or ridges in the manner of ſpines, all round the globe of the earth, from north to ſouth, and ſo on from that point to north again, and in the ſame manner from eaſt to weſt, and from weſt to eaſt again. *Kircher*, Mund. Subt. See the article MOUNTAIN.

COMPAGUS, in antiquity, a kind of ſummer ſhoe worn by the Roman ſenators, conſiſting only of a ſole at the bottom; it was faſtened with leathern ſtraps, croſſing one another many times about the leg. *Dacier*, Not. ſur Hor. l. 1. ſat. 6. *Kenn.* Rom. Ant. P. 2. l. 5. c. 8. p. 324.

Rubenius makes the *compagi* to have been a ſort of caligæ worn by the Roman generals as well as ſenators. Under the later emperors, in the middle age, we read of the ſame worn by popes, biſhops and abbots. *Rubien.* de re Veſt l. 2. c. 5. *Ferrar.* Anal. de re Veſt. c. 37. *Du Cange*, Gloſſ. Lat. T. 1. p. 708, ſeq. *Pitiſc.* Lex. Ant. T. 1. p. 337. *Schoet.* Lex. Ant. p. 257.

COMPANY (*Cycl.*) — *Companies* of foot on the Britiſh eſtabliſhment commonly uſed to conſiſt of one captain, one lieutenant, one enſign, three ſerjeants, three corporals, two drums, and 49 private centinels; in all 60. But of late years, *companies* have been increaſed, by the addition of 20 centinels, to 80 men. Ten, and ſometimes twelve *companies*, make a regiment.

COMPARTMENTS, (*Cycl.*) in gardening, are beds, plats, borders and walks, laid out according to the form of the ground, and depend more on a good fancy than on any ſet of rules, for their conſtruction. They are alſo ſometimes merely diverſities or knots of flower gardens or parterres, of which there are an infinite variety, according to the fancy of the deſigner. Plain *compartments*, are pieces of ground divided into equal ſquares and flower-beds, marked out by lines, and made of regularly equal length and breadth. Some allow to theſe ſquares borders of two feet broad, if the plot of ground be ſmall, and if larger, of three feet, and edge the borders with box, or with upright hardy thyme: the alleys up between are to be laid with ſand or gravel, and kept clean weeded.

COMPASS (*Cycl.*) — The *compaſs* has been ſometimes obſerved to be diſturbed by the electricity of its glaſs cover, and this from ſo ſlight an application of the finger as was barely neceſſary to wipe off a little duſt. The ſame glaſs, rubbed a little more with the finger, a bit of muſlin, or of paper, would attract either end of the needle, ſo as to hold it to the glaſs for ſeveral minutes, far out of the due direction, according to what part of the glaſs was moſt excited. And when the needle, after adhering to the glaſs, has dropt looſe, and made vibrations, thoſe would not be biſected, as uſual, by that point where the needle ſhould reſt, but either be made all on one ſide, or be very unequally divided, by means of ſome remains of electrical virtue in that part of the glaſs which had attracted the needle, until at length, after fifteen minutes or more, all the electricity being evaporated, the magnetical power took place. Phil. Tranſ. N° 480. p. 243.

The cure for this inconvenience, is to moiſten the ſurface of the glaſs: a wet finger will do it immediately and effectually. Phil. Tranſ. N° 480. p. 244.

There is reaſon to believe, that glaſs does at times become in ſome degree attractive, without any friction at all, and may poſſibly be excited by great concuſſions in the air, ſuch as thunder, or the diſcharge of great ordnance, and ſo may diſturb the compaſs.

The mariner's *compaſs*, with a chart, is much leſs dangerouſly moved than the common *compaſs* with a bare needle. And the deeper or farther diſtant the needle hangs below the glaſs, the leſs diſturbance it is likely to receive.

The minute, irregular, reciprocating variations, which have been obſerved in the directions of dipping and horizontal needles, and mentioned in the philoſophical tranſactions [a], may probably have been cauſed by the glaſſes which covered the inſtruments made uſe of [b].—[[a] N° 425. [b] Phil. Tranſ. N° 480. p 245.]

COMPETENTES, in church hiſtory, an appellation given to the *catechumens*, when being ſufficiently inſtructed in the chriſtian religion, they required baptiſm. *Hoſm.* Lex. in voc. See BAPTISM.

COMPITA, in zoology, a name by which ſome have called the colymbus major, or ſiſanelle, the great Venetian diver. See FISANELLE.

COMPLEXI *pars*, in anatomy, a name given by Riolanus, and others, to a muſcle called by Albinus *biventer cervicis*, and by ſome the *complexus.*

COMPLEXUS, (*Cycl.*) a pretty long and broad muſcle, lying on the poſterior lateral part of the neck, all the way to the occiput. It is complicated, by reaſon of the decuſſations of its different portions, but is generally looked upon to be but one muſcle. It is fixed below by ſmall ſhort tendons, to the tranſverſe apophyſes of all the vertebræ of the neck, except the firſt, to which it is fixed only near the root of its tranſverſe apophyſis; from thence it runs up obliquely backward, croſſing under the ſplenius, and after communicating with it by ſome faſciculi of fibres, it is afterwards inſerted above, by a broad fleſhy plane, in the poſterior part of the ſuperior tranſverſe line of the os occipitis, near the criſta or ſpine of that bone. At its inſertion, it joins by one edge the *complexus* of the other ſide, and by the other the ſplenius, which covers it a little. *Winſlow*'s Anat. p. 235.

COMPLEXUS *minor*, a muſcle called alſo *maſtoidæus lateralis.* It is long, ſlender, narrow, and indented, and lies along all the inſide of the neck up to the ear, where it increaſes a little in breadth. It is fixed by one extremity in all the tranſverſe apophyſes of the neck, except the firſt, by the ſame number of branches or digitations, which are moſtly fleſhy, and are diſpoſed obliquely; from thence it aſcends, and having reached above the tranſverſe apophyſis of the firſt vertebra, it forms a

ſmall broad plane, by which it is inſerted in the poſterior part of the apophyſis maſtoidæus. It is here covered by the ſplenius, and covers a little the obliquus ſuperior. It is often miſtaken for a portion of the longiſſimus dorſi. *Winſlow's* Anat. p. 236.

COMPOSITE (*Cycl.*) — COMPOSITE *numbers*, thoſe that can be meaſured by ſome number above unity; as 12, by 2, 3, 4, and 6.

Compoſite numbers between themſelves, are ſuch as have ſome common meaſure beſides unity; as 12 and 15, being both meaſured by 3.

COMPOSITE *ſtalk*. See the article STALK.

COMPOSITIO *menſurarum*, the title of an antient ordinance for meaſures, not printed; it is mentioned in the ſtatute of 23 Hen. VIII. cap. 4.

COMPOUND, in chemiſtry. See AGGREGATE.

COMPOUND *flower*. See FLOWER, *Cycl.*

COMPOUND *leaf*, among botaniſts. See LEAF.

COMPRESS (*Cycl.*)—It is frequently the cuſtom among ſurgeons, after the plaiſter and other dreſſings are applied, to cover all with a *compreſs*, which is made of the ſofteſt old linnen, four, ſix, or eight times doubled. Theſe are of ſervice, not only by preſerving the parts from the injuries of the external air, but alſo for the ſecuring and fixing the plaiſters and other dreſſings. *Compreſſes* are alſo frequently applied where no plaiſter is made uſe of, and that ſometimes dry, ſometimes wetted with certain liquors, which are ſuppoſed to be ſtrengthening, emollient, reſolving, lenient, cooling, &c. They are frequently dipped in the decoctions of certain herbs, into wine, ſpirit of wine, vinegar, or oxycrate, and ſometimes into lime water, and are adminiſtered either cold or hot, as the nature of the caſe requires.

Compreſſes are of various forms; ſome are ſquare, others oblong, others triangular, and others in form of a croſs, according to the part they are to be applied to, and according to the occaſion and ſituation. Some are called ſtrait, others oblique, others tranſverſe, and others annular, as thoſe that ſurround the arm or foot. There are ſome alſo neceſſarily made in the form of an aſteriſm; ſome are divided either on one or both ſides, as far as the middle; ſometimes they form a hexagon, and ſometimes are round or globular, reſembling a ball: theſe are uſed in luxations of the os humeri, and are placed under the axillæ. Sometimes *compreſſes* of a much ſmaller ſize are required, which are either ſquare for the wounds of the blood-veſſels, to reſtrain hæmorrhages, or taper, for ſutures of wounds, or in ligatures of the arteries.

Compreſſes of all kinds are intended for theſe purpoſes: 1. To preſerve and cheriſh the natural heat of the body. 2. To ſecure the dreſſings that are laid under them. 3. To convey liquid remedies to parts wounded or otherwiſe diſordered, and to prolong the uſe of them. 4. To fill up any cavities or depreſſions of the parts, that the dreſſings (eſpecially in fractures) may be applied with greater ſecurity: and laſtly, to prevent bandages from bringing on a troubleſome itching, or other pain or uneaſineſs on the ſkin. *Heiſter's* Surg. p. 19.

COMPRESSED *leaf*, among botaniſts. See LEAF.

COMPRESSOR *naris*, in anatomy, a name given by Albinus and ſome others to one of the muſcles of the face, called by Winſlow the *tranſverſalis naſi*, and *inferior naſi*; and by Cowper, the *elevator alæ naſi*. See ELEVATOR.

COMPTROLLER (*Cycl.*) — COMPTROLLER *of the artillery*, an officer whoſe duty it is to inſpect the muſters of the artillery, to make the pay-liſt, and take the accounts and remains of ſtores. He is accountable to the office of ordnance. *Guil.*

CONAR *lapis*, a ſtone ſaid by ſome authors to have the virtue of preventing wrinkles, and preſerving youth. We have no deſcription of it; but de Boot tells us, that in China they make ſome of their veſſels of it.

CONCAVE *glaſs*, or lens, one that is flat on one ſide and ground hollow on the other, but uſually ſpherical. It is called by ſome a *plano-concave*, and if the glaſs be concave on both ſides, it is called a *double concave*. See GLASS and MIRROUR, *Cycl.*

CONCAVITY (*Cycl.*) — An arch of a curve has its *concavity* turned one way, when the right lines that join any two of its points are all on the ſame ſide of the arch.

Archimedes, intending to include ſuch lines as have rectilinear parts, in his definition, ſays, a line has its *concavity* turned one way, when the right lines that join any two of its points are either all upon one ſide of it, or while ſome fall upon the line itſelf, none fall upon the oppoſite ſide. *Archim.* de Sphær. & Cyl. Def. 2. *Mac Laurin's* Fluxions, Art. 180.

When two lines, having their *concavity* turned the ſame way, have the ſame terms, and the one includes the other, or has its *concavity* towards it, the perimeter of that which includes, is greater than the perimeter of that which is included. *Archim.* ib. Ax. 2.

CONCENTRATING, in chemiſtry, is the bringing the required parts of a ſubject cloſer together. Salt water is thus concentrated by evaporation of the aqueous humidity; and wine, by freezing out, or ſeparating its water in the form of ice. *Shaw's* Lectures, p. 9.

CONCENTRATION (*Cycl.*) — Dr. Shaw, in his eſſay on the diſtillery, is for introducing a method of concentrating the fermentable parts of vegetables, from which their ſpirits are to be drawn by diſtillation; which, if it can be brought to be practiſed in the large way, will prove of very great uſe to the Britiſh diſtillery, as it will greatly ſhorten the diſtiller's buſineſs, which at preſent, including the brewing, fermenting, &c. is much too long. He propoſes only to evaporate carefully the wort, or other tinctures or decoctions of vegetables made for the diſtilling of their ſpirits, to the conſiſtence of treacle: in this form they might be ſold to the diſtiller, who might keep them by him as long as he pleaſed, and occaſionally uſe them, by the eaſy method of reducing them into wort, by mixing warm water with them. *Shaw's* Eſſ. on Diſtill.

CONCEPTACULUM, among botaniſts, a kind of pericarpium, compoſed of ſoft and leſs rigid valves, and containing one cavity. See PERICARPIUM.

CONCEPTION (*Cycl.*) — It has been advanced by ſeveral writers, that women may poſſibly *conceive* in their ſleep, and be with child without any knowledge of the occaſion of it.

As ridiculous and abſurd as this doctrine may appear to the generality of the world, no leſs an author than Genſili has thought it worthy a particular diſſertation. The occaſion of this treatiſe was; that a young woman of twenty, a ſervant in a family in which he was acquainted, proved with child, and atteſted in the moſt ſolemn manner imaginable, that ſhe had no knowledge of the occaſion. The girl's life and behaviour inclined people, who would have rejected ſuch a ſtory from another perſon with contempt, to believe it firmly from her. She gave the ſame account on oath before the juſtices of the place, and confirmed it in the agonies of child-bearing. All that ſhe could recollect in regard to it was, that a certain acquaintance of her maſter's had given her once a glaſs of wine, after the drinking of which, ſhe almoſt immediately fell into a very profound ſleep: ſhe ſuſpected that there might be ſome narcotic medicine in the wine, and ſuppoſed that the injury was done her during the deep ſleep into which this threw her; tho' ſhe continued to declare, in the ſolemneſt manner, that ſhe had no remembrance of any ſuch thing, and certainly not the leaſt ſenſibility of it at the time. The perſon accuſed ſwore to his innocence, and the principal juſtice reſolved to determine his judgment by the opinion of this author, to whom he in the moſt ſolemn manner put this plain queſtion, Whether it is or is not poſſible, that a woman ſhould conceive in her ſleep, without her knowledge of the intercourſe of the man? The doctor gave his anſwer, that he believed it was poſſible; that there were ſimilar inſtances in Montanus, and other authors; and that provided all the neceſſary requiſites to *conception* were employed, that it could not be otherwiſe but that the woman muſt conceive, tho' the whole was done either againſt her inclination, or without it. It is very certain, that *conception* does not depend upon the will of the woman, ſince women are daily with child greatly againſt their wills, as is the caſe in the unlawful intercourſes of unmarried perſons; and among married people, ſuch women as thro' a cold phlegmatic conſtitution, or any other peculiar temperament of body, have no ſenſe of pleaſure in the action, yet conceive as frequently, and perhaps more frequently, than thoſe who have their inclinations ever ſo violently bent on ſuch things. Not only common experience ſhews us this, but the greateſt writers on theſe ſubjects confirm it. There is no reaſon to doubt, but that ſuch perſons would conceive as well in their ſleep as if awake, ſince their paſſions or ſenſibility have no ſhare in occaſioning it. In ſhort, it ſeems that if the ova are properly impregnated, the woman muſt conceive, and that her own ſenſations have nothing to do with it. Act. Erud. Ann. 1715. p. 122. See the article PREGNANCY.

CONCERTANTE, in the Italian muſic, is uſed for the reciting parts of a piece of muſic, to diſtinguiſh them from thoſe which ſing only in the grand chorus [a]. Graſſineau [b] makes *concertante* ſignify thoſe parts that ſing or play throughout the whole piece.— [a *Broſſ.* Dict. Muſ. in voc. b Muſ. Dict. p. 35.]

CONCERTATO, in the Italian muſic, is uſed for a piece compoſed in ſuch a manner, as that all the parts may have their recitals, be it for two, three, four, or more voices or inſtruments: thus they ſay *meſſe concertate*, *ſalmi concertati*, a 2, a 3, a 4 *voci*, &c. *Broſſ.* Dict. Muſ. in voc.

CONCERTO *groſſo*, in the Italian muſic, is uſed to denote the grand chorus of a concert, or thoſe places where all the ſeveral parts perform or play together. *Broſſ.* Dict. Muſ. in voc.

CONCHA (*Cycl.*) — CONCHÆ *anomiæ*, in natural hiſtory, the name of a foſſile ſhell-fiſh, found in great abundance, and in a great variety of ſpecies, but not known in any of them living, on the ſhores or in the ſeas of our own or other countries. In Glouceſterſhire, and ſome other of our counties, theſe are found as common as pebbles on the ploughed lands in other places. They are a ſort of bivalve ſhell, the valves of which are of unequal extent, both of them convex, and the head or beak of the longer valve crooked, and falling over the head of the other. See Tab. of Foſſ. Claſſ. 9

The great general diſtinction of this numerous claſs of bodies, is into thoſe which are of a ſmooth ſurface, and thoſe which are of a ſtriated or rough one.

Of the ſmooth *conchæ anomiæ* we find great numbers of ſpecies: ſome are rounded at the margin, others are crenated, and others deeply ſinuated, and others are cornered on each ſide, and end in two angles, with a broad flattiſh ſurface between them.

Of thoſe whoſe margin is rounded, we find many with thick edges, and others with thin ones; ſome alſo are broad and flattiſh, while others are ſo much rounded on each ſide, as to approach to an oval form. Moſt of theſe have rounder and blunter beaks than the other kinds, and many of them have a hole at the ends, looking as if done by art. Theſe are the terebratulæ of Mr. Lhuyd. Of thoſe with the cornered margin, ſome are thicker in the middle, and others at the end or rim; and others have a ridge running down the middle of the back. Of thoſe which are ſtriated from the cardo or hinge to the margin, we have alſo very numerous ſpecies: in ſome the lines are ſlight, and in others they make deep ridges and furrows. Theſe have generally a ſharper beak than the ſmooth ones, and are, like them, various in the ſhape of the margin, ſome having it ſmooth and plane, and others more lightly or deeply ſinuated or cornered. In the more common ſpecies of theſe, the middle ſegment of the longer valve is depreſſed, or ſunk into a kind of hollow, and running out in length beyond the corners, bends round the margin, and meets the depreſſed middle part of the oppoſite valve, which is much ſhorter. Some of theſe are of a more convex, others of a more flatted figure, and ſome have their ridges and furrows much more numerous than others, in ſome there being only one to the depreſſed or middle part of the ſhell.

Others alſo of the ſame claſs, or of one very nearly allied to it, are found in many of our inland counties, ſome very long from the cardo, or hinge, to the margin; and others very ſhort, and very long the contrary way. They are found indifferently in all ſorts of ſtrata, in earth, in ſtone, in ſand, and among gravel. *Hill*'s Hiſt. of Foſſ. p. 650.

CONCHA *fortificata*, in natural hiſtory, a name given by ſome authors to the genus of ſhells, called by others the *murex*. See MUREX.

CONCHA *globoſa*, in natural hiſtory, the name of a large genus of ſhells, called by authors the *dolium*, and in French the *tonne*. See DOLIUM.

CONCHÆ *latitans muſculus*, a name given by Riolanus and others to one of the muſcles of the ear, called by Cowper *internus auris*, and by Albinus, very properly, the *tenſor tympani*.

CONCHÆ *narium*, in anatomy. See NARIUM *conchæ*.

CONCHÆ *proprius muſculus novus*, a name given by Santorini to a muſcle of the ear, called by Albinus, and the French writers, *auris alæ anterior*.

CONCHA *ſpectrorum*, the *ſpectre ſhell*, a name given by authors to a ſpecies of voluta, from ſome odd figures deſcribed on its ſurface, repreſenting rough draughts of terrible phantoms. It is an elegant ſhell, of a middle ſize, and is of a white ground, and the figures are reddiſh; theſe form three large and broad bands, ſurrounding the ſhell at the top and bottom, and in the middle; and between theſe there are ſeveral ſeries of ſmall ſpots. It is a ſcarce ſhell, and uſually ſells at a large price.

CONCHITES *marmor*, a name given by the antients to a ſpecies of marble dug near Megara, and remarkable for containing a great number of ſea ſhells, and other marine bodies immerſed in it.

CONCHYLIA. See the article SHELL *fiſh*.

CONCIATOR, in the glaſs art, is for the cryſtal glaſs what the founder is at the green glaſs houſes. He is the perſon that weighs and proportions the ſalt on aſhes and ſand, and works them with a ſtrong fire, till they run into lumps, and become white; and if the metal be too hard, and conſequenty brittle, he adds ſalt, or aſhes; and if too ſoft, ſand; ſtill mixing them to a fit temper, which is only known by the working. *Neri*, Art of Glaſs, p. 240.

CONCLAMATIO, in antiquity, a ſhout raiſed by thoſe preſent at burning the dead, before they ſet fire to the funeral pile. See SHOUT, and BURIAL.

CONCOU, in botany, a name given by the people of Guinea to an herb which is in great eſteem with them for killing that troubleſome ſort of worm called the Guinea worm, which breeds in their fleſh. They bruiſe the leaves, and mixing them with oil, apply them in form of a cataplaſm. The leaves of this ſhrub ſomewhat reſemble thoſe of the caggow, but they are thicker and ſtiffer, and are not ſo full of veins. They are broadeſt within one third of the baſe, and from thence they go tapering to each end. They are placed on long footſtalks of a fine green throughout. Phil. Tranſ. N° 232.

CONCORDIA, in botany, a name uſed by ſome authors for agrimony. *Ger.* Emac. Ind. 2.

CONCRETE *juices*. See the article JUICES.

CONCURRING, or CONGRUENT *figures*, in geometry, ſuch as, being laid upon one another, do exactly correſpond to, and cover one another, and conſequently muſt be equal among themſelves. See CONGRUITY, *Cycl.*

CONDALUS, in antiquity, a kind of ring uſually worn by ſlaves.

CONDEMNATION (*Cycl.*) — CONDEMNATION *of prizes* taken from the enemy. See PRIZES.

CONDENSING *of wines*. See WINES.

CONDUCTOR (*Cycl.*) — *Conductors*, in military affairs, are aſſiſtants given to the commiſſary of the ſtores, to receive or deliver out ſtores to the army; to attend at the magazines by turns, when in garriſon; and to look after the ammunition waggons in the field. They bring their accounts every night to the commiſſary, and are immediately under his command.

CONE, in aſſaying. See MELTING-*cone*.

CONE-*ſtone*, in natural hiſtory, the name given by many to a ſpecies of tubulus marinus, not known to us in its recent ſtate, but frequently found foſſile in the Swediſh ſtones uſed in pavements. See TUBULUS *concameratus*.

CONEPATL, in zoology, the name of an American animal, very like the rackoon in ſhape, but variegated with two long ſtreaks of white, one on each ſide of the ridge of the back, which run even into the tail. It is a tame and harmleſs animal, but of a ſtinking ſmell, and when purſued, or provoked, will diſcharge its excrements at the perſon who offends it, to ſix or eight foot diſtance; theſe have a very ſad ſmell, and ſpoil peoples cloaths, by leaving indelible yellow ſpots on them. *Ray*'s Syn. Quad. p. 182. See the article YZQUIEPATL.

CONESSI, or CONESTI, in the materia medica, a bark brought from the Eaſt Indies. It is frequent in Ceylon, and Malabar, where the natives take it in diarrhœas, lienteries, and dyſenteries. We uſe it in powder for the ſame purpoſes, the doſe being from half a dram to a dram. It is proper to give a doſe of ipecacuanha before taking it.

This tree grows alſo on the Coromandel coaſt, in the Eaſt Indies, and is not unlike the cadagopala of the hortus Malabaricus. The *coneſſi-ſeca*, or bark of the ſmall young branches of the tree is ſaid to be a good medicine in diarrhœas. The bark of the ſmall young branches of the tree is to be choſen, and the moſs or ſcurf is to be ſcraped off; the bark is then made into an electuary, with ſyrup of oranges, and taken to the quantity of half a dram, or more, four times a day, for three or four days. It is to be oberved, that this bark ſhould be freſh powdered, and the electuary made every day, or every other day, otherwiſe it loſes its proper effect. Mr. Monro cured an obſtinate dyſentery of three years ſtanding with this medicine. See Med. Eſſ. Edinb. Vol. 3. Art. 4.

CONFECTIO *cardiaca*, a name given in the late London diſpenſatory to the ſo much eſteemed medicine, commonly known by the name of the *confectio Raleighana*, or Sir Walter Raleigh's cordial. The compoſition is alſo altered, as well as the name, and is ordered now to be made in the following manner: take freſh tops of roſemary, and juniper berries, of each a pound; the leſſer cardamum ſeeds, freed from their huſks, zedoary, and ſaffron, of each half a pound. Draw a tincture from theſe, with a gallon and half of proof ſpirit; reduce this tincture, when filtred, to the weight of about two pounds and an half, by a gentle evaporation; then finiſh the electuary by adding the following ſpecies finely powdered; viz. of compound powder of crab's claws, ſixteen ounces; cinnamon and nutmeg, of each two ounces; cloves, an ounce; double refined ſugar, two pound. *Pemberton*'s London Diſp. p. 338.

CONFECTIO *paulina*, a name given in the late London diſpenſatory, to the compoſition which uſed to be called *confectio archigenis*. It is now ordered to be made in the following manner: take coſtus or zedoary, cinnamon, long pepper, black pepper, ſtrained ſtorax, galbanum, opium, and Ruſſia caſtor, of each two ounces; of ſimple ſyrup, boiled to the conſiſtence of honey, an equal weight to thrice the ſpecies. *Pemberton*'s London Pharm. p. 339.

CONFERTA *folia*, among botaniſts. See LEAF.

CONFERVA. We find many of our pools and rivers in the ſummer months thick covered with the green *confervæ*; they are alſo frequently driven by the winds againſt the ſhores of our rivers, and cover the whole ſurface with a green mantle; this, with us, has never been found to be of any ill conſequence to animals; but there is a peculiar ſpecies of it in ſome parts of the world, that is undiſtinguiſhable from ours in appearance, but is poiſonous. Near a ſmall village, two German miles from Dantzick, weſtward, there is an inland water made by the joining of three rivulets, ſome ſmaller ſprings, and the rains and the ſnow water from the hills: it is about half a German mile long, and an eigthth of ſuch a mile broad. The ſoil of the bottom is ſand and clay, and the water does not ſtagnate, but delivers out two, or more, conſiderable ſtreams, and there are good fiſh in it. The water is alſo ſweet, and wholeſome to drink, but in the months of June, July, and Auguſt, it becomes covered with this green *conferva*, which renders it poiſonous and fatal to all the cattle that drink of it. Dogs, cows, and even fowls, drinking of it, certainly die; yet the water itſelf is not affected by it, for horſes that are rode in to drink beyond the reach of the green covering never come to any injury; ſo that it is the *conferva* itſelf, ſwallowed in ſubſtance, which deſtroys the animals. Phil. Tranſ. N° 83.

CONFERVA, in botany. See HAIR-*weed*.

CONFESSION, *confeſſio*, in rhetoric, the ſame with what is otherwiſe called *parhomology*. See PARHOMOLOGY.

CONFIGURATIONS *of ſalts*, a term uſed by ſome to expreſs the combinations of the particles of the ſalts of plants, and other ſubſtances, into certain figures, on the evaporating the water in which they had been diſſolved, ſo haſtily as not to admit of their ſhooting into their own regular cryſtals.

CONFUSED *viſion*, in optics. See VISION.

CONGE (*Cycl.*) — CONGE *d'accorder*, i. e. leave to accord, or agree, is uſed in the ſtatute of fines, anno 18. Edw. I. to the following purpoſe.--*When the original is delivered, in preſence of the parties before juſtices, a pleader ſhall ſay this: Sir, juſtice*, conge d'accorder;

and

and the juſtice ſhall ſay to him, What ſaith Sir R, and ſhall name one of the parties, &c.

CONGEABLE, from the French *congè*, (i. e. leave, licence, or permiſſion) ſignifies as much as lawful, or lawfully done, or done with leave and permiſſion; as, *then entry of the diſſeiſee is* congeable. *Littl.* Sect. 420.

CONGELATIONS *by artificial cold.* See ARTIFICIAL *freezing.*

CONGELATION *of wines.* See WINES.

CONGENERES *muſculi*, in anatomy, are ſuch muſcles in an animal body, as ſerve together to produce the ſame motion; and they are ſo called becauſe they aſſiſt one another in their action.

CONGER, in zoology, the name of the ſea eel, a very voracious and extremely large fiſh of the eel kind.

The name is derived from the Greek γογγρος, which is formed of a duplication of the adjective γραος, or γερος voracious, from γρω to devour.

It grows to an enormous ſize, four or five cubits being a common length with it, and its thickneſs that of a man's thigh. It is of a pale grey on the back, and a fine milk white on the belly, and has on each ſide a ſtrait white line, ſomewhat broad, made as it were of a double row of dots, and running from the head to the tail; the top of its back fin is black all the way; and in the end of his upper jaw, juſt at the noſe, he has two ſhort tubular horns, out of which a mucous liquor may be ſqueezed. Their fleſh is very agreeable, but is not eaſy of digeſtion. *Willughby*'s Hiſt. Piſc. p. 112.

CONGERIES, in rhetoric. See SYNATHROISMUS.

CONGESTIONES, in medicine. See STUFFINGS.

CONGITELLA, in antiquity, half a *congius*. *Pitiſc.* Lex. Ant. See CONGIUS, *Cycl.*

CONGO *money*, or Guinea money, a name given to a peculiar ſpecies of concha veneris, or porcelane ſhell, which paſſes by way of money among the natives of thoſe places. It is diſtinguiſhed from the other porcelanes by having a dentated mouth, and ſix gibbous protuberances on its ſurface.

CONGREGATIONALISTS, a branch of the independents, who agreeing with the preſbyterians in doctrine, do notwithſtanding reject all church government, beyond that of a ſingle congregation, under the direction of one paſtor. *Hofm.* Lex. in voc. *congregationales*. See INDEPENDENTS, *Cycl.*

CONICHTHYODONTES, in natural hiſtory, a name given by Dr. Hill to a genus of foſſile bodies, called by other authors plectronitæ, from their ſuppoſed reſemblance to the ſpur of a fighting cock. As this name carried with it, however, no idea of the nature and origin of the body, and as it appears very plainly that theſe are the teeth of fiſhes, though our preſent imperfect knowledge in the animal hiſtory is not able to aſcertain what ſpecies they belong to; it ſeems more rational to call them by a name which at once expreſſes their general origin, and their conic figure.

They are of ſeveral varieties of ſhape, but all of the ſame general form, which is an oblong conic figure, broad at the baſe, and narrower at the point: they are ſometimes perfectly ſtrait, but more uſually a little crooked; very often they not unaptly reſemble the beak of a bird, and ſometimes approach to the figure of the lamiodontes, and ſometimes to that of the belemnitæ, being, like thoſe bodies, hollowed at the root. Some of them terminate in a round, and perfectly ſmooth point; others are near the ſummit, ridged on each ſide with a prominent edge; and, in ſome, theſe ridges run all the way down the tooth; but this is very rare. Sometimes alſo they emulate a ſquared, or pyramidal figure; and ſome of them are very broad at the baſe, very ſhort, and rounded at the top, ſeeming as if they had had the points worn down by long uſe.

Their external ſurface is ſometimes ſmooth and gloſſy, as in the lamiodontes, but much more frequently they are ridged longitudinally, or from top to bottom, and that ſometimes with finer, ſometimes with deeper, or coarſer ſtriæ. They are all plainly of the ſame bony ſubſtance with the bufonitæ, or lycodontes, and ſometimes, though that happens but rarely, they are found with their roots. They are of various ſizes, from a tenth of an inch to two inches long, and are moſt uſually of a bright cheſnut colour, though ſometimes whitiſh, ſometimes blueiſh, and ſometimes quite black. They are found in ſome places in the ſtrata of clay, but more uſually in thoſe of ſtone; and ſeem more frequent in England, than in any other part of the world. *Hill*'s Hiſt. of Foſſ. p. 645.

CONIFERA *ſalicis facie*, in botany. See *ſilver* PINE *tree.*

CONIFERA *aïypi folio*, in botany. See *ſpurge-leav'd* PINE.

CONIRA, in botany, a name uſed by ſome authors for the myrrhis. *Ger.* Emac. Ind. 2.

CONISSALÆ, in natural hiſtory, the name of a claſs of foſſile bodies; the word is derived from the Greek κονισαλος, powder, all the ſpecies of bodies of this claſs being found like common ſand, in form of powder, have been uſually confounded together, under the common name of ſands. The *coniſſalæ* are defined to be ſtones of a differently debaſed, cryſtalline, or ſparry matter, but always found in form of ſmall and diſunited particles, great numbers of which being amaſſed together, form a kind of powder.

Of this claſs of bodies there are two diſtinct and large genera. 1. The ſands properly ſo called, which are compoſed of particles all appearing to have a tendency to the ſame regular figures, tranſparent, vitrifiable by a ſtrong fire, and not ſoluble in, or effervеſcing with acids. 2. The ſaburræ, or gritt of ſtone found looſe; theſe are found in form of powder, the particles of which, in general, have no tendency to any particular figure, but appear to be rudely broken fragments of larger maſſes. *Hill*'s Hiſt. of Foſſ. p. 543. See the articles ARENÆ and SABURRÆ.

CONISTERIUM, κονιστηριον, in antiquity, that part of the gymnaſium where the duſt was kept with which thoſe who had been anointed, were ſprinkled. It was alſo called κονιστρα. *Pett.* Archæol. Græc. l. 1. c. 8. T. 1. p. 38.

CONISTRA, κονιστρα. See CONISTERIUM.

CONJUGATE *point*, in geometry. See POINT.

CONNA, in botany, a name uſed by ſome authors for the tree which produces the caſſia fiſtula uſed in medicine. Hort. Malab. Vol. 1. p. 37.

CONNARUS, in the materia medica, a name given by ſome authors to a large ſpecies of jujube. *Ger.* Emac. Ind. 2.

CONNATA *folia*, among botaniſts. See LEAF.

CONNECTING *oil.* See OIL.

CONNOUGH *worm.* See WORM.

CONOPEUM, κωνωπειον, in antiquity, a ſort of net-work, made to keep away flies.

The word comes from κωνωψ, a fly.

CONSCRIBED is ſometimes uſed for circumſcribed. *Harris.* See CIRCUMSCRIBING, *Cycl.*

CONSECRATRIX, in botany, a name given by ſome authors to the common iris paluſtris, or yellow flag flower. *Ger.* Emac Ind. 2.

CONSENT, *(Cycl.)* in medicine. See SYMPATHY.

CONSEQUENTE, CONSEQUENZA, or *in* CONSEQUENZA, in the Italian muſic. A part of a fugue, or canon, is ſaid to be *in conſequenza*, when it follows the firſt part called the guide, imitating its motions, notes, and figures. *Broſſ.* Dict. Muſ. in voc.

CONSERVATOR *(Cycl.)* — CONSERVATOR *of the truce, and ſafe conducts*; *conſervator induciarum, & ſalvorum regis conductuum*, was an officer appointed in every ſea-port, under the king's letters patent. His charge was to enquire of all offences committed againſt the king's truce, and ſafe-conducts upon the main ſea, out of the franchiſes of the cinque-ports, as the admirals were wont to do, and ſuch other things as are declared anno 2 Hen. V. cap. 6. Touching this matter, ſee alſo Stat. 4. Hen. V. cap. 7.

CONSERVATORY, *(Cycl.)* is ſometimes uſed for a place to preſerve ſnow and ice. Phil. Tranſ. N° 8. p. 140. See SNOW and ICE.

CONSISTENTES, in church hiſtory, a kind of penitents who were allowed to aſſiſt at prayers, but could not be admitted to receive the ſacrament. See *Hofm.* Lex. in voc.

CONSOLIDATION *(Cycl.)* — Among the many inſtances of the *conſolidating* power of blood and raw fleſh, we have a very remarkable one in Bartholine's medical obſervations, which is, that a man being condemned to have his noſe cut off by the hand of the common executioner, the friends who were to be preſent, provided a warm loaf of new bread, which was cut in the middle, and the noſe received in it, as it fell from the face; the noſe was, after this, nicely placed on the face again, and being ſewed on, the whole, in time, *conſolidated*, and left no more marks of the ignominy than the ſcar round the whole noſe, and the marks of the ſtitches.

CONSONANCE *(Cycl.)* is ſometimes uſed to ſignify a ſound ariſing from ſeveral others ſounding together, whether agreeable, or diſagreeable to the ear. *Euler.* Tentam. Nov. Theor. Muſ. p. 57.

In this ſenſe *conſonance* may be divided into concord and diſcord. Id. p 62. §. 14. See CONCORD, and DISCORD, *Cycl.*

CONSONANTE, in the Italian muſic, is uſed to ſignify concords, or thoſe intervals which afford pleaſure, be they either perfect, as the fifth and eighth, or imperfect, as the third, ſixth, &c. *Broſſ.* Dict. Muſ. in voc. See OCTAVE, &c.

CONSPIRATIONE, a writ that lies againſt conſpirators. *Fitz.* Nat. Br. fol. 114. d. *Compton*, Juriſd. fol. 209. Regiſter, fol. 134.

CONSPIRATORS, according to the ſtatute, are thoſe that do confederate, or bind themſelves by oath, covenant, or other alliance, that every of them ſhall aid, and bear the other, falſely and maliciouſly, to indite, or cauſe to indite, or falſly to move, or maintain pleas: and all ſuch as cauſe children, within age, to appeal men of felony, whereby they are impriſoned, and ſore grieved: and ſuch as retain men in the country, with liberties, or fees, to maintain their malicious enterprizes: and this extendeth as well to the takers, as the givers. And ſtewards, and bailiffs, of great lords, which, by their ſeigniory, office, or power, undertake to bear, or maintain quarrels, pleas, or debates, that concern other parties than ſuch as touch the eſtate of their lords, or themſelves. Anno 33 Edw. I. Stat. 2. 2. Inſt. fol. 384 and 562.

CONSTANT *(Cycl.)* — CONSTANT *quantity*, in geometry, that which remains the ſame, while others increaſe or decreaſe. Thus, the ſemi-diameter of a circle is a *conſtant quantity*; for while the abſciſs and ſemi-ordinates increaſe, it remains the ſame.

CONSTAT *(Cycl.)* is held to be ſuperior to a *certificate*; becauſe this may err or fail in its contents, that cannot, as certifying

tifying nothing but what is evident upon record. Alſo the exemplification under the great ſeal of the inrolment of any letters patent, is called a *conſtat*. *Coke* on Littl. fol. 225. b. The difference between a *conſtat*, *inſpeximus*, and *vidimus*, is treated of at large in Page's caſe, *Coke*'s 5. report.

CONSTIPATION *(Cycl.)*— A *conſtipation*, or obſtinate coſtiveneſs, is thought by Dr. Stevenſon to be firſt or laſt owing to, or attended with, a kind of palſy of the inteſtines, and may ſometimes be cured by fomenting the belly with wine, in which aromatics have been boiled, and drinking a little of the ſame when the pulſe is ſlow, and the body cool. This diſorder, tho' of long continuance, and come to a dangerous height, has been cured by a cold pediluvium, and by placing the patient with his bare ſoles on a cold floor, and daſhing his feet, legs, and thighs, with cold water. See Medic. Eſſ. Edinb. Abrid. Vol. 1. p. 249, ſeq.

CONSTITUENT *parts*, in chemiſtry. The *conſtituent parts* of bodies are their diſſimilar parts, or principles, into which they may be reſolved, by the rules of that art. They are thus called in diſtinction from the integrant parts of bodies, which are parts of the ſame nature and properties with the bodies themſelves. Thus quickſilver, diſſolved by aqua fortis, may be ſeparated from the diluted menſtruum, by means of a copper plate, in its own form; this therefore was only divided into its integrant parts: but cinnabar reſolved by chemiſtry into ſulphur and mercury, is divided into its *conſtituent* parts, neither of theſe, nor any particle of them being cinnabar, or having its properties. *Shaw*'s Lectures, p. 15.

CONSTRICTOR, *(Cycl.)* in anatomy, a name given by Spigelius, and ſome others, to a muſcle now very well known by the name of the *ſphincter ani*.

CONSTRICTOR *cunni*, in anatomy, the name given by Albinus to a muſcle called by others the *ſphincter vaginæ*; by ſome the *orbicularis pudendi*, and the *inferior clitoridis muſculus*. See SPHINCTER.

CONSUALES *ludi*, among the Romans, the ſame with *Circenſes ludi*. See CIRCENSES *ludi*, *Cycl.*

CONSUL *(Cycl.)* — The right of convoking the ſenate in antient Rome, on all occaſions, belonged of courſe to the *conſuls*, as the ſupreme magiſtrates of the city [a], which, in their abſence, devolved regularly to the next magiſtrates in dignity, the prætors, and the tribunes [b]. — [a Vid. *A. Gell.* 14. 7. b *Cic.* Ep. Fam. X. 12. See TRIBUNE, *Cycl.* and *Suppl.*

CONSUMPTION. See PHTHISIS.

CONTAGION *(Cycl.)* — In times of peſtilential *contagion*, the phyſician, and others who attend upon the ſick, are in the moſt imminent danger of falling into the ſame condition; nor have any of the ſo much boaſted preſervatives againſt this been found of any conſequence; on the contrary, the very remedies, many of them at leaſt, which have been contrived on this occaſion, are very dangerous when lodged in imprudent hands, as well as uſeleſs and improper in all. The beſt methods of ſafety are firſt never to viſit a patient in any infectious diſorder when one is faſting, but ſome generous wine ought always to be drank firſt. Some are of opinion that it is proper to eat firſt a piece of bread and butter, ſoaked in vinegar, either ſimple, or with rue firſt ſtamped in it. When one is in the patient's apartment, great care is to be taken never to eat or drink there, nor to ſwallow one's ſpittle; and it is no idle cuſtom in thoſe who are continually in the infected room to chew zedoary, myrrh, angelica, cinnamon, or the like warm and aromatic drugs; for all theſe things promote a plentiful diſcharge of ſaliva from the mouth, which it is certain, when ſwallowed, cannot but often carry peſtilential particles down with it into the ſtomach, whence they will eaſily find their way into the blood. It may be added as a good rule, that we never ſtay too long in an infected room; for a conſtitution that could have reſiſted the *contagion* for a ſmall time, may eaſily be overpowered by too long a continuance in the way of it.

After one is returned home from a viſit of this kind, it is always proper to waſh one's hands and mouth with vinegar and water; to change cloths, hanging the former in the air, and then to drink ſome warm liquor, as tea of ſcordium, ſage, or other herbs of that kind, or, in their place, coffee; for this opens the pores, and if any ſmall quantity of the peſtilential virus ſhould have mixed itſelf with the blood, expels it by a gentle perſpiration. It may be alſo of great aſſiſtance to all about the ſick, for preventing them from being infected, to hold frequently ſponges dipt in vinegar to their noſes, and frequently to ſprinkle vinegar on a red hot iron, in the room, to correct and mend the air. *Heiſter*'s Surgery, p. 201.

CONTARA, in botany, a name given by ſome authors to the plant which produces the *faba Sancti Ignatii*, or St. Ignatius's bean. *Plukenet*, Mantiſſ. p. 60.

CONTARII, in antiquity, a kind of horſemen, whoſe chief armour was the *contus*, a kind of long ſpear.

CONTIGUITY, the relation of bodies touching one another. It differs from *continuity*, which is the immediate union of the parts which compoſe any natural body; ſo that it cannot be diſtinguiſhed where one begins, and the other ends.

CONTINENT *fevers*, a term uſed by medical writers to expreſs ſuch fevers as continue through their whole courſe exactly in the ſame tenor in which they begun, without the leaſt viſible intermiſſion: they are thus called in oppoſition to the continuous fevers, which, though they never regularly go off ſo as to have intermiſſions, yet have frequent remiſſions. Of the number of *continent fevers* are the *ephemera*, whether it be ſtrictly diary, or continues more days; alſo the *ſynocha*, which is called the *continent fever*, by way of eminence. *Junker*'s Conſp. Med. p. 252.

CONTINGENCY *of blood*, in the writers of the laws of Scotland, is uſed for proximity of blood. *Bayne*, Crim. Law. p. 48.

CONTINUAL *(Cycl.)*—CONTINUAL *proportionals*. When in a ſeries of quantities, the firſt is to the ſecond as the ſecond to the third, and the third to the fourth, and the fourth to the fifth, &c. they are called *continual proportionals*.

CONTINUATO, in the Italian muſic, is uſed to direct a ſinger, or player, to continue or hold on a ſound, in equal ſtrength or manner; or to continue a movement in an equal degree of time all the way. *Broſſ.* Dict. Muſ. in voc.

CONTINUED *(Cycl.)* — CONTINUED *zocle*, or *ſocle*, in architecture. See SOCLE, *Cycl.*

CONTINUITY *(Cycl.)* — An eminent mathematician has ſuppoſed what he calls a law of *continuity* to obtain in the univerſe, by which law every thing that is executed or done in nature, is done by infinitely ſmall degrees. He urges, that good ſenſe dictates this truth, *natura non operatur per ſaltum*, or that nothing can paſs from one extreme to another, without paſſing through all the intermediate degrees. *Bernoulli* Opera, Tom. 3. p. 9, ſeq.

This law ſeems ſubject to difficulties. Rigourouſly taken, it ſuppoſes actual, and yet infinitely ſmall changes, which ſome philoſophers cannot reliſh; and if we ſuppoſe changes only imperceptible to our ſenſes, but finite, the law of *continuity* is no leſs violated, than if the univerſe were to be ſuddenly deſtroyed, as M. Maupertuis juſtly obſerves. Mem. de l'Acad. de Berlin. Tom. 2. p. 284.

This law of *continuity* led Mr. Bernoulli to reject all hard-bodies, as chimeras, and naturally impoſſible. See HARD-*bodies*.

CONTINUO, in the Italian muſic, is ſometimes applied to *baſſo*, to ſignify the thorough baſs. Thus *baſſo continuo*, is the continual, or thorough baſs. It is ſometimes marked in muſic books by the letters B. C. *Graſſin*, Muſ. Dict. in voc.

CONTINUO is alſo uſed for a ſpecies of harmony mentioned by Julius Pollux, and which, ſays Zarlino, anſwers to the perpetual burden of our bag-pipes, which now and then muſt be harmonious. *Broſſ.* Dict. Muſ. p. 23. See DESCANTO.

CONTINUOUS *fevers*, a term uſed by the medical writers to expreſs ſuch fevers as have no intermiſſions, but have ſome ſort of regular remiſſions from the violence of their ſymptoms every day. They are thus called by way of diſtinction from the continent fevers, which never have the leaſt remiſſions.

Of the number of *continuous fevers*, are the *quotidiana continua*, and the catarrhal fevers, which are more violent every day toward evening, and are much more mild in the middle of the day. *Junker*'s Conſp. Med. p. 252.

CONTOPÆCTÆ, Κοντοπαικται, in antiquity, a ſort of artiſts who ſupported a pole on their foreheads ſo firmly, that boys could play, dance, and wreſtle together on it. *Hofm.* Lex. in voc. who quotes St. Chryſoſtom.

CONTOR, or CUNTOR, a bird of Peru, ſaid to be the largeſt in the world. With its wings expanded, it meaſures 16 feet from the tip of the one to the other; a ſingle feather of it is four feet two inches long; its beak is ſtrong enough to tear off the hide, and rip up the bowels of an ox. Two of them will attempt a bull, and devour him. Phil. Tranſ. N° 208. p. 61.

CONTRA *formam collationis*, was a writ that lay againſt an abbot, or his ſucceſſor for him, or his heir, who had given land to an abbey, for certain good uſes, and found a feoffment made thereon by the abbot, with aſſent of the tenants, to the diſinheriſon of the houſe and church. This was founded on the ſtatute of Weſtm. 2. c. 41. See Reg. of writs, fol. 238. and *Fitz.* Nat. Br. fol. 210.

CONTRA *formam Feoffamenti*, a writ that lies for the heir of a tenant, enfeoffed of certain lands, or tenements, by charter of feoffment of a lord, to make certain ſervices and ſuits to his court, and is afterwards diſtrained for more than is contained in the ſaid charter. Reg. of Writs, fol. 176. Old. Nat. Br. fol. 162.

CONTRARY *(Cycl.)* — CONTRATY *propoſitions*, in logic, univerſal propoſitions, one of which affirms, and the other denies, the ſame predicate of the ſame ſubject; as *every ſquare is a parallelogram*, and *no ſquare is a parallelogram*. Theſe propoſitions differ in quality, but not in quantity, and therefore are diſtinguiſhed from contradictory propoſitions, which differ in quantity and quality. See CONTRADICTORY, *Cycl.*

Contrary propoſitions cannot be both true, but may both be falſe: whereas, in contradictory propoſitions, one is neceſſarily true, and the other falſe.

CONTRARY *flexure*, or *flexion*. See POINT *of contrary flexure*.

CONTRE *queue d' hironde*, in fortification. See QUEUE *d' aronde*, *Cycl.* where *queue d' aronde* is corruptly written for *queue d' hironde*, or rather, *queue d' hirondelle*, which is French, and imports a ſwallow's tail.

CONTUS, in antiquity, a long ſpear, chiefly uſed by the horſe. *Pitiſc.* Lex. Ant. in voc.

CONTUSIONS *(Cycl.)* — When the ſmall veſſels, and fibres have been broken by a *contuſion*, the fluids that were contained in them will be forced out, and hence will proceed obſtructions, corruptions, inflammation, and ulcers, or even a gangrene, in proportion to the violence of the cauſe, and the nature of the affected part. When a bony part is the ſubject of a *contuſion*, the ſame miſchiefs will enſue from the injury inflicted on the periofteum, as happen to the pericranium in wounds of the head; and when the medullary juice of the bones is affected, very violent diſorders are to be expected, though the bone is not fractured. When *contuſions* happen on the joints, they uſually bring on violent pains and inflammations, convulſions, gangrenes, ſphacelus, rigidity of the limbs, and caries; and the ſame miſchiefs will indeed ſometimes happen from *contuſions* of the muſcular parts. When the internal parts are *contuſed* great miſchiefs uſually enſue; but theſe entirely depend upon the nature of the injured part: theſe are ſometimes inflammations, ruptures of the veſſels, varixes, aneuriſms, hæmorrhages, ſtagnation of the fluids, corruption, gangrene, and ſuppuration, and very often death, is the neceſſary attendant on theſe ſymptoms. When the head receives a conſiderable *contuſion*, the ſenſes are taken away, the limbs become either convulſed, or rigid, and death preſently follows. In *contuſions* of the thorax, a difficulty of breathing follows, with ſpitting of blood, fainting fits, inflammation, and ulcers of the lungs, and death. After *contuſions* of the abdomen we may expect vomitings of blood, inflammations, ſuppurations, or gangrenes of the viſcera, and at length death; but if any large internal veſſel is burſt by the blow, it is no wonder if the patient dies upon the ſpot, even though there be no mark of violence left upon the external parts. Laſtly, if the eye is *contuſed*, tumor and inflammation will ſucceed, and frequently loſs of ſight.

Theſe are the effects of violent *contuſions* on the different parts. In the cure of ſlight *contuſions* the principal care is to divide the inſpiſſated fluids, and prevent the parts from ſuppurating, or being affected by the gangrenes: this may be done by hot wine, ſpirit of wine, ſpirit of wine with camphor, or Hungary water; or by applying cold water, or vinegar mixed with ſalt, to the part; or by clapping a broad piece of money, or a plate of lead, upon the tumor, and faſtening it on with a very tight bandage: or linnen rags dipped in freſh warm urine ſhould be applied to the part. Theſe different methods ſucceed very well in tumors of the foreheads of children from falls, or any other ſlight *contuſion* in perſons of a tender make.

Larger *contuſions* are to be fomented with decoctions of the warm herbs, as ſcordium, ſavin, ſouthernwood, and ſuch like, either alone, or mixed with wine, or with ſalt water; great benefit alſo ariſes from the applying to the parts a ſpunge dip'd in a decoction of Venice ſoap made in freſh urine, or warm applications of lime water, ſpirit of wine camphorated, vinegar with litharge, and vinegar with carraway ſeeds boiled in it. But when the *contuſion* is ſo violent that it is apparently impoſſible to divide the ſtagnating fluids, and return them into circulation, and the parts are tending towards a gangrene, they muſt be ſcarify'd without delay, and by this means the ſtagnating fluids will be let out, and all danger of ſuppuration and gangrene prevented. After ſcarification warm fomentations are to be uſed, and the tumor ſhould be well rubbed with warm cloths before it is fomented, which will keep the blood in its fluid ſtate; or, if it is already concreted, will divide it, and make it fit to return to the veſſels, or, at leaſt, to eſcape thro' the pores of the ſkin. Into all theſe fomentations it is very proper to put wine, or ſpirit of wine, or elſe ſome other ſpirituous liquor; but if theſe are not to be had, ſalt water is to be uſed, which, if you are not near the ſea, may be had by adding a handful of ſalt to a quart of water: attenuating decoctions muſt alſo be taken inwardly, and bleeding, eſpecially in plethoric habits, is extremely neceſſary.

It ſometimes happens, when the *contuſed* parts lie very deep, or when the ſurgeon does not uſe the proper means, or the patient refuſes to ſubmit to proper treatment, that the ſtagnating fluids will corrupt and ſuppurate. When a ſuppuration on theſe occaſions is once begun, it muſt be carried on and forwarded by emollient cataplaſms, made of mallow, marſhmallow, and white-lilly roots, linſeed, fænugreek ſeed, pellitory, mercury, and other herbs of that kind, with crumbs of bread, and the emollient oils of lillies, chamomile, &c. Theſe muſt be laid on the part as hot as they can be born; and ſometimes it is neceſſary to add the warm herbs, ſuch as onions, &c. and the gums, as galbanum, ammoniacum, and the others of that kind. Sometimes, in ſmall *contuſions*, a plaiſter of diachylon with the gums, without any other application, will anſwer the purpoſe.

When the whiteneſs and ſoftneſs of the tumor evidently ſhew that the matter is formed, and fit to be diſcharged, the part is to be laid open with a knife, and, after the diſcharge of the matter, muſt be healed in the common way. Large *contuſions* are frequently attended with violent inflammations and gangrenes: in this caſe numerous and deep inciſions muſt be made on the part, and the wounds dreſſed with Venice treacle, ſoftened with ſpirit of wine with camphor, applying at the ſame time externally the warm fomentations. And when the parts are from very large and deſperate *contuſions*, abſolutely ſphacelated, the limb muſt be taken off in time. *Heiſter's* Surg. p. 92.

CONTUSIONS *of the cranium*. When the cranium is violently *contuſed*, it will be diſcovered by the tumor and ſoftneſs of the part, by the ſeparation of the integuments from the cranium, and by the collection of ſtagnating blood which appears to be confined under the ſkin. In this caſe you are to endeavour to divide the confined fluids, by attenuating medicines externally applied, or to diſcharge them by making an opening with a knife; or, laſtly, to bring them to ſuppuration. When the extravaſation of fluids is very conſiderable, it is beſt to diſcharge the greateſt part of them inſtantly by inciſions, and what remains will then eaſily be diſperſed. Fomentations, and medicated bags of the warm herbs, rue, wormwood, ſavin, ſcordium, &c. quilted into bags, and boiled in wine, or in water, with a mixture of ſpirit of wine, or malt or melaſſes ſpirit. But where it is found impracticable to divide and attenuate the ſtagnating fluids, the ſuppuration of them muſt be attempted; and if the *contuſion* have been but ſmall, after the ſuppuration is formed, and the matter diſcharged, the wound will eaſily heal, by the application of a vulnerary balſam.

In violent *contuſions*, when there is no opening, or but a very ſmall one, the wound muſt be enlarged with the knife, to prevent the neighbouring parts from being corroded; and by this means the wound will be eaſily cleaned, and the cure performed by the method before laid down. When the pericranium is wounded, but not in ſo great a degree as to lay the cranium bare, the wound is to be dreſſed with warm balſamic medicines. But where the cranium is expoſed and laid bare, its external lamella being robbed of its nouriſhment, by the deſtruction of the veſſels by which it was conſtantly ſupplied, it will loſe its natural colour, and become yellow, livid, black, and, by degrees, ſeparate from the neighbouring parts, and exfoliate, which will greatly protract the cure of the wound. To haſten this exfoliation, the ſurgeon ought to bore ſeveral holes thro' the denudated part, as deep as the diploe, with an awl, or ſuch like inſtrument. This operation not only forwards the exfoliation of the part, but makes way alſo for the ſprouting up of new veſſels. The dreſſing, which ought to be repeated each time with great expedition, is to be applied in the following manner: when the wound is well cleaned, pledgits thoroughly ſaturated with the mild balſamics, with the addition of a ſmall quantity of honey of roſes, are to be laid upon the injured part of the cranium; over theſe a ſticking plaiſter is to be applied; and over that, the proper bolſter and bandage. Theſe applications ſhould be continued till the cranium appears ſound, and the wound in a condition to heal. *Heiſter's* Surg. p. 84.

CONTUSIONS of the eye. See the article EYE.

CONVENTION, in our law books, is uſed when a parliament is called, which ſits and is diſſolved without any act paſſed, or judgment given. It is then ſaid not to be a ſeſſion of parliament, but a convention. 4 Inſt. 38. See *Raym.* 187. *Lev.* 442. 2 *Kebl.* 529.

CONVENTION *of Rouen*, the ſame with burſe of Rouen. See the article BURSE.

CONVERSOS *(Cycl.)*—The Jews here in England were formerly called *converſos*; viz. becauſe they were converted to the chriſtian religion. Henry III. built a houſe for them in London, and allowed them a competent proviſion or ſubſiſtence, for their lives; and this houſe was called *Domus converſorum*. 'Tis mentioned by our hiſtorians, Matt. Paris, and Matt. Weſtm. anno 1244. But by reaſon of the vaſt expences of the wars, and the increaſe of theſe converts, they became a burthen to the crown; and therefore they were placed in abbeys and monaſteries, for their ſupport and maintainance. But the Jews being afterwards baniſhed, Edward III. in the fifty-firſt year of his reign, gave this houſe for the keeping of the rolls; and it is the ſame which is at this time enjoyed by the maſter of the rolls.

CONVERTIBILITY *of ſpirits into one another*. See SPIRITS.

CONULUS, in natural hiſtory, the name of a genus of the echinodermata, of the general claſs of the fibulæ. Theſe are raiſed from a circular baſe into a taller and more pointed, or a ſhorter and more obtuſe cone. The echinitæ of this genus have been called by authors *ſcolopendritæ*, *pileæ*, and by ſome *bufonitæ*; and are generally known in Engliſh by the name of cap-ſtones. Of theſe there are four ſpecies: 1. The *albogalerus*, or white-hat ſtone, found foſſile in our chalk-pits. 2. The *globulus*. 3. The *nodus*, the ſeries of the lines of which are flexuous, and make the ſuperficies ſomewhat gibboſe. 4. The *bulla*, the orders of lines in which are ſtrait, and reſemble a button. *Klein's* Echinod.

CONVOLVULUS, *bindweed*, in botany, the name of a very large genus of plants, which ſome have alſo made much larger than it really is, by making every climbing plant belong to it.

The characters, however, of the *convolvulus*, properly ſo called, are theſe: they have flowers conſiſting only of one leaf each, formed into the ſhape of a bell, and uſually very wide at the mouth. From the cup of the flower ariſes a piſtil, fixed to the lower part of the flower, in the manner of a nail; this ripens into a roundiſh membranaceous fruit, which is uſually ſurrounded by the cup, and in ſome ſpecies is unicapſular, in others tricapſular, and contains ſeeds uſually of an angular figure. See Tab. 1. of Botany, Claſs 1.

The ſpecies of *convolvulus* are theſe: 1. The common great white *bindweed*. 2. The great purple-flowered kind. 3. The great *bindweed*, with variegated flowers. 4. The great ſea kind, with auriculated leaves. 5. The purple-flowered, arrow-headed leav'd kind. 6. The purple-flowered round-leav'd one. 7. The Indian white-flowered one. 8. The Indian, variegated, flowered kind, with white ſeeds. 9. The violet-leav'd purple one. 10. The yellow many-flowered one. 11. The round-leav'd, white, many-flowered one. 12. The hairy yellow flowered one, with a purple baſe. 13. The large ſea kind, with cordated leaves, and a large purple flower. 14. The large American kind, with very large leaves, and a great white flower. 15. The purging ſea kind, with a leaf like ſorrel, and a ſnow-white flower. 16. The purging ſea kind, with a roundiſh leaf, and a purple flower. 17. The Ceylon ſea kind, with a thick heart-faſhioned leaf. 18. The Italian ſea kind, with a ſinuated leaf. 19. The round-leav'd ſea kind, commonly, but improperly, called *ſoldanella*. 20. The ſmall roſe flowered field *bindweed*. 21. The ſmall field kind, with a purple flower with white rays. 22. The little white-flowered field kind. 23. The little field kind, with a white flower, and purple umbo. 24. The little field kind, with a white flower, ſtreaked with red. 25. The ſmall field kind, with auriculated leaves. 26. The ſmall branched kind. 27. The blue-flowered Portugal *bindweed*. 28. The ſmall African kind. 29. The dwarf African kind. 30. The ſmall *bindweed*, with very ſmall auriculated flowers. 31. The Syrian *bindweed*, called ſcammony. 32. The ſcammony-leav'd *bindweed*. 33. The long-rooted ſcammony *bindweed*. 34. The ſmall Syrian kind. 35. The upright kind, with toad-flax leaves. 36. The ſmaller kind, with toad-flax leaves. 37. The little creeping ſilvery *bindweed*, which has ſcarce any ſtalk. 38. The umbellated, erect, ſilvery *bindweed*, called by many authors *cneorum*, and *dorycnium*. 39. The creeping, umbellated, ſilvery *bindweed*, called by many *lichnis campanulæ flore*, the bell-flowered lichnis; and *campanula lichnidea* by John Bauhine. 40. The branched hoary kind, with leaves like thoſe of mouſe-ear, called by many *ceſſampelus ramoſus*. 41. The ſmall hairy American kind, with ciſtus leaves. 42. The blue-flowered creeping kind, with leaves like thoſe of moneywort. 43. The blue-flowered kind, with angular and ivy-like leaves. 44. The broad leaved, angular, ivy-leav'd kind, with blue flowers. 45. The hairy, ivy-leav'd, Indian *bindweed*. 46. The great alated Indian kind, with leaves like thoſe of marſhmallows, and whoſe root is the turbith of the ſhops. 47. The great American *bindweed*, called mechoacan. 48. The thick-rooted, ſeven-leav'd, American kind, with ſcarlet flowers. 49. The white-flowered, jagged-leav'd, ſea *bindweed* of America. 50. The great, many-leav'd, American *bindweed*, with a red flower, and red fruit. 51. The five-leav'd American kind, with ſmooth dentated leaves, and hairy tendrils. 52. The five-leav'd or ſix-leav'd hairy, great, American kind. 53. The ſmaller five or ſix-leav'd hairy *bindweed* of Ceylon. 54. The ſmooth kind, with multifid leaves. 55. The elegant foreign *bindweed*, with leaves like thoſe of betony. 56. The elegant ſilvery *bindweed*, with leaves very deeply cut. *Tourn.* Inſt. p. 84, 85.

CONVULSIONS. See SPASMS.

CONVULSIONS *of infants*. See INFANT.

CONYZA. See FLEA-*bane*.

COOMINGS, in ſhip-building. See COAMINGS.

COOPER, on board a ſhip, the perſon that looks to the caſks, and all other veſſels, for beer, water, or any other liquor. He has a mate under him.

COOT, in zoology. See FULICA.

COPE, (*Cycl.*) among miners, is ſixpence for every load of ore, nine diſhes making one load. *Houghton*'s Compl. Miner, in the Explan. of the Terms.

COPHOSIS, in medical writers, is uſed for deafneſs, whether beginning or perfect, from what cauſe ſoever.

The word is Greek, derived from κωφὸω, *ſurdus ſum*. *Blanc.*

COPIOUS *ſtile*, in rhetoric. See MACROLOGY and DICTION.

COPOS, in medical writers, is uſed for a wearineſs of the body, when the muſcles, or their fibres rather, are loaded and obſtructed with viſcous humours, ſo as to render them unfit for motion. *Blanc.*

COPPEL, (*Cycl.*) in metallurgy, is a veſſel of great uſe in the aſſaying of metals. It muſt be made of a matter that will contain melted metals, ſo long as they are in their true metallic ſtate, but will abſorb them, as well as all other bodies, when they are vitrified.

The matter of which *coppels* are to be made, muſt be choſen, therefore, ſuch as can reſiſt the ſtrongeſt fire, ſuch as will not run eaſily into glaſs with vitrifiable bodies, as glaſs of lead, &c. and ſuch as may be reduced into a well coherent, tho' porous maſs. The beſt earth for this purpoſe is found to be that which is made of calcined bones of all animals, a very few excepted, eſpecially ſwines bones; for a *coppel* made of the bones of this creature is found to receive ſomething metallic into it, at the ſame time that it abſorbs the glaſs. The beſt bones for this purpoſe are thoſe of calves, horſes, ſheep, and oxen; and of theſe, the ſmalleſt bones are always to be preferred, as they are the more eaſily calcined, eſpecially ſuch as have been long expoſed to the injuries of the air.

The calcination of theſe bones is to be made in an open fire, for a few hours or more, according to their ſize, and ſuch ſhould be choſen as have leaſt fat about them. The calcination is known to be perfect, when there is not a black ſpot remaining, either on the outſide of the bone, or within it, when broken. When the bones are perfectly calcined, they muſt be reduced to a very fine powder, either by grinding on a porphyry, or ſifting thro' a fine ſieve, after beating. This powder muſt be alſo carefully waſhed in warm water; for during the calcination, the bones become almoſt always impregnated with the ſalt of the aſhes of the fuel.

This powder is called by ſome *clar*, and is an excellent ſubſtance for *coppels*. The bones of fiſhes, when ſmall, are yet more eaſily calcined than thoſe of other animals: this may be done with eaſe in an open earthen veſſel, and the powder of theſe is preferable even to the former.

Parget, or plaiſter of Paris, made of various kinds of ſpar, tho' all kinds will not do for this purpoſe, is alſo excellent: but as there are ſome ſorts of ſpar which will not afford a proper plaiſter, it is proper to try in a ſmall quantity firſt. The calcination is to be made in an earthen veſſel, covered with a tile, in an open fire. The ſpar crackles a little with the heat, and when this noiſe is over, the calcination is perfect.

As the preparation of bone-aſhes for this uſe, however, is tedious, and the proper ſorts of ſpar not always or every where to be had, the want of them may be ſupplied with the aſhes of vegetables, properly prepared: but, leſt the *coppels* ſhould vitrify, by reaſon of the alkaline ſalt in theſe aſhes, the following method muſt be obſerved in their preparation:

Waſh off the lighteſt and fineſt part of the aſhes from hot wood embers, with warm water, thro' a ſieve, that the fineſt part of the aſhes may not fly away, nor any of the embers be mixed among them; pour upon this duſt pure boiling water, and ſtir it with a ſtick: when the aſhes have ſubſided, decant off the water, and pour on freſh boiling water, ſtirring all together, as before: when this has ſettled, decant it off again; and repeat this operation with freſh water every time, till the water have not the leaſt taſte of the ſalt, but is perfectly inſipid. When this laſt water is decanted off, add a freſh quantity; ſtir the aſhes thoroughly up, and after eight, ten, or twelve ſeconds, pour off the liquor, as yet thick with the aſhes, into a clean veſſel: part of the aſhes will now remain in the former veſſel; on theſe pour more water, ſtir them, and, after a ſhort reſt, pour off as before into the other veſſel. Repeat this, till in the firſt veſſel there remains only a little ſandy matter, or a few coarſer particles. Let the waſhed aſhes now ſtand, till the water is perfectly clear above them; then decant this carefully off, and you will find theſe aſhes now become a good earth for this uſe, and free from redundant ſalt and oil, and immutable by fire. Theſe, however, if made into a paſte, and rolled into ſmall balls, and burnt again in a potter's oven, and then waſhed anew, become purer and better ſtill.

Finally, put a ſmall quantity of the aſhes of beaſt or fiſh bones, into a very clean earthen veſſel, and calcine them a ſecond time, for a few hours, in a moſt violent fire; afterwards waſh them with water, and grind them to a perfectly fine powder on a porphyry, and keep this preparation, as alſo each of the others, ſeparate, for the more or leſs nice uſes. This laſt is the preparation properly called *clar*, or *claer*, by the German metallurgiſts.

The hollow of the *coppels*, which is to contain the metal, muſt be a ſpherical ſegment, and not very deep: firſt, that the ſurface of the melted maſs, be it ever ſo ſmall, be diſtinctly viſible to the artificer's eye; and, ſecondly, that the metal left in that cavity, may melt together into one globule. But the outſides of the *coppel* muſt be only a ſmall matter convergent towards the baſis, like a truncated cone, that it may ſtand firmly on its baſe: and that this figure may be regularly given to theſe veſſels, it is convenient to have copper or braſs moulds for the making them. See Tab. of Chemiſtry, N° 24.

Now to make *coppels* from theſe preparations, take bone-aſhes of beaſts or fiſhes, either alone, or take two parts of wood-aſhes to one part of theſe, and mix them perfectly in a marble mortar, or on a porphyry or levigating ſtone; then add to the mixture, by very ſmall quantities, juſt ſo much either of pure water, or of the whites of eggs diluted with water, as will be neceſſary to make the matter ſtick together, when ſtrongly preſſed between the fingers: and great caution muſt be uſed, not to exceed or fall ſhort of this exact proportion of the fluid. If you uſe the calcined ſpar, it muſt be made up with a ſolution of vitriol.

Put a ſufficient quantity of this matter, thus wetted, into a ſmall mortar, ſupported on a firm prop, and preſs down the matter cloſely with your fingers, that the capacity of the mortar may be quite full: lay the reſt aſide.

Then put the peſtle, made for a mould to make the *coppels*, perpendicularly on the ſurface of the matter in the mortar, and with a mallet drive it down with three or four blows, according to the different diameter of the *coppel* that is to be made: thus make the maſs conſiderably compact; but take great care that the peſtle do not rub againſt the ſides of the mortar. When this is done, remove the peſtle, and ſtrew the cavity it has made in the maſs with aſhes of dry bones of the preparation called claer, ground extremely fine, and ſifted thro' a fine ſieve: after this, wipe the peſtle with a clean cloth,

and

and put it into the cavity again, driving it in with one or two more blows. Then having at hand a ſmall wooden plank, ſtrewed a quarter of an inch thick with dry aſhes, put upon it the mortar, containing the *coppel* already prepared; the *coppel* will eaſily quit its mould, and its inequalities at the upper edge and bottom being taken evenly off with a knife, let it be inverted, and laid aſide in a dry place.

The dry fine aſhes are applied to the inſide of the *coppel*, that the little inequalities commonly remaining there may be filled, and it may make a ſort of fine ſieve, admitting thro' it vitrified bodies, but retaining gold and ſilver. The cavity being regularly covered with this perfectly fine ſubſtance, prevents any harm from the common matter of the *coppels* being a little defiled with ſand, or other powder, eaſy to be vitrified, which is a fault indeed hardly poſſible to be avoided, eſpecially when wood aſhes are uſed. Hence it is plain, that this powder muſt needs be prepared with very great caution, and even the levigating it muſt be done on a very hard ſtone, leſt, if on a ſoft one, ſome particles might perhaps be abraded from its ſurface, and ſpoil the powder.

Coppels had better be too compact than too looſe in their texture, ſince the latter is always a miſchievous accident, whereas the former, by abſorbing the glaſs more ſlowly, is of no other hurt than the retarding the operation a little.

Coppels made of bone aſhes, or of calcined ſpar, are more valuable than thoſe of wood aſhes, as they require not ſo much caution and regularity in the management of the fire; but if wood aſhes enter the compoſition, the *coppel* muſt be made pretty hot before the metal is put into it, otherwiſe the aqueous vapours, forcing their way out, will cauſe the metal to be thrown out in drops; for *coppels* of this kind can never be perfectly dried by the air alone, there being always ſomething of an alkaline ſalt yet remaining in wood aſhes, which makes them attract the water out of the air, as the dark colour of theſe aſhes, and the ſolution of ſal armoniac poured on them, alſo ſhew: for this reaſon, theſe aſhes are alſo more diſpoſed to vitrification than thoſe of bones, the latter approaching much nearer to the nature of the incombuſtible ſtones.

As to the moiſtening the matter of the *coppels*, great care muſt be taken not to uſe a fluid too mucilaginous and fat; for this makes the *coppels* ſo compact, that they not only either abſolutely reject vitrified bodies, which they are intended to receive, or yield them but a very ſlow or difficult paſſage; but alſo are apt to ſplit, when made very hot, and diveſted of their oily part.

Neither muſt ſuch mucilaginous fluids by any means be uſed, as may produce a great deal of fixed alkaline ſalt in the heating of the *coppel*, as the tartareous dregs of fermented bodies do. Nor muſt the aſhes be moiſtened too much; for if they are, the ſurface of the veſſel will never be perfectly neat.

Some artificers mix about a tenth part of fine waſhed clay to their aſhes, for the making their *coppels*: when this is done, the matter muſt be moiſtened with water only, the clay making the whole ſtick ſufficiently together. Great care, however, muſt be taken, that too much clay is not added, and the different degree of the fatneſs of the clay be attentively conſidered.

The aſhes of bones uſed alone, and ground to a ſufficient fineneſs, require no clay or mucilaginous fluid to increaſe their coheſion, but do very well with pure water alone: and *coppels* of this kind, and ſuch as are made of the calcined ſpars, need hardly be made at all hot before the metal is put into them.

The operation, however, when performed in a *coppel* made of bone aſhes, or of calcined ſpar alone, takes up a little more time, but it is more ſecurely performed than in *coppels* where wood aſhes make a part of the matter of them: for as theſe bone or ſpar veſſels receive the vitrified metal more ſlowly, on account of their compact ſtructure, ſo it is leſs to be feared that any of the perfect metal ſhould be abſorbed alſo, even tho' the management of the fire be not ſo critically minded. *Cramer*, Art. of Aſſ. p. 52 to 59.

COPELLING. Silver may be precipitated out of its ore by *copelling* alone, in the following manner: roaſt a centner of the ſilver ore in the common way; when roaſted, powder and ſift it very fine, and if it melts with difficulty, mix with it one centner of litharge: when it is an ore that melts eaſily, this may be omitted. Divide the powder into five or ſix parts, and wrap up every one of them ſeparately in ſmall pieces of paper. Put a large coppel under a muffle in the furnace; heat it thoroughly; then put into it ſixteen centners of lead. When the lead begins to ſmoak and boil, put upon it one of the ſmall parcels of powdered ore, in its paper; then diminiſh the fire a little. The paper will be immediately conſumed, and the ore caſt to the ſide of the coppel, in form of ſcoriæ. When this is done, increaſe the fire again, and add a ſecond parcel of the ore; and continue this method till all the ore is put in; after which, ſcorify the lead in a ſtronger fire. The ſilver contained in the ore, with that contained in the lead, will now be found in form of a bead in the coppel; and ſubtracting the known quantity yielded by the lead, the remainder of the weight gives the quantity of ſilver in that centner of ore.

Silver is not the only ore that can be thus worked; many others may be aſſayed in the ſame manner, by *coppelling* alone: thoſe are indeed to be excepted from this proceſs, which ſplit, or which corrode the coppels. *Cramer*'s Art of Aſſ. p 233.

COPPER *(Chal.)* — This metal, expoſed to the focus of a powerful burning glaſs, at firſt becomes white on the ſurface, after that it turns black, being covered with a black ſcale or ſkin, and after this it melts.

If it be taken away in the firſt ſtate, there is found no remarkable difference in it, and the whiteneſs of the ſurface very ſoon goes off again. It is not eaſy to ſay to what this white colour is owing, whether to an arſenical ſalt in the metal, or to the mere change of poſition in its parts; but the black that follows, is plainly occaſioned by an oily matter ſeparated from the reſt of the metal, which is the firſt thing that gets into fuſion, and is carried to the ſurface by the violence of the heat. If the *copper* is held longer in fuſion in the focus of the glaſs, it emits ſome light fumes, and by degrees diſſipates wholly away. If it be put into a coppel, and in that placed before the focus of the glaſs, it ſoon melts, and afterwards becomes fluid like oil. If it be taken away in this ſtate, it cools into a browniſh, red, reguline maſs, which is brittle, and not at all extenſible under the hammer. This may be rubbed to powder, and reſembles cinnabar in colour, and the grains of the powder being viewed by the microſcope, appear like ſo many rubies, very beautifully tranſparent, and of a fine red; ſo that it is eaſy to ſee, this regulus is truly a deep red glaſs. If this regulus or glaſs be mixed with common white glaſs in powder, and then melted, the alkali ſalts of the glaſs act upon the *copper*, and the glaſs produced by the mixture is blue or green.

This regulus is, properly ſpeaking, no other than *copper*, diveſted, by the ſolar fire, of that oily or ſulphurous principle which gave it the form of a metal, its malleability and other properties: and a clear proof of the truth of this is, that if this regulus of *copper* be again expoſed to the focus of the glaſs upon a piece of charcoal, it in a very little time imbibes the oil or ſulphur of the charcoal, and reaſſumes its metalline ſtate, and if taken away, and left to cool, is found to be as good *copper* as it was before the firſt experiment; as malleable, and as ductile as before. Any other calx of *copper* alſo may, by the ſame means, be reduced to the true metalline ſtate again. It follows, therefore, from the whole, that the baſis of *copper* is a red friable matter, ſuſceptible of vitrification; that this matter receives its metallic form from an oily, or ſulphureous principle; and that this oil does not appear to be any way different from the common oils of vegetable, and of animal ſubſtances; that *copper* may be deprived of this oil by holding it long in fuſion in the ſolar fire, and is then diveſted of its metallic form; but that if it be afterwards laid on a piece of charcoal, in the ſame heat, it receives from that charcoal an oil like that which it before had loſt, and becomes a metal again. Mem. Acad. Par. 1709.

Copper put into the fire with iron promotes its fuſion, but it becomes more rigid and more pale by the mixture. It is often neceſſary, to render this fuſion the eaſier, to add as much tartar and common glaſs, as will cover the ſurface of the whole maſs.

As to the other metals, *copper* is well known to mix readily with ſilver and gold, and to give them a rigidity which renders them much more fit for the uſes of life, than they would be in their natural ſoft ſtate.

Copper, when hid, as it frequently is, in an ore full of the matter of the pyrites, may be diſcovered by a ſolution and liquid precipitation, in the following manner: make a ſolution of vitriol out of the ore, by a ſlight roaſting in an open fire, and by expoſing it afterwards to an air ſomewhat moiſt, and pouring warm water upon it. Put into this ſolution ſmall iron plates, perfectly clean, and free from greaſe; if there is any ſmall quantity of *copper* in the pyrites, it will now ſtick to the iron plates, in form of a ſubtle powder, of a deep yellow colour, and all of it will be thus fetched out of the ſolution, if there be time enough, and a moderate warmth. *Cramer*'s Art of Aſſaying, p. 327.

When ſilver is contained in *copper*, it may be ſeparated in the following manner: Reduce the *copper* into filings; put one centner of this by for the operation; then put the double and ſextuple quantity of granulated lead into a large, well-baked copell; make the fire ſtrong, and continue it ſo till the lead begins to ſmoak and boil; then add the *copper* wrapped up in a paper, ſo that it may be immerſed together into the middle of the boiling lead. When all the *copper* is diſſolved, ſuppreſs the fire till there is a ſmoak ſeen wandering over the ſurface, and the maſs is not raiſed up very high in the middle, and the coppel looks brown as far as it has been penetrated by the litharge: take care, however, that the boiling of the lead does not entirely ceaſe. When the greateſt part of the metal is conſumed, encreaſe the fire gradually, and make it very ſtrong toward the end. When the operation is finiſhed, the ſilver will be found pure in the center of the coppel, ſurrounded with yellow ſcoriæ in form of cryſtals. *Cramer*'s Art of Aſſaying, p. 227.

Copper, in medicine, muſt not be given internally in any form, unleſs under the direction of a very cautious phyſician. Crude *copper*, like crude mercury, may be ſwallowed in great quantities with perfect ſafety; it is returned again unaltered, nature having furniſhed us with no menſtruum within our bodies, that is capable of acting on it. It is much otherwiſe with regard to its preparations, which are generally eſteemed poiſonous;

poiſonous; but this is carrying the terror of them too far. *Copper* in any form is a violent and inſtantaneous emetic. A ſingle grain of the common verdigreaſe is an immediate vomit, working as ſoon as ſwallowed; and therefore, in caſes of poiſon, juſt taken, where the firſt buſineſs is to throw it up again, nothing is ſo efficacious. We find that even foods, ſuffered to ſtand long in *copper* veſſels, acquire an emetic quality, which ſometimes has very bad effects. Milk, oil, and butter, are good antidotes in this caſe.

The preparations of *copper*, are, 1. *Flos æris*, or flowers of *copper*. 2. *Ærugo æris*, or verdigreaſe. 3. *Æs uſtum*, or burnt *copper*. 4. *Squamma æris*, or the flake of *copper*. 5. The *ens veneris* of Mr. Boyle. 6. *Aqua ſapphirina*, a famous eye-water, of a blue colour. See Æs, VERDIGREASE, &c.

COPPER *ore*. The method of procuring the metal from a pure and fuſible *copper ore* is this: mix one or two centners of the ore for an aſſay, beaten to a very fine powder with ſix centners of the black flux; put the powder into a crucible, and cover it half an inch high with common ſalt; preſs the whole down with the finger, but let the capacity of the veſſel be ſuch, that it may be only half full; ſhut the veſſel cloſe with a lute, and put it into the furnace. Increaſe the fire ſlowly, till the common ſalt crackles; then increaſe it ſo far that the veſſel may preſently be made red hot, and after about a quarter of an hour's ſtanding in this heat, the metal will be ſeparated: then take out the veſſel, and ſetting it on the floor, ſtrike with a few blows of a hammer near where it ſtands, to make the metal get together at the bottom. Break the veſſel, when grown cold, in two, from top to bottom, as nearly as you can, and you will find a ſolid, and malleable regulus at the bottom. *Cramer*'s Art of Aſſaying, p. 301.

COPPERAS (*Cycl.*) — The alum workers in Yorkſhire have an opinion that if their liquor ſtands beyond the uſual time in the pans, it will turn to *copperas*. The maſters of the works have inculcated this ſtory to make them diligent, and it is as firmly believed among them as if it were a real truth.

COPPERAS *ſtone*. See PYRITES.

COPPICES. See WOODS.

COPROCRITICA, medicines which purge away the excrements in the guts. *Blancard*.

COPROPHAGOS, the *dung-fly*, in natural hiſtory, the name given by many authors to the common yelloviſh fly found on human excrements. There are ſeveral other ſpecies found on the excrements of various animals, and thence called *merdivoræ*. See FLY.

COR (*Cycl.*) — COR *marinum*, in natural hiſtory, the name of one of the claſſes of the *echini marini*, the characters of which are, that the anus is placed in the ſide of that point of the ſhell which appears as if cut off; and the mouth has two lips, and is placed in the third region of the axis of the baſe. *Klein*'s Echin. p. 34.

COR *Veneris*, *Venus's heart*. a name given by authors who treat of ſhells, to a very elegant kind of the *cordiformis*, or heart-ſhell, which has more of the ſhape of a real heart than the *bucardium*, or any other ſhell of this genus. There are only three known ſpecies of the *cor Veneris*. 1. A denticulated one, with very elegant, roſe-coloured ſpots. 2. The white boat-ſhell, furrowed on the inſide. And, 3. The little, roſe-coloured kind. Theſe are all very elegant ſhells. See HEART-*ſhell*.

CORACIAS, in natural hiſtory, a name given by many writers to the *belemnites*, called by others *lapis Lyncurius*, and *dactylus Idæus*. See BELEMNITES.

CORACIAS, in zoology, a name uſed by Linnæus for the *pica* or *pye*. This bird makes, in that author's ſyſtem, a diſtinct genus; the characters of which are, that the inner tail feathers grow gradually one longer than another. See Tab. of Birds, N° 8. and *Linnæi* Syſtem. Natur. p. 44.

This bird is called by ſome the *pyrrhocorax*, and in Engliſh the *Corniſh chough*. It is of the ſhape of the jackdaw, but of the ſize of the common crow. Its beak is red, long, and ſomewhat hooked at the end. It frequents rocks, and ruined buildings about the ſea ſhores, and is found about the high cliffs, all along the weſtern ſhore of England. Its voice is much like that of the jackdaw, but is more hoarſe and rough. *Ray*'s Ornithol. p. 86.

CORACINUS, in zoology, the name of a ſea fiſh caught in the Mediterranean, and called by ſome authors *skiæna*, and by Aldrovand and Salvian *umbra*; it is of the colour of the common tench, but in figure more approaches to the pearch: its ſcales are ſmall; its mouth not very large, but well furniſhed with teeth; and its tail is not forked, but when extended, ſeems of a roundiſh figure; the ends of the rays or nerves of the tail-fin are black, and the other fins are all black, and ſeem as if dyed with ink. *Rondelet* de Piſc. l. 5. c. 8. p. 128.

CORACOBRACHIALIS (*Cycl.*) — This is a long muſcle, lying on the inſide of the upper half of the os humeri, that is, on that ſide which anſwers directly to the hemiſphere of the head of the bone, and to the prominent internal condyle. It is fixed above to the point of the *coracoide* apophyſis, between the inſertions of the biceps, and the pectoralis minor, by a tendon, which as it deſcends, adheres a good way to the tendons of theſe two muſcles; afterwards it becomes fleſhy, and is inſerted by a broad thin extremity, with a ſmall mixture of tendinous fibres in the middle part of the os humeri, cloſe by the ligamentary frænum of the latiſſimus dorſi, and teres major. Its inſertion is continued down below the frænum, near the internal intermuſcular ligament, to which it likewiſe adheres a little. This muſcle paſſes behind the tendon of the pectoralis major; and as it is perforated in the middle, to give paſſage to a nerve, it has by ſome been termed *perforatus Caſſerii*, that author being the firſt who gave a particular figure of it. Its other name is taken from its inſertions. *Winſlow*'s Anatomy, p. 184.

CORACOMANTES, Κορακομαντεις, in antiquity, a kind of diviners, who made their predictions by obſerving the crows. *Pott.* Arch. l. 2. c. 8. T. 1. p. 266.

CORACORADIALIS, in anatomy, a name given by ſome authors to a muſcle generally known by the name of the *biceps*; the *peſcetto* of the Italian authors; and the *primus flectentium cubitum*, of Veſalius, and others of his time.

CORAL, (*Cycl.*) *corallium*, in botany, the name of a genus of ſea plants, diſtinguiſhed from all others by a ſuperior hardneſs, approaching to that of ſtones. See Tab. 1. of Botany, Claſs 17.

The ſpecies of *coral* enumerated by Mr. Tournefort are theſe: 1. The common red *coral*. 2. The elegant, bright red *coral*. 3. The bright, light red *coral*. 4. The roſe-coloured *coral*. 5. The browniſh red *coral*. 6. The yelloviſh *coral*. 7. The variegated, red and white *coral*. 8. The plain white *coral*. 9. The white, geniculated *coral*. 10. The white fingered *coral*, with contiguous and flattiſh branches. 11. The brittle, white, many-fingered *coral*, with equal and contiguous branches. 12. The foliated, white *coral*. 13. The foliated, curled, violet-coloured, American *coral*. 14. The red, curled, American *coral*. *Tourn.* Inſt p. 572.

We hear ſome naturaliſts talk of blue, green, and yellow *corals*, and we are apt to deſpiſe ſuch accounts, as knowing that all the *corals* preſerved in the cabinets, and found in the works of artiſts in all nations, are either white or red. It ſeems, indeed, very certain, that there is no *coral* intrinſically of any other than one or the other of theſe colours, yet if the perſons who deſcribe theſe painted kinds have been at ſea, they may, in ſome places have ſeen what they deſcribe, though they would never be able to bring any ſuch thing home with them. All the *corals*, as they grow at the bottom of the ſea, are, as we ſee them, red or white, in their proper ſubſtance; but thoſe which grow in deep water are often covered completely over with a coat of a tough, gelatinous matter, reſembling glue. This is frequently coloured with thoſe elegant tinges which dye the bottom of the ſea in deep water; and they, in this ſtate appear, as taken up out of the water, to be blue, green, purple, and the like. Thus thoſe who ſay they have ſeen *corals* of theſe colours taken up out of the ſea, may be in the right, as to appearance; but this colour being only in the jelly that covers the plant, is not to be preſerved, but if this is rubbed off, the ſurface goes with it, and leaves the plant of its natural colour; and if the whole be attempted to be dryed together, the colour vaniſhes as the moiſture evaporates, and the plant, when dried, is found only covered with a dirty yelloviſh cruſt. *Marſigli*, Hiſt. Phyſ. de la Mer.

Red CORAL. The effects of vegetable diſtilled oils on *coral*, by the help of a long digeſtion, is ſuch as could not have been imagined, till the experiments of Dr. Langelot ſhewed that they were a ſort of ſolvent for that refractory ſubſtance. This gentleman had put fragments of *red coral* into ſome diſtilled vegetable oil, and let them ſtand many months, in hopes of drawing a tincture from them; but without ſucceſs. At length having a digeſting furnace at work, he placed the glaſs in which the *coral* and oil were, in the furnace among the other things; the conſequence was, that after about a month's digeſtion, the pieces of *coral* were found to be ſwelled, and higher coloured than before, and with a few days longer continuance of the ſame heat, the whole quantity of *coral* had loſt its original figure, and was blended together into a red mucilage, the oil ſtill ſwimming above it in its priſtine form, and not at all altered in colour: the moſt violent agitation of the veſſel could not cauſe theſe two ſubſtances to mix together, and all the artifice that could be uſed, proved vain toward the tinging the oil with a red colour. After long trial in the ſame, and an advanced heat, the oil was poured off as clear as before, and very little altered in ſmell, or other qualities; and tartariſed ſpirit of wine being poured on the remainder, with a very ſhort digeſtion took a very highly red tincture. This proceſs is a great proof of the power of digeſtion.

The common *red coral* yields, by diſtillation in a retort, a volatile vitreous ſpirit, in no inconſiderable quantity; this turns ſyrup of violets green, and makes an effervescence with acids, and renders a ſolution of corroſive ſublimate white and milky. And the fixed ſalt drawn from the reſiduum produces a white coagulum in the ſame ſolution; from which it is evident that it is not a mere alkali, but a ſal ſalſum, in ſome degree.

Red coral calcined, even in a very gentle fire, becomes white; the ſame change alſo happens to it when infuſed a long time in ſome oily ſubſtances, as the oils of aniſe, fennel, or in white wax kept in fuſion. The menſtrua in this caſe acquire a red colour in proportion as the *coral* loſes it. It appears from theſe, and ſeveral other experiments, that *coral* is not, as ſome ſuppoſe, a mere terreſtrial abſorbent, but that it contains a volatile urinous ſalt, and a bituminous oil combined with its earthy

earthy matter; and on theſe its virtues in medicine principally depend. The red colour of *coral* is evidently owing to its bituminous oil, which it is found not difficult to ſeparate, and wholly diveſt it of. It is obſerved, that *coral* newly taken up out of the ſea contains both the ſalt and oil in greater abundance than that which has been long kept; and it is ſuſpected by many, that its external or cortical ſubſtance contains more of it than the interior, harder, and more ſtony matter.

The antients uſed *coral* in many external medicines for diſtemperatures of the eyes; and internally as an aſtringent, and refrigerating medicine. We uſe it only internally, and that principally in diarrhœas, and bleedings, in too great evacuations of the menſes, and in the fluor albus. The vulgar attribute to it, beſide theſe virtues, many others, which we have not ſufficient warrant for; ſuch as its ſtrengthening the heart, curing malignant fevers, and reſiſting poiſon; and they tell us, that it will do all this as well if worn externally, as if taken inwardly; which may very poſſibly be true. *Geoffroy*, Mat. Med. Vol. 2. p. 254.

White CORAL. There is no part of the world where *white coral* is produced in ſuch abundance as on the ſhores of the iſland of Ceylon, and other of the neighbouring Indian coaſts. The lime uſed in that part of the world, for building houſes, fortifications, &c. is all made by burning this *coral*. It lies in vaſt banks which are uncovered at low water, and it is ſpungy and porous. While young, it grows erect, in form of little ſhrubs, and is then firm and ſolid, and ſmooth on the ſurface, but the branches continually ſhoot out more, and theſe other new ones, till the whole is one confuſed buſh. Theſe branches are all covered with a white viſcous matter, which, in time, hardens upon them, and becomes *coral*; and this filling up all the interſtices between the branches, when they become ſo numerous, and hardening between and over them, the whole becomes one coarſe rock, and the adjoining maſſes of this kind uniting to one another, form at laſt a continued bank, which has the appearance of a great white rock. In the places where the *coral* grows in this manner, there are like banks formed of oyſter ſhells; the oyſters here grow often to a foot in diameter, and a foot in thickneſs, and, it is ſaid, that they continue to increaſe in bulk after the animal is dead. Phil. Tranſ. N° 282. p. 1277.

Foſſile CORAL. It has been matter of ſurprize to naturaliſts, that as red *coral* is ſo common in the ſea, and is a ſubſtance of ſo firm and durable a nature, it is not frequently found among other remains of the ſea productions in the foſſile ſtate. We find the tendereſt ſhells, the teeth and bones of ſea fiſhes, and the white *corals*, in great abundance in the ſtrata of earth and ſtone; yet there is ſcarce one certain account of red *coral* being found foſſile. This had long puzzled the naturaliſts, when Agoſtino Scilla attempted to account for it by ſome ſpecimens in his own cuſtody. This gentleman, living at Meſſina, had an opportunity of ſearching the quarries in the neighbourhood of thoſe ſeas, where red *coral* grows in abundance, and whither it might moſt eaſily be carried by any inundation. Accordingly he found, among a vaſt quantity of white *coral*, ſome ſpecimens, which doubtleſs had once been red, and theſe, though they had, in a great meaſure, loſt their colour on the outſide, yet they retained ſo much of it within, as plainly ſhewed that they had once been red; and the whole truth ſeems to conſiſt in this, that though the ſubſtance of the *coral* is permanent, the colour is not ſo; and that we, perhaps, often meet with red *coral* which we know not to be ſuch, becauſe of the changes it has ſuffered in the earth. This is a ſtrong argument againſt the opinion of thoſe who ſuppoſe that the foſſile *corals* and ſhells were never truly marine bodies, but produced in the beds of ſtone, &c. in which they are found; ſince it ſeems very clear, from the loſs of the colour of theſe foſſile red *corals*, that they are in an altered ſtate, and in part decaying; and that the places where we find them contribute to their deſtruction, not to their generation. *Auguſtin. Scilla* de Petrifac.

That theſe have once been marine *corals* is alſo evident from many other things; they are not unfrequently found with the fragments of ſea ſhells yet adhering to them, ſuch as the *tubuli vermiculares*, and other ſuch ſhells as we continually find growing to them, as they grow in the ſea: and about Meſſina, where the foſſile *corals* are found embodied in looſe maſſes of ſtone, not in ſtrata, it is a very common thing to find the parts of the ſame piece of *coral* buried in two, or more of theſe maſſes of ſtone, it having been broken there, and part retained in one ſtone, part in another; the two ſtones thus containing the two parts of a piece of *coral* are frequently found at conſiderable diſtances from one another, yet, when they are brought together, the broken pieces are found to tally exactly with one another. Can this be ſuppoſed the caſe, if they were each produced ſeparately in the ſtone, from its own peculiar ſeminal principle.

Beſide the great variety of *corals* found in their natural ſtate, in the ſea, we find great numbers buried in the earth, and immerſed even in the bodies of ſolid ſtones, and marble: of theſe many are the ſame with the ſpecies now known to us at ſea, and many differ from all the known recent ones. The foſſile *corals* are found ſometimes nearly in their own natural ſtate, but much more frequently they have their pores filled up with ſtony particles, ſo as to ſeem mere ſtones. Thoſe which are not reducible to any of the known recent ſpecies, are probably the produce of ſeas and ſhores yet unſearched; but it is very remarkable, that the common red *coral*, though ſo frequent at ſea, is ſo ſcarce in the foſſile world, that there is hardly one credible account of its having ever been met with.

The ſeveral white *corals*, known as marine productions, are almoſt all of them found alſo foſſile in ſome part of the world; and, of the ſeveral which are leſs known, many have been honoured in their foſſile ſtate with peculiar names. *Hill*'s Hiſt. of Foſſ. p. 641. See the articles MYCETITÆ, PORPITÆ, TUBULARIA, PERUS, ASTROITES, LITHOPHYTA, *marine* PRODUCTIONS, &c.

CORALLINA, *coralline*, in botany, the name of a genus of ſea plants, the characters of which are, that they grow naturally under water, and are finely divided, or compoſed of parts jointed into one another by regular articulations, and terminating in very fine and ſmall branches. See Tab. 1. of Botany, Claſs 17. The ſpecies of *coralline* enumerated by Mr. Tournefort are theſe: 1. The common *coralline*. 2. The thick, brittle, hollow *coralline*. 3. The ſlenderer, brittle, hollow *coralline*. 4. The purple, jointed *coralline*. 5. The hollow *coralline* of Jamaica, with ſhort white joints, ſeeming as if ſtrung on threads. 6. The ſoft, geniculated, American *coralline*, with flat compreſſed ſegments. 7. The ſmalleſt, Engliſh, geniculated *coralline*. 8. The knotty *coralline*, reſembling the ſea dier's weed, with tubular ſegments. 9. The ſeeding ſea *coralline*, with capillaceous leaves. 10. The procumbent, denticulated, moſſy *coralline*, with very ſlender ſtalks, and oppoſite jaggs. 11. The alternately denticulated, moſſy *coralline*, with branches divided into numerous thin filaments. 12. The moſſy *coralline*, with oppoſite denticulations. 13. The moſſy, feathered *coralline*, with hooked branches, commonly called the ſickle-feathered ſea moſs. 14. The feathered, ſcrupoſe *coralline*, with thick, rigid ſtalks. 15. The lobſter's horn *coralline*. 16. The ſmall, fir-like, ſea *coralline*. 17. The narrow-leaved, purple *coralline*. 18. The duſky green, Spaniſh *coralline*, with capillaceous leaves, and a ſpungy ſtalk. 19. The Spaniſh *coralline*, with brown, capillaceous leaves. 20. The white, ſea *coralline*, with capillaceous, multifid leaves. 21. The capillaceous *coralline*, with black, multifid leaves. 22. The capillaceous *coralline*, with green, multifid leaves. 23. The ſmalleſt, knitty, ſea *coralline*. 24. The very much branched, red, capillaceous *coralline*. 25. The very much branched, white, capillaceous *coralline*. 26. The gold-coloured, capillaceous *coralline*, with forked leaves. 27. The pale-coloured, capillaceous, tough *coralline*. 28. The ſea *coralline*, reſembling the tuberoſe roots of trees. 29. The dodder-like, ſea *coralline*. 30. The ſea *coralline*, with long, fennel-like, leaves. 31. The ſea *coralline*, with ſhorter, fennel-like leaves. 32. The abrotanum-leaved *coralline*. 33. The ſhrubby and knotty, ſouthernwood-leaved *coralline*. 34. The ſmalleſt *coralline*, divided into extremely ſmall, ſhort branches. 35. The capillaceous ſea *coralline*, with the appearance of the coſtus Indicus. 36. The ſilvery, capillaceous *coralline*.

It is to be obſerved, that Mr. Tournefort brings into the claſs of *corallines*, all thoſe ſea plants which terminate in finely divided branches; and therefore takes in many of thoſe plants which others called the fine-leaved fucus's, retaining the name *coralline* only to the ſcrupoſe or jointed kinds.

The antients have ſaid great things of the virtues of the common *coralline*. Dioſcorides preſcribes it for mitigating the pain of the gout, and for preventing ſtagnations of the humours in any part; he ſays nothing of its virtues againſt worms, which are what we alone eſteem it for. We give it in powder from ten grains to a ſcruple, or half a dram twice a day in theſe caſes, and that with conſiderable good effect. *Geoffroy*, Mat. Med. Vol. 2. p. 238.

CORALLO-ACHATES, in the natural hiſtory of the antients, the name of a very beautiful ſpecies of agate, found at this time in the Eaſt-Indies, but not in any plenty, and called by Dr. Hill *achates miniaceus flavo variegatus*, or the red lead coloured agate, variegated with yellow. Its baſis, or ground colour, is a pale, but very bright red, in which there are diſcovered, on a cloſe inſpection, in moſt of the pieces, multitudes of veins of a darker red, drawn in very fine and cloſe concentric circles, round one or more points, the whole giving a mixt red, not unlike that of our red lead, or that of the common red coral in its rough ſtate, when firſt drawn out of the ſea. It is always variegated alſo with a number of ſmall and beautiful blotches of a fair yellow, which are ranged with great irregularity in the maſs, but never interſect, or are interſected, by the veins; they are all ſmall, and either round or oblong. It is very hard, and capable of a fine poliſh, and, when wrought, is an extremely elegant ſtone. *Hill*'s Hiſt. of Foſſ. p. 484.

CORALLODENDRON, *coral-wood*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the papilionaceous kind, but of a very ſingular make;

its vexillum is remarkably long, and of the ſhape of a ſword; its alæ and carina ſhort; from the cup of the flower there ariſes a cylindric piſtil, ſurrounded by a fimbriated membrane, which finally becomes a ſort of knotty pod, compoſed of two valves, and containing a number of kidney-ſhaped ſeeds.

The ſpecies of *corallodendron* enumerated by Mr. Tournefort, are theſe: 1. The prickly, trifoliate, American *corallodendron*, with bright red flowers. 2. The ſmaller, American trifoliate *corallodendron*, with black ſpines, and black ſeeds. 3. The aſh-leaved, American *corallodendron*. 4. The American *corallodendron*, with ſingle oblong leaves, and with flat pods. 5. The American *corallodendron*, with leaves like the pſeudo-acacia, hoary underneath, and with yellow flowers. *Tourn.* Inſt. p. 661.

CORALLOFUNGUS, in botany, the name by which Vaillant has called the *clavaria*, a genus of fungus, growing erect, and having every where one even and uniform ſubſtance. This is called *fungoides* by others. See CLAVARIA.

CORALLOIDE *marble.* See *coralloide* MARBLE.

CORALLOIDES, in botany, a term uſed by Mr. Tournefort to expreſs a genus of muſhrooms; the diſtinguiſhing characters of which are, that they are of a fleſhy fungoſe texture, and are branched in the manner of coral. See Tab. 2. of Botany, N° 5. The ſpecies of *coralloides* enumerated by Mr. Tournefort, are theſe: 1. The yellow fungous *coralloides*. 2. The white fungous *coralloides*. 3. The pale purple fungous *coralloides*. 4. The tall white fungous fir *coralloides*. 5. The violet-coloured fungous *coralloides*, with ſhort horns. 6. The purple Alpine fungous *coralloides*. 7. The ſmall, duſky yellow, fungous *coralloides*. 8. The ſmall, yellow, branched, fungous *coralloides*. 9. The ſmall branched, orange-coloured, fungous *coralloides*. 10. The white, fingered, branched, fungous *coralloides*. 11. The black, compreſſed, fungous *coralloides*, with white edges. 12. The ſmall, broad-horned, Virginian, fungous *coralloides*. 13. The echinated fungous *coralloides*. 14. The briſtly fungous *coralloides*. 15. The ſtag's horn fungous *coralloides*, with ſhort branches. 16. The ſtag's horn fungous *coralloides*. 17. The fungous *coralloides*, with ſnow-white horns. 18. The fungous *coralloides*, with reddiſh horns. 19. The fungous *coralloides*, reſembling the horns of the fallow deer. *Tourn.* Inſt. p. 564.

CORALLOIDES is alſo uſed in a different ſenſe. Bauhine and Chabræus have made it the name of the great *dentaria heptaphyllos*; and Dillenius, that of a whole genus of the dry leafleſs moſſes. *Dale*, Pharm. p. 200. See HEATH-*moſs*.

CORALLOIDES is alſo a name given by many authors to the foſſile corals. See *foſſile* CORALS.

CORALLORHIZA, in botany, a name given by Ruppius to the plant called by Linnæus *neottia*, and by others *nidus avis*.

CORALLUM, in mineralogy, a name given by ſome of the writers on theſe ſubjects to the common *pyrites*. It is not eaſy to gueſs the reaſon of giving the ſame name to two ſuch different ſubſtances as *coral* and *pyrites*.

CORAN. See ALCORAN.

CORANA, or *nai* CORANA, the name of a peculiar ſort of phaſeolus, or kidney-bean, the down of the pod of which is the couhage, or, as it is commonly called, cowitch. Hort. Mal. Vol. 3. p. 199.

CORAX *piſcis*, the *crow-fiſh*, in zoology, the name of a fiſh of the cuculus kind, and much approaching to the ſwallow fiſh in ſhape and figure. The bones which cover the gills in this fiſh, all terminate in ſharp thorns. The gill-fins are ſmaller than in the ſwallow-fiſh, and are white on the outſide, and of a blackiſh green within. The back is of a bluiſh black; the ſides reddiſh, and the belly milk white. The head is very large; and there are two rows of pointed bony ſubſtances on the back. The forehead, between the eyes, is marked with ſeveral figures; and the mouth is of a pale yellow, much leſs coloured than that of the milvus. *Geſner*, de Piſc. p. 356. See MILVUS *piſcis*.

CORBEIL, in natural hiſtory, the name of a curious ſpecies of *chama*. It is of the larger kind, and is deeply ſtriated, both longitudinally and tranſverſely; ſo that it has a ſort of reticulated ſurface, like baſket-work. See CHAMA.

CORBETT, in architecture, is uſed by ſome, as Harris, in his lexicon, for *corbel*. See CORBEL, *Cycl.*

CORCELET, in natural hiſtory, that part of the fly claſs which is analogous in its ſituation to the breaſt in other animals. Many have called it the breaſt in theſe alſo, but improperly; becauſe the breaſt of other animals is the place of the lungs and trachea; but theſe organs are in the fly claſs diſtributed thro' the whole body. The wings are affixed to this part of the fly claſs: and there are ſome diſtinctions of great conſequence, in regard to the arrangement and diſtribution of thoſe animals into genera. *Reaumur*'s Hiſt. Inſect. T. 4. p. 126.

Some flies have a double *corcelet*, or one divided into two parts; and this is the caſe of the fly produced from the formica-leo, which therefore does not carry its only diſtinction in the figure of its antennæ. One pair of the legs of this fly are attached to the firſt or anterior *corcelet*, which is alſo capable of moving on the other.

The *corcelets* of ſome flies is much more elevated alſo than thoſe of others; and in ſome this elevation is carried ſo far, that the head is forced by it to be bent downward, and the creature is plainly made hump-backed by it. The great kind, and the *tipulæ*, furniſh inſtances of this elevated and humped *corcelet*.

A ſeries of flies of two wings, are known by a very particular armament which they carry on the *corcelet*, uſually called their breaſt. This is two long, ſlender, and ſharp pointed prickles, which are immoveable in their inſertions, and ſeem meant as defenſive or offenſive weapons; but in what manner they are uſed, is not eaſily to be determined.

All theſe flies are produced from long water-worms, with open and funnel-faſhioned tails, or furniſhed with their aperture for reſpiration at the hinder extremity. Theſe tails are bordered with hairs, which the creature makes to diverge from their inſertion, and form a ſort of funnel at the ſurface of the water, when it throws up its tail for air.

There are three known ſpecies of this ſort of fly, with armed *corcelets*, which differ much in ſize, but are all produced of worms of this kind. The largeſt of theſe flies is produced from the largeſt and longeſt worm, and are ſomething longer than the bee. The ſmalleſt are produced of worms very ſmall and ſlender, and are themſelves extremely minute: and the third kind is of a middle ſize between theſe, and produced of a proportionably ſmaller worm than that of the firſt, and proportionably larger than that of the ſecond ſpecies.

All theſe ſpecies have their wings but little diſtinguiſhable at their firſt production from the ſhell; they appear, indeed, only like two ſlender filaments, laid along their bodies, but they ſoon ſhew, that in this ſtate they were only very nicely folded together, and very ſoon expand, and ſhew their full extent and proportion.

When firſt produceed from the ſhell, theſe flies are of a pale green, and the under part of their belly, in many, continues green, but in the greater number it becomes of a pale dead brown. Some of them have the outſide of their bodies of a deep brown, approaching to black, with lines of a dead brown between the commiſſures of the rings. The back of ſome others has only a blackiſh brown band, which runs ſtrait down from the *corcelet* to the end of the body, the whole body beſide being of a dead brown. The *corcelet* in theſe flies is brown, and the prickles are yellowiſh near their inſertions, but nearly black at their points. They have three of the ſmall gloſſy eyes, diſpoſed in figure of a triangle on the back part of their head; and their reticular eyes are brown, and at ſome diſtance from one another. *Reaumur*, Hiſt. Inſect. Vol. 4. p. 346, 347.

CORCULUS, the *little heart*, in natural hiſtory, a name given by authors to a ſmall ſpecies of cordiformis, or heart ſhell, of a roſe colour. See HEART-*ſhell*.

CORD (*Cycl.*) — *Magical* CORD, an inſtrument in great uſe among the Laplanders, and ſuppoſed to be of great virtues among them. It is a *cord* or rope, with three knots tied in it. They uſe many magical rites and ceremonies in the preparing and tying this *cord*; and when thus prepared, it is ſuppoſed to have power over the winds, and they will ſell, by means of it, a good wind, or at leaſt a promiſe of one, to a ſhip. If they untie only one of theſe knots, a moderate gale ſucceeds; if two, it is much ſtronger; and if three, then there is ſure to be a ſtorm.

CORDATED *leaf*, among botaniſts. See LEAF.

CORDAX, in antiquity, a gay ſort of dance. See DANCE, *Cycl.*

CORDIA, in botany, the name by which Linnæus and Plumier have called a genus of plants, called *ſebeſtena* by Dillenius in his Hortus elthamenſis. The characters are theſe: the cup is a one-leav'd perianthium, divided into three pointed ſegments, from a tubular baſe, and remaining after the flower is fallen. The flower conſiſts of one leaf, which is of the funnel faſhioned kind: its tube is of the length of the cup: the verge is partly erect, but expanded, and is divided into four, five, or ſix obtuſe ſegments. The ſtamina are pointed filaments of the length of the tube, and of the ſame number with the ſegments of the flower. The apices are ſimple: the germen of the piſtillum is round, and pointed at the end: the ſtile is pointed, and of the length of the tube of the flower, and divided into two parts at the end. Theſe ſegments are again bifid, and the ſtigmata that terminate them are of an obtuſe figure. The fruit is a drupe of the dry kind, and is of a globoſe pointed form, and covered with the cup. The ſeed is a ſingle nut, furrowed on the ſides, and divided into two ſegments. *Dill.* Elth. 226. *Linnæi* Gen. Plant. p. 520.

CORDIAL *waters*. See STRONG *waters*.

CORDIFORMES *conchæ*. See HEART-*ſhells*.

CORDYLA, or CORDYLUS, in zoology, a name by which ſome authors call the *thynnus* or tunny-fiſh, while young and ſmall. *Willughby*'s Hiſt. Piſc. p. 177. See the article THYNNUS.

CORDYLINE, in botany, a name given by Van Royen to the plant called by others the *yucca*. See the article YUCCA.

CORDYLUS, in zoology, the name of a ſpecies of lizard, called alſo *uromaſtyx* and *cauriverba*. It is larger than the green lizard. Its tail is rounded, and is divided into a number of circles covered with ſcales, which coat them over, and cover the whole tail like the tiling of the roof of a houſe. *Ray*'s Syn. Quad. p. 263.

CORDYLUS, in ichthyology. See CORDYLA.

COREGONUS, in ichthyology, the name of a genus of fishes of the malacopterygious, or soft-finned kind, the characters of which are these: the branchiostege membrane on each side contains seven, eight, nine or ten bones. The pinna dorsi is placed nearer the snout than the ventral fins are. The teeth are so small, that in several of the species they are scarce discernable.

The species of this genus, enumerated by Artedi, are these: 1. The toothless *coregonus*, with the lower jaw longer than the upper. This is the fish called by the Swedes the *sik-loya*, or stint. Its length is from four to seven inches. The vertebræ are very small, and in number thirty eight. 2. The *coregonus*, with the upper jaw longer than the under, and flatted, and with fourteen bones in the back-fin. This is the fish called the *albula nobilis* by authors. Its length is ten or twelve inches. 3. The *coregonus*, with the upper jaw longest, and with twenty three bones in the back-fin. This is the *thymallus* of authors; the fish we call the grayling. 4. The *coregonus*, with the upper jaw longest, and of a conic figure. This is the *oxyrynchus* of authors, or the *hantin* or *antin*. It has no visible teeth; but the tongue is rough. The pinna ani has fourteen bones. *Artedi*, Gen. Pisc. 7.

The name *coregonus* is of Greek origin, and is formed of the words κόρη, the pupil of the eye, and γωνια, an angle or corner; and is given it from the singular structure of this part of the eye, the pupil in this fish running out into an acute angular corner in the anterior part, and this regularly in all the species.

COREHORUS, in botany, the name of a genus of plants, the characters of which are these: the flower is of the rosaceous kind, consisting of several leaves, disposed in a circular form. The pistil arises from the cup, and finally ripens into a cylindric quinquecapsular fruit, which opens in five places, when ripe, and is full of angular-shaped seeds. To these marks it is to be added, that the leaves stand alternately on the stalks.

The species of *corehorus* enumerated by Mr. Tournefort, are these: 1. The common Ægyptian *coreborus*, or *melochia*. 2. The American *corehorus*, with hornbeam leaves, and longer fruit: and, 3. The American *corehorus*, with narrower leaves, and slenderer fruit. These plants are called by some *alceas*. *Tourn.* Inst. p. 259.

COREIA, Κορεια, in antiquity, a festival in honour of Proserpine, named *Core*, Κορη, which in the Molossian dialect signifies a beautiful woman. *Pott.* Archæol. T. 1. p. 409.

COREOPSIS, in botany, the name given by Linnæus to a genus of plants, called by Dillenius, in the Hortus elthamensis, a species of *bidens*. The characters are these: the common cup is double, the exterior consisting usually of eight rude leaves, disposed in a sort of circle, and the inner of as many large, broad, and elegant leaves, regularly disposed and coloured. The flower is compound, and radiated. The hermaphrodite floscules are very numerous, and are placed in the disc. The female flowers are eighteen in number, and are placed in the radius. The hermaphrodite floscules are tubulose, and divided into five segments at the end. The female are larger, and are divided only into four. The hermaphrodite flowers have five very short capillary filaments: the antheræ are cylindric and tubular: the germen of the pistil is compressed, and divided into two horns, in the hermaphrodite flower: the stile is capillary, and of the length of the stamina; and the stigma is bifid, acute and slender. In the female flowers, the germen is the same as in the hermaphrodite; but there is no stile or stigma. There is no other fruit than the cup. In the hermaphrodite flowers, the seeds are single and orbiculated, convex on one side, and concave on the other, with a transverse protuberance, running from the apex to the base, and surrounded with a membranaceous rim, terminated in two points. *Linnæi* Gen. Plant. p. 416. *Dillen.* Hort. Elth. p. 48.

CORETT, in zoology, the name of a large East-Indian fish, of the tunny kind, and suspected to be no other than the common tunny. It grows to six or seven feet long. Its eyes are large, and their irises yellow: its tail is broad and forked, and in colour of a yellowish green: its belly fins are yellowish, and its belly of a fine bright glossy blue, with a silvery cast. It is generally caught with hooks, and is a very fine tasted fish. *Ray*'s Ichthyogr. Append. p. 5. See THYNNUS.

CORIANDER, (*Cycl.*) *Coriandrum*, in botany, the name of a genus of umbelliferous plants, the characters of which are these: the flower is of the rosaceous kind, consisting of several heart-fashioned leaves, sometimes regular, sometimes irregular in size, disposed in a circular order round a cup, which afterwards becomes a fruit, composed of two seeds of a spherical, or hemispherical shape.

The species of *coriander* enumerated by Mr. Tournefort, are these: 1. The common or larger *coriander*. 2. The smaller *coriander*, with testiculate seeds. *Tourn.* Inst. p. 316.

This plant, while green, has a nauseous disagreeable smell, like bugs; but the seed, when dry, smells gratefully. It is reckoned strengthening to the stomach, and carminative, and therefore frequently used with purging medicines [a]. *Coriander* seeds have also a great acrimony, when fresh gathered, which they lose with time [b]. — [[a] *Quincy*, Pharm. Edit. 1736. p. 83. [b] *Boyle*'s Works, Abrid. Vol. 1. p. 141, 142.]

CORICEUM, Κωρικιον, in antiquity, the undressing-room belonging to the Gymnasium. *Pott.* Archæol. Græc. l. 1. c. 8. p. 38.

CORINDUM, in botany, the name of a genus of plants, the characters of which are these: the flower is of the polypetalous anomalous kind, being composed of four leaves, disposed in form of a cross, and of four smaller, of a crooked shape, placed between them. The cup is composed of four leaves, and from it there arises a pistil, which finally becomes a fruit of an inflated, bladder-like appearance, and divided into three cells, which contain seeds of a roundish shape, marked with a heart-fashioned spot.

The species of *corindum* enumerated by Mr. Tournefort, are these: 1. The large-leav'd *corindum*, with large fruit, called by some authors the black bladder pea. 2. The large leav'd *corindum*, with extremely large fruit: and, 3. The *corindum*, with smaller leaves, and smaller fruit. *Tourn.* Inst. p. 431.

CORION, in botany, a name given by some authors to the plant which produces the coriander seeds used in the shops. *Ger.* Emac. Ind. 2.

CORIS, in botany, the name of a genus of plants, the characters of which are these: the flower consists only of one leaf, and is of the personated kind, tubulated behind, and expanded in the manner of a fan before. The pistil arises from the cup, and is fixed in the manner of a nail to the hinder part of the flower: this finally becomes a fruit, nearly of a globose figure, which, when ripe, splits into several parts, and contains a number of roundish seeds, being itself hid in the cup of the flower.

The species of *coris* enumerated by Mr. Tournefort, are these: 1. The blue-flowered sea *coris*. 2. The red-flowered sea *coris*: and, 3. The white-flowered sea *coris*. The two last are properly only varieties of the first. *Tourn.* Inst. p. 652.

CORIS is also used in the East-Indies for a kind of shells which pass for money. See BIA.

CORISPERMUM, in the Linnæan system of botany, the name of a genus of plants, called before *stellaria*. The characters of this genus are, that the flower has no calyx, and consists of two petala, which are compressed, bent and pointed, equal in size, and placed opposite to one another. The stamen is single, long, and crooked, and terminated by a simple anthera. The pistillum is composed of a roundish, compressed germen, and two bent capillary stiles, with pointed stigmata. The fruit is a roundish, but compressed capsule, with a furrowed rim, and divided into two cells, each containing a single seed. The essential distinction of this plant consists in the flower; for the fructification has some varieties. *Linnæi* Gen. Plant. p. 1.

CORIZIOLA, in the materia medica, is a name given by some authors, particularly by Rhasis, to the scammony. *Ger.* Emac. Ind. 2.

CORK, or CORKING *of a saddle*, are pieces of wood upon which the bolsters are made fast. See BOLSTERS.

This part of the saddle was formerly made of *cork*, whence it still retains the name.

Tubulated CORKS. See TUBULATED *corks*.

CORMORANT, in zoology, a large sea bird, called by authors *corvus aquaticus*, or the sea raven. Our shagg is a true species of this bird. See SHAGG and CORVUS *aquaticus*.

CORN (*Cycl.*) — *Guinea* CORN. See GUINEA *corn*.

Indian CORN. See MAIZE.

Preservation of CORN. See PRESERVATION *of corn*.

Transportation of CORN. See TRANSPORTATION.

CORNEA *tunica of the eye* (*Cycl.*) — It is sometimes necessary to make incisions thro' this tunic, in order to discharge not only matter, but even blood, when extravasated by external injuries, if it will not give way to the common methods of dispersion, to prevent the stagnant blood from suppurating and destroying the eye. There have been instances, when this has been done with great success, and without any deforming cicatrix, the sight having been also perfectly restored by it. See *Heister*'s Surgery, p. 427.

CONET, in conchyliology, a name given by some French writers to a genus of shells, called by others *cuculli*, and by the generality of writers *volutæ*. See VOLUTÆ.

CORNICABRA, in botany, a name by which the Spaniards call the turpentine tree. The name is founded on the singular production of this tree, in form of a horn or pod. This is not the fruit of the turpentine tree, as has been supposed by some; but is a mere excrescence, of the nature of the galls on the leaves and stalks of other trees and plants, and is inhabited by a number of small insect of the puceron kind. *Garcias* ab Orto.

CORNICULARIUS, among the Romans, an officer who published the orders of the tribunes with the sound of an horn. *Hofm.* Lex. in voc.

CORNISH *diamond*, a name given by many people to the crystals found in digging the mines of tin in Cornwall. These crystals are of the nature of the Kerry-stone of Ireland, but somewhat inferior to it: they are usually bright and clear, except toward the root, where they are coarse and foul, or whitish. They are usually found in the common form of an hexangular column, terminated at each end by an hexangular pyramid. See CRYSTAL.

CORNISH *ring*, or *astragal of a gun*, is the small ring near the muzzle.

CORNISH *chough*, in zoology. See CORACIAS.

COR-

CORNIX, in zoology, the name of the *crow*, distinctively from the raven. Naturalists reckon four distinct species of this bird: 1. The common *crow*, sufficiently known in most countries, and feeding on dead carcases, &c. 2. The *rook*, not less known, which loves vegetable food best, but will eat worms, &c. when hungry. 3. The grey *rook*, or Royston *crow*: and, 4. The *cornix cærulea*, or blue *crow* of Gesner, which Mr. Ray suspects to be no other than the *roller*. *Ray*'s Ornithol. p. 83, 84, 85. See ROLLER.

CORNU (*Cycl.*) — CORNU *ammonis*. The only recent shell we have of this kind, is a species of *tubulus marinus*, which is concamerated or divided into several cells within, between all which there runs a siphunculus, or pipe of communication. It is wreathed toward the tail, and is of a very tender structure. It is white, and very glossy. It is found on the shores of the Molucca isles.

CORNUCOPIA, (*Cycl.*) in botany, the name of one of the species of the grass kind, which, in the Linnæan system of botany, makes a distinct genus of plants: the characters of which are, that the cup is a common perianthium of one leaf, very large, and made in the fashion of a funnel, indented at the edge, and obtuse, and somewhat erect, and spread open. The glume has two valves, and contains only one flower: the valves are oblong, obtusely pointed, and equal in size. The flower is composed of a single valve, in figure and situation much resembling the valves of the cup. The stamina are three capillary filaments, and the antheræ are oblong. The germen of the pistillum is of a turbinated form: the styles are two in number, and very slender: the stigmata are fibrose. The flower contains the seed, which is single, of a turbinated form, and convex on one side, and plain on the other. *Linnæi* Gen. Plant. p. 13.

CORNUS, in the Linnæan system of botany, a distinct genus of plants, the characters of which are these: the cup is a common involucrum of many flowers, and is composed of four leaves of an oval figure, of different sizes, coloured, and falling with the flowers, of which it bears the peduncles. The separate perianthia belonging to each flower are small, notched into four segments, situated on the germen of the pistillum, and falling with the flower. The flower consists of four very small petals, oblong and pointed. The stamina are four erect pointed filaments, longer than the perianthium, and the antheræ, which are roundish, lie on them. The germen of the pistillum is roundish, and placed below the calyx: the style is slender, and of the length of the stamina: the stigma is obtuse. The fruit is an umbilicated roundish drupe. The seed is an oblong cordated nut, containing two cells, the kernel being oblong. *Linnæi* Gen. Plant. p. 48.

The *cornus* is what we call the *cornel-tree*. Its characters, according to Tournefort, are these: the flower is of the rosaceous kind, being composed of several petals, disposed in a circular form, the cup of which finally becomes an olive-shap'd fruit, or else a roundish one: these are soft, fleshy, and contain a nucleus, divided into two cells, with kernels.

The species of *cornus* enumerated by Mr. Tournefort, are these: 1. The common male *cornus*, or garden *cornel-tree*. 2. The garden *cornel-tree*, with yellow or wax-coloured fruit. 3. The male or garden *cornel-tree*, with white fruit. 4. The male or garden *cornel*, with a deep red fruit, with a short and hard kernel. 5. The male wild *cornel*. 6. The common wild female *cornus*, called the *dogwood*, or *dogberry-tree*: and, 7. The female *cornus* or *dogwood*, with variegated leaves. *Tourn.* Inst. p. 641.

CORNUTA, in ichthyology, a name given by Gesner and others to the fish called also *lyra*, and *lyra altera* by others. It is of the *trigla* kind, and is distinguished by Artedi by the name of the *trigla*, with many cirri, and with an octagonal body.

CORNUTIA, in botany, the name of a genus of plants, called by Vaillant *agnanthus*. The characters are these: the perianthium is very small, of a roundish figure, and consisting only of one leaf: it is divided into five segments at the end, and remains when the flower is fallen. The flower is composed of one petal, and is of the gaping kind: the tube is cylindric, and much longer than the stamina: the edge is divided into four parts, the upper segment being erect and roundish, the side ones standing distinct from one another, the lower one being roundish and undivided. The stamina are four filaments: the antheræ are simple, and inclined: the germen of the pistil is roundish: the style is very long, and divided into two parts: and the stigmata are very thick. The fruit is a globose berry, adhering to the bottom of the cup, and containing one seed of a kidney-like shape. *Linnæi* Gen. Plant. p. 302. *Plumier* 17. *Vaillant*, A. G. 1722.

CORNUTUS *piscis*, in zoology, a name given by Mr. Ray to the fish commonly called by the Dutch in the East-Indies, where it is very common, *hoorn visch*. It has a horn of a very singular kind in the back part of its head, or beginning of its back, and two others on the belly: these are crooked, and very brittle. They seem much of the nature of the spines, which several fish have placed before their back and belly fins; and it is dangerous to be wounded by them, the wound being generally very difficult of cure, especially if any part of the horn or spine is left in it, which, from the brittleness of those substances, is generally the case. See Tab. of Fishes, N° 66. and *Ray*'s Ichthyogr. App. p. 5.

COROCORO, in zoology, the name of a Brasilian fish, somewhat resembling the coracinus of the Mediterranean. Its back is prominent and crooked, and its nose obtuse; its teeth small, and not sharp: the coverings of its gills are large, and terminate in a very sharp spine. It has six fins, two behind the gills; two others, of a somewhat triangular figure, under the belly; these have before them a very strong and sharp spine; and one behind the anus, with a very thick, strong, and pointed spine, with another very small spine standing just before it. The back fin begins about the middle, and runs a good way down the back: this is supported by prickly rays; and where it terminates, there immediately begins another lower and softer fin, which reaches to the tail. Its scales are considerably large: its back is of a pale browniish white: all the rest of the body of a fine silvery hue, but that the sides have a few transverse pale brown lines. Its belly, and belly fins, are perfectly white; and it has a sinus in the back, in which, at pleasure, it can bury the fins. *Marggrave*'s Hist. Brasil.

CORODIO *habendo*, a writ, whereby to exact a *corody* of an abbey or religious house. See Reg. of Writs, fol. 264.

CORODY, CORRODY, or CORREDY, in law, (*corrodium*, from *corrodo*, also *conredium* & *corredium*) a sum of money, or allowance of meat, drink and cloathing, due to the king from an abbey, or other house of religion, whereof he is the founder, towards the reasonable subsistance of any servant he thinks fit to bestow it on.

The difference between a *corody* and pension is said to be, that a *corody* is allowed towards the maintainance of any of the king's servants in an abbey; but a pension is given to one of the king's chaplains, for his better maintainance, till he may be provided with a benefice. See *Fitzherb.* Nat. Br. fol. 250. who sets down all the *corodies* and pensions certain, that abbeys, when they stood, were bound to perform to the king.

COROLLA, among botanists, is the most conspicuous part of a flower. It expresses the coloured, tender part, which surrounds the organs of generation. The parts it is composed of are called *petals*; if it consist only of one piece, it is called *monopetalous*; if of more, it is said to be *dipetalous*, *tripetalous*; and so on, as it consists of two, three, four, or more parts. See PETAL, &c.

COROLLARY, or CONSECTARY, in mathematics, is used for a consequence drawn from some proposition already advanced or demonstrated: as if from this theorem, *That a triangle, which has two equal sides, has also two equal angles*, this consequence should be drawn, *that a triangle, which hath the three sides equal, has also its three angles equal.* *Ozanam*, Dict. Math. p. 9.

COROLLISTÆ, among the botanical authors, are those who have attempted the establishing the classes and distinctions of plants, on the different form of the corolla, or leafy part of the flower, without paying the due regard to the apices, stamina, and pistillum, the parts of fructification contained within it. Of these are Rivinus, and the great Tournefort. *Linnæi* Fund. Bot. p. 2.

COROLLULA, among botanists, a term used to express those little partial flowers, which together constitute the whole compound ones. They are of two kinds, the tubulated, and ligulated; the former are always furnished with a campanulated limb, divided into four or five segments: the latter, or ligulated *corollulæ*, have a flat linear limb, terminated by a single point, or by a broader extremity, divided into three or five segments.

CORONA, (*Cycl.*) in anatomy, is that edge of the glans of the penis where the preputium begins.

CORONA, among botanists, expresses any thing growing on the head of the seed. The *coronæ* of seeds are of various kinds; sometimes simple, consisting only of a dentated membrane; sometimes pappose, consisting of downy matter, which in some cases is immediately fixed to the seeds; in others it has a pedicle growing from it. Sometimes the *coronæ* are composed of simple filaments, and sometimes they are ramose.

CORONA *æthiopica*, in natural history, the name of a sea shell of the *dolium*, or *concha globosa* kind. See the article DOLIUM.

CORONA *imperialis*, in conchyliology, a name given by authors to a kind of *voluta*, differing from the other shells of that family, by having its head ornamented with a number of points, forming a sort of crown. See VOLUTA.

There are four species of this shell found in the cabinets of the curious: 1. The common kind. 2. The *corona imperialis*, with fewer and smaller fasciæ, or circular lines. 3. The variegated brown kind: and, 4. The marbled kind. This is elegantly stained with black.

CORONA *imperialis*, *crown imperial*, in botany, the name of a genus of plants, the characters of which are these: the flowers are collected into a sort of crown near the top of the stalk, and have over them a large tuft of leaves. The flowers are of the lilliaceous kind, being each composed of six petals. The pistil stands in the center of the flower, and finally becomes an oblong fruit, edged with a sort of membranaceous wings. This is divided into three cells, which contain a large number of seeds, of a flatted shape, lying closely upon one another. To this it is to be added, that the root is

tunicated, and has a number of fibres iſſuing from its baſe.

The ſpecies of *crown imperial* enumerated by Mr. Tournefort, are theſe: 1. The common *crown imperial*. 2. The *crown imperial*, with beautiful red flowers. 3. The *crown imperial*, with pale, faint, yellow flowers. 4. The *crown imperial*, with yellow ſtriated flowers. 5. The *crown imperial*, with plain, deep, yellow flowers. 6. The great *crown imperial*. 7. The late flowering *crown imperial*, with very large leaves, and deep purple flowers. 8. The many flowered *crown imperial*, with a broad flatted ſtalk. 9. The *crown imperial*, with a double circle of flowers. 10. The *crown imperial*, with variegated flowers. 11. The double-flowered *crown imperial*. 12. The *crown imperial*, without ſmell. 13. The branched *crown imperial*: and, 14. The monſtrous *crown imperial* of John Bauhine. *Tourn.* Inſt. p. 372.

CORONA *ſolis*. See SUN-*flower*.

CORONARIA, in botany, the name given by Linnæus to a genus of plants, uſually confounded by other authors under the name of *lychnis*. See LYCHNIS *coronaria*.

CORONATORE *eligendo*, a writ, which, after the death or diſcharge of any *coroner*, is directed to the ſheriff, out of the chancery, to call together the freeholders of the county, for the choice of a new *coroner*, to certify into chancery both the election, and the name of the party elected, and to give him his oath. See Weſtm. 1. c. 10. *Fitzh.* Nat. Br. fol. 163. and Reg of Writs, fol. 177.

CORONEOLA, in botany, a name given by ſome authors to the *lyſimachia*, or purple willow herb, vulgarly called with us codlings and cream. *Ger.* Emac. Ind. 2.

CORONILLA, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the papilionaceous kind, and the piſtil which ariſes from the cup, finally becomes a pod compoſed of many parts joined together by a ſort of articulation, each containing an oblong ſeed.

The ſpecies of *coronilla* enumerated by Mr. Tournefort are theſe: 1. The ſmall *coronilla*, called by ſome the leaſt *colutea*. 2. The *colutea* with a fungous, broom-like ſtalk. 3. The ſea *coronilla*, with blueiſh green leaves. 4. The *coronilla* with thick pods, and large ſeeds. 5. The ſilvery, Cretic *coronilla*. 6. The ſmalleſt *coronilla*. 7. The herbaceous *coronilla*, with variegated flowers. And, 8. The herbaceous *coronilla*, with double, variegated flowers. *Tourn.* Inſt. p. 650.

There have been pieces of amber found, with the pennated leaves of *coronilla* included in them, and as elegantly expanded as the moſt curious botaniſt could have expected it, for preſerving them in his hortus ſiccus. Breynius gives us an account of one of theſe pieces of amber, in which the middle part of one of theſe leaves was thus elegantly preſerved; he examined the ſpecimen with the greateſt accuracy, but could not find the leaſt mark of fraud or deceit in it, and is very particular in the deſcription of the piece, and in the diſpoſition of the leaf in it.

Mercatus in his Metallotheca Vaticana has an entire leaf of the ſame plant figured; but his has got into diſrepute, by being placed among ſome other things which muſt have been fictitious, ſuch as a ſmall fiſh, a water newt, or eft, and a compleat frog. Theſe were certainly let in by art between two pieces of amber which were afterwards nicely cloſed together again; but the figure of the leaf gains credit from the obſervation of Breynius: to this it is to be added, that the *coronilla* is a ſhrub commonly wild in Pruſſia, where amber is produced. Phil. Tranſ. N° 396.

CORONOPUS, *buckſhorn*, in botany, the name of a genus of plants which have flowers and fruits like thoſe of the plantains, but differ from them by having their leaves divided into ſeveral ſegments, whereas thoſe of the plantains are for the moſt part ſmooth at the edge, and never more than lightly notched.

The ſpecies of *coronopus* enumerated by Mr. Tournefort are theſe: 1. The common *buckſhorn* plantain, ſo called from the leaves being ſo divided as to reſemble the horns of that creature. 2. The broad-leaved hairy *coronopus*. 3. The narrow-leaved, deeply-jagged *coronopus*. 4. The ſmalleſt, hairy, ſea *coronopus*. 5. The ſea roſe *coronopus*. *Tourn.* Inſt. p. 128.

CORPUS *Chriſti day*, a feaſt held always on the next thurſday after Trinity ſunday. It was inſtituted in the year 1264, in honour of the bleſſed ſacrament, to which alſo a college in Oxford is dedicated. We find it mentioned in 32 Hen. VIII. c. 21. By which ſtatute Trinity term is appointed for ever to begin the morrow after this feaſt.

CORRECTION, (*Cycl.*) in the manege, is uſed for aids given with ſeverity. See CHASTISEMENTS.

CORRECTION, *correctio*, in rhetoric, the ſame with what is otherwiſe called *epanorthoſis*. See EPANORTHOSIS, *Cycl.*

CORRECTOR (*Cycl.*) — CORRECTOR *of the ſtaple*, an officer, or clerk, belonging to the ſtaple, who makes and records the bargains of merchants there made, anno 27. Edw. III. Stat. 2. c. 22, and 23. The Romans called them *merſarii*.

CORRIDOR, in fortification. See CORIDOR, *Cycl.*

CORRODENTS, *corrodentia*, in medical writers, is applied to ſuch things as eat, conſume, or deſtroy excreſcent fleſh. *Blancard.* in voc.

CORRODY. See the article CORODY.

CORROSIBILITY, } in chemiſtry. See CORROSION, *Cycl.*
CORROSIVENESS, }

CORRUGATOR (*Cycl.*)—CORRUGATORIS *ordo exterior*, in anatomy, a name given by Santorini to certain faſciculi of the great zygomatic muſcle, running under the fleſhy part of the lower lip. See the articles LABIUM *attollens*, and ZYGOMATICUS *major*.

CORRUGATOR *ſupercilii muſculus*, in anatomy, a name given by Albinus, and by Douglaſs, and ſome others, to one of the muſcles of the face, called alſo by Douglaſs the *frontalis verus*, and by Winſlow the *ſuperciliaris*.

CORRUGATORIS *inferior ordo*, in anatomy, a name given by Santorini, and ſome others, to that muſcle of the mouth called by Albinus *orbicularis oris*; by Cowper *conſtrictor labiorum*; and by Douglaſs *ſphincter labiorum*.

CORRUPTICOLÆ, in church hiſtory, heretics who maintained that Chriſt is ſtill corruptible, and ſtands in need of meat, drink, and reſt. See *Hoffm.* Lex. in voc.

CORSOIDES, in natural hiſtory, a name given by ſome authors to a ſpecies of agate of a greyiſh white, full of ſlender veins of a clearer white, reſembling hairs. It is one of the German agates, and ſometimes ſeen among our jewellers, cut into tops of ſnuff boxes, and other toys, but is not much eſteemed.

CORTEX, (*Cycl.*) the *rind* or *bark* of trees. The wounds of the *bark*, and its ſeparations from the wood, whether natural, or experimentally made, are eaſily cured, and made to unite again, by proper care. If ſections be made in the *rinds* of the aſh, and ſycamore, of a ſquare figure, three ſides cut, and the fourth uncut, and the whole be afterwards bound round with a packthread, it will all unite again, only leaving a ſcar in each of the ſides where it was cut. If ſeveral parts of the *bark* of either of theſe trees be cut off, and entirely ſeparated from the tree, ſome ſhallower, leaving a part of the *bark* on, and others deeper, to the wood itſelf; theſe pieces being again put into their places, and bound on with packthread, will not indeed unite, but a freſh *bark* will grow in their places, and thruſt them away; but if they be firſt carefully laid on in the exact direction in which they originally grew, and then the whole part beyond the wound on every ſide covered with a large plaiſter of diachylon, or the like, and this bound over with packthread to keep all firmly in their places, the pieces of *bark*, whether cut off ſhallower, or deep down to the very wood of the tree, will firmly unite themſelves to the places where they originally grew. This cure will be performed in the ſpace of about three weeks, but the outer *rind* of the ſeparated pieces will not be plump, but ſomewhat ſhrivelled; the edges alſo will recede ſomewhat from their original place, ſo that there remains a ſort of ſcar all round. Theſe experiments are beſt made in the ſpring ſeaſon, for in the autumn and winter the ſap ariſing but weakly, the parts that ſhould unite wither before that is brought about. The ſucceſs of theſe experiments has made ſome think, that the whole branch of a tree ſeparated and bound on again, might grow on again; but the experiments that have been made in the moſt favourable manner for ſuch a trial have all proved vain, the branch cut off withering always in a few days, however well united, and carefully kept on. Phil. Tranſ. N° 25. See BARK.

CORTEX *Peruvianus* (*Cycl.*) See PERUVIAN *bark*.

CORTEX *Winteranus* (*Cycl.*) See WINTERANUS *cortex*.

CORTUSA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: the cup is a ſmall perianthium, remaining when the flower is fallen, and compoſed of one leaf divided into five obtuſe ſegments, with their ends bent back. The flower conſiſts of one petal, forming a very ſhort tube, with a plain large rim divided into five roundiſh ſegments, at the baſes of which there ſtand five tubercles. The ſtamina are five ſhort obtuſe filaments; the antheræ are compoſed of two lamellæ, and are oblong, erect, and fixed to the outer ſide of the ſtamina; the germen of the piſtillum is of an oval figure; the ſtyle is ſlender, and ſhorter than the ſtamina, and the ſtigma is ſimple; the fruit is an oval, oblong, pointed capſule, furrowed longitudinally on each ſide, containing only one cell, and having two valves with twiſted edges; the ſeeds are numerous, ſmall, oblong, and obtuſe. *Linnæi* Gen. Plant. p. 63.

CORVINA, in zoology, a name by which ſome have called a ſea fiſh of very great beauty, and a delicate taſte, caught on Braſilian ſhores, and more commonly known among authors by its Braſilian name *guatucuſa*. *Willughby*'s Hiſt. Piſc. p. 302. See GUATUCUSA.

CORVINDUM *nella*. See NELLA *corvindum*.

CORVINUS *lapis*, a name given by ſome to the *belemnites*; but by others to a very different body of a whitiſh colour, and oval figure, convex on one ſide, and concave on the other, and in the middle of the concave ſide there ariſes a tubercle: this is ſaid to be taken out of the head of a fiſh; and it is very poſſible that the authors may mean by this no other than our crab's eyes.

CORVIPETA *avis*, in zoology, a name under which Nieremberg has deſcribed a ſmall green bird, not larger than a wren, which, he ſays, drives whole flocks of ravens before it. The whole is ſuppoſed a mere fabulous ſtory. See GUITGUIT.

COR-

CORVO, in zoology, a name by which many call the *umbra*, or *chromis* of authors, a large ſea fiſh, common in the Mediterranean, and, while young, brought to the markets of Italy. *Ray*'s Ichthyogr. p. 300. See the article UMBRA.

CORUS, OMER, HOMER, or CHOMER, in the Jewiſh antiquities, a meaſure containing ten baths, or ſeventy-five gallons, and five pints, as a meaſure of things liquid, and thirty two pecks and one pint, as a meaſure for things dry. The *corus*, or *omer*, was moſt commonly a meaſure for things dry[a], and the greateſt that was uſed among the Jews. It contained, according to the Rabbins, ten ephahs, or thirty ſata or ſeahs. *Corus* is the moſt uſual term in the hiſtorical writers, and *omer* or *chomer* among the prophets[b]. — [[a] *Calmet*, Dict. Bibl. [b] *Arbuthnot*, Tables, &c. p. 100.]

CORUS, is alſo uſed in ſome of our old writers for eight buſhels, or a quarter; *decem* coros *tritici*, *ſive decem quarteria*. *Bracton*, l. 2. c. 16. parag. 7.

CORUSCATIONS (*Cycl.*). — There is a method of producing *artificial coruſcations*, or ſparkling fiery meteors, which will be viſible not only in the dark, but at noon day, and that from two liquors actually cold; the method is this: fifteen grains of the ſolid phoſphorus are to be melted in about a dram of water; when this is cold pour upon it two ounces of oil of vitriol; let theſe be ſhaken together, and they will at firſt heat, and afterwards they will throw up fiery balls in great number, which will adhere like ſo many ſtars to the ſides of the glaſs, and continue burning a conſiderable time; after this, if a ſmall quantity of oil of turpentine be poured in, without ſhaking the vial, the mixture will of itſelf take fire, and burn very furiouſly. The veſſel ſhould be large, and open at the top. Phil. Tranſ. N° 150. See INFLAMMABILITY.

Artificial *coruſcations* may alſo be produced by means of oil of vitriol and iron, in the following manner. Take a glaſs body, capable of holding three quarts; put into this three ounces of oil of vitriol, and twelve ounces of common water; then warming the mixture a little, throw in, at ſeveral times, two ounces or more of clean iron filings; upon this an ebullition, and white vapours will ariſe: then preſent a lighted candle to the mouth of the veſſel, and the vapour will take fire, and afford a bright fulmination, or flaſh like lightning. Applying the candle in this manner ſeveral times, the effect will always be the ſame; and ſometimes the fire will fill the whole body of the glaſs, and even circulate to the bottom of the liquor, and at others it will only reach a little way down its neck. The great caution to be uſed in this experiment is the making the matter of a proper heat; for, if too cold, few vapours will ariſe, and if made too hot, they will aſcend too faſt, and will only take fire in the neck of the glaſs, without any remarkable *coruſcation*. *Shaw*'s Lectures, p. 397.

CORUSCATULA, in natural hiſtory, a name given by Mr. Lhuyd to a ſpecies of foſſile plant of the fern kind, which that gentleman happened to find covered with a ſhining or gloſſy coat. See PLANTS *foſſile*.

CORVUS, (*Cyc.*) the *crow*, or *raven*. In the Linnæan ſyſtem of zoology, this makes a diſtinct genus of birds of the order of the *pica*, the diſtinguiſhing character of which is, that the tail feathers are all of an equal length. Of this genus are the *crow*, raven, jackdaw, &c. *Linnæi* Syſtem. Natur. p. 44.

CORVUS, the *raven*, is particularly uſed for a large bird of the crow kind, well known throughout the world, as being found in all climates, and all regions. The *ravens* build in high trees, or upon the ruins of old lofty buildings; they lay four, five, or ſix eggs, of a blueiſh green, variegated with ſpots and ſtreaks of black. There are many fabulous ſtories of the longævity of the *raven*, but birds are in general long-lived, and the crow kind not leſs ſo than the reſt. *Ray*'s Ornithol. p 82.

CORVUS, in ichthyology, a name given by Paulus Jovius to the *faber*, or *dree*. See FABER.

CORVUS, in antiquity, a machine invented by the Romans at the time of their wars in Sicily, when they firſt engaged the Carthaginian fleet. According to Polybius, the *corvus* was framed after this manner:

On the prow of their ſhips they erected a round piece of timber about 1¼ foot diameter, and 12 feet in length, on the top of which was a block, or pulley; round this piece of timber was a platform of boards 4 feet in length, which was about 18 feet long, and well framed and faſtened with iron; the entrance was longways, and it was moveable round the aforeſaid upright piece of timber, and could alſo be hoiſted up and down within ſix feet of the top: about this frame was a ſort of parapet knee high, which was defended with upright bars of iron, ſharp at the ends, and towards the top there was a ring, by the help of which, and a pulley, or tackle, it was hoiſted and lowered at pleaſure; with this moveable gallery, they boarded the enemies ſhips (when they did not lie ſide by ſide) ſometimes on their bow, and ſometimes in the after part of the ſhip; the ſoldiers keeping the boſs of their bucklers level with the top of the parapet, &c and by the means of this new engine got a victory over the Carthaginians in their firſt ſea-fight with them, though the enemy were long before well ſkilled in naval affairs, and the Romans raw and ignorant.

CORVUS *aquaticus*, in zoology, the name given by authors to the bird commonly known by the name of the *cormorant*. It is of the ſize of a gooſe, and is of a very deep duſky brown on the back, with ſome admixture of a greeniſh gloſs, and white on the belly and breaſt; its long wing feathers are greyiſh; its tail is a hand's breadth and a half long, and when expanded, looks roundiſh at the end; its beak is between three and four fingers breadth long, and is a little hooked at the end; its legs are very ſhort, but very thick and ſtrong, and (which is a very peculiar thing) are flat, or compreſſed, eſpecially while the creature is young; and another ſingularity is, that the baſe of the lower chap is covered by a naked yellow membrane, in the manner of the wild ſwan's beak; its legs are black, and covered with a ſeries of cancellated ſcales; the toes are all joined by one membrane. It builds not only among rocks, but often alſo on trees. Tab. of Birds, N° 9. *Ray*'s Ornithol. p. 248.

CORVUS *aquaticus*, the *water raven*, is alſo a name given by ſome authors to the *acacalotl*, a very beautiful Mexican water bird, of a ſhining, greeniſh, blackiſh, and purpliſh hue. It feeds on fiſh, and is eaten, but is of a coarſe and fiſhy taſte. *Ray*'s Ornithol. p. 219.

CORVUS *aquaticus minor*, in zoology, a name by which Mr. Ray has very properly called a bird common on our northern coaſts, and called there the *ſhagge*, and in ſome places the *crane*, it being a genuine ſpecies of *cormorant*.

CORVUS *cornutus*, in zoology, a name by which ſome have called the Indian raven, with the horned beak, more uſually called the *rhinoceros* bird. See RHINOCEROS *avis*.

CORVUS *fluviatilis*, the *river raven*, a name given by ſome writers to a very remarkable bird of the Philippine iſlands, reſembling the common raven, but being of the amphibious kind. It is called, in the language of the place *caſſili*, or *colocolo*. See COLOCOLO.

CORVUS *indicus*, in zoology, the name of a bird of the raven kind, very common in the Molucca iſlands, very large, and armed with a very ſtrong beak and claws; it does not feed on carrion, as our raven, but eats the nutmegs, and does vaſt damage, in deſtroying that fruit. Its fleſh is very delicate, and has plainly the aromatic flavour of its food. *Ray*'s Ornithol. p. 86.

CORVUS *ſylvaticus*, the *wood raven*, in zoology, the name of a bird deſcribed by Geſner, and ſuppoſed by Mr. Willughby to be no other than the *coracias*, or *pyrrhocorax*; but, if rightly deſcribed, it differs eſſentially from that bird in ſize, and in having a creſt on its head. Geſner ſays, it is of the ſize of the common hen; it appears at a diſtance of a deep black, but, when viewed nearer, and in the ſunſhine, it appears of a fine gloſſy green; its tail is ſhort; its toes very long, and not webbed; and it has a creſt on its head. It feeds on frogs, fiſh, and other ſmall animals, and builds in the ruins of old buildings, and lays two or three eggs. They fly very high; the young ones are accounted a very well taſted food. *Ray*'s Ornithol. p. 366.

CORVUS *piſcis*, the *crow-fiſh*, a river fiſh of the chub kind, common in Italy, and in ſome parts of Germany, and called by Geſner, *capito fluviatilis rapax*, and by the common people *roppe*.

It is a long, thick, and fleſhy fiſh; its back is of a blueiſh brown, and its ſides and belly white, and of a ſilvery gloſs; its ſcales are broad, and very thin and pellucid, and have under them a fine thin pellicle, of a great gloſs, and ſilvery whiteneſs, which is ſeen through the ſcales, and make the fiſh look as if plated over with ſilver; its gills are ſoft like thoſe of the ſalmon, and its fins of a browniſh red. It ſeldom grows to more than ſix or ſeven pound weight; it is an extremely rapacious fiſh, not leſs ſo than the pike, and very frequently chaces its prey ſo hard as to drive them out upon the bank; and, in that caſe, he uſually follows them alſo, and both are frequently taken, ſtranded together. It is caught at all ſeaſons of the year, but never in any great abundance; it is eſteemed a very delicate fiſh. *Geſner* de Piſc. p. 1267.

CORYBANTICA, κορυβαντικα, a feſtival held in Crete, in memory of the *Corybantes*, who educated Jupiter when he was concealed in that iſland, from his father Saturn, who would have devoured him. *Pott.* Arch. l. 2. c. 20. T. 1. p. 409.

CORYCEUM, in antiquity, that part of the gymnaſium, where people undreſſed. It was otherwiſe called *apodyterion*. See APODYTERION.

CORYCUS, among the Greeks, a kind of exerciſe with the hand-ball. See its deſcription in *Hoſm.* Lex. in voc.

CORYDALEPODIUM, in botany, a name given by ſome authors to the *delphinium*, or *larkſpur*. *Ger.* Emac. Ind. 2.

CORYDALIUM, or CORYDALIS, a name uſed by ſome authors for the *fumaria*, or *fumitory*, a red-flowered little plant, improperly called by ſome *mayweed*. *Ger.* Emac. Ind. 2.

CORYLUS. See HAZLE.

CORYMBIUM, in antiquity, an ornament of hair worn by the women. Its form was that of a *corymbus*. See the article CORYMBUS, *Cycl.*

CORYPHA, in botany, a name by which Linnæus calls a genus of plants called *codda panna* in the hortus Malabaricus, the characters of which are theſe: the cup of the flower is the whole compound ſpatha; the flower is divided into three obtuſe, oval ſegments, which ſtand in an expanded form; the ſtamina are ſix pointed filaments, which are longer than the flower, with antheræ growing to them; the germen of the piſtil is roundiſh; the ſtyle is ſubulated and ſhort; the ſtigma ſimple; the fruit is a large unilocular berry, containing a large hard ſeed. *Linnæi* Gen. Pl. p. 514. Hort. Mal. p. 11. Muſ. *Cliffort.* 11.

CORY-

CORYPHÆNÆ, in ichthyology, the name of a genus of fiſhes of the malacopterygious kind, the characters of which are theſe: the branchioſtege membrane contains on each ſide five bones, beſide two others which lie under the bony coverings of the gills, and cannot be ſeen. The fins are ſeven in number, one upon the back, reaching from the top of the head to the tail; the head is very obtuſe at the end, or, as it were, perpendicularly declivious from the vertex to the mouth; the head and body are both ſomewhat compreſſed.

The ſpecies of this genus enumerated by Artedi are theſe: 1. The *coryphæna* with a forked tail. This is the *guaracapema* of the Braſilians; the *hippurus* of moſt authors, and is what we often call the *dolphin*. Its length is ſix or ſeven feet; the pectoral fins have twenty rays each, the ventral have ſix; the rays, or bones in the tail, are eighteen in number, and are oblong. 2. The ſmall *coryphæna*, elegantly variegated, with an acute back. This is the *novacula piſcis*, and *peſce pectine* of authors; the teeth are large and ſtand forward; the tail is broad; the eyes are ſmall, and are ſituated on the top of the head; the anus is nearer the head than the tail; the body is compreſſed, and variouſly coloured. 3 The *coryphæna* with an even tail, and crooked lateral lines. This is the *pompilus* of authors. *Artedi* Gen Piſc. 12.

CORYPHE, in medical writers, is uſed for the crown of the head; as alſo for the interior extremity of the fingers next the nails. *Blanchard.*

CORYZA, (*Cycl*) in medicine, a catarrhal affection, conſiſting in the excretion of a ſerous and viſcous humor, by the noſe and fauces. Some alſo underſtand the ſame thing by the word *gravedo*, making this and the *coryza* ſynonymous terms, but improperly; for the *gravedo* is, ſtrictly ſpeaking, a catarrhal affection, in which there is no actual excretion of a ſerous matter, but only a congeſtion of it with ſtagnation; whence it is eaſy to conceive, that the ſymptoms attending the *gravedo*, when the matter is confined, are worſe than thoſe in the *coryza*, in which it is evacuated. *Junker*'s Conſp. Med.

Signs of a coryza. This diſeaſe is generally preceded by an itching, and by ſneezing; ſometimes by what is called a *gravedo*, a congeſtion of matter without excretion; this is followed by the excretion of a ſerous and viſcous matter by the noſtrils and mouth, and ſometimes by the eyes; the more thin and acrid this matter is, the more ſeverely it affects the part through which it is evacuated, ſo that ſometimes it is attended with a ſenſation of pain, and ſoreneſs in them.

Perſons ſubject to coryzas and gravedines. Theſe diſeaſes are very frequent; and among children, they uſually take their riſe in them from obſtructions of perſpiration, or from ſuppreſſions of urine. Young people, as they grow farther up, are ſubject to them from an abundant quantity of the ſalival matter: and in more advanced years, thoſe people fall into them, in whom nature is not able to relieve herſelf, by a hæmorrhage: and people of phlegmatic habits, and ſleepy diſpoſitions, are moſt ſubject to them.

Cauſes of them. The general cauſes of theſe defluxions, are the ſame with thoſe of hæmorrhages by the noſe, that is, a congeſtion of blood in the head, by means of a diſcharge of which, nature meant to relieve herſelf of a plethora: but in theſe caſes, the blood being very abundant in ſeroſities, theſe being the thinner part, are moſt eaſily thrown out, and ſo paſs off alone, leaving the red part behind. Sometimes alſo theſe diſeaſes are produced by a mere retention of the ſerous and lymphatic juices in and about the glands of theſe parts; but this is much more rarely the caſe. The occaſional or accidental cauſes which bring on theſe congeſtions and ſtagnations, are, the ſuppreſſion of other evacuations, ſuch as habitual and natural diarrhœas, or the evacuations by purging medicines, which perſons had long accuſtomed themſelves to at the ſpring and autumn ſeaſons: the cold and moiſt temperature of the air, or a ſudden chilling of the body in a hot and moiſt place: the leaving off a copious uſe of tobacco, and the abuſe of ſnuff, or other ſternutatory powders. To this is to be added, every thing that impedes natural perſpiration, and ſometimes ſuppreſſions of urine.

Prognoſtics. The ſimple *coryza* and *gravedo* are attended with no great danger, not even when they are of long ſtanding, provided that the conſtitution be ſtrong and healthy in other reſpects. But this is not the caſe in old and weak people; for in theſe, this continual defluxion upon the head too often brings on vertiginous complaints, and ſometimes paralytic, and even apoplectic diſorders, or elſe aſthma's, and ſuffocative catarrhs, are the conſequence: and if this matter, ſo copiouſly ſecreted from the blood, be thrown upon the lungs, it may occaſion exulcerations, and even a true phthiſis.

Method of cure. This is a diſeaſe which few people trouble a phyſician about, being uſually left to nature; but it is, however, in the power of medicine to do great ſervice, and, uſually, wholly to remove the complaint; which, even where it is not attended with danger, is ſo far troubleſome, as that any one would wiſh to be rid of it. In caſes of a *gravedo*, a juſt and neceſſary excretion of the congeſted matter muſt be provided for; and this may eaſily be contrived to be made, by leſs troubleſome evacuations than thoſe to which nature ſeems to point, and by more convenient outlets; and by continuing this method, the future diſtempers of this kind may be anticipated and prevented. For the ready diſcharge of the matter, according to the intent of nature, errhines are to be uſed; the powders of the cephalic herbs, as thyme, betony, lavender, and the like, may be ſnuffed up the noſe, and the volatile pungent ſalts may be ſmelled to: by theſe means the mucid humor, which cauſed the infarction, will be rendered thin, and fitted to diſcharge itſelf. After this, it will be proper to give a gentle purge. And when the cure is perfected, the return may be prevented by bleeding and purging in ſpring and autumn. When the defluxion is very violent, Stahl recommends the uſe of gentle diaphoretics, and of a powder compoſed of cinnabar, and a gentle opiate. In caſes where the matter of a *coryza* is very acrid, and there is a violent pain in the head, the external uſe of camphor is of great ſervice; it is in this caſe to be applied to the temples; and the patient ſhould at the ſame time take internally, powders compoſed of nitre and the common abſorbents, and diaphoretic antimony, and afterwards ſhould take ſome gentle purges, and frequently bathe the feet in warm water. *Junker*'s Conſp. Med. p. 500, 501.

CORYZA, in infants. See the article INFANT.

COSCYLIUM, in natural hiſtory, a name given by ſome of the old writers to the *kermes*, the true nature of which they did not know, but ſuppoſed it to be a ſort of ſcabrous excreſcence, formed of the abundant juices of the tree, and of the nature of the galls on the oak, and other trees.

COSENAGE, in law, a writ that lies where the treſail, that is, the tritavus, the father of the beſail, or great grandfather, being ſeized in fee at his death of certain lands, or tenements, dies; a ſtranger enters, and abates; then ſhall his heir have this writ of *coſenage*; the form of which ſee in *Fitzh.* Nat. Br. fol. 221.

COSENING, in law, an offence whereby any thing is done deceitfully, in, or out of, contracts, which cannot be fitly termed by any eſpecial name. *Weſt.* Symbol. P. 2. Tit. Indictment. Sect. 68. In the civil law it is called *ſtellionatus*. See STELLIONATE, *Cycl.*

COSHERING, in the feudal cuſtoms, a kind of right of the lords to lie, and feaſt themſelves, and their followers, at their tenant's houſes.

We find this term in *Harris*'s lexicon technicum, and in *Jacobs*'s law dictionary, which laſt quotes Spelman of parliaments MSS. for it. The word *coſhering* may perhaps be derived from the old Engliſh *coſhe*, a cot, or cotage. See *Spelm.* Gloſſ. Verb. *coſcez.*

COSMOLOGY, the ſcience of the world in general. This Wolfius calls *general*, or *tranſcendental coſmology*, and has written a treatiſe on the ſubject, wherein he endeavours to explain how the world ariſes from ſimple ſubſtances; and treats of the general principles of the modifications of material things, of the elements of bodies, of the laws of motion, of the perfection of the world, and of the order and courſe of nature. *Wolf.* Coſmologia generalis, Francfort. & Leipſic. 1731. 4°.

COSMOPŒIA. See WORLD.

COSSE and COSSIC, is uſed in old writers for algebra. *Harris.*

COSSE *de geniſte*, an order of knighthood inſtituted by Lewis the IX. at his marriage with Margaret of Provence. *Hofm.* Lex. in voc.

CASSILAGO, in botany, a name given by ſome authors to the poiſonous plant called *henbane*. *Ger.* Emac. Ind. 2.

COSTA *canina*, in botany, a name given by ſome authors to the *plantago quinquenervia*, or narrow-leaved plantain, commonly called *ribwort*. *Ger.* Emac. Ind. 2.

COSTARUM *depreſſores proprii*, in anatomy, a name given by Douglaſs, from Cowper, to what Albinus affirms to be only that part of the internal intercoſtal muſcles which lie neareſt the ribs. See INTERCOSTALS.

COSTARUM *levatores*, a name given by Steno, Morgagni, and others, to the muſcles of the ribs called by Albinus, the *levatores breviores coſtarum*, and by others the *ſupracoſtales*, the *ſur coſtaux* of the French.

COSTIVENESS (*Cycl.*)—See OBSTRUCTIO *alvi*.

COSTIVENESS, in infants. See INFANT.

COSTOHYOIDES, in anatomy, a name given by Santorini to one of the muſcles of the mouth now generally called the *coracohyoidæus*.

COSTRANGULA, in botany, a name uſed by ſome for the *ſcrophularia*, or *figwort*. *Ger.* Emac. Ind. 2.

COSTUS (*Cycl.*) — COSTUS *Arabicus*. Mr. Geoffroy has obſerved that this root ſeems to be a ſpecies of elecampane; and that our common elecampane, when plump, well fed, and carefully dried, after it has been kept a long time, aſſumes exactly the ſmell of the *coſtus*, and wholly differs from the common elecampane roots ſold and uſed in the ſhops. Memoires Acad. Scienc. Par. 1740.

Coſtus Arabicus is an attenuant, diuretic, and ſudorific; it is given in obſtructions of the menſes, and chronic caſes, ariſing from infarctions of the viſcera. Its doſe is from ten grains to half a dram, but is ſeldom preſcribed ſingly.

COSTUS *dulcis*, in the materia medica, the name of a root, which being apt to contract a bitterneſs in growing old, is called in that ſtate, by many authors, bitter *coſtus*, and ſuppoſed a different drug.

It is the root of the *coſtus indicus violæ martis odore*, called by the

the Indians *tſiana cua*. It grows to ſix or ſeven feet high; the leaves are of a lively green, but ſomething paler on the upper ſide than the lower; the flowers are four leaved, white, and ſhaped like a bell; the fruit is three cornered, and divided into three cells, containing a number of triangular ſeeds. The root always contracts a bitterneſs, and grows darker coloured in keeping, though freſh it was pale and ſweet; and hence the ſuppoſed difference, the deſcriptions of authors agreeing alike to each in all but theſe accidents.

The leaves of the common garden *coſtmary*, are ſtomachic and detergent. They are given with ſucceſs againſt crudities of the ſtomach, belchings, and vomittings after meals. They have alſo great reputation for the curing an offenſive breath, heart-burns, and many of the moſt obſtinate and inveterate head-achs, the cauſes of which lie in the ſtomach.

COTATUA, in natural hiſtory, a name given by the people of the Philippine iſlands to a ſpecies of parrot, called alſo *calangay*. It is all over white, and has a creſt of feathers on the head. It is of the bigneſs of a common pigeon.

COTATUA *major* is a very beautiful ſpecies of parrot, common in the woods of the Philippine iſlands. This is of the ſize of a common hen. It is all over white, except that its beak and legs are black; its tongue alſo is black. This is the moſt eaſily taught to talk of any of the parrot kind, and when taught, ſpeaks the moſt diſtinctly of all the kinds.

COTE, a term uſed in courſing, to expreſs the advantage one greyhound has over another, when he runs by the ſide of it, and, putting before it, gives the hare a turn. See the article COURSING.

COTE-*gare*, a kind of refuſe wool, ſo clung or clotted together, that it cannot be pulled aſunder. By 13 Rich II. Stat. 1. c. 9. it is provided, that neither denizen or foreigner make any other refuſe of wools but *cote-gare* and *villein*. So the printed ſtatute has it: but in the parliament roll of that year, it is *cod-land* and *villein*. *Cot*, or *cote*, ſignifies as much as cottage in many places, and was ſo uſed by the Saxons, according to Verſtegan.

COTESWOLD, ſeveral ſheep-cotes, and ſheep feeding on hills. It comes from the Saxon *cote*, i. e. *caſa*, a cottage, and *wold*, a place where there is no wood.

COTICULA, in the natural hiſtory of the antients, the word by which the Romans expreſſed the ἄξων of the Greeks; a ſtone of very great hardneſs, brought from Armenia, and uſed on many occaſions; one of which was, the working on ſuch of the harder ſtones as iron inſtruments would not touch.

Many of the antient Greeks, who had this ſtone from the iſland of Cyprus, called it, from its hardneſs, by the ſame name with the diamond, as they ſometimes did iron alſo; which manner of writing has much miſled thoſe who have copied too careleſsly from them; and even Pliny, who after having in one part of his book given a right account of this ſtone, and called it *cos*, in another gives a different hiſtory of it, miſtaking it for a diamond.

This *coticula* was long in great eſteem with the antient artificers on gems, and ſerved not only to work upon ſuch of the gems as iron could not touch, but was uſed to bore holes thro' ſuch as they ſtrung on threads, and hung in rows in their ornaments of the bracelet kind. And Pliny's account of the other gems being bored with Cyprian diamonds, means no more, than that they were worked with this *coticula*, which was antiently had from the iſland of Cyprus, and afterwards from Armenia, and was called by ſome, in a metaphorical ſenſe, *adamas*, from its great hardneſs. *Hill*'s Theophr. p. 108.

COTICULA is alſo a name given by many to the touch-ſtone; not from its being of the nature of the *coticula* of the Romans, but from its being, for the convenience of carriage and uſe, frequently found in the ſhape of a whetſtone.

COTINUS, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the roſaceous kind, or compoſed of ſeveral petals, arranged in a circular form. From the cup of the flower there ariſes a piſtil, which finally becomes a fruit: This does not ripen in Europe, but ſeems to be of the unicapſular kind, and is placed on branches, which terminate in villoſe capillaments. *Tourn.* Inſt. p. 610.

The only known ſpecies of the *cotinus*, is the *cotinus coriaria*, or *coccygria*.

COTINUS was alſo uſed by the antients for the olive tree, eſpecially the *olea ſylveſtris*, or wild olive, which is always called *cotinus*, κότινος, by the Greeks. To diſtinguiſh this from the ſhrub uſed in dying, and called by the ſame name, the Latins have added the epithet *coriaria* to this laſt: but as this is often omitted, ſome confuſion has been occaſioned by that omiſſion. The *cotinus* of the Latins, or *cotinus coriaria*, is at preſent called by the Italians *ſcotano*, and is ſuppoſed by ſome to be the ſame with the *ſcythicum lignum*, but improperly. See SCYTHICUM *lignum*.

COTONASTER, in botany, a name given by ſeveral authors to a ſpecies of the *cratægus*, called by Mr. Tournefort the *cratægus*, with oblong ſerrated leaves, green on both ſides. See CRATÆGUS.

COTTON (*Cycl.*) — *Philoſophic* COTTON, a name given by ſome chemical writers to the flowers of zink, from their whiteneſs, and ſilky or cottony appearance.

COTTUS, in ichthyology, the name of a genus of the acanthopterygious fiſhes, the characters of which are theſe: the branchioſtege membrane on each ſide contains ſix very diſtinct bones: the head is broader than the body, and is depreſſed and prickly: there are two fins on the back; the foremoſt has ſeveral flexile prickles in it. The fins of the belly are ſmall, and have only four bones in each, and the ſkin of the whole fiſh is ſmooth, not ſcaly. The ſpecies of this genus are three: 1. The ſmooth *cottus*, with two prickles on the head. This is the little fiſh which we call the *miller's thumb*. 2. The rough *cottus*, with four horn-like prickles in the middle of the head. This is the fiſh called by the Swedes the *hornſimper*. The upper jaw is a little longer than the under one. 3. The ſmooth *cottus*, with ſeveral ſpines on the head, and with the upper jaw longer than the under. This is the *ſcorpio marina* of Schonveld, and the *ſcorpæna* of Bellonius. The head is very prickly, but it has none of thoſe horns in the middle which the former has. 4. The *cottus*, with ſeveral cirri, and with an octangular body. This is the *cataphractus* or *pogge*. 5 The *cottus*, with the ſecond fin of the back white. This ſeems to be the *draunculus marinus* of Rondeletius, and other authors. *Artedi*, Gen. Piſc. 34. See DRACUNCULUS, &c.

COTULA, in botany, the name of a genus of plants, the characters of which are theſe: the flower is in ſome plants radiated, and in others floſculous: the diſk is compoſed of floſcules, and the outer circle, where there is one, of ſemifloſcules. Theſe all ſtand upon the embryo ſeeds, and are all contained in a general ſquammoſe cup. The embryos finally ripen into ſeeds, which are flat, heart-faſhioned, and alated.

The ſpecies of *cotula* enumerated by Mr. Tournefort, are theſe: 1. The yellow flowered, radiated *cotula*, called by many the *cotula* leav'd oxeye. 2. The *cotula*, with yellow naked flowers. 3. The dwarf, procumbent, Portugal *cotula*: and, 4. The African *cotula*, with a beautiful blue cup. *Tourn.* Inſt. p. 495.

COTULA *fœtida*, a name given by ſome to the ſtinking *chamæmile*. See CHAMÆMELUM.

The *cotula fœtida* has all the virtues of caſtor, but in a more remiſs degree. A decoction of it, when carefully dried, is of great uſe in all diſorders of the hyſteric kind. It is alſo uſed externally, by way of fomentation, in pains and tumors. Some alſo uſe the expreſſed juice of the freſh leaves, as a remedy in ſcrophulous caſes. The flowers have much the ſame virtues as thoſe of the common chamæmile.

COTURNIX, in zoology, the *quail*, the leaſt of all the birds of the gallinaceous kind. They have, however, the genius of the cock kind, and may be bred to fight like our game cocks. This was an old cuſtom among the Athenians, and is ſtill kept up in ſome parts of Italy, and in Aſia *Ray*'s Ornithol. p. 122.

COTYLEDON, in botany, a name by which ſome authors call the *umbilicus veneris*, or *navelwort*, a round-leaf'd plant, found on old walls. *Tourn.* Inſt. p. 90. See NAVEL-*wort*.

COTYLISCUS, or COTYLUS, in antiquity, a veſſel with a narrow mouth, a very wide belly, and only one handle. *Pitiſc.* Lex. Ant. in voc.

COTYTTIA, or COTYTTIS, in antiquity, a nocturnal feſtival, in honour of *Cotys*, or *Cotytta*, the goddeſs of wantonneſs. *Pott.* Archæol. Græc. l. 2. c. 20.

COUCH. See WET-*couch*.

COUCH, in heraldry, a term uſed to expreſs the ſhield of a coat of arms, when it does not ſtand erect, but hangs downward. The origin of this poſition of the ſhield ſeems to have been, that the perſons who were to fight in tournaments were compelled, from the time that proclamation was made till the day of fighting, to hang up their ſhields, by one corner, from the windows or balconies of the neighbouring houſes, or on the trees or barriers of the ground, if the exerciſe was performed in the fields. The horſe combatants hung up their ſhields by the left corner, and the foot combatants by the right. Hence the left corner hanging became the moſt honourable; and we ſee, in all the ſons of the royal blood of England and Scotland, that the ſhields with their arms all hang that way. Some writers on heraldry expreſs this diſpoſition by the word *pendant*. *Niſbet*'s Herald. p. 12.

COUCHER, or COURCHER, in our ſtatutes, is uſed for a factor, or one that continues in ſome place or country for traffic; as formerly in Gaſcoign, for the buying of wines. Anno 37 Edw. III. c. 16.

COUCHER is alſo uſed for the general book, in which any religious houſe or corporation regiſter their particular acts. Anno 3 and 4 Edw. VI. c. 10.

COVERTURE (*Cycl.*) — By the law of England, *coverture*, in ſome caſes, will excuſe the woman from the pains of felony, &c. Vid *Hawk.* P. C. l. 1. c. 1. See FEME *covert*.

COUGH (*Cycl.*) — *convulſive* COUGH. The method of cure often followed in this diſeaſe, is by evacuations: but this has been obſerved rather to prevent the diſeaſe from becoming fatal, than to ſhorten it, ſuch *coughs* continuing ſeveral months notwithſtanding. However, a remiſſion for ſome days happens after bleeding and purging, eſpecially when the purgatives work upwards as well as downwards. Pectorals, balſamics and attenuants have been ſometimes found to do little or no good;

good, and opiates rather to do hurt. Medic. Eſſ. Edinb. abridg. vol. 1. p. 70. See TUSSIS.

COUGH, *in infants*. See INFANT.

COVINUS, among the antients, a kind of chariot, in which the Gauls and Britons uſed to fight in battles. See *Hoffm.* Lex. in voc.

COULTER, in huſbandry, that part of a plough which forms the edge, ſtanding before the ſhare of the plough, and cutting the clods as the ſhare tears them up. The *coulter* is an iron inſtrument of two foot eight inches in length, of near two inches breadth, and near one inch thick. It is driven through the beam of the plough, and fixed in its proper direction by a wedge. See PLOUGH.

The modern improvement of the plough by Mr Tull, gives it four *coulters*; the conſequence of which is, that the earth ploughed up is cut four times as ſmall as by the common plough, which has only one.

In all *coulters*, the length and direction are to be nicely regulated. The cutting the hole and driving the wedge, regulate the direction, and its length is altered from the beam by the driving it farther down, as its point wears away. The firſt *coulter* in all ploughs ought to be laid in the beam, in the following manner: Its back is to bear againſt the back of the *coulter* hole, its right ſide above, to bear againſt the upper edge of the *coulter* hole, and its left ſide to bear againſt its lower edge; ſo that there ſhould always be at leaſt three wedges to hold the *coulter*; the pole wedge before it, another on the left ſide of it above, and a third on the right ſide underneath; and the hole muſt be ſo made, that the *coulter* ſtanding thus acroſs the hole, its point may incline ſo much toward the left, as to be about two inches and a half farther to the left than the point of the ſhare, if it were driven down ſo low as it. But it never ought to be ſo low in any plough.

As to its bearing forward, the point of the *coulter* ſhould never be before the middle of the point of the ſhare; but if it be ſet too obliquely, it will in the working, have greater power to move up the pole-wedge and get looſe.

In the four *coultered* plough, the three additional *coulters* muſt all ſtand in the ſame poſition with this, in regard to the inclination of their points one to another. This is a vaſt advantage to them; for by this means, when the fin of the plough is raiſed up, by turning the handles toward the left, their point do not riſe out of the ground as they would do were it not for this inclination. In regard to their pointing forward, experience ſhews, that it is beſt that every one of the three ſhould be a little more perpendicular than that next behind it: by this means there is a greater ſpace left between them above than below, and the roots of weeds can never clog them up as they otherwiſe would do, and by that means raiſe the plough out of the ground, if not picked clean by a man at times.

None of theſe *coulters* ought to deſcend ſo low as the ſhare, except when the land is to be ploughed very ſhallow; it is always ſufficient for them to cut through the turf, let the plough go as deep as it will; in plowing ſhallow, the fin of the ſhare muſt alſo be broad enough to cut off the fourth piece or furrow; elſe that lying very faſt, will be apt to raiſe up the groundwriſt, and throw out the plough; but when the land is ploughed deeper, the groundwriſt will break off this fourth furrow, though the fin be not broad enough to reach it. *Tull*'s Huſbandry.

COULTER-*neb*, or COUNTER-*neb*, in zoology, a name which the people in ſome parts of England call the *anas arctica clusii*. See DUCK.

COUNCIL *and Seſſion*, in Scotland. See SESSIONS.

COUNTER (*Cycl.*)—*Counters* in ſhip building are diſtinguiſhed into upper and lower. The *upper counter* is reckoned from the gallery to the lower part of the ſtreight piece of the ſtern. The *lower counter* is between the tranſom and lower part of the gallery.

COUNTING-*board*. See ABACUS.

COUNTORS, CONTOURS, or COUNTERS, has been uſed for ſerjeants at law, retained to defend a cauſe, or to ſpeak for their client in any court of law. *Horn*'s Mirror, lib. 2. cap. des Loyers.

It is of theſe Chaucer ſpeaks,

——A ſheriff had he been, and a *contour*,
Was no where ſuch a worthy vavalour.

They were antiently called ſerjeant *contours*. *Coke* on *Littl.* fol. 17.

COUNTRIES, among the miners, a term or appellation they give to their works under ground. Phil. Tranſ. No. 198.

COUP *de bride*, in the manege. See EBRILLADE.

COUP *de grace*, in the French muſic, the ſame as what the Italians call *tronco per grazia*. See TRONCO.

COURBARIL, the name of a genus of plants. See HYMENÆA.

COURSES, (*Cycl.*) in the ſea language, is uſed for a ſhip's main ſail and fore ſail. When ſhe ſails under them only, without lacing on any bonnets, they ſay, ſhe goes under *a pair of courſes*.

COURSING. There are three ſeveral *courſes* with greyhounds. 1. At the hare. 2. At the fox, and 3. At the deer.

For the deer there are two ſorts of *courſes*, the one in the paddock, the other either in the foreſt or purlieu. For the paddock *courſe*, there muſt be the greyhound and the terrier, and the mungril greyhound, whoſe buſineſs it is to drive away the deer before the greyhounds are ſlip'd; a brace, or a leaſh, are the uſual number ſlip'd at a time, ſeldom at the utmoſt more than two brace.

In the *courſing* the deer in the foreſt or purlieu, there are two ways in uſe, the one is *courſing* from wood to wood, and the other upon the lawns by the keeper's lodge. In the *courſing* from wood to wood, the way is to throw in ſome young hounds into the wood, to bring out the deer; and if any deer come out that is not weighty, or a deer or antler, which is buck, ſore or ſorrel, then you are not to ſlip your greyhounds, which are held at the end of the wood, where the keepers, who can gueſs very well on theſe occaſions, expect that the deer will come out. If a proper deer come out, and it is ſuſpected that the brace or leaſh of greyhounds ſlip'd after him, will not be able to kill him, it is proper to waylay him with a couple of freſh greyhounds.

The *courſing* upon the lawn is the moſt agreeable of all other ways. When the keeper has notice of this, he will lodge a deer for the courſe, and then by coming under the wind, the greyhound may be brought near enough to be ſlip'd for a fair *courſe*.

The beſt method of *courſing* the hare, is to go out and find a hare ſitting, which is eaſily done in the ſummer, by walking acroſs the lands, either ſtubble, fallow or corn grounds, and caſting the eye up and down; for in ſummer they frequent theſe places for fear of the ticks, which are common in the woods at that ſeaſon; and in autumn, the rains falling from the trees offend them. The reſt of the year there requires more trouble, as the buſhes and thickets muſt be beat to rouſe them, and often they will lie ſo cloſe, that they will not ſtir till the pole almoſt touches them: the ſportſmen are always pleaſed with this, as it promiſes a good *courſe*.

If a hare lies near any cloſe or covert, and with her head that way, it is always to be expected that ſhe will take to that immediately on being put up: all the company are therefore to ride up, and place themſelves between her and the covert before ſhe is put up, that ſhe may take the other way, and run on an open ground. When a hare is put up, it is always proper to give her ground or law, as it is called, that is, to let her run twelve-ſcore yards or thereabouts, before the greyhounds are ſlip'd at her; otherwiſe ſhe is killed too ſoon, and the greater part of the ſport thrown away, and the pleaſure of the ſeveral windings and turnings that the creature will make to get away, is all loſt. A good ſportſman had rather ſee a hare ſave herſelf, after a fair *courſe*, than ſee her murder'd by the greyhounds as ſoon as ſhe's up.

In *courſing* the fox, no other art is required than ſtanding cloſe, and on a clear wind, on the outſide of ſome grove, where it is expected he will come out; and when he is come out, he muſt have head enough allowed him, elſe he will turn back to the covert. The ſloweſt greyhound will be able to overtake him after all the odds of diſtance neceſſary; and the only danger is, the ſpoiling the dog by the fox, which too often happens; for this reaſon, no greyhound of any value ſhould be run at this courſe, but the ſtrong, hard bitten dogs, that will ſeize any thing.

The laws of *courſing* eſtabliſhed by the duke of Norfolk, and the ſportſmen of the kingdom in the reign of queen Elizabeth, are theſe:

1. He that is choſen fewterer, or letter looſe of the dogs, ſhall receive the greyhounds matched to run together into his leaſh, as ſoon as he comes into the field; he is to march next to the harefinder, or him who is to ſtart the hare, until he come to the form; and no horſeman or footman is to go before or ſideways, but all ſtrait behind, for the ſpace of about forty yards. 2. A hare ought never to be *courſed* with more than a brace of greyhounds. 3. The harefinder is to give the hare three ſo-hoes before he puts her up from her form or ſeat, to the end that the dogs may be prepared, and may attend her ſtarting. 4. If there be not a particular danger of loſing the hare, ſhe ſhould have about twelve-ſcore yards law. 5. The dog that gives the firſt turn, if after that there be neither cote, ſlip nor wrench, wins the wager. 6. If one dog gives the firſt turn, and another beats the hare, then he that beats the hare wins the wager. 7. A go-by, or bearing the hare, is accounted equivalent to two turns. 8. If neither dog turn the hare, he that leads laſt to the covert wins. 9. If any dog turns the hare, ſerves himſelf and turns her again, it is as much as a cote, and a cote is eſteemed as much as two turns. 10. If all the *courſe* be equal, he that bears the hare ſhall win, and if he be not born, the *courſe* ſhall then be judged dead. 11. If a dog take fall in his *courſe*, and yet perform his part, he may challenge the advantage of a turn more than he gave. 12. If a dog turn the hare, ſerve himſelf, and give divers cotes, and yet in the end ſhall ſtand ſtill in the field, the other dog, if he turns home to the covert, although he gives no other turn, ſhall be adjudged to win the wager. 13. If by misfortune a dog be rid over in the *courſe*, that *courſe* is to be adjudged void; and he that did the miſchief is to make reparation to the owner. 14. If a dog gives the firſt and laſt turn, and there be no other advantage betwixt them, he that gives the odd turn wins. 15. A cote is, when a greyhound goes end ways by the ſide of his fellow,

and gives the hare a turn. 16. A cote ſerves for two turns, and two trippings or jerkings for a cote; and if the hare turns not quite about, ſhe only wrencheth, in the ſportſman's phraſe. 17. If there be no cotes given by either of the brace of greyhounds, but that one ſerves the other at turning, then he that gives the moſt turns wins the wager; and if the turns are equal in number, then he that bears the hare wins the wager. 18. Sometimes a hare does not turn, but wrenches; for ſhe does not turn, except ſhe turn as it were round. In theſe caſes two wrenches ſtand for one turn. 19. He that comes in firſt to the death of the hare takes her up, and ſaves her from breaking, he cheriſhes the dogs, and cleanſes their mouths from the wool; he is adjudged to have the hare for his pains. 20. Finally, thoſe who are judges of the leaſh muſt give their judgment before they depart out of the field, or elſe it is not to ſtand as valid. Sportſman's Dict. in voc.

COURT (*Cycl.*) — By the law of England, no *court* in this kingdom can claim any juriſdiction, unleſs it be ſome way or other derived from the crown; the king being the fountain of juſtice, and the ſupreme magiſtrate of the kingdom, intruſted with the whole executive power of the land. *Hawk.* Pl. Cr. B. 2. c. 2.

Yet the king cannot give any addition of juriſdiction to an antient *court*; but all ſuch *courts* muſt be held in ſuch manner, and proceed by ſuch Rules, as their known uſage has limited and preſcribed. Whence it follows, for inſtance, that the *court* of King's-Bench cannot be authorized to determine a mere real action between ſubject and ſubject; nor can the court of Common Pleas inquire of treaſon or felony.

The moſt general diviſion of *courts* of law in England, is, into ſuch as are of *record*, or *not of record*.

Courts of record are again divided into ſuch as are *ſupreme*, *ſuperior*, and *inferior*.

Every *court*, by having power given it to fine, and impriſon, is thereby made a *court* of record. 1. *Salkeld*, 200.

Courts of record are created by act of parliament, letters patent, or preſcription. *Coke*, *Litt.* 260. a.

The *ſupreme court* is the *court* of parliament. See PARLIAMENT, *Cycl.*

Superior courts of record are diſtinguiſhed into *more principal*, and *leſs principal*.

The *more principal courts* are the *Houſe of Lords*, the *Court of Chancery*, the *King's-Bench*, *Common Pleas*, and *Exchequer*; and alſo, according to Sir Matthew Hale, the *juſtices itinerant ad communia placita*, and *ad placita foreſtæ*.

The *leſs principal courts of record* are ſuch as are held, 1°. By commiſſions of *goal delivery*, *oyer* and *terminer*, *aſſize*, *niſi prius*, and ſome others. 2°. By cuſtom, or charter; as the *courts* of the counties palatine of *Lancaſter*, *Cheſter*, *Durham*. 3°. By virtue of an act of parliament, and the king's commiſſion; as the *court of ſewers*, *juſtices of the peace*, &c. See *Hale*, Analyſis, p. 36.

Inferior courts of record are *corporation courts*, *courts leet*, and the *ſheriff's torn*.

Every *court* of record is the king's *court*, though the profits may be another's. If the judges of ſuch *courts* err, a writ of error lies. The truth of its records ſhall be tried by the records themſelves, and there can be no averment againſt the truth of the matter recorded. *Coke*, *Litt.* 117. b. 8. *Coke*, 38. b.

Courts not of record, are the *courts baron*, *county courts*, *hundred courts*, and others. *Hale*, Anal. 36.

Theſe *courts* cannot impoſe any fine on an offender, nor award a capias, nor hold plea of debt or treſpaſs, if the debt or damages amount to 40 ſhillings; nor of a treſpaſs done *vi & armis*, though the damage be laid under 40 ſhillings. And their proceedings may be denied and tried by a jury, and a writ of falſe judgment, not of error, lies on their judgments. *Coke Litt.* 117. b. 260. a. 2 Inſt. 311, 312.

The *court* of Chancery proceeding by *ſubpœna*, is not a *court* of record. 1. Rol. abr. 527.

On the ſubject of *courts*, ſee New Abr. of the Law, Tit. *Courts*.

COUSINAGE. See COSENAGE.

COW, *bos*, in zoology. See the article BOS.

The uſe of the *cow* is either for the dairy, or for the breed. The red *cow* is generally ſuppoſed to give the beſt milk, and the black *cow* to bring the beſt calves. The *cow* that gives the milk longeſt is the beſt both for the breed and dairy; and, for the latter uſe, it is moſt convenient that the *cow* ſhould calve in the ſpring. Either in the month of March or April, when a *cow* is near calving, ſhe ſhould be put into good graſs three or four weeks before the time; or if it happen in winter, ſhe is to be fed well with hay. The day and night after ſhe has calved, ſhe ſhould be kept in the houſe, and the water that ſhe drinks ſhould be a little warmed. The next day, at noon, ſhe may be turned out; but ſhe ſhould be taken in at night, for three or four days afterwards, and then ſhe may be left to herſelf. Every night that ſhe is taken in, ſhe ſhould be kept till the cold of the morning is over, and a drink of warm water given her before ſhe goes out.

COWSLIP, *primula veris*, in botany, &c. See the article PRIMULA *veris*.

COXENDIX, in anatomy, the hip. See its bones and muſcles under COXÆ, *Cycl.*

COXSWAIN, on board a ſhip. See COCKSWAIN, *Cycl.*

COYOLCOZQUE, in zoology, the name of an American bird deſcribed by Hernandez and Nieremberg, as a ſpecies of quail, or partridge. Its back is of a mixt white and yellow colour, its breaſt and belly wholly yellow; and its head and neck are ornamented with ſpots of black and white; its eyes are black, and its legs yellow. It is very common in many parts of New Spain, and is a very well taſted bird. *Ray*'s Ornithol. p. 314.

COZCACOAUHTLI, in zoology, the Mexican name of a large bird of the eagle kind, deſcribed by Nieremberg, and called *regina aurarum*, the queen of the winds, from its being able to fly againſt any wind.

CQUILAQUIL, in natural hiſtory, a name given by the people of the Philippine iſlands, to the ſpecies of parrot common with them, and diſtinguiſhed from all the other kinds, by being very large, and all over of a fine green.

CRAB, in zoology. See the article SQUILLA.

The *cancer major*, or common large *crab*-fiſh, has its abode from twenty to forty fathom water. Theſe animals herd together in diſtinct tribes, and have their ſeparate haunts for feeding and breeding, and will not aſſociate with their neighbours. This has been carefully tried, by marking the ſhell of a *crab*, and carrying it to two or three miles diſtance, and there leaving it among the ſame ſpecies: this *crab* has, after this, found its way home, and been caught in its old abode by the ſame fiſhermen.

The fiſhermen find the *crabs* of this ſpecies from the ſize of a cheſnut to twelve pound weight. Nothing, in the hiſtory of this creature is ſo ſingular as its breaking off its own limbs, which it occaſionally does, in the following manner: the creature is able to do this in any poſition, but the moſt advantageous way of making the experiment is to lay it on its back; then, with a pair of iron pincers, break the ſhell, and bruiſe the fleſh of one of the outer joints of a ſmall leg; the wound will bleed, and the creature ſhew ſigns of pain, by moving it about; afterwards it holds it quite ſtill, in a direct and natural poſition, without touching any part of its body, or other legs with it; then, on a ſudden, with a gentle crack, the wounded part of the leg drops off, at the internodium of the ſecond joint, from the body. If a hole be pierced in the great claws, or legs, and an iron put in to lacerate the muſcle, the effect is the ſame, and this large limb is thrown off in the ſame manner, only with more violence.

When the leg is off, a mucus overſpreads the wound, and ſtops the bleeding; and a ſmall leg is, by degrees, produced, which afterwards attains to the ſize of the former. Nature ſeems to have given this ſingular power to this creature for the preſervation of its life, in the mutual quarrels it very frequently has with others of its own ſpecies: in theſe, one *crab* lays hold of the claws of another, and cruſhes it in ſuch a manner, that it would bleed to death had it not this power of giving up the limb, and healing the wound. Phil. Tranſ. N° 478. S. 14.

CRAB, or GIN, in mechanics, an engine uſed for mounting guns on their carriages. It is made of three pieces of oak, aſh, or other ſtrong wood, of about 14 feet long, two of which are joined by tranſomes; ſo that they are wide aſunder at bottom, and join at top, on a ſtrong piece of wood, crooking forwards, called the head, in which are three braſs pullies. Over theſe comes a rope called the *gin-rope*, which likewiſe goes through other pullies in a block, and returns through the head, down the back of the *gin*, and then goes round a windlace. The third piece of the *crab* is round; one end of it goes into the head, and the other ſtands on the ground; ſo that all three make a triangle called the *pye*. When a gun is to be mounted, a ſtrong rope is tied through the block and the trunnions; and then, the windlace being turned round, the gun is lifted up, and placed in her carriage with eaſe. *Guillet.*

The *crab* is uſed alſo to launch ſhips, or heave them into the dock, or off the key. *Manwayring.*

CRAB's *claws*, or CRAB's *eyes*, *chelæ cancrorum*, in the materia medica, the tips of the common *crab* broken off at the verge of the black part; ſo much of the extremity of the claws only being uſed in medicine, as is tinged with this colour. The blackneſs, however, is only ſuperficial; they are of a greyiſh white within, and, when levigated, furniſh a tolerably white powder: this is of the number of the alkaline, abſorbent powders, but ſuperior to moſt of them. It makes the baſis of the famous *Gaſcoign* powder, the *lapis contrayerva*, and many other of the compound, ſudorific powders, and is ſometimes, though rarely, preſcribed ſingly.

It is the common opinion, that theſe *crab's eyes* act as mere abſorbents in the primæ viæ, and extend their efficacy no farther than thoſe paſſages. The French memoirs, however, give us an account of their certainly paſſing into the blood, in this remarkable caſe. A woman who complained of acid humors in her ſtomach, was preſcribed a draught with ſome *crab's eyes* in it, when, to the great ſurprize of the phyſician, her head, face, and breaſt were the next day found vaſtly ſwelled and inflamed. He ſuſpected there might have been ſome miſchievous mixture with the medicine, or that the *crab's eyes* might have been powdered in a braſs mortar, and taken ſome tincture of the metal; but on repeating the doſe, with other *crab's eyes*, the ſame ſymptoms were produced; and perhaps would never have been underſtood, had not the patient heard the word *crab's eyes* mentioned, and told them that the ſame accident always happened to her on eating *crabs*, or cray-fiſh; and that even a ſon of hers

was always affected in the ſame manner on eating either. Mem. Acad. Par. 1709.

CRACKER, in zoology, the name of a freſhwater fowl, of the duck kind, known by authors under the title of *anas caudacuta*, and *coda lancea*, and called in ſome parts of England the *ſea pheaſant*. It is of the ſize of the common wigeon; its head is all over of a ferrugineous brown, but behind the ears there is a ſlight tinge of purple; its neck is ſomewhat longer than in the wigeon, and its beak of a blueiſh black; its head is ſmall, and there is a white ſtreak on each ſide of it, which reaches down to the throat; the throat is grey, variegated with tranſverſe lines, as is alſo the back, but the ſhoulder feathers are, in a great meaſure, black. The tail is grey, with a mixture of white about the edges of the feathers, and is of a very different ſhape from that of all the other ſpecies of the duck kind, having two feathers much longer than the reſt, and running out into narrow points, whence the fowl has the name of the *ſea pheaſant*. The female differs much in colour from the male, and much reſembles the common tame duck; ſhe has the ſame long feathers, however, in the tail. *Ray*'s Ornithol. p. 289.

CRACKS, in timber. To remedy *cracks*. See CLEFTS.

CRADLE, in ſhip-building, a frame of timber raiſed along the outſide of a ſhip, by the bildge, for the more commodious and ſecure launching of the veſſel. The *cradle* is much uſed in Italy, Spain, and Turky, where they alſo trim great ſhips in the *cradle*.

CRAMA, in metallurgy, a name given by the antients to braſs, made by the mixture of copper and the lapis calaminaris, as at this time. They had alſo a kind of white braſs, or mixt metal, made of copper, in uſe among them, which they eſteemed much above the yellow. We find mention of this in Virgil, under the name of *album orichalcum*, and the other old writers often call it *album crama*. We know of many ways of turning copper white: arſenic and many other minerals will do it; and the ſpoons, and other utenſils, which ſome years ago uſed to be made of a mixt metal, called alchymy metal, were a ſort of white braſs. But it does not appear, that any of our methods have been the ſame with that of the antients: the copper is rendered more brittle, and in ſome ſort debaſed, in all our compoſitions of this kind; but in thoſe of the antients, it ſeems to have been rendered more ductile than at firſt.

CRAMA, CROMA, and CHRAMA, in medical writers, are uſed to ſignify a mixture of things, whether medicines or elements. *Blancard.*

CRAMASPARAGUS. See ASPARAGUS.

CRAMBE, *wild-ſea cabbages*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of four leaves, and is of the cruciform kind: the piſtil ariſes from the cup, and finally becomes an unicapſular fruit, containing one oblong ſeed. See Tab. 1. of Botany, Claſs 5. The ſpecies of *crambe* enumerated by Mr. Tournefort, are theſe: 1. The cabbage-leav'd ſea *crambe*, called *ſea cale*, and *ſea cabbage*. 2. The broad rocket-leav'd ſea *crambe*, with a fruit of the ſhape of a ſpear point. This is uſually eſteemed a ſpecies of rocket: and, 3. The narrower-leav'd, rocket-like ſea *crambe*, with ſpear-pointed ſeed veſſels. *Tourn.* Inſt. p. 211.

CRAMP *fiſh*, or NUMB *fiſh*, in ichthyology, the Engliſh name of the *torpedo*. See RAJA and TORPEDO.

CRAMPER, in zoology, a name given by ſome to the *brama ſaxatilis*, or *Pagrus indicus*, a large and broad ſea fiſh, caught among the rocks on the ſhores of many parts of the Eaſt-Indies. *Ray*'s Ichthyogr. Append. p. 1. See the article BRAMA *ſaxatilis*.

CRANE (*Cycl.*) — CRANE, in zoology, a name improperly given in many parts of England to the ſhagg or ſmall cormorant, a bird common about our ſhores.

CRANE, in zoology. See GRUS.

CRANE's *bill*, a kind of forceps uſed by ſurgeons, and ſo named from its figure.

CRANE's *bill*, in botany, &c. See GERANIUM.

CRANE-*fly*, a name given by ſome to the creature we commonly call father long-legs, and the authors of hiſtories of inſects, *tipula terreſtris*. This creature affords the microſcopic obſerver many curious particulars; but the moſt remarkable is, the ſurpriſing contraction of the muſcular fibres in the legs. Theſe being diſſected in a drop of water, and placed before the microſcope, the fleſhy fibres contract and diſtend themſelves in a manner not to be imagined, and continue this motion for ſeveral minutes; and this is conſtantly to be obſerved in this inſect, and never in any other, ſo far as has been yet obſerved. *Lewenhoek*, Arcan. Nat. T. 3. p. 109.

The inteſtines of this creature are alſo very wonderful, conſiſting of numberleſs veſſels and organs, which may be ſeen as plainly by the microſcope, as the bowels of larger animals can by the naked eye. The tails both of the male and female are alſo of an amazing ſtructure; the female's ends in a ſharp point, with which ſhe perforates the ground, and depoſites her eggs under the graſs in meadows. *Baker*'s Microſcope, p. 290.

It is alſo called *macropedium*, and by ſome *pedo*.

CRANIOLARIA, in botany, the name of a genus of plants, called by Houſton, the firſt obſerver, *martyniæ ſpecies*, but improperly. The characters are theſe: the perianthium is compoſed of four ſhort and ſlender leaves, which ſtand wide expanded, and remain after the flower is fallen. The ſpatha is large, inflated, and of an oval figure, and is open on one ſide all the way along. The flower conſiſts of one irregular petal: the tube is extremely long and ſlender: the limb is plane, and bilabiated: the upper lip is roundiſh, and cut into ſome ſegments, of which the middle one is the largeſt: the lower lip is trifid: the ſegments are all round, and the middle one much larger than the reſt. The ſtamina are four filaments, two of which are ſomewhat ſhorter than the others; but all nearly of the length of the tube of the flower. The antheræ are ſimple: the germen of the piſtil is oval: the ſtyle is ſlender, and of the length of the tube of the flower. The ſtigma is thick and obtuſe. The fruit is a bivalve capſule, of an oval figure, pointed at each end, and of a coriaceous texture; and within this is contained a woody nut, of a depreſſed figure, pointed at each end, and furrowed on the ſurface; ſo that it in ſome degree reſembles the ſkull of ſome quadruped. *Linnæi* Gen. Plant. p. 292.

CRANIUM, in natural hiſtory, the name of a ſpecies of the *echinus marinus*, of the genus of the *briſſoides*. *Klein*'s Echin. p. 36. See BRISSOIDES.

CRANIUM, the ſkull. See SKULL.

CRANNY, in the glaſs trade, a round iron, whereon the workmen in the glaſs-houſes roll the glaſs, to make the neck of it ſmall. *Neri*'s Art. of Glaſs, Append.

CRASSIROSTRÆ, in zoology, the name of a genus of ſmall birds, diſtinguiſhed by the thickneſs of their beaks, as the ſparrow, greenfinch, and the like. *Ray*'s Ornithol. p. 148.

CRATÆGUS, in botany, the name of a genus of trees, the characters of which are theſe: the flower is the ſame with that of the pear; but the fruit differs from the pear both in ſize and ſhape, being more properly called a berry than a large fruit, and containing a number of callous ſeeds, lodged in certain cells within it.

The ſpecies of *cratægus* enumerated by Mr. Tournefort, are theſe: 1. The *cratægus*, with roundiſh ſerrated leaves, hoary underneath. 2. The *cratægus*, with oblong ſerrated leaves, green on both ſides. 3 The arbutus-leav'd Virginian *cratægus:* and, 4. The jagged-leav'd *cratægus*, called the parſley-leav'd medlar, and the *ſorbus torminalis*. *Tourn.* Inſt. p. 633.

CRATERITES, in natural hiſtory, the name of a gem mentioned by Pliny, and ſaid to be extremely hard, and of a middle colour between that of the chryſolite, and of the common yellow amber. This was plainly a ſpecies of chryſolite.

CRATEVA, in botany, the name of a genus of plants, the characters of which are theſe: the perianthium conſiſts of one leaf, divided into four ſegments at the edge: theſe are of an oval figure, and ſtand expanded, and the baſe of the cup is plane. The flower is compoſed of four petals, of an oval figure, all bending upwards in the ſame direction, and having ungues of the length of the cup. The ſtamina are ſixteen ſetaceous filaments, ſhorter than the flower, and ranged on that ſide oppoſite to the petals. The antheræ are erect and oblong: the ſtyle is very long and crooked: and the germen, which is of an oval figure, ſtands upon this. The ſtigma has no pedicle, and is of the capitate kind. The fruit is a very large, globoſe, fleſhy berry, ſtanding upon the ſtyle, which grows thick, in order to become a proper pedicle for it. The ſeeds are numerous, round, and emarginated, and are contained in one cell. *Linnæi* Gen. Plant p. 231. *Plumier*, Gen. 21.

CRATICULA, a chemical inſtrument, made of ſquare pieces of iron of about a finger's thickneſs, placed ſo as to have half a finger's ſpace betwixt them. It is uſed in making of fires to keep up the coals. *Blancard.*

The word is Latin, importing a roaſter or gridiron. *Ainſworth.*

CRAVANT, in zoology, a name by which Bellonius and ſome others have called the *bernacle*, a ſmall ſpecies of wild gooſe, common in winter on the coaſts of Lancaſhire, and idly ſuppoſed to breed out of ſhells. *Ray's* Ornithol. p. 274. See the article BERNICLA.

CRAX, in the Linnæan ſyſtem of zoology, the name of a diſtinct genus of birds, the diſtinguiſhing character of which, from the reſt of the gallinæ is, that the feet have each four toes, and the head is ornamented with a kind of feathery crown, bending backwards. *Linnæi* Syſt. Nat. p. 47.

CRAY *fiſhes*. The delicate flavour of theſe fiſh ſeems to be in a great meaſure owing to their food. When they have well-taſted food, their fleſh preſerves the reliſh of it: but when they feed on other things, they are often rendered of no value, by the flavour communicated to their fleſh by them. There are great quantities of theſe fiſh in the river Obra, on the borders of Sileſia; but the people find them ſcarce eatable, becauſe of a bitter aromatic flavour, very diſagreeable in food. It has been ſince obſerved, that the calamus aromaticus grows in vaſt abundance on the banks of that river, and that theſe creatures feed very greedily upon its roots. Theſe have a very remarkable bitterneſs mixed with their aromatic flavour, while freſh, which goes off very much in the drying; and on comparing the taſte of theſe roots with that of the *cray-fiſh*, there remains no doubt of the one being owing to the other. Act. Leipſ. 1690.

In Swiſſerland, there are ſome *cray-fiſh* which are red, while they are alive, and others blueiſh. Some kinds of them alſo will never become red, even by boiling, but continue blackiſh.

CRAYER, a kind of ſmall ſea veſſel or ſhip. It is mentioned in the Stat. 14 Car. II. c. 27. and in old records, *Et tranſitus craerarum & batellorum cum victualibus & aliis neceſſariis, &c.* Parl. 6. Ric. II. Par. 2. M. 13.

CREENGLES, in a ſhip, are ſmall ropes ſpliced into the bolt-ropes of the ſails of the main-maſt and fore-maſt, into which the bowling bridles are made faſt; and are alſo to hold by when a bonnet is ſhaken off. *Manwayring.*

Harris, in his lexicon technicum, has the ſame deſcription under *Crenyles*, and the gentleman's dictionary under *Crencles*.

CREMATION is ſometimes uſed for burning, particularly when applied to the antient cuſtom of burning the dead. This cuſtom is well known to have prevailed among moſt eaſtern nations, and continued with their deſcendants after they had peopled the different parts of Europe. Hence we find it prevailing in Greece, Italy, Gaul, Britain, Germany, Sweden, Norway and Denmark, till chriſtianity aboliſhed it. Phil. Tranſ. N° 458. Sect. 3.

In Pruſſia we are told, that the deceaſed's beſt cloaths, arms, horſes, hunting dogs, and whatever was moſt agreeable to him in his life time, were thrown on the funeral pile. It was likewiſe cuſtomary to throw in his braſs rings, and bracelets, eſpecially if he had been a chriſtian. From whence it ſeems, that the chriſtian religion did not immediately aboliſh the cuſtom of *cremation*. See *Hartknoch* diſſ. 13. de funerib. veter. Pruſſ. p. 193. Phil. Tranſ. N° 457. Sect. 3. where we have an account and draught of ſome of theſe funeral remains of the antient Pruſſians.

CRENOPHYLAX, κρηνοφυλαξ. The *Crenophylaces* at Athens were magiſtrates who had the inſpection and management of fountains under their care. *Pott.* l. 1. c. 15. T. 1. p. 84.

CRENATED *leaf*, among botaniſts. See LEAF.

CREPIDÆ, among the Romans, a kind of ſlippers or ſhoes, which were always worn with the *pallium*, as the *calcei* were with the *toga*. See *Hofm.* Lex. in voc.

CREPIS, in botany, the name of a genus of plants, the characters of which are theſe. The common cup is double, the exterior is very ſhort, wide, open, and deciduous; the interior is of an oval figure, and is ſimple, ſulcated, and permanent. The ſquammæ are very narrow, and meet at the points. The flower is of the compound kind, and is imbricated. It is of an uniform ſtructure, being compoſed of ſeveral hermaphrodite little flowers, all of equal ſize; each of theſe is compoſed only of one leaf, and is ligulated, truncated and narrow, and divided at the extremity into five ſegments. The ſtamina are five very ſhort and capillary filaments. The antheræ are of a cylindric figure, and tubular. The germen of the piſtil ſtands below the flower; the ſtyle is capillary, and of the length of the ſtamina; and the ſtigmata are two in number, and are reflex; the cup ſerves in the place of the fruit, and is of a roundiſh figure; the ſeeds are ſingle and oblong, and have each a long and plumous piece of down; the receptacle is naked. This genus of plants is called by Vaillant, *Hieracnioides*. *Linnæi* Gen. Pl. 376.

CREPUNDIA, in antiquity, tokens left with expoſed children, by which they might be afterwards known. Theſe were of conſiderable value, if the child happened to be nobly born, in order to defray part of the expence of its education.

CREPUNDIA was alſo uſed in a leſs proper ſenſe, for the ſwadling cloths in which children were expoſed; becauſe by them they might be known again. See EXPOSING *of Children.*

CRESCENTIA, in botany, the name given by Linnæus to a genus of plants, called by Plumier, who firſt deſcribed them, *cujete*. The characters are theſe: the cup is a ſhort deciduous one-leaved perianthium, divided into two erect, concave, obtuſe ſegments. The flower is monopetalous and unequal. The tube is crooked and gibbous. The limb is erect, and divided into five ſegments, which are equal in ſize, and placed in an expanded poſture. The ſtamina are four ſubulated filaments, nearly of the length of the former; two of theſe, are ſomewhat longer than the others, and they ſtand in a ſpreading poſture. The antheræ are obtuſe and incumbent. The germen of this piſtil is flatted and oval, the ſtyle is long and ſlender, and the ſtigma is headed. The fruit is a hard, oval berry, with one cell, and the ſeeds are numerous and cordated, and are bilocular. *Linnæi* Gen. Pl. p. 297. *Plumier*, 16.

CRESSES, in botany. See NASTURTIUM.

Indian CRESS. The ſeveral kinds of this plant are eaſily propagated, by ſowing their ſeeds in March or April, in a good ſoil, and warm ſituation, and ſhould be planted near a hedge or wall, being great climbers, and their lying on the ground being ſubject to rot them. They flower in June, and continue flowering till October, when the froſts ſoon deſtroy the whole plant

The double flowered kind produces no ſeeds, and muſt therefore be propagated by planting cuttings of it. This may be done in any of the ſummer months; but the plants muſt be carefully preſerved in winter, being very ſubject to rot. If this be confined in pots, and thoſe filled with a poor ſoil, it will ramble leſs in the branches, and will produce more flowers. The flowers of this kind, though very beautiful, are not near ly ſo well taſted in ſallads as thoſe of the ſingle kind, which are very warm, and agreeable. *Miller*, Gard. Dict.

CRETA, *Chalk*, in natural hiſtory. See CHALK, *Cycl.* and *Suppl.*

CRETIO, in antiquity, a certain number of days allowed the heir to conſider, whether he would act as heir to the deceaſed, or not; after which time, if he did not act, he was excluded from the eſtate. *Pitiſc.* Lex. Ant.

CREX, in zoology, the name of a bird, common about the Nile, and remarkable for the noiſe which it makes, which is no other than *crex, crex*, whence it has its name. It beak is moderately long and black, as are alſo its head and its legs; its neck, back and breaſt, are white, but the back a little greyiſh; the wings are black, variegated with white. It feeds on inſects, and generally makes a very loud noiſe all the time it is on the wing. *Bellonius* de avibus.

CRIB, in the Engliſh ſalt works, the name given to a ſort of caſe uſed in ſome places inſtead of the *drab*, to put the ſalt into as it is taken out of the boiling pan.

Theſe *cribs* are like hay-racks, wide at the top, and tapering to a narrow bottom, with wooden ribs on each ſide, placed ſo cloſe, that the ſalt cannot eaſily fall through them. Through theſe apertures, however, the ſuperfluous ſaline liquor drains out, and leaves the ſalt, after a few days, dry enough to be added to the heaps that ſtand ready for ſale. At Limington, and in ſome other places, they uſe, inſtead of theſe *cribs*, a ſort of wooden troughs with holes in the bottom, through which the ſaline liquor drains from the ſalt, and falls into veſſels placed underneath to receive it; and in other places they uſe barrows or wicker baſkets, out of which the liquor runs with great eaſe on all ſides at once. See DRABS.

CRIBRUM *benedictum antiquorum*. The antients fancied two cavities placed lengthwiſe in the reins: the upper cavity into which the ſerous blood was poured from the emulgent arteries: the lower, which they thought was diſtinguiſhed with a certain tranſverſe membrane, full of little holes like a ſieve. Hence they called it *colatorium*, a ſtrainer; and *benedictum cribrum*, a bleſſed ſieve, through which they would have the ſerum percolated into the ureters, and the good blood ſtay behind, for the nouriſhment of the reins. *Blancard.*

CRIC, in mechanics. See JACK.

CRICELASIA, κρικηλασια, among the Greeks, the exerciſe of rolling the circle or trochus. See TROCHUS.

CRICKET, in zoology. See GRYLLUS.

Mole CRICKET. See GRYLLOTALPA.

CRICETUS, in zoology, the name of an animal of the mouſe kind. Its ſize is between that of a common rat and a rabbit. See the article MUS.

Its legs are very ſhort; its back is of the colour of a hare's; its ſides have more redneſs; and its belly is black; each ſide is variegated alſo with three large white ſpots; the head and neck are of the ſame colour with the back, the temples are rediſh, and the throat is white; the tail is a hand's breadth long, and of the colour of the back. The hairs of this creature are ſo firmly rooted in the ſkin, that they can by no means be pulled out, but ſooner tear away the ſkin with them; and for this reaſon, as well as for the variety of colour, the ſkins are much valued. It is a very bold and deſperate creature; and if a man a horſeback moleſt it, will fly up at the noſe of the horſe, and hold him very faſt. It lives in holes in the earth, as the rabbit, and heaps up large quantities of vegetable fruits and corn for its ſtore, and is uſually found very fat. It is very apt to ſit on its buttocks, and in that poſture looks like a little bear, whence ſome have called it *arctomys ſalæſtinorum*. It has two large teeth in the front of each jaw, and it uſes its fore feet by way of hands, like the ſquirrel. *Ray's* Syn. Quad. p. 221.

CRIMNOIDES, or CRIMOIDES, in medical writers is uſed for urine with thick ſediments at the bottom, like bran. *Blancard.*

CRINONES (*Cycl.*) — The common way of getting out theſe worms is by the point of a needle; and to prevent their forming there again, the uſual cuſtom is to waſh the parts with wine or vinegar, with alum, nitre, or common ſalt, or with a ſtrong lixivium of oak aſhes, and afterwards anointing them with an ointment of the common kind, uſed for ſcorbutic eruptions, with a ſmall mixture of quick-ſilver.

CRINONIA, a kind of cap, worn by the emperors of Conſtantinople on ſolemn occaſions. *Hoff.* Lex. in voc.

CRISIS (*Cycl.*) — Dr. Albertinus obſerves, that all feveriſh, nay, almoſt all diſeaſes are followed by *criſes*, and that particularly after intermitting fevers are ſtopped by the bark, critical evacuations are to be expected. If they do not come timely, the patient is in danger of ſome other diſeaſe, eſpecially if any uſual evacuation has been hindered; in which caſe it is dangerous to give the bark, unleſs we promote a ſuitable excretion, if a *criſis* does not ſoon come. Med. Eſſ. Edinb. Dr. Martine defends the antients in the rules they have laid down concerning the periods and *criſes* of diſeaſes, endeavouring to prove that they are founded on accurate obſervations.

CRISP *leaf*, *criſpum folium*, among botaniſts See LEAF.

CRISTA (*Cycl.*) — CRISTA *galli*, in conchyliology, the name of a peculiar ſpecies of oiſter, called alſo by ſome *auris porci*, or the hog's ear-ſhell. See OSTREA.

CRISTA *pavonis*, in botany, a name by which ſome authors have

called the *poinciana*. See the article POINCIANA.

CRISTA *pavonis* is alſo a name given to the tree, the wood of which is uſually denominated *logwood*. See LOGWOOD.

CRITHE, in medicine, a ſmall tubercle, hard, red, and immoveable, ſeated upon the eyelid, above the cilia, or range of hairs. It is always included in a kind of cyſt, and by inflammation degenerates into a thickiſh matter, from whence frequently proceed intenſe pains, and various diſorders of the ſight. It is ſometimes ſeated immediately under the ſkin of the eyelid; ſometimes it is within, under the muſcle. When this tubercle is moveable, it is generally called *chalazium*, or in Engliſh *ſtye*, or *ſtithe*. *Heiſter*'s Surgery, p. 365.

CRITHMUM, *ſamphire*, in botany, the name of a genus of plants, the characters of which are theſe: the flowers ſtand in umbels, and are of the roſaceous kind, being compoſed of ſeveral leaves, diſpoſed in a circular form, upon a cup, which afterwards becomes a fruit compoſed of two flat, and lightly ſtriated ſeeds, which uſually throw off their covering. To this it is to be added, that the leaves are fleſhy, narrow, and divided into three parts *Tourn.* Inſt. p. 916.

The ſpecies of *crithmum* enumerated by Mr. Tournefort, are theſe: 1. The greater *crithmum*, or ſea fennel, with the ſmell of parſley. 2. The leſſer *crithmum*, or ſea fennel.

The ſeeds of the common *ſamphire* are carminative and aperient: they are uſed by the people about the ſea coaſts, where the plant is common, in the colic, and in caſes of the gravel, or ſtones in the kidneys. The whole plant is alſo diuretic; it is good againſt obſtructions of the viſcera, and to create an appetite.

CRITHOMANTIA, Κριθομαντεια, in antiquity, a ſpecies of divination, by which predictions were made from the flower with which the victim was beſprinkled. *Pott.* Archæol. Græc. l. 2. c. 14. T. 1. p 319.

CRIZZELLING, in the glaſs trade, a kind of roughneſs ariſing on the ſurface of ſome kinds of glaſs. This was the fault of a peculiar ſort of glaſs made in Oxfordſhire, and ſome other places, of black flints, a cryſtallized ſand, and a large quantity of nitre, tartar, and borax. The glaſs thus made is very beautiful, but, from the too great quantities of the ſalts in the mixture, is ſubject to *crizzel*; that is, the ſalts in the mixture, from their too great proportion, are ſubject, either from the adventitious nitre of the air from without, or from warm liquors put in them, to be either increaſed in quantity, or diſſolved, and thereby induce a ſcabrities, or roughneſs, irrecoverably clouding the tranſparence of the glaſs. This is what was called *crizzeling*; but by uſing an Italian white pebble, and abating the proportions of the ſalts, the manufacture is now carried on with advantage, and the glaſs made with theſe ſalts is whiter than the fineſt Venetian, and is ſubject to no faults. *Plot*'s Oxfordſhire, 258.

CROCALLIS, in natural hiſtory, the name given by the antients to a ſtone famous for its virtues againſt poiſons, and venomous bites. All the deſcription Pliny gives of it, is, that it was of the ſize and ſhape of a cherry.

CROCARDS, an old name given by the Iriſh to a certain kind of foreign money brought over into that kingdom from France, and other parts beyond the ſeas, and uttered there for pennies, though not really worth ſo much as a halfpenny. They were a ſmall ſort of coin, made of a mixture of copper, ſulphur, and a ſmall quantity of ſilver, and were called by ſeveral other names, as *mitres*, *lionines*, *roſaries*, and the like, from the figures they were impreſſed with. They went current in Ireland, and in ſome parts of England a great many years; but were afterwards denied, and prohibited importation, both in England and Ireland, under the penalty of the forfeiture of life and effects. At this time, mints were ſet up in Dublin, for the coining of good money, and, in a few years, the whole quantity of the *crocards* was deſtroyed. See POLLARDS.

CROCIAS *lapis*, in natural hiſtory, a name given by ſome of the old authors to a ſpecies of agate, of a yellow colour, but deeper than the cerachates, or wax-coloured agate, and approaching to what is called a ſaffron colour.

CROCINUM, a name given by the antient phyſicians to a ſort of oil of ſaffron, which is thus deſcribed by Dioſcorides.

Eight drams of ſaffron are to be put into three pints of inſpiſſated oil, and they are to be ſtirred together ſeveral times in a day, for five days together; then the oil is to be ſeparated from the ſaffron, and a like quantity is to be added to the ſame ſaffron, and ſtirred about at times, for three days; then this oil is to be cleanſed off, and to it is to be added fifty ounces of powdered myrrh. Theſe having been well ſtirred together, are then to be ſet by for uſe.

Some uſed an oil, impregnated with aromatics, in the compoſition of the *crocinum*, but that was uſually eſteemed beſt, which ſmelt the moſt ſtrongly of ſaffron, or elſe of myrrh.

The *crocinum* was eſteemed heating and narcotic; whence it was frequently preſcribed by way of embrocation, or elſe held to the noſe in frenſies. It was alſo eſteemed uſeful as a ſuppurative, and to cleanſe old ulcers: it was much eſteemed alſo in hardneſſes, obſtructions, and other diſorders of the uterus, being uſed with wax, marrow, and double the quantity of oil; for a glaucoma, it was alſo uſed with ſucceſs, when mixt with water, and the eyes anointed frequently with it. *Dioſcor.* l. 1. c. 64.

CROCODES, in medicine, the name of a ſort of *troches*, mentioned by Paulus Ægineta, of which ſaffron was one of the principal ingredients.

CROCODILE, *(Cycl.)* *Crocodilus*, a very large and terrible animal; its head is broad; its noſe like that of a hog; the opening of its mouth monſtrouſly large, reaching even to the ears, and the upper jaw moving in the opening it, which gives it a very terrible aſpect. The teeth are large, white, and very numerous, and ſet by one another, like the teeth of a comb; the legs ſtand ſideways; and the feet are armed with extremely ſharp claws. The length of the tail is equal to that of the whole body; the ſkin of the belly is ſoft and eaſily wounded, but that of the reſt of the body ſo hard as to be impenetrable to ſpears or darts, and is covered with ſtrong prickly ſcales. The colour is in ſome a duſky rediſh yellow, but in moſt a diſagreeable brown, with a mixture of grey; and even thoſe which, when alive, had much yellowneſs, always acquire this duſky colour in drying.

It is a very ſlow and unweildy animal, turning ſideways with difficulty; it has an agreeable ſmell, but is a very terrible creature, tearing to pieces, and devouring every living thing that is ſo unhappy to come in its way.

Its eggs are about the ſize of a gooſe egg, and its lays ſixty of theſe for one brood, burying them in the ſands, and leaving them for the ſun to hatch them. The *crocodile* is found in the great rivers of the Nile, the Niger, and the Ganges, and in ſome other places. *Ray*'s Syn. Quad. p. 261. *Worm.* Muſ p. 815.

Foſſile CROCODILE. One of the greateſt curioſities in the foſſile world, which the late ages have produced, is the ſkeleton of a large *crocodile*, almoſt entire, found at a great depth under ground, bedded in ſtone. This was in the poſſeſſion of Linkius, who wrote many pieces in natural hiſtory, and particularly an accurate deſcription of this curious foſſile. It was found in the ſide of a large mountain, in the midland part of Germany, and in a ſtratum of a black foſſile ſtone, ſomewhat like our common ſlate, but of a coarſer texture, the ſame with that in which the foſſile fiſh of many parts of the world are found. This ſkeleton had the back and ribs very plain, and was of a much deeper black than the reſt of the ſtone, as is alſo the caſe in the foſſile fiſhes, which are preſerved in this manner. The part of the ſtone where the head lay was not found, this being broken off juſt at the ſhoulders, but that irregularly, ſo that, in one place, a part of the back of the head was viſible in its natural form. The two ſhoulder bones were very fair, and three of the feet were well preſerved; the legs were of their natural ſhape, and ſize, and the feet preſerved, even to the extremities of the five toes of each.

CROCODILION, in botany, a name given by ſome authors to the plant commonly called the *echinopus*, or *globe-thiſtle*. See ECHINOPUS.

CROCOTTA, in natural hiſtory, a name given by the antients to a very fierce and terrible animal, produced by copulation between the large hyæna and the lioneſs See LEOCROCOTTA.

CROCUS, *ſaffron*. In the Linnæan ſyſtem of botany, this makes a diſtinct genus of plants, the characters of which are, that the flower cup is compoſed of two ſpathæ, or films, placed one near the other. The flower is divided into ſix parts, which are all equal in ſize, of a longiſh, oval figure, and ſtand erect. The ſtamina are three pointed filaments, ſhorter than the flower; the antheræ are of the ſhape of an arrow head; the piſtillum has a roundiſh germen, a thread-like ſtyle of the length of the ſtamina, and the ſtigmata are three in number, convoluted, and notched at the edges; the fruit is a roundiſh capſule, compoſed of three lobes, and containing three cells, and three valves. The ſeeds are numerous and round. *Linnæi* Gen. Plant. p. 10.

The characters of the *crocus*, according to Mr. Tournefort are theſe: the flower is of the liliaceous kind, being compoſed of one leaf, tubular below, and growing much larger, and being divided into ſix ſegments toward the end. The flower ſtands on a pedicle, and from its center there ariſes an oblong piſtil, which terminates in three creſted capillaments. The cup finally becomes an oblong, trigonal ſeed veſſel, which is divided into three cells, and contains a number of roundiſh ſeeds. To this it may be added, that the root is tuberoſe, and double. The ſmaller root, which is enveloped in the ſame membrane with the larger, which is fleſhy and fibrated, is always placed upon it.

The ſpecies of *crocus* enumerated by Mr. Tournefort, are theſe: 1. The common, cultivated *ſaffron*. 2. The ſweet-ſcented *crocus*, which produces in autumn, leaves without flowers. 3. The Alpine, autumnal *crocus*. 4. The blue, many-flowered, autumnal *crocus*. 5. The narrow-leaved, autumnal, mountain *crocus*, with ſilvery, white flowers. 6. The autumnal mountain *crocus*, with a large violet-coloured flower. 7. The ſmaller-flowered, autumnal *crocus*. 8. The narrow-leaved *crocus*, which never produces flowers. 9. The narrow-leaved, Italian *crocus*, with large flowers, and a roſtrated root, called *ſiſyrinchium*. 10. The narrow-leaved, Italian *crocus*, with ſmall flowers, called the ſmall-flowered *ſiſyrinchium*. 11. The broad-leaved, Italian *ſiſyrinchium*. 12. The wild, late-flowering, Conſtantinople *crocus*, with white flowers, with a faint caſt of blueiſh. 13.

The

The broad-leaved, ſpring *crocus*, with variegated, purple flowers. 14. The broad-leaved, ſpring *crocus*, with very large, plain, purple flowers. 15. The broad-leaved, ſpring *crocus*, with white, variegated flowers. 16. The violet-coloured, ſpring *crocus*, with broad leaves, with a white line in the middle, and yellow edges. 17. The broad-leaved, ſpring *crocus*, with flowers ſtreaked with red on the inſide, and with white on the out. 18. The ſpring *crocus*, with three ſegments of the flower of a bright red, and the reſt variegated. 19. The ſpring, changeable-flowered *crocus*. 20. The broad-leaved, ſpring *crocus*, with blueiſh, purple flowers. 21. The white-flowered, ſpring *crocus*, with a blueiſh purple baſe. 22. The broad-leaved, ſpring *crocus*, with flowers purple at the top, and yellow at the baſe. 23. The broad-leaved, ſpring *crocus*, with variegated blue flowers. 24. The broad-leaved, ſpring *crocus*, with pale blue flowers, ſtreaked with violet-coloured lines. 25. The double, ſpring *crocus*. 26. The broad-leaved, ſpring *crocus*, with violet purple flowers, ſtreaked with white. 27. The many-flowered, broad-leaved, ſpring *crocus*, with white flowers, variegated with blueiſh purple lines. 28. The leſſer, white, ſpring *crocus*. 29. The leſſer, purple, ſpring *crocus*. 30. The broad-leaved, whitiſh, or greyiſh-flowered *crocus*. 31. The broad-leaved, ſpring *crocus*, with a large, deep, yellow flower. 32. The broad leaved, ſpring *crocus*, with a ſmaller, pale, yellow flower. 33. The broad leaved, ſpring *crocus*, with a yellow flower, and a green bottom. 34. The broad-leaved, ſpring *crocus*, with a yellow flower, with a purple edge. 35. The broad leaved, ſpring *crocus*, with a gold yellow flower. 36. The broad-leaved ſpring *crocus*, with a pale, whitiſh, yellow flower. 37. The broad-leaved, yellowiſh, ſpring *crocus*, with a variegated flower. 38. The broad-leaved, yellow, ſpring *crocus*, with a more variegated flower. 39. The broad-leaved, ſpring *crocus*, with variegated double flowers. 40. The narrow-leaved, ſpring *crocus*, with a large, blue flower. 41. The narrow-leaved, ſpring *crocus*, with a very large, white flower. 42. The narrow-leaved, ſpring *crocus*, with double bulbs. 43. The narrow-leaved, ſpring *crocus*, with ſmall blue flowers. 44. The purple flowered, ruſh-leaved, ſpring *crocus*. 45. The ſpring *crocus*, with capillaceous leaves. 46. The narrow-leaved, ſpring *crocus*, with variegated flowers. *Tourn.* Inſt. p. 350 — 352.

The variety of the ſeveral ſpecies of *crocus* produced in the gardens of the curious, by raiſing them from well choſen ſeeds, is almoſt incredible. For the manner of raiſing them, ſee the article XIPHIUM.

They are all very hardy, and will increaſe exceedingly by the roots, if ſuffered to remain ſome years in the ground. They will grow in all ſoils and ſituations, and are great ornaments to a garden, as they flower when ſcarce any thing elſe is up. The fibres of theſe roots periſh when their leaves do, and they may, therefore, like all other roots of that kind, be taken up as ſoon as the leaves appear dead, and laid by, in a dry place till September, at which time they muſt be planted again for the ſpring flowering. They ſhould be planted in holes made with a debble, about two inches deep, and at two inches diſtance from one another; the earth being raked over them, they ſhould remain covered about an inch deep with it. If the weather is mild, they will, in January, appear above ground, and in February they will be in full flower. The leaves are ſo ſhort when the flower appears, that it ſeems produced on a naked ſtalk, but as that decays they grow to a conſiderable length; theſe look but unſightly after the flower is gone, but they ſhould not be cut, for that greatly weakens the root for the next ſeaſon's flowering.

CROCUS, in chemiſtry. The preparations of metals which are generally known by this name, as the *crocus martis*, and the like, ſeem to have obtained it from their ſaffron-like colour. They are the calxes of metals, conſiſting of their fixed parts ſeparated from their ſulphureous; they are made either by the means of fire, or by the action of ſalts of various kinds; and are either naturally in a powder, or very eaſily reducible into one.

The general ſubjects of this ſort of proceſs are gold, ſilver, iron, and antimony, and there are many ways of making the proceſſes. The virtues aſcribed to the gold and ſilver *crocus's* ſeem, in a great meaſure, imaginary: that of antimony are far from being the beſt ſort of preparations of that metal; but thoſe of iron are, more than all others, uſeful in medicine. Hoffman, in his *Acta Laboratorii*, has many improvements on the common proceſſes for the making theſe preparations.

CROCUS *Indicus*, Indian *ſaffron*, in the materia medica, a name given by ſome authors to the *curcuma*, or *turmeric* root of the ſhops. *Pont.* p. 116.

CROCUS *antimonii*, the name given in the late London diſpenſatory, to the preparation of antimony and nitre commonly known by the name of *crocus metallorum*. It is made of equal parts of antimony and nitre, powdered fine, and thrown, at times, into a red hot crucible, and, when thoroughly melted, poured out, and ſeparated from its ſcoriæ. This looks more yellow the longer it has been melted: it is but little uſed, except among horſes; but when intended for internal uſe among men, ſhould be procured faithfully prepared in this manner; for our chemiſts generally abate of the nitre to ſave charges, and render the medicine of a very different effect. *Pemberton's* Lond. Diſp. p. 230.

Waſhed *crocus* of antimony is made by boiling the *crocus* of antimony, reduced to a very fine powder, in water, ſtill changing the water, till it comes off inſipid. Of this is made the *vinum antimoniale*, called alſo *vinum emeticum*, and *vinum benedictum*. See VINUM *emeticum*, *Cycl.*

CROCUS *martis*, a chemical preparation, uſed alſo by the glaſs-makers, to give a red colour to glaſs. The glaſs-makers prepare this themſelves, and have four ways of doing it. The firſt is this: take filings of iron, mix them with three parts of powdered brimſtone, and keep them in a melting pot, in a furnace, to calcine, and burn off the ſulphur; let them ſtand four hours in this ſtate, then take them out, and, when cold, powder and ſift them, and put the powder into a crucible, which lute over, and ſet it in the leer of the furnace for fifteen days, or more, it will then be of a rediſh purple, and muſt be kept for uſe. *Neri's* Art of Glaſs, p. 31.

The ſecond way of making this, is by ſprinkling filings of iron with ſtrong vinegar, and ſetting them in the ſun to dry; when dry, powder and ſift them, and wet them again with vinegar, and, when dry, powder them again. Repeat this eight times, and then powder the whole, and ſift it fine for uſe.

The third way is to uſe aqua fortis, inſtead of vinegar, in the ſame manner.

The fourth way, which is the beſt of all, is this: diſſolve filings of iron in aqua regia, and let the ſolution ſtand three days in a veſſel cloſe-ſtopped, ſhaking it about at times; then evaporate the liquor gently, and there will remain a moſt valuable *crocus martis*. Id. ibid.

CROCUS *martis aperiens* is preſcribed in caſes of obſtructions, the doſe being from ten to thirty grains.

CROCUS *martis aſtringens* is preſcribed in hæmorrhages, dyſenteries, and diarrhœas, the doſe being the ſame as in the former. The beſt way is to give it in a bolus, or pills, becauſe in liquids it ſinks to the bottom too ſuddenly to be taken without waſte. See CROCUS, *Cycl.*

CRONICAL, in aſtronomy. See ACRONYCAL, *Cycl.*

CRONIUS, Κρονιών, in chronology, the antient name of the Athenian month, *hecatombæon*, which was the firſt of their year, and anſwered to the latter part of our June, and beginning of July. See HECATOMBÆON and MONTH.

CROOKEDNESS. See DISTORTION.

CROOTES, a ſubſtance found about the ore in the lead mines, at Mendip, being a mealy, white, ſoft ſtone, matted with ore.

CROPS *of corn*. The great buſineſs of the farmer is to produce the largeſt *crops* he can, and, at the ſame time, to injure his land the leaſt. The common way of ſowing exhauſts the whole land, without giving half the nouriſhment that it might give to the corn. Inſtead of the ſcattering way of ſowing corn by the hand, if it be let in with the drill, in ſingle, double, treble, or quadruple rows, and an interval of five feet of naked ground be left between theſe ſeries of rows, the uſe of horſe-hoeing in theſe intervals will be found to give all that the farmer requires: the *crop* will be larger, though ſo great a quantity of ground is left vacant, than if all were ſown over, as the plants will ſtand vaſtly thicker in the rows, and will have twenty or thirty ſtalks a-piece; and the more the ſucceſſive *crops* are planted, and the oftener the ground is hoed in this manner, the better will the plants be maintained, and every *crop* will be larger and larger from the ſame ground, without dunging, or without changing the ſort of plant, as is uſually neceſſary in other caſes. See HUSBANDRY, and INTERVAL.

This is very evident in ſeveral parts of the ſame field, where this ſort of huſbandry has been entered upon at different times, and ſome have a firſt *crop*, others a ſecond, and others a third, all growing up at the ſame time, the older worked land always invariably ſhewing the beſt *crop*. Dunging and fallowing are both neceſſary to recover land to its virtue, in the common way, after a few *crops*. Theſe are both of them expences to the farmer; but the horſe-hoeing, when the corn is ſown in rows, anſwers all the intent of them, and is much leſs expenſive. It has, in ſhort, every year, the good effect of a ſummer fallow, though it every year produces a good *crop*, and no time, or uſe of it, is loſt to the farmer. *Tull's* Horſe-hoeing Huſbandry.

CROPPER, or *Dutch* CROPPER, the name of a particular ſpecies of pidgeon, called the *columba gutturoſa Bataviæ*, by Moore. It is naturally thick, and has its name from its large crop, or bag of wind, which it carries under its beak, and can, at pleaſure, either raiſe, or depreſs. Theſe are thick-bodied, and ſhort; their legs are alſo thick and ſhort, and are feathered down to the feet; the crop is large, and hangs low; the feathers on the thighs hang looſe; and their legs ſtand wide; they are gravel-eyed, and are generally very bad feeders.

There are of theſe pidgeons of all colours, and thoſe who are careful of them, generally take them away from their proper parent, while young, and breed them under the females of other ſpecies. *Moore's* Columbarium, p. 32.

CROSS *(Cycl.)*— Crosses, in mining, are two nicks cut on the ſuperficies of the earth, thus +, which the miners make when they take the ground, to dig for ore. This *croſs* gives the miners three days liberty to make, and ſet on ſtones. As many of theſe *croſſes* as the miner makes, ſo many mears of ground he may have in the vein, if he ſet on ſtones within three days after the making his *croſs*, or *croſſes*. But if he make but one *croſs*, and a ſtander-by makes the ſecond, and a ſtranger makes the third, every one is ſerved with the next mear, according as they have firſt or laſt, ſooner or later, made their *croſs*, or *croſſes*, upon the ground. *Houghton*'s compl. Miner, in the Explan. of the Terms.

Cross, in coins, a name given to the face, or right ſide, the other being called the pile, or reverſe. It has been a common error that the reverſe was meant by the *croſs*, becauſe at this time with us marked with figures diſpoſed in that form; but the ſtamping the head of the prince in theſe kingdoms, on the right ſide of the coin, was preceded by a general cuſtom of ſtriking on that part the figure of a *croſs*, while the other, called the pile, contained the arms, or ſome other device. *Simons*, Hiſt. Coins.

Crosses were uſually in former times erected on the tops of houſes, by which tenants pretended to claim the privileges of the templars hoſpitallers, to defend themſelves againſt their rightful lords. This was condemned by the ſtatute W. 2. c. 37. It was uſual alſo, in thoſe days, to ſet up *croſſes* in places where the corps of any of the nobility reſted, as it was carried to be buried, that *a tranſeuntibus pro ejus animo deprecetur*. *Walſingham*, anno 1291.

Cross-*bar ſhot*, a round ſhot, or great bullet, with a bar of iron put through it, coming out at both ends 6 or 8 inches. It is of good uſe in fight, for cutting and ſpoiling ropes, ſails, &c. *Manwayring*.

Cross-*bill*, in zoology, the Engliſh name of the *loxia*, a ſmall bird remarkable for its beak, which is hooked both ways, and has the points croſſing one another. It feeds on the kernels of fruits, and is very deſtructive in orchards. *Ray*'s Ornithol. p. 184. See Loxia.

Cross-*jack*, in a ſhip, is a yard at the upper end of the mizen maſt, under the top, where it is ſlung; it hath no halliards, nor ties, belonging to it. Its uſe is to ſpread, and hale on the mizen-top-ſail ſheets. *Manwayring*.

Cross-*piece*, in ſhip-building, a great piece of timber going a-croſs the bit-pipes, and to which the cable is belayed. *Manwayring*.

Cross-*trees*, in a ſhip, *croſs* pieces of timber ſet on the head of the maſt, and bolted, and let into one another very ſtrongly. They are four in number, and are generally called *croſs-trees*, but, ſtrictly ſpeaking, only thoſe which go thwart ſhips, are called *croſs-trees*; the other, in the largeſt ſhips, are called treiſſel-trees. Their uſe is to keep and bear the top maſts up; for the foot of the top-maſt is always faſtened into them, ſo that they bear all the ſtreſs. They alſo bear the tops, and are neceſſary to all maſts which carry any other top, or flag-ſtaff, at the head. *Manwayring*.

Cross-*tree yard* is a yard ſtanding ſquare, juſt under the mizen top, and to it the mizen top is faſtened below. See Cross-*jack*.

CROSSE, a name given by the people of Guinea, and ſome other parts of Africa, to a kind of fruit very common among them. It very much reſembles our common hazel-nut, but that the ſhell is not ſo hard. Phil. Tranſ. N° 108.

CROTALARIA, in botany, the name of a genus of plants, the characters of which are theſe: the flowers are the ſame with thoſe of the broom, but the pods are very different, as they are tumid and ſwollen in the manner of thoſe of the anonis, not flatted, as in the broom; but the leaves ſtand ſingle, as in the broom, not trifoliately, as in the anonis.

The ſpecies of *crotalaria* enumerated by Mr. Tournefort, are theſe: 1. The Aſiatic *crotalaria*, with ſingle-hearted leaves, and blue flowers. 2. The Aſiatic *crotalaria*, with ſingle, heart-faſhioned leaves, and yellow flowers. 3. The ſmall, hairy, American *crotalaria*, with arrow-headed leaves. 4. The ſtorax-leaved, African *crotalaria*, with blue flowers. 5. The purple-flowered, American *crotalaria*, with arrow-headed, arum-like leaves. 6. The moneywort-leaved, Eaſt-Indian *crotalaria*, with very ſmall flowers, and pods. And, 7. The aſarum-leaved, American *crotalaria*. *Tourn.* Inſt. p. 644.

CROTALOPHORUS *anguis*, in zoology, the name uſed by the generality of authors for the *rattle-ſnake*. See the article Rattle-*ſnake*.

Crotalophorus *anguis*, in zoology, is alſo the name of a very remarkable ſpecies of ſerpent, more uſually known by the name of *cobra de capello*. See the article Cobra *de capello*.

CROTALYSTRIÆ, in antiquity, a kind of morrice-dancers admitted to entertainments, in order to divert the company with their dancing, and playing on an inſtrument called *crotalum*, whence they had their name. See Crotalum, *Cycl.*

CROTAPHIC *artery* is uſed, by ſome medical writers, to denote the tendon of the muſcle called *crotaphites*, or *temporalis*. See Crotaphites, *Cycl.*

CROTAPHIUM, in medical writers, is uſed for a pain in the head. *Blancard*. See Head-*ach*.

CROTON, in botany, the name given by Linnæus to a genus of plants including the *ricinoides* of Tournefort, and the *bernhardiæ* of Houſton. The characters are theſe: it produces both male and female flowers ſeparate, but on the ſame plant. The male flowers are ſmaller than the female. In theſe the perianthium is five-leaved, the leaves being of a long, acute, oval figure, and erect. The flower conſiſts of five oblong, and obtuſe petals, ſcarce longer than the leaves of the cup; the nectaria are five ſmall glands affixed to the cup; the ſtamina are ten or fifteen filaments, of the length of the flower; the antheræ are roundiſh and double. In the female plants the cup and flower are the ſame as in the males; the piſtil has a roundiſh germen, and three ſtyles of the length of the flower, and bifid at the ends. The ſtigmata are reflex and bifid. The fruit is a roundiſh capſule, ſeeming divided into three lobes, and really containing three cells. Each of theſe is bivalve, and of the bigneſs of the leaves of the cup; the ſeeds are of a roundiſh figure, and are placed one in each cell. The *bernhardia*, in ſome ſpecies, produces male and female flowers on ſeparate plants, which is not the caſe in the other plants of this genus. *Linnæi* Gen. Pl. 457. *Tourn.* 423. *Houſt.*

CROW, in zoology. See Corvus.

Crow-*net*. See the article Net.

Crow-*ſtaves*, in huſbandry, a name given to a part of a plough, ſignifying two upright pieces ſtanding perpendicularly, inſerted into the box of the plough, near the wheels, and each pierced with two rows of holes; by means of which they ſupport a tranſverſe piece, called the pillow of the plough, running a-croſs them, and ſerving to raiſe or ſink the beam, by being pinned higher or lower, according as the ground is to be ploughed deeper or ſhallower. *Tull*'s Huſbandry. See Plough.

Crow's-*foot*, in botany. See Ranunculus.

CROWN, *(Cycl.)* in antiquity. See Corona.

Crown, among jewellers, the upper work of the roſe diamond, which all centers in the point at the top, and is bounded by the horizontal ribs. *Jeffries* on Diamonds.

Crown *imperial*, in botany. See Corona *imperialis*.

There are ſeveral diſtinct ſpecies of this plant preſerved in the gardens of the curious, all which make a very elegant appearance; there are alſo a great number of varieties which are propagated from the ſeeds of one or other of the ſpecies, in the ſame manner with thoſe of the tulip. See Tulip.

When they are thus raiſed, the beſt time for tranſplanting their roots is in July or Auguſt, before they puſh forth new fibres; or they may be taken up out of the ground in June, after their green leaves are decayed, and kept till Auguſt, and then planted out into beds of rich earth, with ſome rotten dung buried deep in them. The moſt pleaſing method of planting them is at eight or ten feet diſtance, in the middle of long flower beds: a hole of ſix inches deep ſhould be opened with a ſpade, and the root put into it, and the earth put in with the hand upon it, and all the ſtones picked out, and the lumps broke. They now require no farther care, but in February will ſhoot up, and grow ſo quick, if the weather be mild, as to flower in March. As this is uſually a windy ſeaſon, it is proper to plant ſtakes in the earth, to tye theſe plants to, to prevent their being blown down; and it is a good caution never to gather the flowers, which much weakens the roots; they ſhould, therefore, always be ſuffered to die upon the ſtalks. The roots ſhould be removed once in three years, and their off-ſets ſeparated, and planted in beds. *Miller*'s Gardener's Dict.

CRUCIANELLA, a name by which Linnæus has called the plant uſually known by that of *rubeola*. This, according to the ſyſtem of that author, makes alſo a diſtinct genus of plants; the characters of which are, that the calyx is a three leaved perianthium, with narrow, rigid, compreſſed, and hollowed, pointed leaves; the flower conſiſts of a ſingle petal, which forms a tube very ſlender, of a cylindric form, and longer rhan the cup, with a narrow rim, divided into four ſegments. The ſtamina are four filaments, placed in the orifice of the tube; the antheræ are ſimple; the germen of the piſtillum is compreſſed, and placed between the cup and the flower; the ſtyle is ſlender, and of the length of the tube; the ſtigmata are two in number, and are obtuſe; the one of theſe terminates the ſtyle, and the other is applied cloſe to it, below its apex: the fruit is compoſed of two capſules growing together; the ſeeds are ſingle and oblong. *Linnæi* Syſtem. Natur. p. 26.

CRUCIATA, *croſs-wort*, in botany, the name of a genus of plants, the characters of which are theſe: that the flowers and fruit wholly agree with thoſe of the aparine, but the leaves grow in form of ſtars round the ſtalks, and only four at a joint. See Aparine.

The ſpecies of *croſſwort* enumerated by Mr. Tournefort, are theſe: 1. The common, hairy *croſſwort*. 2. The ſmooth *croſſwort*. 3. The broad-leaved, ſmooth, mountain *croſſwort*. 4. The cluſter flowered *croſſwort*. 5. The ſmooth, ſlender-leaved, mountain *croſſwort*. 6. The roundiſh-leaved, hairy, Pyrenean *croſſwort*. 7. The ſmooth, broad-leaved, white-flowered Portugal *croſſwort*. 8. The white, marſh *croſſwort*. 9. The leaſt *croſſwort*. *Tourn.* Inſt. p. 115.

A decoction of this plant in wine has been recommended as a very excellent vulnerary and detergent. Camerarius tells us, that it is of great efficacy in attenuating and expectorating tough humors.

CRUCIBLE (*Cycl.*)—Theſe veſſels, ſo much uſed by aſſayers, &c. are beſt made of a pure and well-waſhed clay, with an admixture of the pureſt ſand, powder of flint, or the powder of other broken *crucibles*, which have already ſuſtained a great fire, and are very clear. They are formed in wooden, or braſs moulds, divided longitudinally into two parts, and to be disjoined or put together again at pleaſure: for this purpoſe alſo a broad iron ring is adapted to the outſide of the mould, in ſuch manner, that the two ſides are kept firmly together while this ring is on, and fall aſunder as ſoon as it is taken off. This mould, however, gives only the outer ſhape of the *crucible*, its cavity muſt be made by a peſtle, or other ſuch inſtrument.

When theſe veſſels are to be made, the ring is put upon the mould, and the whole ſet upon a ſtrong ſupport: then the cavity of the mould is to be filled with the matter very ſtiff; this is to be preſſed down firſt with the fingers, or with a ſtick, making a hollow in the middle, and leaving the edges of the matter above the ſides of the mould; then apply to this hollow the peſtle, rubbed over with the fat of bacon, and drive it in with ſeveral ſtrong ſtrokes of a mallet: then take away the peſtle, and, taking the ring off from the mould, the *crucible* is taken out perfect, and finiſhed, and is to be dried, and baked in a potter's kiln. See Tab. of Chemiſtry, N° 25.

If, from the too great moiſture of the matter, when put into the mould, or from any inequalities or roughneſſes in the mould, the *crucible* will not readily ſeparate from it ſides, as ſoon as made, place the mould in a dry, warm place, for a few minutes, and the veſſel will, after that, come out eaſily.

In the making theſe veſſels, a ſufficient quantity of the matter muſt always be put at once into the mould; for if you add to the matter once compreſſed, a new lump of the ſame, it will not cohere with the firſt. If the matter be put into the mould in ſmall maſſes, not moulded thoroughly together firſt by handling, theſe never cohere neither; but the veſſel, when finiſhed, will be full of chinks, and pores, which, though not to be diſcovered either by the eye, or by the ſound of the veſſel when ſtruck, yet let the ſalts in fuſion paſs through them.

If theſe veſſels are not made with a large bottom, the concave mould muſt not be greaſed; for if it be, the veſſel comes out of it with the peſtle, and ſticks ſo firmly to it, as not to be got off without breaking. *Cramer*, Art of Aſſ. p. 66.

CRUCIFIX (*Cycl.*) — Superſtitious people will not be without *crucifixes*, or ſomething which they ſuppoſe to reſemble them, even in the mineral kingdom. The *lapis crucis*, or *croſs-ſtone*, is well known, but this has only a repreſentation of two lines croſſing one another; yet this thePortugueſe ſailors carry to ſea with them, and fixing them up againſt a maſt, or board, pray to them in time of danger: but much more regular *crucifixes* than theſe are found in the collections of the curious, in minerals. In the muſæum of the king of Denmark, at Copenhagen, there is preſerved a piece of marble which has an elegant figure of a *crucifix* delineated on its outſide, by the natural veins of the marble. Dr. Hartman, who wrote a book of amber, has alſo given an account of a whitiſh piece of amber, in which was a figure of a woman holding a child in her arms. This he would have to be the virgin Mary, with our Saviour. Dr. Oliver obſerves, in the philoſophical tranſactions, that he ſaw the thing itſelf; he ſays he ſuſpected it to be artificial, but that Hartman was firmly perſuaded that it was natural, and kept it very ſacredly.

Scheuchzer alſo, in his *Herbarium diluvianum*, among the variety of odd repreſentations of things which he has there got together, figures a piece of cryſtal, in which, I ſuppoſe, with the help of a little fancy, himſelf and the engraver, had made out the figure of a man on a croſs. The weak minds of ſome have led them to ſuppoſe that theſe were miraculous delineations; but reaſon ſpeaks the contrary, and we ſee, every day, figures, at leaſt as exact as theſe, wildly delineated in various foſſils, by the mere natural flaws, or other accidents of them.

CRUCIFORM *flowers*, in botany, a term for ſuch flowers as are compoſed of four leaves, diſpoſed in form of a *croſs*. Some of theſe flowers have a cup, others have not: thoſe which have cups, uſually have them compoſed of four leaves, and placed in the ſame order and direction with thoſe of the flower. Of this claſs of plants are the cabbage, rocket, wall-flower, &c. *Tourn.* Inſt. p. 210. See Tab. 1. of Botany, Claſs 1.

CRUCICOLÆ, a deſignation given to the primitive chriſtians, by the heathens. *Hofm.* Lex. in voc.

CRUISERS, in the navy, are ſmall men of war, made uſe of to and fro in the channel, and elſewhere, to ſecure our merchant-ſhips, and veſſels, from the enemy's ſmall frigats, and privateers They are generally ſuch as ſail well, and are commonly well manned: and, indeed, the ſafety of the trade in the channel, and up and down the ſoundings, and other places, abſolutely requires the conſtant keeping out of ſuch ſhips at ſea.

CRUMENA, in zoology, the name given by Cardan, and ſome others, to the purſe, or pouch, which the opoſſum has under its belly, and into which it receives the young in time of danger. See OPOSSUM.

Scaliger ſuppoſing there might be other animals, as well as the opoſſum, to which nature might have given this ſort of pouch, has erected a generical diſtinction, under the name of *animalia crumentata*; but the opoſſum is the only ſpecies yet known to belong to this genus. The only inſtance that naturaliſts ſeem to afford us of a like proviſion of nature for the care of the young, is what is related of ſome of the fiſh kind. Oppian, in his *Halieutics*, mentions this property of receiving the young into the body, in time of danger, to be in the dog-fiſh, and in the ſquatina, and ſome others; and Tyſon obſerves, that, in the anatomy of a female dog-fiſh, he ſaw two ſlits under the belly, cloſed up in their natural ſtate, but eaſily diſtenſible, ſo as to be capable of receiving the young fiſh; and that theſe went not into the womb, nor any other peculiar part, but only into the cavity of the abdomen.

The account given by Oppian is, that, in time of danger from a ſtorm, or from any fiſh of prey purſuing the young fry, they go into their parent's belly. If therefore, after this account of Tyſon's, any young fiſh ſhould ever be found looſe, in the cavity of the mother's belly, it will prove the truth of this paſſage in Oppian, which has been ſo much diſputed. Phil. Tranſ. N° 239. p. 120.

CRUMENTATA, a term uſed by JuliusScaliger to expreſs ſuch animals as have a pouch, or bag, under their belly, into which young ones may be received in time of danger. This author ſeems to ſuppoſe that there may be ſeveral animals for whoſe preſervation nature has made this proviſion; but as we yet know of only one, which is the opoſſum of America, Tyſon has judged it proper to call that by a name expreſſive of this ſurpriſing character, *marſupiale*. This, while we know of no other creature of the quadruped kind that has ſuch a purſe, is a ſufficiently diſtinctive name, and if it ſhould happen that hereafter more ſuch ſhould be diſcovered, it may ſtill be reſerved as the generical name.

CRUPEZIA, Κρυπεζια, in antiquity, wooden ſhoes, or clogs, worn by the *meſochori*. See MESOCHORI.

CRUPINA, in botany, a name by which ſome authors call the *carduus ſtellatus*, or ſtar-thiſtle. *Dill.* Nov. Gen. p. 140.

CRUSTA (*Cycl.*) — CRUSTA *lactea*, in ſurgery, ſignifies a cruſt of ſcabby ulcers, apt to affect the faces of children. The cure of it depends principally on regulating the diet of the nurſe, and giving her gentle purges, and ſweetening powders; the infant ought alſo to take at times a few gentle doſes of phyſic, and, in the intervals, between the purges, to take powders of crude, or diaphoretic antimony, with flower of brimſtone, and crab's claws, and other of the teſtaceous powders. When this method has been purſued for ſome time, the parts may be anointed with cream, with a ſmall quantity of chalk, or ceruſe, mixed in it, or with a mixture of oil of eggs, with a ſmall quantity of oil of bricks. Ointments of mercury, or ſulphur, are very dangerous in the beginning of this diſorder, or to weakly infants; and when ſuch have been uſed by ignorant perſons, the beſt method to be taken is the endeavouring to throw out the humor again by ſudorifics. *Heiſter's* Surgery, p. 269.

CRUSTACEOUS *animals*. See MALACOSTRACA.

CRUSTULA, in medical writers, the ſame as *ecchymoma*, in the eye being a deſcent of the blood from the arteries into the *tunica conjunctiva*, occaſioned by a wound, ſtroke &c. *Blancard.*

CRUYSHAGE, in zoology, the name of a fiſh of the ſhark kind, ſomewhat approaching to that ſtrange fiſh the zygæna, but much leſs monſtrous, its head being only triangular, or ſomething like the figure of an heart, whence Willughby has named it, *zygænæ affinis capite triangulo*. The eyes are very ſmall, and are placed, as in the zygæna, at the ſides of the head: the mouth is ſmall and triangular, and placed a vaſt way below the end of the noſe, and is furniſhed with three rows of very ſmall teeth. *Marggrave*, p. 132.

CRYMODES, in medical writers, a cold, ſhivering fever, but often accompanied with an inflammation of the inner parts. *Blancard.*

CRYPTOGAMIA, in botany, a claſs of plants whoſe flowers are either wholly inviſible, or ſcarce diſcernable by the eye.

The word is formed of the Greek κρυπτω, hidden, and γαμος, marriage. Theſe are a claſs of plants whoſe fructification is concealed, and under it are comprehended thoſe plants which either flower, as is generally ſuppoſed, within the fruit, or have the organs of their fructification ſo minute, as to eſcape our obſervation. Of this claſs are the ferns, moſſes, liver-worts, muſhrooms, &c. See Tab. 1. of Botany, Claſs 1.,

CRYSTALS, (*Cycl.*) in natural hiſtory, are defined to be hard, pellucid, and naturally colourleſs bodies, of regularly angular figures, compoſed of ſimple not filamentous plates, not flexile nor elaſtic, giving fire with ſteel, not fermenting in acid menſtrua, and calcining in a ſtrong fire.

This claſs of bodies is arrang'd into three diſtinct orders, and under thoſe is divided into nine genera.

Of *the firſt order*, are the perfect columnar *cryſtals*, with double pyramids, compoſed of eighteen planes, in an hexangular column, terminated by an hexangular pyramid at each end. See Tab. of Foſſils, Claſs 3.

Of *the ſecond order*, are the perfect *cryſtals*, with double pyramids, and without a column. Theſe are compoſed either of twelve or of ſixteen planes, in two hexangular pyramids, joined cloſely baſe to baſe, without the intervention of any column.

Of *the third order*, are the imperfect *cryſtals*, with ſingle pyramids. Theſe are the *cryſtals* of the common kind, and are compoſed either of twelve or of ten planes, in an hexangular or pentangular column, affixed irregularly at one end

to ſome ſolid body, and terminated at the other, by an hexangular or pentangular pyramid.

The genera of the firſt order are two: 1. The *macroteloſtyla*, or perfect *cryſtals*, with a longer intermediate column. 2. The *brachyteloſtyla*, or thoſe with a ſhorter intermediate column.

Thoſe of the ſecond order are alſo two: 1. The *pauraëdryſtyla*, which are dodecahedral *cryſtalls*, compoſed of two hexangular pyramids, joined baſe to baſe, without any intermediate column. 2. The *polyedraſtyla*; theſe are hexadecahedral *cryſtals*, compoſed of two octangular pyramids, join'd baſe to baſe, without any intermediate column.

Thoſe of the third order are five. 1. The *ellipomacroſtyla*. Theſe are dodecahedral *cryſtals*, with thin hexangular columns, terminated by hexangular pyramids. 2. The *ellipopachyſtyla*. Theſe are dodecahedral *cryſtals*, with thick hexangular columns, terminated by hexangular pyramids. 3. The *oligedra*. Theſe are decahedral *cryſtals*, with thick pentangular columns, terminated by pentangular pyramids. 4. The *pangonia*. Theſe are tetraicoſihedral *cryſtals*, compoſed of dodecangular columns, terminated by dodecangular pyramids. 5. The *arthrodia*. Theſe are dodecahedral *cryſtals*, with very ſhort and ſlender columns, and moderately long pyramids, generally found cluſtered together on the ſurface of cryſtalline or ſtrong roundiſh nodules, or incruſting cavities within ſuch. Theſe are called by ſome echinated and concave *cryſtalline* balls. *Hill*'s Hiſt. of Foſſ. p. 153, ſeq.

Adding to theſe regular genera, the accidental varieties of *cryſtals*, owing to the admixture of metalline particles, influencing their ſhape as well as colour; the three principal of which are thoſe impregnated with lead, iron, and tin; the firſt cubic, the ſecond rhomboidal, and the laſt quadrilateral pyramids, without columns; we have the whole ſeries of the figured *cryſtals*: the firſt of theſe are called *molybdia*, the ſecond *ſideria*, and the third *caſſiteria*. Beſide all theſe, *cryſtal* is alſo ſometimes found in a pebble-like form, which is an accidental variety, like thoſe in the chryſtallizations of ſalts, where many concretions entirely want their naturally angular form.

The origin and formation of *cryſtals*, as to the time and manner of them, deſerve a very nice enquiry, ſince many of the more compound foſſile bodies are principally compoſed of either *chryſtal* or ſpar, a body in many things reſembling it; and the aſcertaining the great queſtion, whether it was all form'd at one time, and that long ſince, or does continue to be formed at this day, will ſo far alſo aſcertain the time of the coaleſcence of thoſe other bodies, of which it is the baſis.

The original coaleſcence and formation of thoſe bodies of which ſpar is the baſis, we well know may have been but of yeſterday, ſince we have evident proofs, that ſpar is concreting to this day, and that ſparry bodies are forming every moment. This is evident, from the ſparry ſtalactitæ in the arches of modern buildings, particularly in one ſo lately built as the new bridge at Weſtminſter, the roofs of the arches of which were filled with theſe ſpars within a year after the arches were built; and there are evident proofs, that ſpars are not made of matter edued from the ſtone, ſince brick arches equally abound with them; and the brick vault which ſupports part of the grand terrace at Windſor, has been of late found ſo full of them, that there was not room to walk for them. See the article STALACTITES, *Cycl.*

From theſe obſervations, as alſo thoſe of the ſparry incruſtations round vegetable, and other bodies in ſprings, and at the bottoms of our tea-kettles being all incruſted with it; we have evident proof, that ſparry bodies are form'd to this day, but we have no ſuch clear evidence of the preſent growth of *cryſtal*. Whether or not it is ſo, however, we may be led by a few propoſitions to prove, by the only ſure teſt, experiment.

1. If *cryſtal* and ſpar can be at this day diſſolved in water, or ſuſpended in it, in their minima or ultimate particles, and again ſeparated from it, then ſtony or other foſſils compoſed of *cryſtal* and ſpar, may be form'd at this day: if theſe bodies are not thus diſſolved, they cannot.

2. If *cryſtal* and ſpar can be raiſed in vapour, or ſuſpended in effluvia, then cryſtalline and ſparry concretions may at this day be formed in places where water cannot be ſuppoſed to have come; if they cannot be thus ſuſpended, then the *cryſtals* and ſpars found in ſuch places cannot have been form'd at this day, but muſt have been there from ſome diſtant time.

The ſubject of enquiry is by theſe propoſitions reduced to a narrow compaſs; and all that experiments have to determine is: 1. Whether *chryſtal* or ſpar are at this time found ſuſpended in water, in imperceptible particles, or whether they are not; and 2. If they are thus ſuſpended, whether they are or are not capable of being raiſed in vapours.

Theſe things Dr. *Hill* has been at the pains to determine, by a great number of experiments.

The bottom of every tea-kettle, as has been before obſerv'd, informs us, that ſome ſolid foſſile body is ſuſpended in imperceptible particles in all, even the cleareſt water, and is eaſily ſeparated from it by no other agent than heat; as heat therefore is found capable of ſeparating this ſubſtance, and no other agent that we know of is ſo, that is, the natural means to be uſed in the inveſtigation of the ſubject.

The ſubſtance encruſting tea-kettles, &c. is found to be a genuine ſpar, with a greater or leſſer admixture of earth, and is wholly the ſame with the encruſtations on vegetables in ſprings, &c. Here therefore, is a proof of ſpar and earth being ſuſpended in common water, but none of *cryſtal*. This was alone to be determined by repeated and cautious diſtillations. In diſtilling the water of the ſame ſpring, with different degrees of fire, a different quantity of matter was found left at the bottom of the veſſel. It appeared hence, that in a greater degree of heat, a great part of the matter had been raiſed in vapour, and the remainder on tryal, always proved to be only ſpar and earth. Here were therefore, both the queſtions anſwered in the affirmative, in regard to ſpar, viz. that it is continually ſuſpended in water, and may be raiſed in vapour. The water of theſe diſtillations being returned into the cucurbit, and rediſtilled, leaves a ſecond ſediment in ſmall quantity, and of a whiter colour. This being examined according to the known laws of foſſils, proves to be part ſpar, and part *cryſtal*, an undiſſolv'd powder remaining from it, after pouring on aqua fortis to take up the ſpar; and this in all teſts appearing to be true and perfectly pure *cryſtal*. A third diſtillation of the ſame water, produced not the leaſt reſiduum. Hence therefore, it is evident, that *cryſtal* as well as ſpar is continually ſuſpended in water, and may be raiſed in vapour, and ſeparated by no other agent than heat. And hence the concluſion is plain, that *cryſtalline* as well as ſparry bodies may be, and doubtleſs are, continually form'd in the earth to this day, and need not be ſuppoſed all of as old a date as the creation or deluge. *Hill*'s Hiſt. of Foſſ p 157.

Having thus from experiments gone thro' the hiſtory of what may be the origin of many of the *cryſtalline* bodies we daily meet with, it remains to ſay ſomething of their form.

The perfect regularity of the figures of *cryſtals*, cannot but be the effect of ſome fixed, permanent and invariable cauſe; theſe being ever, unleſs altered by accidents, which rarely happens, the very ſame in the ſame genus. The antients eſteemed *cryſtal* a congelation of water, and thought it only ice harder than ordinary. Signior Lana, who had an opportunity in the Val-ſabbia, of ſeeing many of the perfect double pointed kinds, imagined, that they owed their origin to dews congealed by nitrous exhalations. Rohault imagines the figure of common *cryſtal* the effect of ſix drops of water thrown together.

Others are for its being formed of radiations; others, from all its parts being like the whole; and others from the mutual tendency of the parts of it toward the ſame center. But all theſe the laws of action in matter, and the ſtructure of *cryſtal* in the ſeveral ſpecies, eaſily ſhew to be erroneous.

Many think they have ſolved all difficulties, when they ſay, that *cryſtals* are ſalts; but we know no more of the true cauſe of the figure of ſalts, than we do of thoſe of *cryſtals*. And it is to be added, that if *cryſtals* are ſalts, then ſalts are ſomething elſe from what we have been taught to think they are, *cryſtals* by no means anſwering to the definitions given us of them by authors. As we yet know ſo little of the cauſes of the regular cryſtalizations of ſalts, why are we to ſuppoſe no other bodies but ſalts capable of ſuch cryſtalizations; and why may not the ſame almighty agent, who has implanted in the minima of ſaline bodies, a tendency to theſe their ſeveral appropriated forms, have allotted the ſame tendency to other bodies?

How is it, that *cryſtal*, in its ſmalleſt concretions, obtains its determinate figure, according to the genus it is of, is aſſuredly yet to us unknown; but how it is enlarged afterwards, yet ſtill kept in its ſame form, ſeems not to be ſo difficult to be accounted for, and may indeed be traced from obſervations of the ſeveral bodies in their preſent ſtate.

We are not to doubt, but that the ſmalleſt concretions are regularly formed in all *cryſtals*, according to their kinds, and we ſee the ſmalleſt that even the microſcope can diſcover to us, regularly are ſo. Theſe are formed among water or vapour, ſolid with the ſame particles, and only wanting a ſlow evaporation to part them from the water or vapour.

Theſe particles, though when collected in a body, they be of more than twice the ſpecific gravity of water, yet while ſuſpended in a vaſt proportion of water, attract the particles of the water more ſtrongly than they do one another, and hence give way to that repulſive power ſo well known in nature, which is properly the effect of another attraction, by which all things are made to aſcend in water, which are leſs than water attracted by the gravitating power of the earth: the particles of *cryſtal* therefore attracting the particles of water more ſtrongly than one another, recede from one another as far as the quantity of water they are ſuſpended in will permit. When this quantity of water is ſo far evaporated, that the particles of *cryſtal* are nearer to one another, and brought within the verge of one another's attraction, they become more attracted by one another than by the particles of water and thence form concretions. This they uſually do in many parts of the ſame fluid at once; and hence it is, that we uſually find many ſhoots in the ſame place. The whole cryſtalline matter might now be expected to form itſelf into theſe ſmall concretions: but there is now a new law or power eſtabliſhed in the evaporating fluid; for theſe ſmall aggregates

gregates of bodies now formed in ſeparate concretions, attract the particles yet ſuſpended in the fluid, more than they do one another: hence they naturally become applied to theſe, and being every way equally extended over them by the ambient fluid, they no way alter their firſt figure, while they ever ſo much increaſe their bulk. And it is evident, from examining the columns of *cryſtals*, which are ridged and ſtriated acroſs, while their pyramids are all ſmooth, that this new matter has ever been added to the pyramidal planes, and thence extended down the ſides of the columns. *Hill*'s Hiſt. of Foſſ. p. 159.

Henkel, a very accurate chemiſt, gives us a remarkable account of the formation of *cryſtal* out of human urine, which ſeems ſo ſtrange, that it would have been deſpiſed had it come from an author of leſs credit; and as it is, will require repeated experiments to convince the world there was no error in the caſe. He tells us, that he once filled a large round glaſs veſſel half way up, with the recent urine of a young lad, and tying a bladder over the mouth of the veſſel, he ſet it in a ſtove for four years together, never ſtirring it during that whole time. At the end of this time he found a number of ſmall white ſtones, growing to the inſide of the glaſs; they were of the ſize of an oat ſeed, of a priſmatic figure, and tolerably pellucid; they ſtuck ſo faſt to the ſides of the glaſs, as not to be waſhed of by the ſhaking about of the urine, and when taken out, had no ſalt taſte, and were not ſoluble even in hot water. Act. Erudit. anno 1720, p. 272.

The largeſt and fineſt *cryſtals* we have any account of, were found in the mountains of Grimſule, between immenſe ſtrata of ſtone; they were all, as pure and limpid as the cleareſt water, and the largeſt of them meaſured near three foot in length, and little leſs in circumference; its weight was two hundred and fifty pounds; others of a hundred and thirty, a hundred, and ſo on, down to thoſe of ten pound weight, were found in the ſame place: but theſe laſt were the ſmalleſt there. They were all exactly of the ſame figure, being hexangular columns, terminated at one end by an hexangular pyramid, and at the other end fixed to the rock. They were in general perfectly clear throughout; but in ſome the baſe was foul, and in others, the point, which is leſs common in *cryſtal*; but the middle column in them all was pure and fine. It is uſual with the largeſt *cryſtals* of the German mountains, to have flaws and blemiſhes; and they are commonly ſo irregularly conſtructed within, that they give all the priſm colours in reflection; but theſe wholly wanted that quality, and were like ſo many columns of the pureſt glaſs, only much clearer than any glaſs can be made. Phil. Tranſ. N° 398.

When any piece of workmanſhip in *cryſtal* is become foul and dark, the method of recovering its luſtre without hurting its poliſh, is this: mix together ſix parts common water, and one part brandy, boil theſe over a briſk fire, and let the *cryſtal* be kept in it, in a boiling ſtate, a quarter of an hour; then take it out, and rub it carefully over, with a bruſh dipped in the ſame liquor; after this, it is not to be left to dry of itſelf, but to be wiped with a clean napkin, and its ſurface will by this means be perfectly cleaned, and rendered as bright as at firſt, without that injury to the points of the cutting, or to the ſurfaces of the planes or facets, which would naturally have been the conſequence of doing it by mere rubbing or wiping.

Natural *cryſtal* may be reduced by calcination, into the ſtate of the bodies proper for making glaſs with alkaline ſalts, and makes a moſt fine and valuable fritt. The method of doing it is this: calcine natural *cryſtal* in a crucible; when it is red hot, throw it into cold water to quench it; repeat this eight times, covering the crucible, that no duſt or aſhes may get in and mix with the *cryſtal*; dry this calcined maſs, and reduce it to an impalpable powder; mix this powder with the pure ſalts of polverine, and with theſe make fritt, in the uſual proportions, and with the common quantity of manganeſe; waſh this often in cold water, and after a proper time, work it; it will yield a moſt beautiful glaſs. *Neri*'s Art of Glaſs, p. 102. See FRITT.

Natural *cryſtal* may be coloured of ſeveral colours, without melting or running it into glaſs, in the following manner: Take a number of pieces of fine, clear and pure *cryſtal*, of various ſizes, of crude antimony and yellow orpiment in powder, of each two ounces; ſal armoniac one ounce; powder this alſo, and mix them well together; put this powder into a ſtrong crucible, and lay upon it the pieces of *cryſtal* in their natural ſtate, then cover this crucible with another, mouth to mouth; lute them well, and when the lute is dry, ſet them in coals, which kindle by little and little; and when they begin to fire, let them kindle of themſelves, and they will then ſmoak very much. Let this be done in a large chimney, taking care to avoid the fumes. When it fumes no more, let the fire go out of itſelf, and let all ſtand till cool; then unlute the crucibles, and take out the *cryſtals*; thoſe at top will be coloured to a fine yellow, with a deep and pale red, the colours of the common fine and balaſs ruby, with beautiful ſpots; and thoſe which be at the bottom upon the powder, will be of a watery colour, motled like that of the viper. This *cryſtal* comes out ſo fair from this proceſs, that it may be cut as a gem, and though many are ſpoiled, yet in making a large quantity, there are always ſome fair and perfect. *Neri*'s Art of Glaſs, p. 117. See the article OPAL.

Improper CRYSTALS, a term introduced into the world by Dr. Coppeler, in his *prodromus chryſtallographiæ*, to diſtinguiſh bodies which have the figure of *cryſtals*, but are not ſuch from the proper or true genuine *cryſtals*

Improper *cryſtals* are, according to this author, ſuch bodies, either ſtones, metals, or ſalts, as have any reſemblance with true *cryſtal*, either as to their multangular, regular, or irregular figure; or as to their pellucidity, or any other of their eſſential properties. As the number of theſe bodies is very extenſive, it was a work of great accuracy to arrange them into any ſort of order; but this is one of the principal attempts of the author. Among the firſt claſs of improper *cryſtals*, that is ſuch as are ſtones, come all thoſe gems which have any determinate figure, as the diamond, emerald, amethyſt, and the like. To the ſecond belong all ſorts of regularly figured, metalline bodies, ſuch as pyritæ and macraſites, as alſo thoſe ores of ſilver, where the native metal has aſſumed ſome regular form; as when this or any other metal ſhoots in its natural bed, into the form of a tree or the like.

Under the third claſs of improper *cryſtals*, including the ſalts, come in all the chemical preparations of ſalts and ſaline bodies. The figure in this claſs is more determinate and accurate than in either of the former claſſes of bodies. See Tab. of Microſcopical Objects, Claſs 3.

We are happy enough to have at preſent, much better arrangements of foſſils than this. *Coppeler*'s Prodrom. Cryſtall. See FOSSILS.

Prepared CRYSTAL, a term among the makers of counterfeit gems, for a powder of natural *cryſtal*, made for their purpoſe. The manner of preparing it is as follows: Take the pureſt and cleareſt natural *cryſtal*, put it into a crucible covered at the top, ſet it among burning coals; let the *cryſtal* be made red hot, then plunge it into a large veſſel of cold water. When the *cryſtal* is cold, put it into the fire again, heat it red hot, and quench it again; and repeat this operation twelve times, carefully keeping aſhes or any other foulneſs out of the crucible. When the calcination is finiſhed, the *cryſtal* will be brittle and crumbly, powder it, and levigate it on a porphyry to an impalpable powder. This powder muſt be made perfectly fine, otherwiſe the gems made with it will be all foul and coarſe, and no braſs or copper veſſels muſt be uſed about the operation. If the *cryſtal* ſhould be powdered in a braſs or bell-metal mortar, there could be no gem but an emerald ever be made of it, from the quantity of copper it would take up in the powdering. When carefully prepared, it receives all the colours of the gems, by proper additions, and affords a maſs ſofter indeed, but not leſs bright and pellucid, or not leſs beautifully tinged than the fineſt of the oriental gems. *Neri*'s Art of Glaſs, p. 125.

CRYSTAL, in medicine, has many virtues attributed to it, being eſteemed an aſtringent and lithontriptic; hence it has been given in diarrhœas, the fluor albus, and in caſes of gravel in the kidneys. Its doſe is a ſcruple, or half a dram, being firſt reduced to a fine powder, by repeated calcinations and extinctions in cold water.

Many are afraid of the uſe of theſe ſtony medicines, in nephritic caſes. The objection againſt ſpar will hold good againſt *cryſtal*; but there wants ſufficient proofs to determine this point. In general, however, ſpar is an alkali, which *cryſtal* is not. See SPAR.

Cryſtal has been recommended by ſome, as a dentifrice, and there is no doubt of its cleaning the teeth; but, like other hard bodies, it is apt to wear away their enamel, and thereby ſubject them to decay.

Iſland CRYSTAL. See ISLAND *Cryſtal*.

CRYSTAL *dews*. See the article DEWS.

Formation of CRYSTALS. See FORMATION.

Diſdiaclaſtic CRYSTAL. See DISDICLASTIC *cryſtal*.

Rock CRYSTAL. See ROCK *cryſtal*.

CRYSTALLINE (*Cycl.*) — Mr. Petit, the phyſician, has many minute obſervations and experiments on the colour, conſiſtence, meaſure, weight, &c. of the *cryſtalline* humor of the eye, and its capſula in different animals: but his obſervations are ſo numerous that we can only take notice of ſome of them. He ſhews the *cryſtalline* to conſiſt of concentrical laminæ: he always found the capſula tranſparent, and denies any connection between this membrane and the *cryſtalline*, or that there are any veſſels going from the one to the other; but affirms that the *cryſtalline* is nouriſhed by abſorbing the lymph lodged between it, and its capſula.

When the *cryſtalline*, or vitreous humors are fallen out of the eye, it is eaſy to conceive, that not only the ſight, but the figure of the eye, muſt be entirely deſtroyed; therefore, an accident of this kind muſt at firſt be dreſſed with compreſſes dipped in warm wine, or ſpirit of wine, and afterwards with ſome vulnerary balſam. But it ſometimes happens, when only the tunica albuginea, and ſclerotica, are ſlightly wounded, the cornea and uvea remaining unhurt, that the eye recovers itſelf: and though both the vitreous and *cryſtalline* humors fall out by the wound, yet they are renewed again by the benefit of nature, and the office of ſight performed as well as before the injury happened. *Heiſter*, Surg. p. 80.

CRSYTALLIZATION (*Cycl.*) — A great number of pigments

or colours are obtainable by *cryſtallization* from metalline bodies, but theſe are ſubject to corrode and eat the canvas, &c. and are not capable of waſhing, by which ſome naturally corroſive colours are rendered mild and harmleſs. The blue and green vitriols, or *cryſtals* of copper, cannot be deprived of their aqueous, or ſaline parts, by a dry air, or by waſhing, without ſuffering extreme alterations, or being left in the form of a dry groſs, terreſtrial matter, differently coloured from what they were before: and thus the fine green *cryſtals* of iron being expoſed to the air, become white; and when well waſhed in water, looſe their greenneſs, and turn to a reddiſh, or yellow, ochreous earth; and if deprived of their ſaline and aqueous parts, by a ſtrong diſtillation, they leave behind a brown, or red caput mortuum, which being waſhed in water, affords not a green, but a brown-coloured pigment; and as this holds proportionably of other colours obtained by *cryſtallization*, there are little hopes of procuring durable pigments by this operation, which ſhall be of the ſame colour with themſelves, tho' after waſhing, ſome other colours may be thus procured. *Shaw*'s Lectures, p. 187. See FORMATION *of cryſtals*.

CHRYSTALLOMANTIA, Κρυσταλλομαντεια, an antient kind of divination, performed by poliſhed cryſtals, in which future events were ſuppoſed to be ſignified by certain marks and figures. Vid. *Pott.* Archæol Græc. l. 2. c. 18.

CRYSTALLUS *lapis*, a word uſed by ſome of the old authors, not in the expreſs ſenſe in which we now make it ſignify *rock cryſtal*, but as a general term for all pellucid ſtones. Some extend it even to the factitious, as well as the natural gems.

CUANDA in zoology. See the article PORCUPINE.

CUBBRIDGE-*heads*, in ſhip-building, is ſometimes uſed for the bulk-heads of the fore-caſtle, and the half-deck: the firſt being called the *cubbridge-head before*; the other the *cubbridge-head abaft*. *Manwayring*.

CUBEBS (*Cycl.*) — It is a general opinion that the carpeſia of the antient Greeks was the *cubebs*; and, on the ſtrength of this opinion, the word *cumamus*, *cumachus*, and the like, which are the old Greek names of *cubebs*, are ſaid to be ſynonyms with carpeſia, which is only looked upon as an antiquated ſynonym of that fruit. It is indeed certain, that the Greeks did ſometimes call the *cubebs* carpeſia; but this is only to be found among the later writers of that nation. The older Greeks meant quite another drug by carpeſia; and Galen has deſcribed it as being the odoriferous twigs of a tree growing on the mountains of Pamphylia, and uſed as a ſuccedaneum for cinnamon. See CARPESIA.

CUBIC (*Cycl.*)— CUBIC *Hyperbola*, in conics, one expreſſed by the equation $x y^2 = a$, having two aſymptotes, and conſiſting of two hyperbolas, lying in the adjoining angles of the aſymptotes, and not in the oppoſite angles, like the *Apollonian hyperbola*. It is alſo called an *hyperboliſmus* of a parabola.

CUBIDIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek κυβος, a die, and is given them from their being of the ſhape of a common die, or of a cubic figure. Theſe bodies owe this ſhape to an admixture of particles of lead, and there are only two known ſpecies of the genus. 1. A colourleſs cryſtalline one, with thin flakes, found in the lead mines of Yorkſhire, and ſome other parts of the kingdom. And, 2. A milky white one, with thicker cruſts. This is found in the lead mines of Derbyſhire and Yorkſhire, but is uſually ſmall, and is not found plentifully. *Hill*'s Hiſt. of Foſſ. p. 376.

CUBITUS (*Cycl.*) — *Fractured* CUBITUS. The lower part of the arm, which is called the *cubitus*, contains two bones, the radius and ulna: fractures of this part, therefore, ſometimes happen only to one, ſometimes to both theſe bones, and that ſometimes near their extremities, but oftener toward their middle: but, when they are both broke together, the bones are not only very eaſily diſtorted from each other, but they are not to be replaced without very great difficulty alſo: if one only ſhould, on the contrary, be broken while the other remains whole, the fractured parts do not much recede out of their places, nor are they very difficult to reduce and retain; for the bone remaining ſound, is found, in this caſe, to be a better direction and ſupport than either ſplints, or bandages. When the fracture happens toward the lower head, near the pronator quadratus muſcle, the fractured part is ſtrongly drawn by that muſcle, and the intervening ligament that is extended between the radius and ulna, toward the ſound bone; and this makes it more difficult to replace. If the radius is to be replaced, whoſe fragment is contracted towards the ulna, an aſſiſtant muſt hold the arm, while the ſurgeon inclines the patient's hand towards the ulna, to draw back the contracted part of the radius. When this is done he muſt carefully reduce them by compreſſion on both ſides with his hands, ſo as to reſtore the compreſſed muſcle between the radius and ulna, and the fragments of the radius, to their proper places. The arm is then to be bound up with the proper bandage, and the limb muſt afterwards be placed in a ſort of caſe made of paſteboard, or light wood, to be ſuſpended in a ſling put about the neck.

In ſetting a fracture of the ulna, the whole method muſt be the ſame with this of the radius, except that in the extenſion, the hand muſt be bent toward the thumb, and radius, before the diſtorted part of the ulna can be compreſſed into its proper place. When both bones of the *cubitus* are broken, the method of cure is much the ſame with that uſed to each of them, when broken ſingly: but there is required more ſtrength and circumſpection, both in the replacing them, and a great deal of caution in applying the bandage to retain them. Care muſt alſo be taken, that while the arm continues in this caſe a great while, without motion, the mucilage of the joint does not harden, or the ligament become ſtiff, and the arm, or *cubitus*, be thereby rendered immoveable. To guard againſt this, it will be proper to unbind the arm once in two or three days, and to move it a little carefully and gently, backwards and forwards; and ſometimes to foment it with warm water or oil; by which means its motion will be preſerved. *Heiſter*, 172.

Luxated CUBITUS. The *cubitus* conſiſting of two bones, the ulna and radius, is articulated by a gynglymus; and the connection of theſe bones is ſuch, that the ulna, or *cubitus*, as being the largeſt bone, and ſeated in the lower part of the arm, does of itſelf perform the whole flexion, and extenſion of the arm, yet it cannot perform thoſe motions without carrying the radius along with it; but, on the other hand, the radius may be turned along with the hand both inward and outward, without at all moving or bending the ulna, as when the pronation and ſupination of the hand are made thereby. Both theſe bones of the *cubitus* are ſo articulated with the lower head of the os humeri, that large protuberances are received into deep cavities, or grooves, and the whole inveſted and faſtened with exceeding ſtrong ligaments; ſo that, notwithſtanding the *cubitus* may be luxated in all four directions, outward or inward, backward or forward, yet it is but ſeldom that it ſuffers a perfect or entire diſlocation, unleſs the upper part of the ulna be broken, or the ligaments of the *cubitus* much weakened by ſome great external violence. The ſlighter, and more recent luxations of this kind are, the more eaſy is the reduction of them. Be the caſe better or worſe, however, the patient muſt be placed in a chair, and both parts of the limb, the humerus and the *cubitus*, muſt be extended in oppoſite or contrary directions, by two ſtrong aſſiſtants, till the muſcles are found pretty tight, with a free ſpace between the bones: then the luxated bone muſt be replaced, either with the ſurgeon's hands alone, or with the aſſiſtance of bandages, that the proceſſes may fall into their ſinuſes; and when that is done, the *cubitus* muſt be ſuddenly bent. But if the tendons and ligaments are ſo violently ſtrained that they can ſcarce perform their office, it will be proper to anoint them with emollient oils, ointments, and the fat of animals; or to apply emollient cataplaſms and fomentations. As ſoon as the reduction has been effected, the articulation muſt be bound up with a proper bandage, and the arm afterwards ſuſpended in a ſling hung about the neck. But care muſt be taken that the bandage is not kept on too long, nor the arm kept entirely without motion all the time, leſt the mucilage of the joint ſhould become inſpiſſated, and the articulation rendered, by that means, ſtiff, or the motion of the part be entirely loſt. To prevent this, it will be proper to undo the bandage every other day, and gently to bend, and extend the limb: afterwards compreſſes dipt in warm wine may be applied, and held on with the bandage. *Heiſter*, Surg. p. 164.

CUBOIDES (*Cycl.*)— CUBOIDES *tarſi*. This bone is ſituated before the os calcis, on the ſide of the os ſcaphoides: it is a maſs with ſix ſides, all very unequal, and very irregular. The upper ſide is flat and rough, for the inſertion of the ligaments which connect it with the neighbouring bones: the lower ſide has an oblique eminence, and, immediately below that, a canal, or groove, which is alſo oblique: the eminence divides this ſide into two, and is a little cartilaginous on that ſide next the groove; the groove appears to be cartilaginous from a ligament which lines it, and both that, and the edge of the eminence, ſerve for the inſertion of an annular ligament, and for the paſſage of the tendon of the peronæus longus. The poſterior ſide is cartilaginous, broad, oblique, partly convex, and partly concave, anſwering to the anterior ſide of the os calcis. The anterior ſide is pretty broad, and is divided into two portions by a narrow prominent line, by which portions this bone is articulated with the third and fourth bones of the metatarſus. The inner ſide is the longeſt of all: it has a ſmall cartilaginous ſurface, by which it is articulated with one of the two oſſa cuneiformia: the reſt is rough, with ſeveral depreſſions in which veſſels and glands are lodged. Behind the cartilaginous portion there is, in ſome ſubjects, another narrow ſurface, which is articulated with the neighbouring portion of the circumference of the os ſcaphoides. This articulation, when wanting, is ſupplied by ligaments. The outſide is the leaſt of all; it is irregular, ſhort, and narrow, and it has a notch which communicates with the groove, on the lower ſide. *Winſlow*'s Anatomy, p. 99.

CUBROS *gezira*. See GEZIRA *cubros*.

CUCKOW, *cuculus*, in ornithology. See CUCULUS.

CUCKOW-*ſpit*, a frothy ſubſtance found on ſeveral plants. See FROTH-*ſpit*.

CUCUBALUS, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the caryophylleous kind, being compoſed of ſeveral petals, which grow out of

of a membranaceous cup; the piſtil ariſes alſo from the cup, and finally becomes a ſoft fruit, or berry, of an oval ſhape, containing a number of kidney-ſhaped ſeeds.

There is only one known ſpecies of *cucubalus*, which is the plant called by many the *berry-bearing chickweed*. *Tourn.* Inſt. p. 389. See Tab. 1. of Botany, Claſs 8.

CUCULLARIS, in anatomy, a name given by Spigelius, Cowper, and Albinus, to a muſcle called by Winſlow and others, *trapeſius*; and deſcribed by Veſalius under the name of the *ſecundus ſcapulam moventium*.

CUCULLUS, in conchyliology, the name of a genus of ſhells called by other authors, *cornet*-ſhells, and *volutæ*. See the article VOLUTA.

CUCULUS, the *cuckow*. In the Linnæan ſyſtem of zoology this makes a diſtinct genus of birds of the order of the *picæ*: the characters of this genus are, that the feet have two toes before, and two behind; the bill is ſmooth; the tail whole, and compoſed but of a few feathers; the tongue membranaceous, and terminated by hairs, and the noſtrils prominent. The *cuckow*, and the jynx, or wry-neck, are the only known birds of this genus. *Linnæi* Syſtem. Natur. p. 45.

The *cuckow* is a bird well known in England by the ſingularity of its note; it beak is long, and ſtrait, only it is a little hooked at the end, of a blackiſh brown above, and of a yellowiſh white below; its mouth is yellow within, and the iris of its eyes of a hazel colour; its noſtrils round, open, and ſtanding out beyond the ſurface of the bill, by which mark alone it is to be diſtinguiſhed from all other birds; its throat, breaſt, and belly, are white, variegated with tranſverſe ſtreaks of brown; the feathers of its head are brown, with white edges, and its rump is grey; its back, neck, and wings are of a browniſh hue; its long wing-feathers have white tips, and are variegated with black, brown, and white; and the tail feathers are beautifully variegated with white. Its feet and legs are yellow. Its food is caterpillars, and other inſects. *Ray*'s Ornithol. p. 63.

It never builds itſelf a neſt, but ſeizes upon that of any other ſmall bird, and deſtroying its eggs, leaves its own in their place.

Whether it hides in hollow trees, &c. during the winter, with us, or whether it leaves us for a warmer climate, is not certainly known. It is pretended that many have been found in hollow trees, but the truth of it has never been well atteſted.

CUCULUS *piſcis*, in zoology, the name of a large genus of fiſhes, the characters of which are, that they have two or three filaments running from the under part of their gills, which are commonly called fingers; that they can make a ſort of noiſe; hence the Latins called them *cuculi*, from their imitating, in ſome ſort, the voice of the *cuckow*. See Tab. of Birds, N° 46.

The Engliſh *gurnard*, which is their common name, ſeems alſo taken from their grunting; and one ſpecies of them is called the *piper*, or the *muſician*, from its reſembling with its voice a ſmall pipe. See GURNARD.

They have all large, broad, and thin gill fins, ſome of which ſerve the ſpecies which have them, for flying; and all of them have large bony heads, of a ſomewhat ſquare figure, and are tapering in ſhape from the head to the tail. The *corax*, *hirundo*, *milvus*, and *lyra* of authors, are all of this genus. *Ray*'s Ichthyogr. p. 278. See the article CORAX, &c.

CUCUMIS, the *cucumer*, or *cucumber*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, faſhioned like a bell, very wide and open at the mouth, and divided into ſeveral ſegments. Some of the flowers of this genus of plants are male, or ſteril, having no embryo of fruit; others are female, or fruitful; theſe have an embryo which ripens into a large fleſhy fruit, uſually of a cylindric figure, and divided either into three or four cells, and full of oblong ſeeds.

The ſpecies of *cucumber* enumerated by Mr. Tournefort are theſe: 1. The common garden *cucumber*, the fruit of which is yellow when fully ripe. 2. The garden *cucumber*, the fruit of which is white, when ripe. 3. The long, crooked *cucumber*. 4. The wild *cucumber*, or ſquirt, called by authors, *cucumis aſininus*, or the aſs *cucumber*, of the juice of which the elaterium of the ſhops is made. 5. The wild *cucumber*, with ſinuated and jagged leaves. 6. The round-leaved, Egyptian *cucumber*, called by ſome authors *chate*. *Tourn.* Inſt. p. 104.

The *cucumber* is one of the four great coolers of the ſhops. It is almoſt an univerſal ingredient in emulſions, and is found of ſervice in fevers, and nephritic complaints.

There are three ſpecies of this plant cultivated in gardens, the common kind, the white one, and the long green one. The firſt is what we bring to market in England; the ſecond is the common Dutch kind, and is greatly preferable to ours, as being much firmer, and having fewer ſeeds; and the third is better even than that, but it is raiſed with difficulty.

The common one, which is what our gardeners almoſt ſolely cultivate, is raiſed at three different ſeaſons of the year; the firſt is on hot beds, under garden frames, for early fruit; the ſecond is under bell, or hand-glaſſes, which is for the middle crop; and the third is on the common ground, which is for a late crop, or to pickle. The *cucumbers* which are ripe before April are unwholeſome, being raiſed wholly by the ferment of dung, not by the ſun's heat. Thoſe ripe in April are good fruit, and are raiſed in the following manner: toward the latter end of January, a quantity of freſh horſe dung muſt be procured, with the litter among it, and a ſmall proportion of ſea coal aſhes ſhould be added to it. In four or five days the dung will begin to heat, at which time a little of it may be drawn flat on the out ſide, and covered with two inches thickneſs of good earth: this muſt be covered with a bell glaſs, and after two days, when the earth is warm, the ſeeds muſt be ſown on it, covered with a quarter of an inch of freſh earth, and the glaſs then ſet on again. The glaſs muſt be covered with a mat at nights, and, in four days, the young plants will appear; when theſe are ſeen, the reſt of the dung muſt be made up into a bed for one or more lights. This muſt be three feet thick, and beat cloſe together, and covered three inches deep with fine freſh earth; the frame muſt then be put on, and covered at night, or in bad weather with mats.

When the earth is hot enough, the plants from under the bell muſt be tranſplanted into it, and ſet at two inches diſtance. The glaſſes muſt be now and then a little raiſed to give air to the plants, and turned often, to prevent the wet from the ſteam of the dung from dropping down upon them. The plants muſt be watered at times with water, ſet on dung till as warm as the air in the frame: and as the young plants grow up, the ſtalks of them ſhould be earthed up, which will give them great additional ſtrength. If the bed is not hot enough, ſome freſh litter ſhould be laid round its ſides; and if too hot, ſome holes ſhould be bored into ſeveral parts of it with a ſtake, which will let out the heat, and when the bed is thus brought to a proper coolneſs, the holes are to be ſtopped up again with freſh dung. When theſe plants begin to ſhoot their third, or rough leaf, another bed muſt be prepared for them like the firſt, and when it is properly warm through the earth, the plants of the other bed muſt be taken up, and planted in this, in which there muſt be a hole in the middle of each light, of about a foot deep, and nine inches over, filled with light and fine freſh earth, laid hollow, in form of a baſon: in each of theſe holes there muſt be ſet four plants; theſe muſt be, for two or three days, ſhaded from the ſun, that they may take firm root, after which they muſt have all the ſun they can, and now and then, a little freſh air, as the weather will permit. When the plants are four or five inches high, their ſtalks ſhould be gently pegged down toward the earth, in as different directions as may be from one another, and the branches afterwards produced, ſhould be treated in the ſame manner. In a month after this, the flowers will appear, and, ſoon after, the rudiments of the fruit. The glaſſes muſt now be carefully covered at nights, and, in the day time, they ſhould have gentle waterings, ſprinkling over the whole plants. Theſe will produce fruit till about midſummer, at which time thoſe of the ſecond crop will come in to ſupply their place: theſe are to be raiſed in the ſame manner as the early crop, only they don't require quite ſo much care and trouble. This ſecond crop ſhould be ſowed in the end of March, or beginning of April. *Miller*'s Gardener's Dict.

The ſeaſon for ſowing the *cucumbers* for the laſt crop, and for pickling, is toward the latter end of May, when the weather is ſettled: theſe are ſown in holes dug to a little depth, and filled up with fine earth, in form of a baſon, eight or nine ſeeds in each hole. Theſe will come up in five or ſix days, and till they are about a week old, are in great danger from the ſparrows; after this they require only watering now and then, and keeping clear from weeds. There ſhould be only five plants left at firſt in each hole, and when they are grown a little farther up, the worſt of theſe is to be pulled up, that there may finally remain only four. The plants of this crop will begin to produce fruit in July.

CUCUMIS *capparis*, in the botanical writings of the Arabians, a name given by Aviſenna, and others, to the plant which produced the fruit called *bel*. This fruit was like the capers in ſhape, and had a hard ſhell over its kernel, like that of a hazel nut. Such is the deſcription they give of it, and of the *fel* and *ſel*, two other fruits as like it in ſhape and other reſpects, as in virtue. Some have ſuſpected all theſe to be the fruits of the turpentine trees of various ſpecies: but this cannot be, becauſe thoſe trees were common in the countries where the writers lived, and yet they had the *bel*, &c. brought from the Eaſt Indies, and expreſly mention a plant, not a tree, as producing it. See the articles BEL, FEL, and SEL.

CUCURBITA the *gourd*. See the article GOURD.

CUCURBITINI *lumbrici*, are broad worms that breed in the inteſtines, like the ſeed of a gourd. *Blancard.*

CUCURI, in zoology, the Braſilian name of a fiſh of the ſhark kind, but not miſchievous, called *caſſaon* by the Portugueſe.

It is of about two feet and a half long. The head ends in an hyperbolic figure, and the mouth is placed far below its end; it has only one row of teeth, and thoſe very ſmall; its eyes are of the ſize of a large pea; its belly is of a ſilver white, and its back and ſides aſh coloured; its tail is aſh coloured, as are alſo all its fins, except the two ſmall ones, under its belly, which are white. *Willughby*'s Hiſt. Piſc. p. 53.

CUCURUCU, in zoology, the name of a ſerpent found in America, growing to ten or twelve foot long. It is very thick alſo in proportion to its length, and is of a yellowiſh colour, ſtrongly variegated with black ſpots, which are irregularly mixed among the yellow, and often have ſpots of yellow within

within them, and are plainly black. It is a very poiſonous ſpecies, and greatly dreaded by the natives; but its fleſh is a very rich food, and greatly eſteemed among them, when properly prepared. *Ray*'s Syn. Anim. p. 327.

CUDGELLING, among the Romans. See FUSTIGATIO.

CUDWEED, in botany. See FILAGO and GNAPHALIUM.

CUGNACUARANA, in zoology, the name of an American beaſt of prey, uſually confounded with the tyger, and deſcribed by Marggrave as one of the three ſpecies of American tygers, the *jaguara*, and *jaguarete*, being the two others. Thoſe two animals are plainly rather of the leopard, or lynx, than of the tyger kind; and perhaps, this is as little of the tyger as they. It is a large and very fierce beaſt, of the ſhape of the jaguara, but of one ſimple colour, which is a very pale tawney, like the colour of ſome goats, but not ſo ſtrong. It is a little duſkier on the back than on the ſides, and there is a little white under the chin, and on the belly. Its hair is very ſhort. *Ray*'s Syn. Quad. p. 169.

CUGUACUETE, and CUGUACUAPARA, in zoology, the Braſilian names of an animal of the caprea kind, ſeeming the male and female of the ſame ſpecies, and not diſtinct animals. The former has no horns, the latter has, and is probably the male; the horns are compoſed of three branches; they ſend out one near the inſertion, and from this they run up ſingle to the extremity, where they are bifid.

We have not ſeen the animal in England, but its horns, which are very ſingular in their ſhape, are preſerved in the muſæum of the Royal Society. This is the animal which Johnſon has figured under the name of the *capreolus marinus*. Tab. 33. *Ray*'s Syn. Quad. p. 90.

CUGUPUGUACU, in zoology, a name by which many call the *meros*, a Braſilian fiſh of conſiderable ſize, and a very good taſte. *Marggrave*'s Hiſt. Braſ. See MEROS.

CUJETE, in botany, a name given by Plumier to a genus of plants which Linnæus has ſince deſcribed under the name *creſcentia*. *Plumier*, 16. See CRESCENTIA.

CUIRIRI, in zoology, the name of a Braſilian bird of the ſtarling kind, very like the common ſtarling, and no way differing from the *pitanguaguacu*, but that it has a yellow ſpot upon its head. *Marggrave*'s Hiſt. Braſil.

Probably this is the male of the ſame ſpecies.

CUITPALLI, in natural hiſtory, the American name of a very beautifully variegated ſtone, found in New Spain, and ſome other places: its name expreſſes the painted ſtone. It is a ſpecies of jaſper of a beautiful green, variegated with very beautiful lines, and clouds of black, and is in ſome parts tranſparent.

CULCASIA, a name given by ſome of the old writers to an Egyptian plant growing near the ſea ſhores. It is by many ſuppoſed to have been the *colocaſia*, but improperly. The reſemblance of the name was the only thing that gave the idea of its being this plant, but the virtues attributed to it, and the uſes it was put to in the common affairs of life, ſhew that it was the *kali*, or *cali*, the plant of whoſe aſhes they made a ſalt uſeful in many arts, and ſtill the baſis of the glaſs, and ſoap manufactures, and called by Aviſenna *uſnen*.

CULCUL, a ſort of grain brought from Egypt to Conſtantinople, where it is much eſteemed, eſpecially when freſh. Authors are not agreed what plant it is produced from. *Hofm.* Lex in voc.

CULDEES, in church hiſtory, a deſignation given to the monks, or prieſts, in Scotland, in the firſt ages of chriſtianity, whence the term paſſed into Ireland.

They were called *culdees*, quaſi *cultores dei*, from their great piety and devotion. *Hofm.* Lex. Univ. in voc.

CULEUS, the name of a meaſure of liquids, the greateſt of all the meaſures among the Romans: it contained twenty amphoræ. Pliny interprets ſeven *culei* to be an hundred and forty amphoræ, when he ſays, ſpeaking of vineyards, that one acre will often yield ſeven *culei*, that is, a hundred and forty amphoræ of wine; and other authors ſpeak of it as containing forty urns, and it is very well known that an urn is the half of an amphora. Columella reckons the *culeus* of wine at the vineyard, to be worth three hundred nummi, or ſeventy-five denarii, that is, according to Engliſh rate, a hundred and forty gallons three pints and an half, for two pounds eight ſhillings and five-pence farthing, which is about a halfpenny the pint. *Columella*, l. 3. c. 3.

The *culeus* is, by others, deſcribed to contain 160 congii, or 960 ſextarii. We read of *dolia culearia*, and *ſeſquiculearia*, the latter of which muſt have been very large, being about $3\frac{1}{7}$ hogſheads, and therefore larger than our pipes. The word *culeus* is uſed alſo by ſome Roman authors for a leather ſack.

CULM, among botaniſts, a term expreſſing the ſtalk of graminеous plants. See STALK.

CULVERTAIL, in ſhip building, is uſed for a manner of letting one timber into another, ſo that they cannot ſlip aſunder. The faſtening of a ſhip's *carlings* into the beam is ſo performed. See DOVE-TAIL, *Cycl.*

CUMAMUS, in the materia medica, a name given by many of the antients to cubebs. This is plain, from their accounts. Some indeed have ſuppoſed, that they called the *carpeſia* by this name; but this is wholly erroneous, unleſs the word *carpeſia* be underſtood as a name for the cubeb: then indeed *cumamus* and *carpeſia* are the ſame; but when the word *carpeſia* is under its proper ſenſe, as the name of the aromatic twigs of a tree, the word *cumamus* is never uſed as ſynonymous with it.

CUMELE, in botany, the name by which the antient Greek writers have deſcribed the lupulus or hop, with which we make our malt liquors bitter. Their deſcriptions of this plant all agree in giving it the characters and virtues of the hop; yet the tranſlators and commentators on their works, have in general made the *cumene* ſignify a very different plant from our hop: this is the white bryony, a plant that has no one character, except its climbing in common, with the hop, and whoſe virtues are as different as one thing can be from another.

The antients had a way of writing the name of this plant in abbreviation βρύον, bryon, for βρυωνία bryonia; and though the Greeks of ſucceeding ages have called this bryonia at length, yet commentators make it the name of the lupulus.

CAMELOBOTANE, καμηλοβοτανη, in the modern Greek writers, a name given to the lupulus or plant, which produces the hops. This is called *cumele*, by the more antient Greeks, and not *bryon*, as is ſuppoſed by ſome; *bryon*, βρυον, being only an abbreviation of bryonia, white bryony.

CUMINOIDES, in botany, the name of a genus of plants, the characters of which are theſe: The flower is compoſed of ſeveral petals, which are diſpoſed in a circular order, and are uſually fimbriated at the edges; theſe ſtand upon the cup, which afterwards becomes a ſingle oblong ſeed. There is only one known ſpecies of this plant, which is the *cuminum ſylveſtre*, or wild *cummin* of authors. *Tourn.* Inſt. p. 300.

CUMPETES, in the materia medica, a name given by ſome of the Greek writers to the *carpeſia* of Galen and others. This was an aromatic drug, and was the younger ſhoots and tender twigs of an odoriferous tree, growing on ſome mountains in Pamphylia, which were collected in the ſpring, and when dried, were uſed as a ſuccedaneum for the cinnamon. The word *cumpetes* often occurs in Myrepſus; but there is ſome doubt in the orthography, whether it be *cumpetes* or *cumpepes*; there ſeems moſt reaſon to believe the latter is the proper word. Charito mentions this drug in his antidotes, and the commentators uſually explain it by the word *carpeſia* or *carpaſus*, a name by which they underſtood, though improperly, the cubebs. The Greeks of the later ages, and the Latin writers who ſucceeded them, all fell into the ſame error, of calling the *carpeſia* the cubeb; though the accounts of the antient Greeks are againſt it. Nay, Aviſenna ſeems to have given into the ſame error; for he he has tranſcribed into his chapter of cubebs what Galen ſays of the *carpeſia*.

CUN, or CUNNING, at ſea. See COND, *Cycl.*

CUNEIFORM *(Cycl.)* — CUNEIFORM *leaf*, among botaniſts. See the article LEAF.

CUNEIFORMIA *oſſa*. See OSSA *cuneiformia*.

CUNEUS, among the Romans, a term often uſed to ſignify that part of the theatre where the ſpectators ſat, on account of its reſembling the figure of a wedge. *Hoffm.* Lex. in voc.

CUNEUS, the wedge, was alſo a form of battle frequent among the Romans. See BATTLE, *Cycl.* and *Suppl.*

CUNICULUS *americanus*, in zoology, a name given by ſome to the creature called *tapeti*, a ſmall ſpecies of rabbit. See the article TAPETI.

CUNICULUS, in mining, a term uſed by authors, in diſtinction from *puteus*, to expreſs the ſeveral ſorts of paſſages and cuts in theſe ſubterranean works. The *cuniculi*, are thoſe direct paſſages in mines, where they walk on horizontally; but the *putei*, are the perpendicular cuts or deſcents. The miners in Germany call theſe by the names *ſtollen* and *ſchachts*; the firſt word expreſſing the horizontal, and the other the perpendicular cuts. It is an obſervation with our miners, that the damps ſo much dreaded in all mines, happen generally in the horizontal cuts; but Dr. Brown, in his examination of the gold and ſilver mines in Hungary obſerves, that they as often happen there in the *putei* or *ſchachts*, as in the *cuniculi* or *ſtollen*. Another obſervation as to damps with us is, that they are moſt frequent in clayey and ſoft places under ground; but in thoſe mines they are as frequent where the matter is hard ſtone; and one of the moſt miſchievous that had then lately happened, was in a place every way ſurrounded with ſtone ſo hard, that the tools of the miners could ſcarce work through it; and the deſcent had, in the very ſpot where the damp was, been made by means of gunpowder. In ſome of the *cuniculi* in theſe mines, there are damps that regularly return on certain occaſions; as if the lower end of the *cuniculus* be filled up with water; certain parts in going to it are always affected with damps, which will put out a lamp or candle the moment it enters them, and often do great miſchief to the miners in paſſing them. Phil. Tranſ. N° 48.

CUNILA *bubula*, in botany, a name by which Pliny, and ſome other authors, have called the wild marjoram or origanum. *C. Bauhin* Pin. p. 223.

CUNILAGO, in botany, is uſed by ſome authors for the *coryza*. *Ger.* Emac. Ind. 2.

CUNVILLET, in zoology, the name commonly given in Cornwall, and ſome other neighbouring counties, to the *arenaria* or ſanderling. See ARENARIA.

CUOGOLO, in natural hiſtory, the name of a ſtone, much uſed by the Venetians in glaſs-making, and found in the river Feſino. It is a ſmall ſtone, of an impure white, of a ſhattery texture, and is of the ſhape of the pebble.

CUP, among botaniſts, the ſame with what is otherwiſe called *calyx*. See the article CALYX.

CUP-*galls*, in natural hiſtory, a name given by authors to a very ſingular kind of galls found on the leaves of the oak, and ſome other trees. They are of the figure of a cup, or drinking glaſs, without its foot, being regular cones, adhering by their point or apex to the leaf; and the top or broad part is hollowed a little way, ſo that it appears like a drinking-glaſs with a cover, which was made ſo ſmall, as not to cloſe it at the mouth, but to fall a little way into it. This cover is flat, and has in the center a very ſmall protuberance, reſembling the nipple of a woman's breaſt. This is of a pale green, as is alſo the whole gall, excepting only its rim that runs round the top; this is of a ſcarlet colour, and that very beautiful. Beſide this ſpecies of gall, the oak leaves furniſh us with ſeveral others, ſome of which are oblong, ſome round, and others flatted; theſe are of various ſizes, and appear on the leaves at various ſeaſons of the year. They all contain the worm of ſome ſmall fly; and this creature paſſes all its changes in this its habitation, being ſometimes found in the worm, ſometimes in the nymph, and ſometimes in the fly ſtate, in the cavity of it. See Tab. of Inſects, N° 25.

CUPA, among the antients, a kind of boats, uſed in laying bridges over rivers, being broad below, and narrow above. *Hoffm.* Lex. in voc.

CUPPING (*Cycl.*)—See DRY-*cupping*.

CUPRESSUS, the *cypreſs-tree*, in botany, the name of a genus of trees, the characters of which are theſe. The flowers are of the amentaceous kind, being compoſed of a great number of ſcales, or little leaves, and furniſhed with a great number of apices in the alæ of them. Theſe flowers, however, are barren, and the embryo ſeeds firſt appear as ſmall protuberances on different parts of the tree. Theſe finally ripen into a roundiſh fruit, which ſplits into ſeveral parts, and encloſes an angular ſhaped ſeed. See Tab. 1. of Botany, Claſs 19. The ſpecies of *cypreſs* enumerated by Mr. Tournefort, are three. 1. The headed *cypreſs*, or cloſe topped *cypreſs*, called the female ſpecies by authors. 2. The ſpreading or open topped *cypreſs*, commonly called the male kind. 3. The ſpreading Portugal *cypreſs*, with ſmall fruit. *Tourn.* Inſt. p. 586.

CURA *avenacea*, a diet drink of oats, much recommended by ſome authors in various diſtempers. See OATS.

CURCAS, a name given in Egypt to an eſculent root, approaching to the taſte and virtues of the *colocaſia*.

It is alſo a name uſed in Malabar, for a ſmall fruit of the ſhape and ſize of a hazel nut. Both theſe things have the credit of being great provocatives; and it is very probable, that the *curcas* of the Eaſt-Indies may be the fruit called *bel* by Aviſenna, and ſaid to poſſeſs the ſame famous virtues. Garcias has been led into a very great error by this ſimiliarity of names and virtues, and ſuppoſes the *curcas* of Egypt the ſame with the *curcas* of the Eaſt-Indies.

CURCUM, in the materia medica of the Arabians, the name of the large celandine, the roots of which, when dryed, was uſed by the dyers of thoſe times as a yellow colour, and by the phyſicians as deobſtruents.

CURCUMA, *turmeric*. See TURMERIC, *Cycl.* and *Suppl.*

CUREMA, in zoology, the name of a fiſh of the mullet kind, but of a remarkable ſize, growing to two foot long, and having a very large moveable upper lip; the under one being ſmall, triangular in figure, and ſcarce viſible, being ſomething ſhorter than the upper. Its eyes are large, and its fins of a fine ſilvery white; in all other reſpects it reſembles the common mullet. *Marggrave*'s Hiſt. Braſ.

CURIA, in Roman antiquity, was uſed for the ſenate-houſe. See the article SENATE.

There were ſeveral *curiæ* in Rome as the *curia calabra*, ſaid to be built by Romulus; the *curia hoſtilia*, by Tullus Hoſtilius; and the *curia pompeia*, by Pompey the great. *Macr.* Sat. 1. 15. *Liv.* 5. 55. *Suet.* J. Cæſ. 80.

CURIA alſo denoted the places where the *curiæ* uſed to aſſemble. See CURIA, *Cycl.*

Each of the thirty *curiæ* of old Rome had a temple or chapel aſſigned to them, for the common performance of their ſacrifices, and other offices of religion; ſo that they were not unlike our pariſhes. Some remains of which little temples, ſeem to have ſubſiſted many ages after on the palatine hill, where Romulus firſt built the city, and always reſided. *Tacit.* Annal. 12, 24. *Middlet.* of Rom. Senate, p. 25.

CURIASSIERS, in war, horſemen that wear armour. Theſe have ſometimes only breaſt plates.

CURIATA *comitia*. See COMITIA *curiata*.

CURICACA, in zoology, the name of a Braſilian bird, called *maſarino* by the Portugueſe. It is a very large bird, approaching to the ſize of a gooſe, but in ſhape reſembling the curlew. Its beak is ſix fingers breadth long; its head and neck are covered with white and yellow feathers, and its whole body is black, except that on the back, the head, and the lower part of the belly it has a greyiſh caſt. It is much eſteemed at table. There is another ſpecies of it ſmaller than the former, not exceeding the ſize of a pullet, and called *matrictici*. It is common about the rivers. *Marggrave*'s Hiſt. of Braſil.

CURIMATA, in zoology, a name by which ſome authors have called the *lavaretus*, a ſmall fiſh, of a ſort of middle nature, between truttaceous and the herring kind, and caught in the American and German lakes. *Willughby*'s Hiſt. Piſc. p. 183. See LAVARETUS.

CURING, is uſed for the preſerving fiſh, fleſh, and other animal ſubſtances, by means of certain additions of things, to prevent putrefaction. One great method of doing this, is by ſmoaking the bodies; that is, the making them imbibe a great quantity of vegetable fumes; for this is uſually done where wood is burnt. The reaſon of this ſort of preſervation is eaſily ſeen by the curious enquirer, ſince wherever wood, or any vegetable of the acid tribe is burnt, the acid particles go off with the ſmoak, and in this form penetrate into, and lodge themſelves in animal ſubſtances expoſed thereto; by which means this ſmoak acts upon them in the ſame manner that the fumes of ſpirit of nitre would do, and whether it be not a nitrous acid that tinges hams, herrings, &c. to a redneſs in the drying, is a ſubject worthy enquiry. *Shaw*'s Lectures, p. 152.

CURLEW, the Engliſh name of the *arquata* or *numenius*. See ARQUATA.

CURMI, a name given by the antients to a ſort of malt liquor or ale. It was made of barley, and was drank by the people of many nations inſtead of wine, according to Dioſcorides's account; he accuſes it of cauſing pains in the head, generating bad juices, and diſordering the nervous ſyſtem. He alſo ſays, that in the weſtern part of Iberia, and in Britain, ſuch a ſort of liquor was in his time prepared from wheat inſtead of barley. *Dioſcorides* L. 2. c. 110.

CURRANTS (*Cycl.*)—For the botanical characters of *currants*, ſee the article GROSSULARIA.

The ſeveral ſpecies of *currants* are very eaſily propagated, by planting their cuttings any time from September to March, upon a ſpot of freſh earth, which muſt be carefully kept clear from weeds in the ſpring; and in the dry weather, the young plants muſt be frequently watered. When they have ſtood about two years in this place, they will be fit to tranſplant to the places where they are to remain; and this ſhould be done when the leaves are juſt decayed, that they may have time to be rooted before winter. If they are for ſtandards, they ſhould be planted in rows of ten foot diſtance from one another, and the trees in each row four foot from each other; but the much better way is to train them in eſpaliers, in which ſtate they take up much leſs room, and their fruit is much the finer. They ſhould be placed at eight feet diſtant in eſpaliers, and all their branches trained horizontally. They are to be allowed the ſame diſtance when ſet againſt walls or pales. Thoſe againſt a ſouth wall ripen their fruit near three weeks ſooner then thoſe in the open air, and thoſe againſt a north wall, near as much later; ſo that, by a little management of this kind, they may be kept a long time in ſeaſon. *Miller*'s Gardner's Dict.

Currant trees produce their fruit on the former years wood, and alſo on ſmall ſnags that come out of the old wood. This may give a caution as to the manner in which they are to be pruned.

They will thrive in any ſoil, or ſituation; but this fruit is always beſt taſted when they grow in a dry ſpoil, and an open ſpot of ground.

The jelly of *black currants* is ſaid to be very efficacious in cuing inflammations in the throat. See Phil. Tranſ. N° 459. Sect. 27.

CURRE, an Engliſh name for the fiſh called by authors *cuculus*, and by us more frequently named the *red gurnard*. *Willughby*'s Hiſt. Piſc. p. 282. See the article CUCULUS.

CURRENTS (*Cycl.*)—See the Appendix.

CURRUCA, in zoology, the name of a ſmall bird, commonly known in England by the name of the hedge-ſparrow, and called by ſome *maguanina*.

It is of the ſize of the red-breaſt, or of the titlark; its beak is longiſh, ſlender and black. Its back is variegated with black and a duſky rediſh brown; the middle of all the feathers being black, the edges browniſh. The head and neck are ſomewhat greyiſh, but are variegated with duſky ſpots; and the rump is ſomewhat of a greeniſh hue, and not ſpotted at all; its wings are variegated with a rediſh brown, and a little white; its tail is two fingers breadth long, and is all over brown, without any variegation. *Ray*'s Ornithol.

It is in the neſt of this bird that the cuckow hatche her eggs for the moſt part, though not always, the neſts of turtle and wood pidgeons being ſometimes uſed by her for that purpoſe. Hence it was that the antients made the cuckow an emblem of ſuch men as made bold with the marriage bed of others, who, on that account, were called *currucæ*. Thus Juvenal ridicules the ſtupid fondneſs of a huſband, comforting his falſe wife, by calling him *curruca*.

Tu tibi nunc, curruca, *places, fletumque labellis exſorbes, &c.*
Sat. 6. v. 276.

CURTEYN, *curtana*, a name given to king Edward the confeſſor's ſword, which is the firſt ſword that is carried before the

the kings of England at their coronation. *Matt. Paris* in Hen. 3.

It is said, the point of it is broken, as an emblem of mercy.

CURTILAGE, *curtilagium*, in law, a yard, backside, or piece of ground, lying near a dwelling-house.

CURTILLA, in zoology, a name given by some to the *corvus sylvaticus* of Gesner.

CURVATAPINIMA, in zoology, a name by which some authors call the fish more frequently named the *bonito*. *Marggrave*'s Hist. Bras. See the article BONITO.

CURVATOR *coccygis*, in anatomy, a name given by Albinus to a muscle of the coccyx discovered by himself, and not described by any other author. It is an oblong, thin, and small muscle, and for the most part tendinous. It arises with a double head, one from the inner, and the other from the lower and lateral part of the os sacrum, and descending, terminates in three extremities. He calls it the *curvator coccygis*, from its office, which is the bending the coccyx; and says, that he found it in different states, in three subjects; one very perfect and entire; in a second, more imperfect and degenerating; and in the third, resembling a ligament rather than a muscle.

CURVATURE (*Cycl.*) See the Appendix.

CURUCUI, in zoology, the name of an American bird of the wood-pecker kind, and very remarkably beautiful. It is of the size of the magpye; its legs are short, and feathered almost to the toes with black feathers, and under its head it has a sort of beard on each side, made up with black bristles. Its breast and belly are of a very bright and elegant red, and its back and tail are of a deep blue, with a glow of a fiery red shining through the whole. Its tail is broad, and is terminated by a broad black line; the tops of its wings are of a shining green, the middle of the wings are black, made hoary by innumerable white spots, and their long feathers, are all of a blackish brown; the wings are of a hoary white underneath. *Ray*'s Ornithol. p. 96.

CURVE (*Cycl.*) — Modern geometers frequently consider *curves* as composed of an infinite number of infinitely small right lines; and it is often said, that the antients also considered *curves* as polygons of an infinite number of sides. But it is certain, that this principle no where appears in their writings. We never find them resolving any figure into infinitely small elements. On the contrary, they seem to avoid such suppositions, as if they judged them unfit to be received into geometry, though it was sometimes obvious, that their demonstrations might have been abridged, by admitting such notions. They considered curvilinear areas as the limits of circumscribed or inscribed figures of a more simple kind, which approach to these limits; so that the difference between them may become less than any given quantity. The inscribed and circumscribed figures were always conceived to be of a magnitude and number that is assignable; and they demonstrated the mensuration, or the proportions of the curvilinear limits themselves, by arguments *ab absurdo*.

But modern geometers have abandoned the foundations of the antients. It was thought unnecessary to conceive the figures circumscribed or inscribed, in the curvilinear area, or solid, as being always assignable and finite; and the precautions of Archimedes and the antients came to be considered as a check upon geometricians, serving only to retard their progress. Therefore, instead of assignable finite figures, indivisible, or infinitely small elements were substituted; and these being supposed infinite in number, their sum was supposed to coincide with the curvilinear area or solid. See *Maclaur.* Fluxions, in the Introd.

CURVES *of the second order*. See LINES *of the third order*, Appendix.

Logarithmic CURVE. See LOGARITHMIC, in the Appendix.

CURVICAUDA, in natural history, the name of a species of bee fly, very common in England, and very troublesome to horses, commonly known by the name of the wringle tail. See WRINGLETAIL.

CURVIROSTRA *fossilis*, in natural history, the name of a species of fossile shell, found very frequently in the stone quarries of Northamptonshire, and the neighbouring counties. It is a species of cockle, and is distinguished by its beak not standing in the middle, but always inclining to one or the other side. The shell is sometimes found remaining entire, and in its native state and condition, but more frequently there is stony matter deposited in its place. *Hill*'s Hist. of Foss. p. 646.

CURVITY. See CURVATURE.

Radius of CURVITY. See CURVATURE, Appendix.

CURURU, in botany, a name used by Plumier in the same sense with the *feriana* of the same author, in its generical characters, and called by Linnæus *paulinia*. *Plumier*, Gen. 36. See the article PAULINIA.

CURURUCA, in zoology, the name of an American fresh water fish, of an oblong, and not flatted, body. It grows to a foot and half in length; its mouth is very large; it has one long back fin, which is divided as it were into two in the middle, and the anterior rays of this are rigid, and prickly, the hinder ones more flexile and soft. Its scales are moderately large, and of a silvery brightness, with a slight mixture of brown and yellow on the back and sides; its tail, and back-fin, are of a greyish colour; those on the belly are of a brownish yellow. It is eaten in the Brasils. *Marggrave*'s Hist. Brasil.

CUSCASOW, the name of a Mooriſh dish eaten in Egypt. It is made of flower tempered with water, rolled in the hands into small pieces, and then put into a colander, over a boiling pot, stopped close round; so that it is dressed with the steam, and when it is done enough they put butter, to it. *Pocock*'s Egypt, p. 183.

CUSCUTA, *dodder*. In the Linnæan system of botany, this makes a distinct genus of plants, the characters of which are these: the calyx is a one-leaved perianthium, in form of a cup, fleshy at the base, and divided slightly into four obtuse segments at the rim. The flower is composed of only one petal, of an oval figure, a little longer than the cup, and divided slightly into four obtuse segments at the edge. The stamina are four pointed filaments of the length of the cup; the antheræ are roundish; the germen of the pistil is roundish; the styles are two in number, and are erect, and short; the stigmata are simple; the fruit is fleshy, and roundish, and contains two cells splitting open horizontally; the seeds are two from each flower. *Linnæi* Gen. Plant. p. 53. The characters of *dodder*, according to Tournefort, are these: the flower is composed only of one leaf, which is hollowed into the shape of a bell, and is divided into many segments at the edges: the pistil arises from the cup, and is fixed, in the manner of a nail, to the hinder part of the flower; this finally becomes a membranaceous fruit, of a roundish, but somewhat angulated figure, perforated in its hinder part, and standing upon a capsule, which fills the basis of the cup, and containing very small seeds. The species of *dodder*, enumerated by Mr. Tournefort, are these: 1. The common *cuscuta*, or *dodder*. 2. The *epithymum*, small *dodder*, or *dodder* of thyme. *Tourn.* Inst. p. 652. See DODDER.

CUSI, in natural history, a name given by the people of the Philippine islands to a very small and very beautiful species of parrot.

CUSTOS (*Cycl.*) — CUSTOS *placitorum coronæ*, in our antient writers of law, seems to be the same with him we now call *custos rotulorum*, which is mentioned in the writ *de odio & atia*. Reg. of Writs, fol. 133. b. See also *Bracton* lib. 2. c. 5.

CUTT-*water*, the sharp part of the head of a ship below the beak. It is so called because it cuts or divides the water before it comes to the bow, that it may not come too suddenly to the breadth of the ship, which would retard her.

CUTAMBULI, a name given by the old writers on medicine to certain worms bred under the skin, and causing by their creeping a very uneasy sensation. Afterwards the same word was used to express certain uneasy itchings caused by a scorbutic habit, and resembling the crawling of worms.

CUTANEOUS *eruptions*, in infants. See the article INFANT.

CUTHBERT *duck*, in zoology, the name given by authors, as well as by our own people, to a species of duck which breeds in some of our northern islands, and leads its young to sea as soon as they are hatched, whence neither they, nor the old ones, ever return till the breeding time again. It is of the size of the common duck; the male is variegated with black and white; its back being white, and its tail and long wing-feathers black; its beak is shorter than the common ducks, and its legs and feet are black; the female is of one colour, a dull dusky brown. One great singularity in these birds, both male and female, is, that the feathers at the sides of the beak run to an angle under the nostrils. *Ray*'s Ornithol. p. 227.

There seems great reason to suspect that this and the *eider*, or *anas plumis molliſſimis*, are the same species of bird. See EIDER.

CUTTING *teeth*, in anatomy. See DENTES *incisores*.

CUTTLE-*fish bone*. See SEPIUM, *Cycl.*

CUTTOFOE, in botany, a name given by the people of Guinea to a plant which they esteem greatly for its medicinal virtues. They boil it in water, and give the decoction in all cases of the colic, in which it proves a cure. It is a species of the anonis, or rest-harrow, and is common to Africa, and the West-Indies, Sir Hans Sloane having very well figured, and described it, under the name of *anonis non spinosa minor glabra procumbens flore luteo*, the yellow-flowered small, procumbent, smooth *anonis*, without thorns.

It is found in vast abundance on the banks of the Rio Cobre, near the city of St. Jago de la Vega, or Spanish town. Phil. Trans. N° 232.

CUURDO, in botany, is, with some authors, the name of the *cinnamon* tree. *Piso*, Mant. Arom. p. 165.

CYAMEA, in natural history, the name by which the antients called the black, flinty eagle-stone. Pliny describes its blackish colour, and says, that, when broken, there was found within it another stone of the bigness of a horse-bean. This is what rattles in it when shaken.

CYAMOS, in botany, a name used by some authors for the common, garden bean. *Chabræus*, p. 141.

CYANUS, the *blue bottle*, in botany, the name of a genus of plants, the characters of which are these: The flower is of the flosculous kind, being composed of a number of floscules; but these of two different kinds: those which stand in the middle

middle of the flower are ſmall, and divided into a number of equal ſegments; but thoſe placed nearer the edges are much larger and more conſpicuous, and are, as it were, bilabiated: both kinds, however, are placed on the embryos, and all are contained together in a general cup, which is ſcaly, and not prickly. The embryos afterwards become ſeeds winged with down.

The ſpecies of *cyanus* enumerated by Mr. Tournefort are theſe. 1. The broad-leaved perennial mountain *cyanus*. 2. The white flowered broad-leaved mountain *cyanus*. 3. The *cyanus* with longer and narrower leaves. 4. The Alpine *cyanus*, with pennated heads. 5. The mountain *cyanus*, with leafy ſtalks, and oblong heads. 6. The great ſweet-ſcented Turkiſh or oriental *cyanus*, 7. The great ſweet-ſmelling Turkiſh or oriental *cyanus*, with white flowers. 8. The great oriental ſweet *cyanus*, with fleſh coloured flowers. 9. The great oriental ſweet *cyanus*, with yellow flowers. 10. The exotic *cyanus*, called *amberboi*, or *emberboi*. 11. The oriental great *cyanus*, with red fiſtulous flowers. 12. The great oriental *cyanus*, with fiſtulous yellow flowers. 13. The great oriental *cyanus*, with fiſtulous white flowers. 14. The low white-flowered *cyanus*, with hierachium leaves. 15. The purple flowered hierachium leaved low *cyanus*. 16. The hierachium leaved low *cyanus*, with purpliſh olive flowers. 17. The Spaniſh *cyanus*, with pale blue flowers. 18. The long-leaved tree *cyanus*. 19. The common corn *cyanus*, with blue flowers. 20. The common corn-field *cyanus*, with white flowers. 21. The fleſh-coloured flowered *cyanus*. 22. The purple-flowered *cyanus*. 23. The bright red-flowered *cyanus*. 24. The corn-field *cyanus*, with a flower blue in the middle, and white at the edges. 25. The *cyanus* with flowers fleſh-coloured in the middle, and white at the edges. 26. The *cyanus* with flowers purple in the middle, and white at the edges. 27. The *cyanus* with flowers of a violet blue in the middle, and white at the edges. 28. The *cyanus* with flowers pure white in the middle, and fleſh-coloured at the edges. 29. The *cyanus* with flowers purple in the middle, and blue at the edges. 30. The *cyanus* with pale violet-coloured flowers. 31. The *cyanus* with whitiſh blue flowers. 32. The garden *cyanus*, with blackiſh purple flowers. 33. The garden *cyanus*, with double blue flowers. 34. The garden *cyanus*, with double purple flowers. 35. The garden *cyanus*, with double flowers, purple in the middle. *Tourn.* Inſt. p. 445, 446.

The common wild *blue bottle* of our corn-fields, is eſteemed a cardiac and alexipharmic. Conſerves and ſyrups are prepared from it in ſome places, and ſerve very properly for the making other more efficacious medicines of the ſame intention into form. Schroder and ſome others, have greatly extolled the diſtilled water of the flowers in inflammations, and many other diſorders of the eyes; but this ſeems a leſs warranted matter. The flowers of the large garden kind, are ſaid to be particularly good in diſorders of the womb, and the leaves of either in infuſion in dropſies.

There are ſeveral ſpecies of this plant, commonly cultivated in gardens, for the beauty of their flowers. They are almoſt all annuals, periſhing as ſoon as they have ripened their ſeed. In order to have them flower early, their ſeeds ſhould be ſown in July, or the beginning of Auguſt, and when the plants have once got ſtrength, they ſhould be tranſplanted into warm borders, and will endure the cold very well, and will flower very early the next ſummer.

CYANUS, in the natural hiſtory of the antients, is uſed to expreſs two different ſubſtances. The one the *lapis lazuli*, the other the *lapis armenus*, a ſubſtance uſed by the painters in its native ſtate, and very improperly called a ſtone, being a mere earth, and being truly to copper, what yellow ochre is to iron.

The antients having called theſe two ſubſtances by the ſame name, has been the occaſion of a great many errors, and great miſunderſtanding of their works, even among one another, after the ſucceſſion of only a few ages, much more among their commentators in theſe later times. We are apt to think, we go very far back in our reſearches, when we go back to Pliny, in ſearch of the things in uſe among the antients; but this is by no means ſufficient, ſince it will appear to any one who will read, and compare Pliny with the older authors, that while he has taken his accounts of things from thoſe who wrote before him, he has often miſtaken, and miſunderſtood them; and in particular, that his hiſtories of foſſils, are in a great meaſure, taken from the writings of Theophraſtus, and are often very careleſs, and very bad tranſlations of him, Pliny having frequently notoriouſly miſunderſtood him. Of this, the hiſtory he has given us of the ſubſtance now under conſideration, is an evident inſtance; for he has plainly confounded the two ſubſtances, called by the common name *cyanus*, and has told us thoſe things of the *cyanus* gem, or *lapis lazuli*, which Theophraſtus, from whom he tranſlated it, ſays of the paint.

When Theophraſtus, in his hiſtory of ſtones, has gone thro' the gems and ſtone claſs, and is come to the earths, among theſe he names the *cyanus* paint, or *lapis armenus*, having, in another part of the work, treated at large of the *cyanus* gem; of the *cyanus* paint he tells us, that beſide the native kind, which was very valuable, and very ſcarce, there was a fictitious one, which ſerved very well for many kinds of painting, and which was prepared in Egypt, where one of their kings having been the firſt inventor of it, it was recorded to his immortal honour, in the annals of his reign. This was very probable, of a ſubſtance ſo very dear, ſo very ſcarce, and yet ſo much wanted in all fine paintings; but Pliny has tranſlated this paſſage, and unfortunately not minding which of the *cyanus* he attributes it to, has ſaid it all of the *cyanus* gem; a thing never in any great eſteem, and which was never worth the counterfeiting, much leſs of ſo much conſequence, that it ſhould be recorded in the hiſtory of a ſeries of kings, which of them happened to find out the way of imitating it. *Hill's* Theoph. p. 131.

CYATHUS, in antiquity, a liquid meaſure among the Romans, being the twelfth part of the ſextarius. It only held as much as a man could eaſily drink at one draught, and was divided in twelve parts, called *unciæ*. See SEXTARIUS & UNCIA, *Cycl.*

CYBÆA, in antiquity, a kind of ſhip uſed in commerce, of a roundiſh form. *Pitiſc.* Lex. Ant. in voc.

CYBELICUM *marmor*, a name given by the antients, to a ſpecies of marble, dug in a mountain of that name in Phrygia. It was of an extremely bright white, with broad veins of a blueiſh black.

CYBOMANTIA, κυβομαντεια, a ſpecies of divination performed by lots.

CYCEON, a name given by the antient poets and phyſicians, to a mixture of meal and water, and ſometimes of other ingredients. Theſe conſtituted the two kinds of *cyceon*, the coarſer being of the water and meal alone, the richer and more delicate compoſed of wine, honey, flower-water, and cheeſe. Homer, in the eleventh iliad, talks of *cyceon* made with cheeſe and the meal of barley, mixed with wine; but without any mention either of honey or water; and Ovid deſcribing the draught of *cyceon*, given by the old woman of Athens to Ceres, mentions only flower and water. Dioſcorides underſtood the word in both theſe ſenſes; but extolled it moſt in the coarſe and ſimple kind: he ſays, when prepared with water alone, it refrigerates and nouriſhes greatly.

CYCLAMEN, *ſow bread*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is globoſe, and of a rotated form, and uſually divided into five ſegments, which all bend upwards; from the cup there ariſes a piſtil, which is fixed in the manner of a nail, to the hinder part of the flower, and afterwards becomes a roundiſh membranaceous fruit, which contains numerous ſeeds, uſually of a longiſh figure, and angular, and fixed to a placenta.

The ſpecies of *cyclamen* enumerated by authors are theſe. 1. The *cyclamen*, with round leaves, purple on their under ſide. 2. The double flowered *cyclamen*, with round leaves, purple underneath. 3. The *cyclamen*, with a roundiſh leaf, of a pale whitiſh green underneath. 4. The round-leaved autumnal *cyclamen*, with very ſweet fleſh-coloured flowers and leaves, red underneath. 5. The bright red-flowered Syrian, autumnal *cyclamen*, with roundiſh, ſhining, crenated leaves. 6. The Syrian autumnal *cyclamen*, with large ſnow-white flowers, and roundiſh, lucid, ſoft, and crenated leaves. 7. The ſweet-flowered, ſpotted-leaved, ſummer *cyclamen*. 8. The ſummer Roman *cyclamen*, with leaves ſcarce at all ſpotted, and of a longiſh ſhape, and with pale purple flowers. 9. The large round-leaved *cyclamen*, with a pale violet-coloured flower. 10. The autumnal *cyclamen* of mount Libanus. 11. The coan *cyclamen*, or purple-flowered winter *cyclamen*, with roundiſh leaves, purple underneath. 12. The angular-leaved *cyclamen*, flowering both in ſpring and winter, with a large white flower, and purple baſe, called by ſome the Perſian *cyclamen*. 13. The winter and ſpring *cyclamen*, with an angular leaf, and a large fleſh-coloured flower, with a purple baſe. 14. The purple flowered African *cyclamen*, which flowers the whole year. 15. The great African *cyclamen*. 16. The ſpring *cyclamen*, with great white flowers, purple at the baſe, and with angular leaves, variegated with three ſorts of green, called by ſome, the *cyclamen* of Antioch. 17. The autumnal *cyclamen* of Antioch, with double purple flowers. 18. The broad-leaved auriculated *cyclamen*, with bright red flowers. 19. The narroweſt leaved, auriculated *cyclamen*, with white flowers, purple at the baſe, called the Byzantine *cyclamen*. 20. The royal *cyclamen*, with long, angular leaves, reſembling ſerpents tongues. 21. The great white flowered *cyclamen*, with long angular leaves. 22. The great rooted *cyclamen*, with leaves red underneath. 23. The common angular leaved ſpring *cyclamen*. 24. The ivy-leaved *cyclamen*. 25. The many-flowered, ivy-leaved *cyclamen*. 26. The *cyclamen*, with roots of the ſize of a cheſnut. 27. The little rooted *cyclamen*. 28. The long rooted *cyclamen*. 29. The white ſpring *cyclamen*. 30. The red ſpring *cyclamen*. 31. The yellow ſpring *cyclamen*, with heart-faſhioned roots. *Tourn.* Inſt. p. 155.

There are ſeveral ſpecies of this plant cultivated in gardens, for the pretty appearance of its flower: they are propagated by the curious from ſeed, in the manner of the *xiphium*. See XYPHIUM. But they are four or five years before they come to flower, and for the firſt year or two of their flowering,

flowering, their roots are ſo ſmall that the flowers they produce are but few. The roots, however, annually increaſe in bulk, and the number of flowers increaſes in proportion; ſo that they will grow to fourteen inches in diameter, and, when of this ſize, will produce upwards of an hundred flowers in one ſeaſon. The beſt ſeaſon for tranſplanting theſe roots is in June and July, ſoon after the ſeed is perfected; but they ſhould not be kept long out of the ground, for the roots are diſpoſed to ſhoot out freſh fibres, with the firſt moiſt weather after the ſeeds are fallen, and in about ſix weeks produce their flowers, which appear upon long ſingle footſtalks before the leaves appear: theſe ſprout up after the flower is fallen, and remain green all the winter, and being of a fair green, and ſpotted in the middle with white, they make a very pretty appearance, during that dead ſeaſon. The pedicle of the flower afterwards twiſts like a ſcrew, encloſing the embryo of the fruit, which is buried among the leaves, and, by that means, ſcreened from the ſeverity of the winter, and ripens its ſeeds in June. *Miller*'s Gardener's Dict.

CYCLAS, in our old writers, a long garment, cloſe upwards, and open, or large below. Matt. Paris, ſpeaking of the citizens of London, tells us they were *cericis veſtimentis ornati*, cycladibus *auri textis circundati*. Anno 1236.

CYCLOID (*Cycl.*) — The time in which a heavy body deſcribes a *ſemi-cycloid*, by deſcending along it by its gravity, is to the time in which it would fall through the diameter of the generating circle by the ſame gravity as the ſemi-circumference of a circle is to its diameter. *Mac Laurin*'s Fluxions, Art. 407. See the ſame book, Art. 405 — 408, for the properties of the *cycloid*. See alſo his account of Sir Iſaac Newton's diſcoveries, p. 296. for the properties of the *cycloid*, and the motion of a pendulum in that curve. On the ſame ſubject we have a ſhort and elegant treatiſe by Mr. Cotes, Oper. Miſcel. p. 80. not to mention the *horologium oſcillatorium* of Huygens, who firſt applied the *cycloid* to regulate the motions of pendulums.

CYCLOPTERUS, in ichthyology, the name of a genus of the branchioſtegous fiſhes, the characters of which are theſe: the branchioſtege membrane on each ſide contains ſix ſmall and cylindric bones. The body is of an oblong, globoſe figure; the belly-fins unite at their extremities, ſo as to form one circular fin, of the ſhape of a funnel; the fins are ſix in number. We at preſent know only one ſpecies, which is the *lump-fiſh*, or ſea owl. *Artedi* Gen. Piſc. 40. See LUMPUS.

The name is of Greek origin, and is formed of the words κυκλὸς a circle, and πτέρον a fin; and expreſſes that this fiſh has ſomething circular in its fins, thoſe of the belly being concreted into this form. See Tab. of Fiſhes, N° 32.

CYDER (*Cycl.*) — The beſt *cyder* of all the kinds is that made from the redſtreak apple, grafted upon the gennetmoyle ſtock. Theſe two ſorts of apple-trees always agree very well, and the ſtalks ſcarce ever canker, as the crab-ſtalks uſually do, when this apple-tree is grafted upon them. The fruit of the redſtreak, on the ſtock here recommended, is always larger, and milder, and, when ripe, is a very good eating apple, and the *cyder* made from it is mellower, and has not the over-roughneſs and auſterity that has which is made from the ſame apple on the crab-ſtock; the apples alſo need leſs mellowing, in order to their making into *cyder*, the ſtalk, in a great degree, meliorating the fruit; for as an apple grafted on a crab becomes better by obtaining an acrimony and quickneſs from the fruit, ſo a crab, and the redſtreak apple, as it is called, which is in itſelf no other, obtains ſoftneſs, mellowneſs, and bigneſs, by being grafted on a good apple. Phil. Tranſ. N° 70.

It might be a great improvement to many eſtates, to cultivate, on the grounds not fit for corn, the proper ſorts of apples for *cyder*. It is a marketable commodity at all times, and coſts no fuel to brew it; and the labour is but once in the year. The greater quantities of *cyder* are made together, the better it uſually ſucceeds, but the veſſels ſhould alſo be large in which it is kept. In this caſe it will not only keep many years, but will improve all the time. Phil. Tranſ. N° 134.

Pepin CYDER. This is a ſort of *cyder* which, in many places, might be made in great quantities, where the redſtreak *cyder* apple will not thrive: the harſhneſs that is apt to be in this ſort of *cyder*, is the only objection to its value, it being of a good body, and otherwiſe, in all reſpects, commendable. The great reaſon of this harſhneſs is the light foulneſs; or, as the *cyder*-people expreſs it, the flying lee that always is in this ſort. But it is eaſy, by watching a proper time, to draw off the liquor from this into other veſſels, or to ſtrain it through a cloth: in either caſe, much of the lee will be left out, and the *cyder* loſe its harſhneſs. Phil. Tranſ. N° 70.

CYDER *ſpirit*, a ſpirituous liquor drawn from *cyder* by diſtillation, in the ſame manner as brandy from wine. The particular flavour of this ſpirit is not the moſt agreeable, but it may, with care be diveſted wholly of it, and rendered a perfectly pure and inſipid ſpirit, upon rectification. The traders in ſpirituous liquors are well enough acquainted with the value of ſuch a ſpirit as this: they can give it the flavours of ſome other kinds, and ſell it under their names, or mix it in large proportion with the foreign brandy, rum, and arrack, in the ſale, without danger of a diſcovery of the cheat.

CYDONIA, the *quince*, in botany, the name of a genus of trees, the characters of which are theſe: the flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form; the cup finally becomes a fleſhy fruit, of a turbinated form, divided into cells within, and containing oblong ſeeds of a callous ſtructure.

The ſpecies of *quince* enumerated by Mr. Tournefort are theſe: 1. The common *quince*, with oblong, ſmooth fruit. 2. The oblong-fruited *quince*, with a ſmooth rind, and ſweet-taſted pulp. 3. The *quince* with a ſmall, oblong, downy, and not eatable fruit. 4. The *quince* with a ſhort, and roundiſh fruit. 5. The common, narrow-leaved *quince*. 6. 6. The broad-leaved, Portugal *quince*. *Tourn.* Inſt. p. 632.

There are three kinds of this tree propagated in the nurſeries about London; the pear-*quince*, the apple-*quince*, and the broad-leaved Portugal *quince*.

The laſt of theſe is moſt eſteemed for the delicate flavour of the fruit: they are all eaſily propagated, either by layers, ſuckers, or cuttings, which muſt be planted in a moiſt ſoil. Thoſe raiſed from ſuckers are ſeldom ſo well rooted as the others, and are ſubject to produce ſuckers again, in a greater abundance, which is not to be wiſhed in fruit-bearing trees.

The cuttings ſhould be planted early in ſpring, and, in dry weather, muſt be often watered, to aſſiſt them in rooting; the ſecond year they ſhould be removed into the nurſery, and ſet in rows, at three feet diſtance, and one foot aſunder in each row. In two or three years more, they will be fit to tranſpant where they are to ſtand, which ſhould always be near a ditch, or river, or in ſome moiſt ſoil; where they will produce twice the quantity of fruit that they will in a dry one, and the fruit will alſo be much larger: but thoſe in a drier ſoil are better taſted, and are earlier ripe.

CYDONITES, (*Cycl.*) in natural hiſtory, the name of a ſtone of the ſhape of a quince. It ſeems to have been a fantaſtic name, given to any common flint, or pebble, that was accidentally found of that ſhape, not appropriated to any peculiar ſpecies of ſtone.

CYEMA, the ſame with embryo. Blancard derives it from κυω, *pario*.

CYGNUS, (*Cycl.*) the *ſwan*, in natural hiſtory, a very well known bird; but, beſide the common tame *ſwan*, there is another ſpecies called the *wild ſwan*, and, in ſome places, the *elk*, and in others, the *hooper*. It is ſomewhat ſmaller than the tame *ſwan*, and is not of ſo clear a white, the middles of the back feathers being greyiſh; the feet are of a yellowiſh brown. *Ray*'s Ornithol. p. 272.

Bartholine has given an accurate account of the anatomy of this bird, and of the ſtructure of its œſophagus, and the windpipe, which is very remarkable. Theſe are ſo framed that they go down together into the ſternum; and, after reaching its bottom, they turn up again, and the windpipe riſing out of the ſtreights of the ſternum, climbs up the intermediate clavicles, on which it leans, as on a baſe, and then bends to the thorax; but before it comes to the thorax and lungs, it forms a ſort of larynx, with an os hyoides, covered with a thick membrane, and reſembling a muſical pipe, wide above, but with a narrow ſlit, and ſtrait, and depreſſed below: under this larynx, before the windpipe enters into the lungs, it is divaricated into two branches like unto bronchia, thicker in the middle, but narrower where they are near the lungs. In this particular it differs from the human aſpera arteria, which, it is true, is divided into branches, but that is not before it has entered into the lungs. *Bartholin*, Diſſert. de Cygni Anatom.

CYGNUS *cucullatus*, the *hooded ſwan*, a name very improperly given by ſome authors to the *dodo*, a very large bird, rather approaching to the caſſowary kind, but not ſo long legg'd, or long neck'd. *Ray*'s Ornithol. p. 107. See DODO.

CYLINDRUS, in conchyliology, the name of a genus of ſhell-fiſh, of which there are many very elegant and precious ſpecies. This genus is more generally, at preſent, called *rhombus*, though this is very improper, the word *cylindrus* very aptly expreſſing the ſhape of the ſhell, which is cylindric and oblong, and the *rhombus*, which ſignifies that figure we call a lozenge, not being at all expreſſive of it.

The characters of this genus are theſe: it is an univalve ſhell, of an oblong cylindric figure, with an oblong mouth, and oftentimes having the clavicle ſeparated from the body by a circle: the columella is, in ſome ſpecies, ſmooth, in others, rough. The moſt obvious character of this genus, without having recourſe to the mouth, is, its having in all the ſpecies, both ends of the ſhell nearly of the ſame ſize, the tail part being always, however, ſomewhat ſmaller than the head. The head is not ſeparated from the body by an elevated rib, as in the volutæ, but have it following the ſhape of the body, though ſometimes it is ſeparated by a dentated furrow; and in ſome, though very few ſpecies, by a rib, or riſing circle. This is a very puzzling circumſtance in the diſtinction of the ſhell, bringing it to a near alliance with the volutæ: but, in this caſe, the point of the ſhell muſt be regarded, which, in the *cylindrus*, is always obtuſe, but, in the voluta always pointed. See Tab. of Foſſils, Claſs 9. and Tab. of Shells, N° 12.

Among

Among the ſpecies of this family of ſhells, there are found two very remarkable diſtinctions; the one is in the ſpecies juſt mentioned, which has a rib near the head; the other is in the olive *cylindrus*, the two extremities of which are nearly equal, but the middle very conſideraby ſwelled.

Some authors, who have not been ſufficiently diſtinct on theſe ſubjects, have called the ſpecies of this genus *volutæ cylindroide*; but it appears very plainly that they deſerve a generical name to themſelves, and there is great advantage in the ſeparating two genera, each of which contains ſo large a number of ſpecies. Rondeletius and Aldrovand, not being able to refer theſe olive-ſhaped *cylindri* to any genus, have placed them by themſelves.

The family of the *cylindri* being very numerous, may be aptly divided into ſeveral ſubordinate ſpecies. 1. The *cylindrus* with the clavicle united to the body. 2. The *cylindrus* with the clavicle ſeparated from the body. 3. The *cylindrus* with a coronated clavicle. 4. The *cylindrus* with a rugoſe columella.

Of the firſt kind, or ſuch as have the clavicle united to the body, we have the following ſpecies. 1. The cloth of gold *cylindrus*. 2. The cloth of ſilver *cylindrus*. 3. The yellow cloth *cylindrus*. 4. The faſciated, cloth of gold, *cylindrus*. 5. The nigella *cylindrus*. 6. The tulip *cylindrus*. 7. The pancake, or amlet *cylindrus*. 8. The reticulated *cylindrus*. 9. The plumoſe *cylindrus*, repreſenting birds feathers. 10. The *cylindrus* variegated with blue ſpots. 11. The granulated *cylindrus*, with various lines, and ſpots. 12. The granulated, yellow *cylindrus*.

Of the ſecond kind, or thoſe which have the clavicle ſeparated from the body of the ſhell, there are the following ſpecies. 1. The decorticated *cylindrus*. 2. The brown, ſpotted, decorticated *cylindrus*. 3. The clouded *cylindrus*. 4. The *cylindrus* with a coronated clavicle. 5. The ſilk, broad *cylindrus*. 6. The ſilver, broad *cylindrus*. 7. The taffeta *cylindrus*. 8. The mohair *cylindrus*. 9. The *cylindrus* of a bright, white-like, poliſhed ſilver.

Of the *cylindri* with a rugoſe columella, we have the following ſpecies: 1. The *olea viridis*, or green olive *cylindrus*. 2. The agate olive *cylindrus*, variegated at the bottom. 3. The cylindric, porphyry *cylindrus*. 4. The black, olive *cylindrus*. 5. The yellow, olive *cylindrus*. 6. The *cylindrus* called by the French the *ſolitaire*. 7. The olive *cylindrus*, faſciated, and variegated in the lower part. 8. The *cylindrus* with marks reſembling letters, or characters. 9. The violet-coloured, or amethyſtine, Panama *cylindrus*. And, 10. The white, olive *cylindrus*, delineated over with yellow lines Hiſt. Nat. Eclair. p. 284, ſeq.

CYLISTICI, Κυλιστικοι, in antiquity, a deſignation given to the *pancratiaſtæ*; becauſe when the weaker found himſelf ſore preſſed by his adverſary, he fell down, and fought, rolling on the ground. *Pott.* Archæol. Græc. l. 2. c. 21. T. 1. p. 444. The word is Greek, formed from κυλιω, to roll, or tumble.

CYLLOSIS., the ſame with *cyllum*. See CYLLUM.

CYLLUM, in medical writers, is uſed to ſignify a leg put out of joint outwardly; alſo one that is lame and crooked.

CYMATITES, in natural hiſtory, a name given by ſome writers to a ſpecies of *aſtroites*, the lineations of which are indented, and repreſent waves. See ASTROITES.

CYMATIUS *ſtorax*. See STORAX.

CYMBARIA, in botany, the name of a genus of plants, the characters of which are theſe: The perianthium is erect, and divided into ſeveral ſegments; two of them, which ſtand oppoſite to one another, are larger and broader than the reſt; the other ten are very narrow: this cup does not fall with the flower. The flower is monopetalous, and its tube is oblong and inflated; the mouth is open; the upper lip is reflex, obtuſe, and divided into two ſegments; the lower one is obtuſe alſo, and is divided into three. The ſtamina are four filaments, of the length of the tube; the antheræ are bifid, and prominent; the germen of the piſtil is oval; the ſtyle is capillary, and of the length of the ſtamina, and the top of it is bent; the ſtigma is obtuſe. The fruit is an oval capſule, compoſed of two valves, and having only one cell; this is ſquare, and contains a number of ſmooth angular ſeeds. *Linnæi* Gen. Plant. p. 282.

CYMBIUM, in natural hiſtory, a name given by many authors to a kind of ſea ſhell, commonly called the *gondola ſhell*. It is of the genus of the *concha globoſa*, or *dolium*, and there are ſeveral ſpecies of it. See GONDOLA.

CYMENE, in botany, a name given by the antient Greeks to a plant with which they uſed to dye woollen things yellow, and with which the women of thoſe times uſed alſo to tinge the hair yellow, that being the favourite colour in thoſe ages. The *cymene* of the Greeks is evidently the ſame plant with the *lutum* or *lutea herba* of the Latins; and this is deſcribed to have leaves like the *linum*, or flax, and flowers like the *geniſta*, or broom. It is plain from this, that the *lutum* of the Romans was the plant we call *geniſtella tinctoria*, or dyer's weed, with which we ſtill uſe to dye yellow, and which anſwers to all the characters of the Roman deſcription. As evident, however, as this is to the judicious botaniſt, it has not prevented errors. Macer, Paulus Ægineta, and many others, have ſuppoſed the *cymene*, or *lutum*, the ſame with *woad*, or *iſatis*, a plant uſed for dying blue, and not at all anſwering to the characters given of the *lutum*.

CYMINALIS, in botany, a name uſed by ſome authors for the *gentian*, the plant whoſe root is the fine bitter drug of that name. *Ger.* Emac. Ind 2.

CYMONIDES, in natural hiſtory, a name given by antient writers to a ſtone which, they ſay, at certain times, became pregnant, and brought forth other ſtones. They called it alſo *cymonites*, *encymonites*, and *encumonis*. It is generally ſuppoſed that they meant the eagle-ſtone by this name; but their deſcriptions of it agree much better with the ſparry incruſtations on the tops of grottos They ſuppoſed this to poſſeſs great virtues in promoting delivery.

CYNAPIUM, in botany, a name uſed by ſome authors for the leſſer *hemlock*, or, as we call it in Engliſh *fool's parſley*. *Rupp. Fl. Jen.* 228.

CYNANCHE, and LYCNANCHE, in medical writers, an inflammation of the inner muſcles of the larynx, accompanied with a difficulty of breathing, and a continual fever, ſo called becauſe it is frequently incident to dogs, and wolves. *Blancard.*

CYNANTHEMIS, in botany, a name given by ſome authors to the *cotula fœtida*, or ſtinking mayweed. *Ger.* Emac. Ind. 2. See COTULA.

CYNANTHROPIA, a term uſed for madneſs given by a dog, wherein the patient flies light, or any thing that is bright, and fears water, and trembles at the ſight and remembrance of it. It proceeds uſually from a poiſonous bite, or the like, of ſome mad creature, as a dog, a wolf, &c. *Blancard.*

CYNARA, in botany, a name generally eſteemed ſynonymous with the word *cinara*, but erroneouſly; the *cinara* being properly the artichoak, and the *cynara* the chardoon, or ſome other thiſtle nearly allied to the artichoak kind, of which the antient Greeks eat the young and blanched ſtalks, as we do the chardoons. Galen has gone a great way, indeed, towards the confounding the two plants together, by accuſing the people of his time for corruptly writing the word *cinara*, when it was originally written *cynara*; but antiquity refuſes to join in this. Sopater Paphius who lived in the time of Alexander the Great, we find writes *cinara*, as Athenæus affirms; and Ptolemy Euergetes, who was a ſcholar of Ariſtarchus, calls it by the ſame name *cinara*, not *cynara*. Many of the ſame authors, who conſtantly write the name of the artichoak *cinara*, alſo write the name *cynara*, as belonging to another plant; and they ſeem to have different etymologies, the word *cinara* being derived from an iſland of the ſame name, where the Greeks found the wild plants of the artichoak grow very plentifully, and the chardoon of the Greeks being called *cynara*, as if dog's thiſtle.

CYNEBOTE, the ſame with *cenegild*. See CENEGILD.

CYNOCEPHALUS, in zoology, the name of one of the genera of monkeys which have a long noſe, and reſemble a dog about the head. Theſe have all tails, ſome longer, ſome ſhorter, and are what we call in Engliſh *baboons*. There are ſeveral ſpecies of theſe, ſome of which are very large.

CYNODES *orexis*, and CYNOREXIS, a canine appetite. *Blancard.* See CANINE *appetite*, and BULIMY, *Cycl.*

CYNOGLOSSUM, in botany. See HOUNDS-TONGUE.

CYNOGLOSSI *radix*, *hound's-tongue root*, in the materia medica, is emollient, anodyne, and narcotic; it is alſo gently aſtringent, and is eſteemed a good medicine in catarrhs, diarrhœas, dyſenteries, and hæmorrhages of all kinds; alſo in the fluor albus, and gonorrhœa.

CYNOGLOSSUS, in zoology, the name of a fiſh common in the Mediterranean ſea, and brought to market at Rome, Venice, and elſewhere. It much reſembles the ſoal-fiſh, but is not of half that bigneſs, and conſiderably ſhorter in proportion to its breadth. It is alſo of a whiter hue; the ſcales are larger; and the anus is ſituated, not in the ſide of the body, but in its under part. Its mouth is very large; its teeth ſharp; and its eyes placed very near each other. It is a much worſe fiſh for the table than the ſoal. *Geſner*, p. 788.

CYNOLUCOS, in natural hiſtory, a name given by the antient writers to a creature which had the ſhape partly of a dog, and partly of a wolf, and was generated, according to their accounts, by a mixture of thoſe two ſpecies of animals in copulation, as the leocrocotta was, between the hyæna and lioneſs. See LEOCROTTA.

CYNOMORIUM, a name given by Micheli, and continued by Linnæus, to a genus of plants, the characters of which are theſe: it produces ſeparate male and female flowers, but they ſtand almoſt cloſe to one another, in the ſame amentum or ear. In the male flowers the general cup is an erect amentum, imbricated on every ſide, and compoſed of oblong, erect, truncated ſquammæ, each containing one flower, and formed narrow at the bottom, and gibbous on one ſide, and hollow on the other; there are no petals, and in the midſt there ariſes, by way of a ſtamen, one firm and ſtrait filament, longer than the cup, and crowned with a double apex. In the female flowers the common amentum is the ſame as in the male, but they have no other cup than is formed by the leaves of the plant. The germen of the piſtil is globoſe; the ſtyle is ſingle, erect, firm, and of the length of the cup; the ſtigma is obtuſe; the ſeed is ſingle and naked. *Linnæi* Gen. Plant. p. 444. *Micheli* Nov. Gen. 12.

CYNOMUIA, the *dog-fly*, in zoology. See DOG-*fly*.

CYNOPHONTIS, Κυνοφονις, in antiquity, a feſtival obſerved in the dog-days at Argos, and ſo called απο της κυνας φονειν, i. e. from killing dogs; becauſe it was uſual on this day to kill all the dogs they met with. *Pott.* l. 2. c. 20.

CYNORRHODON, the *dog-roſe*, the common wild briar, or wild white roſe, the fruit of which is the hip, ſo common in our hedges. *Mont.* 51.

CYNOSBATOS, in botany, a word uſed as the name of different ſhrubs by different authors. It is now generally uſed as the name of the wild, or *dog-roſe*; but ſome authors have applied it to the common bramble; others to the oxycanthus, and others to the caper buſh. *Ger.* Emac. Ind. 2.

The fruit of the *wild roſe* is the *hip*, uſed in conſerve, and ſaid to be good in diſorders of the breaſt, &c. *Quinc.* Pharm.

CYNOSPASTOS, in botany, a name uſed by ſome authors for the *garden piony*. *Ger.* Emac. Ind. 2.

CYNOSURUS, *dog's-tail*, in botany, a kind of graſs called *criſtata* by Scheuchzer, and other authors; but in the Linnæan ſyſtem of botany, under this name, it makes a diſtinct genus of plants, the characters of which are, that the cup is only a partial covering, lying on one ſide, but large, and made of two leaves which are pennated, and remain when the flower is fallen. The glume contains many flowers, and is bivalve, the valves being ſlender, pointed, and equal in ſize; the flower is made of two valves, the exterior one is long, hollow, and bearded; the interior plain, and naked. The ſtamina are three capillary filaments; the antheræ are oblong; the germen of the piſtillum is of a turbinated form; the ſtyles are two in number, hairy and crooked; the ſtigmata are ſingle; the flower does not open, but nicely encloſes the ſeed, which is ſingle, of an oblong ſhape, and pointed at both ends. *Linnæi* Gen. Pl. p. 13.

CYNOZOLOS, in botany, a name given by ſome of the old Greek writers, and, from them, copied by Pliny, and the Latins, to expreſs the black *chamæleon thiſtle*, a poiſonous plant which it was very neceſſary to diſtinguiſh perfectly from the plant called the white chamæleon thiſtle, which was a ſafe and eſculent plant.

CYPERUS. In the Linnæan ſyſtem of botany, this is a genus of plants, the characters of which are, that the cup is an imbricated ſpike, the ſeveral ſcales of which are ſomewhat bent, of an oval figure, and boat-like form; and ſerve to keep the flowers ſeparate. It has no petals; the ſtamina are three extremely ſhort filaments; and the antheræ are oblong and furrowed; the germen of the piſtillum is extremely ſmall; the ſtyle is thread-like, and very long; the ſtigmata are three, and of a capillary form; it has properly no fruit but a ſingle, three-cornered, pointed, and naked ſeed. See Tab. 1. of Botany, Claſs 15. *Linnæi* Gen. Plant. p. 12.

CYPERUS *root*, in the materia medica, the name of a root uſed in medicine, of which there are two kinds, the long and the round; the long *cyperus* is of our own growth; the round, when genuine, we have from the Eaſt-Indies, but what is uſually ſold is the root of a baſtard kind, common about our own ditches, and called by authors, by way of diſtinction from the Indian kind *cyperus rotundus noſtras*.

TheIndian,round *cyperus* is a knobbed root, full of ſmall ſpecks and tubercles, brown on the outſide, and greyiſh within, of a ſlightly ſweet ſmell, and of an acrid taſte. The long *cyperus* is an oblong root, covered with a great number of fibres, not eaſily broke,of a duſky brown without,and a pale bright grey within, of an acrid taſte,and very agreeable ſmell,when freſh and good. The plants which produce them both, grow in watery places, and have leaves and flowers in ſome meaſure reſembling the water graſſes, which from their reſemblance to theſe, are commonly called *cyperus* graſſes. They are both poſſeſſed of the ſame virtues, and cure ill ſcented breaths, and are good in nephritic diſorders, and in colics, and in diſorders of the womb. They are taken either in powder, or decoction. *Pomet*'s Hiſt. of drugs, p 33.

The roots of *cyperus* are attenuants, and deobſtruents, promote urine, and the menſes, are good ſtomachics, and ſerviceable in the firſt ſtages of the dropſy.

CYPHOMA, CYPHOS, and CYPHOSIS, in medical writers, an incurvation of the ſpine, forming a crookedneſs of the back. *Blancard.* in voc.

CYPHON, κυφων, in antiquity, a kind of puniſhment uſed by the Athenians; it was a collar made of wood, ſo called becauſe it conſtrained the criminal who had this puniſhment inflicted on him to bow down his head. *Pott.* Arch. Græc. l. 1. c. 25. T. 1. p. 130.

CYPRESS, (*Cycl.*) *cupreſſus*, in botany. See CUPRESSUS.

Cypreſs nut is a very powerful aſtringent and balſamic. In diarrhœas, and dyſenteries, there is ſcarce any ſimple medicine preferable to it. It is alſo ſaid to be a good febrifuge; but at preſent is little regarded in the ſhops.

The *cypreſs tree*, though found in moſt of our old gardens, is, at preſent, leſs regarded than it really deſerves. It adds a conſiderable beauty to wilderneſſes, or clumps of evergreens. But, beſides this, it ought to be cultivated on account of its valuable wood. See the *Cyclopædia*.

All the ſpecies of *cypreſs* are propagated from ſeeds: theſe ſhould be ſown early in the ſpring, on a bed of warm, dry, ſandy earth, which ſhould be levelled very ſmooth. If the weather prove warm and dry, it will be proper to water the bed, taking care not to waſh the ſeeds out of the ground: in about a month's time, the plants will appear above-ground, which ought to be kept free of weeds. After remaining two years in this bed, they may be tranſplanted into a nurſery: the beſt ſeaſon for removing them is in April, on a cloudy day that ſeems to threaten rain; and, in taking them out of the ſeed-bed, the roots ſhould be preſerved entire, with a ball of earth to each plant. When they have been three or four years in the nurſery, they may be planted out for good; and, if deſigned for timber, the diſtance of eighteen or twenty feet ſhould be allowed every way around them. They muſt be well watered at firſt to ſettle the earth to their roots, which ought to be frequently repeated, if the weather proves dry. *Miller*'s Garden. Dict.

CYPRIANUS, in ichthyology, the name given by Ariſtotle to the *carp*. He has alſo called it *cyprinos*, and Athenæus, Oppian, and many other of the Greek writers uſe indifferently the one, or the other of the words. See CYPRINUS.

CYPRINUS, in the Artedian ichthyology. The name of a very extenſive genus of fiſhes, comprehending what have been before eſteemed many different genera; the characters are theſe: the branchioſtege membrane on each ſide contains three bones; the whole mouth is ſmooth and toothleſs, but low down in the jaws there are two hard and ſerrated bones, which ſerve as teeth, and over againſt theſe, there is one ſoft oval bone to anſwer them. The air bladder is as it were tied with a thread in the middle, and ſo divided into two parts. The fiſh is of the malacopterygious kind, and the two jaws are uſually of the ſame length, but ſometimes the lower one is ſomewhat longer than the upper. *Artedi* Gen. Piſc. 3.

The ſpecies of this comprehenſive genus are theſe: 1. The *cyprinus* with the iris of the eye, and the fins of the belly, and the anus, uſually red. This is the common roach called *mort* by theSwedes. 2. The *cyprinus* with the iris,and all the fins and tail red. This is the fiſh called *ſarfand routag* by the Swedes; the whole back is convex, and the pinna ani has fourteen bones; the vertebræ of this fiſh are thirty-ſeven in number. 3. The five inch *cyprinus*, with twenty-five bones in the pinna ani. This is the fiſh called *biorko*, or *biorkna*, ſometimes the *biork*-fiſh by the Swedes; the iris is of a ſilvery colour, and the fiſh was never deſcribed till Artedi met with it. 4. The *cyprinus* with a yellow iris, and with thirty-ſeven bones in the pinna ani. This is called by the Swedes *faren*; the back is ſomewhat ſharp in the fore-part, and the belly, toward the anus, is alſo ſharp; the fins are all of a hoary appearance, and the number of the vertebræ is forty-four. 5. The broad and thin *cyprinus*, with forty bones in the pinna ani. This is the *ballerus* of authors; the iris is of a ſilvery colour; all the fins are white; the length is ſeldom ſo much as a ſpan. 6. The mucous *cyprinus*, of a black colour all over, having the end of the tail even, not forked. This is the fiſh called by authors the *tinca*, or *tench*; the iris is red, and the linea lateralis is curved. 7. The *cyprinus* with twenty bones in the back fin, and the ſide line ſtrait. This is the fiſh called the *caraſſius* by authors; the back is ſomewhat acute in the anterior part, and the pinna ani has ten bones: the whole body of the fiſh is of a yelloviſh colour, and the upper jaw is longer than the under. 8. The *cyprinus* with four cirri, with little hooks on the third bone of the back fin, and the pinna ani. This is the *carp*, or *cyprinus nobilis* of authors; it is diſtinguiſhed from all the others by the cirri at the mouth, by the ſide lines being ſtrait, and by the back fin having from twenty-three, to twenty-four bones; the vertebræ are thirty-ſeven. 9. The two inch *cyprinus*, with red iris, and nine bones in the pinna ani. This is called by theSwedes the *mud*, *bud*,or *ſkitſpilig*; the body is long and thick, and the back convex. 10. The five inch ſpotted *cyprinus*, with the upper jaw longer than the under, and with two cirri at the mouth. This is the *gudgeon*, or *gobius fluviatis*. 11. The *cyprinus* with the upper jaw longer than the under, with four cirri, and with ſeven bones in the pinna ani. This is the *barbel*. 12. The oblong, large-ſcaled *cyprinus*, with eleven bones in the pinna ani. This is the *chub*, or *chevin*, the *capito*, or *cephalus* of authors; the ſcales are large, and angular, and the upper jaw is longer than the under. 13. The oblong *cyprinus*, with a ſilvery iris, and white fins. This is called *ſlam* by the Swedes; the pinna ani has eleven bones, and the length of the fiſh is ſix or ſeven inches. 14. The *cyprinus* with a yellow iris, with the belly fins and pinna ani, red. This is called *ad* by the Swedes; the pinna ani has thirteen bones; the whole back is convex, and the belly flat; the ſcales are large, and the linea lateralis curved; the length is fifteen, or ſixteen inches; the body is very thick, and the vertebræ are in number forty-one. 15. The *cyprinus* with a naſiform ſnout, very prominent, and with fourteen bones in the pinna ani. This is the *naſus* of authors; its belly is broad, and flat; all the fins of the under part of the body are ſomewhat rediſh; the ſcales are large; the lateral line runs very near the belly; the peritoneum is blackiſh: it is a river fiſh, and breeds in April. 16. The *cyprinus* with a naſiform ſnout, with a ſharp back, and with twenty-four bones in the pinna ani. This fiſh is called *wimber* by the Swedes, and was never deſcribed till Artedi met with it; the ſcales are large; the belly is acute near the anus; the ventral fins are pale-coloured,

coloured, and ſhining; and the peritoneum is of a ſilvery colour. 17. The *cyprinus* with all the fins black, and with twenty-ſeven bones in the pinna ani. This is the common *bream*, the *brama* of authors; the back riſes up in the anterior part, and before the *pinna dorſalis* is acute; the belly alſo is acute near the anus. 18. The five inch *cyprinus*, with twenty bones in the pinna ani. This is the *alburnus* of authors, called by us the *bleak*; the lower jaw in this fiſh is ſomewhat longer than the upper; the fins are all white. 19. The *cyprinus* with the lower jaw longer than the upper, and turned up at the point, with fifteen bones in the pinna ani. This is the fiſh called by the Swedes, the *aſp*; it is two or three foot long; the back is convex all the way, the lateral line crooked, and the belly fins, and pinna ani ſomewhat rediſh. *Artedi* Gen. Piſc. 4.

The *cyprinus nobilis*, or *carp*, is a well known pond-fiſh, of the leather-mouthed kind, and conſequently has no teeth, but, in their place it has a flat, triangular bone in the palate, and, over againſt it, in the lower part of the mouth, two dentated bones bending toward the throat. It has properly no tongue, but nature has, in the place of one, given it a fleſhy palate, which, when taken out, is ſo very like a tongue, that it has deceived not only the vulgar, but even many very good naturaliſts, into the opinion that it was one. The *carp* is almoſt always breeding, and the belly of the female is continually filled with ſpawn; they multiply prodigiouſly, and are found, like eels, in new ponds, and in lakes cauſed by rains, whoſe waters have no communication with thoſe of any other lake, or river, though none were ever put there; hence ſome have pretended to argue from experience, that they were produced without the aſſiſtance of parents of the ſame kind. *Ray*'s Ichthyography, p. 246.

The name *cyprinus* is originally Greek, and is derived from the word Κυπρις, the name of the goddeſs Venus, and was given to this fiſh to expreſs its being very much addicted to venery, and producing a very numerous offspring.

CYPRINUS *latus*, the broad *carp*, in zoology, a name given by many authors to the common *bream*. *Willughby*'s Hiſt. Piſc. p. 248. See BRAMA.

CYPRIUS *lapis*, a kind of adamant brought from *Cyprus*, with which the antients uſed to perforate other gems. *Hofm.* Lex. in voc.

CYPRUS (*Cycl.*) — CYPRUS *bird*, in zoology, a common name for the *atricapilla*, or *black cap*, a very ſmall bird well known in England, and much more plentiful in the iſland of *Cyprus*, where it is eſteemed a very delicate bird at table. *Ray*'s Ornithol. p. 162.

CYPRUS *wood*, in the materia medica, a name given by ſome authors to the *roſe-wood*, becauſe much of it is brought from the iſland of *Cyprus*.

CYRBASIA, Κυρβασια, among the Greeks, a kind of caps with high tops, in form of a cone, which were worn by the prieſts. See *Hofm.* Lex. in voc.

CYROCEPHALUS, in botany, the name given by ſome authors to the *antirrhinum*, the *calves's ſnout*, or *ſnap-dragon*. *Ger.* Emac. Ind. 2.

CYST, (*Cycl.*) in ſurgery, the bag, or membrane, in which an encyſted tumor of the ſteatomatous, atheromatous, or ſarcomatous kind, is included. In the extirpating theſe tumors, if, by neglect, or accident, the *cyſt*, or any conſiderable part of it be left behind, the tumor will not fail to return. Indeed, if the tumor be a ſchirrus, the contents are hard enough to make a clear extirpation of it, notwithſtanding its including coats be wounded: but when the matter of the tumor is ſoft, or fluid, by its eſcaping the tumor will become flaccid; ſo that it will be hardly poſſible to make a clear extirpation of the *cyſt*, without leaving ſome fragments of it behind, which muſt, in that caſe, be brought away afterwards by ſuppuratives, digeſtives, and a proper treatment; and when the ſinus is, by this means, cleared, the wound may be ſafely healed, without any danger of the return of the complaint. *Heiſter*'s Surgery, p. 327.

CYSTIS, (*Cycl.*) in botany, a name by which many of the antient Greek authors have called the *alkekengi*, or *winter cherry*. It had this name *cyſtis* from the remarkable character of its fruit being contained in a ſkinny bladder, or bag. It was generally, however, called *halicaccabum*.

CYTHINON, in botany, a name given by the antient Greeks, to the yellow wood called alſo *thapſum*, and *chryſoxylon*, a wood uſed in dying cloths, and by the ladies, in tinging their hair yellow, the favourite colour of thoſe times. It was called alſo *Scythicum lignum*, Scythian wood, from the country whence it was brought; and from this laſt name it is eaſy to deduce the name *cythinon*. The old Greeks often wrote *cythinon* for *Scythicon*, and the leaving out the initial *ſ*, which was a common practice among them, reduces this word to *Scythinon*, the name before us. Familiar inſtances of this practice occur to us in the words *milax*, for *ſmilax*, *maragdus* for *ſmaragdus*, &c.

CYTISOGENISTA, in botany, *broom-cytiſus*, the name of a genus of plants, the characters of which are theſe: the leaves and flowers agree partly with the broom, and partly with the *cytiſus*, but the leaves are placed on the ſtalks, ſometimes ſingly, ſometimes in a trifoliate order.

The ſpecies of *cytiſo geniſta* enumerated by Mr. Tournefort are theſe: 1. The common, yellow-flowered, beſom *cytiſo-geniſta*, called common *broom*. 2. The white-flowered, common *broom cytiſus*. 3. The Portugal, myrtle-leaved, *broom cytiſus*, with woolly pods. And, 4. The Portugal, *broom cytiſus*, with very large flowers. *Tourn.* Inſt. p. 649.

CYTISUS, *ſhrub trefoil*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the papilionaceous kind; from its cup there ariſes a piſtil, which finally becomes a flat pod, which ſeparates, when ripe, into two parts, and is full of oblong ſeeds. The leaves ſtand three on every ſtalk.

The ſpecies of *cytiſus* enumerated by Mr Tournefort are theſe: 1. The common, hairy *cytiſus*. 2. The hairy *cytiſus*, with longer pods. 3. The hairy *cytiſus*, with purpliſh, yellow flowers. 4. The ſmall-leaved *cytiſus*, with tender, hairy ſtalks. 5. The *cytiſus* with roundiſh, ſmooth leaves, ſtanding on very ſhort pedicles. 6. The green, ſmooth *cytiſus*. 7. The blackiſh, ſmooth *cytiſus*. 8. The hoary *cytiſus*, with narrow and complicated leaves. 9. The broad-leaved, Alpine *cytiſus*, with a pendulous, cluſtery flower. 10. The variegated-leaved, Alpine *cytiſus*, with a pendulous, cluſtery flower. 11. The narrow-leaved, Alpine *cytiſus*, with a long, pendulous, cluſtery flower. 12. The Alpine *cytiſus*, with a ſhort, pendulous, cluſtery flower. 13. The purple-flowered, ſpiked *cytiſus*. 14. The ſilvery, African *cytiſus*, with blackiſh, purple flowers. 15. The prickly *cytiſus*. 16. The dwarf, ſilvery, narrow-leaved *cytiſus*. 17. The very ſmall, viſcous *cytiſus*. 18. The flax-leaved, ſilvery *cytiſus*. 19. The medic-leaved, Montpelier *cytiſus*, with hairy, and very thick-ſet pods. 20. The tall, Spaniſh *cytiſus*, with anagyris leaves, and tufted flowers. 21. The dwarf, Spaniſh *cytiſus*, with glommerated flowers. 22. The medic-leaved, Portugal *cytiſus*, with flowers ſtanding in the alæ of the leaves. 23. The Portugal *cytiſus*, with very ſmall, ſilvery leaves, and ſmall white flowers. 24. The Portugal *cytiſus*, with little leaves, large flowers, and broad, and woolly pods. 25. The narrow-leaved, hairy, African *cytiſus*. 26. The prickly, American *cytiſus*, with yellow flowers ſtanding in the alæ of the leaves. 27. The ſhrubby, American, ſilky-leaved *cytiſus*. *Tourn.* Inſt. p. 648.

We have ſeveral ſpecies of this plant cultivated in the gardens of the curious, where ſome ſpecies make a very agreeable figure, as they grow to be eight or ten feet high, and in May are beautifully loaded with long ſtrings of yellow flowers.

They are all propagated by ſowing their ſeeds, which they afford in great plenty, in March, on a bed of good, freſh, light earth, ſifting over the ſeeds about half an inch of fine mould: in a month's time the plants will come up; they muſt be kept clear from weeds, and watered at times, if the ſeaſon prove dry. They ſhould remain in the ſeed bed, till the March following, when they ſhould be removed into nurſery beds at a foot diſtance, in rows three feet aſunder: here they muſt be watered, and their roots mulched till they are thoroughly rooted, and then the ground kept clear from all weeds. They ſhould remain here three years, and be then removed to the places they are to remain, in October, or elſe in February.

The antient botaniſts evidently were acquainted with two very different ſhrubs, under the name *cytiſus*; and there have been no ſmall errors about the true meaning of ſeveral paſſages in Dioſcorides and Theophraſtus, on occaſion of the miſtaking one of theſe things for another.

Dioſcorides deſcribes the *cytiſus*, as being a ſhrub with leaves white and hoary, both on the upper and under ſide, and of no uſe, or value, to mankind: as to its wood, Pliny tranſlates this account, and adds to it from Hyginus, that it was a very hardy, and ſtrong ſhrub, not being affected by heat, or cold, ſnow, or hail, or any other injuries of the weather, nor of its enemies, as Pliny expreſſes it, (*hoſtium.*) It is not very eaſy to conceive what enemies theſe ſhould be; but the moſt probable conjecture, as to this odd paſſage, is, that Pliny had tranſcribed it in his uſual careleſs way, and that what is called *hoſtium* ſhould be the word *noſtram.*

The ſenſe then is clear enough; the author had juſt before ſaid that the wood was good for no uſe to mankind; and therefore, when he was ſpeaking of the trees ſtanding a long time, and fearing the injuries of no weather, he might very well add, nor of us; for the wood being good for nothing, men would not be at the trouble of cutting it up. It is plain, however, that Theophraſtus means quite a different ſhrub by this name *cytiſus*; for, as Dioſcorides ſays that the wood of his was white throughout, and very light, Theophraſtus obſerves, that it was black at the heart, and as heavy and ſolid as ebony; and, in many places, where he ſpeaks of the hard and elegant woods uſed for inlaying, he mentions the *cytiſus* wood, coupling it with the ebony, heart of oak, and other the hardeſt, and moſt elegant woods known in his time.

Pliny mentions no other *cytiſus* than that of Dioſcorides, which was the common kind cultivated by the Greeks and Romans, as a food for cattle: he ſays, it was raiſed by ſeed, and came to its perfection in three years, and that it was gathered in the ſpring juſt after the time of its flowering; he adds, that this was uſually the office of children, or old women, unfit for other work, and was the cheapeſt of all the offices of huſbandry. It is eaſy to conceive that ſuch a ſhrub as the *cytiſus* of Theophraſtus, with a wood as firm as the heart of oak, and hard as ebony, did not come to perfection in three years from the ſowing; nor could any more be cut up by boys and old women, than eaten by cattle when taken up. There were, therefore, two kinds of *cytiſus* among the antients, the one ſown and cultivated as food for cattle, the other a wild tree, or ſhrub, growing in woods, and being larger than the ſown kind. Dioſcorides, and Pliny, deſcribe the firſt, and Theophraſtus alone the latter, except that Pliny has now and then taken a ſentence from Theophraſtus, when he mentions the *cytiſus* occaſionally among other hard woods, and placed it to the account of his manured *cytiſus*.

Ovid, indeed, where he mentions the *cytiſus* as a wild wood ſhrub, certainly means this kind mentioned by Theophraſtus:

Nec tenuis cytiſus curtave tinus abeſt.

And Columella[a] acknowledges both kinds. It may ſeem a natural objection that culture could never make ſuch a difference in this plant, as that it ſhould be hard and black in the wood, in its wild ſtate, and ſoft and white in the cultivated kind. But we are not to ſuppoſe that the cultivated and wild *cytiſus* were the ſame ſpecies of ſhrub, only altered by theſe two ſtates. The antients were not ſo accurate in their names as later botanical writers have been; and if a wood ſhrub, in ſome reſpects, reſembled their manured *cytiſus*, they would call it by that name, though it had not all the generical characters to make it the ſame.—[a] *Columella*, de R. R. l. 9. c. 4.

CYZICUM *marmor*, a ſpecies of marble ſo called by the antients from the great uſe made of it by a ſtatuary called Cyzicus. It was white, with fine narrow veins of black, and was called alſo *Proconneſium marmor*. See PROCONNESIUM *marmor*.

CZEMER, in medicine, a name given by the people of Hungary, and ſome of the neighbouring nations, to a very troubleſome diſtemperature of the wriſts, and lower part of the arms, to which the people of this part of the world are very ſubject. It conſiſts in a tumor not hard, but very painful to the touch. The general method of cure, is, by giving firſt a ſtrong emetic, and then confining the patient to his bed, and to the uſe of ſudorifics, which in ſome days carry it off. Phil. Tranſ. N° 243.

D.

D, In the Italian muſic, intimates that, in thorough baſſes, the treble or deſcant ought to play alone; as T does the tenor, and B the baſs. *Broſſard.* Dict. Muſ. in Voc.

DC, in the Italian muſic, an abbreviation of *Da Capo*, i. e. from the head or beginning: theſe words or letters are commonly met with at the end of rondeaus, or ſuch airs and tunes as end with the firſt ſtrain, and intimate that the ſong is to be begun again, and ended with the firſt part. *Broſſ.* Dict. Muſ. in Voc.

DAB, in ichthyology, a name given by the Engliſh to a ſmall fiſh of the pleuronectes kind, called by authors the *Paſſer Aſper* and *Limanda*. See PASSER ASPER and PLEURONECTES.

DABUH, a name given by the Arabs to the Hyæna. See HYÆNA. *Hoſm.* Lex. univ.

DACE, in ichthyology, the Engliſh name for the fiſh called by authors the Leuciſcus. According to the new ſyſtem of Artedi, this is a ſpecies of the Cyprinus; and it is called by ſome Albicula and Albicilla. See LEUCISCUS.

This fiſh is extremely common in our rivers, and gives the expert angler great diverſion. The *Dace* will bite at any fly; but he is more than ordinarily fond of the Stone Caddis, or May-fly, which is plentiful in the latter end of April and the whole month of May. Great quantities of theſe may be gathered among the reeds or ſedges by the water-ſide, and on the hawthorn-buſhes near the waters. Theſe are a large and handſome bait; but as they laſt only a ſmall part of the year in ſeaſon, recourſe is to be had to the Ant-fly. Of theſe the black ones, found in large mole-hills or ant-hills, are the beſt. Theſe may be kept alive a long time in a bottle, with a little of the earth of the hill and ſome roots of graſs; and they are in ſeaſon throughout the months of June, July, Auguſt, and September. The beſt ſeaſon of all is when they ſwarm, which is in the end of July, or beginning of Auguſt; and they may be kept many months in a wooden veſſel, waſhed out with a ſolution of honey and water, even longer than with the earth and graſs-roots in the vial; tho' that is the moſt convenient method to be taken with a ſmall parcel, taken for one day's fiſhing. In warm weather this fiſh very ſeldom refuſes a fly at the top of the water; but at other times he muſt have the bait ſunk to within about three inches of the bottom. The winter fiſhing for *Dace* requires a very different bait: This is a white maggot with a rediſh head, which is the produce of the eggs of the Beetle, and is turned up with the plough in great abundance. A parcel of theſe put in any veſſel, with the earth they were taken in, will keep many months, and are an excellent bait.

Small *Dace* may be put into a glaſs-jar with freſh water, and there preſerved alive for a long time, if the water be properly changed. They have been obſerved to eat nothing but the animalcula in the water. They will grow very tame by degrees. Vid. Philoſ. Tranſ. N°. 478. p. 23. ſeq.

DACOLITHUS, in zoology, a name given by many to a ſmall fiſh, a ſpecies of the Loach, and diſtinguiſhed by the name of *Cobitis barbatula aculeata* by Ray and others. It is a very ſmall fiſh, ſeldom exceeding two, or at the utmoſt three inches in length. Its head is broader and flatter than the reſt of its body: Its back is of a duſky brown, ſpotted with black; and its belly yellow. It has two beards on each ſide of the upper jaw; and on the coverings of the gills has, on each ſide, two prickles, or a double-pointed ſharp hook, by means of which it moves itſelf about among the ſtones. This fiſh loves ſhallow waters with a ſtoney bottom, and ſpawns in May and June. *Willughby*'s Hiſt. Piſc. p. 266.

There is another ſpecies of this fiſh, which has ten beards about its mouth, and otherwiſe reſembles this. There is an opinion that they ſwallow little ſtones, and they have hence the German name ſignifying Stone-ſwallowers, or Stone-biters.

DACTYLETHRA, or DACTYLITHRA, δακτυληθρα, δακτυλιθρα, *digitale*, among the antient phyſicians, a medicine uſed to provoke vomiting. It was a ſort of topical application, and is deſcribed at large by Oribaſius.

It ſeems to have begun from the common practice of thruſting the finger down the throat, to provoke the ſtomach to caſt up its contents. The next ſtep to this was, when the finger would not do alone, to rub it over with a preparation of ſcammony, or with the crude juice of the root of the plant: If this had no effect, the next method was to take eight or ten gooſe-feathers, and, rubbing them over with ſome medicinal oil, they thruſt theſe, as far as was neceſſary, down the throat: And when all theſe failed, they uſed the *Dactylethra*, which was made of ſome kind of ſoft leather ſowed together, and of ten or twelve digets in length, and of the ſhape of a finger. This they filled with wool to the length of ſix digets, and left the reſt empty, to be adapted to the finger; then they rubbed it over with one of the medicinal oils, and introduced it as far as was neceſſary into the ſtomach. *Oribaſ.* Collect. Med. l. 8. c. 6.

DACTYLUS, in ichthyology, a name uſed by many authors for the ſolen or razor-fiſh, ſuppoſed to be the *Dactylus* of Pliny, to which he attributes a quality of being luminous in the dark: but Mr. Reaumur has obſerved, that the common ſolen or razor-fiſh has no ſuch quality; but that the *pholas*, or, as the French call it, the *dail* has: and therefore it follows either that the *pholas* is the *Dactylus* of Pliny, or elſe that this author has attributed to one ſpecies of fiſh what is the peculiar property of another. What Pliny has recorded of them is, that they ſhine in the dark; and that they ſhine the more brightly in proportion to their having more water; that their light is ſeen in peoples mouths while they are eating them; and that the drops of water which fall from them upon the hands and the cloaths of perſons who eat them, have the ſame ſhining quality. The ſhell of this creature is not at all luminous, but only its body and juices; and in this it is no way allied to ſome kinds of fiſh, which are known to have the quality of ſhining in the dark, ſince they never ſhine till they are in a ſtate of decay, and in part rotten; whereas theſe have their luminous quality at all times, even when juſt taken out of the ſea. The glow-worm has only a part of its body luminous, but the *pholas* is luminous all over, and is equally ſo in every part: and when the fiſh is taken whole out of the ſhell, and laid in a dark place, every part of its ſurface ſhines with a very bright light: neither is the light peculiar to the external ſurface of the fiſh, but common to the whole body; for if it be wounded tranſverſely, or longitudinally, the cut parts are equally luminous with the other ſurfaces.

The *pholas* is therefore a true natural phoſphorus, and, like the artificial phoſphorus of urine, it renders every thing luminous that it is rubbed againſt. It is ſcarce poſſible for the fingers to touch them without becoming luminous; and, according to Pliny, they muſt, if eaten, make the lips, tongue, teeth, and every other part of the mouth which they touch, luminous in the dark. Mr. Reaumur obſerved of this fiſh, that when freſh caught it abounds with water, and that this water naturally drops away in the handling it; and, according to Pliny's juſt obſervation, theſe very drops of water are luminous.

The light which this fiſh gives to bodies that touch it, is not of any long continuance, but remains only while they are wet. Mr. Reaumur obſerved, that the light upon his fingers grew fainter and fainter by degrees as they dried; and that on dipping them in water to waſh them, it brightened up again. This author was encouraged by this to attempt ſome way of keeping the fiſh, ſo as to make it a phoſphorus ready for uſe at pleaſure; but this did not ſucceed to his wiſhes. His firſt trial was by drying the fiſh, which loſt its luminous property as it loſt its natural moiſture; but after four or five days, on being wetted, became ſomewhat luminous again. This light however was but very faint, in compariſon of the natural one in the vigorous ſtate of the animal; and all his other trials ſucceeded worſe than this.

In the ſummer months, the fiſh may be kept ſeveral days freſh, and with their luminous property; but as they begin to decay, they gradually loſe it. It ſeems alſo, that there being ſome dead ones among the living, would make them loſe their luminous quality, even in that which is their very beſt ſtate. It is well known, that the *pholas* lives in holes within ſtones, from whence it cannot get out; and Mr. Reaumur cauſing ſome of theſe ſtones to be taken up, in which, on breaking, there appeared to be ſome dead ones, and ſome alive, found that the living fiſh from theſe ſtones had not their luminous property, which ſeemed as it were extinguiſhed by the dead and ſtinking ones. Mem. Acad. Par. 1723.

DACTYLUS *Idæus*, in natural hiſtory, a name given by many authors to the Belemnites; ſuppoſed erroneouſly by many, to be the *Lyncurius* of the antients. For other meanings of the word, ſee DACTYLI, *Cycl.*

DÆDALA, δαιδαλα, in antiquity, two feſtivals in Bœotia, one of which was obſerved by the Platæans at Alalcomenus, where was the largeſt grove in all Bœotia. Here they aſſembled, and expoſing to the open air pieces of ſodden fleſh, carefully obſerved whither the crows that came to feed upon them took their flight, and then hewed down all thoſe trees on which any of them alighted, and formed them into ſtatues, which by the antient Greeks were called *Dædala*.

The other ſolemnity was by far the greateſt and moſt remarkable of the two, being celebrated only once in ſixty years. For the ceremonies obſerved in it, ſee *Pott.* Archæol. Græc. l. 2. c. 20.

DÆDIS, Δαιδις, among the Greeks, a ſolemn feſtival that laſted three days, during all which time torches were kept burning, which gave occaſion to the name. *Pott.* Archæol. Græc. l. 2. c. 20.

DÆSION, Δαισιων, in antient chronology, the Macedonian name for the Athenian month *Antheſterion*, which was the ſixth of their year, and anſwered to the latter part of our November and beginning of December. See ANTHESTERION and MONTH.

DAGUS. See DEIS.

DAIE, in zoology, a name under which Nieremberg has described a bird of the size of a pigeon, which, he says, lays forty or fifty eggs, each as large as that of a goose, but having no white: these eggs, he says, as well as the bird itself, are commonly eaten, and are called by the Indians *Tapun*; and that it digs a hole in the sand in a ditch-bottom, and there lays, and leaves the eggs covered with sand to be hatched by the sun. *Ray*'s Ornithol. App. p. 29.

Mr. Ray declares all this to be false and fabulous, and is of opinion that there is no such bird in nature; for though there are some birds which lay eggs very large in proportion to their own size, as the wild swan, and some of the smaller water-fowls, yet these birds lay only one such egg; not to mention the great improbability of any egg being without a white.

DAILE, in a ship, the trough wherein the water runs over the decks.

DAIS. See DEIS.

DAISY, *Great* DAISY. See LEUCANTHEMUM.

DAKER *Hen*, in zoology, the English name for the *ortygometra*, a bird of the gallinaceous kind, somewhat resembling the quail, and called by the Italians the king of the quails, *Re delle quaglie*. It is larger than the quail, and is common in Ireland, and in some of the northern counties of England. *Ray*'s Ornithol. p. 122. See ORTYGOMETRA.

DAKIR, in our statutes, is used for the twentieth part of a last of hides.

According to the statute 51 Hen. 3. *De compositione ponderum & mensurarum*, a *last* of hides consists of twenty *Dakirs*, and every *Dakir* of ten hides. But by 1 Jac. cap. 33. one *last* of hides or skins is twelve dozen. See DICKER.

DALEA, in botany, the name of a genus of plants, the characters of which are these: the cup is small, one leaved, and divided into five segments. The corolla is composed of five petals, which are unequal; four of them being oblong, obtuse, strait, hollow, and equal in size; and the fifth, which stands above, smaller than the others. The stamina are ten diadelphous filaments; the antheræ are roundish; the germen of the pistil is oval, and terminates in a pointed stylus of the length of the stamina; the stigma is simple; the fruit is an oval bivalve pod, consisting of only one cell, and containing only one seed. *Linnæi* Gen. Plant. p. 336.

DAMASONIUM, in botany, the name of a genus of plants, called by most authors by a very improper name, *starry-headed water-plantain*. The characters of the genus are these: the flower is of the rosaceous kind, usually consisting of three leaves, disposed in a sort of circular form. From the flower-cup arises a pistil, which finally becomes a star-fashioned fruit, consisting of several capsules, and containing oblong seeds.

There are only two known species of *Damasonium*: 1. The common *Damasonium*, called *starry-headed water-plantain*: and 2. The great American *Damasonium*, with plantain leaves, yellow flowers, and a globose fruit.

DAMATRIUS, in antient chronology, the Bœotian name of the Athenian month *Pyanepsion*, which was the fifth of their year, and corresponded to the latter part of our October and beginning of November. See PYANEPSION and MONTH.

DAMIER, in conchyliology, the name given by French naturalists to that elegant species of voluta, the spots of which stand in a chequered order, and resemble the marks of a draught or chess-board, that being the common signification of the word *Damier*. See VOLUTA.

DAMPS, (*Cycl.*)—The pernicious damps in mines shew abundantly, that nature affords us inflammable air in some cases; and we have found by experiments that art can do the same, and that very probably on the same principles with the natural. Sir James Lowther having collected the air of some of these damps in bladders, preserved it so well, that, when brought up to London, it would take fire at the flame of a candle, on being let out by the orifice of a piece of tobacco-pipe.

It is well known to all that are versed in chymical experiments, that most metals emit a great quantity of sulphureous vapours during the effervescence they undergo in the time of their solutions in their respective menstruums. On this principle Mr. Maud founded his attempt of producing an inflammable air by art, like the natural one. It is observed that iron, while under solution with oil of vitriol, emits a very great quantity of these vapours, which are very subtile, and not easily condensed. This vapour being received into bladders, in the same manner with the natural air of Sir James Lowther, took fire in the same manner, on being let out in a small stream, and answered all the phænomena of the natural kind.

The exact method of preparing it is this: Take two drams of oil of vitriol, mix it with eight drams of common water; put this into a glass with a flat bottom, about ten inches wide and three deep, with a long neck. To this put in two drams of filings of iron. The solution instantly begins with great heat and ebullition, and vapours are copiously thrown up to the top of the neck of the glass. Lute a bladder empty of air, and, with a tobacco-pipe fastened in its neck: the fumes of the solution will soon fill up the bladder. When it is blown full, tie the neck fast with a string, and then put another in its place; and so on, taking them away as fast as they fill.

The air being afterwards let out at the hole of the tobacco-pipe, will take fire at the approach of the flame of a candle. It usually happens, that in removing the hands to press the bladder in other places, after some of the air is squeezed out, the fire is sucked into the bladder: in this case it fires all the remaining air in the bladder at once, and goes off with a violent explosion, like the report of a gun.

One thing very worthy of notice in the course of this experiment, is, that the air which successively fills several bladders, during the time of the effervescence, must have been either generated *de novo* out of the mixture, or else recovered from being locked up in the body of the metal in an unelastick state. This experiment will easily explain a very probable cause of earthquakes and volcanos, and all other fiery eruptions out of the earth; since by this it appears, that nothing more is necessary to form them than an intervention of iron, with a vitriolick acid, and water. Now iron is generally found accompanied with sulphur, and common sulphur may be analysed into an inflammable oil, and an acid liquor, like oil of vitriol. This acid therefore in the bowels of the earth, by being diluted with a little water, becomes a menstruum capable of acting upon iron, as above described; and an effervescence and intestine heat and tumult must be the consequence. The air which comes from the mixture is rarified; and by how much the more it is compressed by the incumbent earth, by so much the more its impetus will, at length, be increased to an unlimited degree, and like gunpowder it will cause explosions, and make earthquakes and eruptions. Nor does there always need the access of fire to set these vapours to work; for the air in the bladders, if it have been very much heated, will of itself take fire as soon as it is brought into contact with the external air. Philos. Transf. N°. 442. p. 282. and 286.

The German miners think themselves not qualified for their business, if they are not able to make their weather, as they express it; that is, to cure their damps. These are of various kinds in their mines; some so strong that they suffocate the workmen; others less violent, and only making them faint, without doing them any farther hurt, unless they are so imprudent as to continue a long time in the place. The common way of curing the damp is by letting the air in and out, and causing a circulation in it. They sometimes have cured very considerable damps by blowing, for many days together, with large bellows: but the ordinary method of working is by means of long tubes communicating with the air above, by means of which they have continual fresh air, and are able to work on as far as they please. Some of the cuniculi of these mines are five hundred fathoms long; and in the silver trinity-mine by Sebemnitz, there is a passage quite thro' a very large hill, coming out on the opposite side to that where it enters. The tubes always answer very well in the horizontal cuts; but not in the perpendicular ones, when they go to great depths: in these they place a tube all the way down by one side, and they then fit a piece of wood-work to the size of the hole or cut; and several times in a day they are forced to thrust this down, in order to force up all the foul air that is in the pit by the tube, to give room for fresh air in its place. Phil. Transf. N°. 48.

In some of the coal-pits in the neighbourhood of Mendip hills, fire-damps almost continually happen, so that great numbers have been killed, maimed, and burnt by them. The colliers however continue their work notwithstanding, only using the cautions of renewing their air very quick, and using no candles in their work but those of a single wick, and of sixty or seventy to the pound; which notwithstanding will give as good a light there, as others of ten or twelve to the pound in other places. They always have the caution to place even these behind them, and never present them to the breast of the work. When any person is burnt by these damps, they presently betake themselves to a good fire, and, sending for a large quantity of cows milk, they bathe the burnt places with this while warm; and afterwards the places will heal by the common cooling ointments, and healing plaisters.

In regard to the periodical returns of these damps, mentioned by some, we find that by the caution of small candles, used by the colliers of these places, that there is a continual propensity in them to take fire at all times of the year; and though these works seldom do take fire, yet, as the colliers say, they are most subject to it in the violence of winter, and chiefly in a black frost. The danger of firing is alike both in wet and dry grounds. There are no fumes coming out at the mouth of any shaft in these places, which will take fire at lighted torches or candles being held over them. They sometimes take fire of themselves, and set fire to the coal of the mine: they seem to be as frequently on or near the floor of the pits, as about their roofs; and no current of vapours, or wind, is to be met with at the mouths of the shafts by which they go down to these pits. In wet works there are many times bubbles standing on the surface of the water, which will take fire if a candle be held to them; but these, on a close examination, do not appear to be occasioned by subterraneous vapours; but are owing to the dropping of water from the roof of the mine, or the falling in of pieces of coal. These damps are commonly observed in our coal-pits; but the lead-mines on Mendip-hills are also sometimes affected by them. Philos. Collect. p. 8.

DANAE, or DANACE, Δαναη, or Δανάκη, in antiquity, a coin current among the barbarians, being ſomewhat more than the obolus. (See OBOLUS, *Cycl.*) This they put into the mouths of dead people, to pay for their paſſage over the river Acheron. *Pitiſc.*

DANCRETA, in botany, a name given by the people of Guinea to a plant which they uſe in diſorders of the head, boiling it in water, and uſing the decoction in the way of a fomentation. It is a ſpecies of bindweed, and is called by Pettiver *convolvulus quinque foliis Guineenſis foliis non ſerratis*, or the five-leaved Guinea bindweed with leaves not ſerrated. Caſpar Bauhine, in his Prodromus, deſcribes a ſpecies of bindweed growing in Egypt, which exactly agrees with this in all particulars, except that it is finely ſerrated all round the edges of the leaves. Phil. Tranſ. N°. 292.

DANDELION, in botany. See DENS LEONIS.

DANELAGE. See LAW, *Cycl.*

DANGCANGHAC, in natural hiſtory, the name given by the people of the Philippine-iſlands to the heron. The Spaniards call it *gazza*. It is the ſame ſpecies with that ſo common in Europe. See ARDEA.

DAPHNE, Δαφνη, in antiquity, a kind of divination, taken from the crackling of laurel-leaves thrown into the fire. *Pott.* Archæol. Græc. l. 2. c. 18. T. 1. p. 352.

DAPHNEPHORIA, δαφνηφορια, in antiquity, a novennial feſtival, celebrated by the Bæotians in honour of Apollo. For the ceremonies uſed at this ſolemnity, ſee *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 378.

DAPHNIUS *Lapis*, in natural hiſtory, the name of a ſtone the veins of which repreſent the grain of the wood of the bay-tree, and which was probably formed of the wood of that tree, impregnated with ſtony matter, in the manner of the other foſſil woods.

DAPIFERAT, DAPIFERATUS, the office of dapifer. See DAPIFER, *Cycl.*

DAPPLE *Bay*, in the manege, is uſed for a horſe which has marks of a dark bay colour. Such are alſo called *Bays a mirroir*.

DAPPLE *Black*, in the manege, a black horſe, having ſpots or marks blacker and more ſhining than the reſt of his ſkin.

DAPSILES *Coronæ*, among the Romans, a kind of crowns or garlands worn by the women, which covered their faces, and ſerved as a vail. *Hofm.* Lex. in Voc.

DARANI, in the Materia Medica, a word uſed by ſome of the old writers to expreſs the ſal armoniac of thoſe times, which was the ſame with our ſal gemmæ.

DARDANARIUS, in antiquity, is uſed to ſignify an engroſſer, or one that monopolizes any commodity. The name is derived from one Dardanus, famous for this practice. *Hofm.* Lex. in Voc.

DARE, in ichthyology, an Engliſh name for the common dace, or leuciſcus. See DACE and LEUCISCUS.

DARKENED *Room*. See CAMERA, *Cycl.*

DARSINI, in the Materia Medica of the antients, a name given by ſome to cinnamon. It is generally uſed by Aviſenna, Serapion, and the reſt of the Arabian phyſicians. It appears from the name, however, that the cinnamon of thoſe times was collected in the ſame manner as the xylocaſia, or caſſia lignea was; that is, the bark was not ſtripped off from the branches, but the young branches were uſed, bark and all. It is thence it had this name among them, which expreſſes wood of China, not bark of China. *Dar* is a Perſian name for wood, and is borrowed by the Arabians on this occaſion. *Dar Xixgan* is the name of the aſpalathum, or roſe-wood, and ſignifies wood brought from Xixgan; and in the ſame manner *Dar* is often preſixed to words, ſignifying that the ſubſtance meant by them is a wood. Many of the antients have confounded cinnamon and caſſia together; but Aviſenna always keeps them diſtinct. He always tranſlates the caſſia of Dioſcorides, *Salicha*; and the cinnamomum of the ſame author, *Darſini*.

DARSIS, in medical writers, is uſed for an excoriation of the ſkin. *Blancard.*

DARTS *of Gnats*. See the Article GNAT.

DARU, in botany, a name given by Aviſenna and Serapion to a ſpecies of turpentine-tree, which the latter author calls the lentiſk. This grew up to a very large tree, and bore a much larger and more beautiful fruit than the common turpentine-tree. The tree itſelf was alſo more beautiful in the manner of its growth; and it had, in common with the ordinary turpentine-tree, the property of the ends of its leaves becoming red, which gave the whole a very beautiful appearance. Theophraſtus ſeems to have mentioned this tree, tho' without diſtinguiſhing it from the common turpentine-tree by any peculiar name: he ſays, that tho' in Greece the turpentine-tree was but a ſhrub, yet in Syria and ſome other places it grew up into a large tree. And Rawwolf, in his Itinerary, tells us, that beſide the common turpentine-tree known to us, there are two other ſpecies in Arabia; the one called at this time *Bout Quibir*, which, he ſays, bears the ſame ſort of fruit with the Piſtachia, but that it is larger and more round, and ſhort in proportion to its thickneſs. This ſeems to be the *Aldare* of Aviſenna, which he characteriſes by the largeneſs of the fruit. The other Arabian turpentine-tree, mentioned by Rawwolf, is ſmaller, and is called *Bout Saugier*, or *Seguir*: this does not grow to more than the ſize of a common garden-pea; but has the leaves, fruit, and properties of the turpentine-tree. *Rawwolf*'s Itinerary.

DASYMMA, a ſuperficial inequality of the inner part of the eye-lids, accompanied with a redneſs. *Blancard* derives it from δασυς, *hirſutus*.

DATURA, in botany, a name given by many authors to the plant more uſually called *Stramonium*, or the *thorn-apple*. See STRAMONIUM.

DAVACA *terræ*, a portion of land in Scotland ſo called; & *apud priſcos Scotos*, DAWACH of Land, *quod continet quatuor Aratra terræ, quorum unum quodque trahitur octo bobus. Skene.*

DAUCI *Semen*, in the Materia Medica, the name of a ſeed uſed in many of the officinal preparations. The plant which produces it is a ſort of *myrrhis*, or chervill, called *Daucus Creticus*, or candy carrot, by the old authors; but by the moderns *Myrrhis Annua ſemine ſtriato, villoſo, imano*.

The leaves of this plant are finely divided, and hairy; the ſtalks ſlender, and a foot high; and the flowers ſtand in umbells. The ſeeds are of a pale green, hairy and whitiſh, and ſomething like cummin-ſeed; but not ſo long or large, or of ſo ſtrong a ſmell, but of an agreeable flavour, when held ſome time in the mouth. This ſeed being hairy, has very frequently little animalcules and duſt hanging to it; and this fault grows worſe, the longer it is kept, as the animals continue to eat the ſeed, and their excrements become mixed with it in large quantities. It ought therefore to be choſen new, plump and full, and very clean. *Pomet*'s Hiſt. of Drugs, p. 5.

It expels wind, and is good againſt cholics, pains of the womb, and in hyſterical complaints.

DAUCUS, in botany, the name of a large genus of umbelliferous plants, the characters of which are theſe: the flower is of the roſaceous kind, conſiſting of ſeveral heart-faſhioned petals unequal in ſize, and diſpoſed in a circular form. The cup finally becomes a fruit, compoſed of two ſeeds furniſhed with long hairs in the manner of the eye-laſhes of animals. *Tournefort*, Inſt. p. 307.

The ſpecies of *Daucus* enumerated by Mr. Tournefort are theſe: 1. The common yellow-rooted *Daucus*, or yellow carrot. 2. The *Daucus* with yellow roots and yellow-flowers. 3. The orange-coloured-rooted garden *Daucus*, or carrot. 4. The white-rooted carrot. 5. The red-rooted carrot. 6. The common wild carrot, or birdſneſt. 7. The ſea *Daucus*, with ſhining leaves. 8. The viſcid or gummy ſea *Daucus*, with fine ſhining leaves. 9. The American *Daucus*, with ſhining leaves. 10. The Spaniſh *Daucus*, with very large umbells. 11. The narrow-leaved cretic *Daucus*, with very long rays to the umbell. 12. The annual *Daucus*, with flowers at all the knots of the ſtalk, called by authors the knotty Caucalis with rough ſeeds. 13. The little annual *Daucus*, with red flowers, called by ſome the red-flowered Caucalis: and 14. The little annual *Daucus*, with white flowers. *Tournefort*, Inſt. p. 308.

DAUCUS *Sativus*, the carrot. There are two or three ſorts of this plant cultivated for the uſe of the kitchen; and theſe are ſown at ſeveral different ſeaſons of the year, to afford a ſupply of young roots, in all ſeaſons, for the table.

The ſeaſon for ſowing them, for the earlieſt crop, is ſoon after Chriſtmas. They ſhould be ſown in an open ſituation, but near a wall; though if they are ſown cloſe under it, they will be drawn up to ſeed too faſt, and give no good roots: about eight inches diſtant is the propereſt place.

They delight in a warm ſandy ſoil, which ſhould be light, and well dug to a good depth, that the roots may meet with no obſtruction in running down, which makes them grow forked, and ſhoot out lateral branches, eſpecially when the ground has been too much dunged the ſame year that the ſeeds were ſown, which will alſo occaſion their being worm-eaten. The hairyneſs of theſe ſeeds makes them apt to ſtick together in ſmall cluſters, and renders it difficult to ſow them equally: they ſhould therefore be always ſown on a calm day, when there is no wind ſtirring to blow them together, and be well rubbed between the hands to ſeparate them thoroughly: when they are ſown they ſhould be trod in with the feet, and the ground raked level over them.

When they firſt come up, they ſhould be houghed out to four inches diſtance; and a month after this, they muſt be cleared again; and if they are to be drawn while young, they are now to be left at ſix inches diſtance every way: if they are to ſtand to grow large, they muſt be ſeparated to ten inches.

The ſecond ſeaſon for ſowing carrots is in February. This muſt be done under a wall or hedge, and on warm banks; but thoſe which are to be in open large quarters, ſhould not be ſown till the beginning of March. See *Miller*'s Gard. Dict. in Voc.

In July they may be ſown again for an autumnal crop, and finally in the end of Auguſt for thoſe which are to ſtand the winter. Theſe laſt will be fit for uſe in March, before any of the ſpring ones; but they are ſeldom ſo tender or well taſted. In order to preſerve carrots for uſe all winter, they are to be dug up in the beginning of November, and laid in a dry place in ſand; and theſe roots being planted again in February, will ripen ſeeds in Auguſt for ſucceeding crops: the longeſt and ſtraiteſt roots are to be choſen for this purpoſe.

DAUCUS *Sylveſtris*. The ſeeds of this plant are eſteemed

one

one of the moſt powerful diureticks, we are acquainted with, of our own growth. They are alſo given in diſorders of the breaſt and lungs, in pleuriſies, in ſtranguries, and in the ſtone and gravel. They are alſo eſteemed provocatives to venery. An infuſion of them in white wine is excellent in hyſterical comp'aints.

DAUGHTERS, among the antients, were more frequently expoſed than ſons, as requiring greater charges to educate and ſettle them in the world. Potter. Archæol. Græc. l. 4. c. 14. T. 2. p. 332. See EXPOSING *of Children*.

Thoſe who had no legitimate ſons were obliged, by the Athenian laws, to leave their eſtates to their daughters, who were confined to marry their neareſt relations, otherwiſe to forfeit their inheritance; as we find to have been practiſed likewiſe among the Jews, many of whoſe laws ſeem to have been tranſcribed by Solon.

If an heireſs happened to be married before her father's death, this did not hinder the neareſt relation to claim the inheritance, and even to take the woman from her huſband; which is ſaid to have been a common caſe. *Potter* Archæol. Græc. l. 4. c. 15. T. 2. p. 441. ſeq.

DAVIT, a piece of timber in a ſhip, having a notch at one end; in which, by a ſtrap, hangs a block, called the *fiſh-block*: the uſe of this is to hale up the fluke of the anchor, and to faſten it at the ſhip's *bow* or *loof*. This *Davit* may be ſhifted from one ſide of the ſhip to the other, as occaſion ſerves.

There is a ſmall *Davit* in the ſhip's boat, which is ſet over her head with a ſheever, into which is brought the buoy-rope to weigh the anchor: it ſtands in the carlings in the boat's bow.

DAUPHIN, (*Cycl.*)—DAUPHIN, in natural hiſtory, is the name of a ſpecies of ſhell-fiſh. It is one of the round-mouthed ſnails, or *Cochleæ Lunares*, and is ornamented with rows of indented eminences on all the turns of the ſhell.

DAWELL *Coronde*, in the language of the Ceyloneſe, drum-cinnamon. This is called in Low Dutch *Tromm cel Caneel*. The reaſon of the name is, that the wood of the tree which affords this ſpecies, when dried, is light and tough, and is uſed to make drums of. The bark is taken off while the tree is growing, and is of a pale colour. It is a very bad kind of cinnamon, and is very rarely ſold as ſuch; but the natives uſe it in medicine. Philoſ. Tranſ. N°. 409.

DAY, (*Cycl.*)—DAY-COAL, in natural hiſtory, a name given by the miners of England, and the common people who live in coal-countries, to that ſeam or ſtratum of the coal which lies uppermoſt in the earth. The ſame vein or ſtratum of coal uſually runs a great way through the country, and dips and riſes in the earth in different places; ſo that this upper ſtratum, or day-coal, is in the various parts of the ſame ſtratum, ſometimes near the ſurface, and ſometimes at many fathoms deep. The ſubterranean fires found in ſome of our coal-countries principally feed on this coal, and are nearer, or farther from the ſurface as it riſes or ſinks. Phil. Tranſ. N°. 130.

Grand DAYS. See GRAND.

Law DAY. See LAW *Day*.

DAZE, in natural hiſtory, a name given by our miners to a ſort of glittering ſtone, which often occurs in their works; and, as it is an unprofitable ſubſtance, is one of thoſe things which they call weeds. The word *Daze* takes in, with them, every ſtone that is hard and glittering; and therefore it comprehends the whole genus of the *Telangia*, or ſtony Nodules, which have flakes of talc in their ſubſtance: theſe, according to the colour of the ſtony matter they are bedded in, and their own colour, give the names of *black Daze*, *white*, *red*, and *yellow Daze* to theſe ſtones. The *Daze* ſtones in general much reſemble ſome of thoſe nodules with which the ſtreets of London are paved. But in ſome, inſtead of the matter forming regular nodules of a compact ſubſtance, it forms itſelf into a vaſt number of thin plates, which are applied cloſely over one another, and form ſhelves or even ſeries of planes, encompaſſing, ſometimes a roundiſh, ſometimes an oblong maſs of ore.

Theſe *Dazes* are generally of the poorer part of the vein. The ſhoad-ſtones are many of them of this nature, and the ends of the veins degenerate again into them. The beds of rivers in Cornwall afford large quantities of theſe nodules; and as there is alſo granite in that county, and pieces from the ſtrata of that ſtone are ſometimes worn, and rounded into pebble-like ſhapes, and found in the ſame rivers; theſe having alſo flakes of talk in them, are always called by the miners *Daze*. This however leads to no error in the working; for theſe are never found, except in the rivers; and the miners never attempt to trace a vein from any thing found in the bed of a river, becauſe they know how uncertain the original place of that ſtone may be, which has been for ſo many ages ſubject to be toſſed about by the ſtream of a river, perhaps often rendered more rapid by land-floods. Philoſ. Tranſ. N°. 69.

DEAD, (*Cycl.*)—DEAD *Mens-eyes*, in a ſhip, are a kind of blocks, having many holes in them, but no ſheevers; and through them the *lanniers* go, which make faſt the ſhrowds to the chains. Sometimes the main-ſtays of a ſhip are ſet taught in *Dead-Mens-eyes*; but moſt great ſhips uſe double blocks. The *crowfeet* reeve through the *Dead-Mens-eyes*. *Manwayring*.

DEAD *Nettles*, in botany. See SAMIUM.

DEAD-*riſing*, a term in a ſhip for that part of her which lies aft between the keel and her floor-timbers, and next adjoining to the ſtern-poſt under the bread-room, in a man of war. *Guillet*.

DEAD *ropes*, in a ſhip, are ſuch as are not running, *i. e.* which do not run in any block.

DEADING *bed*, among miners. See DEADS.

DEADS, in mining, is uſed to expreſs that part of the ſhelf or faſt ground which contains no ore, but which encloſes the vein or bed of the ore, like a wall on every ſide. The drifts which they ſink for the tin-ore in Cornwall are generally about three feet over, and about ſeven feet high; ſo that a man may conveniently ſtand upright at work, and manage his tools. In caſe the vein itſelf is not broad enough to allow this, as in many places it is not half a foot over, then they pick down the ſtrata that encloſe it, ſo as to make an opening of the ſame breadth. This work they call *breaking up the deads*. Phil. Tranſ. N°. 69.

This word is alſo uſed for ſuch parcels of common looſe mould or earth, lying above the ſhelf, as uſually contain the *ſhoad*, which they find when they are training a load.

In the Mendip lead-mines, when a vein of ore breaks off abruptly in an earth, they call it a *Deading-bed*; and earth without oar they call *Dead earth*.

DEAL. A well-known kind of wood, of great uſe.

A very good method of ſeaſoning planks of *Deal* and fir, is to throw them into ſalt-water as ſoon as they are ſawed, and keep them there three or four days, frequently turning them. In this caſe they will be rendered much harder, by drying afterwards in the air and ſun; but neither this nor any other means yet known, will preſerve them from ſhrinking.

Rods of *Deal* expand laterally, or croſs the grain, in moiſt weather, and contract again in dry; and thence have been found to make an uſeful hygrometer. Phil. Tranſ. N°. 480. p. 184. See HYGROMETER, *Cycl.* & *Suppl.*

DEATH, (*Cycl.*)—It is generally taught, that the life of thoſe animals, which we call perfect, conſiſts in a continued flux and reflux of blood, nervous juice and air, to and from the principal organs; and that a man may be reckoned dead when he no longer breathes, and his heart and arteries have left off all circulation and pulſation. Even Lanciſi, the beſt author on this ſubject, ſays, that without a ſmall degree of reſpiration, and ſome little motion or trembling of the heart, there is no life. In conſequence of this ſyſtem, the general practice is, that as ſoon as theſe ſymptoms of life are gone, all hopes and endeavours to maintain the ſmall remains of life are laid aſide. But Dr. Stevenſon does not admit this doctrine, being of opinion, that after the motion of the heart, arteries, and lungs ceaſes, there often remains a ſmall degree of vital principle, deſerving attention. After a full ſtop of all thoſe organic motions on which life is ſaid to depend, the juices frequently retain ſo much of the animal proceſs as frequently ſerves to keep up warmth for a long time; which, with proper cheriſhing, might perhaps reſtore life entirely. Every age and country affords inſtances of ſurprizing recoveries after lying long for dead. From the number of thoſe preſerved by lucky accidents, we may conclude a far greater number might have been preſerved by timely pains and ſkill. Med. Eſſ. Edinb. Vol. 5. Art. 77.

This ingenious author hopes, from his theory, that one who from all the abovementioned motions ceaſing, may with propriety be called dead, may recover, and be properly ſaid to come to life again.

His theory is, that the cauſe of animal heat, or of the inteſtine motion which had been going on proſperouſly, while the progreſſive motion of the fluids in the veſſels continued, is now checked; yet ſtill proceeds in a lower manner, perhaps like the beginning of fermentation or putrefaction. By this degree of the animal proceſs, the maſs of fluids, particularly in the great reſervoir of venous blood, the heart, rarifying, preſſing every way, and being reſiſted by the valves, ſwells ſo as to fill the flaccid right auricle of the heart, which had been ſome time empty; and thus ſtimulating its fibres, which were at reſt, ſets them a moving again; as we ſee the heart, after being taken out of the body, by being pricked, or having warm water thrown on it, beats afreſh, tho' it has been for ſome time motionleſs. The right auricle being thus filled, and ſtimulated into a contraction, fills the ventricle; which being irritated, likewiſe contracts and empties itſelf into the pulmonary artery; whereby the circulation begins where it left off, and life is reſtored, if the organs and juices are in a fit diſpoſition for it, as they perhaps are much oftner than is imagined.

From hence it ſeems, that death does not inevitably attend an entire organic reſt of what we call the ſolids of the body; nay, that one cannot be called dead till the energy of the blood is ſo far gone, that, though aſſiſted by all poſſible means, it can never be again able to fill, and ſtimulate into contraction, the right ſinus venoſus and auricle of the heart.

See a remarkable caſe, in ſupport of this opinion, in Med. Eſſ. Edinb. Vol. 5. Art. 55.

The learned Winſlow has given us a treatiſe upon the uncertainty of the ſigns of death.

DECACTIS, in natural hiſtory, a name given by ſome to a kind of ſtar-fiſh, of the branched, or aſtrophyte kind, whoſe

rays are ten in number, where they firſt part from the body, and each ſoon branches out into a number more.

DECADARCHUS, Δεκαδαρχος, among the Greeks, a commander of a party of ten men. *Potter*, Archæol. Græc. l. 3. T. 2. p. 56.

DECALITRON, among the antients, a piece of money uſed by the people of Ægina, in value equal to 10$\frac{2}{3}$ Attic oboli. Vid. *Hoſm.* Lex. in voc.

DECAMERIS (*Cycl.*) —In Monſ. Sauveur's ſyſtem the *Decameris* is the tenth part of the heptameris, which he makes the ſeventh part of the meris; and this is the forty-third part of the octave: ſo that the *Decameris* is $\frac{1}{301}$ of an octave. See Mem. Acad. Scienc. 1701, and 1707.

DECAMYRON, in the medicinal writings of the antients, the name of a malagma, conſiſting of ten different kinds of aromatics: theſe were the Indian leaf, maſtick, euphorbium, ſpikenard, adarce, ſtorax, pepper, ointment of nard, opobalſamum, and wax. Vid. *Caſt.* and *James* in voc.

DECANDRIA, in botany, a claſs of plants with hermaphrodite flowers, and ten ſtamina, or male parts in each. See Tab. 1. of botany, Claſs 1.

The word is formed of the Greek δεκα, ten, and ανηρ, male. Of this claſs of plants are the judas tree, baſtard dittany, &c.

DECANUS, in aſtrology, a title given to the god who preſided at any birth, ὁ ωροσκοπος. *Hoſm.* Lex. in voc. See the article ASTROLOGY, *Cycl.*

DECASMUS, δεκασμος, in antiquity, the name of an action or proceſs among the Athenians, which was brought againſt any perſon who offered a bribe. They thought it not enough to puniſh the perſon receiving a bribe, but that the perſon who offered it ought to be puniſhed likewiſe. *Pott.* Archæol. Græc. l. 1. c. 23.

DECEIT, *Deceptio*, or *Dolus*, in law, is uſed for any ſubtile, wily ſhift, or trick; to which may be referred all manner of craft, ſubtilty, guile, fraud, ſleight, cunning, covin, colluſion and practice uſed to deceive another by any means. See *Weſt.* p. 2. ſymbol. tit. indictments. ſect. 68.

DECEIVED, in the manege, is uſed, when a horſe upon a demi-volt of one or two treads, working, for inſtance, to the right, and not having yet furniſhed above half the demi-volt, is preſſed one time or motion forwards with the inner leg, and then is put to a repriſe upon the left, in the ſame cadence with which he began. He thus regains the place where the demi-volt had been begun to the right, and works to the left. A horſe may in this manner be *deceived* on any hand. *Guillet*, Gen. Dict. P. 1. in voc.

DECEMVIRATE, in roman antiquity, the government of the Decemviri. See DECEMVIRI, *Cycl.*

DECENNARY, *Decennaria*, the limits or compaſs of ten *Friburghs*. See DECENNIERS, *Cycl.*

DECEPTIONE, in law, a writ which properly lies for one that receives harm or damage, by him that does any thing deceitfully in the name of another.

This writ is either *original* or *judicial*. Old. Nat. Br. fol. 50. Fitz. Nat. Br. fol. 95. See Reg. of Writs, fol. 112. and Reg. Judicial.

DECIMÆ, *Tithes*, in law. See TITHES, *Cycl.*

DECIMIS *ſolvendis pro poſſeſſionibus alienigenarum*, a writ, yet extant in the regiſter, which lay againſt thoſe that had farmed the Priors Aliens lands of the king, for the rector of the pariſh, to recover his tithe of them. Reg. of Writs, fol. 179.

DECK (*Cycl.*)—*Fluſh*-DECK. See the article FLUSH-*Deck*.

DECOMPOSITE *Leaf*, among botaniſts. See LEAF.

DECTA, in botany, a name uſed by ſome authors for the garden beet. *Ger.* Emac. Ind. 2.

DECUMANNI *Dentes*, a term uſed by the Latin writers on heraldry to expreſs that ſort of line in arms, which we call danſette, or dancetté. See DANCETTE, *Cycl.*

It is a kind of indented line, but is very large, and has very few teeth, commonly no more than three. It is ſuppoſed to have been in its origin no other than the letter M, with its two legs extended from one ſide of the field to the other.

DECUPELATION, the ſame with *Decantation*. *Harris*. See the article DECANTATION, *Cycl.*

DECURRENT *Leaf*, among botaniſts. See LEAF.

DEDUCTOR, in antiquity, a client, who, beſides the ordinary ceremony of ſaluting his patron every morning, was likewiſe obliged to attend him on public occaſions. *Pitiſc.* Lex Antiq. in voc.

DEDUTTIONE, in the Italian muſic, the name which Guido Aretine gave to the riſe of the voice, in pronouncing the ſyllables, *ut*, *re*, *mi*, *fa*, *ſol*, *la*: *quia per has deducitur vox*. On the contrary, when the voice deſcended by *la*, *ſol*, *fa*, *mi*, *re*, *ut*, he called it *Redutione*, *quia per has reducitur vox*. *Broſſ.* Dict. Muſ. in voc.

DEER, *Cervus*, in natural hiſtory, the name of a genus of animals comprehending the common deer, and the elke. The characters of this genus are, that the horns fall off every year, that they are ſolid and branched, and that the animal chews the cud.

The word *Cervus*, uſed alone, is underſtood by authors to mean the Stag, or *red Deer*, the others being all diſtinguiſhed by their ſeveral adjectives; the common *fallow Deer* being called *Cervus platyceros*, or the broad horned *Deer*. *Ray*'s Synopſ. Quad. p. 81.

The *red Deer* differs from the common kind in its ſize, and in the figure of its horns. The *common Deer* is more preſerved in England than in any other part of the world, and carries its diſtinction from the *red Deer* in the falcated figure of its horns.

We keep ſeveral ſpecies of theſe however, and may perhaps increaſe them in ſome ſort to many more, as they are a very ſalacious animal, and will be apt to mingle one ſpecies with another. The principal kinds we know at preſent, are, 1. the *Spaniſh Deer*, which is almoſt as large as the *red Deer*, but has a very ſlender neck, and is of a deep dusky colour; the tail in this ſpecies alſo is longer than in ours, and is black all over, not white next the body. 2. The *mottled Deer*, which are beautifully variegated with black, white, and tawney. 3. The *Virginia Deer*, which are larger and ſtronger than ours, and have thicker necks, and are of a grey or aſh colour rather than tawney, and remarkable for the largeneſs of their penis and ſcrotum. 4. A ſpecies which have their hinder hoofs marked with white on the outſide; the ears and tails of theſe are long, their horns branched, and their forehead a little depreſſed or hollowed between the eyes. Theſe will eat bread, fruits, and any thing that is offered them, and are often beautifully variagated; many of them have black variegations, and a black liſt down their back, with a ſeries of white ſpots on each ſide; others are ſo beautifully marked with white ſpots and other variegations, as to equal the zebra in beauty: theſe they call *menaled Deer*. *Ray*'s Synopſ. Quad. p. 80.

The method of hunting *Deer* in the iſland of Ceylon is very particular. The huntſmen go out in the night, and only two uſually go together; the one of theſe carries upon his head an earthen veſſel, in which there is ſome fire burning and flaming: the ingredients are generally ſmall ſticks cut into pieces, and common roſin; of this the other man carries a ſupply about him to repleniſh the pot when it grows low. The perſon who has the fire upon his head carries in one hand a ſtaff, on which there are fixed eight bells, and the larger theſe are the better. This man goes firſt into the woods, and the other follows cloſe behind with a ſpear in his hand. As ſoon as a *Deer* hears the noiſe of the bells, he turns towards the place whence the ſound comes, and ſeeing the fire he eagerly runs up to it, and ſtands gazing at a ſmall diſtance; the ſecond man has then nothing to do but to kill him with the ſpear, for he ſees neither of them.

Not only *Deer* but elks, and even hares are thus taken, for they gaze at the fire, and never ſee the men. The profits of this ſort of hunting are very large, and the danger nothing; for though there are great numbers of tygers, elephants, and wild boars in theſe woods, the huntſmen are in no danger of them while the fire burns, for they all run away from it. Phil. Tranſ. N° 278. p. 1094.

Mouſe-DEER. See MOUSE-*Deer*.

DEER-*field*, a park, or place where deer are kept.

DEER-*Hays*, engines or great nets, made of cords, to catch deer. *Anno* 19. Hen. 7. cap. 11.

DEER's-*Weed*, in botany, &c. See LUTEOLA.

DE ESSENDO *quietum de tolonio*, a writ that lies for thoſe who are by privilege freed from the payment of toll. See Nat. Br. fol. 226.

DEFECTIVE (*Cycl.*)—DEFECTIVE *third*, in muſic. See the articles DIMINISHED *third*, and DEFICIENT.

DEFEND, *Defendere*, in our antient laws and ſtatutes, ſignifies to prohibit or forbid: as, *uſuarios defendit quoque rex Edwardus ne remanerent in regno*. LL. Edw. Conf. c. 37. & 5 Rich. 2. c. 7. In which ſenſe alſo Chaucer uſes it in the following paſſage:

Where can you ſay in any manner age,
That ever God defended marriage.

In 7 Edw. 1. there is a ſtatute entituled, *Statutum de* Defenſione *portandi arma*, &c. And it is *defended* by law to diſtrain on the highway. *Coke* on Littl. fol. 161.

DEFENDERE *unica manu*, to wage law, by denying the accuſation upon oath. *Et ſi forte forisfactor ille factum negaverit, & foreſtarius ſolus ſit ſine teſte, ille debet ſe* defendere unica manu *ad unicam vocem rationabili die data in curia abbatis, & ſi unicum teſtem vel plures habuerit, debet ſe defendere ſexta manu*, &c. Charta facta inter W. de Bray, mil. & Abb. & Convent. de Oſeney ſine dat. See MANUS.

DEFENDEMUS, (*Cycl.*) a word uſed in feoffments and donations, the deſign of which is to bind the donor and his heirs to defend the donee, if any man go about to lay a ſervitude on the thing given, other than is contained in the donation. *Bract.* lib. 2. c. 16. num. 10. See WARRANTY, *Cycl.*

DEFICIENT (*Cycl.*)—DEFICIENT *Interval*, in muſic, is uſed for an interval leſs than the true by a comma. See INTERVAL, *Cycl.* and *Suppl.*

DEFLAGRATION (*Cycl.*) —This ſhort proceſs has been often recommended to the world as of great uſe in trying the ſtrength of brandies, and other vinous ſpirits, and has been greatly improved in this reſpect by Mr. Geoffroy.

The common way of trying ſpirits by deflagration, is to meaſure out any quantity of it, then to heat it, and ſet it on fire; if after it will no longer burn, the remainder is half as much as the quantity meaſured out for the trial was, then the ſpirit tried is found to conſiſt of half water and half totally inflammable ſpirit; that is, it is exactly what we underſtand by the term perfect proof, and according as the remainder is more or leſs than half the original quantity, it is ſo much below or ſo much above proof, or the due ſtrength of brandy.

This method is much more certain than that by the crown of bubbles, which ariſes upon ſhaking the ſpirit in a vial. Monſ. Geoffroy's method is thus; take a cylindric veſſel two inches high, and as much in diameter, conſiſting of thin plate ſilver, that metal being much leſs liable to ruſt than copper; this veſſel muſt be fitted with a little rectangular gage exactly graduated into lines, half lines, &c. then the veſſel being ſet level upon a copper caſe made to contain it, a parcel of the brandy to be examined is poured in, to the height of ſixteen iines. This height is to be exactly hit by pouring in more than enough at firſt, and then with a ſmall tube ſucking out what is ſuperfluous; then the veſſel being heated a little, ſo as juſt to make the liquor fume, it is to be ſet on fire and left to go out of itſelf; at the inſtant when the flame expires the gage is plunged perpendicularly into the veſſel, and the lines and quarters exactly noted, which the liquor wants of its former height: this difference gives the preciſe quantity of pure ſpirit, or alcohol, originally contained in the liquor: thus, if eight lines of phlegm are found remaining, this being the half of the ſixteen lines of the original filling, it is plain that the liquor contained one half ſpirit, and as ſuch it is found to be of the due ſtrength of brandy; or, as we expreſs it, proof ſpirit. If there remains no more than four lines of the phlegm, the ſpirit was double proof, or of a middle ſtrength, between that of common proof ſpirit and alcohol, and ſo ariſe all the other proportions. Mem. Acad. Par. 1718.

DEFLUVIUM, is uſed to expreſs a diſtemper in trees, whereby they loſe their bark; it is thought to be cauſed by a ſharp humour, that diſſolves the glue whereby the bark is faſtened to the wood, and ſometimes by too much drought. *Harris.*

DEFORCEMENT (*Cycl.*) in the law of Scotland, is uſed for the reſiſting, or offering violence to the officers of the law, while they are actually employed in the exerciſe of their functions, by putting its orders and ſentences in execution; whether they be officers of the ſupreme courts of juſtice, as heralds, purſevants, meſſengers, macers; or of inferior courts, as mayors.

The puniſhment of this crime is confiſcation of moveables, joined with ſome arbitrary puniſhment; as fine, impriſonment, baniſhment, or corporal pains, according to the degrees of violence, and other circumſtances which aggravate the crime: beſides, the party aggrieved may have an action of damages, to be highly taxed out of the firſt and readieſt of the offender's eſcheat, or other eſtate. See *Bayne's* Criminal Law.

Deforcing of officers of the Cuſtom-Houſe is provided againſt by the ſame ſtatutes as in England.

DEFOSSION, *Defoſſio*, the puniſhment of burying alive, inflicted, among the Romans, on veſtal virgins guilty of incontinency. It is alſo a Cuſtom among the Hungarians to inflict this puniſhment on women convicted of adultery. Heretics alſo were puniſhed in this manner. *Hofm.* Lex. in voc. *Defoſſio* and *Hovia.* See BURYING *alive.*

DEGREE (*Cycl.*)—The *degree* of the meridian meaſured by Mr. Picart was in the latitude of 49° 21′, and was found to be equal to 57060 French toiſes. But the French mathematicians who have lately examined Mr. Picart's Operations, aſſure us, that the degree in that latitude is, 57183 toiſes. They meaſured a degree in Lapland in the latitude of 66° 20′, and found it 57438 toiſes. A degree has likewiſe been meaſured at the equator, and found to be conſiderably leſs than in the latitude of Paris. From theſe meaſures it appears that the earth is not a ſphere, but an oblate ſpheroid. See EARTH.

DEGREES *of fire.* See the article FIRE.

Prohibited DEGREES in *Marriage.* See MARRIAGE.

DEGREES *in the civil and canon law.* In computing degrees of conſanguinity, the rule of the civil law is univerſal, either in the direct, or collateral, otherwiſe called the oblique line, *Quot ſunt generationes tot ſunt gradus.* But in the canon law the rule is different for the oblique line. And here a diſtinction is made between the *equal*, and the *unequal* oblique line. In the firſt caſe the rule is, *Quot gradibus perſonæ cognatæ diſtant à communi ſtipite; tot gradibus inter ſe diſtant.* In the other caſe the rule is, *Quot gradibus perſona remotior diſtat à communi ſtipite, tot gradibus perſonæ diſtant inter ſe.* Hence, the ſiſter of a perſon's grandfather, by the civil law is diſtant from that perſon in the fourth degree, whereas by the canon law ſhe is only in the third degree. So that what is ſaid in the Cyclopædia, of two degrees in the civil law making only one in the canon law, is not univerſally true, but holds only in the equal oblique line. Vid. *Heinec.* Inſt. Jur. Civ. §. clv.

DEIS or DAGUS, the chief table in a monaſtery. *Solus in refectorio prandebit ſupremus habens vaſtellum, priore prandente ad magnam menſam quam* Deis *vulgaritur appellamus.*

It is thus called from a cloth called *Dais*, with which the tables of Kings were covered. *Matt. Pariſ.* in vit. Abbat. Sanct. Alb. p. 92.

DELIA, Δηλια, (*Cycl.*) in antiquity, a quinquennial feſtival in the iſland of Delos, inſtituted by Theſeus in honour of Venus. *Pott.* Archæol. Græc. l. 2. c. 20.

There was likewiſe a feſtival celebrated at Athens called *Delia*, for which ſee DELIA, *Cycl.*

DELIAS, Δηλιας, in antiquity, the name of the ſhip in which the Delian proceſſion was annually made by the Athenians. See DELIA, *Cycl.*

DELIBAMENTA, in antiquity, a libation offered to the infernal gods, which was always poured downwards; hence this act was expreſſed by the word *defundare. Pitiſc.* Lex. antiq. in voc.

DELICT, in the law of Scotland, is uſed to expreſs an offence of an inferior degree to a crime, to be puniſhed only by the effect of a civil action, for reparation of private damage.

DELIGATION, *Deligatio*, that part of ſurgery which relates to the binding up of wounds, ulcers, broken bones, &c. *Blancard*, Lex. Med. in voc.

DELIVERANCE. See REPLEGIARE.

DELIVERY (*Cycl.*)—The ſigns of *delivery*, or child birth, juſt coming on, are a frequent emiſſion of the urine, teneſmus of the inteſtinum rectum, or frequent wanting to go to ſtool without any real occaſion; this complaint in this caſe is not continual, but laſts only a little while, and ſoon returns again: and often there comes out of the vagina a bloody and mucous matter, followed by ſome thick and turbid urine, and the uterus ſubſides, and plainly ſinks upon and preſſes againſt the os pubis, in a manner very different from what it does at another time: theſe ſymptoms happening at the natural time of *delivery*, that is, in the fortieth week from the firſt ſuppreſſion of the menſes, or the twentieth or twenty firſt from the fœtus being firſt perceived to move, preſage it with great certainty; and particularly if the ſame face of the moon be preſented at this time that was at the time of the firſt ſuppreſſion of the menſtrual diſcharge. Pains of the back and loins alſo come on at this time, which extend themſelves down to the pubes, and theſe are ſucceeded by ſpaſtick motions of the uterus itſelf, and tremblings of the knees and legs, and finally an opening of the mouth of the uterus; this is ſucceeded by a burſting of the ſecundines, and an effuſion of the water they contain, and after this the opening of the womb becomes larger, and the convexity of the child's head is uſually in ſome manner perceived. Delivery is eaſier with young and healthy perſons than with older, or thoſe who are ſickly; and ſuch who live on coarſe food and are accuſtomed to hard labour, uſually ſucceed better in it than thoſe of idle lives and delicate tables. People who are of an even temper of mind uſually alſo ſucceed better than thoſe addicted much to Paſſions; and it is uſually a good omen if the time of *delivery* be at or near that of the uſual diſcharge of the menſes in a ſtate of health.

Difficult births, or hard and dangerous *deliveries*, are to be preſaged from the following circumſtances: from the mother's being fat and of a plethoric habit, or equally from her being of an over tender and delicate conſtitution, and ſubject to frequent illneſs; ſuch as are troubled with a ſtone in the bladder ſucceed very unhappily in labour, and there is much miſchief often from the perſons being obſtinate and unruly, and not liſtening to the dictates of nature, or the advice of thoſe about her. Perſons who are in years, and are with child for the firſt time, uſually have difficult, and often dangerous labours; the pains continuing longer than they ought; and being languid at times, and not returning at ſuch ſhort intervals as they ſhould, are uſually alſo a bad omen. Spurious pains alſo which do not tend to *delivery* but fly upwards, and affect the breaſt and head, and are attended with faintings and anxieties of the Præcordia, and with head-achs and tooth-ach, are always bad omens; as are alſo an hæmorrhage of the womb, or as our women expreſs it, a flooding before the birth, a too ſoon breaking of the ſecundines and eruption of the water; and, on the other hand, a too great firmneſs and toughneſs of the ſecundines, ſo that they will not break, is not a better omen; convulſions coming on in the time of labour are uſually fatal prognoſtics, and deficiencies in the opening of the uterus from ſchirroſities, excreſcences, or injuries of the vaginæ are alſo very bad preſages. Theſe are the general occaſions of bad and dangerous labours depending on the mother, but there are alſo a not leſs number depending on the child. The firm concretion of the ſecundines, or their excretion before the birth are of this kind, as are alſo the winding of the navel ſtring about the child's neck, a bad conformation of the fœtus, as its being hydrocephalous, or the like, or its being dead in the womb: twins in the womb both offering themſelves to the birth at the ſame time; the bad ſituation of the fœtus, as in the lying of the head upon the os pubis, or the firſt offering of a foot or an arm inſtead of the head; a falſe conception or mole found in the uterus at

the ſame time with the fœtus; and to theſe are to be added the improper efforts of the midwife, and the unlucky accident of the labour happening at the time of the full moon, when it is more than ordinarily difficult.

Symptoms of DELIVERY.—Among the common ones are what are called ſpurious or falſe pains, theſe do nothing toward the promotion of the birth, yet they dreadfully torment the patient, and exhauſt her ſtrength, and that ſometimes at the very time of *delivery*, ſometimes three weeks before it, and in all the intermediate time. Theſe are known from the true labour pains, by their being of a flatulent kind, and running ſometimes tranſverſely acroſs the abdomen, ſometimes upwards from it towards the breaſt; theſe are ſeldom a complaint of nature's cauſing, but are uſually owing to a very improper regimen, or the raſh uſe of medicines.

The method of curing them is by giving internally the emollient medicines and the mild aromatics; and among theſe nothing has more ſucceſs than the chewing of cardamoms; externally, carminative liniments, fomentations, and aromatic ſuffumigations, are often found to be of great uſe and benefit.

In difficult labours, where they are preſaged by the beforementioned ſymptoms, it is proper to uſe emollient fomentations to the parts at night before-hand, and to cauſe the woman to ſit over the ſteam of a decoction of emollient herbs, with linſeed, and the like ingredients: the common people give fat broths for ſome time before, and uſe oily liniments to the abdomen. A laxative diet muſt alſo be uſed, and the bowels kept open by gentle doſes of the mild purgative and lubricating clyſters made of water-gruel and the broths of fat meats with ſugar, oil of olives, and a ſmall quantity of ſalt: and at the full time the patient ſhould be made to walk about, and uſe other gentle motion of the body in a warm room, and to continue this without any fatigue till the labour comes on: after this, if after the waters are diſcharged the mouth of the uterus cloſes again, and the fœtus is drawn back into it, then the forcing medicines are to be given, ſuch as borax, with ſmall doſes of ſaffron in the diſtilled waters of pennyroyal, and other uterine herbs. Some recommend in this caſe the liver of an eel, or the powder of the dry ſecundines of another labour, as ſpecifics; but it ſeems dangerous relying on ſuch helps. While the more powerful medicines are given internally, there may be outwardly laid on the abdomen cataplaſms of aromatic and nervous ingredients.

In caſes of debility of the parent, the moſt powerful analeptics are to be given, and tender perſons who are afraid of pain, and of ſtriving to help themſelves, are to be ſeriouſly and warmly exhorted to do their utmoſt, and bear a greater pain a moment, rather than a leſſer many hours. When the pains are interrupted, vague, or languid, ſmall doſes of borax and ſaffron are to be given, once in four hours; and when they fly upwards to the head and breaſt, and bring on ſtraitneſs of the præcordia, and a difficulty of reſpiration, with pains in the head and teeth, the common antiſpaſmodic powders are to be given, and theſe will be greatly aſſiſted in their operation by a gentle clyſter.

When the patient is fat, and of a plethoric habit, bleeding a little before the time is very neceſſary; and ſometime bleeding in the foot, even in the time of labour. When the patient is in danger of being loſt for want of ſufficient efforts, as is ſometimes the caſe, than ſternutatories and vomits are to be given. When the ſecundines adhere they are to be taken off, either with the finger nails or an inſtrument blunt at the end; and when they are ſo tough as not to break at a proper time they muſt be opened: when the waters have flowed out too ſoon, and the vagina is left dry at the time of the approaching birth of the child, the midwife is to anoint it with oil of almonds, pomatum, or any other lubricating ſubſtance.

Convulſions in the time of labour are to be carefully taken off, if poſſible, by analeptics and cinnabarine medicines: the powder of dried earth-worms is recommended by ſome as a powerful ſpecific: in caſes of a hæmorrhage of the uterus, whether it happen in the time of delivery or of ſome time before, and threaten the life both of the mother and child, it is to be treated in the moſt careful manner by attemperating and aſtringent medicines.

When the fœtus is improperly ſituated, the uſe of forcing medicines, ſo commonly the practice of the ignorant midwives, is extremely dangerous; and the only proper aſſiſtance is the hand of an experienced operator, to bring the fœtus into a proper direction, by carefully turning it while in the uterus. The moſt dangerous of all labours are thoſe in which the fœtus is ill formed, hydrocephalous, monſtrous, complicated, and the like; in theſe caſes nothing can do any good but the hand of an intelligent and experienced practitioner. *Junker*'s Conſpect. Med. p. 719. But quære, whether there be any ground for what this author ſays of the influence of the moon?

DELPHINIUM, *Lark-ſpur*, in Botany, the name of a large genus of plants. The characters of which are theſe: the flower is of the polypetalous anomalous kind, conſiſting of ſeveral irregularly ſized petals, the upper one ending in a ſpur or tail, and receiving into its hollow another of the petals, which has alſo its tail or ſpur: the piſtil which occupies the center of this flower finally becomes a fruit compoſed of ſeveral vaginæ, which open length-wiſe, and contain a number of ſeeds, uſually of an angular form. The ſpecies of *Lark-ſpur* enumerated by Mr. Tournefort are theſe: 1. The hairy aconite leaved perennial mountain *Lark-ſpur*. 2. The ſmooth aconite leaved Portugal *Lark-ſpur*. 3. The blue flowered field *Lark-ſpur*. 4. The white flowered field *Lark-ſpur*. 5. The red flowered field *Lark-ſpur*. 6. The pale fleſh-coloured field *Lark-ſpur*. 7. The deep violet blue field *Lark-ſpur*. 8. The field *Lark-ſpur* with changeable flowers. 9. The field *Lark-ſpur* with white flowers variegated with blue. 10. The tall field *Lark-ſpar* with blue and purple flowers. 11. The tall field *Lark-ſpur* with double flowers. 12. The tall field *Lark-ſpur* with variegated double flowers. 13. The broad leafed field *Lark-ſpur* with ſmall flowers. 14. The garden *Lark-ſpur* with large ſingle blue flowers. 14. The garden *Lark ſpur* with large ſingle bluiſh purple flowers. 15. The tall *Lark-ſpur* with fleſh coloured flowers. 16. The tall *Lark-ſpur* with violet purple flowers. 17. The garden *Lark-ſpur* with large ſingle red flowers. 18. The garden *Lark-ſpur* with large ſingle white flowers. 19. The garden *Lark-ſpur* with large ſingle greyiſh flowers. 20. The garden *Lark ſpur* with ſmall ſingle blue flowers. 21. The garden *Lark-ſpur* with ſmall ſingle red flowers. 22. The garden *Lark-ſpur* with ſmall ſingle white flowers. 23. The garden *Lark-ſpur* with ſmall ſingle fleſh coloured flowers. 24. The garden *Lark-ſpur* with ſmall ſingle greyiſh flowers. 25. The garden *Lark-ſpur* with great double blue flowers. 26. The garden *Lark-ſpur* with great double fleſh coloured flowers. 27. The garden *Lark-ſpur* with great double white flowers. 28. The garden *Lark ſpur* with great double purple flowers. 29. The garden *Lark-ſpur* with great double bright red flowers. 30. The garden *Lark-ſpur* with great double ſilvery white flowers. 31. The great flowered garden *Lark-ſpur* with double purple and white flowers. 32. The double variegated early *Lark-ſpur*. 33. The late flowering *Lark-ſpur* with double white flowers. 34. The late flowering *Lark-ſpur* with double roſe coloured flowers. 35. The *Lark-ſpur* with roſe coloured ſpotted flowers. 36. The *Lark-ſpur* with white flowers variegated with red ſpots. 37. The *Lark-ſpur* with a duſty roſe coloured flower. 38. The platanus leafed *Lark-ſpur*, commonly called *Staves-acre*.

Phyſicians ſeldom preſcribe ſtaves-acre internally, being of a hot burning taſte, and apt to raiſe a great flux of ſpittle. This quality however renders it ſerviceable in ſome caſes. It is ſometimes uſed in maſticatories and gargariſms for the tooth-ach. Its powder, ſprinkled on the head, is ſaid to kill lice; and its ſeeds are bruiſed in oil, and the head anointed therewith, for the ſame purpoſe. Vid. *James*, Dict. Med. in voc. *Delphinium*.

DELPHINUS, *the Dolphin*, (*Cycl.*) in the linnæan ſyſtem of zoology, makes a diſtinct genus of fiſhes of the plagiuri, or tranſverſe tailed order; the characters of which are, that the back has two fins, and there are teeth in both jaws. *Linnæi* ſyſtema naturæ, p. 51.

In the artedian ſyſtem of ichthyology, *Delphinus* is alſo the name of a genus of the plagiuri, or cetaceous fiſhes: the characters of which are theſe; the teeth are placed in both the jaws, the pipe or opening is in the middle of the head, and the back is always pinnated.

The ſpecies of this genus are theſe, 1. The *dolphin*, with a coniform body, with a broad back, and a ſubacute ſnout. This is the *phocæna* or porpeſs. 2. The *dolphin*, with an oblong ſubcylindric body, with a long acute ſnout; this is the *Delphinus* of the generality of authors, and is called the *porpeſſe* alſo by the Engliſh. 3. The *Dolphin* with a back ridg'd upwards, and with broad ſerrated teeth; this is the *orca* of authors, called by us the *grampus* and *north caper*; the body of this fiſh is ſo thick, that its breadth is equal to half its length. *Artedi*. Gen. Piſc. 43. See the article PORPESSE.

The name *Delphinus* is of Greek origin, and is ſuppoſed by ſome to be derived from the word δελφαξ, a pig or hog; and, according to others, from the word δελφυς, *vulva*, this fiſh being of the viviparous kind, and one of thoſe few which have the vulva and penis in the different ſexes, like thoſe of land animals.

The fiſh known by the antients, both Greeks and Latins, under the name of the *dolphin*, has been much miſunderſtood by the generality of people; and except the Greeks now living, no nation has any determinate notion of what fiſh is meant by it: the modern Greeks having preſerved the name to the ſame ſpecies of fiſh, and all other nations having called it by ſome different appellation.

The Greek name δελφις ſeems borrowed from the word δελφαξ, a pig or young hog; and all the nations who have given this fiſh their ſeveral names, have derived them from its reſemblance to the ſame creature, a hog; and this not without reaſon, as there is much analogy between the two animals; the dolphin being as fat as the hog, and having his intrails extreamly like thoſe of that quadruped; but in this there has yet been ſome confuſion, as the common porpeſſe, which

which much reſembles the *Dolphin* in many reſpects, has alſo been indiſcriminately called by the ſame name with that fiſh. The name *Porcus marinus*, a ſea-hog, porco peſce, and as we ſpeak it, *Porpeſſe*, and the *meer ſchwein* of the Dutch, all being, tho' indiſcriminately, names of the phocæna, properly called the *Porpeſſe*, and the *Delphinus* or *Dolphin*. It would be well however if naturaliſts, and indeed all who write or ſpeak on theſe ſubjects, would keep up the proper diſtinctions, always uſing *Delphinus* as the name of the *Dolphin*, and phocæna and the Engliſh name *Porpeſſe* only as the names of that other fiſh diſtinctively from the *Dolphin*.

The difference between the two is, that the *Dolphin* has a much longer ſnout or noſe, ſticking out ſomewhat in form of a gooſe's bill, and is in the whole a longer, ſlenderer, more fleſhy, and leſs fat fiſh, and is the larger of the two. The *Phocæna* or *Porpeſſe* is fatter, ſmaller, broader back'd, and has a more obtuſe and ſhorter ſnout. See the article PHOCÆNA.

The *Dolphin* is a cetaceous fiſh, covered with a ſmooth, but very tough and firm skin; its body is long and rounded, and its back prominent; its noſe long, and rounded at the end; its mouth very large, but ſhutting very nicely and exactly; its teeth ſmall and ſharp, and placed like the teeth of a comb; its tongue broad and ſerrated; its eyes large, but ſo cover'd with the skin that the pupil only appears. Its eyes are placed near the angle of the mouth; and behind theſe are its ears, or auditory paſſages, which are very ſmall. Above the ſnout it has a double pipe, by which it throws out the water neceſſarily taken in with food. It has two ſharp fins join'd like the ſhoulders of a human body to the muſcles, which move them. In the middle of the back it has alſo one fin, which is partly cartilaginous and partly bony, but has no ſpines or prickles. Its back is black, and its belly white, the fleſh is blackiſh, and it has regular lungs in its breaſt of a more tough conſiſtence than thoſe of quadrupeds. Theſe fiſh are ſuppoſed to live a great number of years. The figures of them on ſome antique marbles and coins, which repreſent them crooked, are unnatural; and have been conceived originally by perſons who had ſeen them playing about on the ſurface of the water, in which caſe they ſometimes deceive the eye, and appear crooked: from theſe probably our ſign-painters took their idea of the *Dolphin*. They are an extremely ſwift fiſh in ſwimming, and are able to live a long time out of the water, tho' they can continue but a little while under it without air; hence they are ſometimes taken up dead by fiſhermen in their nets, having been ſuffocated by being forcibly kept under water: they have been known to live three days on dry ground. *Willughby*, Hiſt. Piſc. p. 30.

DELTOIDES (*Cycl.*) —This is a very thick muſcle, covering the upper part of the arm, and forming what is termed the ſtump of the ſhoulder. It is made up of eighteen or twenty ſmall ſingle muſcles in an oppoſite ſituation in reſpect to each other, and united by middle tendons, ſo that taken all together they form ſeveral penniform muſcles. The outer ſurface appears almoſt wholly fleſhy, but on the inner we ſee the ſeveral tendons. All theſe ſmall muſcles are formed and diſpoſed ſo, as to make a conſiderable extent at the upper part; from whence they contract gradually in breadth, till they end in a thick ſtrong tendon, by which the whole muſcle is terminated in a point.

Above, it is fixed in the whole inferior labium of the ſpina ſcapulæ, in the convex or long edge of the acromion, and in the third part of the anterior edge of the clavicle next that apophyſis; it ſurrounds the angle formed by the articulation of theſe two bones by a particular ſlope and fold contrived for that purpoſe: from thence it runs down above one third of the length of the os humeri, where it is inſerted by a thick tendon, in the large muſcular rough impreſſion below the bony ridge, which goes from the great tuberoſity of the head of the bone, and forms the higheſt border of the groove in that part of the bone.

This muſcle may be diſtinguiſhed into three principal portions, one of which is fixed in the ſpine of the ſcapula, one in the acromium, and one in the clavicle: theſe are ſeparated from one another by a ſmall quantity of fat, or a cellular ſubſtance, chiefly near the baſis of the muſcle. The middle or ſtrongeſt portion runs down almoſt directly to its inſertion in the os humeri; the lateral portions ſeem to end ſooner: but that is only becauſe they turn inward toward the bone, and thereby form the biggeſt and thickeſt part of the tendon; the anterior or clavicular portion ſends off ſome fibres to the bone before it reaches the tendon. The portion fixed in the ſpine of the ſcapula ſends backward a thin aponeuroſis, which is ſtrengthened by another tendinous or ligamentary ſeries of fibres. This aponeuroſis is fixed in the baſis of the ſcapula below the ſpine, and from thence is extended toward the inferior angle. The other ſeries begins at the ſpine, and ends near the ſame angle at the beginning of the inferior coſta. Theſe, together with the great tendon, ſeem to contribute to the formation of the tendinous expanſion which covers the muſcles of the arm.

This muſcle at its upper part joins the inſertion of the trapezium, and below that of the brachialis. Anteriorly it joins the pectoralis major, being diſtinguiſhed from it only by a ſmall line of fat, or of a cellular ſubſtance, and a ſmall vein called the cephalica. It covers the head of the os humeri, and adheres to the capſular ligament of the joint, and likewiſe covers the inſertion of the pectoralis major. *Winſlow*'s Anatomy, p. 178.

DELTOIDE *Leaf*, among botaniſts. See LEAF.

DELUBRUM, in roman antiquity, a temple with a large ſpace of conſecrated ground round it. Vid *Pitiſc.* Lex. Ant. in voc. See the article TEMPLE, *Cycl.*

DELUGE (*Cycl.*) —The moſt full and expreſs accounts which we have of the univerſal *Deluge* are in the holy ſcriptures; yet when we conſider theſe carefully, they ſeem to contain only a ſmall part of that amazing ſtory, and for the want of more circumſtances leave us in the dark as to many points, and give us cauſe to wonder at the reception and agreement of the animals in the ark, and at its preſervation in that immenſe ocean; eſpecially at that time when God cauſed the winds to blow to dry up the waters, particularly when it firſt came to the ground. All the objections however that have been, or can be ſtarted in regard to this hiſtory, leave us no room to doubt the reality of the event. We are well aſſured that there once was ſuch an univerſal *Deluge*, which overſpread the whole ſurface of the earth, and the marine bodies found in all parts at land ſufficiently prove that all parts were once covered with water.

Whether we allow that theſe parts of the earth have ariſen out of the ſea, or that the ſea has at ſome time riſen up to them, there are immenſe difficulties in the way of either ſyſtem, and the ſcriptures give us no light into the caſe. The burſting open of the fountains of the great deep, which is given as one of the cauſes of this flood, muſt have been by far the greateſt, for the raining forty days could be of little conſequence toward the drowning of the world; for ſuppoſing it to rain as much in one day as it does with us in a whole year, this is only about forty inches depth, and therefore forty days of ſuch rain could only cover the whole ſurface of the earth with about twenty-two fathom of water; and this would only be ſufficient to drown the low lands next the ſea, but the much greater part of the ſurface of the earth would eſcape.

What is meant by the fountains of the abyſs being broken up, and the opening of the windows of heaven, ſeems not ſo eaſy to be underſtood, but is intended to indicate the waters of the *Deluge*, which was, according to the Moſaic philoſophy, from the letting in of the waters above the firmament, mentioned *Gen.* i. 7. by the windows of heaven; and the riſing up out of the ground of the waters under the earth, ſpoken of in the ſecond commandment; or, as ſome chuſe to underſtand it, by the overflowing of the ſea riſing upon the land, which is expreſſed by the breaking up of the fountains of the great deep, according to their ſenſe of the word.

Upon the whole we may reaſonably conclude, that by one of theſe expreſſions is meant an extraordinary fall of waters from the heavens, not as rain, but in one continued body; as if the firmament ſpoken of by Moſes to ſuſtain the ſupra-aerial ſea had been broken in, and at the ſame time the ocean flowed in upon the land, ſo as to cover all with water.

This cataſtrophe could not have been effected in the common way of underſtanding the accounts of it, but by an increaſe of the waters, and as the withdrawing the flood afterwards muſt in that caſe have been effected only by the again annihilating thoſe waters, the ſyſtem ſeems to labour under more difficulties than any other which has been advanced.

A change of the center of gravity about which the center of the ſea is formed, ſeems not an improbable conjecture, till it appears that this center of gravity was the natural reſult of the materials of which the globe of the earth is compoſed, and by no means alterable while the parts of it remain in their preſent poſition: and beſides, this ſuppoſition could not drown the whole globe, but only that part of it toward which the center of gravity was changed, leaving the other hemiſphere all dry.

Dr. Burnet's hypotheſis is full of inſufficiencies, and contradicts not only the phyſical principles of nature, but alſo the account given of the *Deluge* in the holy ſcriptures more than any other ſyſtem that has been advanced, notwithſtanding the ſeeming agreement he finds between them. And Dr. Hook's opinion of the compreſſion of a ſhell of earth into a prolate ſpheroid, thereby preſſing out the water of an abyſs under the earth, may very well account for drowning two oppoſite zones of the globe; but the middle zone being by much the greater part of the earth's ſurface, muſt by this means be raiſed higher from the center, and conſequently ariſe more out of the water than before.

Dr. Halley reſolves it into the ſhock of a comet, or ſome other ſuch tranſient body. The great agitation that muſt have been occaſioned by it in the ſea, he obſerves, would be ſufficient to account for all thoſe ſtrange appearances of heaping vaſt quantities of earth and high cliffs upon beds of ſhells, which once were the bottom of the ſea, and raiſing up mountains where none were before: ſuch a ſhock as this impelling the ſolid parts would occaſion the waters, and all fluid ſubſtances that were unconfined as the ſea is, to run violently with an impetus toward that part of the globe where the blow was received, and

that

that with force ſufficient to take with it the very bottom of the ocean, and to carry it upon land.

In this caſe it is much more difficult to ſay how Noah and his family could be preſerved, than how all other creatures were deſtroyed: ſuch a ſhock would change the length of the day and year, and alter the axis of the globe according to the obliquity of the incidence of the ſtroke, and its direction in relation to the axis. That ſome ſuch thing as this has at ſome time happened, appears very probably from this, that the earth in its preſent ſtate ſeems but the ruins of a former world, in which we every where find ſuch animal bodies as lived before this *Deluge*, either in their own ſtate, or petrified.

It may be objected to this ſyſtem, that ſuch a ſhock as is here ſuppoſed to occaſion the *Deluge*, muſt have brought on that cataſtrophe inſtantaneouſly, and all at once, not gradually as it is ſaid to have happened; and therefore that tho' there are the evident remains of ſuch a ſhock in the petrified animal bodies found in ſtone, *&c.* yet this may have happen'd before the formation of the world into its preſent ſtate long before the time of Noah. It is probable alſo, that ſuch another ſhock may be at ſome time neceſſary, in order to render this earth ſufficiently fruitful in vegetables, which are either immediately or mediately the food of all animals. The parts about the ſurface being ſuppoſed to petrify and harden in time, and that ſuch a concuſſion will in fine be neceſſary in order to bury them, and to bring up a ſofter and more nouriſhing matter to cover the world, which muſt be the caſe in a ſhock and overflowing of this kind; as the ſhock would looſen and ſuſpend in the water all the upper part of the globe, and the heavieſt matter out of this ſubſiding firſt, muſt leave the lighteſt for the laſt ſettling, or that which will make the upper coat of the new formed world, which would then be fit for all vegetable productions. Philoſ. Tranſ. N° 383. p. 120.

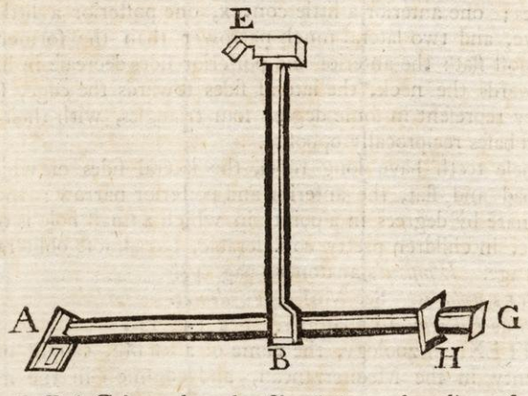
DELVIN, in natural hiſtory, a name ſometimes given by the miners in Cornwall to that ſort of talky ſtone or ſlate, which they more generally call killas; but in ſome places, as at Lowancowiggan, they uſe it as the name of a coarſe, but very hard ſtone in which the ore lies. The ore is tin, and is conſiderably rich there, but the hardneſs of this ſtone makes it difficult to be got out.

DEMARCHUS, Δημαρχος, (*Cycl.*) in antiquity, an appellation given to the chief magiſtrate of the city Neapolis. *Pitiſc.* Lex. ant. in voc.

DEMETRIA, Δημητρια, in antiquity, a feſtival in honour of Ceres, called by the Greeks *Demeter*, Δημητηρ. It was uſual on this occaſion for the worſhippers to laſh themſelves with whips made of the bark of trees, and called μυροπλοι. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 379.

DEMETRIA was likewiſe the name of another feſtival celebrated by the Athenians in honour of Demetrius Poliorcetes, and was the ſame with that afterward called *Dionyſia*. *Pott.* loc. cit.

DEMI-CROSS, an inſtrument uſed by the Dutch to take the ſun's altitude, or that of a ſtar at ſea; but inſtead of which we uſe the croſs-ſtaff or fore-ſtaff. The *Demi-croſs* is of this figure:



The ſtaff A G is graduated eaſily, being only a line of whole tangents, whoſe radius is E B, the length of the croſs piece or tranſum. It hath three vanes; a horizontal vane, as A; a ſight vane, as H; and the ſhade vane, as E.

When the vanes are on the ſtaff and croſs piece, to take the ſun's altitude, hold the inſtrument with the tranſum as upright as you can, and looking through the ſight vane, as H, look for the horizon through the ſlit in the horizon vane, and then ſlide the croſs piece or tranſum to and fro, till you make the ſhade of the vane at E to fall at the ſame time upon the ſlit of the horizon vane, and alſo at A; then are the degrees cut on the ſtaff, by the edge of the croſs piece, the ſun's altitude required.

But to take the height of a ſtar; you muſt remove the horizon vane A, and put it on the end G, and transfer the ſight vane H to A; then holding up the inſtrument as before, looking through the ſight vane, ſee for the horizon through the horizon vane, and for the ſtar by the ſhade vane, ſliding the tranſum to and fro, till the horizon and ſtar are both ſeen by their reſpective vanes, and then the tranſum will cut the degrees of the ſtars Altitude on the ſtaff, allowing about 8 or 10 minutes for your height above the level of the water, as muſt be done in all ſuch caſes.

DEMIDITONE, in muſic, is uſed by ſome for a third minor.

DEMI-HAQUE. See HARQUEBUSS, *Cycl.*

DEMISE (*Cycl.*)—DEMISE *of the King* does not diſcontinue any writ or proceſs. Vid. Stat. 1 Ed. 6. cap. 7. §. 1, 2, 3.

Nor does it determine any commiſſion civil or military, or great office of ſtate, but they ſhall continue in force for ſix months after the ſovereign's *Demiſe*, unleſs made void by the next ſucceſſor. Stat. 7 & 8 Wil. 3. c. 27. ſect. 21. 1 Ann. Stat. 1. cap. 8. 6 Ann. c. 7. ſect. 8.

Neither is a parliament thereby determined till after ſix months. 7 & 8 Will. 3. c. 15.

Nor is a defendant, who hath pleaded to an information, obliged to plead to it again. But he may plead again upon requeſt made to the Court, within five months after the *Demiſe*. 4 & 5 Will. & Mar. c. 18. ſect. 7.

DEMOISELLE, the *Dancing Bird*, a long-leged and long-necked bird of the ſtork kind, a native of Numidia. It is remarkable for its jumping or dancing in its walk. See Tab. of Birds, N° 40.

DEMONIUS *Lapis*, in natural hiſtory, a name given to a ſtone famous among the writers of the middle ages for a number of imaginary virtues, ſuch as rendering people victorious over their enemies, and the like. All the deſcription they have left us of it is, that it was variegated with two colours laid in lines ſo as to repreſent a rainbow. It was probably an agate.

DEMULCENTS, *Demulcentia*, in pharmacy, are medicines which render the acrimonious humours mild. This they do by obtunding or ſheathing their ſharp particles. Vid. *Blancard.* Lex. Med. in voc.

DEN, a ſyllable added to the names of places, and ſhews their ſituation to be in a valley, or near woods, as *Tenterden*, *Biddenden*, &c.

The word is Saxon *Den*, i. e. *Vallis*, or *Locus ſylveſtris*.

DENDRACHATES, in natural hiſtory, the name by which the ancients called that ſpecies of agate we know by the name of the *Mocheа ſtone*. See Tab. of Foſſils, Claſs 5.

This in its natural ſtate is only a whitiſh ſemi-pellucid ſtone, very beautifully vein'd with a fine milky white; but its great beauties are certain accidental delineations in black, which repreſent in a rude and irregular, but a very elegant manner, trees, moſſes, ſea-plants, and a number of other beautiful figures. Many have ſuppoſed theſe to be real moſſes, *&c.* lodg'd in the ſubſtance of the ſtone, but there is no foundation for this opinion; and nothing indeed can be more abſurd, ſince compleat and beautifully tufted oak trees are frequently delineated there of leſs than an inch in height. Theſe figures are in black, and the ſubſtance of the ſtone being white, they are ſeen to a very great advantage. Their true hiſtory is no more than this: the ſtone is ſubject, like our common flints, to imperceptible cracks and flaws, into which the ſteams and effluvia from minerals, and other foſſile bodies, continually pervading the whole ſtructure of the earth, find their way, and perhaps in ſome caſes water itſelf has been at ſome time in them: either water or theſe vapours, we well know, may be naturally enough tinged with black, or capable of leaving a black tinge on the ſurfaces of the bodies they have long remained on; and theſe finding their way into the natural cracks or ſmall crevices of the ſtone, have from the ſides of theſe inſinuated themſelves farther and farther into the maſs, and run into branched figures; or the water where-ever included has, as the maſs of the ſtone ſhrunk and contracted in the drying, ſpread and diffuſed itſelf into the various detach'd figures we ſee; for all the delineations we find in theſe ſtones may be referr'd either to theſe looſe detached figures or cloudy ſpots, or to thoſe which evidently ariſe from the ſides of ſome long cracks or fiſſures.

That water is continually to this day getting into theſe natural crevices of ſtone, and diffuſing itſelf beyond their natural limits in irregular, and often in beautifully branched figures, we ſee in many of our gravel-pits, where many of the larger flints and pebbles being ſtruck eaſily fall to pieces at theſe crevices, the ſides of which are always either wet, or plainly marked with waters having once been there; and if from theſe we trace the leſſer cracks, we ſhall uſually find numbers of figures imperfectly reſembling the delineations in the agates, and the very ſame often alſo on their ſurfaces, merely the effect of mineral effluvia.

On the ſurfaces of the natural creviſes of our ſeptariæ, or ludus Helmontii of the harder kinds, we often alſo meet with what authors call dendritæ, or fuliginous delineations of trees, which are of the very ſame kind with thoſe of this agate, and are ſo far from being inferior to them in beauty, that they even greatly excel them; nay, ſo low and poor a ſubſtance as common chalk is not without them, but is frequently found beautifully marked with branches, trees, ſtars, and a thouſand other figures like thoſe formed by pulling aſunder two levigating ſtones with the fine matter between them, or the ſhooting of ſalts in chemical veſſels, or the figures of hoar-froſt on our windows. *Hill's* Hiſt. Foſſ. p 473.

DENDRANATOMY, a term uſed by Malpighi and others to expreſs the diſſection of the ligneous parts of trees and ſhrubs, in order to the examining their ſtructure and uſes: Galen has uſed the ſame word, and taken ſome pains to diſcover ſome of the ſubjects of theſe reſearches. There is a very remarkable

analogy between the parts of ſome trees, and thoſe of peculiar parts of animal bodies; and Malpighi has, with great juſtice, uſed the comparative anatomy of trees, to explain, by the formation of the galls, and other preternatural tumors on them, the puſtules and other unnatural fleſhy excreſcences on animal bodies.

DENDROPHORI, Δενδροφοροι, in antiquity, perſons whoſe employment it was to cut down trees, and carry them to market. Thoſe were likewiſe called *Dendrophori*, who, in honour of ſome deity, as Bacchus, Sylvanus, &c. carried trees pulled up by the roots through the city. *Pitiſc.* Lex. Ant. in voc.

DENEB, or ALDENEB *Alchail*, in the writings of the Arabian Phyſicians, the name of the equiſetum or horſe-tail: there is, however, no great dependance to be had on what authors ſay of this plant; for the Greek and Roman writers having ſometimes called this plant *polygonum*, from its having many joints; and polygonum being alſo the name of the common knot-graſs; the virtues of theſe two plants, though conſiderably different, are blended together; and the plants themſelves confounded under the ſame name: nay, Pliny has gone ſo far as to take in the *Polygonatum*, or Solomon's ſeal, into the number of *Polygonums*, from the ſimilar ſound of the names; and ſuppoſing all that had been ſaid of polygonum was applicable to the *hippuris*, or horſe-tail; he has told us, that it grows in ſhady woods, and has large ſpreading roots, and a fruit of a round ſhape, and of the ſize of a coriander ſeed.

DENOMINATIVE, in logic. See DENOMINATION, *Cycl.*

DE NON *reſidentia clerici regis*, in law, the name of an antient writ, the form whereof ſee 2 inſt. fol. 624.

DENS *Canis*, *dogs tooth*, in botany, the name of a genus of plants; the characters of which are theſe; the flower is of the lilliaceous kind, and is compoſed of ſix petals, which are pendulous, and bend backward. The middle of the flower is occupied by a piſtill, which finally becomes a roundiſh fruit, or ſeed veſſel, divided into three cells, and containing a number of oblong ſeeds: to this, it is to be added, that the root is fleſhy, and of the ſhape of a dog's tooth. See Tab. 1. of botany, Claſs 9.

The ſpecies of *Dens Canis* enumerated by Mr. Tournefort are theſe. 1. The *dens canis*, with a broad, and ſomewhat roundiſh leaf, and a purpliſh red flower. 2. The broad and roundiſh leaved *dens canis*, with a white flower. 3. The broad, and roundiſh leaved *dens canis*, with a purpliſh white flower. 4. The broad and roundiſh leaved *dens canis*, with an amethyſtine flower. 5. The yellow flowered *dens canis*. 6. The long and narrow leaved *dens canis*, with a milk white flower. 7. The long and narrow leaved *dens canis*, with a purpliſh flower; and 8. The long and narrow leaved *dens canis*, with a reddiſh flower. *Tourn.* Inſt. p. 378.

The powder of the dried root of this plant is ſaid to kill worms in children. Drank in wine, it is an approved remedy for the cholic. It is ſaid to be reſtrictive and reſtorative, and taken in water, cures children of the epilepſy: it is alſo eſteemed a great provocative to venery. Vid. *James*, Dict. Med. in voc.

DENS *Leonis*, *Dandelion*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the ſemi-floſculous kind, and the petals it is compoſed of are placed on the embryo ſeeds, and ſurrounded by the cup. The embryos finally become ſeeds wing'd with down, which are affixed to the thalamus, but expand their downy ends into a globular head, and the ſtalks are uſually hollow and not branched. The ſpecies of *dandelion* enumerated by Mr. Tournefort are theſe: 1. The ſmooth mountain *dandelion*, with very long foliaceous ſtalks. 2. The common broad leaved *dandelion*. 3. The broader leaved *dandelion*. 4. The narrower leaved *dandelion*. 5. The *dandelion* with broad and roundiſh leaves. 6. The *dandelion* with bulbs like the aſphodell. 7. The fineſt leaved *dandelion*, called by ſome the ſtinking hawkweed. 8. The ſmall *dandelion* with rough leaves. 9. The ſmall *dandelion* with radicated leaves. 10. The tuberous rooted *dandelion*. 11. The hoary or hairy leaved *dandelion*. 12. The hoary rough leaved *dandelion*. 13. The rock *dandelion* with hairy and rough leaves. 14. The hairy *dandelion*, with very ſmall and rough leaves. 15. The narrow leaved mountain *dandelion*. 16. The hoary mountain *dandelion*, with ſmall flowers. 17. The ſmall mouſe ear leaved alpine *dandelion*. 18. The leaſt alpine ſmooth *dandelion*. 19. The ſmalleſt rough leav'd *dandelion*. 20. The ſmall Spaniſh *dandelion*. 21. The *dandelion* commonly called mouſe ear. 22. The mouſe ear *dandelion*, with leſs hairy leaves. *Tourn.* Inſt. p. 468.

The common ſpecies of this plant has much the ſame virtues with the common endive, but in a greater degree: the roots eaten in ſpring are eſteemed of great ſervice in obſtructions in the liver and ſpleen.

DENS *Caninus*. See DENTES *Canini*.

DENSHRING, in agriculture. See DEVENSHRING.

DENTALE, in natural hiſtory, the name of a genus of the tubuli marini: the characters of which are, that they are ſhelly tubes, reſembling the tusks of elephants, or the horn of ſome animal which is a little bent. Some authors have called theſe elephants teeth. See Tab. of Foſſils, Claſs 9.

There are two principal kinds of them, the one ſmooth, the other ſtriated. Of the ſmooth kind, ſome are all over white, others are tipped with red at the end: and of the ſtriated ones, ſome are altogether white, others are green, and in ſome the ſtriæ are more prominent, in others fainter, eſpecially in the leſſer ones. See Tab. of Shells, N° 4.

This fiſh is alſo called *dentalium* and *ſyringites*. Taken inwardly, it is uſed as an alkali to ſweeten acids, to ſtop a looſeneſs of the belly, and for ſpitting of blood. It is alſo uſed externally as a drier. Vid. *Lemery*, Dict. des drog. in voc. *Dentalium*.

DENTALE, is a name given by ſome to a fiſh caught in the Mediterranean, and common in the markets of Italy, known more commonly among naturaliſts by the name *Dentex*. *Bellonius*, de Piſc. *Willughby*, Hiſt. Piſc. p. 312. See DENTEX.

DENTARIA, *Toothwort*, in botany, the name of a genus of plants. The characters of which are theſe: the flower conſiſts of four leaves, and is of the cruciform kind; the piſtill ariſes from the cup, and finally becomes a pod, divided by an intermediate membrane into two cells, and containing roundiſh ſeeds. To theſe marks it is to be added, that the pods when ripe burſt open with violence, and throw out the ſeeds to a conſiderable diſtance, and that the roots are fleſhy, ſcaly, and toothed.

The ſpecies of *dentaria* enumerated by Mr. Tournefort are theſe: 1. The ſeven leaved *dentaria*. 2. The ſmooth five leaved *dentaria*. 3. The rough five leaved *dentaria*. 4. The ſeven leaved bulbiferous or bacciferous *dentaria*. 5. The three leaved *dentaria*. 6. The nine leaved *dentaria*. *Tourn.* inſt. p. 225.

The three firſt ſpecies of this plant are uſed internally, for exulcerated lungs, and the wind cholic; the others only externally. Vid. *Lemery*, Dict. des Drog. in voc.

DENTATED *Leaf*. See LEAF.

DENTES CANINI, *Dogs teeth*, are ſo termed, becauſe they are naturally a little pointed, and appear longer than the reſt, almoſt in the ſame manner as in dogs: they might alſo properly enough be called angular, becauſe they make an angle, by which the inciſors are ſeparated from the grinders; the two ſuperior have alſo been named eye-teeth from their ſituation. The bodies of the *Dentes Canini* are thicker, and more prominent than thoſe of the inciſores, they are convex, and a little rounded on the outſide, and end in a ſhort triangular point, one of the ſides of which is a continuation of the convexity of the outſide, and the other two are flatter and turned inwards. Theſe points are often worn out by maſtication: their roots are commonly larger, thicker, longer, and more pointed than thoſe of the inciſores, and ſometimes perforate the bottom of the maxillary ſinus. WINSLOW's anatomy, p. 43.

DENTES *inciſores*, the cutting teeth, have this name from their uſe; and are by ſome authors called *riſorii*, becauſe they appear in laughing: the four upper *inciſores* are larger and broader than the four lower; and of the upper, the two in the middle are larger than the other two: the bodies of theſe teeth reſemble large cutting wedges, and their roots are pointed. Their bodies are ſo diſpoſed that their ſharp ends lie all in a line, making one uniform edge; each body has properly four ſides; one anterior a little convex, one poſterior a little concave, and two lateral much narrower than the former, and almoſt flat: the anterior and poſterior ſides decreaſe in breadth towards the neck, the lateral ſides towards the edge, ſo that they repreſent in ſome degree four triangles, with their apices and baſes reciprocally oppoſite.

Theſe teeth have long roots, the lateral ſides of which are broad and flat, the anterior and poſterior narrow: they terminate by degrees in a point, in which a ſmall hole is obſervable, in children pretty conſiderable, but almoſt obliterated in old age. *Winſlow*'s anatomy, pag. 43.

DENTES *molares*. See MOLARES *dentes*.

DENTES *Piſcium*, in anatomy. See TEETH.

DENTEX, in zoology, the name of a ſea fiſh, caught in great plenty in the Mediterranean, and common in the markets of Italy.

It is a well taſted fiſh, and is caught of five, or ſix, and ſometimes ten pound weight: it is ſomewhat broad and flat in its ſhape, yet conſiderably thick and long. Its head is flatted, its ſnout very long, and its back ridg'd and ſharp; its back and ſides are of a dusky yellowiſh green colour, and ſometimes, in the full grown fiſh, purpliſh, always ſpotted with very bright blue and black ſpots; the back and gill-fins have each a black ſpot near their origin, and the belly fins are yellow.

The teeth are diſpoſed in a ſingle row in each jaw, and there are at diſtances four, which are longer and broader than the reſt, and look like the canine teeth of men, or of quadrupeds: it is from theſe that it has its name, and theſe as well as the reſt of the teeth are in this fiſh covered with lips, as in quadrupeds: its tail is forked, and its ſcales are very large. *Geſner* de Aquat, p. 1119.

DENTICULI *Elephantis*, in the hiſtory of ſhells, a name given by many authors to the *dentales*, a ſmall ſhell of the tubulus marinus kind, which is ſomewhat bent and pointed at one end, and in ſome meaſure repreſents the elephants tusk. See DENTALES.

DENTIFRICE, *Cycl.* The generality of operators for the teeth allow

allow acids, ſuch as ſpirit of vitriol, &c. to be the readieſt of all *dentifrices*, to take off the foulneſs and yellowneſs of the teeth; but though they allow theſe render them white, for the preſent, they diſcountenance a frequent uſe of them, as wearing away too much of the teeth, and injuring the gums.

Tachenius attacks ſpirit of vitriol even in a ſtronger manner, and affirms that it cannot anſwer the firſt purpoſe of making the teeth white: he alledges, that the mixture of ſpirit of vitriol, with any white alkali, produces a yellowiſh colour, not a white one. It is evident, that our ſweat, and all other matter, tranſpiring through the pores is of an alkaline nature, and there continually tranſpires through the gums ſomething of this kind, which lodging itſelf upon the teeth, muſt needs mix with the remains of the ſpirit of vitriol left on them in the cleaning; and, by that means, the whiteneſs at firſt given will gradually go off; and the yellow, which is the natural reſult of an alkali, with ſpirit of vitriol, will appear in its place. *Tachenii* Hippocrat. *Chym.*

DENTIL, in architecture. See DENTICLE, *Cycl.*

DENTILLARIA, in botany, a name, by which ſome authors call the *plumbago*, or leadwort. See PLUMBAGO.

DE ONERANDO *pro rata portionis*, in the law of England, a writ that lies where one is deſtrained for a rent that is to be paid proportionably by others: thus, if a man holds ten oxgangs of land, by fealty and ten ſhillings rent, of the king; and aliens, one oxgang to one, and another to another, in fee; and afterwards the ſheriff diſtrains only one of them for the rent; he that is ſo deſtrained may have this writ for his relief. *Fitz. Herb.* Nat. brev. f. 234.

DEOSCULATION, *Deoſculatio*, in antiquity, one of the moſt antient forms of adoration. See ADORATION, *Cycl.* and *Suppl.*

DEPARTERS *of gold and ſilver*. See the articles FINERS and DEPART, *Cycl.*

DEPERSONATUS. See DISPERSONATUS.

DEPESTA, in antiquity, a wine veſſel, which the Sabines, on any feſtival day ſet on the table of their gods. *Pitſc.* Lex. Ant. in voc.

DEPOPULATORES *agrorum*, in our ſtatutes, ſuch as depopulate or diſ-people lands.

It appears by the ſtatute 4 *Hen.* 4. c. 2. that theſe were great offenders by the antient law, and that the appeal or indictment againſt them ought not to be in a general, but in a ſpecial manner. They got their name of *depopulatores agrorum*, for that by proſtrating or decaying the houſes and habitations of the king's people, they depopulate towns. *Coke*, 3 Inſt. fol. 204.

DEPOSITION, *Depoſitio*, among the antients, a ceremony obſerved immediately upon a perſon's expiring, and was a ſolemn manner of laying the corpſe upon the ground. *Hoſm.* Lex. in voc. See BURIAL.

DEPRESSED *Leaf*. See LEAF.

DEPRESSOR (*Cycl.*) — DEPRESSOR *Alæ naſi*, in anatomy, a name given by Albinus, to a muſcle of the face, called by Cowper *conſtrictor alæ naſi*, and *depreſſor labii ſuperioris*.

DEPRESSOR *angular oris*, in anatomy, a name given by Albinus to the muſcle, called by others *depreſſor labiorum communis*; which ſee.

DEPRIMENS (*Cycl.*) DEPRIMENS *Biventer*, in anatomy, a name given by Spigelius, and others, to one of the muſcles of the lower jaw, called by others *digaſtricus ſive biventer*; and by Albinus *biventer maxillæ inferioris*.

DEPRIMENS *humerum rotundus*, in anatomy, a name given by Spigelius, and others, to a muſcle called by others the *teres major* and *rotundus major*.

DEPRIMENS *occuli*, in anatomy, a name given by Riolanus, and others, to one of the muſcles of the eye, called the *humilis*, and *rectus inferior* by others. It is the *depreſſor occuli* of Cowper, and of Albinus, being one of his four recti.

DEPRIMENS *quintus*, in anatomy, a name given by Spigelius, and ſome others, to the muſcle called the *ceratogloſſus*. See the article CERATOGLOSSUS.

DE QUIBUS *ſur diſſeiſin*, in law, a writ of entry. See *Fitz. Herb.* Nat. brev. fol. 191.

DER, a ſyllable frequently prefixed to the names of places in England. It is ſaid to ſignify that ſuch were formerly places where wild beaſts herded together, ſo called from the Saxon Deop, *fera*, unleſs the ſituation was near ſome river. *Blount.*

DARAIGN, or DEREYN, *diſrationare* vel *dirationare* in our old laws, is generally uſed for the act of proving: thus we find, *dirationabit jus ſuum hæres propinquior. Glanv.*. l. 2. c. 6. And, *dirationavit terram illam in curia mea.* Id. l. 2. c. 20. Bracton uſes it in the ſame ſenſe, *Habeo ſufficientem diſratiocinationem & probationem*, l. 4. tract. 6. c. 16. And ſo he makes uſe of *diſrationare*, l. 4. c. 22. And we find to *dereyn the warranty* in Old Nat. Br. fol. 146. To *deraign* that right, 3 Edw. 1. c. 4. and Weſtmin. t. 2. cap. 5. When the parſon of any church is diſturbed to demand tithes in the next pariſh, by a writ of *indicavit*, the patron ſhall have a writ to demand the advowſon of the tithes, being in demand; and when it is *deraigned*, then ſhall the plea paſs in the court chriſtian, as far forth as it is *deraigned* in the king's court.

DERAINMENT, or DEREINMENT. The ſubſtantive *dereinment* is ſometimes uſed in the ſame ſenſe with the French *deſrayer* or *deſranger*; that is, to diſplace or ſet out of order: thus we find, *deraignment* or departure out of religion, ann. 31. Hen. 8. c. 6. & 5 and 6 Edw. 6. c. 13. Thus alſo we meet with, *dereinment* or diſcharge of their profeſſion, 33 Hen. 8. cap. 29. which is ſaid of thoſe religious men, who forſook their orders or profeſſions. See Kitchin, fol. 152. The leſſee enters into religion, and afterwards is *deraigned*. And *Briton*, c. 21. uſes *ſemonenſe deſrenable*, for a ſummons that may be challenged as defective, or not lawfully made. *Skene* de verb. ſignific. verbo *diſrationare*, makes it ſignify what we call waging and making of law. See LEX *deraiſnia*.

DERBY *marble*. See MARBLE.

DERDER, in the materia medica of the ancients, a name uſed by Aviſenna and Serapio, to expreſs the common elm, whoſe bark they uſed on many occaſions.

DEREFELD, in our old writers, is uſed for a park, q. d. a field of deer.

DERELSIDE, in botany, a name by which ſome authors have called the tamarind tree. *Alpin.* Egypt. p. 328.

DE REVOCATIONE *parliamenti*, the name of a writ for recalling a parliament. Thus in 5 Edw. 3. the parliament being ſummoned, was recalled by ſuch a writ before it met. Vid. *Pryn's* Animad. on the 4 Inſt. f. 44.

DERVIS (*Cycl.*)—Of theſe there are in Egypt two or three kinds; thoſe that are in convents, are in a manner of a religious order, and live retired; though there are of theſe ſome who travel and return again to their convents. Some take this character, and yet live with their families, and exerciſe their trades: of this kind are the dancing *derviſes* at Damaſcus, who go once or twice a week to a little uninhabited convent, and perform their extraordinary exerciſes; theſe alſo ſeem to be a good people: but there is a third ſort of them who travel about the country, and beg, or rather oblige people to give, for whenever they ſound their horn ſomething muſt be given them. The people of theſe orders, in Egypt, wear an octagonal badge, of a greeniſh white alabaſter, at their girdles, and a high ſtiff cap without any thing round it. *Pocock's* Egypt, p. 178.

DESCENDENS *obliquus*, in anatomy, a name given by Fabricius, and others, to the muſcle, called by Albinus *obliquus externus abdominis*.

DESCENT (*Cycl.*)—The ſeparating mercury from its ore by *deſcent*, is performed in the following manner: take two earthen pots, with orifices of equal diameter; adapt an iron plate to the orifice of one of the two pots, in ſuch a manner that it may reſt upon the brink of it, but not jut out too much all round: let this have ſeveral holes bored here and there in it, but not near its bottom; pour into this pure water, to about two inches high, then ſhut it with the iron plate; put upon this plate a ſmaller veſſel, containing the ore of mercury; then cloſe theſe veſſels, with the ſecond pot inverted, ſtopping the joint well with lute; bury the inferior pot in aſhes, and put about the whole a moderate fire, continue it till the upper veſſel is ſlightly red hot, and the mercury will be driven into the lower, in fumes, which will be condenſed by the water into running quickſilver. *Cramer's* art of aſſaying, p. 352.

DESERTERS (*Cycl.*)—For the manner of puniſhing them among the antients, ſee TRANSFUGA.

DESIDERATUM, is uſed to ſignify the deſirable perfections in any art or ſcience: thus, it is a *deſideratum* with the blackſmith, to render iron fuſible, by a gentle heat, and yet preſerve it hard enough for ordinary uſes; with the glaſs-man, and looking-glaſs maker, to render glaſs malleable; with the clock-maker, to bring pendulums to be uſeful where there are irregular motions; with the braſier and copper-ſmith, to make malleable ſolder; with the ſhip-wright, to build veſſels that will ſail under water; with the diver, to procure manageable inſtruments for conveying freſh air to the bottom of the ſea, ſufficient for reſpiration, and the burning of lights; with the aſſay-maſter, to melt or copel ores, or metals, immediately without the uſe of bellows or furnace; and with the carvers and joiners, to faſhion wood in moulds like plaiſter of Paris, or burnt alabaſter, &c. And though, as Mr. Boyle obſerves, the obtaining of theſe *deſiderata* may be thought chimerical, yet it is proper they ſhould be propoſed; for although perfection may not be attainable, yet approaches to it may be made, and arts thereby improved. Vid. *Boyle's* Works abr. Vol. 1. p. 129, 136.

To this we may add, that the making iron malleable with pit-coal, was once perhaps looked upon as chimerical, yet it is now put in practice, to the great advantage of the owners of ſeveral mines in this kingdom.

It is a *deſideratum* in the tin works, to find a method of obtaining the ſilver out of the tin, as it is now got out of the lead, in places where the ores are ſo rich as to make it worth the while.

In the glaſs-works it is a *deſideratum* to ſolder up the cracks and flaws in the pots, while they are detained in the fire, and another to make glaſs without veins.

A taſteleſs and inodorous wine is a *deſideratum* among vintners, and a taſteleſs acid inodorous ſpirit among diſtillers.

The painters want a permanent green, and the callico printers a laſting blue.

In ſhort, all arts have their defects, and it is not at firſt to be gueſſed, for how many of theſe, remedies may be found, by means of chemical reſearches properly directed.

Chemiſtry itſelf is greatly defective in many particulars, as in an experimental hiſtory of general fermentation, ſeparatory and combinatory, in ſubjects of the animal, vegetable, and mineral kingdoms. A hiſtory of putrefaction, rancidneſs, muſtineſs, mouldineſs; and of the making of glues, mucilages, and the like preparations in the moſt perfect manner is alſo wanted.

The ſublimer metallurgy is in particular yet greatly defective. It wants a more eaſy method of extracting the mercuries of metals, than thoſe commonly deſcribed; a cheaper method of meliorations is wanted; and, in general, all the parts of this branch of the art ſeem equally defective.

The ſchemes for new trades will riſe occaſionally in the proſecuting many of the ſubjects; thus, it is natural for the common operations of brewing and ſugar-baking, to ſuggeſt that ſugar may be procured from malt and other vegetables. That nurſeries of peculiar ferments, both native and foreign, may be raiſed on the common principles; and, it is evident, that the introduction of ſuch new trades, would greatly improve the buſineſſes of brewing, ſugar-baking, and the like.

If a proper number of perſons duly qualified for making expements, and improving from them, would ſet about each his particular ſhare of the neceſſary experiments, and communicate the reſult of all their proceſſes to one another, the buſineſs of chemical experiment, would be much better directed in regard to future ſtudents, and many of the deſiderata in the art probably ſupplied. Vid. *Shaw*, Chem. p. 355.

DESION, in chronology, the Macedonian name of the Athenian month *Antheſterion*. See ANTHESTERION.

DE SON TORT *demeſn*, in our law, words of form, uſed in an action of treſpaſs by way of reply to the defendant's plea. Thus, if A. ſues B. in ſuch an action; B. anſwers for himſelf, that he did that which it calls a treſpaſs by the command of C. his maſter. A. replies that B. did it *de ſon tort demeſne, ſans ceo que C. luy command modo et forma*; that is, B. did it of his own wrong, without C.'s commanding him in ſuch manner and form. *Cowel.*

DESPOTIC. See DESPOTISM, *Cycl.*

DETENTS, in a clock, are thoſe ſtops which, by being lifted up or let fall down, lock and unlock the clock in ſtriking.

DETENT-*Wheel*, or HOOP-*Wheel*, in a clock, that wheel which has a hoop almoſt round it, wherein there is a vacancy, at which the clock locks.

DETERRATION, is uſed to ſignify a removal of the earth, ſand, *&c.* from the mountains and higher grounds, down into the valleys and lower parts. This is occaſioned by rains, which waſh the earthy matter down by degrees; but this cannot be very conſiderable, or much raiſe the ſurface of the earth, as ſome have imagined, becauſe a good part of it is ſunk into the clefts and caverns of the rocks and mountains, a great quantity is born down into rivers, and thence into the ſea, and the richer and finer part helps to compoſe the bodies of plants and vegetables. *Harris.*

DETERSOR, in antiquity, a ſervant whoſe buſineſs it was to attend at dinner, and wipe the table. *Pitiſc.*

DETERSORIUM, in antiquity, a name given to the common waſh, which was bean-meal, called *Lomentum*, or the meal of a ſort of pulſe called *Lupines:* this laſt they called *Smegma.*

The antients when they bathed uſed various waſhes for cleanſing the skin; but natrum, and its thin froth, called in Greek *Aphronitron*, were moſt common.

DETRAHENS *Quadratus*, in anatomy, a name given by ſome authors, particularly Spigelius, to a muſcle, called by the generality of anatomiſts the *Platyſma Myodes*; and by Albinus, *latiſſimus Colli.* Douglas calls it alſo *quadratus genæ.*

DEVENSHRING, or DENSHRING, a term uſed by the farmers to expreſs the burning land by way of manure: the method is to cut off the turf about four inches thick, and burn it in heaps, and then ſpread the aſhes upon the land; they probably call it *Devenſhring* from its having been earlieſt practiſed in Devonſhire. See the article BURNING.

DEVEST, *deveſtire*, in feudal writers, is uſed for the oppoſite to inveſting. *Inveſtire* ſignifies *poſſeſſionem Feudi tradere.* On the contrary, *Diveſtire* is *poſſeſſionem auferre.* Feud. lib. 1. c. 7. *Cowel.*

DEVINCTION, *Devinctio*, in antiquity, was uſed to ſignify a love-charm or incantation to gain the affection of a perſon beloved.

It was done by tying knots, and differed little from what was called *Obligatio* or *Catadeſmus.* Virgil in his 8th Eclogue deſcribes it thus:

Nectе tribus nodis ternos Amarylli colores,
Nectе Amarylli modo, & veneris, die, vincula nectо.

Pitiſc. Lex. Ant. in voc.

DEVOIRS *of Calais*, in our old ſtatutes, cuſtoms due to the king for merchandize brought to or carried out of Calais, when our ſtaple was there. 34 Edw. 3. c. 18. & 2 Rich. 2. ſtat. 1. c. 3.

Devoir is French, ſignifying duty.

DEVOTION (*Cycl.*)—Cornelius Nepos uſes the word *Devotion* for a kind of puniſhment conſiſting of direful curſes and marks of infamy. See the article EXECRATION.

DEUS *Myagrus.* See MYAGRUS.

DEUTEROPOTMI, δευτεροποτμοι, among the Athenians, a deſignation given to ſuch who had been thought dead, and, after the celebration of the funeral rites, unexpectedly recover'd. It was unlawful for the *Deuteropotmi* to enter into the temple of the *Eumenides*, or to be admitted to the holy rites, till after they were purified by being let through the lap of a woman's gown, that they might ſeem to be new born. *Pott.* Archæol. Græc. l. 2. c. 4. T. 1. p. 223.

DEUTEROSIS, the Greek name by which the Jews called their *Miſchnah*, or ſecond law. *Deuteroſis* in Greek has the ſame ſignification almoſt as *Miſchnah* in Hebrew; both ſignify an iteration. Euſebius accuſes the Jews with corrupting the true ſenſe of ſcripture with the trifling explanations of their *Deuteroſes.* Epiphanius ſays, that there were four ſorts of theſe quoted, the firſt under the name of Moſes, the ſecond under that of Akiba, the third under that of Adda or Judah, and the fourth under the name of the ſons of the Aſmonæans or Maccabees: It is not eaſy to determine whether the preſent Miſchnah is the ſame with any of theſe, whether it contains them all, or only ſome part, or whether it be different from them all, Jerom ſays, that the Hebrews referred their *Deuteroſes* to Shammai and Hillel. If it were well proved that they were of this antiquity, it would be conſiderable; ſince Joſephus ſpeaks of Sammeas, who is the ſame with Shammai in the beginning of Herod's Reign. Jerom ſpeaks always of the *Deuteroſes* with the utmoſt contempt: he looked upon them as a collection of fables, childiſh ſtuff, and obſcenities. He ſays, the principal authors of theſe fine deciſions, according to the Jews, are Bar-Akiba, Simeon, and Helles. Bar-Akiba is probably the grandfather or father of the famous Akiba. Simeon and Shammai are the ſame perſons, ſo are Helles and Hillel. *Calmet*, Dict. Bibl. in voc.

DEVUIDER, in the manege, is applied to a horſe, that upon working upon *Volts* makes his ſhoulders go too faſt for the croupe to follow; ſo that inſtead of going upon two treads, as he ought, he endeavours to go only upon one. This comes from the reſiſtance he makes in defending againſt the heels; or from the fault of the horſeman, who is too haſty with his hand. *Guil.* Gent. Dict. in voc. See HASTE.

DEW (*Cycl.*)—Thro' the whole courſe of the operations of nature, when there appear two methods by which any thing that we ſee can be effected, we have many reaſons to believe that it is done by that method which is the moſt different from common appearances. As we know there muſt be a revolution, for inſtance, either of the earth round the ſun, or of the ſun round the earth; tho' common appearances ſeem to inform us, that it is the earth which ſtands ſtill, and the ſun which moves round; yet when we come to enquire more deeply into nature, we very plainly find that it is in reality the earth which makes the revolution, while the ſun remains fixed in its place. A thouſand other parallel inſtances might readily be produced; and according to this method of judging, we are to teach ourſelves to judge of the *Dew*, which then becomes one of the number.

The *Dew* which we ſee continually appearing to fall at its ſtated periods, may thus either fall originally from that middle region of the air, whence it ſeems to us to deſcend; or elſe it may be firſt raiſed from the bowels of the earth in form of a vapour, and ſent up into that region, whence it again falls, if it do fall to us, in form of *Dew.* The moſt natural opinion ſeems that of its falling *ab origine* out of the air; and thus the generality of the world look upon it, eſteeming it a gift of heaven for the enriching and fertilizing the earth. But the truth is on the other ſide of the queſtion; and it is indiſputable, that all that we properly call *Dew*, all thoſe drops of water which, tho' imperceptible, as ſuch while ſeparate, eaſily amaſs themſelves into larger drops, and are in that ſtate found on graſs, and on the herbs of the field and garden in the morning, and remain there for a certain time, all this has unqueſtionably been firſt raiſed in vapour out of the earth to which it now again deſcends.

This is no new opinion, tho' not a general one; the old naturaliſts have many of them affirmed it, and there are ſo many familiar proofs of it, that one would think ſcarce any obſerver could be ignorant of it. Every gardener knows that the glaſs bell, which he places over a tender fruit, will be hung over with drops of *Dew* after a certain time, tho' it have no communication with the external air, nor can have received them any other way than in the vapours raiſed from the earth. There have not however been wanting men of great genius and knowledge who have contradicted this opinion, and endeavour'd to account for all that appears in favour of it from other principles. Experiments however are the great guides to truth; and M. Dufay, of the royal academy at Paris, being reſolved to try firſt of all the grand queſtion, whether the matter of *Dew* did firſt aſcend in vapour, or did not, he brought the firſt proof to this ſimple proceſs: if the *Dew* did aſcend, it muſt

muſt wet a body placed lower ſooner than one placed higher, and muſt wet its under ſide ſooner than its upper, and of a number of bodies placed in this manner, the lower muſt be thus gradually wetted all the way before the upper. It appeared certain to him, that the *Dew* aroſe in vapour from the earth after it had been heated by the ſun, and that not leſs of it aroſe in the middle of the day than afterwards, but that then it was diſperſed and evaporated as ſoon as raiſed. On this foundation he determined to make his trials, and for this purpoſe he plac'd two ladders againſt one another, meeting at their tops, ſpreading wide aſunder at their bottoms, and ſo tall as to reach thirty-two foot high. To the ſeveral ſteps of theſe he faſtened large ſquares of glaſs like the panes of a window, and ſet them in ſuch a manner, that they ſhould not ſhade or overhang one another. It was plain that, on the whole, if the *Dew* deſcended without firſt ariſing, the top ſquares muſt be firſt wetted, and that on their upper ſurfaces; but, on the contrary, if the *Dew* firſt aſcended from the earth, the bottom ſurfaces of the lower panes muſt firſt receive it. On the trial it appeared exactly as expected in the latter manner. The lower ſurface of the loweſt piece of glaſs was firſt wetted, then its upper ſurface; then the lower ſurface of the pane next above it, and ſo on gradually till the whole were wetted to the top of the ladders.

It was happy that this Experiment ſucceeded in ſuch perfect regularity; but this is not always to be expected, for a thouſand accidents may prevent it, and the lighteſt wind deſtroy it: thus, ſuppoſing the *Dew* to have aſcended in this exact order up to a certain height, it may there meet with a guſt of wind, which ſhall diſſipate it in ſuch a manner, that it ſhall no more affect the higher planes, till that wind ceaſing, gives it leave, which perhaps may not be till it has riſen to the height of the whole ladder; and then at an inſtant all the upper planes ſhall after this interruption be wetted at once.

This gentleman afterwards tried the ſame experiment with pieces of cloth tied to the ſteps of the ladder inſtead of glaſſes, as he could be able, by weighing theſe, to know of certainty, how, and in what order they received the dew; in this trial ſome accident prevented the ſame perfect regularity from appearing in the aſcent of the *Dew*, but the quantity of moiſture imbibed by the higher pieces, was ſo much leſs than that imbibed by the lower, as abundantly to prove that the moiſture they received was from below not from above. Mr. Muſchenbroek, who is no friend to this opinion, thought he had invalidated all theſe proofs, by trying the ſame experiments, and finding the ſame ſucceſs on a plane covered with ſheet lead, as had before appeared in the garden of the firſt experiments, where the ladders were placed on the ground. Mr. Muſchenbrock, who eaſily ſaw that the vapour could not aſcend, at leaſt not in ſuch quantity through lead, thought he had proved, that however it appeared on the cloaths, it muſt have deſcended from above; but Mr. du Fay very properly overthrew all theſe arguments, by obſerving, that the vapour need not riſe through the lead, nor from that very ſpot, but that as it aroſe from the adjoining open ground, the continual fluctuation of the air, could not but ſpread it abroad, and carry it in its aſcent thither.

The order and manner of the aſcent of *Dew* is thus aſcertained, and its deſcent again cannot appear at all wonderful when we conſider, that at ſuch times, as the heat of the ſun is not ſo great as to diſſipate it, as it riſes, it will, by its natural attraction form itſelf, into drops ſo large, and of ſuch gravity, that the air cannot ſuſtain them. From the ſame ſource and origin, we muſt alſo ſometimes have thick fogs, and theſe, properly ſpeaking, are only *Dew*, in a certain ſtate. Mr. du Fay has proved alſo, that the vapour which is to fall in *Dew*, continues to mount in a direct courſe upwards the whole night. For having hung up a piece of woolen cloth, after he had carefully weighed it, he examined it, at times, through a whole night; and weighing it every time, he found it ſenſibly increaſed in weight; that is, its quantity of moiſture ſenſibly increaſed every time. Theſe are the moſt obvious qualities in regard to the *Dew*, but there are others more nice and curious, which owe their firſt notice to Mr. Muſchenbroek, and have been afterwards verified by Mr. du Fay.

Several different ſubſtances expoſed to the ſame *Dew*, receive and charge themſelves with it in a very different manner, ſome more, others leſs, and ſome even not at all. The drops ſeem to make a ſort of choice of what bodies they ſhall affix themſelves to; glaſs and cryſtals are thoſe which they affix themſelves to, in the moſt ready manner, and in the largeſt quantity; and metals, of all kinds, do not receive them at all, nor do the drops ever affix on them. The two extremes are thus fixed; the intermediate bodies are to be judged of by repeated experiment. The extremes are indeed ſo well aſcertained, that they are eaſily proved; for, if a cryſtal, or glaſs veſſel be ſet out in an evening on a ſilver plate, the glaſs will be found covered all over with *Dew* drops, and the ſilver perfectly dry. China ware is a ſort of glaſs; ſix pounds of mercury being expoſed to the air in a china plate, the *Dew* was found running in ſtreams on the edges of the plate, while not the leaſt trace of a ſingle drop appeared upon the mercury.

The plain way of accounting for this would ſeem, not that *Dew* falls upon ſome bodies without touching others, but that it readily evaporates from the ſurfaces of ſome, while it remains and collects itſelf into drops upon others: and it is hence that we find ſome wet and others dry, which have had the ſame expoſure; but this, though the moſt obvious, and ſeemingly apparent reaſon, is not the true one. Mr. du Fay has obſerved, that if this were the caſe, in thoſe bodies, which we find dry after expoſure, the evaporation muſt be more ſudden than there are powers in nature, to effect; or, in other words, than it is poſſible for it to be; and the truth, in regard to the obſervation, is not this; but that, in reality, the particles of this aſcending *Dew* really do not affix themſelves at all to ſome bodies, while they very readily do it to others; as we ſee in water itſelf, that in a common river, a rough dog, ſhall be miſerably wetted all over, while the feathers of a ſwan ſhall not receive a ſingle drop of moiſture.

There is alſo another ſingle obſervation, which ſhould ſeem to prove that this vapour only aſcends, and does not at all deſcend in form of *Dew* again; but that what we ſee collected into drops on graſs, and plants, collects itſelf in that manner in the beginning of its aſcent. For if a cup of any metal be expoſed a whole night, it will never be found to contain any *Dew*, which if that liquid deſcended muſt have been the caſe; ſince, though it did not naturally ſtick to that metal, it muſt fall into it, and remain there; but this does not happen. What can be collected from the whole, ſeems, that *Dew* is a vapour, which ariſing into the air, and increaſing in quantity, through the courſe of a whole night, expands itſelf every way in it, and moiſtens or wets ſome ſubſtances, and does not moiſten others, and this merely according to the differences of their ſurfaces.

Theſe however are but probable ſyſtems, not abſolutely known facts: ideas of the manner of the actions and operations of bodies, readily flow into the mind, when we have formed a ratio, be it whatever, in our own thoughts for them. Mr. du Fay has many nice opinions in regard to this vapour or liquid, which it were much to be wiſhed were carefully examined by experiments. He ſuppoſes ſome diſtant alliance between the phænomena he has obſerved in *Dew*, and thoſe which appear in electrical bodies, and in thoſe bodies which afford phoſphori. He has obſerved, that all bodies, which are capable of a ſufficient degree of rubbing, become electrical, excepting only the metals; and that all bodies, except only the metals, may alſo be made phoſphori. The metals are the only bodies alſo which wholly refuſe to admit the *Dew*; here are certain properties all appearing in metals, and in metals only; and it ſeems hence there may be ſome affinity in thoſe things, which do, or do not affect the metals only. It is certain, that there are connections in natural bodies, which are too nice for haſty elucidation, yet are not unworthy all the care that can diſcover them. Mem. acad. Scien. 1736.

It is very certain that ſubſtances of a very different kind from the uſual and natural matter of the *Dew*, have ſometimes fallen in that form. Our Philoſophical Tranſactions give an account, that in the year 1695, there fell in Ireland, in ſeveral parts of the provinces of Leinſter and Munſter, for a conſiderable part of the winter and ſpring, a fatty ſubſtance, reſembling butter inſtead of the common *Dew*; it was of a clammy texture and dark yellow colour; and was, from its great reſemblance, generally called *Dew-butter* by the country people. It always fell in the night, and chiefly in the mooriſh low grounds, and was found hanging on the tops of the graſs, and on the thatch of the houſes of the poor people. It was ſeldom obſerved to fall twice in the ſame place, and uſually wherever it fell it lay a fortnight upon the ground before it changed colour, but after that it gradually dried up, and became black. The cattle fed in the fields where it lay, as well as in others, and received no hurt from it: it fell in pieces of the bigneſs of ones finger end, but they were diſperſed ſcatteringly about, and it had an offenſive ſmell, like that of a churchyard. There were in the ſame places very ſtinking fogs during the winter, and ſome people ſuppoſed this no other than a ſediment or connection of the heavier matter of thoſe fogs. It would not keep very long, but it never bred worms. The country people willing to have ſome good of it, tried it on their childrens fore-heads, and it always cured them. Philoſ. Tranſ. n° 220. p. 222.

Cryſtalline DEWS, a term uſed by ſome modern writers, to expreſs certain *Dews*, or ſteams; which, in their fall upon the earth, become, as they ſay, cryſtal. This greatly favours the opinion of the antients, that all cryſtal was only water frozen into a kind of ice harder than ordinary, but it is erroneous. Mr. Beaumont gives an account in the Philoſophical Tranſactions of theſe cryſtal *Dews* on Mendip hills; in which he tells us, that the miners of that place find ſometimes in the roads where the earth is bare, triangular cryſtals, about two inches in length, and an inch over, not with ſharp angles, but roundiſh and blunted ones, and carried up round at the ends like a cocoa nut; and that none of theſe are ever found under ground in digging, but only lying on the ſurface. He tells us alſo, that he had ſeen ſome taken up in Glouceſter-

ſhire, and confirms the opinion of theſe *cryſtalline Dews*, producing real cryſtals, by the account given of ſome places in Italy, where cryſtals are, as it is ſaid, frequently produced in clear evenings by a coagulation of the *Dews* falling on nitrous ſteams. Whatever the cryſtals are, which authors ſeem to ſuppoſe to have been generated in this manner, it is very certain, that they have in reality another origin; and theſe are only the accounts of ignorant and inconſiderate people, to give credit to the ſtrange and unnatural method here given for their formation. Philoſ. Tranſ. n° 129.

May-DEW. See Ros-*mayalis*.

Orange-DEW. See ORANGE.

Sun-DEW. See Ros-*ſolis*.

Earth of DEW. See the article EARTH.

DEX, a name uſed by many Greek writers, for a worm or maggot, hatched of the egg of a beetle, and remarkable for its eroding wood. It is alſo called thrips and enxylon. The old Greeks uſed the pieces of wood eroded by it in various directions as ſeals. See the article THRIPS.

DIABATHRA, in antiquity, a kind of ſhoe worn by the Grecian women. *Pitiſc.* Lex. Ant. in voc.

DIABE, in zoology, the name of a prickly ſea fiſh of the orbis or globe fiſh kind, and in all things reſembling the hiſtrix or porcupine fiſh, except that its ſpines or prickles are all fixed into its skin by three inſertions. *Marcgrave*'s Hiſt. Braſ. l. 4. c. 14.

DIABETES (*Cycl.*)—In this diſeaſe the urine is thin and pellucid, and has no ſediment, and is of a ſweetiſh taſte; the quantity voided is always very great; and if the patients endeavour to retain it, they are afflicted with ſwellings about the loins, and a ſenſation of weight and preſſure in the hypochondria.

Perſons ſubject to the Diabetes. — It is a very rare diſeaſe, and ſeems to have been ſo in other ages as well as the late ones. Galen expreſsly ſays, that he never met with more than two perſons who had it; the people affected with it are uſually ſuch as have diſorders of the viſcera in general; and it is often but a ſymptomatick affection, ariſing from an improper treatment of perſons in fevers.

Prognoſticks in it. It is always a very terrible diſeaſe, but the longer ſtanding it is of, the more difficult it is to be cured; it is not, however, ſuddenly of fatal conſequence, but the people uſually live ſome time with it, though they in the end generally die tabid, after having been afflicted with it a length of time.

Method of cure. The infarctions of the viſcera, which are the occaſion of this, are firſt to be regarded, and are to be attacked with ſuch aperients as are not ſtrongly diuretick; of this kind are decoctions of the roots of dandelion, ſuccory, polypody, and the like; and of the capillary herbs. Pills alſo are to be taken, made of ammoniacum, and the other reſolvent gumms, with the bitter extracts; and interchangeably with theſe the digeſtive neutral ſalts, ſuch as tartarum vitriolatum, and the like: during this courſe, the febrile heat, which always attends this diſtemper, is to be taken off by the vegetable acids, ſuch as ſorrel and purſelain, and tincture of roſes made in the uſual way. Some recommend the teſtaceous powders in general; and others are peculiarly laviſh in the praiſes of crawfiſh reduced to powder whole, after baking them in an oven. The great diſcharge of urine is to be leſſened, in the mean time, by gentle laxatives now and then given, ſuch as infuſions of ſenna, rhubarb, and the like; and finally, if the diſeaſe goes off, or but remits conſiderably of its violence, the chalybeates, and other reſtoratives, are to be given, to reſtore the parts to their due ſtate.

It is a common error to give aſtringents in a *Diabetes*; for, if they take effect, they too violently conſtringe the viſcera, and bring on pains and ſwellings in the loins, and not rarely an aſcites and death itſelf in the end.

Perſons ſubject to this diſeaſe ſhould be extreamly careful of themſelves in their regimen; they ſhould avoid all hot things, and beware of themſelves that they do not fall into violent paſſions; they ſhould feed principally on emulſive and gelatinous diets, to make up for the waſte of fleſh that always attends this diſeaſe. *Junker*'s Conſp. Med. p. 540.

Dr. Morgan thinks the tincture of cantharides may almoſt be abſolutely depended on for ſtopping the immediate flow of urine in the *Diabetes*. The way he prepares his tincture is, by infuſing half an ounce of cantharides upon a pound of the elixir vitrioli; of which tincture, from fifteen to thirty or forty drops, may be given twice or thrice a day in Briſtol hot well water. Mecan. pract. of Phyſ. p. 114.

Dr. Jurin found the chalybeate waters acidulated with the oil of ſulphur, very ſucceſsful in this diſtemper. Med. Eſſ. Edinb. Abr. Vol. 2. p. 469.

Allum poſſet-drink is alſo ſaid to be an effectual cure for a *Diabetes*. Ibid.

DIABOLUS *Marinus*, *the ſea devil*, in zoology, the name of an ugly and ſtrangely ill-ſhaped fiſh, of the ray kind. Its noſe or ſnout is bifid, and runs out into two horns, and its ſides are both terminated by thin fins: its skin toward the head is variegated with dusky ſpots. It grows to a very conſiderable ſize, being ſometimes caught of ſix or ſeven feet long. *Ray*'s Ichthiogr. append. p. 5. See Tab. of Fiſhes, N° 65.

DIACAUSTIC. See *Cauſtic by* REFRACTION.

DIACELTATESSON, in chemiſtry, a name given by Van Helmont, to a purging preparation, procured from the fixed flowers of antimony, in the following manner: take eighteen grains of the fixed diaphoretick flowers of antimony, ſixteen grains of roſin of ſcammony, and ſeven grains of cream of tartar, make all together into a powder. Or take nine grains of the fixed antimony, nine grains of roſin of ſcammony, and three grains of cream of tartar, make them into a fine powder. The former is the largeſt doſe for a grown perſon, and the latter the leaſt; they are to be taken without any acid; and if they operate too violently, the violence may be ſtopped by taking any thing acid: it is to be given in intermittents, ſo as to finiſh its operation immediately before the coming on of the fit: it is ſaid by the author always to cure quartans before the fourth doſe, and all intermittent and continued fevers.

Boerhaave obſerves, that he had often given it with good effects, but never with that great ſucceſs which the author aſcribes to it; who ſays, that it radically cures the gout and fevers, heals ulcers of the larynx, œſophagus and bladder, and purges the body when in perfect health, but not otherwiſe. This candid writer obſerves, that Helmont ſeems always to have carried the virtues of his medicines by a ſubtilty of reaſoning, beyond what will be found warrantable of them from experience. Boerh. chem. part 2. p. 338.

DIACENTROS, is uſed by Kepler, to ſignify the ſhorteſt diameter of the elliptical orbit of any planet.

DIACHALASIS, in the medicinal works of the antients, a term uſed to expreſs a ſolution of continuity in the bones of the cranium at the ſutures; that is, when the bones recede from their mutual indentations, an accident that frequently happens from large wounds of the head.

DIACHRISTA, a name given by the antient writers in medicine to certain compoſitions, whoſe uſe was to be applied to the fauces, uvula, palate, and tongue, for the abſterſion of phlegm.

DIACODUS, in natural hiſtory, a name given by ſome to the diadochos, a kind of beryll or ſapphire, of which many fabulous things are aſſerted.

DIACOPE, Διακοπη, in Grammar, the ſame with what is otherwiſe called *Tmeſis*. See TMESIS, *Cycl.*

DIADELPHIA, in botany, a claſs of plants with hermaphrodite flowers, whoſe ſtamina, by the conjunction of their filaments, are formed into two bodies.

The word is formed of the Greek δις twice, and αδελφα communities. Among the plants of this claſs are the fumitory, milk-wort, broom, &c.

The characters of the Diadelphia are theſe: the perianthium conſiſts of one leaf, and is of a bell-like ſhape, and gibbous at the baſe: this always falls with the flower. It ſtands on a pedicle, is obtuſe at the top, and carries a drop of honey-like juice at the baſe. Its mouth or rim is divided into five ſegments, which are ſometimes erect, ſometimes oblique, and always irregular, and acute. The bottom ſegment, which has no fellow, is longer than all the reſt; and the top pair are ſhorteſt of all, and ſtand fartheſt aſunder. The receptacle of the fructification is incloſed in the bottom, where it is wetted with the drop of honey. The flower is of an irregular ſhape, and is of that kind called by authors papilionaceous, from its ſomewhat reſembling the wings of a butterfly. The ſeveral parts of theſe flowers have their ſeparate names; a right underſtanding of which is neceſſary, in order to the comprehending the meaning of the deſcriptions authors give of them. Theſe names are vexillum, alæ, and carina. See Tab. 1. of Botany, Claſs 1. *Linnæi* Gen. Plant. p. 335.

The vexillum is a large incumbent petal, which covers the others, and ſtands in a plane horizontal direction, and has its upper unguis inſerted into the margin of the receptacle or cup; in that part of it which is out of the cup it approaches to a roundiſh figure, and is uſually undivided, or very lightly ſo, and has eſpecially near the apex, a line or ſtreak in the center, which ſtands up above the level of the reſt of the petal, and the petal looks as if depreſſed downwards: that part of this petal which is neareſt the baſe, approaches to a ſemi-cylindric figure, and is then affixed within the cup. The diſk of this petal is depreſſed on each ſide, but the two ſides are turned a little upwards near the edges.

In that part where the tubular part of this petal ends, to give place to its expanſion into the body; there are two concave impreſſions toward the back, which appear ſomewhat prominent at their lower extremity, and ſerve to compreſs the alæ that ſtand under them.

The alæ, in theſe flowers, are two equal petals, a regular pair, and placed under the vexillum, one on each ſide of the flower: theſe are incumbent at the edges, and placed perpendicularly at the ſides, and are of a roundiſh, but ſomewhat oblong figure, broader in the outer part than in the inner; their upper rim is ſtrait and thin, their lower ſomewhat inclined toward a circular figure: the baſe of each is bifid, and the lower ſegment is carried on into an unguis much longer than the other, and is inſerted into the ſide of the receptacle.

It

It is in the whole of much the ſame length with the cup, and is ſhorter, and bent above.

The carina is the lower petal, and is often divided into two ſegments: this is placed under the vexillum, and between the alæ; it is of the ſhape of a boat, being hollow and compreſſed at the ſides: it repreſents, in its poſture, as well as ſhape, a boat on the water, but it is mutilated at the baſe, and is extended in its lower part into an unguis, which is of the length of the cup, and is inſerted into the receptacle. The lateral and upper part being jagged, is received among the like part of the alæ: the ſides of the carina are of a ſhape, reſembling the wings; and their ſituation, in the flower, is much the ſame, but they ſtand ſomewhat more inward and lower. The carina or line of this petal is carried ſtrait along half the petal; after this it ariſes into a ſegment of a circle, but the marginal line runs ſtrait quite to the apex, where it forms an obtuſe angle, with the extremity of the carina, or line. The ſtamina, in theſe flowers, which are called Diadelphia, are two filaments of different ſhape, one of them ſtands below the piſtil, and in a manner involves it; and the other ſtands above, and is depreſſed upon it. The lower filament, which involves the germa of the piſtil, is, in its lower half, membranaceous, of a cylindric figure, and ſplit open. In its upper part, where it divides itſelf into nine parts of a ſubulated figure, which in their length and flexure reſemble the ſhape of the carina; the intermediate or lower ſegiments among theſe are longer alternately in pairs. The upper filament is of a ſubulated and ſetoſe make, it covers the ſlit in the middle of the lower filament before deſcribed; it lies upon this, and is placed in the ſame direction, and is ſhorter; it ſeparates itſelf from the other at the baſe, and gives paſſage to a honey-like liquor.

The antheræ of the whole flower are ten in number; there are nine of them placed on the ſegments of the lower filament, and one on the ſummit of the upper one which has no diviſion; they are ſmall, but are all of equal ſize in the ſame flower.

The piſtil, in theſe flowers, is ſingle, and grows from the receptacle within the cup. Its germen is of an oblong figure, ſomewhat cylindric, but compreſſed in a ſlight manner; it is ſtrait, and is of the length of the cylindric part of the lower filament, by which it is involved and incloſed.

The ſtile is of a ſubulated capillary form and aſcendant, its length and ſituation in the flower are the ſame with thoſe of the radii or ſegments of the upper part of the lower filament, among which it is placed; this ſtile is not permanent, but withers with the ſtamina.

The ſtigma is hoary, it is of the length of the ſtile, it turns upward, and is placed immediately under the ſtamina and antheræ.

The fruit, in all the plants of this claſs, is an oblong cylindric and ſomewhat flatted pod; this is obtuſe, bivalve, and marked with two ſutures, the one above and the other below, each running the whole length of the pod, and the upper one deſcending a little at the baſe, otherwiſe they are all the way ſtrait; the pod always naturally opens at the upper ſuture.

The ſeeds are contained ſeveral in every pod, and are of a roundiſh figure, ſmooth, fleſhy, and pendulous, and have a mark of an embryo, prominent near that part where they are inſerted to the ſides of the pod. The proper receptacles of the ſeeds are very ſmall, ſhort, and attenuated at the baſe, obtuſe in the disk, of an oblong figure, and are inſerted longitudinally into the upper ſuture of the pod; and this, in ſuch an order, that when a pod is carefully opened, onehalf of the ſeeds are always found in one of the valves, and the other half on the other.

This is a perfect natural claſs of plants, and is the moſt remarkable of all others in the ſtructure of the flower. The common ſituation of the flower is in an obliquely pendulous direction, it inclines toward an acute angle from a perpendicular line. The former ſyſtematiſts, in botany, as Linnæus obſerves, took great notice of the pod in this claſs of plants, and thought it the principal ſubject of diſtinction; but he very judiciouſly makes it but of very little conſequence, and will not allow it ſufficient to diſtinguiſh the genera one from another: but the cup, which had always before his time been diſregarded, he eſteems a very eſſential part of the plant, and ſufficiently certain to erect the different genera upon in many caſes. Some of the old writers had been uſed to take the leaves into their marks, by which to diſtinguiſh genera of this claſs; but Linnæus wholly excludes this part of a plant from this office. Magnol has obſerved, that the carinæ of the diadelphia or papilionaceous flowers is dipetalous, and is compoſed of two diſtinct oblong petals; the lower edges of which join ſo nicely and cloſely together, that they ſeem only one; and are not joined in their ſubſtance, but only in their ſituation. Linnæus has ſtrictly examined this, and finds that the author is ſo far right, that this is really the caſe in many of the papilionaceous flowers, but not in all: ſome not only appearing to have, but really and certainly having a carina compoſed of only one petal.

The conſideration of the ſtigma, is of more conſequence in this than in moſt other flowers, and even more than that of any other part of the fructification in this. The ſeeds of all the plants of this claſs are eatable, excepting in a very few particulars; their leaves alſo are a grateful food to cattle. *Linn.* Gen. Plant. p. 337.

DIADOCHUS, in natural hiſtory, the name given by the antients to a gemm, approaching to the nature of the beryl or aqua marine, probably a pale ſapphire; for they had no peculiar generical name for that gemm, but call'd the beautiful deep coloured ones only sky blue beryls, berylli acroides. The writers of the middle ages have given ſtrange accounts of the magical virtues of this ſtone, ſuch as its calling up ſpirits, and many other the like things, on being thrown into water: they ſaid, however, that if it happened by any accident to touch a dead body it loſt all its virtue.

DIADROME, is ſometimes uſed for the vibration, motion, or ſwing of a pendulum.

DIÆRESIS, Διαιρεσις, a figure in Grammar, otherwiſe called *Tmeſis*. See TMESIS, *Cycl.*

DIÆTETÆ, Διαιτηται, among the Athenians, were of two ſorts, the cleroti and diallacterii. The former were a kind of public arbitrators, choſen by lot, to determine all cauſes exceeding ten drachms within their own tribe. Their office was annual, at the expiration of which they were obliged to give up their accounts; and if it was proved, that they refuſed to give judgment, or to have been corrupted, they were puniſhed with infamy. Their ſentence, however, was not final, an appeal lying from it to the ſuperior courts.

The *Diallacterii*, on the contrary, were private arbitrators, from whoſe ſentence there lay no appeal; and accordingly they always took an oath, to adminiſter juſtice without partiality, which the *Cleroti* did not. *Potter*'s Archæol. Græc. l. 1. c. 22. T. 1. p. 122. ſeq.

DIAGLAUCIUM, a name given by the old writers on medicine to a ſort of collyrium, in which the juice of the glaucium, or yellow poppy, was a principal ingredient. It was uſed for beginning lippitudes and ophthalmies.

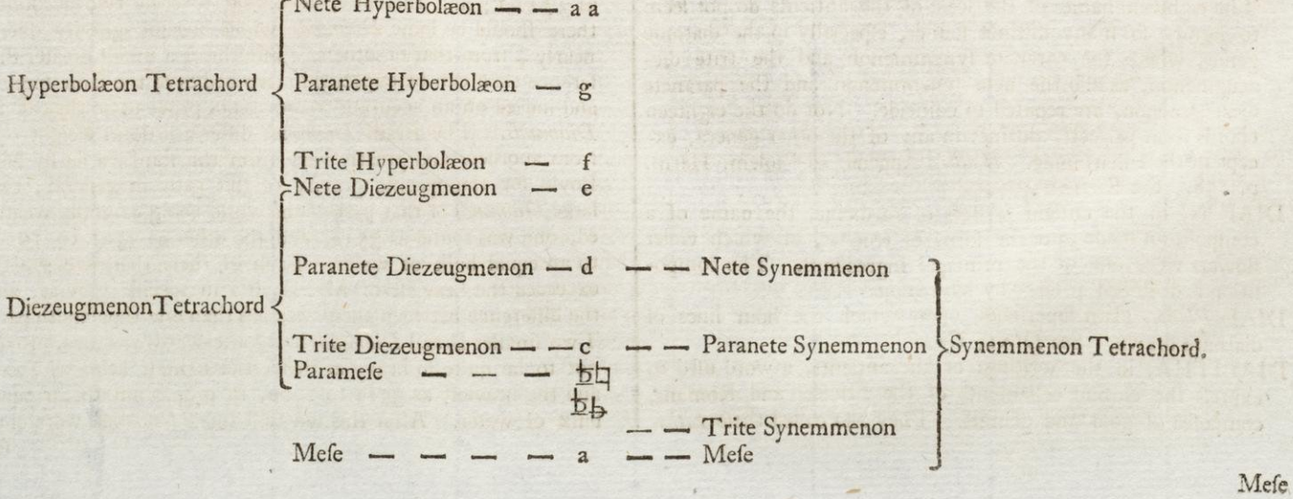
DIAGONAL *Scale*. See SCALE, *Cycl.*

DIAGRAM (*Cycl.*)—The muſical ſcale or *Diagram* of the antients, was of the compaſs of two octaves, and contained eighteen ſounds, whoſe uſual Greek names are mentioned in the Cyclopædia from Malcolm's Treat. of Muſic, p. 519.

Martianus Capella mentions them by the following names, which he thus tranſlates into Latin:

Προσλαμβανομενη, Adquiſitus: ὑπατη ὑπατων, principalis principalium: παρυπατη ὑπατων, ſub-principalis principalium: ὑπατων διατονη, principalium extenta: ὑπατη μεσων, principalis mediarum: παρυπατη μεσων, ſub-principalis mediarum: μεσων διατονη, mediarum extenta: μεση, media: τριτη συνημμενων, tertia conjunctarum: συνημμενων διατονη, conjunctarum extenta: ὑπατη συνημμενων, ultima conjunctarum: παρα μεσην, prope media: τριτη διεζευγμενων, tertia diviſarum: διεζευγμενων διατονη, diviſarum extenta: ὑπατη διεζευγμενων, ultima diviſarum. τριτη ὑπερβολαιων, tertia excellentium: ὑπερβολαιων διατονη, excellentium extenta: ὑπατη ὑπερβολαιων, ultima excellentium. *Wallis*'s Append. ad Ptolem. Harm. p. 156.

We ſhall here inſert the whole *Diagram*, or Greek Scale, with the correſponding letters of our modern notation.



Meſon Tetrachord	Meſe — — —	a
	Lichanos Meſon — —	G
	Parypate Meſon — —	F
	Hypate Meſon — — —	E
Hypaton Tetrachord	Lichanos Hypaton — —	D
	Parypate Hypaton — —	C
	Hypate Hypaton — — —	B♮
	Proſlambanomenos — —	A

It is to be obſerved, that this *Diagram* only repreſents the diatonic genus; and therefore, after the names *Lychanos Hypaton*, and *Lychanos Meſon*, ſome add *Diatonos*, to diſtinguiſh them from the Lichanoi of the Chromatic or harmonic genera. *Wallis*, Append. ad Ptolem. Harm. p. 157. See LICHANUS.

The Tetrachords in this Diagram are conjunct or disjunct. The conjunct have a common note, chord, or ſound. Thus the Hypate Meſon, which is the laſt of the Hypaton Tetrachord, is the firſt of the meſon. The meſe alſo is the laſt chord of the meſon, and the firſt of the ſynemmenon tetrachord. So likewiſe the nete diezeugmenon is the laſt chord of the diezeugmenon, and the firſt of the hyperbolæon tetrachord. The disjunct tetrachords are thoſe which are ſeparated by a tone. Thus the meſon and diezeugmenon tetrachords are ſeparated by the tone between the meſe and parameſe: ſo likewiſe the ſynemmenon and hyperbolæon tetrachords are ſeparated by the tone between the nete ſynemmenon, and the nete diezeugmenon.

Some of the names of the chords in this *Diagram* being placed nearer to each other than the reſt, ſignify that there is only a ſemi-tone between them. Thus, between the hypate hypaton and the parypate hypaton, or between the meſe and the trite ſynemmenon, or between the parameſe and trite diezeugmenon, the interval is no more than a ſemi-tone.

It has been obſerved by Dr. Pepuſch [a], that the antients conſidered a deſcending as well as an aſcending ſcale; the former proceeding from acute to grave preciſely by the ſame intervals, as the latter did from grave to acute, and the ſame names ſerved for both. But the proſlambanomenos, and the reſt of the names correſponded to different notes of our ſcale. An example of one octave will explain the learned Author's meaning.

Aſcending		Deſcending
A — Proſlambanomenos		g
B — Hypate hypaton	— —	f
C — Parypate hypaton	— —	e
D — Lychanos hypaton	— —	d
E — Hypate meſon	— —	c
F — Parypate meſon	— —	b
G — Lychanos meſon	— —	a
a — Meſe	— —	G

The intervals here, both aſcending and deſcending, are the ſame, and in the ſame order, viz. tone, ſemi-tone, tone, tone, ſemi-tone, tone, tone. So that the one ſcale is preciſely the reverſe of the other. This diſtinction of an aſcending and a deſcending ſcale, is ſaid to be conducive to the variety and perfection of melody, though little underſtood by modern compoſers.[b] [[a] Phil. Tranſ. N° 481. p. 369. [b] Phil. Tranſ. ibid.]

The eighteen names of the ſcale of the antients do not ſeem to ſignify ſo many diſtinct ſounds, eſpecially in the diatonic genus, where the paranete ſynemmenon and the trite diezeugmenon, as alſo the nete ſynemmenon and the paranete diezeugmenon, are reputed to coincide. Nor do the eighteen chords ſeem perfectly diſtinct in any of the other genera, except in the enharmonic. *Wallis*'s Append. ad Ptolem. Harm. p. 158. See ENHARMONIC.

DIAION, in the antient writers of medicine, the name of a compoſition made into the form of troches, of which violet flowers were one of the principal ingredients. The compoſition is deſcribed at large by Myrepſuus.

DIAL-*Planes*, plain ſuperficies, upon which the hour lines of dials are drawn. See DIAL, *Cycl.*

DIALITHA, in the writings of the antients, a word uſed to expreſs the elegant ornaments of the Greeks and Romans, compoſed of gold and gemms. They alſo called theſe *Lithocolla*, cemented ſtones or gemms: the gold being, in this caſe, as a cement, to hold the ſtones together. They wore bracelets and other ornamental things about their habits thus made; and their cups and table-furniture for magnificient treats were of this kind. The green ſtones were found to ſucceed beſt of all in theſe things; and the emerald and greeniſh topaz, or, as we call it, chryſolite, were moſt in eſteem for this purpoſe. This uſe of the ſtones explains what Pliny very often ſays of them in his deſcription: *Nihil jucundius aurum decet*; nothing becomes gold better: this, he ſays, of the green topaz or chryſolite; and this, and many other like paſſages, have greatly perplexed the critics who did not hit upon this explication. The Latins called theſe *Dialitha* and *Lithocolla aurum gemmatum*; and thus Martial, where he ſays *miratur ſcythicas virentis auri flammas Jupiter*, alludes to cups of Gold, ornamented with Scythian gemms, that is, emeralds. Some of the Latins have expreſſed theſe cups by the word *Gemmium*; but erroneouſly: for *Gemmium* is properly the name of a roſe or cup, formed out of ſome one ſtone, as an agate, or the like; but the *Gemmatum Pocculum* is not a cup made of a gemm, but beſet with gemms: this therefore is properly the Dialithum of the Greeks.

DIALLACTERII, among the Athenians. See DIÆTETÆ.

DIALLELOS, Διαλληλος, in rhetoric, a figure, wherein the words and meaning of a ſentence are inverted, as *doctis diſertior, diſertis doctior*. *Voſſ.* Rhet. l. 5. p. 405.

DIALLING (*Cycl.*)—The general theory of *Dialling* is eaſily deduced from the principles of the ſphere, and thoſe of perſpective. The moſt ſimple kind of *Dial* is the equinoctial, where the ſhadow is received upon a plane parallel to the circles of the ſun's diurnal motion, or to the equator; and is projected by a ſtile, or right line perpendicular to thoſe planes. As the ſun moves over equal arcs on its parallel in equal times; the motion of the ſhadow in this *Dial* muſt likewiſe be uniform, ſo that the intervals between the hours muſt be equal, which is done by dividing a circle into twenty-four equal parts. The conſtruction of other *Dials* may be deduced from this, by the rules of perſpective. For one *Dial* may be conſidered as the projection of another, on a propoſed plane.

Practical Rules for the conſtruction of *Dials*, are given in the Cyclopædia under *Dial*. Thoſe who deſire farther inſtructions may conſult the authors there mentioned in the article DIALLING.

A horizontal *Dial* being given, others may be deſcribed from it, in the manner ſhewn by s'Graveſande, in his eſſay on perſpective, chap. 9.

DIALOGISM, Διαλογισμος, in rhetoric, is uſed for the ſoliloquy of perſons deliberating with themſelves. We have an inſtance of it in Virgil, where Dido ſays,

En quid agam? rurſuſne procos irriſa priores
Experiar? &c.

In which ſenſe it is diſtinguiſhed from dialogue. *Voſſ.* Rhet. l. 5. p. 355. See DIALOGUE, *Cycl.*

DIALOGISM is alſo taken in a more extenſive ſenſe for diſcourſe in general, whether held by a perſon alone, or in company. *Voſſ.* loc. cit.

DIAMARTYRIA, Διαμαρτυρια, in antiquity, a proteſtation that the deceaſed perſon had left an heir; and made to hinder the relations from entering upon the eſtate. *Pott.* Archæol. Græc. l. 1. c. 24. T. 1. p. 128.

DIAMNES, a word uſed by Johannes Anglicus, and ſome other authors, for an involuntary diſcharge of urine.

DIAMOND (*Cycl.*)—*Specific gravity of* DIAMONDS. Mr. Boyle has given us the obſervation of a perſon much converſant in *Diamonds*, that ſome of thoſe gemms in their rough ſtate were much heavier than others of the ſame bigneſs, eſpecially if they were cloudy or foul; and Mr. Boyle mentions one that weighed 8 grains and $\frac{8}{16}$, which being carefully weigh'd in water, according to the rules of hydroſtatics, proved to an equal bulk of that liquor, as $2\frac{2}{3}$ to 1. So that as far as could be judged by that experiment, a *Diamond* weighs not thrice ſo much as water; and yet in his table of ſpecific gravities, that of a *Diamond* is ſaid to be to water as 3400 to 1000, that is, as $3\frac{1}{3}$ to 1; and therefore, according to theſe two accounts, there ſhould be ſome *Diamonds* whoſe ſpecific gravity differs nearly $\frac{1}{8}$ from that of others. But this is a much greater difference than can be expected in two bodies of the ſame ſpecies, and indeed on an accurate trial does not prove to be the caſe in *Diamonds*. The Braſil *Diamonds* differ a little in weight one from another, and greatly vary from the ſtandard ſet by Mr. Boyle for the ſpecific gravity of this gem in general; two large *Diamonds* of that part of the world being carefully weighed, one was found as 3518, and the other as 3521 to 1000, to an equal bulk of water. Each of theſe therefore greatly exceeded the heavieſt of Mr. Boyle's in ſpecific gravity, and the difference between them was leſs than one thouſandth part. Two ſmaller Brazil *Diamonds* being afterwards weighed, proved not to be quite ſo heavy as theſe, the lighteſt being as 3501, and the heavieſt as 3511 to 1000, in proportion to an equal bulk of water. After this ten Eaſt India *Diamonds* were choſen

ſen out of a large parcel, each as different from the other as could be, in ſhape, colour, and whatever other reſpects might make a change; theſe being weighed in the ſame ſcales and water as the former, the lighteſt proved to be as 3512, and the heavieſt as 3525 to 1000, in proportion to water. The very near agreement of theſe laſt with one another, and with the former two, weighed at a diſtance of time, makes it highly improbable there ſhould be ſo great a difference as that expreſſed in Mr. Boyle's tables, in any *Diamonds* whatever, much leſs ſo great a difference as appears between the lighteſt of his, and the heavieſt of theſe, being above one ſeventh of the whole. It is very certain that there may be ſome difference in theſe trials from the nature and temper of the water uſed in the experiments; ſome waters, as that of pumps or wells, being heavier than rain or diſtilled water, and the heat or coldneſs of the water may alſo make ſome variation: this, however, is much leſs than might be expected; careful experiments having proved, that the ſpecific gravity of any body will not differ above $\frac{1}{200}$ at moſt, on account of the difference of the water in quality and temper taken together; whereas the heavieſt and lighteſt of the *Diamonds* in Mr. Boyle's and theſe experiments differ about one thirty-fifth part, which is about ſix times as much as $\frac{1}{200}$.

Mr. Ellicot, who made theſe experiments, has drawn out a table of their ſeveral differences, which is done with great care and accuracy, and taking in all the common varieties in *Diamonds*, may ſerve as a general rule of their mean gravity and differences.

	In air.	In water.	Specific gravity.
	Grains.	Grains.	
Water — — — — — —			1000
N° 1. A Brazil *Diamond*, fine water, and rough coat —	92,425	66,16	3518
2. Ditto, fine water, rough coat	88,21	63,16	3521
3. Ditto, fine bright coat — —	10,025	7,170	3511
4. Ditto, fine bright coat — —	9,560	6,830	3501
5. An Eaſt-India *Diamond*, pale blue — — —	26,485	18,945	3512
6 Ditto, bright yellow — —	23,33	16,71	3524
7 Ditto, very fine water, bright coat — — —	20,66	14,8	3525
8 Ditto, very bad water, honeycomb coat — — —	20,38	14,59	3519
9 Ditto, very hard, blueiſh caſt	22,5	16,1	3515
10 Ditto, very ſoft, good water	22,615	16,2	3525
11 Ditto, a large red foulneſs in it	25,48	18,23	3514
12 Ditto, ſoft, bad water — —	29,525	21,140	3521
13 Ditto, ſoft, brown coat ——	26,535	18,99	3516
14 Ditto, very deep green coat —	25,25	18,08	3521
The mean ſpecific gravity of the Brazil *Diamonds* appears to be —— —— —— ——			3513
The mean of the Eaſt-India Diamonds —— ——			3519
The mean of both —— —— —			3517

Therefore, if any thing determinate is to be ſaid, as to the ſpecific gravity of the *Diamond* it is, that it is to water as 3517 to 1000. Philoſ. Tranſ. N° 476. p. 472.

Valuation of DIAMONDS—Mr. Jeffries lays down the following rule for the valuation of *Diamonds* of all weights. He firſt ſuppoſes the value of a rough *Diamond* to be ſettled at 2 l. per carrat, at a medium; then to find the value of *Diamonds* of greater weights, multiply the ſquare of their weight by 2, and the product is the value required. E. G. to find the value of a rough *Diamond* of two carrats, $2 \times 2 = 4$, the ſquare of the weight, which multiplied by 2, gives 8 l. the true value of a rough *Diamond* of two carrats. For finding the value of manufactured *Diamonds*, he ſuppoſes half their weight to be loſt in the manufacturing them; and therefore to find their value, we muſt multiply the ſquare of double their weight by 2, which will give their true value in pounds: thus, to find the value of a wrought *Diamond* weighing two carrats; we firſt find the ſquare of double the weight, viz. $4 \times 4 = 16$, then $16 \times 2 = 32$. So that the true value of a manufactured *Diamond* of two carrats is 32 l.

By this rule Mr. Jeffries has conſtructed tables of the price of *Diamonds* from 1 to 100 carrats. *Jeffries* on *Diamonds*, p. 8, 9. & p. 11. ſeq. of his tables.

Rough *Diamonds* are more commonly found of a ſix pointed figure than of any other; and theſe are called *ſix pointed rough* Diamonds, the figure of which is compoſed of two ſquare pyramids, joined at their baſes. Hence the whole figure is compoſed of eight triangular faces, or planes, four of which meet in a point above the baſe, and four below it, in another point.

The diſtance of theſe two points is the axis of the figure.

Dimenſions of a ſquare brilliant DIAMOND.—To make a complete *ſquare Brilliant*, if the rough *Diamond* be not found to be of the figure here deſcribed, it muſt be made ſo. And if the work be perfectly executed, the length of the axis will be equal to the ſide of the ſquare baſe of the pyramid.

Jewelers then form the table and collet, by dividing the block or length of the axis into 18 parts. They take $\frac{1}{18}$ from the upper part, and $\frac{1}{18}$ from the lower. This gives a plane at $\frac{4}{18}$ diſtance from the girdle for the table; and a ſmaller plane at $\frac{8}{18}$ diſtance, for the collet; the breadth of which will be $\frac{1}{2}$ of the breadth of the table. In this ſtate the ſtone is ſaid to be, *a complete ſquare table* Diamond. *Jeffries* on Diamonds, p. 13.

The Brilliant is an improvement on the table *Diamond*, and was introduced within the laſt century, according to Mr. Jeffries.

To render a Brilliant perfect, each corner of the above deſcribed table *Diamond*, muſt be ſhortened by $\frac{1}{25}$ of its diagonal. The corner ribs of the upper ſides muſt be flattened, or run towards the center of the table $\frac{1}{9}$ leſs than the ſides. The lower part which terminates in the girdle, muſt be $\frac{1}{8}$ of one ſide of the girdle; and each corner rib of the under ſides muſt be flattened at the top, to anſwer the above flattening at the girdle, and at bottom muſt be $\frac{1}{4}$ of each ſide of the collet.

The parts of the ſmall work which completes the brilliant, or the ſtar and ſkill facets, are of a triangular figure. Both of theſe partake equally of the depth of the upper ſides from the table to the girdle, and meet in the middle of each ſide of the table and girdle, as alſo at the corners. Thus they produce regular lozenges on the four upper ſides and corners of the ſtone. The triangular facets, on the under ſides, joining to the girdle, muſt be half as deep again as the above facets to anſwer to the collet part.

The ſtone here deſcribed is ſaid to be a *full ſubſtanced Brilliant*. If the ſtone be thicker than in the proportion here mentioned, it is ſaid to be an *over-weighted Brilliant*.

If the thickneſs be leſs than in this due proportion, it is called a *ſpread Brilliant*.

The beauty of *Brilliants* is diminiſhed by their being either over-weighted or ſpread. The true proportion of the axis or depth of the ſtone to its ſide, is as 2 to 3.

Brilliants are diſtinguiſhed into ſquare, round, oval, and drops, from the figure of their reſpective girdles.

Dimenſions of a roſe DIAMOND—In *roſe Diamonds* the depth of the ſtone from the baſe to the point, muſt be half the breadth of the diameter of the baſe of the ſtone. The diameter of the crown muſt be $\frac{3}{5}$ of the diameter of the baſe. The perpendicular from the baſe to the crown muſt be $\frac{3}{4}$ of the depth of the ſtone. The lozenges, which appear in all circular roſe *Diamonds*, will be equally divided, by the ribs that form the crown; and the upper angles, or facets, will terminate in the extreme point of the ſtone, and the lower in the baſe or girdle.

The taſte which now prevails of converting roſe *Diamonds* into *Brilliants*, is condemned by Mr. *Jeffries*; unleſs the roſe *Diamonds* be over-weighted. He thinks, that the diſplay of beauty, in roſe *Diamonds*, is often preferable to that of *Brilliants*. See his treatiſe on *Diamonds*, p. 32, 35.

Mr. Jeffreys's table of the value of *Diamonds* differs conſiderably from that in the Cyclopædia. This not following the rule laid down by him, of the values increaſing in the duplicate proportion of the weights.

Complexions of DIAMONDS—The fineſt *Diamonds* are thoſe of a complexion like that of a drop of the cleareſt rock water: and if ſuch ſtones be of a regular form, and truly made; as alſo free from ſtains, fouls, ſpots, ſpecks, flaws, and croſs veins, they will have the higheſt luſtre of any, and be eſteemed the moſt perfect.

If *Diamonds* be tinctured yellow, blue, green, or red, in a high degree, they are next in eſteem. But if they partake of theſe colours only in a low degree, it greatly ſinks their value. There are other complexions of *Diamonds*, ſuch as the brown, and thoſe of a dark hue; the firſt ſometimes reſemble the browneſt ſugar-candy, and the latter dusky-iron.

The *firſt water* in *Diamonds* means the greateſt purity and perfection of their complexion, which ought to be that of the cleareſt drop of water.

When *Diamonds* fall ſhort of this perfection, they are ſaid to be of the *ſecond* or *third water*, &c. till the ſtone may be properly called a coloured one: for it would be an impropriety to ſpeak of a *Diamond* imperfectly coloured, or having other defects, as a ſtone of a *bad water* only.

Magnitude of DIAMONDS—The moſt remarkable *Diamonds* for ſize now known, are, Governor Pitt's Diamond, purchaſed by the late Duke of Orleans for Louis the XVth King of France, weighing 136 $\frac{3}{4}$ carrats: the *Diamond* of the Great Duke of Tuſcany, which weighs 139 $\frac{1}{2}$ carrats: that of the Great Mogul, weighing 279 $\frac{9}{16}$ carrats: and one, mentioned by Mr. Jeffries, in a merchant's hands, weighing 242 $\frac{5}{16}$ carrats.

According to Mr. Jeffries's Rule, that the value of *Diamonds* is in the duplicate ratio of their weights, and that a manufactured *Diamond* of 1 carrat is worth at a medium 8 l. the Great Mogul's *Diamond* muſt be valued at above 624962 l. this being the value of a *Diamond* of 279 $\frac{1}{2}$ carrats.

Corniſh DIAMONDS, in natural hiſtory, a name given in England to all the ſpecies of cryſtals, which are compoſed of a column, terminated at each end by a pyramid. The name takes in two genera of cryſtal, of each of which there are ſeveral ſpecies. Dr. Hill has determined this to be the true figure of perfect cryſtal, and accounts all thoſe which are affixed by one end to ſome ſolid body, and terminated at the other by a pyramid, to be mutilated or imperfect cryſtals. The ſame author, according to the length or thickneſs of the intermediate column, has divided theſe bodies into two genera, the firſt the macroteloſtyla, the other the brachyteloſtyla. *Hill*'s hiſt. of foſ. p. 160 to 165. See the articles MACROTELOSTYLA and BRACHYTELOSTYLA.

DIAMOND *Powder* is of great uſe for grinding hard ſubſtances. And Mr. Boyle obſerves, that though it be much dearer than emery, yet it makes ſo great diſpatch, and the tools employed laſt ſo much longer, as greatly to over-balance the cheapneſs of the emery. *Boyle*, Phil. Works abr. vol. 1. p. 135.

DIANÆ *Arbor*.—Lewenhoeck, in one of his papers of the Philoſophical Tranſactions, deſcribes a microſcopic kind of *Arbor Dianæ*; which muſt afford the curious in thoſe obſervations, a very pleaſing ſpectacle. Having diſſolved ſome pure ſilver in aqua fortis, and weakened this ſolution, by adding ſome common water to it; after this, putting this diluted ſolution into a glaſs, and dropping into it a few filings of copper, one particle at a time; there will be found on ſome of theſe, extempore ſilver trees; the ſilver leaving the liquor, and affixing itſelf in very ſmall particles to the copper, which, as they grow more and more numerous, link themſelves to one another, and form the ſame ramoſe maſſes that are called the ſilver trees. A ſtem, or main trunk, is, in this caſe firſt form'd, and after this a number of fine and elegant branches growing from it every way, till at laſt there is a whole tree reſembling thoſe low and headed oaks, which are common on heaths and in other barren places. This is ſo ſudden an effect of the putting in the copper, that a few ſeconds are ſufficient to form ſeveral trees. If a few more particles of copper are thrown into this liquor, the whole quantity of ſilver that was held in a ſtate of ſolution in it will be precipitated from it, and fixed in the form of theſe ſmall trees and ſhrubs on the ſeveral pieces of copper. The formation and arrangement of theſe ſmall particles of ſilver into trees, is not more natural in this ſtate of their ſeparation from the particles of a fluid, in which they were ſuſpended, than in their natural concretions within the bowels of the earth, where they fix themſelves to the ſurfaces, and within the cracks and crevices of hard ſtones, in the ſame arboreſcent forms; and the moſt common ſilver ores afford us an infinite number of what may be called natural *Arbores Dianæ*, or trees of native ſilver. On comparing theſe natural ſilver trees in the ores, with thoſe formed upon the particles of copper, from a water in which they were ſuſpended in a ſtate of ſolution, it appears, highly probable, that in the time of the origin of theſe ores, the ſtone which makes the bed, or matrix, in which the rich metal now lies in branches and flakes, was ſoft and fluid; and that, at that time, the particles of ſilver were as cloſely combined among, and as perfectly ſuſpended in its matter as thoſe of the ſolution in this experiment are in the liquor; and that when the matter of the ſtone came to coaleſce, and harden its particles, uniting together, formed hard concretions; from which the fluid was excluded, or driven out, and with it the ſilver ſtill ſuſpended in it: but, as this fluid, ſo much altered, by the ſeparation of the ſtony matter from it, was now no longer equal to the office of holding the ſilver ſuſpended in ſolution, it became juſt like this diluted ſolution of ſilver in the acid, ready to part with, and depoſite it in the form of trees and ſhrubs, on any ſubſtance proper to receive it; and that the ſtony particles, now ſeparated, and coagulated into hard maſſes, were ſuch proper ſubſtances; and did exactly, in this natural precipitation, what the filings of copper do in the artificial one. There is yet the more analogy in this caſe, becauſe, both the ſilver and the copper added afterwards, are ſubſtances ſoluble in the ſame menſtruum that is employed; and ſo it appears evident, that the ſtony matter of the matrix, or bed of the ſilver ore, and the ſilver itſelf were both equally ſoluble in that menſtruum, whatever it was, which before held them both ſuſpended: and that as ſoon as the one of theſe two ſoluble ſubſtances was added to the liquor in its ſolid ſtate, the other was precipitated upon it in this branched form. Philoſ. Tranſ. N° 286. p. 1496. See ARBOR *Dianæ*, *Cycl.*

DIANDRIA, in botany, a claſs of plants, which have hermaphrodite flowers, with two ſtamina or male parts in each.

The word is formed of the Greek Δις twice, and Ανηρ male. Of this claſs of plants are the jeſſamine, phillerea, olive, roſemary, &c. See Tab. 1. of botany, Claſs 1.

DIAPASON (*Cycl.*)—The antients had ſeven variations, ſchemes, figures, or ſpecies of the *Diapaſon*, ariſing from the various poſitions of the tones and ſemi-tones in the ſcale.

The firſt ſpecies of the *Diapaſon* was from the hypate hypaton to the parameſe; or from B♮ to b♮ of our notation. It was called *Myxolydian*.

The ſecond, called *Lydian*, from the parypate hypaton, to the trite diezeugmenon, or from C to c.

The third, called *Phrygian*, from the Lichanos Hypaton to the Paranete Diezeugmenon; or from D to d.

The fourth, called *Dorian*, from the Hypate meſon to the Nete Diezeugmenon; or from E to e.

The fifth, named *Hypolydian*, from the parypate meſon to the trite Hyperbolæon; or from F to f.

The ſixth, called *Hypophrygian*, from the lichanos meſon to the paranate Hyperbolæon; or from G to g.

The ſeventh, named *Hypodorian*, *Common* and *Locrian*, from the meſe to the nete Hyperbolæon, or from the Proſlambanomenos to the meſe, that is, from our a to a a, or from A to a. *Euclid.* Introd. Harm. p. 15, ſeq. *Bacchius*, p. 18. Edit. Meibom. See DIAGRAM.

DIAPASON *Diateſſaron*. The Pythagoreans did not admit this interval as a conſonance or concord; for this reaſon, that its ratio 8 : 3 was neither multiple nor ſuper-particular. But Ptolemy contends for its being a good concord for this reaſon, that the *Diapaſon* added to any concord, produces a concord. Ariſtoxenus herein agrees with him. Vid. *Wallis*'s Append. ad Ptolem. Harm. p. 155.

DIAPERD, in Heraldry, ſee DIAPRE, *Cycl.*

DIAPHRAGM (*Cycl.*)—The *Diaphragm* is looked upon as a double digaſtrick muſcle, made up of two different portions, one large and ſuperior, the other ſmall and inferior; the firſt is called the great muſcle of the *Diaphragm*; the ſecond, the ſmall one.

The great or principal muſcle is fleſhy in its circumference, and tendinous or aponeurotic in the middle. This centre is of conſiderable breadth, and repreſents in ſome degree a treſoil leaf. The fleſhy circumference is radiated, the fibres of which it is compoſed being fixed by one extremity to the edge of the middle aponeuroſis, and by the other to all the baſis of the cavity of the thorax, being inſerted by digitations in the lower parts of the appendix to the ſternum, of the loweſt true ribs, of all the falſe ribs, and in the neighbouring vertebræ. There are therefore twelve coſtal inſertions, two vertebral, and one ſternal. The fibres inſerted in the appendix enſiformis run from behind directly forward, and from a ſmall parallel plane; The firſt coſtal inſertion runs a little obliquely toward the cartilage of the ſeventh true rib; the ſecond is into the whole cartilage of the firſt falſe rib; the third partly in the bone, and partly in the cartilage of the ſecond falſe rib; the fourth in the bone, and ſometimes a little in the cartilage of the third falſe rib; the fifth in the bone, and a little in the cartilage of the fourth falſe rib, being broader than the reſt; the ſixth is in the cartilage of the laſt falſe rib, and almoſt through the whole length of the bone. At the head of this rib it joins the vertebral inſertion, which runs from the lateral part of the laſt vertebra of the back to the firſt vertebra of the loins. The lateral inſertions of the great muſcle of the *Diaphragm* on the right ſide appear to be lower than thoſe on the left, and the right lateral portion appears to be larger than the left, as being more arched. The ſmall muſcle of the *Diaphragm* is thicker than the other, but of much leſs extent; it is ſituated along the foreſide of the bodies of the laſt vertebræ of the back, and ſeveral of thoſe of the loins, being turned a little to the left hand; it is of an oblong form, repreſenting in ſome meaſure a fleſhy collar, the two lateral portions of which croſs each other, and afterwards become tendinous towards the lower part. The upper part of the body of this muſcle is fixed in the ſlope of the middle aponeuroſis of the great muſcle. The outer edges of the alæ, or lateral portions, join the poſterior plane of the great muſcle, and adhere to the body of the laſt vertebræ of the back. The extremities, called alſo pillars or crura, are inſerted by ſeveral tendinous digitations in the vertebræ of the loins; the upper part of the fleſhy body is formed by a particular intertexture of fibres belonging to the alæ; the fibres that come from the left, croſs over thoſe from the right; and this again ſends a ſmall faſciculus of fibres over thoſe of the left. The right croſs is larger and longer, the left ſmaller and ſhorter. An oval opening in this muſcle gives paſſage to the œſophagus, and the aorta lies in the interſtice between the two crura. There are in all three openings in the *Diaphragm*, one round and tendinous for the paſſage of the vena cava; one oval and fleſhy for the extremity of the œſophagus; and one forked, partly fleſhy and partly tendinous, for the aorta. *Winſlow*'s anatomy, p. 226.

The *Diaphragm* is the chief organ of reſpiration. Dr. Martin thinks the enlargement of the cavity of the breaſt in inſpiration more owing to the depreſſion of the *Diaphragm*, than to any remarkable change in the poſture of the ſternum and ribs. See RESPIRATION.

Mr. Senac has given us a new deſcription of the ſtructure of the *Diaphragm*, with remarks on the action of this muſcle. See Mem. Acad. Scienc. 1729.

DIAPORESIS, Διαπορησις, in rhetoric, is uſed to expreſs the heſitation or uncertainty of the ſpeaker.

We have an example in Homer, where Ulyſſes going to relate his ſufferings to Alcinous, begins thus:

Τί πρῶτον, τί δ' ἔπειτα, τί δ' ὑστάτιον κατάλεξω?
Quid primum, quid deinde, quid poſtremo aloquar?

This

This figure is moſt naturally placed in the exordium or introduction to a diſcourſe. *Voſſ.* Rhet. l. 5. p. 384. See DOUBTING, *Cycl.*

DIARRHOEA (*Cycl.*)—The *Diarrhœa*, looſeneſs or purging of the bowels, as it is uſually called by us, is properly an increas'd periſtaltick motion of the guts, by means of which nature attempts to throw off a mucous or bilious matter lodged in too great a quantity in the primæ viæ, and diſturbing her regular operations.

Phyſicians diſtinguiſh *Diarrhœas* into ſeveral kinds: 1. The ſimple *Diarrhœa*. This is when a ſerous and mucous matter is voided by ſtool. 2. The choleric *Diarrhœa*, in which a bilious foulneſs is thrown off. 3. The Lienteric *Diarrhœa*, in which caſe the food is thrown off ſo ſpeedily, that it appears in its natural ſtate, and to have ſuffered no concoction. 4. The cœliac *Diarrhœa*; in this the excrements are a little different from the food when taken in, and are of a chylous appearance. 5. The dyſenterick and hepatic *Diarrhœa*, ſee DYSENTERY and HEPATIC flux. 6. The critical *Diarrhœa*, which happens in fevers on the day of the criſis. This uſually is the caſe in quotidians of the continual kind, and ſometimes in tertians in the time of the fit. 7. The ſemicritic. Theſe are *Diarrhœas* which appear at irregular times in catarrhal and petechial fevers. 8. The ſymptomatic *Diarrhœas*. Theſe appear in the ſmall-pox, meaſles, and purple fever. 9. The icteric *Diarrhœa*. In this the ſtools are whitiſh as in the jaundice. 10. The periodic *Diarrhœas*. Theſe are ſuch as return upon the patient at certain regular times of the year, particularly at the ſpring and autumn. And finally, 11. The colliquative *Diarrhœa*. This is that kind that appears toward the laſt ſtage of hectics and conſumptions, and uſually carries off the patient. *Junker*'s Conſp. Med. p. 551.

Signs of a DIARRHOEA.—The ſigns which precede a *Diarrhœa* of any kind are uſually a tenſive pain and rumbling, and noiſe in the abdomen, and pungent acute pains, particularly about the region of the navel. The appetite is uſually very bad in the beginning of a *Diarrhœa*, and in its future ſtages the ſtrength fails; and the longer it continues, the worſe ſymptoms it brings on: a teneſmus is one common complaint, and the head is weaken'd and aches at times; and, finally, an internal heat is felt, which is a very bad ſymptom, and threatens miſchiefs of various kinds.

Perſons moſt ſubject to DIARRHOEAS.—The ſimple *Diarrhœa*, in which a mucous and ſerous matter is voided, is principally a diſeaſe incident to people of phlegmatic habits, whoſe ſtools are generally watery. When this kind of *Diarrhœa* obſerves any regular period, it is a ſign of a ſanguine temperament in the perſon. The bilious *Diarrhœas* are moſt frequent with perſons of choleric habits; and the critical *Diarrhœas* in fevers uſually happen to perſons of a ſanguine one. Men of tender and delicate conſtitutions, if they walk about a room when hot with their feet naked, are uſually affected afterwards with a ſimple *Diarrhœa*.

Cauſes of DIARRHOEAS.—Among the principal Cauſes of *Diarrhœas* may be reckoned the ſudden repreſſion of ſweats in a morning while the perſon is in bed.

Crude foods, and ſuch as are difficult of digeſtion, often throw people into *Diarrhœas*, as alſo over fat meats, eſpecially if perſons drink much after them; and nothing ſo frequently as the free eating of ſummer fruits, eſpecially if the perſon chance to ſwallow a quantity of any thing liquid ſoon after them.

Feculent or fermenting liquors will alſo do it, and ſometimes the drinking cold liquors in a large quantity, or even the external cold; but in this caſe the tender habit of the patient is as much to be accuſed as any thing.

The cauſe of a lienteric *Diarrhœa* is principally the cicatrizing of the bowels after their eroſion in a dyſentery, in which the lacteal veſſels have been alſo injured. The cœliac *Diarrhœa* is uſually laid upon a fault in the ſtomach; but it is as often owing to an obſtruction of the lacteal veſſels, as to a weakneſs of that organ. The choleric *Diarrhœa* is uſually occaſioned by an effuſion of a larger portion than uſual of bile into the inteſtines, and this is often occaſioned by a violent fit of paſſion in the perſon. *Junker*'s Conſp. Med p. 553.

Prognoſtics in DIARRHOEAS.—All *Diarrhœas* are diſeaſes of the greateſt conſequence when improperly treated, or raſhly and ſuddenly ſtopped by opiates and aſtringents. On the contrary, the whole courſe of a ſimple *Diarrhœa*, if nature be left to herſelf, is attended with no danger. When the moſt ſimple and, in itſelf, innocent *Diarrhœa* is treated in that manner, the conſequences are violent and pungent pains in the abdomen; and, in old people eſpecially, a tranſlation of the matter, which nature would have carried off by that ſoft way, to the head and breaſt; whence vertigos and ſuffocative catarrhs are often brought on, and the perſons die ſuddenly, and as it is ſuppoſed of apoplexies. The danger of ſtopping a bilious *Diarrhœa* is ſtill greater, for the frequent conſequence of this is a cauſus, or other violent fever of that kind; but the greateſt danger of all attends the ſtopping of a critical *Diarrhœa*. The ſymptomatick *Diarrhœas* in the ſmall-pox, meaſles, and purple fevers are often of fatal conſequence. Periodic *Diarrhœas*, if nature be left to herſelf, are always ſalutary. The ſimple lienteric and cœliac *Diarrhœas* uſually give way eaſily to medicines, and the choleric are of no dangerous conſequence, unleſs they are attended with a fever. Finally, it is to be obſerved, that any *Diarrhœa* continuing an immoderate time will by degrees waſte the ſtrength, and throw the patient into a ſlow fever and an atrophy.

Method of curing DIARRHOEAS.—In a ſimple *Diarrhœa* the firſt intention is to incide and attenuate the mucous matter, and then to abſterge it by digeſtive, reſolvent, and colliquating medicines; ſuch are the bitters and aromaticks, with ſome of the acrid ones, as the roots of gentian, arum and zedoary, together with ginger, galingals, and the aromatic ſeeds. Theſe may be aſſiſted by the digeſtive ſalts, as cream of tartar, arcanum duplicatum, and vitriolated tartar, with the fixed ſalts of wormwood, and the like. To theſe may be added occaſionally the digeſtive and attenuating gums, as ammoniacum, and the like; and in ſome caſes it is proper to reduce the vicious matter into a ſort of pulpy conſiſtence. This is to be done by the abſorbents, as crabs-eyes, and the like. When there is a quantity of a bilious matter mixed with this, the admixture of ſmall doſes of nitre with the other medicines is of great effect; and when the peccant matter is by this means prepared for evacuation, nature is to be aſſiſted in her attempt to throw it off by this proper paſſage by ſmall doſes of gently laxative medicines, ſuch as rhubarb, and the like. After this, if the motion of the bowels do not abate and come to its uſual ſtandard on their being thus eaſed of their load, theſe ſymptoms are to be taken off by gentle aſtringents. For though theſe motions were no way to be impeded, when nature meant them for the throwing off what offended her, and were ſalutary in that ſtate; yet when they remain after the end is obtained, they are to be conſider'd as a diſeaſe. The medicines proper on this occaſion are dried quinces, the abſorbent powders, ſuch as red coral, and the like, gentle opiates, and the aſtringent ſyrups of cinnamon, and the like; and finally, the cure is to be compleated by reſtoring the bowels to their due tone by gentle chalybeates.

The lienterick and cœliac *Diarrhœas* require the ſame method of treatment with theſe, except that in the lienterick a vomit in the beginning is uſually very proper: but in the cœliac, when there is an obſtruction of the lacteal veſſels, a vomit has no uſe; but the reſolvents, aperients, and laxatives alone are to be depended upon.

Periodic *Diarrhœas* are to be treated in this manner like the ſimple ones, and nature is to be aſſiſted, not checked, in her operations in them. In theſe caſes a medicated wine prepared with rhubarb, gentian, zedoary, and black hellebore, is a very valuable medicine. When worms are ſuſpected to be in the caſe, as they very frequently are, the uſual anthelminthics are to be joined to the medicines before directed.

The critical and ſemicritical, as well as ſymptomatic *Diarrhœas* in fevers, are to be treated as directed under the fevers to which they belong; and the icteric *Diarrhœa*, in which the ſtools are white as in the jaundice, is to be treated as the jaundice. *Junker*'s Conſp. Med. p. 557. See the articles WORMS, FEVER, *&c.*

DIARRHOEA *of Infants*, ſee INFANT.

DIARTHROSIS (*Cycl.*)—In the *Diarthroſis*, or moveable articulations of the bones, the pieces are really ſeparated, and the parts in which they touch are each of them covered by a ſmooth cartilage, by means of which they eaſily ſlide over one another; whereas in the ſynarthroſis, or immoveable articulation, the pieces are joined together in ſuch a manner, that the parts in which they touch have nothing particular in their ſurface, and cannot ſlide upon one another.

The *Diarthroſis* is either manifeſt with large motion, or obſcure with ſmall motion. Each of theſe is alſo again of two kinds, one indeterminate, with motion many different ways, as that of the os humeri upon the ſcapula of the os fremoris on the os innominatum. The other alternative, or with motion, confined to the two oppoſite ſides only, as that of the ulna on the os humeri, and that of the two laſt phalanges on the firſt and ſecond. A bone is ſaid to be moveable many different ways, when it can be turned upwards and downwards, forwards and backwards, to the right and to the left, or quite round. The motion quite round is made either on a pivot, that is, about an axis, or in manner of a ſling, when the bone deſcribes a ſort of cone, or the figure of a funnel, one end of it moving in a very ſmall ſpace, the other in a large circle. The firſt of theſe round motions is termed rotation by anatomiſts; the other is only the reſult of a combination of ſeveral different motions upwards, downwards, *&c.* and it is to be remarked, that rotation is not to be met with in all the articulations for motion many different ways; as the articulation of the firſt phalanges with the metacarpal bones, *&c.* does not admit of it.

Moreover, this indeterminate *Diarthroſis* is of two kinds, the one orbicular or globular; the other flat, or planiform. The orbicular *Diarthroſis* is when the round end of one bone moves in the cavity of another more or leſs proportionable to it. As the head of the os ſemoris in the acetabulum of os innominatum,

tum, or when the cavity in one bone moves upon an eminence in another, as the baſes of the firſt phalanges on the heads of the metacarpal bones. The planiform *Diarthroſis* is when the articulated bones ſlip upon one another, much in the ſame manner as when we rub the palm of one hand upon the palm of the other. This articulation is found in the bones of the carpus and tarſus, and in the oblique proceſſes of the vertebræ. The antients called the firſt of theſe two kinds of articulation enarthroſis, the other arthrodia; and ſome modern French writers ſeem to comprehend both under the word genou, a term borrowed from workmen, who probably firſt ignorantly took it from the human body to apply it to their inſtruments. This term indeed, as they uſe and explain it, agrees well enough with all the degrees of the orbicular *Diarthroſis*; but there are undoubtedly many articulations of the other kind ſo very flat, that a skilful workman would not apply the term genou to ſuch.

The alternative or reciprocal *Diarthroſis* bears ſome reſemblance to a hinge, and for that reaſon the antient Greeks called it ginglymus. This has been divided into ſeveral kinds, but properly ſpeaking there are only two. The firſt is that which is confined to flexion and extenſion, and as in one of theſe motions, the two bones always make an angle, it may be not improperly termed the angular ginglymus: this is exactly the ſame with the motion of a hinge. The ſecond kind is adapted only to ſmall turns toward each ſide, or to ſmall lateral rotations, in the language of anatomiſts: this therefore may be termed a lateral ginglymus. In each kind ſeveral differences are to be taken notice of. In the angular ginglymus, either each bone partly receives, and partly is received by the other, there being reciprocal eminences and cavities in each, as in the articulation of the os humeri with the ulna. Or there are only a number of eminences in one bone received into a like number of cavities in the other, as in the articulation of the os femoris with the tibia. The lateral ginglymus is either ſingle, as in the articulation of the firſt vertebra of the neck with the apophyſis dentiformis of the ſecond; or double, that is, in two different parts of the bone, as in the articulation of the ulna with the radius. It muſt in general be obſerved concerning theſe kinds of articulations, that ſome of them are more perfect and cloſe than others, and that they are not all confined to flexion and extenſion, or to the reciprocal turns already explained.

The obſcure *Diarthroſis*, or that which admits only of ſmall motions, is alſo of different kinds, examples of which are found in the articulations of the bones of the carpus and metacarpus, and of the fibula with the tibia. This articulation has by ſome been called doubtful or neutral, and by others amphiarthroſis, while others have reduced it to a ſynarthroſis. The firſt of theſe names might paſs, but the reſt are improper. *Winſlow*'s Anatomy, p. 152.

DIASCHISM, *Diaſchiſma*, in muſic, the difference between the comma and enharmonic dieſis. This is expreſſed by the ratio $\frac{2048}{2025}$, for $\frac{128}{125} : \frac{81}{80} = \frac{2048}{2025}$. Mr. Euler [a] has taken this term in the ſenſe here mentioned. Others call it the leſſer comma [b]. The octave contains 61 *Diaſchiſms* nearly. [[a] Tentam. Nov. Theor. Muſic. p. 107 and 112. [b] Ibid. p. 107.] See COMMA, *Cycl.*

DIASIA, Διασια, in antiquity, a feſtival at Athens in honour of Jupiter, ſurnamed Μειλιχιος, i. e. the *Propitious*. *Pott.* Archæol. l. 2. c. 20.

DIASTASIS, a word uſed by the writers in medicine in many different ſenſes. It is frequently uſed as a name for that ſeparation of the bones, when they naturally recede from one another. Sometimes it is uſed as the term for an interſtice, as that between the ulna and radius, or between the tibia and fibula. Sometimes it is put for a diſtenſion of the muſcles in convulſions; and, when applied to the ſtomach, it is made to ſignify an inclination to vomit.

DIASTEM, Διαστημα, in the antient muſic, was the difference of tenſions [a]. It anſwers to what we call an interval.

Ariſtoxenus [b] enumerates many differences of intervals: ſuch as greater, or leſs; conſonant, or diſſonant; compounded, or uncompounded; related to one genus, or to another; laſtly, rational or irrational. [[a] *Ariſtox.* ap. *Wallis.* Append. ad Ptolem. Harmon. p. 154. [b] Id. ibid. p. 16. Edit. *Meibom. Wallis*, ibid.]

DIASTOLE (*Cycl.*)—Authors, who have treated of the heart, have all contented themſelves with accounting for its ſyſtole on rational principles, and have been ſatisfied with referring its *Diaſtole* to no other principle than a motion of reſtitution. But Dr. Drake has thought more deeply on this ſubject, and has found that reſpiration has an effect upon the heart in this ſenſe which had not been underſtood before. The ſyſtole being the proper motion of the heart, a ſtate of contraction by means of that ſyſtole muſt needs be its natural ſtate, and conſequently no motion of reſtitution natural, and without external violence it could have no *Diaſtole* at all.

This will appear more plain, if we conſider the circumſtances of the heart, and its motion as a muſcle, with reſpect to other muſcles. That contraction is the proper action and natural ſtate of all muſcles, is evident from experience as well as from reaſon: for, if any muſcle be freed from the power of its antagoniſt, it is immediately contracted; and is not by any action of the will or ſpirits, to be reduced to a ſtate of dilatation: thus, if the muſculi flexores of any joint be divided, the extenſores of that joint, the oppoſite muſcles to the flexores, being freed from the contrary action of their antagoniſts, will exert themſelves; the joint will be extended without the conſent of the will, and it will continue in that poſture: and, on the other hand, if the extenſors are divided, the contractors will of themſelves exert their force, and the limb will be contracted without the conſent of the will, and it will continue in this poſture. It is very evident from all this, that the muſcles of the human body have no reſtitutionary power of their own, but that all power of this kind in them is derived from the action of their antagoniſts by which they are balanced: thus likewiſe the ſphincters of the gula, anus, and veſica, having no proper antagoniſts, are always in a ſtate of contraction, and ſuffer nothing to paſs through them, but what is forced on by the action of other ſtronger muſcles; which, though not properly antagoniſts to theſe, yet, on all neceſſary occaſions, perform the office of ſuch.

That the heart is a muſcle furniſhed and provided for motion, like other muſcles, has been demonſtrated, beyond all contradiction, long ago, by Lower, and many others, who have written of it, and it is a ſolitary muſcle: it has no antagoniſt, and is not under the direction of the will: as it performs alſo no voluntary motion, it in all things approaches more to the nature of the ſphincter muſcles, than to any kind beſide; but, in its conſtant actions of contraction and dilatation, it differs exceedingly from all the muſcles of the body. This reciprocal motion of the heart has given the learned abundance of trouble, who finding nothing peculiar in the ſtructure which ſhould occaſion it, nor any antagoniſt whoſe relation ſhould produce it, have been extremely perplexed to find out the cauſe of it. Lower having proved the heart a muſcle, and eſtabliſhed the manner of its muſcular motion, takes notice of no farther aſſiſtance that it receives for the performing this, than what it has from the brain, by means of the eighth pair of nerves. Borelli, in his *Animal Oeconomy*, computes the motive power of the heart, to be equal to, at leaſt, that of a weight of three thouſand pounds. The obſtacles to the motion of the blood, through the arteries, he eſteems equivalent to one hundred and eighty thouſand pounds, which is ſix times as much as he rates the force of the heart at; then deducting forty five thouſand pounds, for the adventitious help of the muſcular elaſtic coat of the arteries, he leaves the heart, with the full force of three thouſand pounds to overcome the reſiſtance of a hundred and thirty-five thouſand pounds; that is, with one, to remove forty-five. This ſtupendous effect, he ſatisfies himſelf with aſcribing to the energy of percuſſion; but, had he proceeded, in his calculation, to the veins; which, he allows to contain conſtantly a quantity of blood, quadruple to the contents of the arteries, and to which this energy of percuſſion does not either reach at all, or but very languidly; he might probably have ſeen a neceſſity of ſome other expedient, to remove ſo inſuperable a difficulty.

But not to inſiſt regularly on the exactneſs of this computation, we may allow a much greater deduction than would be juſtifiable, without leſſening the difficulty. Dr. Lower, notſtanding the care and ſagacity with which he examined this ſubject, ſeems to have overlooked ſomething of very great moment, in the explication of the action of the heart; for, though it ſhould be granted, that the muſcular fibres of the heart, acted by the nerves, are the immediate inſtruments of its ſyſtole or contraction, yet it muſt not be denied that the intercoſtal muſcles and diaphragm are of great ſervice, to aid and facilitate this contraction, by opening a paſſage for the blood through the lungs, which denied, would be an invincible obſtacle: neither do the lungs promote the motions of the heart in that way only, but the manner in which they aſſiſt the heart in its contraction, will appear manifeſtly, if we conſider the different poſture, ſituation, and capacity of the blood veſſels of the lungs, in the ſeveral times of elevation and depreſſion of the coſtæ.

The pulmonary artery ariſes from the right ventricle of the heart, and runs in one trunk, till it comes to the aſpera arteria, where it is divided, and ſends a branch along with each diviſion of the aſpera arteria; according to all the minuteſt ſubdiviſions of which, it is alſo ſubdivided, accompanying all the bronchi in their paſſage through the lungs.

The pulmonary vein, which empties itſelf into the left ventricle of the heart, ſpreads itſelf on the aſpera arteria and bronchi, and continues its progreſs in the ſame manner, in which the artery does. The neceſſary conſequence of this diſpoſition is, that this artery and vein, being co-extended with, and faſtened to the bronchi, muſt needs ſuffer ſuch alteration of ſuperficial dimenſions, as the bronchi do in the elevation and depreſſion of the coſtæ; while the ribs are in a ſtate of depreſſion, whether before commerce with the external air, or after the annular cartilages of the bronchi, ſink into one another, and by that means their dimenſions are exceedingly contracted; in conformity to this condition of the bronchi, the pulmonary artery and vein muſt likewiſe either

by

by means of their muſcular coats, contract themſelves to the ſame dimenſions, or lie in folds or corrugations, which is much leſs probable.

On the other hand, when the ribs are elevated, and the diaphragm bears downward, the air ruſhing into the lungs, ſhoots out the cartilaginous rings, and divaricates the branches of the tracheæ, and by them extends and divaricates the ſeveral diviſions of the pulmonary artery and veins, and thereby lengthens and enlarges their cavities. This enlargement of their cavities is very conſiderable, not only upon the ſcore of the addition, which they receive in length thereby, but alſo on account of their divarication; for whereas, when the ribs are depreſſed, and the lungs ſubſide, the blood veſſels are not only contracted, but their branches, which are exceeding numerous approach one another, and lie in juxta poſition, by which their cavities are very much compreſſed and ſtreightned: when the ribs are elevated and the lungs turgid with air, not only the fibres, by which their coats in the oppoſite ſtate were contracted, are extended; but thoſe innumerable veſſels, which lying before in lines almoſt contiguous to one another, compreſſed each other, making an acute angle at their junctures, are divaricated and ſeparated from each other, and make an obtuſe one, whereby their channels are widened.

Thus a paſſage is opened for the blood from the right ventricle of the heart to the left, through the lungs, to which it could not otherwiſe paſs; and the oppoſition, which the blood contained in that ventricle muſt otherwiſe have had made to its conſtriction is taken off, and the ſyſtole thereby facilitated; nor is this all, for the diaſtole being cauſed, as is certainly and demonſtrably the caſe, by the force of the blood ruſhing into the ventricles; this ampliation and extenſion of the pulmonary artery is a ſort of check or counterpoiſe to it, and prevents an endeavour towards two contrary actions at once, which would neceſſarily fruſtrate both: for the heart being a ſpringy and compreſſible body, whoſe proper action, which is contraction, depends upon the influx of certain fluids into its fibres and ſubſtance; and containing beſide a fluid in its ventricles, or great cavities, in one of which is the mouth of this artery, the action of this veſſel muſt in a great meaſure reſemble that of a ſyringe, whoſe extremity is immerſed in water. The enlargement or expanſion of the channels of the artery, anſwering the drawing of the embolus, as the conſtrictive motion of the muſcle of the heart, does the preſſure of the atmoſphere on the ſurface of the water; the one making way for the fluid, and the other forcing it, to flow where the reſiſtance is leaſt. In this ſenſe we may allow a ſort of attraction to the pulmonary artery, depending wholly upon the action of the intercoſtal muſcles, and diaphragm, which we muſt therefore confeſs to be very ſerviceable and inſtrumental in promoting the ſyſtole of the heart. Phil. Tranſ. N° 281. p. 1222.

DIATONIC (*Cycl.*)—The *Diatonic* genus was by the antients divided into two ſpecies: the *molle*, and the *intenſum*. The laſt is in daily practice. It is commonly ſaid to conſiſt of two tones and a ſemi-tone: but, to ſpeak exactly, it conſiſts of a ſemi-tone major, a tone minor, and a tone major. Phil. Tranſ. N° 481. p. 212.

We find it accurately defined by Didymus, in Ptolemy's harmonics publiſhed by Dr. Wallis. Vid. Wallis Oper. vol. 3. p. 92. The numbers by which Didymus expreſſes its intervals, are, $\frac{9}{8} \times \frac{10}{9} \times \frac{16}{15} = \frac{4}{3}$. Ptolemy, indeed, makes the *Diatonicum* intenſum, to be expreſſed by $\frac{10}{9} \times \frac{9}{8} \times \frac{16}{15} = \frac{4}{3}$; but, it is plain, this is only tranſpoſing the tones major and minor, which makes no eſſential difference, nor is it ſufficient to conſtitute a new ſpecies. But the firſt of the before-mentioned ſpecies, the *Diatonicum molle*, has not, till lately, been accurately defined by any author. Its component intervals, according to Dr. Pepuſch, are, the ſemi-tone major, an interval compoſed of two ſemitones minor, and the complement of theſe two to the fourth; which complement is equal to a tone major, and an enharmonic Dieſis. Phil. Tranſ. N° 481. p. 271, 272.

Beſides, the two ſpecies of the *Diatonic* mentioned by Ariſtoxenus and Euclid; Ptolemy, and other antient muſicians, have left us ſeveral different *Diaontic* diviſions of the tetrachord; ſuch are the *Dianotic* of Archytas, of Eratoſthenes, and of Didymus, which laſt agrees perfectly with the truth of muſical proportions. Ptolemy himſelf gives us no leſs than five different *Diatonics*, by the names of *molle*, *tonicum*, *ditonicum*, *intenſum*, *æquabile*. Phil. Tranſ. N° 481. p. 271. See GENUS.

But, except one (the *intenſum*) they are all inconſiſtent with the true theory of muſic; which admits of no numbers, or proportions, but 2, 3, and 5, and ſuch as ariſe from theſe primes. Indeed Ptolemy's tetrachords are ſo miſ-tuned, that Salinas has charged him with having had no ear. Vid. Phil. Tranſ. ibid. p. 267.

DIATONUM, Διατονον, in the the antient muſic, is uſed for the Diatonic genus. See DIATONIC.

DIATRÆTA, a word uſed by Pliny, and other of the antient Romans, to expreſs a ſort of cups and vaſes, which were of great value, and only ſeen at the tables of the great. They were pellucid and colourleſs, and cut into various forms, and were often engraved upon with figures expreſſive of the deeds of honour of the family who poſſeſſed them. The firſt *Diatretæ* were made of pure cryſtal of the rock, and the working of theſe rendered them very expenſive; but afterwards they were made of common white glaſs, and ſunk greatly in their price and value. The antients were very nice in their diſtinctions of the ſeveral kinds of cryſtal. They termed the pureſt and fineſt of all *acentatum*, and the others, which were ſubject to blemiſhes and foulneſſes of ſeveral kinds, they called by names expreſſive of them. There was nothing they ſo much feared in the pieces they ſelected for this work, as what they called an over hardneſs, that is, a brittleneſs, which made the veſſel often fly under the engraver's tool, after it had been formed into ſhape at a great expence: for this reaſon they were cautious of uſing the very brighteſt and cleareſt maſſes; for they often found thoſe ſucceed beſt, which had ſome of thoſe flaws which we call hairs in them. Theſe they thought the tougheſt pieces of cryſtal, and theſe flaws they eaſily concealed among the ſtrokes of their work. See the articles SAL and NUBES.

DIATYPOSIS, Διατυπωσις, in rhetoric, the lively deſcription of a thing, ſetting it, as it were, before the eyes of the audience. Thus Cicero, VII. in Verr. *Ipſe inflammatus ſcelere & furore, in forum venit; ardebant oculi; toto ex ore crudelitas eminebat, &c.*

DIAULION, in antiquity, a deſignation given to a performance on the antient ſtage with the flute alone.

DIAULODROMI, Διαυλοδρομοι, in antiquity, thoſe racers who turned round the meta, or goal, and finiſhed their courſe at the carcer, or place of ſtarting. The *Diaulodromi* always took a ſhort breathing or reſt, when they arrived at the meta, before they ſet out again for the carcer. *Pitiſc.* Lex. Ant. in voc. See CARCER.

DIAULOS, in antiquity, the name of a particular kind of race, wherein the racers always returned to the place from whence they ſtarted, and were called *Diaulodromi*. *Pitiſc.* Lex. Ant. in voc. See DIAULODROMI.

DIAULOS is alſo uſed to ſignify a diſtance of two ſtadia. Id. ibid.

DICE *Marle*, in husbandry. See the article MARLE.

DICERATON, in the writers of medicine, a name given to a collyrium mentioned by Celſus, and thus named from κερας, a horn, burnt hartſhorn being a principal ingredient in it.

DICHORÆUS, in poetry, the foot of a Latin verſe conſiſting of four ſyllables; of which the firſt is long, the next ſhort, the third long, and the laſt ſhort. It is a double *Choræus*, as *cōmprĕbārĕ*.

DICHOTOPHYLLUM, in botany, the name by which Dillenius, and ſeveral others, call the hydroceratophyllum of Vaillant; and ſome other writers, a genus of plants charactered by Linnæus in his genera plantarum under the name of *Ceratophyllon*. *Dillen.* Gen. 3. See CERATOPHYLLON.

DICKER, or DICRE, *Dicra*, in our old writers, a quantity of leather conſiſting of ten hides. *Blount.*

Some derive the word from the Greek δεκα, ten.

We find the word *Dicra* applied to other things beſides leather; thus, *Civitas Glouceſtriæ reddebat* XXXVI Dicras *ferri*, which is interpreted 36 *Dickers* of iron, ten bars to the *Dicre*. *Gale*'s Hiſt. Brit. 766. ap. *Blount.*

DICROTUS, in natural hiſtory, a word uſed by the antients to expreſs the deer or ſtag when in its third year's growth. It was called *Nebus* by the antient Greeks in the firſt year, *Puttolea* in the ſecond, *Dicrota* in the third and in the fourth, and all its life afterwards *Ceraſtes*.

DICROTUS, in the medicinal writings of the antients, the epithet given to a peculiar ſort of pulſe, which Dr. Nihill calls very properly in Engliſh the rebounding pulſe. In this kind of pulſe the artery beats as it were double; and it is eſteemed a certain ſign of a future critical hæmorrhage by the noſe. When the rebounding pulſe is perceived at about every thirtieth pulſation, the hæmorrhage uſually follows in about four days after; when it recurs at every ſixteenth pulſation, the hæmorrhage generally follows in three days; when every eighth pulſation, it is to be expected in two days and a half; and, finally, when it recurs at every fourth, third, or ſecond pulſation, or is continual in every one, the hæmorrage is to be expected within four and twenty hours. Sometimes nature runs regularly through all the before-mentioned progreſſions of this critical pulſe from its firſt appearance at every thirtieth ſtroke, to the ſingle pulſation; and in this caſe the hæmorrhage is ſeen gradually approaching, and happens regularly as expected: but ſometimes ſhe haſtens or delays it; and then the pulſe ſhifting in its indications, it cannot be judged of with any certainty; when the artery rebounds upon the finger with great celerity, and very briskly follows the firſt ſtroke, the hæmorrhage is juſt at hand, and will appear on the patient's blowing his noſe.

The quantity of the hæmorrhage may be gueſſed from the ſtrength of the rebound in the pulſe, and as the blood diſcharges itſelf, this ſymptom in the pulſe gradually goes off; and if after the hæmorrhage it ſhould be perceived again, it is a ſign of another criſis of the ſame kind. Finally, when the rebounding of the artery is more evident in one

wriſt than in the other, the blood uſually flows in the greateſt violence from that ſide of the noſe, or that noſtril which is on the ſame ſide with the hand in the artery of which the rebounding has been moſt violent.

DICTORES, in our old writers, is uſed for an arbitrator. *Blount*.

DICTUM, in our old writers, is uſed for an arbitrament or award. *Blount*, in *Dictores*.

DICTUM *de Kenelworth*, an edict or award between king Henry the IIId, and thoſe barons who had been in arms againſt him. It was ſo called becauſe made at Kenelworth caſtle in Warwickſhire, anno 51. Hen. 3. It contained a compoſition of five years rent for the Lands of thoſe who had forfeited them in that rebellion. Id. ibid.

DIDAPPER, a common Engliſh name for the ſmall ſpecies of colymbus or diver, very common in our rivers, and more commonly called the *Dob-chick*. See DOB-CHICK.

DIDAR, among the Arabian authors, the name of the elm. *Ger*. Emac. Ind. 2.

DIDELPHIS, the name by which Linnæus calls the animal called philander by other writers. This creature, in that author's ſyſtem of zoology, is alſo a diſtinct genus of animals, the character of which is their having eight paps placed between the duplicature of the abdomen. *Linnæi* ſyſtema naturæ, p. 36.

DIDYNAMIA, in botany, a claſs of plants, whoſe flowers have two of their male parts or ſtamina of greater efficacy in the action of impregnation of the ſeeds than the others: they are known by the two efficacious ſtamina being always much longer than the others.

The word is formed of the Greek Δις, twice, and Δυναμις, power or efficacy. Of this claſs of plants are thyme, lavender, baſil, &c.

This claſs comprehends the plants called by Rivinus *monopetali irregulares*, or plants with flowers of an irregular ſhape, but formed of one leaf; and the plants with labiated or perſonated flowers, according to Tournefort. There are certain general characters which are found in all of this claſs. The perianthium is one leaved, erect, and tubular; it is divided at the end into five ſegments, which are uſually unequal in ſize, and it remains after the flower is fallen. The flower conſiſts of one petal, and ſtands erect: its baſe always contains honey, and ſerves in the place of the nectaria of other flowers. The verge or limb of the flower is uſually ringent or gaping, the upper lip is ſtrait, and the under one broader than the upper, and divided into three ſegments, of which the middle one is the largeſt. The ſtamina are four filaments of a ſubulated ſhape; they are fixed to the tube of the flower, and placed near its back. Two of theſe are uſually longer than the other four. Theſe ſtand near one another, and are placed in the middle: they are all placed in a parallel direction, and rarely exceed the length of the flower. The antheræ are uſually laid under the upper lip of the flowers, and are placed in pairs, joining together near their tops. The germen of the piſtil uſually ſtands above the receptacle or cup; the ſtyle is ſingle and capillary, and is bent in the ſame direction with the ſtamina; it uſually ſtands among them, and a little exceeds them in length; its top alſo is a little crooked, and the ſtigma is commonly emarginated. Many of the genera of this claſs have no fruit, but the ſeeds are contained naked in the cup; and when there is a fruit, it uſually contains two cells. When there is no ſeed-veſſel, the ſeeds are contained in the bottom of the cup, and are four in number; and in ſuch plants as have a ſeed-veſſel, they are uſually more than four, and are always affixed to a ſort of placenta within the capſule.

The flowers of the far greater part of theſe plants ſtand erect, or nearly ſo, making only a ſmall angle with the ſtalk; by this means the antheræ are much better defended from injuries than they otherwiſe would be; and, by means of this poſition, the farina, when diſcharged from the antheræ, naturally falls upon the ſtigma of the piſtil, and is in little danger of being loſt. The characters of this claſs of plants are delivered as general, not particular: moſt of them are found regularly in all the plants of it, but ſome vary in one or other of the particulars, and to this is owing the diſtinction of the ſeveral genera. This is a remarkably natural claſs of plants, not one ſpecies of it deviating from the characters of the reſt; though there are ſome of thoſe plants which have only two ſtamina, which ſeem otherwiſe entitled to a place in it. Such are the pinguicula gratiola, verbena lycopus, and the like. Theſe however cannot be received into it, becauſe the eſſential character of it is that the ſtamina are four in number, two longer and two ſhorter. *Linnæi* Gen. Plant. p. 261.

Linnæus divides this claſs of plants into two general ſeries. The firſt the *gymnoſpermia*, and the ſecond the *angioſpermia*. The firſt of theſe comprehends the labiated plants of Tournefort, and the verticillate plant of Mr. Ray's method, and the other the perſonated plants of Tournefort.

The gymnoſpermia, or verticellate plants, are diſtinguiſhed from the reſt, by having the ſeeds four in number, and ſtanding naked in the cup; and the ſtigma divided into two ſedgments, the lower of which is crooked.

The angioſpermia, or perſonated plants, are diſtinguiſhed from the others, by always having a ſeed veſſel of ſome form, though very various; and, by the ſtigma being obtuſe and various.

Of the firſt kind, or gymnoſpermia, are the galeopſis and ballota, with the like; and, of the ſecond kind, or angioſpermia, are the antirrhinum, &c.

DIEBEL, in ichthyology, a name given by Kentman and others to the chubb or capito. It is properly a ſpecies of the cyprinus. See CAPITO and CYPRINUS.

DIELCYSTINDA, among the antients, a kind of exerciſe performed by boys, who being divided into two parties or ſides, each endeavoured to draw the other over to their ſide, and the party which prevailed gained the victory. *Hofm*. Lex. in voc.

DIEMERES, in the antient muſic, a word uſed ſometimes alone, and ſometimes joined with the word phorbeia. It expreſſed a ſort of bandage, uſed by the antients, to tie up the lower lip in playing on the pipe. The other kind of phorbeia conſiſted only of one perpendicular piece, which went down the cheek, and one tranſverſe one which covered the whole mouth, but had a hole cut into it, to admit the mouth-piece of the pipe. See PHORBEIA.

DIESIS *(Cycl.)*—Ariſtoxenus, and other antient muſicians, often mention the tone as divided into four parts, and the ſemitone into two; thereby making ten diviſions or *dieſes* in the fourth. And this is true, if we conſider theſe ſounds in one tenſion; that is either aſcending or deſcending: but accurately ſpeaking, when we conſider all the *dieſes* or diviſions of a fourth, both aſcending and deſcending we ſhall find thirteen; five to each tone, and three to the ſemi-tone major. But then it is to be obſerved, that ſome of theſe diviſions will be leſs than the enharmonic *Dieſis*: for, if we divide the ſemitone major, into the ſemi-tone minor, and enharmonic *Dieſis*, aſcending; for inſtance, E, ♮ E, F, and then divide in like manner deſcending F, b F, E, we ſhall have the ſemi-tone major divided into three parts: thus, E, b F, ♮ E, F; where the interval between b F and ♮ E, is leſs than the enharmonic *Dieſis* between E & b F, or between ♮ E & F. Phil. Tranſ. N° 481. p. 273.

But if we ſuppoſe theſe ſmall intervals equal, by increaſing the leaſt diviſion, and diminiſhing the true enharmonic *Dieſis*, we ſhall then have a fourth divided into thirteen equal parts; and this naturally leads us to divide the octave into thirty-one equal parts, which gives us the celebrated temperament of Huygens. See TEMPERAMENT.

The logarithm or meaſure of the octave $\frac{2}{1}$ being 1. 000,000, the meaſure of the *Dieſis* $\frac{128}{125}$ will be 0. 034215. Hence 29 *Dieſes* will be nearly equal to the octave. *Euler*. Tentam. Nov. Theor. Muſc. p. 106. See INTERVAL.

DIEXAHAEDRIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek δις, twice εξ ſix and εδρα ſide. The bodies of this genus are ſpars, compoſed of twice ſix planes, being formed of two hexædral pyramids, joined baſe to baſe, without any intermediate column. Of this genus there are only two known ſpecies. 1. One with long, narrow, and ſharp pointed pyramids, found in lamb's cave on mendip hills: and 2. one with long, broad, and obtuſe pyramids: this is found in the mine of Goſſelar in Saxony, and in many of the mines of the hart's foreſt. *Hill*'s hiſt. of Foſſils, p. 213.

DIEXODUS, Διεξοδος, in rhetoric, is uſed for digreſſion.

DIFFARREATION, *Diffarreatio*, in antiquity, a religious ceremony, uſed upon occaſion of obtaining a divorce. It was directly oppoſed to the ceremony of contracting marriage, called *Confarreation*. *Pitiſc*. Lex. Ant. in voc. See CONFARREATION, *Cycl*.

DIFFERENCE *(Cycl.)* — It was a fundamental principle among the antient geometers that the *difference* of any two unequal quantities, by which the greater exceeds the leſſer, may be added to itſelf, till it ſhall exceed any propoſed finite quantity of the ſame kind. This principle ſeems inconſiſtent with the ſuppoſition of an infinitely ſmall quantity or difference, which added to itſelf any number of times, is never to be ſuppoſed to become equal to any finite quantity whatſoever; which is the foundation of the modern method of infiniteſimals. However, this laſt may, with proper caution, be made uſeful and accurate. Vid. *Maclaurin*'s fluxions Introd. p. 4. and art. 495. ſeq.

DIGASTRICUS *(Cycl.)* — The *Digaſtric* muſcle, according to Winſlow, is a ſmall long muſcle ſituated laterally between the whole baſis of the jaw and the throat. It is fleſhy at both the extremities and tendinous in the middle, as if it conſiſted of two ſmall muſcles joined endwiſe by a tendon. It is fixed by one fleſhy extremity in the ſulcus of the maſtoide apophyſis, and from thence runs forward inclining to the os hyoides, where the firſt fleſhy body ends in a round tendon, which is connected to the lateral part and root of the cornua of that bone by a kind of aponeurotic ligament, and not by a pulley, as appears at firſt ſight, becauſe of its paſſage by the extremity of the muſculus ſtylogloſſus. Here the

the tendon is incurvated, and preſently ends in the other fleſhy body, which is fixed immediately above the internal labium of the baſis of the chin, near the ſymphyſis, in a ſmall unequal depreſſion. *Winſlow*'s anatomy, p. 254.

The *Digaſtric* muſcles, according to Mr. Monro, do not ſolely pull the lower jaw down, but ſerve to draw up the os hyoides, and parts annexed to it, in deglutition. We have an account of the ſituation and uſes of theſe muſcles, by this learned profeſſor, in the Med. Eſſ. Edinb. vol. 1. art. 11.

DIGESTION (*Cycl.*)—Some ſuppoſe *Digeſtion* owing to gentle heat and motion. By this heat and motion the texture of the nouriſhment is changed in the bodies of animals; and then, the conſtituent ſolid parts are endued with peculiar attractive powers of certain magnitudes, by which they draw out of the fluids moving through them, like parts in certain quantities, and thereby preſerve their forms and juſt magnitudes. See Dr. *Bryan Robinſon* of the anim. œcon.

Others think *digeſtion* performed by a violent trituration of the ſtomach; but ſeveral obſervations ſeem to contradict this opinion. See TRITURATION.

DIGESTION, in chemiſtry—The chemiſts of late years have too much given into the more elaborate and forced proceſſes, and neglected the more natural and eaſy ones. Among theſe latter is *Digeſtion*; a proceſs ſo eaſy, that it requires ſcarce any quality in the operator but patience, and yet will do ſuch things as all the elaborate proceſſes of that art can never arrive at without it. There is ſcarce a proceſs that has more puzzled the chemiſts of an age or two ago, than the volatilizing ſalt of tartar; yet Langelot aſſures us, that after uſing all the caution in the common proceſſes that an earneſt deſire of ſucceſs could inſpire him with, he failed in them all; till trying the effect of a long *Digeſtion*, he ſucceeded ſo well in the firſt attempt, that he converted almoſt the whole ſalt into a pure white volatile ſubſtance, leaving only a few inſipid earthy fæces behind.

Another great uſe of *Digeſtion* is the duly preparing the eſſences of mineral ſulphurs; the ſtony ſea plants, which greatly reſemble the nature of foſſils, are alſo better treated by this proceſs than by any other. Tartariſed ſpirit of wine, receiving a very high tincture from red coral, after a long *Digeſtion*, in any diſtilled vegetable oil, though it will not in the common way be at all coloured by it. Phil. Tranſ. N° 87. See CORAL,

DIGGING, in mineralogy, a term appropriated by the miners to expreſs that penetrating into the earth, where they have the ore before them, and every ſtroke of the tools turns to account. They appropriated the word to this ſenſe, expreſſing the random openings, which they make in ſearch of mines, by the word *hatching*, or *eſſay-hatching*. See the article TRACING *of mines*.

When the eſſay hatches have been opened ſo long, that the orifice of the mine or load is found, the opening which has led to it, loſes its name of eſſay-hatch, and is called a ſhaft or metal-hatch; this is to be ſunk down about a fathom, and then they leave a ſquare ſpace, called a *ſhamble*, and ſo continue ſinking from caſt to caſt; that is, as high as a man can conveniently throw up the ore with a ſhovel, till the load is found to grow ſmall, or elſe to degenerate into ſome unprofitable ſubſtance, or weed, as they metaphorically expreſs it. The degeneracy of the ore is ſoon perceived, by the finding mundick or marchaſite growing more plentiful among it. This is a ſulphureous mineral, of a yellow, whitiſh, or greeniſh colour, and is very troubleſome to the Corniſh miners. The other unprofitable ſubſtances found in the place of the ore, or mixed in large quantities with it, where it degenerates, are daze, which is white, black, or yellowiſh; *iron mould*, which is black or ruſty; *caul*, which is red; *gliſter*, which is blood-red, or black, is alſo another degeneracy of the ore. Theſe are the common names given by the miners to various foſſils, explained under their ſeveral heads, and theſe are the marks by which they know the vein is almoſt exhauſted in that part, and will not long be worth digging.

In this caſe, they begin to drive either eaſt or weſt, as the goodneſs of the land, or the convenience of the hill, unite. The drift or opening, on this occaſion, is three foot over, and ſeven foot high, ſo that a man may conveniently ſtand and work: but in caſe the land is not broad enough of itſelf, as ſome ſcarce are half a foot; then they break down the deads firſt on the north ſide of the land, for the greater conveniency of the right arm in working, and then they begin to rip the load itſelf; by the term deads, they mean that part of the ſhelf, which contains no metal, but encloſes the load or vein as a wall between two rocks.

The inſtruments commonly uſed in mines with us, and that ſerve for ripping the lands are the *beele*, or as it is called in Cornwall the *tubber*. This is a weapon of eight or ten pounds weight, well ſteeled and ſharpened at each end, ending in a point each way, and having a hole in the middle: this will laſt half a year, but muſt be new ſharpened every fortnight. The ſecond inſtrument is a *ſledge*; this is uſually made from ten to twenty pounds weight; and will laſt ſeven years, if new ordered once in three or four months. Beſide theſe, they have *gadds*, or wedges; theſe are of about two pounds weight; they are made four ſquare, and well ſteeled at the point, and they muſt have ladders and wheel-barrows to carry the deads, and the ore out of the adits to the ſhambles. The general proportion of the workmen in Cornwall is this, two ſhovel-men and three beele-men in a drift; theſe are as many as the drift will contain without ſtanding in one another's way. The beele-men rip the deads and the ore, and the ſhovel-men carry it off and land it, by caſting it up from one of the ſhambles to another all the way up; in ſome places they ſave the trouble of this caſting it to the ſhambles by a winder and two buckets; theſe are ſo contrived, that one goes up as the other comes down, and they are filled and emptied with great eaſe. Philoſ. Tranſ. N° 69.

DIGITALIS, *Fox-glove*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, of a tubular form, very wide, open at the mouth, and ſeeming bilabiated. The piſtil ariſes from the cup, and is fixed in the manner of a nail into the hinder-part of the flower; this afterwards ripens into a fruit, or capſule, of an oval, pointed figure, divided into two cells, and uſually containing very ſmall ſeeds. The ſpecies of *Fox-glove* enumerated by Mr. Tournefort are theſe. 1. The purple *Fox-glove*. 2. The pale red *Fox-glove*. 3. The white *Fox-glove*, with large flowers. 4. The ſmall purple Spaniſh *Fox-glove*. 5. The oriental *Fox-glove*, called by authors ſeſamum. 6. The dusky ſeeded oriental *Fox-glove*. 7. The trifid leaved oriental *Fox-glove*, with ſnow white flowers. 8. The ſmalleſt *Fox-glove*, called by many authors *Gratiola*. 9. The flax leaved Portugal marſh *Fox-glove*. 10. The large flowered yellow *Fox-glove*. 11. The great *Fox-glove*, with ſmall pale yellow flowers. 12. The leſſer *Fox-glove* with ſmall yellow flowers. 13. The ſmall narrow leaved yellow *Fox-glove*. 14. The broad leaved *Fox-glove*, with a ferrugineous flower. 15. The broad leaved *Fox-glove*, with a ſmall ferruginous flower. 16. The middle *Fox-glove*, with a yellowiſh flower. 17. The narrow leaved *Fox-glove*, with a ferruginous flower. 18. The narrow leaved purple *Fox-glove*. 19. The narrow leaved yellow Spaniſh *Fox-glove*. 20. The narrow leaved black flowered Spaniſh *Fox-glove*. See FOX-*glove*.

DIGITATED *Leaf*, among botaniſts. See LEAF.

DIGITUS *Veneris*, *Venus Finger*, in botany, a name by which ſome authors have called the nymphæa, or water lilly. *Ger.* Emac. Ind. 2.

DIJAMBUS, in poetry, the foot of a latin verſe of four ſyllables; it is compounded of two *iambics*, as fĕvĕrĭtās.

DIIPOLIA, Διιπολεια, in antiquity, an Athenian feſtival, celebrated in honour of *Jupiter Polieus*, or protector of the city. For the ceremonies obſerved at this ſolemnity, ſee *Potter*'s Archæol. Græc. l. 2. c. 20. t. 1. p. 381.

DILATATOR *Poſticus Urethræ*, in anatomy, a name given by Heiſter, and ſome others, to what is ſuppoſed to be a peculiar muſcle by many, and called alſo *levator ſextus ani*, and by ſome other names, though it is really only a proceſs of the ſphincter ani running into the perinæum. See SPHINCTER.

DILE, in Botany, a name by which ſome authors have called the iſatis or woad. *Ger.* Emac. Ind. 2.

DILIGENZA, in the Italian muſic, is uſed for a ſoft or ſweet manner of ſinging or playing.

DILL, in botany, &c. See ANETHUM.

DILLENIA, in Botany, the name of a genus of plants, the characters of which are theſe: the perianthium is compoſed of five leaves, which are large, roundiſh, hollow, and of a coriaceous texture, and remain when the flower is fallen: the flower is compoſed of five roundiſh hollow petals; theſe alſo are large and of a coriaceous texture. The ſtamina are numerous filaments forming a ſort of globe, the antheræ are oblong and erect. The germina are about twenty in number, they are of an oval oblong figure, and pointed, they are ſomewhat compreſſed, and adhere together by their inner ſurfaces: there are no ſtyles. The ſtigmata are large and pointed, and are diſpoſed in form of a ſtar; the fruit is roundiſh, and is covered with a number of capſules, divided by ſo many furrows. The ſeeds are numerous and ſmall. *Linnæi* Gen. Plant. N° 253. Hort. Mal. vol. 3. 38, 39.

DILICTUM, a term uſed by Agricola, to expreſs a brine, made by pouring water upon ſand, ſtones, earth, &c. that had been before ſtrongly impregnated with Sea ſalt; from this brine, a ſalt, for the uſe of the table, was made by evaporation in his time, and is ſo ſtill in many parts of the world. At Junthall in Germany they have a ſalt work of this kind, where they make at the rate of eight hundred loaves of ſalt in a week, each loaf weighing four hundred weight. Here, and at ſeveral other places in the Upper Auſtria, there are deep mines, in which they dig mud and earth ſtrongly impregnated with common ſalt. This ſaline earth they break into lumps, of a proper ſize, and caſt them into pits in the bottom of the mines, where they cover them with water; and this, in a few weeks ſtanding, becomes a brine ſaturated to the higheſt degree, every pound of it containing ſix ounces of ſalt. This brine is conveyed thence by pipes into ciſterns, and is boiled in iron pans into a white ſalt. In other places, as at Roche, the

water is directed to pass among earths thus impregnated, and from thence becomes saturated with salt in the same manner, and is afterwards boiled in the common way. *Hoffman* de Salin. Hallens, c. 2. and 4. Obs. Phys. Chym. l. 2. obs. 16. The sand of the sea is also in some places used as a substance to make salt from. There are works of this kind on the coast of Normandy, where a brine is made from the sand, and evaporated at so small an expence, that it is worth their while to export it to England and other countries. We had formerly some works of this kind in England, as at Wirewater, and some other places in Lancashire and Westmoreland, where pit-coal being scarce, they boiled it with turf fires; but since the works of the brine salt, and purified rock salt, have succeeded so happily with us: these are all laid aside, except some inconsiderable ones in Lancashire. These are near Ulverstone, and the sand from which they make their brine there, is extracted from the flat sandy shores, which are only covered with water in the highest tides, which flow two or three days before, and three or four days after the new and full moon; for those parts of the sand which are overflowed by the neap tides are seldom sufficiently dried, and are at too great a distance from the salterns.

This sand they collect in flats and washes, or in parts of the sands, which are perfectly plain, and in little hollows, where the sea water is left, and either sinks into the sand, or is dried up by the heat of the sun, and leaves the salt behind. This is only collected in dry weather, and at such times when the sea water has been exhaled from it by the sun, and there have been no rains afterwards to wash the salt out of it. They dig a pit adjoining to the saltern eighteen foot long, three broad, and one deep; the bottom of this they cover with straw, or rushes, and then fill it up with sand collected in this manner; they pour upon this sea water, and this imbibing the salt from the sand is filtered through the straw or rushes, and runs clear through a pipe at the bottom. *Brownrig* of Salt, N° 136.

DIMACHÆ, in antiquity, a kind of horsemen, first instituted by Alexander. Their armour was lighter than that of the infantry, and at the same time heavier than that used by horsemen, so that they could act as horse or foot as occasion required. *Pitisc.* Lex. Ant. in voc.

DIMACHÆRUS, Διμαχαιρος, in antiquity, a gladiator who fought with two swords. Vid. Hist. Acad. Inscript. T. 2. p. 374. seq.

DIMETIENT, in geometry, is sometimes used for *Diameter*. *Harris*, in voc.

DIMINISHED *interval*, in music, is applied to such as are lessened by a semi-tone minor. Thus from C ♮ to E being a third minor, if E be lowered by a semi-tone minor, we shall have E b, and then from C ♮ to E b is called a *diminished* third, in the language of practical musicians, and occurs frequently in their works. But strictly speaking, in this case, the note E must be lowered more than a semi-tone minor, as shall be shewn farther on.

DIMINISHED *Second* is a semi-tone major, lessened by a semi-tone minor. See the articles INTERVAL and SECOND.

DIMINISHED *Third*, by some called *defective third*, is properly a third minor lessened by a semi-tone minor. But among practical musicians, it commonly signifies an interval equal to two semi-tones major. And this they confound with the former; but there is a difference between them, equal to the difference between a tone-major and minor, that is, a comma. The first mentioned of these *diminished* thirds, will be expressed by $\frac{144}{125} = \frac{6}{5} : \frac{25}{24}$, and is equal to the tone major and enharmonic diesis; for $\frac{144}{125} = \frac{9}{8} \times \frac{128}{125}$. The second *diminished* third will be expressed by, $\frac{256}{225} = \frac{16}{15} \times \frac{16}{15}$, which is a comma less than the former. See the table in the article INTERVAL.

DIMINISHED *Fourth*. See the table in the article INTERVAL.

The *diminished* fourth often occurs in practice, as from C to G ♮ descending; and sometimes, though more rarely from G ♮ to C ascending.

DIMINISHED *Fifth*, in music, is less than the true fifth by a semi-tone minor, and is therefore equal to two lesser thirds.

Practitioners often confound the *diminished* fifth, with the semi-diapente, or false fifth, which is a comma less. See INTERVAL.

DIMINISHED *Sixth*.—This interval, according to Ozanam, contains two tones and three semi-tones major; or a fourth and diminished third; or a *diminished* fourth and third minor. Thus from C ♮ to A b is a *diminished* sixth.

But, as there are two *diminished* thirds, so there may be as many *diminished* sixths; these being the complements of the former to the octave. One of these *diminished* sixths will be expressed by $\frac{1024}{675} = \frac{4}{3} \times \frac{256}{225}$, and this is a semi-tone major more than the semi-diapente: the other *diminished* sixth will be $\frac{192}{125} = \frac{4}{3} \times \frac{144}{125}$, which is a semi-tone minor less than the flat sixth. Practitioners confound these two; and, in effect, in temperate scales they coincide, as do all other intervals, differing only by a comma. See TEMPERAMENT.

DIMINISHED *Seventh*, is of two kinds, differing by a comma. See the table in the article INTERVAL.

That *diminished* seventh, which is the complement of the superfluous second to the octave, is the only one in use. It is a semi-tone major more than the sixth minor, as from C ♮ to B b.

DIMINISHED *Octave*, is a semi-tone minor less than the octave, as from C to *c* b. It occurs sometimes in the basses of instrumental pieces of music. See INTERVAL.

DIMORPHOTHECA, in Botany, a name given by Vaillant to a genus of plants, which Linnæus makes the same with the calendula. The characters are these: the common cup is simple, erect, and divided into several parts. The flower is of the compound radiated kind, its disk is composed of a great number of hermaphrodite floscules, and its radius of a vast number of female flowers: these are very long, and are of the same number with the segments of the cup. The hermaphrodite floscules are tubular, and lightly divided into five segments at the edge, and are of the length of the cup. The female flowers in the radius are of a ligulated form, and divided into three denticulations at the end; they are also hairy at the base, and have no ribs. The stamina in the hermaphrodite flowers are five filaments, very short and slender, and the antheræ are cylindric, tubular, and of the length of the flower. The pistill in the hermaphrodite flowers has its germen standing below the flower. The style is capillary, and is scarcely of the length of the stamina; and the stigma is obtuse, bifid, and erect. In the female flowers, the germen of the pistill is oblong and of a triangular form; the style is capillary, and of the length of the stamina; and the stigmata are two, and are oblong, pointed, and reflex. There is no capsule for the seeds but the cup becomes roundish and depressed, and closes at the summit. There are no seeds from the central flowers of the disk; but those near the margin, have each a single seed after them which is membranaceous, and surrounded with a cordated compressed substance; they are of an oblong figure, broader at the top than elsewhere, and probably are steril.

The seeds which follow the female flowers are single, larger, and of an oblong figure; they are crooked, and approach to a somewhat triangular form, and are externally marked with a sort of figure of a plant in a longitudinal direction. The receptacle is naked and flat. *Linnæi* Gen. Plant. p. 419.

DINUS, in medicine, according to some, is the name of a disease, called more usually *Vertigo*. See VERTIGO.

DIOCALLIA, in Botany, a name by which Apuleius and some other authors have called the common sweet chamomile. *Ger.* Emac. Ind. 2.

DIOCLEIA, Διοκλεια, in antiquity, a solemnity kept in the spring at Megara, in memory of the Athenian hero Diocles, who died in the defence of the youth he loved. *Pott.* Archæol. Græc. l. 2. c. 20.

DIOCTAHÆDRIA, in natural history the name of a genus of spars. The word is derived from the Greek δις twice, οκτω eight, and εδρα a side. The bodies of this genus are spars composed of twice eight planes, or two octangular pyramids joined base to base, without any intermediate column. Of this genus there are three known species. 1. One with long pyramids, which is found in the mines of Rammelsberg in the Hartz forest in Germany, and no where else, so far as is yet known. 2. One with short and sharp pointed pyramids found in many of the mines of the Hartz forest, and sometimes tinged with the colours of the gemms. And 3. One with short and obtuse pyramids, which is found in the mines of Cornwall, and lodged in the cetton stone of Rutland. *Hill*'s Hist. of of Foss. p. 211.

DIODIA, in Botany, the name of a genus of plants. The characters of which are these: the perianthium consists of two leaves, of an oval figure, equal in size, and placed upon the germen, these remain when the flower is fallen. The flower is of the one-leaved labiated kind; its tube is slender and longer than the cup; its upper lip is erect and bifid, and the lower lip is expanded, and divided into two pointed segments. The stamina are four filaments of the thickness of a bristle; and two of these, which are opposite to one another, are somewhat shorter than the others. The antheræ are oblong, and versatile. The germen of the pistil is roundish, but in some degree four cornered, this stands under the cup of the flower. The style is capillary, and of the length of the stamina, and the stigma is bifid. The fruit is a capsule, of an oval figure, with four corners, so as to appear square, and is crowned with the cup grown larger; this is composed of two valves, and contains two cells; the seeds are single, of an oval oblong figure, and convex on one side, and plain on the other. *Linnæi*, Gen. Plant. p. 291.

DIOECESIS, Διοικησις, among the Romans, a præfecture of several provinces joined together, under the same governor, called *Præfectus*. *Hoffm.* Lex. in voc. See PRÆFECT and DIOCESE, *Cycl.*

DIONYSIACA, (*Cycl.*) in antiquity, was also a designation given to plays and all manner of sports acted on the stage; because playhouses were dedicated to Dionysius, i. e. Bacchus and Venus, as being the deities of sports and pleasure. *Potter*, Archæol. Græc. l. 1. c. 8. t. 1. p. 41.

DIONYSIAS *Lapis*, in natural history, the name of a stone described by Pliny, and some other of the antients, as a black

stone

ſtone variagated with red ſpots. There are ſome fabulous accounts recorded of its virtues, ſuch as its preventing drunkenneſs, and giving water the taſte of wine. Some of the writers of the middle age have attributed many other virtues to the ſtone of this name; but they ſomewhat deviate from Pliny's account in their deſcription of it: they ſay it is of a ferrugineous colour variegated with white, and that it is found only in the Eaſt-Indies; theſe are too ſhort deſcriptions to be certain what ſtone they were intended for. *Plin.* l. 37. c. 10. *Hofm.* Lex. in voc.

DIOECIA, in Botany, a claſs of plants which have the male and female parts, not in the ſame, but in different flowers, and thoſe not on the ſame individual, but on different plants of the ſame ſpecies; either of which, though they are called the male and female plants, from their thus carrying the ſeparate male and female flowers, might have ariſen from the ſame ſeed.

The word is formed of the Greek δὶς twice, and οἶκος habitation. Among the plants of this claſs are the willow, miſletoe, hemp, ſpinach, &c.

All the plants of this claſs are in the different individuals, diſtinctly males and females; and thence in every ſpecies of this claſs. There is a male and female plant, which in the time of flowering appear very different from one another. The male plants, as well as the others, growing from the ſeeds of the ſame individual female plant: and it is found, that the female plants of this claſs never produce perfect ſeeds, or ſuch as can yield plants from ſowing, unleſs there be a male plant of the ſame ſpecies near them at the time of their flowering. It is obſerved in ſome of the ſpecies of this claſs, that though in general the plants raiſed from the ſeeds are ſome male and others female ſeparately; yet there are ſome which are hermaphrodites, or have the two ſexes conjoined. It is a curious obſervation, that there are no ſeparate male and female plants in the claſſes of the aſperifoliate or ſtellate plants, nor in the umbelliferous claſs, or that of the didynamia, tetradynamia, monadelphia, diadelphia, or ſyngeneſia. The reaſon of which appears very evidently, from an obſervation of the conduct of the fructification in thoſe claſſes. *Linnæi* Gen. Plant. p. 470.

DIOMEDIS *Avis*, in Zoology, the name of a bird of the web footed kind, with a ſlender beak, hooked at the end, and with its hinder toe not connected by the membrane that joins the reſt. It is of the ſize of a common hen, but its neck and legs are much longer: its colour is a dusky, and ſomewhat greyiſh brown, and under the belly there is more or leſs white: its beak is of a fine red, or in ſome of a yellowiſh colour, with a black end. It is found in the Inſula Diomedea, now called Tremiti, in the Adriatic Sea, and is ſaid to be peculiar to that place.

DIOPTRA, among the antients, an inſtrument invented by Hipparchus, which ſerved for ſeveral uſes, as to level water; to take the height of towers, or places at a diſtance; to determine the places, magnitudes, and diſtances of the ſtars. *Hofm.* Lex. in voc.

DIORTHOSIS, in ſurgery, an operation, by which crooked or diſtorted members, are made even, and reſtored to their primitive and regular ſhape.

DIOSCOREA, in Botany, the name of a genus of plants, the characters of which are theſe: it produces ſeparate male and female flowers; the cup is a one leaved perianthium, of a bell like ſhape, divided into ſix lanceolated ſegments, which expand at the top; there is no other flower but this cup. The ſtamina are ſix very ſhort capillary filaments, with ſimple antheræ. In the female flowers, the cup is the ſame as in the male, and there are no petals. The piſtil has a ſmall trigonal germen, from which ariſe three ſtyles of a ſimple ſtructure, terminated by ſimple ſtigmata. The fruit is a large triangular capſule, which has three cells, and is compoſed of three valves. The ſeeds are two in each cell, and they are compreſſed, and have a membranaceous ring. Linnæus obſerves, that he could never trace out the cup, as Plumier deſcribes it in the dried ſpecimens. *Linnæi* Gen. Pl. p. 479. *Plumier* Gen. 26.

DIOSCURIA, Διοσκουρια, in antiquity, a feſtival in honour of the Διοσκουροι, or Caſtor and Pollux, who were reputed to be the ſons of Jupiter. It was obſerved by the Cyrenæans, but more eſpecially by the Spartans, whoſe country was honoured by the birth of theſe heroes. The ſolemnity was full of mirth, being a time wherein they ſhared plentifully of the gifts of Bacchus, and diverted themſelves with ſports, of which wreſtling matches always made a part. *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 384.

DIOSPIROS, in Botany, a name given by Pliny, and ſome other authors, to the plant called *Lacryma Jobi*, or Job's tears. *Ger.* Emac. Ind. 2.

DIOSPOROS, in Botany, a name given alſo by ſome of the antients to the lithoſpernum or gromwell; ſome chuſe to write it *Dioſpyros*, but this ſeems erroneous. The plain derivation of the word, being from the Greek διὸς σπορος, the ſeed of Jupiter. It ſeems to have obtained this name from its beauty and hardneſs. *Pliny*, l. 26.

DIOSPYROS, in Botany, the name by which Linnæus calls the Guiacana, of Tournefort and others. *Linnæi* Gen. Pl. p. 166. See GUIACANA.

DIOSPYRUM, in Botany, a name by which ſome authors have called the milium ſolis or gromwell. *Ger.* Emac. Ind. 2.

DIOTA, among chymiſts, a term uſed for a circulating or double veſſel.

DIPHRIS, a ſtone mentioned by the antient writers; and ſaid, by Pliny, to be of two kinds, the one black, the other white; and that theſe carried each of them the mark of one of the ſexes, deſcribed by a line of the oppoſite colours: they were therefore called the male and female: the white was called the male, and had the character of the male ſex figured in a black line, the other the female; and had the marks of that ſex deſcribed by a white one: we know no ſuch ſtones at this time.

DIPHTHERA, Διφθερα, among the antients, a garment made of ſkins, and worn only by ſhepherds and country labourers. *Hofm.* Lex. in voc.

DIPHYES, in natural hiſtory, a name given by ſome authors, to a kind of ſtone, which repreſents both the male and female parts of generation of the human ſpecies. We have ſtones which repreſent the figures of ſhells, becauſe they have been formed in them: and nothing can be more proper than the calling them by the name of the ſhell, from which they borrow their figure; but this is not to be ſuppoſed the caſe in regard to this ſtone, which has nothing to do with thoſe parts in its formation, but owes its figures merely to the accidental conformation of the hinge and protuberances of a ſhell, in which it has been formed. We have a ſpecies of chama, whoſe external form at the mouth repreſents the female pudenda; but the figure of this ſtone is owing to the internal ſhape of the ſhell, in which it has been caſt. This is an unknown ſpecies of concha anomia, which has ſuch ridges on one ſhell, and ſuch cavities in the other, that the ſtone caſt or moulded in it, has on one ſide the figure of the female pudenda, and on the other of the male: it is uſually of a dusky brown colour, and of a ferrugineous ſubſtance; as the ſame ſhell may, however, have received in different places different ſubſtances into its cavity, all which would neceſſarily be of this form, we hear, among authors, of ſome black, and ſome white ſtones of this kind. Authors have treated of this ſtone in a very idle and fabulous manner, but this is its true hiſtory.

DIPLASIASMUS, in medicine, a reduplication of diſeaſes.

Diplaſiaſmus is alſo uſed for two muſcles of the arm, which ſerve to turn it about. *Blancard.*

DIPLOIS, Διπλοις, in antiquity, a double *pallium*, or cloak, worn chiefly by the *Cynics*. *Hofm.* Lex. in voc.

DIPONDIUS, in the ſcripture language, is uſed by St. Luke [a], to ſignify a certain coin, which was of very little value. Our tranſlation of the paſſage is, *are not two ſparrows ſold for two farthings?* In St. *Matthew* [b], who relates the ſame thing, we read, *Are not two ſparrows ſold for a farthing?* The Greek reads *Aſſarion* inſtead of *As*. Now *Aſſarion*, as ſome ſay, was worth half an *As*, that is to ſay, four French deniers and $\frac{1}{8}$: and, according to others, two deniers and $\frac{5}{12}$. *Dipondius* ſeems rather to ſignify half an *As*. *Calmet*, Diction. Bibl.

[a *Luke* xii. 6. b *Matt.* x. 29.]

Dr. Arbuthnot differs in opinion from the author laſt quoted. He ſays, that this coin was at firſt *libralis*, or of a pound weight, and even when diminiſhed it retained the name of *libella*. So that *Dipondius* denoted two Aſſes. *Arbuth.* tables of antient coins, &c. c. 3.

DIPPING, (*Cycl.*) in mineralogy, a term uſed to expreſs the deviation of the veins of ore, from that regular and ſtrait line, in which they uſually run. A great deal of the skill of the miners conſiſts in the underſtanding this dipping of the veins, and knowing how to manage in it. In Cornwall they have this general rule to guide them in this reſpect: moſt of their tin loads, which run from eaſt to weſt, conſtantly dip towards the north. Sometimes they underlie; that is, they ſlope down toward the north three foot in eight perpendicular. This muſt carefully be obſerved by the miners, that they may exactly know where to make their air ſhafts when occaſion requires; yet, in the higher mountains of Dartmaer there are ſome conſiderable loads, which run north and ſouth: theſe always underlie toward the eaſt.

Four or five loads may run nearly parallel to each other in the ſame hill; and yet, which is rare, they may meet all together in one hatch, as it were a knot, which well tins the place, and ſo ſeparate again, and keep their former diſtances. Phil. Tranſ. N° 69.

DIPSACUS, *Teaſell*, in the Linnæan ſyſtem of Botany, makes a diſtinct genus of plants; the characters of which are theſe: the calyx is a common perianthium, containing many flowers, and compoſed of ſeveral ſlender little leaves, placed round the receptacle, and longer than the flowers. The flower is formed of one leaf, or petal, the whole making a ſtrait tube, divided into four ſegments; at the extremity all placed erect, and the outer one larger and more pointed than the reſt. The ſtamina are four capillary filaments longer than the flower. The antheræ are laid cloſely on them. The germen of the piſtil is placed below the proper receptacle of the flower; the ſtyle is ſlender, and of the length of the flower, and the ſtigma is ſingle. The fruit is one large and common receptacle, of a conic form, made up of the leaves of the cups longer than

thoſe of the flowers, and ſeparating the flowers one from another. The ſeeds are ſingle, oblong, and ſomewhat cubic in figure, and are crowned with a marginaceous rim. *Linnæi* Gen. Plant. p. 22.

The DIPSACUS, according to Tournefort, is characterized thus: the flower is of the floſculous kind, being compoſed of ſeveral ſmall floſcules, collected into a kind of a honey-comb-like ſtructure; the head is compoſed of ſeveral imbricated leaves, and theſe are fixed to an axis, and laid like ſcales over one another. The floſcules ariſe from the alæ of theſe, and are divided into many ſegments at their ends; theſe are placed on the coronated end of an embryo, which afterwards becomes a ſtriated ſeed.

The ſpecies of *Dipſacus* enumerated by Mr. Tournefort are theſe. 1. The cultivated great *Dipſacus*. 2. The great wild *Dipſacus*. 3. The jagged leaved *Dipſacus*. 4. The four leaved giant *Dipſacus*, with ſmooth ſcabious like leaves, and a pear faſhioned head: and 5. The Indian great *Dipſacus*, with numerous heads. *Tourn.* Inſt. p. 466.

The leaves of the common wild *Teaſell* dried, and given in powder, or infuſion, are a very powerful remedy againſt flatus's and crudities of the ſtomach. There is alſo another, though ſomewhat whimſical uſe, for which this plant is become famous among the country people. If the heads are opened longitudinally about September or October, there is generally found a ſmall worm in them: one of theſe only is found in each head, whence naturaliſts have named it the *vermis ſolitarius dipſaci*. They collect three, five, or ſeven of theſe, always obſerving to make it an odd number, and ſealing them up in a quill, give them to be worn as an amulet for the cure of agues. Faith has wrought ſo many cures for them, that they are in many parts of the kingdom of much higher reputation than the bark.

DIPSACUS, in medicine, according to ſome, is the ſame with a Diabetes. *Caſt.* Lex. Med. in voc. *Diabetes*. See DIABETES.

DIPSAS, a ſort of ſerpent, the biting whereof produces ſuch a thirſt as proves mortal; whence it is called *Dipſas*, which in Greek ſignifies thirſty. In Latin it is called ſitula, a pail. Moſes ſpeaks of it in Deut. viii. 15.

The Hebrew word *tzimaon* anſwers very well to the Greek *Dipſas*, and expreſſes the thirſt occaſioned by the biting of this ſerpent. Some by the Hebrew *tzimaon* underſtand a deſart or dry place. *Calmet*, Diction. Bibl.

DIPYRENON, in ſurgery, the name of a probe, with a double button at the end, reſembling two ſmall berries growing together.

DIRECTION (*Cycl.*)—*Quantity of* DIRECTION, in mechanics, is uſed for the product of the velocity of the common center of gravity of a ſyſtem of bodies, by the ſum of their maſſes.

In the colliſion of bodies, the quantity of *Direction* is the ſame before and after the impulſe. *Bernoulli*, Diſcours ſur le movement. Oper. tom. 3. p. 32 & 56.

DIRECTOR, (*Cycl.*) in ſurgery, a grooved probe, to direct the edge of the knife or ſciſſars in opening ſinus's or fiſtulas, that, by this means, the ſubjacent veſſels, nerves, and tendons, may remain unhurt. Sometimes one end is made in form of a ſpoon, to contain powders to ſprinkle upon wounds or ulcers. Sometimes alſo it is forked at the end to divide the frænum of the tongue. *Heiſter*'s Surg. Introd. Sec. 36.

DIRECTRIX, in geometry, the line of motion, along which the deſcribing line, or ſurface, is carried in the Geneſis of any plane or ſolid figure. It is otherwiſe called *Dirigent*. See DIRIGENT, *Cycl.*

DIRIBITORES, among the Romans, officers appointed to diſtribute tablets to the people at the *Comitia*. See COMITIA, *Cycl.*

DIRITTA, in the Italian muſic, a term intimating that the piece is to be played or ſung in conjoint degrees. Thus, *Contrapunto alla Diritta*, according to Angelo Berardi, is when one is obliged to raiſe or fall the voice by the ſame degrees, i. e. by an equal number aſcending or deſcending, without making a leap, even of the interval of a third. *Broſſ.* Dict. Muſ. in voc.

DISARM, in the manege—To *diſarm* the lips of a horſe, is to keep them ſubject, and out from above the bars, when they are ſo large as to cover them, and prevent the true preſſure or *appui* of the mouth, by bearing up the bit, and ſo hindering the horſe to feel the effects of it upon the bars. *Guil.* Gent. Dict. in voc.

DISBOSCATION, *Diſboſcatio*, a turning wood-ground into arable or paſture, an aſſarting. See ASSART, *Cycl.*

DISCEIT, in our old writers. See DECEIT and DECEPTIONE.

DISCOBOLI, Δισκοβολοι, among the antients, an appellation given to thoſe who gained the victory at the *Diſcus*. *Hofm.* Lex. in voc. See DISCUS, *Cycl.*

DISCOIDES *Fibula*, in natural hiſtory, the name of a genus of the echinodermata, or ſea hedge-hogs; the periphery of the baſe of theſe is exactly round, and the body of a convexo-concave figure. The principal ſpecies of this genus is the ſubuculus, which has ſometimes a roſeaceous top, the lines being very neat and elegant, ſometimes a plain and ſmooth top, ſometimes is all over covered with extreamly minute and fine ſtriæ, and ſometimes it is much flatter than at others. *Klein's* Echinoderm.

DISCRETIONE, in the Italian muſic, is uſed to direct the ſinger or player to execute his part with care diligently.

DISDIACLASTIC *Cryſtal*, in natural hiſtory, a name given by Bartholine, and ſome others, to the pellucid foſſile ſubſtance, more uſually called from the place whence it was firſt brought, *Iſland cryſtal*; though properly it is no cryſtal at all, but a fine pellucid ſpar, called by Dr. Hill from its ſhape parallellopipedum. See ISLAND-*Cryſtal*.

This cryſtal is met with in other places beſide Iſland, but not ſo plentifully. It is there found in great abundance all over the country, but is particularly plentiful in a mountain, not far from the bay of Roezfiord, where the fineſt and moſt pellucid pieces are found on digging. The mountain lies in 65 degrees latitude, and has its whole outſide made up of it; but, though this makes a very bright and glittering appearance, it is not ſo fine as that which lies at a little depth, and is met with on opening the ſurface. This is generally taken up out of the earth in maſſes of a foot long, and its corners very frequently are terminated in theſe large maſſes, by a ſort of cryſtals, very different in figure and qualities from the reſt of the maſs. The ſtone itſelf is of a parallellopiped figure; but theſe excreſcences are either ſingle pyramids affixed to columns, like common cryſtal or double pyramids, with or without columns between. The ſtone itſelf is ſoft; theſe are hard, and cut glaſs; the ſtone calcines to lime in the fire, theſe run into glaſs; in ſhort, the ſtone itſelf is true ſpar, and theſe are true cryſtal: beſide theſe, there ſometimes grows out of the ends of the larger maſſes a pure and fine abeſtus. This likewiſe is the caſe ſometimes in the ſpar, found about Barege in France, and ſhews how nearly together the formation of bodies wholly different from one another, may happen. The general figure of the ſtone is parallellopiped; or, as ſome expreſs it, rhomboide; and it retains this not only while whole, but alſo when broken to pieces. Every fragment it naturally falls into, though ever ſo ſmall, being truly of that ſhape. But it is remarkable, that in ſome places of this mountain, the ſame ſort of matter is found in form of triangular pyramids, all which have the ſame property of the double refraction with the parallellopipeds of the ſame ſubſtance; ſo that the original error of ſuppoſing its qualities owing to its ſhape, is refuted by this, as well as by the trials made with other pellucid bodies of the ſame figure, which do not ſhew this remarkable property. *Bartholine* de Cryſtal-Iſland. Phil. Tranſ. N° 67.

The iſland cryſtal is electrical, and when rubbed will draw up ſtraws, feathers, and other light ſubſtances, in the ſame manner that amber does. It is not ſo hard as to endure poliſhing. The ſides, however, are of an extreamly fine natural poliſh, which is moſt perfectly ſeen on breaking a thinner piece nimbly between the fingers: for where a larger maſs is ſtruck with a hammer, the percuſſion has not the ſame effect upon every part, nor is reſiſted equally every where; and therefore the broken ſurfaces have often ſome of the plates, or thin laminæ, of which they conſiſt, raiſed up, and become ſcabrous and rough by that means. The whole body is rather clear than bright: it is of the colour of limpid water; but that colour, when it has been wetted, and dried again, becomes very much duller; and hence, it is, that the outer ſurfaces of the pieces, which lie on the outſide of the mountain, are uſually very dark and dull in compariſon of the others that it ſhews when broken; the rains and ſnows often wetting and drying again upon it. When the ſurface is bright, there often appears the figure of a rainbow, with all the colours on it. The angles of the regular pieces are not pointed alike; all the flat ſides being obliquely inclined to one another. The oppoſite plains are always parallel in this cryſtaline priſm. Two of the plain angles are always acute, and the other two are always obtuſe, and never any of them is equal to the collateral angles of the inclinations. The objects ſeen through it appear ſometimes, and in certain poſitions of the priſm, double; and, the diſtance between the two images of the object, is always greater or leſs according to the largeneſs or ſmallneſs of the priſm, inſomuch, that in thin pieces of it, the difference of the double image almoſt vaniſhes; and it has been hence ſaid, by ſome, that only thick maſſes of this ſtone had the property. The object appearing double, both images appear with a fainter colour, and ſometimes one part of the ſame ſpecies is obſcurer than another; and, to an attentive eye, one of theſe images will always appear higher than the other.

In a certain poſition of the ſtone the image of the object ſeen through it appears only ſingle, as through any other tranſparent body; and there is, on the contrary, a particular poſition, in which it appears ſix-fold. If any of the obtuſe angles of this priſm be divided by a line into two parts, and the viſual rays paſs from the eye to the object through that line or its parallel; both images of the object will meet in one, either in that line, or in one parallel to it.

Whereas objects ſeen through diaphanous bodies, are wont to remain in the ſame place, in whatever manner the tranſparent body is moved, nor does the image on the ſurface move, unleſs the object itſelf be moved; in this particular pellucid body,

one

one of these images is moveable, but the other is all the while fixed. This is the natural and obvious method in the examining the properties of the stone: but there is a way to render the moveable object fixed, and the fixed one moveable; or to render both the one and the other moveable at the same time. The moveable image, in the common way of observing, does not move about at random, but always in a regular manner about the fixed object, and while it turns about this, it never describes a perfect circle, but only in one case. The common laws of dioptricks, teach us, that a diaphanous body having only one surface, sends from one object but one image refracted to the eye, and having more surfaces than one, it represents one image of the object in each; and, as in this island crystal, when we look only upon one surface we have two images, it is evident, that there must be something peculiar in the nature and internal structure of the body itself to occasion it. The whole masses of this stone are wonderfully composed of plates, or laminæ, extreamly thin, laid evenly and regularly on one another; and forming, in a manner, scarce conceivable, both the horizontal and the perpendicular surfaces. Each of these plates is composed of a vast number of small parallellopiped figures, arranged in a neat and orderly manner together; and each of these minute parallellopipeds is again composed of plates composed of other parallellopipeds, and so on as far as microscopes can trace them. There is therefore something singular in the structure of this body, which may very well give it the property of refracting differently from the other pellucid stones; and, it is observable, that all the spars of this massy kind, as well as some of the pyramidal ones, have the same property; and that, in the same degree, in proportion to their bigness, whenever they are sufficiently pellucid. The vast masses of white spar which are found in the lead mines of Derbyshire, though they are not externally of the parallellopiped figure of the island crystal, nor have any thing of its brightness or transparence in the general lump; yet, when they are broken, they separate into rhomboidal fragments, and some of these are found to be tolerably pellucid: all those which are so have the property of the island crystal; and being laid upon paper, where a black line is drawn, they all shew that line double in the same manner as the real island crystal does. Bartholine has two hypotheses for the explication of the various refractions of this stone, not so much founded on reasonings as on experience: the one is, that there are some lines, by which the rays pass through the body of the stone unrefracted, which lines, though they have been held to be perpendicular in the diaphanous bodies, commonly known, yet it does not appear necessary, that they should always be supposed such; since they may, perhaps, in some cases, be much otherwise: the other is, that it may be supposed, that half the light or appearance diffused from the object, is refracted, according to the usual laws of refraction; but the other half, according to the unusual refraction; or which is all one, that the usual and unusual refraction, have the same power to refract the rays of the object. *Barthol.* de Crystal Island. See the article PARALLELLOPIPEDIUM.

DISEASE (*Cycl.*)—The colder the country, in general, the fewer and the less violent are the *Diseases*. Scheffer tells us, that the Laplanders know no such thing as the plague or fevers of the burning kind, nor are subject to half the *distempers* we are. They are robust and strong, and live to eighty, ninety, and many of them to more than a hundred years; and, at this great age, they are not feeble and decrepid, as with us; but a man of ninety is able to work or travel as well as a man of sixty with us. They are subject, however, to some diseases more than other nations: thus they have often *distempers* of the eyes, which is owing to their living in smoak, or being blinded by the snow. Pleurisies and inflammations of the lungs are also very frequent among them; and the small-pox often rages with great violence. They have one general remedy against these, and all other internal diseases: this is the root of that sort of moss, as Scheffer expresses it, which they call jerth. They make a decoction of this root in the whey of rain-deer milk, and drink very large doses of it warm, to keep up a breathing sweat; if they cannot get this, they use the stalks of angelica boiled in the same manner; they have not so great an opinion of this as of the other remedy; but the keeping in a sweat, and drinking plentifully of diluting liquors, may go a great way in the cure of their diseases, whether either the one, or the other of the drugs, have any virtue or not. They cure pleurisies, by this method, in a very few days; and get so well through the small-pox with it, that very few die of it.

It has been always observed, that people of particular places were peculiarly subject to particular *Diseases*, which are owing to their manner of living, or to the air, and effluvia of the earth and waters. Hoffman has made some curious observations on diseases of this kind. He observes, that swellings of the throat have always been common to the inhabitants of mountainous countries: and the old Roman authors say, Who wonders at a swelled throat in the Alps? The people of Switzerland, Carinthia, Styria, the Hartz-forest, Transylvania, and the inhabitants of Cronstradt, he observes are all subject to this disease from the same cause; and, it seems, that these strumous swellings are owing to the water which they drink, and which in mountainous places is usually very highly impregnated with sparry or stony particles. The French are peculiarly troubled with fevers, with worms, and with hydroceles and sarcoceles; and all these disorders seem to be owing originally to their eating very large quantities of chesnuts. The people of our own nation are peculiarly afflicted with hoarsenesses, catarrhs, coughs, dysenteries, consumptions; and the women with the fluor albus, or whites; and children, with a *Disease* scarce known elsewhere, which we call the rickets. In different parts of Italy different *Diseases* reign. At Naples the venereal *Disease* is more common than in any other part of the world. At Venice people are peculiarly subject to the bleeding piles. At Rome tertian agues and lethargic distempers are most common. In Tuscany, the epilepsy, or falling sickness. And in Apulia they are most subject to burning fevers, pleurisies, and to that sort of madness which is attributed to the bite of the tarantula, and which, it is said, is only to be cured by music.

In Spain apoplexies are common, as also melancholy hypocondriacal complaints and bleeding piles. The Dutch are peculiarly subject to the scurvy, and to the stone in the kidneys. Denmark, Norway, Sweden, Pomerania, and Livonia, are all terribly afflicted with the scurvy; and, it is remarkable, that in Denmark, Sweden, and Norway, fevers are very common; but in Island, Lapland and Finland, there is scarce ever such a *Disease* met with; tho' peripneumonies be very common in these places, as also diseases of the eyes and violent pains of the head. The Russians and Tartars are afflicted with ulcers, made by the cold, of the nature of what we call chilblains, but greatly worse; and in Poland and Lithuania there reigns a peculiar *Disease*, called the plica polonica; so terribly painful, and offensive, that scarce any thing can be thought of worse.

The people of Hungary are very subject to the gout and rheumatism: they are more infested also with lice and fleas than any other people in the world, and they have a peculiar *Disease* which they call cremor.

The Germans, in different parts of the Empire, are subject to different reigning *Diseases*. In Westphalia they are peculiarly troubled with peripneumonies and the itch. In Silesia, Franconia, Austria, and other places thereabout, they are very liable to fevers of the burning kind, to bleedings at the nose, and other hæmorrhages; and to the gout, inflammations, and consumptions. In Misnia they have purple fevers; and the children are peculiarly infested with worms. In Greece, Macedonia, and Thrace, there are very few *Diseases*; but what they have, are principally burning fevers and phrensies. At Constantinople the plague always rages; and, in the West-Indian islands, malignant fevers, and the most terrible colics.

DISEASES *feigned*—The cheat of feigning *Diseases*, for idleness, or profit sake, or for other occasional purposes, has been too common in all ages, and is too difficult to be discovered in all cases; though, in many, there are ways of coming at the truth. We have had a very late instance of a young lady, who puzzled several of our best physicians, to account for the nature of a *Disease*, which showed itself in a singular kind of excoriations; and the secret perhaps had never been discovered, had not a bottle of aquafortis been accidentally found in her chamber; the touching the arms, &c. with which had occasioned all the appearances, which some strange fault in the juices had been before accused of.

Dissimulation, in regard to *Diseases*, may be reduced to three kinds: in the first, the sickness is pretended by words only, and really is not; of this nature are the pretended head-ach, colic, and the like; which, as the patient can only know of, the physician may always be deceived by his words. In the second, there are not only words for testimonies of the sickness, but there appear signs and marks of it on the body, which yet are only counterfeited to serve certain purposes. Scabbyness, leprosy, and even the exulceration of the lungs may be thus counterfeited; the last by a pretended spitting of blood. Gravidation is often pretended also. Our beggars often contrive the means of these to excite compassion. In the third kind of dissimulation of *Diseases*, we are to include the concealing a *Disease*, which really exists, instead of the owning one which does not.

The great occasion of this kind of dissimulation is the pox, and the concealing of this often proves the ruin of the patient's constitution, or his reason; a miserable death or madness being too often the consequences.

In the discovery of these deceits, on which the credit of the physician often depends, it is not mere medical knowledge that will succeed, but there must be added to it a sagacity in exploring all circumstances and outward accidents, and especially those things which relate to the genius, temper and state of the person suspected. The Dæmoniacs, of former ages, exorcised by the priests, who wanted to propagate the credit of their religion, or their own sanctity, have generally been cheats of this kind, and might have been discovered by any

who

who had talents and opportunities for the proper examinations. Sylvaticus, an Italian author, has given an excellent ſet of rules for the diſcovery of theſe frauds, and all others of pretended ſickneſſes, to which we refer the curious reader.

DISEASES *of infants*. See INFANTS.

Peſtilential DISEASES. See PESTILENTIAL.

Soporous DISEASES. See SOPOROUS.

DISEASES *of Trees*. See DISTEMPERATURE.

DIS-ERGOT, in the manege. See ERGOT.

DISGORGE, in the manege, is uſed for diſcuſſing or diſperſing an inflammation or ſwelling: thus if a horſe's legs are gorged or ſwelled, we ſay he muſt be walked out to *diſgorge* them.

DISGUISE.—Perſons doing unlawful acts in *diſguiſe* are by our ſtatutes ſometimes ſubjected to great penalties, and even declared felons. Thus perſons convicted of hunting in *diſguiſe* in foreſts, parks, or warrens, or of unlawful hunting in the night, are to ſuffer as felons [a]. But the principal act of parliament in this reſpect is that commonly called the Black-Act, which makes appearing *diſguiſed* and armed in a foreſt, or grounds incloſed, or hunting deer, or robbing a warren, or taking away fiſh, felony [b]. The concealers of ſuch offenders are alſo made guilty of felony [c]. There are alſo rewards of 50 *l.* appointed for thoſe who ſhall be wounded in apprehending the offenders; and if a man be killed in ſo doing, the reward goes to his executors or adminiſtrators [d]. Proſecutions on this act may be commenced within three years, and the trial may be in any county [e]. [[a] Stat. 1 Hen. 7. c. 7. [b] See the Stat. 9 Geo. 1. c. 22. §. 1. [c] Ib. §. 5. [d] Ib. §. 12. [e] Ib. §. 13, 14.]

DISH, (*Cycl.*) in mining, is a trough made of wood, about 28 inches long, 4 inches deep, and 6 inches wide; by which all miners meaſure their ore. If any be taken ſelling their ore, not firſt meaſuring it by the bar-maſter's *Diſh*, and paying the king's duties, the ſeller forfeits his ore, and the buyer forfeits for every ſuch offence forty ſhillings to the lord of the field, or farmer. *Houghton*'s compl. miner, p. 15, and in the explan. of the terms.

DISLOCATION (*Cycl.*) — We have an inſtrument of Mr. Freke's invention for the reduction of *diſlocated* ſhoulders, deſcribed in the Philoſophical Tranſactions, N° 470.

DISPART, in gunnery, is uſed for the ſetting a mark on the muzzle-ring of a piece of ordnance, or thereabouts; ſo that a ſight-line taken upon the top of the baſe-ring againſt the touch-hole, by the mark ſet on or near the muzzle, may be parallel to the axis of the concave cylinder. The common way of doing which, is, to take the two diameters of the baſe-ring, and of the place where the *Diſpart* is to ſtand, and divide the difference between them into two equal parts, one of which will be the length of the *Diſpart*, which is ſet on the gun with wax or pitch, or faſtened there with a piece of twine or marlin: but an inſtrument may be made to do it to all poſſible nicety.

DISPERSION (*Cycl.*)—DISPERSION *of Inflammations*, in medicine. The grand intention in the treatment of all inflammations ſhould be to open ſuch ſmall veſſels as are obſtructed, and to reſtore the blood to its natural conſiſtence and free circulation; and this is commonly term'd in ſurgery the reſolution or *diſperſion* of tumors. When in caſes of this kind the inflammatory ſigns are but gentle, it is always beſt immediately to ſet about the diſperſing the tumor. If the cauſe of the inflammation is external and obvious, as thorns, ſplinters, bullets, or any other foreign body ſtuck in the part, this is to be immediately removed, if that can be done with ſafety. So when the inflammation proceeds from too tight a bandage in wounds, *&c.* or from a luxation or fracture, the firſt thing to be done is to looſen the bandage, to ſet the fracture, or to reduce the luxation. It is after this very proper to open a vein in the arm, and after that to give a brisk but not heating purge; and if the ſymptoms do not abate, this method is to be repeated at proper intervals. Internal medicines which are watery, diluting, cooling, and attenuating, do great ſervice on theſe occaſions.

A proper regimen is alſo to be obſerved in regard to diet: all aliments that are of difficult digeſtion, all pickled or ſalted meats, and all ſpices and fermented liquors, with every thing elſe that may tend to heat and inflame the blood, are to be carefully avoided. The moſt proper aliments are broths, and drinks made of pearl barley, oats, or flower. Decoctions of all the cooling plants, as ſorrel, endive, *&c.* mixed with ſmall quantities of lemon juice, or any other of the vegetable acids; and when the inflammation is great, a little nitre ſhould be added to theſe drinks. Nor is there leſs care required about the external applications; for though ſome to appeaſe inflammations uſe only heating medicines, and others only cooling ones, yet either ſort if applied at random, and in all caſes, may prove pernicious, for one medicine can never in theſe caſes ſerve for all conſtitutions. To perſons of a hot temperament the cooling external remedies are in theſe caſes to be applied. Of this kind are the litharge vinegar applied warm on linnen rags folded together, or hot vinegar mixed with red lead, or with bole armoniac, and applied in the ſame manner; or oxycrate, or vinegar and water mixed in equal quantities; or of any of theſe liquors may be taken ſix ounces, and to this an ounce of common ſalt, and two ounces of either nitre or ſal armoniac being added, and with this mixture linnen rags many times doubled, and applied wet to the part, will be of great ſervice. In the night time alſo, when theſe applications cannot ſo conveniently be renewed, a plaſter of the red lead, or other cooling one, may be of no ſmall uſe. This is the proper method in hot conſtitutions; but, on the contrary, in cold and phlegmatic ones, ſpirit of wine alone, or camphorated ſpirit, or either of theſe with an admixture of a ſmall quantity of Venice treacle, are very ſucceſsful remedies for the *Diſperſion* of inflammations, being applied on linnen cloths doubled in the ſame manner; ſo alſo is ſpirit of wine mixed with lime-water, or even lime-water alone, or Hungary-water with lapis calaminaris, ceruſs, ſal armoniac, or bole armenic, or a mixture of a pint of rectified ſpirit of wine with two ounces of Caſtile ſoap. This laſt applied warm is hardly ſecond to any medicine in theſe intentions. Decoctions of wormwood, mint, ſavin, ſouthernwood, and other ſuch herbs made with ſalt-water or lime-water, are alſo very good external applications; and to theſe may be added when neceſſary, either camphorated ſpirit of wine, or Caſtile ſoap: and not only the decoction of theſe herbs, but the herbs themſelves when boiled may be applied as a cataplaſm, with great ſucceſs. *Heiſter*'s Surgery, p. 181.

DISPROVING, in rhetoric. See REFUTATION.

DISSIPATION (*Cycl.*) — *Circle of* DISSIPATION, in optics, is uſed for that circular ſpace upon the retina, which is taken up by one of the extreme pencils of rays iſſuing from an object.

To underſtand which, it is to be obſerved, that when the diſtance of an object from the eye is too ſmall, or too great, for perfect or diſtinct viſion, the rays of each pencil iſſuing from the object cannot be united at a point on the retina, but beyond it, or before they arrive at the retina; conſequently the rays of each pencil will occupy a circular ſpace upon the retina; and this circle is called the circle of *Diſſipation*, becauſe the rays of a pencil, inſtead of being collected into a central point, are diſſipated all over this circle.

The conſideration of the circles of *Diſſipation* formed by the rays coming from the extremities of objects, is of uſe to account for ſeveral curious phænomena of viſion. See the article MOON, and Dr. Jurin's *Eſſay on diſtinct and indiſtinct viſion*, at the end of Dr. Smith's Optics.

Radius of DISSIPATION, the radius of the circle of *Diſſipation*.

DISTANCE (*Cycl.*)—*Diſtance*, according to an ingenious author, cannot of itſelf and immediately be ſeen. For *Diſtance* being a line directed endwiſe to the eye, it projects only one point in the fund of the eye, which point remains invariably the ſame, whether the *Diſtance* be longer or ſhorter. Dr. *Berkeley*, Eſſay on Viſion.

A late eminent mathematician [a] obſerves, that the *Diſtance* here ſpoken of, is *Diſtance* from the eye; and that what is ſaid of it muſt not be applied to *Diſtance* in general. The apparent *Diſtance* of two ſtars is capable of the ſame variations as any other quantity or magnitude. Viſible magnitudes conſiſt of parts into which they may be reſolved as well as tangible magnitudes, and the proportions of the former may be aſſigned as well as thoſe of the latter; ſo that it is going too far to tell us, that viſible magnitudes are no more to be accounted the object of geometry than words; and that the ideas of ſpace, outneſs, and things placed at a diſtance, are not, ſtrictly ſpeaking, the object of ſight; and are not otherwiſe perceived by the eye than by the ear. [a] Mr. *Maclaurin* in his account of Sir Iſaac Newton's diſcoveries, p. 225.

Apparent DISTANCE. See the article APPARENT.

DISTEMPER, among phyſicians. See DISEASE.

DISTEMPERATURES *of Trees*.—Some of theſe are in the tree itſelf, and others in the ſoil and other things about it. Of the laſt kind are weeds, which are of the utmoſt ill conſequence to all ſorts of trees while young, and ſhould be pulled up by hand after rain: if they are too ſtrong rooted for this, they muſt be dug up; and this will have a double advantage, as the ſtirring the earth about their roots will do the trees very great good. When the trees are grown to any tolerable height, they require no care about weeds, for they kill them with their own dropings. Suckers are another *Diſtemperature* of trees ariſing from the tree itſelf: they muſt be pulled off, or cut up cloſe to the place where they come out, opening the earth to come at them there. Over-much wet often is a very great prejudice to trees, and eſpecially to thoſe kinds which naturally love a dry ſoil. This is to be remedied by cutting drains: and if a drip fret the body of the tree by the head (which will certainly decay it) the place muſt be firſt cut ſmooth, and then ſome loam or clay, mixed well with horſe-dung, is to be applied to the place, which will defend it from miſchief till a new bark is formed over it. All wounds made in trees in winter are much harder to cure than thoſe made in ſummer; and for theſe it is proper to add ſome tallow to the mixture of loam and dung.

When trees are bark-bound, which is eaſily ſeen by the unnatural tightneſs and ſtraining of the bark over them, it is to be remedied by cutting through the bark with a knife from the top to the bottom of the tree. This may ſeem a dangerous remedy

remedy to thoſe who have not experienced it, but it never was found to do any injury to trees. It is to be done in February or March; and if the wound gape very much, it may be filled up with cow-dung, which will defend the tree from injury till it heals. The digging about the root of the tree is a very good practice alſo on this occaſion, and the cutting off the dead or withered branches.

The grubs of beetles, called teredines and coſſi, which get between the bark and the tree, do great miſchief: if the places can be found out where they lie, it is proper to pierce into the bark with a pointed inſtrument upon them, and then to open a ſmall hole below to let out whatever moiſture may be there. When trees of the fruit kind are burnt up and bliſter'd on the bark with hot and dry ſeaſons, and this is followed by a vaſt number of the pucerons or tree-lice, which feed on the juices, ſome recommend the boring a large hole in the main root, and pouring in ſome brandy, then ſtopping up the hole with a pin of the ſame wood. The tree ſuffers nothing by this, but the juices are ſo much altered for the preſent by it, that theſe animals do not like them, and conſequently quit their habitation. *Mortimer*'s Husbandry, *&c.* p. 70. See the article PUCERON.

If a tree is by any accident barked or ſtripped all round, ſo that it cannot grow any longer, the proper method is to cut it off juſt above ſome principal branch; the ſtump muſt be cut off ſlanting and covered with clay, and the branch will ſoon become the body of a tree in the place of the other: the place where the ſtump is cut off being covered with a bark in the manner of a tree that is graſted.

Deer and hares, as alſo rabbits, are apt to bark trees, and do them great miſchief. The defences againſt deer are by paling them round, or painting the lower part of the tree, but the firſt is much the better method. The hares and rabbits may be kept off by tying bands of ſtraw round the foot of every tree as far as they can reach. Evelyn recommends the rubbing them over with human dung made into a ſoft paſte with urine, ſo that it may be laid on with a bruſh; but this is attended with great trouble, as it muſt be renewed after every hard rain. Some uſe tar and lime mixed together, but this always damages the tree more than theſe creatures would have done; and in general ſtraw-bands, where any thing is neceſſary, do beſt. Id. ibid. See DISEASES *of Plants*, *Cycl.*

DISTENSION (*Cycl.*)—DISTENSIO, Διαταϛις, in the antient muſic, was uſed for the differences of ſounds with relation to acute and grave. *Wallis* Append. ad Ptolem. Harm. p. 154. Nature in this reſpect, ſtrictly ſpeaking, aſſigns no limits. But, with regard to our uſe, the antient muſicians held, that the nature of what ſounded, and alſo of what was to judge, that is, the human ear, was to be conſidered: for, neither the human voice, nor even any inſtrument, can give intervals or *diſtenſions* immenſely great or ſmall, nor could the ear judge of ſuch. Ariſtoxenes fixes the leaſt interval or *diſtenſion* in practice, to the dieſis enharmonica. As to the greateſt, he thinks it does not exceed two octaves, and a fourth, or a fifth, if we conſider any human voice; or three octaves, if we conſider one and the ſame inſtrument. He does not deny that the extent of the voice, conſidered in differenr ſubjects, as in men and children, may go even beyond four octaves. *Ariſtoxen.* p. 21. edit. Meibom.

DISTICHOUS *Stalk*, among botaniſts. See the article STALK.

DISTILLATION (*Cycl.*)—*Combinatory* DISTILLATION, a term introduced into uſe by Dr. Shaw, in his Eſſay on *Diſtillation*, to expreſs that ſort of rectification of diſtilled ſpirits which is done with additions, and which he otherwiſe calls improper rectification, by way of diſtinction from that proper rectification, which is only the method of reducing a ſpirit to its utmoſt degree of purity and perfection.

In the *Combinatory Diſtillation* many ingredients are added in order to rectify the ſpirit, as the diſtillers expreſs it; and ſome parts of theſe actually come over and mix themſelves along with the ſpirit ſo intimately, as not to be ſeparable again without great difficulty. This is done with a deſign to alter, improve, or aboliſh the natural flavour of the ſpirit, but inſtead of rectifying it, they only obſcure and pervert its true qualities. In the buſineſs of rectification, properly ſo called, of the malt ſpirit, all that is neceſſary is the rediſtilling the low wines procured from the waſh; the again diſtilling over the ſpirit thus obtained, and called proof ſpirit, into a totally inflammable liquor called alcohol. This is done by the common proceſſes, only taking care not to increaſe the fire by ſudden ſpurts, ſo as to raiſe the oil with the ſpirit, which if once mixed will not be eaſily ſeparated again, and ſcarce ever perfectly, whatever care is uſed. *Shaw*'s Eſſay on Diſtillery.

The methods of combinatory rectification, on the other hand, are very numerous, every diſtiller having his peculiar noſtrum about it. Malt ſpirit is the general ſubject of this proceſs, and the means uſed to rectify it on this plan may be reduced to three heads: 1. That by fixed alkaline ſalts alone. 2. That by fixed alkaline ſalts and acid ſpirits. And, 3. That by ſaline bodies and flavouring additions. The general method is that by fixed alcaline ſalts alone; but it is ſurpriſing to ſee in how careleſs and ſlovenly a manner this is done by the generality of our diſtillers, though we are allowed to excel all other nations in it. The effect of this operation, when carefully performed, is to attenuate and thin the ſpirit, and to keep back a part of its groſs and fœtid oil, and ſo far to alter the part of the oil which comes over, as ſcarce to leave the ſpirit diſtinguiſhable for a malt ſpirit.

This end is greatly promoted by a prudent and ſteady management of the fire, and by leaving out the faints; but this is a thing our diſtillers never attend to, they hurry over the operation, working the ſtill in its full force, and by this means raiſe and carry over the oil; though the whole buſineſs of the proceſs is to keep it back; and they even ſuffer the fulſome bitter oil, made into a kind of liquid ſoap with the ſalt in this proceſs, to run among the ſpirit with the faints; by this the whole intent of the proceſs is fruſtrated, and the ſpirit rendered much harder to clean than it was before.

This operation is uſually performed upon proof ſpirit, and the quantity allowed is from eight to fourteen pounds of ſalt of tartar, fixed nitre, pot-aſh, or more commonly calcined tartar to the piece. The tartar being only roaſted to a blackneſs in this laſt proceſs, is ſold under the abſurd notion of a vinous ſalt, and the dealers will often praiſe the vinoſity of their ſpirit, becauſe diſtilled from this ſalt; but the truth is, that this ſalt never fails to give, inſtead of a vinoſity, a ſaponaceous, urinous, or lixivial taſte and ſmell. This is the great misfortune that attends the method of rectifying by means of fixed ſalt, for they all of them become volatile in part during the operation; and this volatile portion paſſes over the helm with the ſpirit, and impregnates it, uniting itſelf alſo with that portion of oil yet retained in the ſpirit, and much more firmly combining it and the ſpirit together than they were before; ſo that in reality the ſpirit thus rectified is no other than an alkaline or tartariſed ſpirit, as the chemiſts call it; a thing extremely different from a true vinous ſpirit.

This method therefore, though it were practiſed to the utmoſt perfection, would never do what was intended by it, but would alter inſtead of rectifying the ſpirit. Hence there appears the neceſſity of ſome acid to deaden the force of the alkali thus uſed in the rectification. The neceſſity of this gave occaſion to the method of mixing acids and alkalies together for theſe purpoſes. The acids uſed by our diſtillers on this occaſion are thoſe of the mineral kingdom by reaſon of their cheapneſs, and the moſt common in uſe among them are oil of vitriol, ſpirit of nitre, oil of ſulphur, and the like. The moſt celebrated rectifiers in the malt way have got their reputation by the uſe of theſe acids. There is ſome choice however to be made of the ſpirits according to the greater or leſſer foulneſs and need of rectification, and they muſt not only be well proportioned, but carefully introduced, and regularly mixed; and indeed without ſome skill and judgment in the management of theſe corroſives, no diſtiller ought to attempt to meddle with them.

Theſe ſtrong and violent acids at beſt are not ſo well adapted to the work as the milder ones, particularly the ſulphureous ſpirit of vitriol, which comes over in the rectification of the oil; to this may be added the common ſpiritus nitri dulcis, and Mr. Boyle's acid ſpirit of wine well prepared.

Some of our rectifiers inſtead of the fixed ſalts uſe quick-lime, which cleanſes and dephlegmates conſiderably: but this method requires the aſſiſtance of acids alſo afterwards, to take off not only the alkaline diſpoſition, but alſo the ſtinking flavour it leaves behind it. Some alſo uſe chalk, virgin earth calcined, and burnt animals bones. Theſe are of conſiderable uſe in the rectifying brandy without rendering the ſpirit any more unfit for the purpoſe of the compounders than before, or requiring much acid afterwards.

The great art of uſing the flavouring ingredients in rectification is the proper admixture of ſalts in the operation, for without theſe the flavours added by this means do very little. The ſalts uſed on this occaſion are either the fixed alkalies, as pot-aſh and calcined tartar, or decrepitated common ſalt, or calcined vitriol, alum, or ſandiver. The flavouring ingredient is to be applied afterwards, and the whole quantity of the ſpirit either drawn over again, or not, as the occaſion and nature of the addition requires. But theſe ſaline bodies perform ſo very little, that the ſpirit is uſually left impregnated with a flavour from its own oil, which is but badly hidden, or overpowered by the other ingredients. The moſt common flavourers, as they call them, are theſe, mace, orrice root, parſnip, artichoak, rhodium, raiſin ſtalks, damask roſes, wine lees, rape or grape husks, and the oil of wine. The laſt of theſe is infinitely preferable to all the others, but is not ſo well known. Theſe and the like ingredients judiciouſly mixed, will, when the ſpirit is very well purified firſt, give the flavour of foreign brandies with ſome tolerable exactneſs; but if this is not attained, their flavour will be loſt in the original one, and the general taſte reſulting from the whole will be like nothing at all. The ultimate perfection aimed at in all the proceſſes of *combinatory Diſtillation*, is the depurating the Engliſh malt ſpirit at one operation, ſo as to render it taſteleſs and inodorous, and yet vinous; or elſe to make it reſemble the French brandy, arrack, or ſome other low-flavoured vinous ſpirits.

This is certainly practicable, though not usually practised to the perfection that it might be: the principal thing to be endeavoured after, is the obtaining a tasteless spirit, capable of receiving any impression, and then the business of flavouring is easy. The method of rectifying, by fixed alkaline salts, is capable of great improvement, as by steeping the spirit first brought near to the state of alcohol, upon a well dried salt of tartar, or any other cheaper, but pure fixed alkali; by this means it will be almost totally freed of its oil without volatilizing much of the salt, as it does in the way of distillation; by this means a weak tincture of salt of tartar may be procured, and an acid added to this, to take off the effects of the alkali in the spirit, the whole is then to be distilled; and the fire being well managed, a very clean spirit will be thus procured at one operation, such as can no way else be obtained at once.

The use of the compound neutral salts in rectification seems not yet to be sufficiently known; what is meant by these salts is a fixed alkaline salt saturated with an acid one. Such a salt has indeed been expected from the caput mortuum, or white saline cake, remaining upon the *Distillation* of the spirit of nitre with oil of vitriol, but it proves too hard, stony, and insoluble, to be of any great use on this occasion: a much better effect may be expected from soluble tartar, carefully prepared, and properly used; though even this is apt to render the spirit a little saponaceous. Some compound neutral salts have been made however upon this foundation, that would rectify common malt spirit from proof at a single operation, much better than all the other more perplexed and tedious methods in use. A prudent use of fine dry sugar may also be of some service, as it readily unites with the essential oil, and detains and fixes it, without imparting any urinous or other nauseous flavour to the spirit rectified upon it; another hint to this purpose, which may be made to turn to very good account, is that given by the ingenious method invented by Dr. Cox, of taking all the oil out of the volatile salts, by first bringing them to a neutral state with spirit of salt, and then subliming them with salt of tartar, which does the business to perfection. In the case of spirits the acid may be varied, and virgin earth, chalk, calcined flints, or the like absorbents used in the stead of salt of tartar, and yet the general effect will be the same. *Shaw*'s Essay on Distillery.

Brewing for DISTILLATION. *See* BREWING.

DISTILLED *juice of Tar.* See TAR-*water*.

DISTILLED *waters.* The waters *distilled* from plants and other medicinal things, may receive something from the vessels in which they are *distilled*, which may in some degree alter their properties. Even water alone *distilled* in glass vessels, and in those of metal, differs so much, that these two distillations being mixed, will render one another turbid. The florentine academicians have taken this change of waters under their consideration among the many other minutiæ, of natural and experimental philosophy omitted by others. They found that common water *distilled* in leaden vessels would render all other waters turbid, on mixing with it; whether it were spring, fountain, river, or well water, except alone the water of the conduit at Pisa: an experiment that proved a quality in that water, different from all others, though never before suspected in it. The experiment being repeated at various seasons afterwards, the water of this conduit was sometimes found to grow turbid also, but this was at such times as other waters, from rain, &c. had blended themselves with the genuine water of the spring. Waters *distilled* in glass vessels, and mixed with waters *distilled* in lead vessels, were supposed by the Florentines indeed not to render one another turbid; but, by the observations often made by the curious Redi, it proved that they did. This author assures us, that having *distilled* the parietaria in a glass cucurbit, and shifted the receiver fourteen times, and mixed all these shifted waters with rose water *distilled* in lead, they always became turbid, though he repeated it after several months: but after distilling in balneo, the remainder of these fourteen shiftings, in a silver vessel, with a glass head, changing the receiver eight times; he found, indeed, the water that was gathered in the eighth or last receiver untroubled: though he mixed with it several shiftings of water *distilled* in lead, but all the other seven shiftings grew still turbid when thus mixed. *Redi*'s Observat.

Common water *distilled* in gold, silver or glass, with a glass head, and kept in glass, remains always clear; but, in crystal of Pisa, it grows turbid in a few hours; then milky, and in a few days yellow, and after all this bitter; whereas in crystal of Rome or Venice, the same water does not grow turbid till after two or three days, and never becomes yellow or bitter in it; and in crystal of Paris it will scarce grow turbid, but after a very considerable time. The various materials used in the making these several kinds of crystal, at the glass-houses of these different places, and the various manner of working them are the occasion of this great difference in them; and on these principles we may find a new and more than ordinary way of judging of the goodness of glasses which seem equal to one another.

DISTILLED *waters* of laurel leaves. See LAUROCERASUS.

DISTILLERY. The business of fermentation is one of the great preparations to the *Distillery*. What we usually call vinous fermentation in particular, is the kind it is concerned principally in. By this we usually understand that physical action, or intestine commotion of the parts of a vegetable juice tincture, or solution, which renders them fit to yield an inflammable spirit on distillation.

This fermentation in the hands of the distiller differs from the common one, that is used in the making of potable vinous liquors, as being much more violent, tumultuary, active, and combinatory than that. A large quantity of yeast, or other ferment, is added to the distiller's fermentation: the free air is admitted, and every thing is contrived to quicken the operation, so that it is sometimes finished in two or three days. This great dispatch, however necessary to the large dealer, has its inconveniencies attending it; for the spirit is by this means always fouler, more gross, and really terrestrial, than it would have been if the liquor had undergone a proper fermentation in a slower manner. It also suffers a diminution in its quantity, from the violent and tumultuary admission, conflict, and agitation of the free air, both in the body and upon the surface of the liquor, especially if the liquor be not immediately committed to the still as soon as the fermentation is fairly slacked or fully ended. It is a very difficult task to render the business of fermentation at once perfect and advantageous. To ferment, in perfection, necessarily requires length of time, and careful attendance, and close vessels, beside several other articles of nice management, which cannot be expected to be received and practised in the large way, on account of the trouble and expence, unless it could be proved to the distillers, as possibly it some time may, that the quantity of spirit would be so much greater from the same quantity of materials managed thus, than by the common way, that it will more than pay its own expence; to which may be added, the very well known advantage of the spirit thus procured by perfect fermentation, being much finer than that obtained in the common way: till this shall be made out, it may not be amiss to try how much of the more perfect art of vinous fermentation, is profitably practicable by the distiller in the present circumstances of things. The improvements to be made in this affair will principally regard, 1. The preparation or previous disposition of the fermentable liquor. 2. The additions tending to the general, or some particular end. 3. The admission or exclusion of the air. 4. The regulation of the external heat or cold; and 5. A suitable degree of rest at last. When proper regard is had to these particulars, the liquor will have its due course of fermentation, and it will thence become fit to yield a pure and copious inflammable spirit by distillation. The tincture, solution, or liquor intended for fermentation, for the still, should be considerably thin and aqueous. That sort of richness that there is in the ten shilling small beer, is the utmost that ought to be allowed to it. This property not only fits it to ferment readily, but also to yield a larger quantity in proportion of a pure vinous spirit, than it would do if it were more rich and clammy: the gross, foul, viscid, and earthy particles of such glutinous liquors, being after fermentation apt to rise up with the boiling heat which must necessarily be employed to raise the spirit; and the spirit thus of course comes over foul and fetid. There is also another advantage attending the thinness of this liquor, which is, that it will sooner become fine by standing before fermentation; whence it may be commodiously drawn off from its fæces or bottom, which must always in case of corn, malt, or any other mealy substance, be kept out where the purity of the spirit is consulted. A certain degree of warmth seems necessary in all the northern climates, to all sorts of artificial liquors, intended for immediate fermentation, especially in winter; but the natural juices of vegetables, which have never been inspissated, as that of grapes, and other fruits, when fully ripened, will usually ferment, as soon as they are expressed without any external assistance. But, as a certain degree of inspissation, prevents all tendency to fermentation in all vegetable juices, though otherwise strongly disposed to ferment; so a long continuance, or an increase of the inspissating heat, especially if it acts immediately through a metalline or solid body upon the juice, will destroy its fermenting property; and it will do this the more effectually, as the heat employed approaches to that of scorching, or the degree capable of giving an empyreuma. After the same manner, several experiments make it appear that there is a certain degree of heat; the continuance, or least increase of which, proves detrimental or destructive to fermentation; as there is another, which in a wonderful manner encourages and promotes it. These two degrees of heat ought to be carefully noted and settled by the thermometer, or other certain methods, for philosophical and chymical uses; but for common, or all oeconomical occasions, they may be limited to what we call a tepid and fervid heat: a fervid heat is the bane of all vinous fermentation, as a tepid one, or rather an imperceptible warmth is the great promoter of them. In this neutral state therefore, with proper contrivances to preserve and continue it, the liquor is to be put into a suitable vessel for fermentation; at which time if it works not of itself, it must be quickened by addi-

additions; and, in general, by ſuch things are generally called ferments. *Shaw*'s Eſſay on Diſtillery. See the articles FERMENT, SPIRITS, MAKING *up*, LOWERING, *&c.*

Malt DISTILLERY. See MALT *Diſtillery.*

DISTORTION (*Cycl.*)—A terrible malady to the human ſhape, has been very often the mere effect of careleſsneſs and ill habits. Mr. Winſlow, in the memoirs of the academy of ſciences of Paris, gives a very remarkable account, to this purpoſe, of a lady of quality, whom he had known to be perfectly ſtrait for ſeveral years; but who taking afterwards to a ſedentary courſe of life, got a cuſtom of dreſſing herſelf very careleſsly, and of leaning as ſhe ſat, either forwards, or to one or the other ſide. It was not many months before ſhe found it troubleſome and painful to ſtand or ſit upright, and ſoon afterwards ſhe found an inequality in the lower part of the back bone: alarmed at this, ſhe conſulted the gentleman who gave the account. Who, to prevent the increaſe of the malady, ordered the wearing a particular ſort of jumps inſtead of her ſtays, and had a pad applied of proper ſize: but this was ſoon neglected; and the conſequence was, that the back bone, in a little time became more and more crooked, and at length bent itſelf ſideways, in two contrary directions, ſo as to repreſent the figure of the Roman S; and the lady refuſing to take the proper meaſures, loſt a fourth part of her height, and continued for the remainder of her life, not only crooked both from right to left, and from left to right; but ſo oddly folded together, that the firſt of the falſe ribs on one ſide approached very near the creſt of the os ilium on that ſide, and the viſcera of the lower belly became ſtrangely puſhed out of their regular places to the oppoſite ſide; and the ſtomach itſelf was ſo compreſſed, that whatever ſhe ſwallowed, ſeemed to her to fall into two ſeparate cavities. Mem. Acad. Scienc. 1740.

DISTRIBUTION (*Cycl.*)—The ſurplus of an eſtate, or *pur autre vie*, is diſtributable by adminiſtrators. See ADMINISTRATORS, *Cycl.*

DISUNITE, in the manege, is uſed for a horſe that drags his haunches, that gallops falſe, or upon an ill foot. See GALLOP.

DITCH (*Cycl.*)—In marſhes, and other wet land, where there are no hedges, the common fence or incloſure for land is a *Ditch*. They allow theſe *Ditches* ſix foot wide againſt highways that are broad, and againſt commons five foot. But the common *Ditches* about incloſures, dug at the bottom of the bank, on which the quick is raiſed, are three foot wide at the top, one at the bottom, and two foot deep; by this means each ſide has a ſlope, which is of great advantage; for where they neglect this, and dig them perpendicular, they are always waſhing down; beſide, in a narrow bottomed *Ditch*, if cattle get down into it, they cannot ſtand to turn themſelves to crop the quick; but where the *Ditch* is four foot wide, it ſhould be two and a half deep; and where it is five wide, it ſhould be three deep, and ſo in proportion.

DITCH *water* is often uſed as an object for the microſcope, and ſeldom fails to afford a great variety of animalcules.

This water very often appears of a greeniſh, reddiſh, or yellowiſh colour; and this is wholly owing to the multitudes of animals of theſe colours which inhabit it. Theſe animals are uſually of the ſhrimp kind: and Swammerdam, who very accurately examined them, has called them from the branched figures of their horns *pulex aquaticus arboreſcens*. They copulate in May and June; and are often ſo numerous at that ſeaſon, that the whole body of the water they are found in, is ſeen to be of a red, green, or yellow colour, according to the colours of their bodies. The green thin ſcum alſo, ſo frequently ſeen on the ſurface of ſtanding waters in ſummer is no other than a multitude of ſmall animalcules of this or ſome of the other kinds. Dunghill water is not leſs full of animals than that of *Ditches*; but is often found ſo thronged with animalcules, that it ſeems altogether alive; this is ſo very much crowded with theſe creatures, that it is proper to dilute it before they can be diſtinctly viewed, by adding clear water to it. There are uſually in this fluid a ſort of eels, which are extremely active; and beſide theſe, and many other of the common inhabitants of fluids, there is one ſpecies found in this which ſeems peculiar to it; the middle part of theſe is dark, and beſet with hairs, but both ends are tranſparent; their tails are tapering, with a long ſprig at the extremity, and their motion is ſlow and wadling. *Baker*'s microſcope, 87. See PEPPER-*water*.

DITONICUM *Diatonum*. See GENUS.

DITRIHÆDRIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek δις twice, τρις three, and ἑδρα, a ſide, or plane. The bodies of this genus are ſpars compoſed of twice three planes, being formed of two trigonal pyramids joined baſe to baſe, without the intervention of any intermediate column. Of this genus there are five known ſpecies. 1. One with long and pointed pyramids, found in the mines of Cornwall, and ſome other parts of England. 2. One with long and broad pyramids found looſe in the fiſſures of the alabaſter quarries of Blanckenberg in Germany. 3. One with ſhort and broad pyramids found in the mines of Rammelsberg. 4. One with extreamly broad depreſſed pyramids, found in the alabaſter quarries at Blankenberg, and ſometimes in the mines of Goſſelaer in Saxony. 5. One with ſhort but ſharp pointed pyramids, found very frequently in the mines of the Hartz-foreſt, and ſometimes on Mendip Hills with us. *Hill*'s Hiſt. of Foſſ. p. 218.

DITTANY, in Botany, *&c.* See FRAXINELLA.

DITTANY *of Crete*, *dictamnum creticum*, in medicine, was highly extolled by the antients, as a vulnerary, and antidote againſt venomous bites. They alſo gave it to promote the menſes and aſſiſt delivery. With us it is diſuſed, except in ſome officinal compoſitions.

DIVALE, an Engliſh name uſed by ſome writers, and in ſome counties of England in common expreſſion, for the deadly nightſhade, or ſolanum lethale, a plant with poiſonous berries, looking like black cherries. *Ger.* Emac. Ind. 4.

DIVER, in zoology, the Engliſh name of the *Colymbus*, a genus of water birds; the characters of which are, they have narrow, ſtrait, and ſharp bills, their heads are ſmall, their wings ſhort, their feet placed far backward on the body, and near the tail, and their legs broad and flatted, their claws broad like the nails of ones fingers. They are called *Colymbi*, and in Engliſh *Divers*, from their great expertneſs in diving, and long continuance under water.

There are properly two ſubordinate genera of theſe birds. The one having the feet not webbed, but the toes looſe, yet all widened by a membrane, and having no tail. Thoſe of the other genus have webbed feet like the duck, and have tails. Of each of theſe genera there are ſeveral ſpecies; thoſe of the firſt, or ſuch as have no tails are, 1. The *Colymbus major*, or greater loon, called by the Venetians *Fiſſanelle*. 2. The *Colymbus major criſtatus*, or creſted great loon. This is called alſo the *lepus marinus*, or ſea hare, and is common both in Europe and America; the baſe of its beak is covered with a deep yellow membrane; the head is black on the crown and grey on the ſides, the back part of the head is ornamented with a black creſt, the top of the neck is black, and the reſt of the neck is of a mixed colour of red and a ferrugineous brown; the back and wings are black, and the breaſt and belly of a greyiſh white; it has no tail, and its toes are ſeparate. 3. The *Colymbus cinereus*, or grey *Diver*. This is a very rare ſpecies, but is found in ſome parts of England; it is all over of a pale grey, and has a creſt behind its head. 4. The *Colymbus major criſtatus & cornutus*, the greater creſted and horned *Diver*; this has a long and ſtrong beak, and the feathers on the top of its head, and on the upper part of its neck, ſtand prominent, and are part black and part yellow; the neck is ſhort, and is all over partly reddiſh, partly black; the breaſt and belly are of a whitiſh red, and the back is mottled with grey, browniſh red, and black. It is common in ſome parts of Yorkſhire; the laſt ſpecies is the common *Dedapper*, or *Dobchick*. See Tab. of Birds, N° 47.

Of the ſecond genus there are only three known ſpecies. 1. The *Colymbus maximus caudatus*, or great tailed *Diver*, which is a very remarkable bird, and ſeems of a middle nature between thoſe web footed fowls, which have their hinder toe joined and brought forward with the reſt, and thoſe which have not. It is of a middle ſize, between the duck and gooſe; its head is ſmall, and its tail rounded at the end; and the upper part of its neck is ſo thick ſet with feathers, that it appears even larger than the head; its colours differ ſomething in the different birds; ſometimes it is ſeen in the back, neck, and head, of a fine black, variegated with white ſpots and lines, and with a ring of white about the neck; and ſometimes without the ring, and with the back of a greyiſh colour, variegated only with ſpots without any lines: poſſibly this may be the difference of the ſexes. It is ſuppoſed, that this bird cannot fly, by reaſon of the ſhortneſs of its wings, but this is erroneous. It is common in Italy, and ſometimes is ſeen with us. The other two ſpecies of the tailed *Divers* are the *Colymbus arcticus Lumme dictus*. The northern *Diver* called the *Lumme*, and the *Colymbus maximus* of Geſner, called the *Fluder*, or ſea fludder. *Ray*'s Mythol. p. 258 to 260. See LUMME and FLUDDER.

DIVERGENCY—For the *Point* of divergency or divergence in optics, ſee VIRTUAL *Focus*, *Cycl.*

DIVERSIFYING, in rhetoric, is of infinite ſervice to the orator; it is an accompliſhment eſſential to his character, and may fitly be called the ſubject of all his tropes and figures. Voſſius lays down ſix ways of *diverſifying* a ſubject. 1. By enlarging on what was briefly mentioned before. 2. By a conciſe enumeration of what had been inſiſted on at length. 3. By adding ſomething new to what is repeated. 4. By repeating only the principal heads of what had been ſaid. 5. By tranſpoſing the words and periods. 6. By imitating them. *Voſſ.* Rhet. l. 5. p. 281. *ſeq.*

DIVIDEND (*Cycl.*) —Stealing of any *dividend* warrants of the Bank, South-Sea Company, Eaſt-India Company, or of any other corporation, is made felony, with or without benefit of clergy, in the ſame manner as if the offender had ſtolen, or taken by robbery, goods to the value of the money due on ſuch *dividend* warrants. Stat. 2 Geo. 2. c. 25. Sec. 3.

DIVIDUAL, in arithmetic, is uſed for that part of the dividend

dend, distinguished by a point, in working by the rule of division.

DIVING (*Cycl.*)—Diving *Bladder*, a term used by Borelli for a machine, which he contrived for *Diving* under the water to great depths, with great facility, and prefers to the common *diving* bell. The vesica, or bladder, as it is usually called, is to be of brass or copper, and about two foot in diameter. This is to contain the *Diver*'s head, and is to be fixed to a goat's skin habit, exactly fitted to the shape of the body of the person. Within this vesica there are pipes, by means of which a circulation of air is contrived; and the person carries an air pump by his side, by means of which he may make himself heavier or lighter, as the fishes do, by contracting or dilating their air bladder: by this means, the objections all other *diving* machines are liable to are obviated, and particularly that of the air; the moisture by which it is clogged in respiration, and by which it is rendered unfit for the same use again, being here taken from it by its circulation through the pipes, to the sides of which it adheres, and leaves the air as free as before. *Borelli* Opera Pusthuma.

DIUIOHU, in Botany, a name given by the people of Guinea to a species of plant, with which they use to ripen and break boils, beating the leaves and laying them on.

DIVISIBILITY (*Cycl.*)--Divisibility *of magnitude*.—All that is supposed, in strict geometry, concerning the *Divisibility* of magnitude, amounts to no more, than that a given magnitude may be conceived to be divided into a number of parts, equal to any given or proposed number. It is true, that the number of parts, into which a given magnitude may be conceived to be divided, is not to be fixed or limited, because no given number is so great but a greater may be conceived and assigned: but there is not, therefore, any necessity of supposing the number of parts actually infinite; and if some have drawn very abstruse consequences from such a supposition, yet geometry ought not to be loaded with them. *Mac Laurin*'s Fluxions, art. 290. See Extension.

DIVISION (*Cycl.*)—The sign of *Division* made use of in algebra, is sometimes a line drawn between the dividend or divisor, thus: $\frac{a}{b}$; sometimes the sign $\div$ is placed between the two quantities thus, $a \div b$. Others, particularly the Germans, after Leibnitz, make use of two points only; thus, $a : b$. All which equally signify a divided by b.

Division, in rhetoric, the arrangement of a discourse under several heads, to be spoken to separately. *Voss.* Rhet. l. 3. p. 366. See Disposition, *Cycl.*

Divisiones, in antiquity, certain presents of money, oil, bread, wine, or the like, appointed by will to be distributed annually among certain persons or companies, and sometimes to the people in general. *Pitisc.* Lex. Ant. in voc.

DIUTURNITY, the long continuance or duration of any being.

DIZOSTOS, in Botany, a name given by some of the old Greek writers to the *apios* or knobby rooted spurge: it is so called, because of its having usually two or three slender, and rush like stalks, growing up from the roots, which seem as if they were fit to be used as cords or bandages. See the article Apios.

DO, In the Italian music, is a syllable used instead of *ut*, being supposed more resonant and musical than *ut*. *Bross.* Dict. Mus. in voc.

Do *Law*. To *do law*, *facere legem*, is the same as to *make law*, anno 23 Hen. 6. c. 14. See Make.

DOBCHICK, in zoology, the common English name of a small water fowl, the least of all the *Diver* kind, and known among authors by the name of *Colymbus minor*. It seldom exceeds six ounces in weight, and has a short beak not more than a finger's breadth long, large at the base, but tapering to a point at the end; its eyes are large, and it is covered with a very thick downy plumage; it is of a very deep blackish brown on the back, and very white on the belly; its wings are very small, and it has no tail.

DOBULA, in ichthyology, a name given by Gesner, and other writers to the chubb. It has been called *capito* and *cephalus* by the moderns, and *squalus* by the antients; but it requires no generical name, being properly only a species of the cyprinus. See the articles Cephalus and Cyprinus.

Dobula is also used for a fresh water fish, of the leuciscus, or dace kind, but is of a larger and thinner shape, and a much better tasted fish. It is caught in the fresh waters of Germany about Hamburgh, and in many other places. *Schonefeldt* Hist. pisc.

DOCIMASIA, Δοκιμασια, in antiquity, a custom among the Athenians, by which every man, before he was admitted to a public employment, was obliged to give an account of himself, and his past life, before certain judges in the forum; for if any man had lived a vicious and scandalous life, he was thought unworthy of the meanest office. Nor was this thought enough: for the first ordinary assembly after their election, they were a second time brought to the test; when, if any thing scandalous was found against them, they were deprived of their honours. *Pott.* Archæol. Græc. l. 1. c. 11. T. 1. p. 73.

DOCIMASTICAL *Experiments*. See Assaying.

DOCIMENUM *marmor*, a name given by the antients to a species of marble, of a bright and clear white, much used in the large sumptuous buildings, as temples and the like. It had its name from Docimenos, a city of Phrygia, afterwards called Synaia, near which it was dug, and from whence it was sent to Rome. It was accounted little inferior to the Parian in colour, but not capable of so elegant a polish; whence it was less used by the statuaries, or in other smaller works. The Emperor Adrian is said to have used this marble in building the temple of Jupiter, and many other of the great works of the Romans are of it.

DOCK (*Cycl.*)—Dock-*root*, in the materia medica. See the article Lapathi *radix*.

Dock, in the manege, is used for a large case of leather, as long as the *Dock* of a horse's tail, which serves it for a cover. The French call the *Dock*, *trousse-queue*. It is made fast by straps to the crupper; and has leathern thongs that pass between his thighs, and along the flanks to the saddle straps, in order to keep the tail tight, and to hinder it to whisk about.

Dock-*Yards*, in ship-building, are magazines of all sorts of naval stores; the principal ones in England, are those at Chatham, Portsmouth, Plymouth, Woolwich, Deptford, and Sheerness. In time of peace, ships of war are laid up in these *Docks*, those of the first rates mostly at Chatham, where, and at other yards, they receive, from time to time, such repairs as are necessary.

These yards are generally supplied from the northern crowns, with hemp, pitch, tar, rosin, and several other species. But as for masts, particularly those of the largest size, they are brought from New England.

How much it imports the good of the public, to keep those magazines constantly replenished, every one is able to judge: and it were much to be wished, the improving the fore-mentioned commodities in our English plantations, might meet with all possible encouragement; lest one time or other, it may prove difficult to get them elsewhere. It is reasonable to think such an undertaking will put the nation to some considerable charge, ere it be brought to perfection; but when so, many are the advantages that will arise from it.

DOCTOR (*Cycl.*)—A *Doctor* of the civil law may exercise ecclesiastical jurisdiction, though a layman. Stat. 37 Hen. 8. c. 17. Sect. 4.

DODDER, *Cuscuta* and *Epithymum*, in medicine, is an attenuant and aperient; and as such prescribed in obstructions of the viscera, in dropsies, jaundies, and other chronic diseases. See Cuscuta and Epithymum.

DODECACTIS, in natural history, a name by which Linkius, and some other authors, have called a kind of astrophyte, or branched star-fish, which has twelve rays, first parting from the body, and each of these finally divided into many others.

DODECADACTYLON, in anatomy, a name given by some of the old authors, to the gut called the *duodenum*, from its being usually about twelve fingers breadth long.

It is the first part of the small guts, beginning from the pylorus of the stomach, and ending where the gut *jejunum* begins: it is so called, as if it were the length of twelve fingers, which yet is never observed in any men amongst us; perhaps the antients mistook, from inspecting the guts of some brutes. It is most usually called *Duodenum*. *Blancard*.

DODECANDRIA, in Botany, a class of plants which have hermaphrodite flowers, with twelve stamina or male parts in each. See Tab. 1. of Botany, Class 1.

The word is formed of the Greek δωδεκα twelve, and ανηρ male. Of this class of plants are the asarabacca, agrimony, &c.

DODO, in zoology, the name of a bird, called also by some *cygnus cucullatus*, by others *gallus gallinaceus perigrinus*, and by Bontius *dronte*. It is a very singular bird, somewhat larger than a swan, but wholly different from the swan in shape, though by some esteemed a kind of that bird. Its head is large, and is covered with a membrane resembling a hood; its beak is of an oblong figure, and is yellow at its origin and black at the point, and is somewhat crooked: it is very naked, having only a few feathers scattered over its body, and the rudiments of wings made up of a few naked quills; the hinder part of its body is very bulky and fat, and has a tail made of four or five curled greyish feathers, resembling those of the ostrich. Its legs very thick and strong. See Tab. of Birds, N° 22. *Ray*'s Ornithol. p. 107.

DODONÆA, in botany, the name of a genus of plants about which authors were very unsettled in their opinions, till Linnæus characterized it under this name. Burman has made it a species of the carpinus, and Plumier of the staphylodendron. The characters are these: The perianthium is divided into three oval, erect, and equal segments. There are no petals. The stamina are eight in number, and are extremely short. The antheræ are of an oblong figure, they stand very low, and

and ſcarce exceed the length of the cup. The germen of the piſtil is of a three-corner'd ſhape, the ſtyle is ſubulated and very long, and the ſtigma is ſimple. The fruit is a roundiſh capſule, having three inflated cells with prominent angles. The ſeeds are contained one in each cell. The cup has ſometimes four ſegments, and the fruit four cells. *Linnæi*, Gen. Pl. p. 159.

DODRA, in Roman antiquity, a drink prepared from nine different ingredients; which are enumerated by the epigrammatiſt in the following line,

Jus, aqua, mel, vinum, panis, piper, herba, oleum, ſal.

Vid. *Auſon.* Epigram. 86. *Pitiſc.* Lex. Ant. in voc.

DOG (*Cycl.*)— The manner of chuſing a *Dog* and bitch for breeding of good whelps is this. The bitch muſt be of a good kind, and well proportioned, with large ribs and flanks. The *Dog* muſt be of a good kind, and young. The beſt rule is, that a young *Dog* and an old bitch breed excellent whelps. The months of January, February, and March are the beſt for theſe creatures to couple in. The bitch ſhould be uſed to a good kennel, that ſhe may like it after her whelping, and ſhe ought to be kept warm at the time. The whelps ſhould be weaned at two months old, and the firſt or ſecond never choſen. Among the reſt it is hard to chuſe which is beſt: but many prefer that which was pupped laſt againſt all other appearances.

Another method of chuſing is the taking the cunning of the bitch into the aſſiſtance, by removing the whole litter out of the kennel, and watching to ſee which ſhe takes up firſt to carry back: this is eſteemed the beſt and ſtrongeſt puppy. Others chuſe by weight, eſteeming the lighteſt puppy likely to make the beſt *Dog*. As ſoon as the choice is made, which ſhould be ſoon after the creature has littered, all thoſe are to be drowned which are not pitched upon, that thoſe which are to be bred up may have the more care and the better nouriſhment. Hounds for the chace are to be choſen by their colours: the white with black ears and a black ſpot at the ſetting on of the tail, are generally eſteemed the beſt to compoſe a kennel of, and are of the beſt ſcent and condition. The black hound, the black tanned, or the all liver-colour'd, or all white, the true Talbots, are beſt for the ſtring or line; and the grizzled, whether mixed or unmixed, if their hairs are ſhagged, are uſually the beſt runners. There ſhould always be a couple of theſe in the pack.

The general marks of a good hound are, that the head be in a good proportion, neither too long, nor too round, but rather inclining to the former than the latter; the noſtrils ſhould be even, the ears large, the back broad, the fillet great, the haunches large, the thighs well truſſed, the hams ſtrait, tall, and big near the reins, the reſt ſlender, the leg ſhould be big, and the ſole of the foot dry, and in the form of that of a fox, with long and large claws.

DOG-*Fly*, *Cynomyia*, in natural hiſtory, the name of a ſpecies of fly common in woods and among buſhes, and particularly troubleſome to dogs. It uſually ſeizes upon the ears, and 'tis in vain to beat it off, for it returns in a moment, and cannot be prevented but by being killed. It ſtings very ſeverely, and always raiſes a bliſter in the part. It ſomewhat reſembles the flat black fly ſo troubleſome to cattle. It has no trunk, but has two teeth much reſembling thoſe of the waſp. Its wings are always placed ſo cloſe upon its body that they are not ſeen. There are two kinds of it, one larger and found in woods, and the other common in hedges.

DOG-*Roſe*, a name for the common bryar or hip-tree. It is obſervable of ſome kinds of this ſhrub, that the flowers ſmell extremely ſweet in the night, or very early in the morning, but not at all ſo in the day-time. The reaſon of which ſeems to be the ſame as in all the noctuolent plants, of which there are ſeveral kinds, as ſome of the geraniums, and of the jaſmines, *&c.* that is, that the ſun exhales and diſſipates their odorous effluvia in the day-time as ſoon as they are expanded from the flower, but that in theſe cold times the vapours are condenſated, and reach our noſe in an agreeable manner. Phil. Tranſ. N° 114.

Mad DOG. See MAD.

Water DOG. See WATER.

DOGA, in antiquity, a large veſſel into which the wine was put when newly brought from the vintage. *Pitiſc.* Lex. Ant. in voc.

DOGGERS, in the Engliſh alum works, a name given by the workmen to a ſort of ſtone found in the ſame mines with the true alum rock, and containing ſome alum, though not nearly ſo much as the right kind. The county of York, which abounds greatly with the true alum rock, affords alſo a very conſiderable quantity of theſe *Doggers*; and in ſome places they approach ſo nearly to the nature of the true rock, that they are wrought to advantage.

Whether the finer of theſe *Doggers*, or the right alum rock be uſed, they always add urine and a ſea-weed in the making the alum. Moſt of the hills between Scarborough and the river Tees abound in both kinds of ſtone, and there is alſo a great abundance of it about Preſton in Lancaſhire. It is of a bluiſh colour. Thoſe mines which lie deep in the earth, and are tolerably well moiſtened with ſprings, are the beſt. Thoſe mines that are abſolutely dry are not good, and the ſtone they contain is often of the *Dogger* kind inſtead of the true rock. On the other hand, where there is too much water the ſtone is apt to be rotted and corrupted, and a great quantity of the alum is loſt.

The mine often lies ſeventy yards or more under the ſurface of the earth; and for the more convenient working of it, they generally begin to dig on the declining of a hill, where they may have water at command. They dig down the mine by ſtages to ſave carriage, and to throw down the ſtone ore near the place where they calcine it.

The true alum rock, while it remains in the earth, is a hard ſtone; but on being expoſed to the air, it moulders in pieces, and yields a liquor of which vitriol or copperas is made; but being calcined, it yields no vitriol, but is fit for the making of the alum. The *Doggers* are of the ſame hardneſs with the true rock while in the earth, but they do not break and moulder ſo eaſily in the air where the mine is all of the true rock. There will often iſſue out at its ſides a brackiſh water, which is a ſort of liquid alum, and with the ſun's heat will be evaporated, and leave pure alum behind it. The general way of calcining the rock is with cinders of Newcaſtle coal, wood, and furze-buſhes. The fire place is made about two foot and a half thick, two yards wide, and ten yards long; and betwixt every two fires of this kind there are ſtops made of wet rubbiſh, ſo that any one or more of them may be kindled without damage to the reſt. They lay on every heap of this fewel eight or ten yards thickneſs of the alum rock broken to pieces, and then kindling the fire, as it burns up toward the top, they lay on more and more of the rock. The ſulphur remaining in the ſtones aſſiſts the burning; and if the heap be finally carried to twenty yards high, it will burn as fiercely at the top as at the bottom. When the ſtones are properly calcined they become whitiſh; but in windy weather the fire is apt to be irregular, and where it is carried moſt by the wind it over calcines the ſtones, and makes them red; and where it has leaſt force, they are left black and half calcined; ſo that to the proprietor of a work of this kind, it is of great conſequence to attend a fair day for the burning. The alum rock when thus calcined is thrown into pits of water, where there is a communication with other pits to the number of four; and it is ſo contrived, that every parcel of the alum rock is waſhed with four waters, and every quantity of the liquor, before it comes to the boiling, has waſhed four parcels of the rock; every quantity of the rock is left four and twenty hours ſteeping in the water, and conſequently every parcel of the liquor is four days in preparing before it comes to the boiling-houſe.

When the works are firſt begun in any place, they uſually boil the liquor into alum alone without the mixture of any other ingredient; but after a time they generally add the ſea-weed and urine to ſave expence by procuring the more alum from an equal quantity of the liquor. The things they add are the urine of healthful people, and the ſalt extracted from the ſea-weed, which is a ſort of pot-aſh. The urine of poor labouring people, who drink little ſtrong drink, is beſt. The kelp or pot-aſh is put into the liquor while boiling, but the urine is put into veſſels of wood cover'd with clay, and the liquor after boiling is put to it. The redder the liquor looks, the more urine is required in proportion to it. The liquor remains four days in theſe veſſels; the alum begins to ſhoot on the ſecond day, and continues ſhooting till the end of the fourth. The maſters of the works not being willing to loſe time, never ſuffer the liquor to remain more than four days in the coolers: they tell the workmen that if it ſtood longer the ſalt would turn to copperas or green vitriol, which ſtory, however abſurd, is firmly believed by them.

Temperate weather is greatly the moſt eligible for alum making; if the weather be too hot, the liquor is longer in cooling, and the alum in gathering, than it ſhould be, and is always obtained in leſs quantity, though purer, than otherwiſe. In very cold and froſty weather, on the other hand, the alum ſhoots too ſoon, and the nitrous matter and ſlime not having time to ſubſide, are mixed with the alum. This produces ſometimes a double quantity of alum, but ſo foul, that it is afterwards in great part conſumed in the waſhing. This waſhing is done with water already impregnated very ſtrongly with alum, ſo that the ſalt when tolerably pure loſes little or nothing by it. Being waſhed, it is put into another pan with a quantity of water, where it melts and boils a little; and thence it is ſcraped into a great cask, where it commonly ſtands ten days, and is then fit for the market. The *Doggers* treated in the ſame manner as the alum rock yield the ſame ſalt, but in leſs quantity, and are often not worth the expence of working; as ſome of them are however much richer in alum than the others, it is always worth while to try them, where they are found in large quantities, and in ſufficiently convenient places for working. Philoſoph. Tranſact. N° 142.

DOGGER-*fish*, in our ſtatutes, ſeem to be fiſh brought in the fiſhing veſſels, called *Doggers*, to Blackneſs Haven, *&c.* anno 31 Edw. 3. Stat. 3. c. 2.

DOGGER-*men*, fiſhermen belonging to *Dogger* ſhips. 25 Hen. 8. c. 4.

DOGGET. See DOCKET.

DOGS-BANE, *Apocynum*, in Botany, the name of a plant, which conſtitutes a large genus, the characters of which are theſe: the flower conſiſts of one leaf and is made in the faſhion of a bell, but not regularly figured in all the ſpecies.

In ſome the flower is bell faſhioned, and divided into ſeveral ſegments; and from its cup there ariſes a piſtil, which perforates the bottom of the flower, and is fixed to its hinder part like a nail; this changes into a fruit, compoſed of two vaginæ, and opening from the baſe to the apex, and filled with large quantities of ſeeds, winged with down, and fixed to a rough placenta. *Tournefort's* Inſt. p. 91.

In others the flower is bell faſhioned, and is multifid and inverted; and its middle is filled by a very elegant head, compoſed of five little horns expanded into a circle; to the lower part of this head there is affixed a piſtil, which is joined to it in the manner of a nail; this ariſes from the cup, and finally ripens into a fruit, compoſed of two vaginæ, which open from the baſe to the apex, and contain numerous ſeeds, winged with down, and placed in the manner of ſcales, and affixed to a foliacious placenta. To this, it is to be added, that the *Apocynums* all abound with a milky juice.

The ſpecies of *Apocynum* enumerated by Mr. Tournefort are theſe. 1. The upright, hoary, broad leaved Egyptian kind, called by many authors *Beidelſar*. 2. The hoary broad leaved erect kind of malabar, with purpliſh white flowers. 3. The hoary broad leaved erect American kind, with pale bluiſh red flowers. 4. The hoary broad leaved erect Syrian kind, with ſmall dusky purple flowers. 5. The great erect Syrian kind, with green ſtalks and whitiſh flowers. 6. The narrow leaved erect Syrian kind. 7. The ſmall erect American kind, with very long and narrow leaves. 8. The Virginian kind, with a green flower, and very long pod. 9. The Indian *Apocynum*, with leaves like thoſe of the tutſan, and flowers like thoſe of the lilly of the valley, and of a beautiful reddiſh colour. 10. The roundiſh leaved *Apocynum*. 11. The Venetian, willow leaved ſea *Dogsbane* with purple flowers. This has been called very improperly by ſome a *tithymal*, *eſula*, and *alypum*. 12. The hairy *Apocynum* of New England, with a tuberous root and yellow flowers. 13. The *Dogsbane* of Curaſſo, with long leaves, like thoſe of oleander, and with a fibroſe root, and orange coloured flowers. 14. The broader leaved orange coloured flowered *Dogsbane* of Curaſſo. 15. The erect African *Dogsbane*, with a broad, ſmooth, and willow like leaf, and a hairy pod. 16. The green climbing *Apocynum*, with periwinkle leaves, and a hairy fruit. 17. The hoary climbing *Dogsbane*, with periwinkle leaves. 18. The climbing African *Dogsbane*, with a tuberoſe root, like that of aſphodell, and very narrow leaves. 19. The American *Apocynum*, with leaves like thoſe of the agnus caſtus. 20. The climbing American *Dogsbane*, with a large hairy yellow flower, and very long and ſlender pods. 21. The long almond leaved American *Dogsbane*. 22. The climbing American *Dogsbane*, with almond like leaves, and pods like thoſe of the emerus. 23. The climbing American *Dogsbane*, with pods rough at the end, and ſticking to peoples cloaths. 24. The citron leaved, climbing American *Dogsbane*, with ſpotted pods. 25. The bay-leav'd and climbing American *Dogsbane*, with white umbellated flowers. 26. The Tree *Dogsbane* of the Canaries, looking like æleagnus. And 27. The ſhrub by the Spaniſh *Dogsbane*, with leaves like thoſe of toad's flax. Moſt of the ſpecies are poiſonous. *Tourn.* Inſt. p. 92.

DOG's-*tail*, in Botany. See CYNOSURUS.

DOG's-*teeth*, in anatomy. See DENTES *Canini*.

DOG's-*tooth*. in Botany. See DENS *Canis*.

DOG-*wood*—This wood, when put into water, is ſaid to ſtupify fiſh there, ſo that they are eaſily taken with the hand. It is uſed in America for this purpoſe, and the method is to tie it to the ſtem of the fiſhing boat. See *Boyle's* Works abr. vol. 1. p. 137. It is the wood of a ſpecies of cornus.

DOITKIN, a kind of baſe coin of ſmall value, prohibited by the ſtatute 3 Hen. 5. c. 1. Hence came the phraſe, *Not worth a Doitkin*.

DOLABRUM, among the Romans, a kind of knife uſed in ſacrifices among that people. Vid. Hiſt. Acad. Inſcript. T. 2. p. 345.

DOLE, (*Cycl.*) in the law of Scotland, is uſed for a malevolent intention. The word is taken from the civil law term *Dolus*.

Dole, in the law of Scotland, as well as in the civil law, is an eſſential ingredient to conſtitute an action criminal. In crimes wherein the will, not the event muſt be regarded, no negligence can equal *Dole*; unleſs the negligence be ſo extremely ſupine, as not to be conceivable without implying *Dole*.

Under *Dole* are comprehended the vices and errors of the will, which are immediately productive of the criminal fact, though not premeditated, but the effect of ſudden paſſion. In this reſpect *Dole* differs from what the Engliſh law calls malice. However both laws agree in this, that the bare intention never brought forth into act, is no crime; yet giving counſel to perpetrate, and the fact following, is.

DOLE-*fish*, in our ſtatutes, ſeems to be that fiſh, which the fiſhermen, yearly employed in the north ſeas, do of cuſtom receive for their allowance or ſhares. V. ſtat. 35 Hen. 8. c. 7.

DOLET, in natural hiſtory, a word uſed by ſome writers, in medicine, for red vitriol, or colcothar of vitriol.

DOLG-BOTE, in the Saxon laws, a recompence, amends, or ſatisfaction, made for a ſcar or wound. Sax. Dict. LL. Aluredi Regis, c. 23.

DOLICHODROMUS, in the antient exerciſes, one who ran the length of a *Dolichos*. See DOLICHOS.

DOLICHOLITHOS, in natural hiſtory, a name given by ſome authors to a ſpecies of ſtone, of a blackiſh colour, and of the ſhape of a kidney bean, found in great abundance about Tyrol, and yielding a ſmell on rubbing.

DOLICHOS, in Botany, the name of a genus of plants of the papilionaceous kind; the characters of which are theſe: the perianthium is compoſed of one leaf; it is very ſhort, and is divided into four ſegments at the end; the upper ſegment is emarginated. The flower is of the papilionaceous kind; the vexillum is roundiſh, large, and emarginated, and is wholly bent backward; and there are two callous oblong bodies running parallel to one another, and growing in the tender part of the vexillum toward its baſe. Theſe compreſs the alæ together: the alæ are of an obtuſe oval figure, and are of the length of the carina: the carina is compreſſed, the filaments are diadelphous, and the antheræ are ſimple. The germen of the piſtil is ſlender and compreſſed, the ſtyle points upward, the ſtigma is bearded, and runs from the middle of the inner part of the ſtyle to its apex, which is callous and obtuſe. The fruit is a large pod of a pointed oblong figure, it is bivalve, and is divided into two cells; the ſeeds are of an elliptic figure, and uſually are compreſſed. This plant approaches greatly to the phaſeoli, but is diſtinguiſhed at firſt ſight by the carina of the flower, which is not ſpiral, as in that genus. *Linnæi* Gen. Pl. p. 350.

DOLICHOS, in antiquity, a word uſed by different writers in different ſenſes. The antient phyſicians underſtood by it long or prolix, and uſed it in this ſenſe in their deſcriptions of diſeaſes. Others uſed it for the fruit or pod of the kidney bean. Suidas makes it ſignify a race, or courſe, of twelve ſtadia, or of twenty-four.

DOLIUM, in natural hiſtory, the name of a genus of ſhells, called by ſome *conchæ globoſæ*, and by the French, *tonnes*. The characters are theſe: it is an univalve ſhell, with a globoſe, or round belly, with a lax aperture, ſometimes ſmooth and ſometimes dentated. The clavicle is either moderately umbonated or depreſſed; and the columella is, in ſome ſpecies ſmooth, in others wrinkled. Some authors have called theſe *conchæ ampullaceæ*; and they have had, at times, many other names, but all tending to the ſame ſenſe, and expreſſing the globular figure of the body, which is the great character by which theſe are diſtinguiſhed from all other ſhells. See Tab. of ſhells, N° 15.

The Perſian ſhell, ſo much eſteemed in cabinets, is a very ſingular one; but the globoſe figure of its body evidently refers it to this genus, though it differ in many other particulars from all the ſpecies of it. Aldrovandus could not tell what to make of the ſhells of this genus; but has thrown them together at the end of his book, obſerving, that they would ſeem of the turbinated kind, but that they want the turbo. Hiſt. Naturel. Eclairc. p. 300.

The author of the Armarium Balfourianum, calls the Perſian ſhell the *turbo cochlea*; and ſays, that many range it among the porcelains. The Ethiopian crown is another very remarkable ſpecies of the *Dolium*; it is always of a fine yellow, and is ſurrounded with a crown of regular eminences. The lyra, or harp ſhell, called alſo the caſſandra, is another very elegant ſhell of this genus, often finely variegated with the moſt brilliant colours. That peculiar ſpecies, known by the name of lyra nobilis, is variegated in an extreamly elegant manner, with a dark brown. The fig and the radiſh ſhells are alſo of this genus, and are very particular in their long ſhape, their crooked tail, and their colours. *Fabius Column.* de Purpura. p. 28. c. 18.

Rumphius is very much to be blamed for confounding theſe ſhells with the helmet ſhell kind, which he calls *Caſſides*. But nothing can be more erroneous than this, as the helmets are a genuine kind of murex, and theſe a genus wholly diſtinct from thoſe, and from all other ſhells. The ſhell which Rondeletius has figured under the name of the echinophora, is alſo one of theſe globoſe ſhells, or dolia, and is covered all over with ſmall and ſhort ſpines, or buttons: he has placed it among the buccinums. Armarium Balfour. p. 144.

Fabius Columna has deſcribed the little gondola ſhell, which is a ſpecies of this genus, much at large; and ſays, that it ſails at pleaſure in the manner of the nerites; he calls it conchæ natatilis, or neritodes minima. This genus of ſhells, comprehending a great number of ſpecies; and there appearing

ing among them ſeveral marks and characters peculiar to certain ſpecies, and not to others; it may be proper to arrange them under ſeveral ſeries denoted by theſe marks.

I. Of the round umbilicated *Dolia* we find the following ſpecies. 1. The white, thin, and ſtriated *Dolium*. 2. The furrowed *Dolium*, with yellow circular ridges. 3. The furrowed *Dolium*, ſurrounded with ſpotted ridges. 4. The partridge ſhell, or regularly ſpotted and ſtriated *Dolium*. 5. The white thick *Dolium* furrowed all over, and with dentated edges. 6. The ſtriated and ſpotted *Dolium*, with a wrinkled columella.

II. Of the oblong and ſmooth *Dolia*, we have the following ſpecies. 1. The yellow *Dolium*, without an umbo. 2. The white *Dolium*, with an umbo. 3. The Ethiopian crown, or the brown coronated *Dolium*, with an umbo. 4. The oblong *Dolium*, with no umbo. 5. The contabulated and variegated *Dolium*, with an exerted clavicle.

III. Of the oblong coſtated and umbonated *Dolia* we have the following ſpecies. 1. The *Lyra* or *Harp-ſhell*, pennated and adorned with thicker roſe coloured ribs. 2. The *Harp-ſhell*, with eleven ribs. 3. The noble *Harp-ſhell*; this is of a very elegant figure, and is of a brown colour variegated with white. 4. The reddiſh *Harp-ſhell*, with fourteen red ribs. 5. The umbonated *Perſian ſhell*, otherwiſe called the *Perſian Purpura*, or *Panama ſhell*. When this is poliſhed, it appears of a very different kind, and has ſeveral white lines on it, and is ſmooth. 6. The *Mullberry-ſhell*. 7. The ſtriated *Dolium*, with brown and white ſpots.

IV. Of the *Dolia* of the fourth ſeries, which have long and arched tails, there are the following ſpecies. 1. The *Fig-ſhell*, with a depreſſed clavicle. 2. The violet coloured, or ametleyſtine rediſh *Dolium*. 3. The ſtriated pale yellow *Dolium*. 4. The thick yellow *Dolium*, with ſtreaks and protuberances regularly placed. 5. The white *Dolium*, with ſtreaks and protuberances placed regularly.

V. Of the *Dolia* of the fifth ſeries, which from their ſhape are called bullæ, we have the following ſpecies. 1. The great and thick *Gondola ſhell*; this is of a grey colour, and is called by ſome the *ſea nut*. 2. The oblong greeniſh *Gondola ſhell*. 3. The oblong reddiſh *Gondola ſhell*. 4. The thin white papyraceous *gondola ſhell*. 5. The yellow *Gondola ſhell*, with four brown faſciæ. 6. The yellow *Gondola ſhell*, with brown capillary ſtreaks. 7. The great white *Gondola ſhell*, umbilicated on each ſide.

VI. To theſe is to be added a very rare ſpecies of *Dolium*, which is faſciated, of a blue colour on the outſide and white within, this is called by ſome the *Vitta Cerulea*; and there is an olive coloured ſhell of the ſame kind. Hiſt. Nat. Eclairc. N° 303.

DOLPHIN, (*Cycl.*) in ichthyology, the Engliſh name of a fiſh of the cetaceous kind, called alſo ſometimes the *Porpeſſe*, but improperly. The word *Porpeſſe* is properly the name of the conick bodied *Dolphin*, with a broad back and ſubacute ſnout; but the *Dolphin*, properly ſo called, and to which the name *Porpeſſe* is erroneouſly given, is the *Delphinus* of Artedi, with an oblong and ſubcylindric body, and a long and acute ſnout. This is the *Delphis* of Ariſtotle and the other Greek writers, and the other properly called the *Porpeſſe* is their *Phocæna*. Ælian, Appian, and Athæneus, all join in calling this *Dolphin*, properly ſo named, the *Delphis* and *Delphin*, and the ſame name is preſerved by all the more accurate of the Latin writers. See DELPHINUS.

DOLPHIN, is alſo a name given by the Engliſh to the fiſh called *Hippurus*, by the generality of authors; but by ſome *Hippoſele* and *Equiſele*, and by others *Dorado*. According to the new ſyſtem of Artedi, this fiſh is a ſpecies of the *Coryphæna*, and is diſtinguiſhed from all the other kinds, by its having a forked tail. See HIPPURUS and CORYPHÆNA.

DOM *and* SOM, words uſed in antient charters, ſignifying a power of judging, and ſecurity in poſſeſſing.

DOMENGER, in middle age writers, is ſometimes uſed for damſel. See DAMSEL, *Cycl.*

DOMICELLUS. See DAMSEL, *Cycl.*

DOMINARUM AQUA, a name given by Mynſicht to a diſtilled water, which he recommends to the ladies to facilitate delivery.

DOMNICELLUS. See DAMSEL, *Cycl.*

DOMO *Reparanda*, a writ that lies for one againſt his neighbour, by the fall of whoſe houſe he fears damage to his own. Reg. of writs, fol. 153. In which caſe the *Civilians* have the action *de damno infecto*.

DONARIA, among the antients, in its primary ſignification, was taken for the places where the oblations offered to the gods were kept; but afterwards was uſed to denote the offerings themſelves; and ſometimes, though improperly, the temples. *Hofm.* Lex. in voc.

DONAX, in zoology, a name by which ſeveral of the old authors have called the ſolen or razor fiſh. See SOLEN.

DONAX, in botany, the name by which ſome authors call the great reed, the arundo maxima, or arundo cypria of others. *Tourn.* Inſt. p. 256. See ARUNDO.

DONGON, in natural hiſtory, a name given by the people of the Philippine Iſlands to a peculiar ſpecies of crane, which has a large body like a gooſe, and a ſhorter neck than the common kind: it has a long and very broad beak, and is of a grey colour; they have, beſides this, another ſpecies of crane, which they call tipul or tihol; as remarkable for the length of its neck and legs, as this for the breadth of its beak. This tipul can ſtand erect, and look over a tall man's head. See TIPUL.

DONNA, or *La* DONNA, in ichthyology, a name given by Zuchelli, and ſome other authors, to the manati or ſea cow. See the article MANATI.

DONZELLINA, in zoology, a name by which ſome called the *julis* a very beautifully painted fiſh, of the Mediterranean, approaching to the nature of the turdus or wroſſe. *Willughby*, Hiſt. piſc. p. 324. See the article JULIS.

DOR, the Engliſh name for the common black beetle. Some alſo apply it to the duſty beetle, that flies about hedges in the evening. See SCARABÆUS.

DORADO, in zoology, the name of a large ſea fiſh, called by the Braſilians guaracapema; and ſo much reſembling the hippuris, as by many to be ſuppoſed to be the ſame fiſh; it grows to ſix or ſeven feet in length, and is of a ſomewhat broad and flatted form, being a foot and a half broad near the head; the head ends in a ſquare, and is thinned away to an edge, for the advantage of the creatures ſwimming the more ſwiftly. Its mouth is but ſmall for its ſize, and is furniſhed with very ſharp teeth; its eyes are large and round, and placed but a little above its mouth; its gills are large. It has one long fin running the whole length of the back, and another anſwering it on the belly, reaching from the anus to the tail; the tail is long, large, and forked; its ſcales are very ſmooth, and ſcarce ſenſible to the touch; its head, back and ſides are of a ſilver green, its belly white; its back and ſides are ſpotted with blue; it is a very ſwift fiſh in ſwimming, and is a very delicate and well taſted one. *Willughby*, Hiſt. piſc. p. 214.

DOREAS *Lybica*, in natural hiſtory, the name by which Ælian and ſome other authors have called the common antelope. See GAZELLA.

DOREE, or *John* DOREE, in ichthyology, a name given by us to a fiſh, called by authors, the faber and gallus marinus. We have borrowed the name *Doree* from the French; and, as to the word *John*, by ſome writers prefixed to it, it ſeems only a corruption of the French word *jaune*, yellow. They expreſſing the colour of the ſides of this fiſh, which is a gold yellow, by the phraſe *jaune doreé*: this has given us the words *John Doreé*, or by thoſe who ſpell yet worſe, *John Dory*; as we ſee it in ſome authors. See FABER.

According to the new Artedian ſyſtem, this is a ſpecies of the Zeus, and is diſtinguiſhed by that author from the others of that genus, by the name of the Zeus, with a prickly belly, and with a tail, not forked at the end, but rounded. *Willughby*, Hiſt. piſc. p. 295. See Tab. of fiſhes, N° 50, and ZEUS.

DORIALTIDES, in natural hiſtory, the name of a ſtone, to which great virtues, medicinal and magical, were attributed by the writers of the middle ages. It was ſaid to be found in the head of a cock, or of ſome other animal; and that it was made lucid by being laid on an ant-hill, the account ſeems altogether idle and imaginary.

DORIAN, in antient muſic, the fourth ſpecies of the diapaſon. See DIAPASON.

DORING, or DARING, among the ſportſmen, a term uſed to expreſs a method of taking larks, by means of a clap-net and a looking-glaſs. For this ſport there muſt be provided four ſticks, very ſtrait and light, about the bigneſs of a pike; two of theſe are to be four foot nine inches long, and all notched at the edges, or the ends. At one end of each of theſe ſticks there is to be faſtened another of about a foot long on one ſide; and on the other ſide a ſmall wooden peg, about three inches long. Then four more ſticks are to be prepared, each of one foot length; and each of theſe muſt have a cord of nine foot long faſtened to it at the end. Every one ſhould have a buckle for the commodious faſtening on to the reſpective ſticks when the net is to be ſpread.

A cord muſt alſo be provided, which muſt have two branches. The one muſt be nine foot and a half, and the other ten foot long, with a buckle at the end of each: the reſt, or body of the cord muſt be twenty-four yards long. All theſe cords, as well the long ones, as thoſe about the ſticks, muſt be well twiſted, and of the bigneſs of ones little finger. The next thing to be provided is a ſtaff of four foot long, pointed at one end, and with a ball of wood on the other, for the carrying theſe conveniencies in a ſack or wallet.

There ſhould alſo be carried, on this occaſion, a ſpade to level the ground where there may be any little irregularities; and two ſmall rods, each eighteen inches long, and having a ſmall rod, fixed with a packthread at the larger end of the other. To theſe are to be tied ſome packthread loops, which are to faſten in the legs of ſome larks; and there are to be reels to theſe, that theſe birds may fly a little way up and down.

When all this is done, the looking-glaſs is to be prepared in the following manner. Take a piece of wood, about an inch and half thick, and cut it in form of a bow, ſo that there may be

about

about nine inches ſpace between the two ends; and let it have its full thickneſs at the bottom, that it may receive into it a falſe piece; in the five corners of which, there are to be let in five pieces of looking-glaſs. Theſe are to be ſo fixed, that they may dart their light upwards, and the whole machine is to be ſupported on a moveable pin, with the end of a long line fixed to it; and made in the manner of the childrens play-thing of an apple and a plum-ſtone; ſo that the other end of the cord being carried through a hedge, the barely pulling it may ſet the whole machine of the glaſſes a turning. This and the other contrivances are to be placed in the middle between the two nets. The larks fixed to the place, and termed calls, and the glittering of the looking-glaſſes, as they twirl round in the ſun, invite the other larks down; and the cord that communicates with the nets, and goes through the hedge, gives the perſon behind an opportunity of pulling up the nets, ſo as to meet over the whole, and take every thing that is between them. The places where this ſort of ſporting ſucceeds beſt are open fields remote from any trees or hedges, except one by way of ſhelter for the ſportſman, and the wind ſhould always be either in the front or back; for if it blows ſideways, it prevents the playing of the nets.

DORONICUM, *Leopard's Bane*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the radiated kind; its disk is compoſed of floſcules, and its outer edge of ſemifloſcules, all ſtanding upon embryo's, and incloſed in a funnel-like, or baſon-like cup. The embryo's finally become ſeeds winged with down, and affixed to the thalamus of the flower.

The ſpecies of *Doronicum* enumerated by Mr. Tourneſort are theſe: 1. The ſweet rooted *Doronicum*. 2. The branched or ſcorpion-rooted *Doronicum*. 3. The broad leaved ſcorpion-rooted *Doronicum*. 4. The plantain leaved *Doronicum*. 5. The German plantain leaved *Doronicum*. 6. The long leaved rough and hairy *Doronicum*. 7. The broad leaved large flowered *Doronicum*. 8. The largeſt *Doronicum* with leaves ſurrounding the ſtalks. 9. The black rooted *Doronicum*. 10. The Portugal plantain leaved *Doronicum*. The *Doronica* are all eſteemed poiſonous. *Tourn.* Inſt. p. 487.

DORONICI *Radix*, in the materia medica, the name of a root kept in the ſhops in ſome places, but at preſent little uſed. It is a ſmall yellow root, appearing white when broken, of a ſweet aſtringent taſte, and viſcous in the mouth. The faireſt and plumpeſt roots ſhould be choſen, and ſuch as are freſh dried, or at leaſt not worm eaten. The root is brought from the mountains of Swiſſerland, and ſome other places. The plant which produces it is the *Doronicum Officinarum* of Gerrard, and is kept with us in the gardens of the curious. The leaves are broad, and the flower is yellow, and of the ſize of a marygold.

It is ſaid to be an alexipharmic, but is not uſed in the preſent practice. Authors are indeed not at all agreed about its nature; ſome accounting it a very valuable medicine, and others a poiſon. *Pomet*'s Hiſt. of Drugs, p. 40.

DORSCH, in ichthyography, the common name of ſmall fiſh of the cod kind, frequent in the Baltick, but more rare in other ſeas, and called by authors the aſellus varius, or ſtriatus. It is remarkable for having the ſmootheſt and ſofteſt skin of all the cod kind; nevertheleſs it has ſmall ſcales. It is uſually caught of a foot, or a little more, in length. Its head is proportionably ſmaller than the haddocks, and ends in a ſharper point; the jaws being both alſo furniſhed with teeth, its mouth opens very wide, its back and the upper part of its ſides are black, or of a dusky brown, and ſometimes, eſpecially in winter, is of a paler greyiſh colour, and ſpotted with black ſtreaks. The lines running from the gills to the tail are one on each ſide, and are whitiſh. Its belly is of a greyiſh or yellowiſh white. It approaches neareſt to the ſpecies called the whiting pollack, but differs from it in having a beard. It is a fine fiſh for the table. *Willoughby*, Hiſt. Piſc. p. 172.

DORSI (*Cycl.*)—DORSI *primus*, in anatomy, a name given by Fallopius, and many other authors, to a muſcle, now generally known by the name of *Quadratus Lumborum*, or the external lumbal muſcle. See QUADRATUS.

DORSTENIA, in botany, is uſed by Plumier, and ſome other authors, for the plant of which the contrayerva uſed in medicine is the root. *Plum.* Nov. Gen. 29. T. 8.

DORSTENIA, in the Linnæan ſyſtem, is uſed for a genus of plants, the characters of which are theſe: the cup is a common involucrum, large, of a fat figure, and angular, covered with the common receptacle of the flowers, and with numerous very ſmall flowers in it. Each ſingle perianthium is quadrangular, hollow, buried in the common involucrum, and growing to it. There are no petals. The ſtamina are four ſlender and very ſhort filaments. The antheræ are roundiſh. The germen of the piſtillum is roundiſh, the ſtyle ſimple, and the ſtigma obtuſe. The common receptacle becomes thick and fleſhy, and contains the ſeeds which are numerous and ſmall. *Linnæi* Gen. Plant. p. 50.

DORSUM *Piſcium*. The back in fiſhes is a part from which authors take the characters of ſeveral of their diſtinctions. Its principal differences taken notice of by Artedi are theſe: conſidered in regard to its length, it is either ſtrait, as in the pike, &c. or gibboſe, riſing up into a prominence in the middle, as in the pearch, bream, and many other fiſh. Then conſidered tranſverſly, it is either flat, as in the pike; or convex, as in moſt other fiſhes; or finally, it is formed into a ſubacute angle, as in the pagrus and ſome others. From the conſideration of the back, the ichthyologiſts generally deſcend to the ſides: theſe alſo are the ſubject of ſeveral characters and diſtinctions, as they are in the different fiſh more or leſs flat, or more or leſs convex. The breaſt and belly follow theſe in deſcription, and their principal differences are their being convex, as in the petromyzon, the eel, &c. or flat, as in the pike, the bream, and many others; or finally, raiſed or pointed, with a ridge or acute angle, as in the clupeæ. There is alſo another ſingularity, which is, that in ſome the belly and breaſt are flat, but the lower part of the belly, between the ventral fins and the anus, is contracted into a ſort of ſharp angle: this is ſeen in ſome of the cyprini. *Artedi* Ichthyolog.

DORYCNIUM, in botany, a name given by ſome to the upright umbellated ſilvery bindweed, called by others *Cneorum*. See the article CONVOLVULUS.

DORYDREPANON. See the article DREPANON.

DORYPHORI, an appellation given to the life-guard-men of the Roman emperors. They were held in ſuch high eſtimation, as frequently to have the command of armies conferred on them.

It was uſual alſo for chief commanders to have their *Doryphori*, or life-guard, to attend them. *Pitiſc.* Lex. Ant. in voc.

DOSENS, ſtreight cloths made in Devonſhire, and ſo called in Rot. Parl. 2 Hen. 5. See DOWSEINES.

DOSSER, a ſort of basket to be carried on the ſhoulders of men. It is uſed in carrying the overplus earth from one part of a fortification to another, where it is wanted. There are likewiſe ſmall carts and wheel-barrows for the ſame uſe. *Guillet.* Gent. Dict. in voc.

DOSSIL, in ſurgery, is lint made into a cylindric form, or reſembling the ſhape of dates or olive-ſtones. *Doſſils* are ſometimes ſecured by a thread tied round their middle. *Heiſt.* Surgery, Introd. §. 53.

DOTE (*Cycl.*)—DOTE *Aſſignanda*, in law, a writ that lay for a widow, where it was found by office, that the king's tenant was ſeized of tenements in fee, or fee-tail, at the day of his death; and that he held of the king in chief, &c. in which caſe, the widow came into the Chancery, and there made oath, that ſhe would not marry without the king's leave. Anno 15. Edw. 3. c. 4. And hereupon ſhe had this writ to the eſcheator; for which ſee Reg. of writs, fol. 297. and Fitz. Nat. Br. fol. 263.

Theſe widows are called the king's widows.

DOTE *unde nihil habet*, in law, a writ of dower that lies for the widow againſt the tenant, who bought land of her husband in his lifetime, whereof he was ſolely ſeized in Fee-ſimple or Fee-tail, in ſuch ſort, as the iſſue of them both might have inherited. *Fitz.* Nat. Br. fol. 147.

DOTIS *Admenſuratione*. See ADMEASUREMENT, *Cycl.* and Reg. of Writs, fol. 171.

DOTTERELL, in zoology, the name by which the mainellus is commonly known in moſt parts of England. See MAINELLUS.

DOTTO, in natural hiſtory, a name given by ſome authors to a ſpecies of the emerald, which was of a good green, but not clear or fine.

DOUBLE (*Cycl.*)—DOUBLE, in the manege. A horſe is ſaid to *double* his reins, when he leaps ſeveral times together to throw the rider. Thus we ſay, this *Ramingue doubles* his reins, and makes *Pontlevis*. See RAMINGUE and PONTLEVIS.

DOUBLE *Caſt*, in husbandry, a term uſed by the farmers for that method of ſowing that does not diſpenſe the neceſſary quantity of ſeed for a piece of land at one bout, but requires the going over it every where twice in a place. *Plot.* Oxf. p. 251.

DOUBLE *Horizontal Dial*, one with a *double* gnomon, whereof one points out the hour on the outward circle, and the other ſhews the hour on the ſtereographic projection drawn upon it. This dial finds the meridian, hour, the ſun's place, riſing, ſetting, &c. and many other propoſitions of the globe. See DIAL, *Cycl.*

DOUBLE *Dancette*, in heraldry. See DANCETTE, *Cycl.*

DOUBLES, in our ſtatutes, ſignify as much as letters patent, being a French word made of the Latin diploma. Anno 14 Hen. 6. c. 6.

DOVE, in zoology. See COLUMBA.

Ring-DOVE. See the article RING-*Dove*.

DOVELLA, in ichthyology, a name given by the Maſſilians to the fiſh called the donzellina: by the Italians, it is the julia or julis of authors; and, according to the Artedian ſyſtem, it is a ſpecies of the labrus. That author diſtinguiſhes it by the name of the labrus of variegated colours, with two large teeth in the upper jaw. See LABRUS.

DOULEIA, Δουλεια, among the Athenians, a kind of puniſhment by which the criminal was reduced into the condition of a ſlave. It was never inflicted upon any but the Ατιμοι, ſojourners

journers and freed ſervants. *Pott.* Archæol. Græc. l. 1. c. 25. T. 1. p. 130.

DOWLE and DEAL, in our old writers, are uſed to ſignify a diviſion. The word comes from the Saxon *dal*, i. e. *diviſio*, and that from *dælan*, *dividere*; whence our Engliſh word *dealing* is formed.

In this ſenſe it is that the ſtones laid to the boundaries of lands are called *Dowleſtones*.

DOWSEINES, a ſort of kerſeys made in Devonſhire, in length twelve yards; whence alſo their name, which is otherwiſe writ *doſens*, *dozens*, or *dozeins*.

DOZEIN, *Decenna*. In the ſtatute for view of frank-pledge, made 18 Edw. 2, one of the articles for ſtewards in their leets to enquire of, is, if all the *Dozeins* be in the aſſize of our Lord the king, and which not, and who received them. Art. 3. See DECINERS.

DOZEIN is alſo uſed for a ſort of Devonſhire kerſeys. Anno 5 and 6 Edw. 6. c. 6. See DOWSEINES.

DOZELLINA, in zoology, a name by which ſome authors have called the muſtela of the common ſpecies, which we in Engliſh term the *Sea Loche*, and *Whiſtle-fiſh*. *Willoughby*'s Hiſt. Piſc. p. 121.

DRABLER, in the ſea language, a ſmall ſail in a ſhip, which is the ſame to a bonnet, that a bonnet is to a courſe, and is only uſed when the courſe and bonnet are too ſhoal to cloath the maſt. See BONNET and COURSE.

DRABS, in the Engliſh ſalt works, a name given to a ſort of wooden caſes into which the ſalt is put, as ſoon as it is taken out of the boiling pan. Theſe are partitions like ſtalls made for horſes, they are lined on three ſides and at the bottom with boards, and at the front have a ſliding board to put in or take out occaſionally. Their bottoms are made ſhelving, being higheſt at the backſide, and gradually inclining forwards; by which means the ſaline liquor that remains mixed with the ſalt eaſily drains out from it, and the ſalt in three or four days becomes ſufficiently dry, and is then taken out and laid up in large heaps for ſale. In ſome places they uſe cribs inſtead of the *Drabs*. See CRIBS.

DRACO *Marinus*, in zoology, the name of a fiſh of the cuculus kind, known in England by the name of the weaver. It is a very long bodied fiſh, ſomewhat flat, with a crooked belly and ſtrait back. The ſides are variegated with browniſh and yellow lines running obliquely from the back to the belly, and leaning toward the tail. The coverings of the gills are yellow, and the belly is white. Its ſcales are very ſmall and thin, and its head is of a moderate ſize, ſomewhat flatted, and ſinking into a hollow between the eyes. The eyes are placed very near one another, and ſtand nearer the end of the ſnout than in any other fiſh of the ſcaly kind. The mouth is very large, and the lower jaw is longer than the upper; both the jaws are furniſhed with teeth, and the head is full of tubercles. It has two fins on the back: the foremoſt of theſe is very ſhort, and the other very long. The foremoſt of theſe fins have ſeveral prickly points, and theſe are ſaid to inflict a ſort of poiſonous wound. Its tail is but ſlightly forked, and is bluiſh in colour. Its fleſh is delicate, and it grows in ſome ſeas to twelve, or even eighteen inches in length. The fiſhermen are much afraid of its pricking them, and always as ſoon as they have caught it, cut off the back fin. *Geſner* de aquat. p. 89.

DRACO *Volans*, in natural hiſtory, a name given by ſome people to one of the flying lizards. Others have applied the ſame term to a very different ſubject, expreſſing by it a ſort of ignis fatuus very common in this iſland, and others of the more northern countries, which is much redder, larger, and more terrible than our common lambent fires, or will in the wiſps, as our country people expreſs them. This ſort of exhalation is principally ſeen on the borders of rivers, and in marſhy places, and ſeldom riſes very high from the ground, but plays and dances about the ſurface in an agreeable manner; and if people go up to it, will ſtick to their hands or cloaths without burning, or doing them any injury. They are more common in the ſummer months than in the winter, and are more frequently ſeen in thick weather than in clear.

DRACOCEPHALON, *Dragon's Head*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind, and the upper lip which is galeated, and the lower which is divided into three ſegments, reſemble in ſome ſort the head of a ſerpent. The piſtil ariſes from the cup of the flower, and is fixed in the manner of a nail to the hinder part of it; the four embryos which ſurround this, ripen into ſo many ſeeds, which the cup ſerves as a receptacle for. See Tab. 1. of Botany, Claſs 4.

The only known ſpecies of this is the American *Dracocephalon* of Breynius, which has been called by others a ſpecies of digitalis or foxglove. *Tourn.* Inſt. p. 181.

DRACONTEAS, a name given by Neophytus, and ſome others of the later Greek writers, to two plants diſtinguiſhed by the epithets of the great and the little kinds. The great *Draconteas* is the plant we call dragons[a], and the ſmall *Draconteas* is the arum. Neophytus ſays that the roots of ſome ſpecies of the ſmall *Draconteas* were eatable, which we alſo know to be true at this time; for though with us the juice of this plant is fiery and corroſive, yet we know that there are eſculent arums in other parts of the world. The Greek writers, from the earlieſt times we have accounts of, were not ignorant of this; and Theophraſtus in particular has deſcribed an eſculent rooted arum under the name of arum edodimum.

[a] See DRACUNCULUS.

DRACONTHEMA, a name uſed by ſome of the old writers in medicine for what we call *ſanguis draconis*, or dragon's blood, a red vegetable reſin.

DRACONTIA, or DRACONTIA *Lapis*, in natural hiſtory, a name given by authors to a roundiſh or oval pellucid ſtone, which ſeems no other than a cryſtal cut into that form, and poliſhed by the ſavage inhabitants of ſeveral nations before the Roman conqueſts, and intended to be worn as ornaments. Authors tell a number of idle and fabulous ſtories about this ſtone, imagining it to be naturally of this figure and poliſh, and to be found in the head of a dragon. Pliny, Solinus, and many other authors, give us ridiculous and idle accounts of the manner of taking this ſtone out of the creature's head, which, they ſay, muſt be done while it is yet not quite dead; and ſuppoſe it to have great virtues againſt the bites of ſerpents and other venomous beaſts. They are not indeed all agreed about the ſpecies of the ſtone; Ficinus deſcribing an aſtroites under this name, and others ſome other coloured ſtone; but the generality of writers, eſpecially the old ones, make it colourleſs and pellucid.

DRACONTIUM. The Greeks, from whom the botanical writers have taken this name, never uſed it ſingly as the denomination of a plant, but only as an adjective expreſſing ſome peculiarity in which that plant differed from ſome others of the ſame ſpecies. Thus the plant which we now call ſimply *Dracontium*, was called by the Greeks *Arum Dracontium*, that is, the arum with ſtalks ſpotted like dragons or ſnakes skins; and the plant we call dracunculus or tarragon had the ſame epithet from its fiery heat.

DRACUNCULI, (*Cycl.*) a name uſed by authors for a ſort of long and ſlender worms, which breed in the muſcular fleſh of the arms, legs, &c. and from their being more frequent in ſome parts of Guinea than elſewhere, are called by many Guinea worms. They have been long known in the world; and Plutarch quotes Agathercidas for an account of theſe animals, which, he ſays, the people about the red ſea were at a certain time very much afflicted with. Plutarch tells us that they thruſt out their heads through the skin, and on being hurt draw them in again, and cauſe an intolerable pain and inflammation. Theſe worms principally affect children, and their origin is not unlike that of the worms in the inteſtines. While they move about, they create no trouble; but when they fix their reſidence, the place about them ſuppurates, and then being uneaſy they thruſt out their heads; and if they are broken in attempting to draw them out, the conſequence is very bad. They may ſometimes be manifeſtly ſeen to move. They are no where ſo frequent as on the gold coaſt in Guinea about Anamaboe and Cormantyn. The worm is white, round, long, and uniform, very much reſembling a piece of white round tape or bobbin. It is lodged between the inteſtines of the membranes and muſcles, where it inſinuates itſelf to a prodigious length, ſometimes exceeding five ells. It occaſions no great pain in the beginning; but when it is about to ſhow its head, a ſwelling and inflammation appear on the part, which is uſually the ankle, or ſome part of the leg or thigh.

The countries where this creature is thus produced are very hot, and ſubject to great droughts, and the inhabitants make uſe of ſtagnating and corrupted water, in which it is probable the ova of theſe animals lie: the white people and negroes who drink this water are equally ſubject to theſe worms.

The ſurgeons ſeldom attempt to extract this worm by inciſion, but when the tumor appears, they endeavour to bring it to a ſuppuration as ſoon as they can; and when they have broke the ſwelling, and the head of the worm appears, they faſten it to a ſtick, and continue gradually winding it round at the rate of an inch or two in a day, till they by this means have wound it all out. If it be wound too haſtily, it is apt to break in the operation; and if it does, the end is not eaſily recovered again; and if not, there are abſceſſes formed, not only at the place where it breaks, but all along the whole winding of the muſcles where the dead worm remains; ſo that often from one worm thus broken, there are produced a number of obſtinate ulcers in different parts. When the worm has not been broken, the ulcer out of which it was extracted heals eaſily, and there is no farther trouble about it. *Town*'s Diſeaſes of the Weſt Indies, p. 561.

DRACUNCULUS, in zoology, the name of a ſea-fiſh, called by Bellonius and Geſner, a kind of the exocætus. It is a ſmall fiſh, of about a hand's breadth long, and ſometimes a little larger. It is of a long and rounded body, and of a dead greeniſh or olive colour on the back, and white on the belly, and is marked on the ſides with a great number of bluiſh, white, and very light ſmall ſpots. On the upper part of its head below the eyes, it has alſo a purpliſh triangular ſpot. The eyes are large, and ſtand very cloſe together, and the mouth

very wide; the upper jaw is a little longer than the under, and both are furniſhed with very ſmall teeth. The apertures of the gills are only two ſmall holes near the upper part of the head. It has two pair of fins on the belly, and two fins on the back, the one placed toward the head, and the other a little lower. Both are ſituated in a kind of furrow, and the hinder is very high, and beautifully ſpotted with black and white, and has its ribs running to a vaſt length beyond its edge. The tail is very long, and not forked. It is common in the Mediterranean and other ſeas, and is brought to market among other ſmall fiſh at Rome, and in other places. See Tab. of Fiſhes, N° 17. *Ray*'s Ichthyograph. p. 136.

DRACUNCULUS, *Dragons*, in botany, the name of a genus of plants, the flower and fruit of which wholly agree with thoſe of arum; but the leaves are divided into ſeveral deep ſegments. The ſpecies of *Dragons* enumerated by Mr. Tournefort are theſe:

1. The common *Dragons*. 2. The common *Dragons* with leaves variegated with yellow. 3. The common *Dragons* with leaves variegated with white. 4. The great Indian late flowering *Dragons* with ſtalks not ſpotted. 5. The leſſer Indian *Dragons* with plain ſtalks. 6. The great Ceyloneſe *Dragons* with rough ſtalks variegated with green and yellow. 7. The great Ceyloneſe *Dragons* with rough ſtalks, green variegated with white. 8. The great purple ſtalked American *Dragons*, with roots like thoſe of the cyclamen. 9. The polypody-leaved prickly *Dragons* of Ceylon, with a creeping root. 10. The ſmooth Ceyloneſe *Dragons* with green and white ſtalks. 11. The great Ceyloneſe *Dragons* with a trifid ſtalk. 12. The climbing American *Dragons*. 13. The climbing American *Dragons*, with trifoliate and auriculated leaves. 14. The dwarf American trifoliate *Dragons*. 15. The colocaſia-like American *Dragons* with jagged leaves. 16. The low American *Dragons* with a white flower and white fruit. 17. The American *Dragons* with an extremely long, green piſtil. 18. The five-leaved Indian *Dragons*. 19. The Indian *Dragons* with trifid leaves. *Tourn.* Inſt. p. 160. See the the article SERPENTARIA, *Cycl.*

All the ſpecies are propagated by parting their knobby roots, which when they have ſtood undiſturbed for three years will afford a great number of off-ſets. Theſe are to be taken off and planted in autumn ſoon after the green leaves decay; for if they are removed after they have taken freſh root and began to ſhoot, they ſeldom produce flowers the ſucceeding ſummer; or if they do, they are very weak: they will thrive in almoſt any ſoil and ſituation.

DRACUNCULUS, *Dragons* or *Tarragon*, an eſculent garden herb. The latter name has moſt univerſally obtained for this plant in England, the other being the uſual Engliſh name of the great dracontium. Some of the antients have ſhewn their great ignorance in natural philoſophy, by ſuppoſing the *Dracunculus* not to be an original ſpecies of plant, but to be raiſed at pleaſure out of two other plants, by ſowing the ſeeds of the common flax in the roots of an onion.

DRAGMA, in pharmacy, a name uſed by the antients for a handful of any herb or other medicine.

DRAGMIS, in pharmacy, a word uſed by the antients to ſignify a pugil, or as much of any thing as can be taken up at a pinch, between the thumb and two fingers.

DRAGON-*Beams*, in architecture, are two ſtrong braces or ſtruts, which ſtand under a breaſt ſummer, and meet in an angle on the ſhoulder of the king-piece.

DRAGON-*Fly*. See LIBELLA.

DRAGON-*Shell*, in natural hiſtory, a name given by people curious in ſhells to a ſpecies of concamerated patella or limpet. This has its top very much bent, and is of an aſh-colour on the outſide, but of an elegant and bright fleſh-colour within. This has been found ſticking on the back of a tortoiſe, as the common limpets do on the ſides of rocks: and ſome have been found affixed to large ſhells of the pinna marina brought from the Eaſt Indies at different times. Hiſt. Nat. Eclacic. part 2. p. 243.

DRAGONS, in botany, *&c.* ſee DRACUNCULUS.

DRAGOON, (*Cycl.*) in ornithology, the name of a ſmall kind of carrier-pidgeon, called *columba tabellaria minima* by Moore. It is a baſtard breed between the two ſpecies of pidgeons called the *horſeman* and the *tumbler*. They are very good breeders, and as they are lighter than the horſeman, they are ſuppoſed more expeditious in flight for a few miles, but the horſeman outdoes them at greater lengths. *Moore*'s Columb. p. 32.

DRAGS, in the ſea language, is uſed for whatever hangs over the ſhip in the ſea, as ſhirts, coats, or the like: and boats when towed, or whatever elſe that, after this manner, may hinder the ſhip's way when ſhe ſails.

DRAINS, a name given in the fen countries to certain large cuts or ditches, of twenty, thirty, nay ſometimes forty foot wide, carried through the marſhy ground to ſome river, or other place capable of diſcharging the water they carry out of the fen lands. Moſt of theſe drains are made in our fen countries by a body of men called *The Undertakers*, whoſe reward is one third of the ground they *drain*. They erect ſluices alſo at a great expence, often not leſs than two thouſand pounds each. Yet theſe, with all the care they employ in erecting them, are ſubject to be blown up by the vaſt weight of water that lies upon them when the lands are overflown. Some of theſe ſluices have two or more pair of doors, of ſix, eight, or ten foot high, which ſhut when the water in the river is higher than in the *Drains*, by the weight and force of it; and ſo, *è contra*, throw out a body of eight foot ſquare of water for about ſix or ſeven hours during the ebb. The real uſe of theſe *Drains* is very evident from the preſent ſtate of the land where they are cut, and that of it before. In Cambden's time all this was bog, and now it is all firm land. The country about Crowland was in that author's time ſo ſoft, that it was not paſſable by carriages; and thus grew a witticiſm upon it, that all the carts that entered this town were caſed on the wheels with ſilver: but this is now ſo firm ground, that carriages of any kind paſs over it. The duck ponds uſed to be called the fen corn fields, and they now are ſuch in reality, their bottoms being dry, and producing oats, and rape ſeed or cole ſeed with great increaſe. Philoſ. Tranſ. N° 223.

DRANK, a name given by our farmers to the great wild oats. Theſe are often very troubleſome to the plowed lands, eſpecially after wet ſeaſons and much froſt. Many to deſtroy this weed ſow the land with black oats, which being ripe much ſooner than the ſeeds of this plant, are cut down before it can ſow itſelf for another year; eſpecially if they are cut a little the earlier, which will do them no harm, if they be ſuffered to lie a while upon the ground afterwards for the grain to ſwell before they are carried in. But, in general, when plowed lands begin to run to theſe weeds and thiſtles, it is a token to the farmer that it is time to fallow them, or elſe to ſow them with hay-ſeed, and make paſtures of them. The ſowing beans upon a land ſubject to theſe weeds is alſo a good method, becauſe the farmer may ſend in his ſheep when they are about three inches high, which will eat up the *Drank*, and all the other weeds, and will not hurt the beans. The general method is to put twenty ſheep to an acre; but they muſt be put in only in dry weather, and not left too long. *Mortimer*'s Husband. p. 318.

DRAPERY *Painter*. See PAINTER.

DRAUGHT (*Cycl.*) — DRAUGHT *Compaſſes*, thoſe provided with ſeveral moveable points, to draw fine *Draughts* in architecture, *&c.* See the article COMPASS, *Cycl.*

DRAUGHT-*Hooks*, are large hooks of iron fixed on the cheeks of a cannon carriage, two on each ſide, one near the trunnion-hole, and the other at the train, and are called the fore and hind *Draught-hooks*. Large guns have *Draught-hooks* near the middle tranſum, to which are fixed the chains, which ſerve to eaſe the ſhafts of the limbers on a march. The fore and hind hooks are uſed for drawing a gun backwards or forwards by men with ſtrong ropes, called *Draught-ropes*, fixed to theſe hooks. *Guillet*.

DRAUGHT-*Horſe*, in farming, a ſort of coarſe made horſe deſtined for the ſervice of the cart or plough. In the choice of theſe horſes for what is called the ſlow *Draught*, they are to be choſen of an ordinary height, for otherwiſe when put into the cart one draws unequally with the other, and the tall ones hang upon the low ones. The *Draught-horſe* ſhould be large bodied and ſtrong loined, and of ſuch a diſpoſition, as rather to be too dull than too brisk, and rather to crave the whip than to draw more than is needful. Mares are the fitteſt for this uſe for the farmer, as they will be kept cheap, and not only do the work, but be kept breeding, and give a yearly increaſe of a foal, of the ſame kind, and fit to be bred to the ſame purpoſes. They ſhould have a good head, neck, breaſt, and ſhoulders; for the reſt of the ſhape, it is not of much conſequence. Only for breeding the mare ſhould have a large belly, for the more room a foal has in the dam, the better proportioned it will be. *Draught-horſes* ſhould be always kept to that employ. Some put them to the ſaddle on occaſion, but it does them great harm, alters their pace, and ſpoils them for labour. The *Draught-horſe* ought to have a large broad head, becauſe horſes of this ſhaped head are leſs ſubject than others to diſeaſes of the eyes. The ears ſhould be ſmall, ſtrait and upright; the noſtrils large and open, that he may breathe with the more freedom. A horſe with a full and bold eye always promiſes well. On the other hand, a ſunk eye and an elevated brow are very bad ſigns. The horſe is eſteemed fitteſt for this purpoſe alſo, that has a large and round buttock, which neither ſinks down nor cuts. He muſt have a firm and ſtrong tail, and the dock muſt be thick and well furniſhed with hair, and placed neither very high nor very low. The legs ſhould be rather flat and broad than round. The roundneſs of the leg being a fault in a horſe deſtined to labour that will ſoon ruin him. As to the hinder legs, the thighs ſhould be fleſhy and long, and the whole muſcle which ſhews itſelf on the outſide of the thigh ſhould be large and very thick. Nothing is ſo eſſential to the health of theſe ſerviceable creatures as cleanlineſs: if they are fed ever ſo well, and not kept clean, they will be ſubject to numerous diſeaſes.

The ſervant who has the care of them ought to be up very early, and to clean the racks and mangers from all filth. The currying

currying of them ought to be carefully performed every morning, but not in the ſtable, for the duſt to fall upon the other horſes, as it is too often done. After the horſes are duſted, they ſhould daily twiſt a whiſp of ſtraw hard up, and weting it in water, rub the legs, ſhoulders and body with it. Many of the diſeaſes of *Draught-Horſes*, which are not owing to naſtineſs, are owing to bad water; ſuch as are too raw, too muddy, or too cold, being all improper. If there be any running ſtream in the neighbourhood, they ſhould always be had to that to water, every day in ſummer, but in winter, well-water is warmiſh, and is better for them. If there be a neceſſity of giving them well-water in ſummer, it muſt be drawn up ſome hours before the time, and expoſed to the ſun-beams in tubs or troughs; marſh-water or that of lowland ditches is worſt of all. When the labouring horſe has drank his water, he ſhould have his oats given him, and theſe ſhould be carefully ſifted, and the manger duſted firſt. It is a common practice as ſoon as a horſe is come in from his work, to rub down the legs with a hard whiſp of hay, but the beſt judges of horſes, abſolutely condemn this, and obſerve, that this rubbing of the legs after hard labour, brings down humours into them, and makes them ſtiff.

The rubbing itſelf is wholeſome, but the doing it when the creature is hot is the miſchief; while a horſe is in a ſweat it is a great relief and refreſhment to him to have his body rubbed down, but when he is cool is the proper time to rub his legs. The racks are to be well ſupplied with hay, and the horſes ſhould be left to reſt and eat, about two hours, and then led to water; after this their oats ſhould be given them, and they ſhould then go to work again.

In the evening when the labour of the day is over, the firſt thing to be done, is to examine the feet, and ſee if any thing is amiſs about the ſhoes, and what earth or gravel is lodged in the foot, between the ſhoe and the ſole, is to be picked out with a knife, and ſome freſh cow-dung put in its place, which will cool and refreſh the part.

A very material thing for the preſervation of all ſorts of cattle, but of none ſo much as *Draught-Horſes*, is freſh and clean litter; this is a thing too often neglected in the care of theſe creatures, and many even neglect the cleaning away the old litter on purpoſe, leaving it there to imbibe more moiſture, that it may be the better manure for the land. It is true, that by this the dung is enriched and will go farther, but the benefit they reap from this, is nothing in compariſon of the miſchief they do the horſe in the mean time; for the heat this gives his feet, is alone enough to ruin him. The owner often finds the effect of this, without knowing the cauſe; the horſe becomes tender footed and weakly, and is unable to do his buſineſs, though fed in the beſt manner that can be; the dung in this caſe is left under him that there may be ſome advantage from his feeding, and the diſtemper is increaſed inſtead of being relieved, till in the end the horſe is generally rendered uſeleſs.

DRAWING *a caſt*, among bowlers. See BOWLING.

DREAMS—According to *Wolfius* every *dream* takes its riſe from ſome ſenſation, and is continued by the ſucceſſion of phantaſms in the mind. His reaſons are, that when we *dream* we imagine ſomething, or the mind produces phantaſms; but no phantaſm can ariſe in the mind, without a previous ſenſation: hence neither can a *dream* ariſe without ſome previous ſenſation. He obſerves farther, that tho' it be certain *a priori*, from the nature of the imagination, that *dreams* muſt begin by ſome ſenſation, yet that it is not eaſy to confirm this by experience; it being often difficult to diſtinguiſh thoſe ſlight ſenſations, which give riſe to *dreams* from phantaſms or objects of imagination. Yet this is not impoſſible in ſome caſes, as when the weak ſenſation ſufficient to give riſe to a *dream* gradually becomes ſtronger, ſo as to put an end to it, as it often happens in uneaſy and painful ſenſations. *Wolf.* Phychol. empir. §. 123.

The ſeries of phantaſms, or objects of imagination which conſtitute a *Dream*, ſeem to be ſufficiently accounted for, from the law of imagination, or of aſſociation; tho' it may be extremely difficult to aſſign the cauſe of every minute difference, not only in different ſubjects, but in the ſame, at different times and in different circumſtances. We have an eſſay on this ſubject by M. Formey, in the Mem. de L'Acad. de Berlin. Tom. 2. p. 316. He expreſsly adopts Wolfius's propoſition abovementioned [a] that every dream begins by a ſenſation, and is continued by a ſeries of acts of imagination, or of phantaſms; and that the cauſe of this ſeries is to be found in the law of the imagination [b]. [a Pſychol. empir. §. 123, 321, 327. b Si naturale ſomnium eſt, initium capere debet per legem ſenſationis, & continuari per legem imaginationis. *Wolf.* Pſychol. rational. § 327.]

Hence he concludes thoſe *Dreams* to be ſupernatural, which either do not begin by ſenſation, or are not continued by the law of the imagination. ibid. §. 328, 329.

A learned author has lately aſſerted, that *our dreams are prompted by ſeparate immaterial beings*. He contends, that the phantaſm, or what is properly called the viſion, is not the work of the ſoul itſelf, and that it cannot be the effect of mechanical cauſes; and therefore ſeems to conclude, they muſt be the work of ſeparate ſpirits acting on our minds, and giving us ideas while we ſleep. We muſt refer to the Author of this extraordinary hypotheſis, for a farther account of it. See Eſſay on the phænomenon of dreaming, in the 2d vol. of the Enquiry into the nature of the human ſoul, 3d edit. Lond. 1745.

DREAMS, in medicine.—The phyſicians who have accurately examined the ſtate of their patients in every particular circumſtance, have not omitted at times, to enquire into their *dreams* in thoſe hours of ſleep which their ill ſtate allows them, and partly from experience, partly from reaſon and analogy have found, that there are many preſages of diſeaſes to come, and many indications of ſuch as are preſent, but unperceived, at leaſt not ſeen in their full extent, to be had from what the ſenſes ſuffer in *Dreams*. Indeed if *Dreams* are different from what might be expected from the buſineſs of the day, or the turn of thought before, they may always be looked upon as ſigns of a more or leſs diſtempered ſtate of the body, and the true condition of that ſtate, may often be better learned from them, than from any other means. What has been obſerved by phyſicians in regard to the prognoſticks from *Dreams*, may be ſumm'd up in the following manner; to *dream* of fire indicates a redundance of yellow bile; to *dream* of fogs or ſmoak indicates a predominancy of black bile; to *dream* of ſeeing a fall of rain or ſnow, or a great quantity of ice, ſhews that there is a redundance of phlegm in the body; he who fancies himſelf converſant among ſtinks may be aſſured, that he harbours ſome putrid matter in his body; to have red things repreſented before you in ſleep, denotes a redundance of blood; if the patient *dreams* of ſeeing the ſun, moon and ſtars, hurry on with prodigious ſwiftneſs, it indicates an approaching delirium; to *dream* of a turbid ſea, indicates diſorders of the belly; and to *dream* of ſeeing the earth overflowed with water, or of being immerged in a pond or river, indicates a redundance of watery humours in the body; to *dream* of ſeeing the earth burnt or parched up, is a ſign of great heat and dryneſs; the appearance of monſters and frightful enemies, indicates deliriums in diſeaſes; and to *dream* often of being thrown down from ſome very high place, threatens an approaching vertigo, or ſome other diſorder of the head, as an epilepſy, apoplexy, or the like. Theſe and a great many others are the obſervations of Hippocrates on the *dreams* of his patients. From thoſe and from ſome farther aſſiſtances, Lomnius has carried the ſubject to a very great length, and given many rules of judging from them. *Lomnii* Med. Obſ. But quære, how true.

DREGS *of Oil*, a name given by the people who trade in oil, to that coarſe and thick part of it, which ſubſides to the bottom of the veſſels in which great quantities of it are kept. This is not fit for the common uſes of the clear oil at the top, but there are ſeveral purpoſes to which it ſerves very well. Great quantities of theſe lees or *Dregs* of common oil are uſed by the ſoapboilers, principally in making the common ſoft ſoap. The leather-dreſſers alſo uſe it in conſiderable quantities to ſoften the hides they are employed to prepare for the ſeveral artificers who uſe them. Some of theſe *Dregs* are alſo uſed in the making of flambeaux, which inſtead of being made of yellow wax as pretended, are uſually compoſed of pitch, roſin and this oil, mixed in ſuch a proportion as to make a maſs of a proper hardneſs and conſiſtence. People who uſe preſſes, and other works in which there are many ſcrews, ſometimes buy this to greaſe their ſcrews, inſtead of ſoap or ſuet. Theſe are the uſes mentioned by Savary; but beſide theſe we have in England another manufacture, which conſumes a greater quantity, then all theſe put together. This is the making ſperma ceti, ſome perſons among us have found the art of making this out of the fæces of oil, and will give an oilman at any time as much clear oil in exchange for theſe dregs, as they are in quantity. All the other uſes of theſe dregs leave the trader at a great loſs; and as Savary obſerves, the more fæces the oil contains, the greater is the loſs to the buyer; but with us, this is rendered equal, and there is no loſs in it.

All ſorts of oil produce more or leſs fæces and *Dregs*, but of all others, the whale oil is obſerved to produce the largeſt quantity, and the nut oil the leaſt. *Savary's* Dict. Comm.

DREIT DREIT, in our old writers, ſignifies a double right, that is, *jus poſſeſſionis & jus dominii*. Bracton lib. 4. c. 27. and lib. 4. tract. 4. c. 4. and lib. 5. tract. 3. c. 5. *Coke* on *Littl.* fol. 266.

DRENGAGE, *Drengagium*, vel *ſervitium Drengagii*, in our old writers, the tenure by which the *Drenches* held their lands; concerning which, ſee Term. Trin. 21 Edw. 3. Ebor. and Northum. Rot. 191. *Notandum eſt, eos omnes eorumve anteceſſores, qui e* Drengorum *claſſe erant, vel per* Drengagium *tenuere, ſua incoluiſſe patrimonia ante adventum Normannorum. Spelm.* Gloſſ. *Du Cange*, Gloſſ. Lat. in voc. *Drenches.*

DREPANON, Δρέπανον, among the Greeks, an engine of iron crooked like a ſickle and fixed to the top of a long pole. It was uſed in cutting aſunder the cords of the ſail yards, in order to diſable the ſhip by letting fall the ſails, and was otherwiſe called *Dorydrepanon*. *Potter* Archæol. T. 2. p. 141.

DRESSING *of ores*; the preparing them as they come rough from the mine, for the working by fire. This is done ſeveral ways in different countries, and in reſpect to the different ores of the metals; in Devonſhire we have a very eaſy method, which is ſo expeditious, and ſo good for all the purpoſes, that it is worthy copying in other places. After the ore is dug, it is toſſed up by hand from ſhamble to ſhamble by the ſhovelmen in the mine, and drawn up in buckets by a wynch at the top of the ſhaft. As ſoon as the whole quantity for one dreſſing is brought up, the large ſtones are broken, and the whole is then carried to the mills, where one horſe turns a wheel that moves the machines for poudering a great quantity of it; theſe are called the ſtamping or knocking mills. The ore is unloaded at the head of the paſs or entrance into theſe mills; this paſs is made of two or three bottom boards and two ſide boards, in form of a hollow trough, and ſtands in a ſlanting direction. The ore by its own weight is carried down this trough, and lodges itſelf in the coffer. The coffer is a long ſquare box made of the firmeſt timber, and of three feet long, and a foot and half broad; the ore is not ſuffered to fall into this all at once, but is ſtopped over the mouth of the trough by a croſs board, where a cock turns in a quantity of water at the ſame time, which waſhes down juſt as much of the ore with it into the trough, as there ought to be. In this coffer there are three lifters placed between two ſtrong board leaves, having two braces or thwart pieces on each ſide to keep them ſteady, as a frame with ſtamp heads. Theſe heads are of iron, and weigh about thirty or ſorty pounds a-piece, and ſerve to the breaking the lumps of ore in the coffer.

The lifters are always made of heart of oak, and have as many intimbers or guiders between them; they are lifted up in order, by a double number of toppits, which are faſtened to as many arms paſſing diametrically thro' the great beam, which is either turned by the wheel and horſe, or where there is conveniency of water, by an overſhot water-wheel on two boulſters. The tappets exactly but eaſily meet with the tongues, which are ſo placed in the lifters, as that they eaſily ſlide from each other, and ſuffer the lifters to fall with great force on the ore in the trough. The frequent pounding of theſe ſoon reduces the large maſſes into a ſort of ſand, which is waſhed out of the trough by the continual current of the water from the cock thro' a braſs grate, which is placed at one end of the coffer between two iron bars.

The powdered ore is conveyed out of the trough into the *launder*, which is a trench cut in the floor of eight foot long, and ten foot over, this is ſtopped at the lower end with turf, ſo that the water is all ſuffered to paſs away, and the powder of the ore is ſtopped. Thus the launder by degrees fills up with the dreſſed ore, and this is removed out with ſhovels as occaſion requires. The launder is divided into three parts, the forehead, the middle, and the tail; that ore which lies in the forehead, that is, within a foot and half of the grate, is always the richeſt and beſt, and is laid up in a heap by itſelf; the middle and tail afford a poorer ore, and theſe are ſometimes laid up in ſeparate heaps; ſometimes thrown into one heap together.

DRIFT (*Cycl.*) — DRIFT, in mining, a paſſage cut out under the earth betwixt ſhaft and ſhaft, or turn and turn, or a paſſage or way wrought under the earth to the end of a meer of ground, or part of a meer. See *Houghton*'s Compl. Miner. in the Explan. of the Terms.

DRILL, or DRILL-*Box*, a name given to an inſtrument uſed in the new method of horſehoing husbandry for ſowing the land. The *Drill* is the engine that plants the corn and other ſeeds in rows; it makes the channels and ſows the ſeeds in them, and covers them with earth when ſown, and all this at the ſame time, and with great expedition. The principal Parts of the *Drill* are the ſeed-box, the hopper, the plow and its harrow. The ſeed-box is the chief of theſe, it meaſures or rather numbers out the the ſeeds which it receives from the hopper, and is for this purpoſe as an artificial hand, but it delivers out the ſeed much more equally, than that can be done by a natural hand. The plow and hopper are drawn by a horſe, and by theſe the ground is opened, and the ſeed is depoſited in it; the harrow follows, and lightly rakes in the earth over them. When the ground is fine, and the ſeeds ſmall, a hurdle with ſome prickly buſhes faſtened to its under part, will ſerve better than the harrow. The whole apparatus for this method of ſowing, is finely deſcribed and illuſtrated with figures by *Tull* in his Horſehoing Husbandry, to which we refer.

DRILL, in mechanics, a ſmall inſtrument for making ſuch holes as *punches* will not conveniently ſerve for. *Drills* are of various ſizes, and are chiefly uſed by ſmiths and turners. Vid. *Moxon.* Mech. Exerc. p. 6. 234.

It is a very well known fact, that a *Drill* made of iron, has frequently not only a polarity, but ſo ſtrong an attractive virtue of the magnetick kind, that it will ſuſpend a common needle from its point. It is uſually ſuppoſed that a *Drill* acquires this polarity by boring iron. But it is not only by boring of iron, that this power is obtained, but in the very making. As ſoon as one of them is finiſhed and hardened, its point becomes a north pole before it has ever been worked either in iron or any other materials, ſo that of the great numbers of theſe inſtruments found in a ſhop, endued with this power, it is to be ſuppoſed that more of them owe it to their original make, than to any after uſe. All pieces of wrought iron which in ſhape reſemble *Drills*, that is, which are of a long and ſlender form, will not only have this polarity, but they will change it on being placed for ſome time in an inverted poſture, and that which was the oppoſite to the north pole, by ſtanding downwards will be the north pole. This has been an old obſervation, but on a fair experiment, it does not prove to be true in all things without exception, tho' it be ſo in moſt particulars. The larger pieces of iron ſeem to be moſt eaſily influenced in their polarity, by changing their poſition, but the ſmall ones will ſometimes be found to have fixed poles, which no change of poſture will alter. Philoſ. Tranſ. N°. 246. See MAGNET.

DRILLING, is popularly uſed for exerciſing of ſoldiers.

The word is derived from the French *Drille*, which ſignifies a raw ſoldier: *Calo, miles exigui pretii*, ſays Le Clerc [a], who derives *Drille* from the Hebrew *chol*, ſignifying *all*, or a *whole*. As this derivation ſeems no ſmall paradox, we ſhall here inſert this learned Author's deduction. 1°. From *chol* is formed the Greek ὁλος *totus*. 2°. From ὁλος is formed the Latin *ſolus*. 3°. From *ſolus*, comes *ſolidus*. 4°. From *ſolidus* is derived *ſolidum*, a piece of money. 5°. From *ſolidum* comes *ſolidarius*, or a ſoldier receiving a *ſolidum*. 6°. From *ſolidarius*, *ſoldarius* is eaſily derived, and hence the French *ſoudar*. 7°. From *ſoudar* comes the diminutive *ſoudrille*. 8°. From *ſoudrille*, the tranſition *per aphæreſin* to *Drille* is eaſy. This etymology is applauded by Menage; but he, as Le Clerc [b] obſerves, does not aſcend to the Hebrew ſpring; in which the reader may perhaps think him judicious. [a *Le Clerc*, Diſſert. Etymol. ad Math. Martinii Lexicon. Philolog. b Id. ibid.]

DRINK (*Cycl.*)—The firſt *Drinks* of mankind were certainly water and milk; but the love of luxury and debauchery ſoon introduced the art of preparing intoxicating and inebriating *Drinks* out of vegetables. The vine gave the firſt of theſe liquors; after this, wheat, barley, millet, oats, rice, apples, pears, and pomegranates; and after theſe the juices drained from the pine, ſycamore and maple were brought to this uſe; in latter times, roots, berries, and the pith of the ſugar cane, have been employed for the ſame purpoſes: honey alſo is at preſent in ſome repute, but before the uſe of the other things here mentioned, the vinous liquor made of honey and water was in the very higheſt eſtimation. The bees were natural purveyors, and their ſtores were one of the firſt delicacies probably of the human race. It was very natural to attempt the meliorating ſo raw a drink as water, by an addition of this ſweet ſubſtance; and ſuch a mixture needing only time for fermentation to become vinous, accident might ſoon lead to this diſcovery. Mead therefore may naturally be ſuppoſed to have been one of the firſt ſtrong liquors in uſe in the world, and among the very oldeſt writers among the Greeks we find it named as a thing well known. Homer, Heſiod and Ariſtophanes all give plain proofs of their having been acquainted with it; and Orpheus repreſents night counſelling Jupiter to make Saturn drunk with mead, and then to dethrone and caſtrate him. The people who have ſtudied the human frame to moſt purpoſe, all agree, that amongſt the ſtrong *Drinks*, wine is the moſt pernicious; and that good water, milk, beer and cyder are greatly preferable to it, none of them bringing on the variety of diſorders, to which immoderate wine drinkers are ſubject, ſuch as decay of ſight, trembling of the limbs, &c.

Mr. Boyle mentions an acquaintance of his who uſed to *drink* but once in ſeveral days, and that in no great quantity, yet ſweat freely, and had his urine in juſt quantity. See Works Abr. Vol. 1. p. 306.

DRINKLEAN, in our old writers, a ſcot-ale or contribution of the tenants towards a potation, *i. e.* ale provided to entertain the lord or his ſteward. In ſome records it is written, *Potura Drinklean.*

DRIVE-*Bolts*, in ſhip building. See BOLTS, *Cycl.*

DRIVER, the name given by our ſportſmen to an inſtrument uſed in the taking pheaſant powts, in the method called driving. This inſtrument conſiſts only of a parcel of ozier wands ſuch as are uſed by the basket-makers, which are made up into a bundle, or ſort of great whisk, and faſtened in a handle; and to prevent their ſpreading too much at the points are tied round in one or two places in the length; with this inſtrument the ſportſman having fixed his nets, drives the young birds into them. See DRIVING.

DRIVING, amongſt ſportſmen, a term applied to the taking of young pheaſants, and ſome other birds in nets of an open ſtructure. The method of doing this, is, when an eye of pheaſants are found, the ground all about is to be ſearched, for the finding of their principal haunts. The induſtrious ſearcher

er will soon be able to make out some one of their paths, which are beaten in the manner of sheep-tracks, only more slightly. When one of these is found, the place is to be marked by seting up a stick with another tied to its top like the hand of a road post, marking out the place where the path seems to run to. On examining the rest of the ground thereabouts, having regard to the same direction, it is highly probable, that several more of the same sort of tracks will be found all running the same way. By one or other of these probably the sportsman will be led to their haunt, which he will not miss knowing by the nakedness and barrenness of the ground, and its being covered with the dung and feathers of the young birds. When this is found, the nets are to be placed near this spot loose and circularly, in such a manner, that the under part being fastned down to the ground, the upper may be a hollow, and give a passage to the young birds in, and entangle them when there. When the nets are fixed, the person must go to the haunts and call them together by the artificial noise of the pheasant-call, which is so like the real note of the pheasant, that the powts or young ones, will seldom fail being deceived by it. When they hear this and begin to answer it with their chucking and piping; the call is to be stopped, and a person is to get behind them taking the wind with himself, as they always run with the wind. He is to have in his hand the instrument called by the sportsmen a driver; which is no more than a parcel of those long white ozier wands used by our basket makers, fixed in a handle, so that they may be conveniently managed, and tied round in two or three places with ozier bands or packthread to keep them from spreading too much.

When the person who carries this instrument perceives that he is come pretty near some of the powts, he must softly beat the bushes with the driver, or only lightly draw it over them; the little noise this makes will terrify these timorous creatures, and they will gather together in the track and run a little way forward, and then all stop and turn about; on this the person is to make the same noise again, upon which they will run farther, and when they stop again, the same noise will again send them forward. Whatever other powts are in the way will join the main body in this fright, and the whole will be driven in this manner, like a flock of sheep, and by a little address of the sportsman be sent into the nets; so that out of a whole eye, it often happens that not one is missed.

If in the fright the birds happen to run out of their track, and take a wrong way, then the driver is to make a raking noise with his instrument dragged along the ground, on that side on which they are running; this will amaze and terrify them so, that they will immediately start back, and come into the beaten track that leads directly to the haunt. There are but two cautions necessary to the succeeding perfectly in this method of taking them: these are secresy and patience. Whatever stops they make, or however tediously they move, the sportsman who would make sure of them, must bear with it; for over rashness and hurrying will spoil all, and he must content himself with terrifying them by the noise alone, keeping himself carefully out of their sight, for if they espy him, all the plan is disconcerted, and they will no more move forwards, but will every one run a different way, and hide under the roots of trees, and thick bushes, and all the art in the world, will never bring them out again till night, when it will be too dark to watch them.

DRIVING *of wild fowl*, is only practicable in the moulting time, which is in July and August; and is to be done by means of a spaniel, well trained to the purpose. The nets are to be set in creeks and narrow places, or at their usual night retreats, and the dog is to put them up, and *driving* them forward, they will be sent immediately into the nets, not being able to fly away from the dog, from the want of their wing feathers. The people who live in the fenns, find great account in this practice, taking very great numbers of wild-ducks by it. They are usually indeed poor and out of flesh at this time, but as they are always taken alive, and without any hurt, the people find it easy to fatten them with beasts livers, barley, paste, scalded bran, and the like; and they will on this become in a very little time, fat and well tasted, excelling in flavour both the tame ducks commonly kept in the yards, and the wild ducks in their natural state. When the sportsman takes the dog into places where they are not so frequent, he may hunt them singly, and the dog alone will take them.

DRIVING, in metallurgy, is used by the refiners of silver, to express the rising up of copper from its surface in red fiery bubbles. When the lead that was added for the refining the silver is burnt away, before the copper is gone from it, these bubbles appear very fiercely on the surface. They say on this occasion, that the metal *drives*, and then add more lead till the remainder of the copper is consumed. Phil. Trans. N°. 142.

DROCK, in husbandry, a name given by our farmers to a part of the common plow. It is an upright piece of timber, running nearly parallel with the hinder part of the plow, but belonging to the right side of the tail, as that does to the left. The ground wrist of the plow is fastened to this, as also is the earth board. *Tull's* Husbandry. See the articles WRIST, EARTH-BOARD, and PLOW.

DROFFAND or DRYFFAND, in our old writers, was a quit rent, or yearly payment made by some tenants to the king or their landlords, for driving their cattle through the mannor to fairs or markets. The word comes from the Saxon *Dryfene*, driven.

DROIT (*Cycl.*) DROIT *close*. See RECTO *Clauso*, *Cycl.*

DROIT *de Advowsen*. See RECTO *de Advocatione Ecclesiæ*, *Cycl.*

DROIT *de dower*. See RECTO *Dotis*, *Cycl.*

DROIT *patent*. See RECTO *patent*, *Cycl.*

DROIT *sur Disclaimer*. See RECTO *sur Disclaimer*, *Cycl.*

DROMEDARY, in zoology, the name of a species of camel which has only one bunch on its back. Its hairs are soft to the touch, and are shorter than those of our oxen, except that there are some longer on the head, the throat and the top of the neck; and on the middle of the back, there are hairs of a foot long, and these tho' very soft and flexile, yet naturally standing in an erect posture, they make the most visible part of the bunch. For when these are removed by the hand, the flesh scarce appears more prominent, than that of the back of a hog, and there is not the least fleshy or callous excrescence there.

The head is small in proportion to the body; the upper lip is divided as in the hare; the feet are not hoofed, but each terminated by two small claws; the sole of the foot is broad and very fleshy, and seems soft to the touch, tho' the skin is very hard and callous; the feet are indeed cloathed as it were with living shoes, which are of very great service to it in traveling over the sandy countries. It has six callous hardnesses on the knees and shoulders of the forelegs, and one on each of the hinder ones. And beside these there is another much larger, which adheres to the breast, on an eminence which is there, as if made to support it; this is usually eight inches long, six inches broad, and about two thick. The use of these is to sustain the weight of the creatures body on occasion of his stooping to rest, or to be loaded.

Its stomach is very large, and divided into four parts as in other of the ruminating animals, but of a singular structure; in that at the upper part of the second ventricle, there are several square holes, which are the orifices of a great number of a sort of bags placed between the membranes which compose the stomach, and these seem to be the receptacles of water kept for the time of necessity, for the creature always drinks a vast quantity at once, and will then live a great while without drinking again. It is yet a question to be decided, whether this creature is of the retromingent kind, and whether it copulates backwards? this has been affirmed by some, but it is greatly doubted by others. *Ray's* Syn. Quad. p. 143. See Tab. of Quadrupeds, N° 16. and the article CAMEL.

DROMONARII, in antiquity, rowers belonging to the ships called *Dromones*.

DROMONES, in antiquity, a kind of yatchts or expeditious ships used in carrying provisions, or other necessaries. *Pitisc.* Lex. Ant. in. voc.

DROMONES, DROMOS, or DROMUNDA, in middle age writers signified any large ships; but afterwards it was used chiefly for men of war; and in this sense 'tis used in Walsingham, Anno 1292, and in Knighton, lib. 3. c. 14, &c.

DROMEUS, in natural history, a word used by the antients, as the name of two very different animals, the stag and the dromedary. The meaning of the word is swift in running; and the stag had this name as being swifter than any other animals, and the dromedary as being swifter than any of the camel kind beside. The not remarking this double meaning of the word *dromeus*, has made some people in their expositions of the antient Greeks, run into very great absurdities, attributing to the stag. what could only belong to the dromedary; and to this animal, what could only belong to the stag.

DRONE, in natural history, a sort of bee of a larger size than the common working bee, and of a lazy disposition, never going out to work to collect either wax or honey, but living on the honey collected by the rest. These are the males of the swarm; the common working bees are of no sex at all, and the female is usually only one in a hive. See QUEEN BEE.

The dissection of the *Drone*-bee gives as great proof of its being the male, as that of the queen does of her being female. In this creature there is no appearance of ovaries or eggs, nor any thing of the structure of the common working bees, but the whole abdomen is filled with transparent vessels, winding about in various sinuosities, and containing a white or milky fluid. This is plainly analogous to that fluid in the males of other animals, which is destined to render the eggs of the female prolific; and this whole apparatus of vessels which much resembles the turnings and windings of the seminal vessels in other animals, is plainly intended only for the preparation and retention of this matter, till the destined time of its being emitted on the eggs. At the extremity of the last ring of the body is placed the aperture of the anus in the female, and in the working bees; and it is at this aperture, that the sting is also thrust forth; but the case is quite otherwise in the drone

or male bee; for the extremity of that ring is not open, but abſolutely cloſed; and the aperture of the anus is in the under part of that ring about its middle. On preſſing the body of this bee, there is alſo forced out at this part, the penis; this is a ſmall and ſlender fleſhy body, contained between two horns of a ſomewhat harder ſubſtance, which join at their baſe, but gradually part aſunder as they are continued in length. When the preſſure is continued, there are finally thruſt out at the ſame aperture, a part of the internal apparatus of the ſeminal veſſels, and in fine, there is uſually ſome of the milky liquor extravaſated; but this ſeems rather to be let out by the burſting of a veſſel, than by any natural paſſage. Theſe parts found in all the drones, and none of them in any other bees except theſe, ſeem to prove very evidently, the difference of ſex; but there is one thing extremely remarkable in regard to them, which is, that tho' they appear ſo evidently on being forced out of the body by preſſure, yet it is very difficult to find them in it on diſſection. The cauſe ſeems to be their ſwelling when expoſed to the air; and Swammerdam ſuppoſes, that to this purpoſe they are furniſhed with a great number of tracheæ, which readily admit the air as ſoon as ever they are expoſed to it.

It is no uncommon thing for a hive to afford only one female bee, with five or ſix hundred, or even a thouſand *Drones*. The queen ſeems in this caſe, to have a very numorous ſeraglio; yet ſo it is, that in the midſt of ſo many males, and tho' ſhe is loaded with ſuch an immenſe number of eggs, all which muſt be impregnated by the male, no one ever ſaw, or at leaſt no author who has treated on this ſubject, has mentioned his having ſeen the queen and any of her ſeraglio in copulation.

This however is no ſort of proof that the thing is not done, for without giving the female a ſenſe of modeſty or ſhame to govern her actions, we may obſerve, that ſhe always loves the inner receſſes of her habitation; and that as her uſual reſidence is among the center of the combs, there is no reaſon to ſuppoſe, that ſhe would leave that place, and crawl to the edge on purpoſe to ſhew herſelf to the ſpectator in that act. We are acquainted with no other method of animal generation, but by the copulation of male and female in any of the fly kinds; and as analogy is the beſt of all methods of arguing in caſes of this kind, it is to be obſerved, that there are other inſects of the nature of the bees, which we are well aſſured uſe copulation in the common way. Thus the waſps and the common great humble bees are in their ſwarms compoſed of males, females, and labouring creatures, which are of no ſex at all; and both the drones among the waſps, and thoſe among the humble bees, have been ſeen in copulation with the females of their kinds.

The great number of males in proportion to the females in the ſwarms of waſps, takes off the argument againſt the male bees copulating with the female, from the ſuppoſed inequality of their numbers; and it is to be added, that we are not to wonder at our not ſeeing the bees in this action, when we conſider that beſides the obſtruction which the combs give our ſight, the female bee is uſually ſo covered with a cluſter of the working bees, that ſhe is uſually hid from our inſpection in her travels about the edges of the combs by this croud of attendants.

Many of the antients as well as moderns, have ſuppoſed that the eggs of the female bee, are not impregnated with the male ſperm, while in the body of the creature; but that they are depoſited unimpregnated, in the cells, and that the male afterwards ejects the male ſperm on them, as they lie in the cells; in the ſame manner as the generation of fiſhes is ſuppoſed to be performed by the males impregnating the ſpawn after it is caſt out by the female. But this is evidently proved erroneous in the caſe of the bees, as it uſually happens, that during the whole time of the eggs lying in the cells, there is not one male bee alive in the place.

Swammerdam whoſe obſervation of the hives was too accurate to let him fall into this miſtake, and who knew very well, that this ſort of impregnation, was only the erroneous gueſs of perſons little skilled in nature, had recourſe even to a more ſtrange and ridiculous ſource of impregnation, than this: he ſuppoſes, that the female never copulates with the male, but that the effluvia of his body in paſſing by her, renders the eggs within her capable of producing yonng ones, and ſuppoſes according to this doctrine, that nature ſends the vaſt numbers of males to every female, that in the paſſage of the latter thro' the hive, theſe meetings on occaſions of impregnation, might be more frequent. What has been obſerved by Mr. Reaumur in regard to the copulation of the *Drones* with the female bee, ſeems to give all the part of the invitations and careſſes to the female, the males being very indolent and inactive; and this indeed is very neceſſary; for ſhould the males be the aggreſſors, in a place where there are a thouſand of them to one female; that creature could have no reſpite, and could neither feed nor lay her eggs; but on the other hand, as they are indolent and inactive, ſhe lives as quiet a life as ſhe pleaſes among them, and only ſingles out ſuch as ſhe likes occaſionally for her purpoſes.

M. Reaumur contrived to get a female into a box, and putting a male to her, found that all the careſſes and blandiſhments, which the common bees pay'd to her, ſhe returned abundantly to the male; ſhe ſtroaked him with her trunk, and offered him honey to feed on out of her mouth; and this kindneſs for a long time had no effect upon him; at length however, he grew more active and brisk, and the female then got upon his back and bending downward, the hinder part of the body ſeemed to receive into it the male part; the ſtructure of which renders it indeed neceſſary, that the creatures ſhould be in this poſture; for it is bent into the ſhape of a hook, and the point turned upwards, ſo that it would be impoſſible for the male ever to introduce it into her body, if he got upon her in the ordinary way. The time that the bees remained in copulation, if this junction could be ſo called, was but very ſhort, and the female often repeating it, the male uſually died at laſt in the operation.

The common hen will often lay eggs daily for a long time together, and in the ſame manner the female bee lays every day for many months. But there is this great difference, that the hen in order to be thus fecundated, muſt live with a cock all the time, and be often in copulation with him. Whereas the female bee continues laying almoſt the whole year round by only having had the males with her during a few weeks. When the ſhort time in which the male bees are neceſſary in the hive is over, the labourers all fall upon them, and produce a cruel ſlaughter among them. They leave not ſo much as one alive, and every morning carry out of their habitation, the carcaſſes of the ſlaughter of the former day's butchery. Nay they do not ſpare even the young ones in the worm or nymph ſtate, but ſearch out all the large cells which they had before made for their reception, and finding they will not hereafter be neceſſary to them, deſtroy them in this defenceleſs ſtate. Theſe ſlaughters happen at different ſeaſons of the year according to the different accidents of the ſwarm; They are always eaſily known by the numbers of dead carcaſes found about the hives, and happen uſually in June or July, tho' ſometimes later; for a ſwarm not received into the hive till May, will let the males live till Auguſt. *Reaumur*, Hiſt. Inſect. T. 10. p. 128, 149, 157.

DRONE-*fly*, or BEE-*fly*, a two wing'd fly, ſo extremely like the common bee as to be at firſt ſight not eaſily diſtinguiſhable from it. The diſtinction between the two inſects however, beſide the different number of their wings, is that the bee has a ſomewhat longer and leſs thick body, and the head is proportionably much ſmaller, than that of the fly which ſo much reſembles them. The bee fly alſo ever carries its wings parallel in their poſition, but without its body; whereas the bee itſelf uſually carries its wings croſſed on the back, and covers its body with them; this is not however an invariable poſture with the wings of the bee, tho' it is the moſt frequent one. The bee fly is found among the flowers, as is the bee, and tho' it gathers no wax, it has a trunk by means of which it ſucks the honey.

The trunk, by means of which the *fly* is enabled to do this, has no teeth, and conſequently the *fly* belongs to Mr. Reaumur's firſt general claſs of the two-winged *flies*; and the form of its body, which is ſhort and flat, determines it to be of his firſt ſubordinate genus of that claſs. This is properly a ſeparate genus of *flies*, of which there are many ſpecies. Mr. Ray has deſcribed ſix, and a cloſe obſervation will enable us to add much to that number. The different ſpecies vary extremely from one another in ſize. The ſmaller of them are not ſo large as the common blue fleſh-*fly*, the others equal or exceed this *fly* in ſize. They differ alſo in colour in their different ſhades of brown; and ſome of them have ſpots of a fine deep black, and others of a fine gloſſy yellow, which make them very diſtinguiſhable from bees.

The moſt ſingular and obſervable part of the life of this inſect is that which it paſſes without wings, and in form of a *fly*-worm and nymph. The general exterior form of the *fly*-worms of this genus has been well enough known to the generality of naturaliſts; and Goedart, Merian, and Albinus were well acquainted with them ſo far; but they did not give themſelves the trouble of a farther examination, and were not ſenſible that theſe worms had many obſervable things to offer to our conſideration.

The matter among which they are found is that of all others the moſt offenſive and diſagreeable. They are of the claſs of thoſe with variable heads; but their great diſtinction from all others is their having a long ſlender tail. This at different times the worm makes of very different lengths, but in its ſhorteſt it is longer than the body of the creature. It is round, ſmooth, and at times extremely ſmall at the extremity, and ſometimes much reſembles the tail of a rat; whence the whole claſs of theſe worms are well diſtinguiſhed by the name of rat-tail'd worms.

Nothing is more vague than our manner of gueſſing at the uſe of the parts of animals at firſt ſight. Nature, we know, gives them no organ in vain, and therefore we are to find the uſe for which they were given. Goedart gueſſed theſe long tails were given to this claſs of worms to enable them to crawl

along

along without rolling about, to which their round figure would without theſe naturally have ſubjected them. But this cannot be agreed to on a general examination, when we find that there are a vaſt number of other worms of as round bodies as theſe, which have no power of flattening themſelves, no viſcous matter exſudated from their skin, nor either feet or tail, which yet are able to move along without rolling.

Notwithſtanding that Goedart did not perceive it, this ſpecies of worms have legs alſo, and thoſe in a ſufficient number. They have ſeven pair of theſe placed at pretty regular diſtances, and the firſt pair not far from the head of the creature, the laſt but at a ſmall diſtance from the tail. Theſe are all ſhort and membranaceous, but they are well contrived for laying hold of things; for they are round and large at the bottom, and are ſurrounded there with fine and ſharp hooks. The creature has a power not only of retracting theſe hooks into the ſubſtance of its feet, but can even retract its feet into its body, and render them inviſible, till it has occaſion to thruſt them out again to walk with.

To know the uſe of the tail of this worm, it is however neceſſary firſt to know the nature of the worm itſelf. Theſe authors took it for a terreſtrial worm; but it is in reality an aquatic, as Swammerdam and Valliſneri rightly judged. 'Tis in the water that it acquires its growth, and it never leaves that element till the time that it is in a ſtate to undergo its firſt metamorphoſis, in order to its change into the *fly* ſtate. Theſe worms being uſually found on dry land, aud only picked up now and then ſparingly, gave the world for a great while no room to believe that they were ſo numerous as they really are, nor had people any idea that they were to look for them in the water. In examining veſſels of corrupted and ſtinking water however, they have been found in very great multitudes together lying among the mud at the bottom. Theſe taken out of this filth, and put into veſſels of clean water, will ſoon ſhew the curious obſerver the uſe of their long tails. Notwithſtanding that theſe worms are to live under water and in mud, there is no doubt to be made but that, like other of water *fly* worms, they have a neceſſity of breathing freſh air; and 'tis to this great purpoſe that their long tail ſerves them; for while they lie buried in the mud, this is extended up to the top of the water, and being open at the extremity lets in the air into the body of the creature. It is a pleaſing ſight to obſerve, that theſe animals, after having been put into a veſſel of freſh water, all get quickly to the bottom, and each thruſts up the extremity of its tail to the ſurface.

It is very eaſy, from ſeeing that at whatever depths the worms lie their tails ſtill reach the ſurface, to conclude, that they have a power of lengthening them at pleaſure. The ready way to be aſſured of this is to add depth to the water by pouring more into the veſſel; for as the worms love the bottom, they muſt, if they will remain there, lengthen their tails proportionably in order to breathe from the ſurface. The repeating ſeveral of theſe additions ſhews, that the worm is able to extend its tail to the length of five inches; an extremely remarkable length for a creature, whoſe body is not much more than half an inch, and whoſe tail in its more common ſtate is not much longer than that. Five inches is however the ſtint, beyond which they cannot go in this action; and when the water in the veſſel is made of a greater depth, the worms leave the bottom, and either crawl up the ſides of the veſſel to a proper height, or elſe ſwim in the water at the depth of five inches, which is the depth at which they carry their tails up to the ſurface.

The organization of ſo remarkable a part as the tail of this animal, cannot but appear to the curious greatly worth the enquiring into; and the tranſparence both of it, and of the body of the creature, is ſuch as to favour very greatly this examination. And indeed in many of the younger of theſe worms, and ſuch as have not yet come to the ſtate at which they quit the water, one may diſtinguiſh the parts within the body as plainly almoſt as if placed for examination in a glaſs tube. It is eaſy in all ſtates of the worm to diſtinguiſh that its tail is compoſed of two hollow tubes, the one of which nicely fits, and is eaſily retracted within the other, or thruſt out of it again, as the creature's occaſions require. The outter and larger tube ſeems an elongation of the fleſhy matter that forms the rings of the body. It is white like the body, and is compoſed of a vaſt number of rings, as the body is. Within this is lodged a leſſer pipe, a great part of which is of a blackiſh brown; and by means of this colour, the inner tube may be diſtinguiſhed even when it is wholly within the other. This inner one may be called the tube of reſpiration. It is eaſy to ſee now that the tail of the worm may be made more and more long, as his inner tube is thruſt out of the other, which ſerves it as a caſe or ſheath. But this is not all; it is eaſily known that theſe pipes are in themſelves capable of extenſion, by obſerving, that when the whole inner tube is lodged within the caſe, or outer one, yet this is of no determinate length, but is ſometimes longer, ſometimes ſhorter.

Both the inner and outer tube are indeed compoſed of annular fibres, and are capable of extenſion in length by the leſſening their diameters. Thus when the tail is extended to its whole length, the upper part of the tube of reſpiration appears no thicker than a large thread, or a horſe-hair.

The tube of reſpiration is terminated by a ſmall brown prominence, in which there may be diſtinguiſhed two apertures deſigned to give a paſſage to the air; and around this there may be diſcovered five ſmall pencils of hairs, which, when the end of the tail is on the ſurface of the water, ſpread on it like the rays of a ſtar. The mechaniſm by which the inner tube is extended out of its caſe, and is again retracted into it, when ſuch extenſion is no longer neceſſary, is extremely plain and ſimple, and the eye is very well able to diſcern the whole operation. There are in the body of the worm two large trachea laid in a parallel direction to one another, and extended the whole length of the body from head to tail. They have their origin very near the head, the one on the right hand, and the other on the left, and their diameter in this place is very ſmall; they inſenſibly grow larger as they approach the hinder part of the body, and when arrived at this ſize they keep it to the extremity of the body. They are here two large veſſels, whoſe brightneſs and whiteneſs reſemble white ſattin. Near the origin of the tail theſe tracheæ ſuddenly become narrower; and for the reſt of their extent, each is no more than an extremely thin tube, but that ſo long, that it has not room to be lodged in it without making ſeveral folds and convolutions in a very ſmall ſpace; and this the more, as the ſmaller tube, or tube of reſpiration, is the more retracted within its caſe.

The long and ſlender portions of theſe reſervoirs of air are two hollow threads as it were, the ends of which are faſtened to the tube of reſpiration. When this tube is thruſt in part out of its caſe, and the tail is by that means become longer, theſe threads follow it out; they unfold themſelves in proportion to the length it is thruſt out to, and are drawn out of the body into the caſe, or larger outer tube of the tail. In this caſe the folds and convolutions they make in the body are few, and diſtinct; and when the tail is yet much farther lengthened, and the tube of reſpiration is carried out to its utmoſt length, and leaves the outer tube an empty caſe, theſe hollow threads are extended into two parallel ſtrait lines, their folds and convolutions are all loſt, and they are brought into the now empty caſe in form of two parallel tubes: and when this tube of reſpiration is again retracted into its caſe, theſe hollow threads recede into their old places, and make their former folds and convolutions at the end of the great tracheæ, or the great reſervoirs of air, of which they are properly no other than elongations.

It is moſt probable, that to the unfolding and expanding of theſe two veſſels, the whole action of the thruſting out of the tube of reſpiration from its caſe, when the depth of water requires it, is owing; and that the retracting of it in again is, in like manner, the effect of the returning of theſe veſſels into their original folds and convolutions: ſince if we allow this veſſel but a little ſtrength, as they muſt have if of a cartilaginous ſtructure, that will be enough on its expanding to throw out the eaſily moveable tube of reſpiration from its caſe; and as they are faſtened to the end of this tube, it is a moſt neceſſary conſequence, that their contracting themſelves into their old convolutions muſt pull it in again.

Beſide this, there muſt alſo be a power in the animal of extending and retracting the parts of each of theſe pipes or tubes by means of their annular ſtructure. But this depends on the ſame principle as muſcular motion in general, and is a ſubject of too abſtruſe enquiry to be entered into here. This tube of reſpiration is however not only capable of being retracted wholly into its caſe, but it is ſometimes drawn into the body of the creature between the two principal tracheæ, and carried up almoſt to the head, and is even ſometimes bent and folded.

The worm has the power of changing the figure of its head like the reſt of this claſs. It ſhews at times two fleſhy horns, the inſertions of which are in the under part of the body, and near theſe is the mouth. This is ſurrounded by a ſort of arch of a brown cartilaginous ſubſtance; and within this is a little fleſhy protuberance, which may be taken for the tongue. Its anus is a tranſverſe ſlit, placed between the inſertion of the laſt pair of legs, and the origin of the tail. This is ſurrounded by a number of fleſhy bodies forming a kind of fringe, which the creature either ſhews or hides at pleaſure. Theſe may not improperly be taken for a part of the inteſtines, which the creature is obliged to puſh out of its body when it is to void its excrements; and when that is done, it retracts them in again. The microſcope ſhews them to be all hollow.

Many of the water *fly* worms do not quit that element till in the *fly* ſtate; but this ſpecies, as ſoon as they have acquired their full growth, leave the water, and crawl upon the earth. Their bodies in this new element become dirty and greyiſh; and when they have found a proper ſpot of ground where the earth is ſoft and moiſt, they bury themſelves, and after a neceſſary time for their change come out in the form of *flies*.

Their changes are all made under a ſhell of their own skin, which

which in a few hours is found beginning to harden, and by degrees becomes very firm, of a yellowiſh colour, and is remarkable for having four horns, two larger and two ſmaller, placed in different directions near the head: and theſe are the organs of reſpiration to the incloſed nymph.

Theſe are the changes of the *flies* of this claſs. They are of ſeveral ſpecies, and differ in ſize not leſs than the worms from which they are produced. Of theſe the largeſt are found in vaults and privies; and in winter, multitudes of them may be met with in the hollows of willows and other trees where there is water. *Reaumur*, lib. cit. T. 4. p. 441—459.

DRONTE, in zoology, the name given by Bontius, and ſome other authors, to the bird more uſually called *Dedo*; a very large and ill ſhaped fowl, ſomewhat approaching to the nature of the caſſowary, but not ſo tall. *Ray*'s Ornithology, p. 107. See the article DODO.

DROPS (*Cycl.*)—*Engliſh* DROPS, a name given, in the time of king Charles the ſecond, to a chemical preparation eſteemed of great virtue againſt vapours and lethargick affections, and ſaid to be purchaſed for a large price by that monarch from the inventor. The medicine appeared to be only a ſpirit drawn by the retort from raw ſilk, and afterwards rectified with oil of cinnamon, or any other eſſential oil; and was in reality no better than the common ſal volatile oleoſum, or any of the volatile ſpirits, as thoſe of hartſhorn, ſal armoniac, or the reſt, impregnated with an eſſential oil, except that it was leſs diſagreeable than any of them to the taſte, and therefore fit for perſons of nice palates. Mem. Acad. Par. 1700.

Rupert's DROPS. See RUPERT.

DROPSY (*Cycl.*)—Some think that the anaſarca, leucophlegmatia, hydrops aſcites, tympanites, hydrocele, *&c.* differ ſo exceeding little, that it is ſcarce worth while to retain ſo many pompous Greek names. Medic. Eſſ. Edinb. vol. 1. p. 226.

The oil of juniper, or an infuſion of juniper-berries roaſted, and made into a liquor like coffee, is ſaid to be good for the *Dropſy*.

Exerciſe is alſo recommended to hydropic people immediately before tapping, that the groſſer particles in the water of their belly may be mixed with the thinner, and ſo run out with them. And if there is reaſon to ſuſpect any ſuch groſs parts remaining after the operation, ſome adviſe the injection of barley-water to dilute and bring them away.

We have lately had accounts, in the philoſophical tranſactions, of *Dropſies* cured by tapping, and afterwards injecting Cahor wine, mixed with Briſtol water.

There is alſo an account of an uncommon *Dropſy*, from the want of a kidney, in the Philoſophical Tranſactions. The ſubject was a young woman; the water evacuated from the abdomen on diſſection, meaſured near half a hogſhead, and was contained in a large ſack, which almoſt occupied the whole cavity of the abdomen above ſix feet in circumference, and extended upwards of four feet from the xyphoid cartilage, to the os pubis. The figure and deſcription of this ſack and the adjacent parts, may be ſeen in Phil. Tranſ. N°. 482. Sect. 2.

We read of an hydropic body becoming ſo infectious, that the ſurgeon who tapped the corpſe, was thrown into a peſtilential fever. Phil. Tranſ. N°. 454. Sect. 4.

DROPSY *of the lungs*. See HYDROPS *pulmonum*.

DROSOLITHUS, in natural hiſtory, the name of a ſtone to which many great virtues are attributed, by the writers of the middle ages; but the accounts they have left us of it, are too imperfect to give us any juſt idea of what ſtone it was. They ſay it was variegated with many colours, and that when laid upon the fire, it ſweat or oozed out large drops of clear water, all over its ſurface.

DROUGHTS—Great *Droughts* are very prejudicial to the farmer and his paſture, and ſuch years afford but very little reward for the labour and expence of keeping it in order. The only remedies are high incloſures, and plenty of water at hand. The firſt of theſe is always in the farmer's power, and ſhould be carefully provided by planting hedges in a proper manner, in counties moſt ſubject to ſuffer by this diſadvantage. The other is not always ſo eaſy, but may be managed ſeveral ways, as by ſinking wells; but theſe, when deep, are very expenſive; or by bringing the water in pipes, gutters, or other conveyances: and this is eaſily done where there is a ſpring or brook in the neighbourhood higher than the lands. Pumps, wheels, and ſuch other engines are alſo uſed in ſome places to bring on the water; and in others, ponds, ciſterns, and receptacles are made to take in the rains and winter floods, and retain the water till ſummer, when it is wanted.

The farmers of England are very deficient in this laſt method, which they might uſe to their great benefit in many places. In Spain they have no water in many parts but what they preſerve in this manner. And at Amſterdam and Venice they have whole cellars made into ciſterns, which receive the water that falls in rains, and preſerve it all the year. Want of water for the cattle in ſummer in many places might be eaſily remedied by ſome care of this kind, and many thouſand acres of land made uſeful, which are now left as waſte, by this means alone. It is very evident that this is feaſible, becauſe it is done in places where there falls much leſs rain annually than with us; and yet by this the inhabitants have always freſh water enough for the uſe of their houſes, cattle and gardens, none of which ever fail. *Mortimer*'s Huſbandry, p. 296. See CISTERN.

DROWNING (*Cycl.*) was formerly the capital puniſhment for a woman, as hanging was for men. *Hoſm.* Lex. in voc. See FOSSA and FURCA, *Cycl.*

DRUM (*Cycl.*) is uſed to ſignify a kind of fiſh in Virginia. The oil of this fiſh is ſaid to cure pains in the limbs frequent in the country. See Phil. Tranſ. N° 454. §. 1.

DRUNKENNESS (*Cycl.*) is puniſhable by the law of England [a]. The penalty is five ſhillings fine, or the ſtocks in caſe of non-payment. For a ſecond offence the guilty perſon may be bound to his good behaviour [b]. [[a] See Stat. 4. Jac. 1. c. 5. 21 Jac. 1. c. 7. [b] 21 Jac. 1. ibid.]

Hobbes [a] makes voluntary *Drunkenneſs* a breach of the law of nature, which directs us to preſerve the uſe of our reaſon. The law of England alſo does not allow it to be an excuſe in any caſe whatſoever. [[a] *Hob.* de cive.]

DRUPE, among botaniſts, a ſpecies of pericarpium, conſiſting of a ſoft, fleſhy, and ſucculent pulp, in the center of which there is a nucleus. See PERICARPIUM.

DRUSA, in natural hiſtory, a name given by ſome of the Saxon miners to the common pyrites, and by others to ſome peculiar kinds of it. But in general it is underſtood to ſignify both the pyrites and the marcaſite.

DRY (*Cycl.*)—A *dry* air, cæteris paribus, leſſens the weight of the human body, and the contrary quality increaſes it. See MOISTURE *of the air*.

DRY *Cupping*, in ſurgery, the application of cupping-glaſſes to various parts of the body, and raiſing the common tumors under them without opening them with the ſcarificator.

The uſe of *Dry cupping* is twofold, either to make a revulſion of the blood from ſome particular part affected, or elſe to cauſe a derivation of it into the affected part upon which the glaſs is applied. It is in the firſt ſenſe that Hippocrates orders a large cupping-glaſs to be applied under the breaſts of women, who have a too profuſe diſcharge of the menſes, intending thereby to cauſe a revulſion of the blood upwards from the uterus. And upon the ſame principle have hæmorrhages at the noſe been ſtopped by applying cupping-glaſſes to the legs and feet, particularly about the ankles and knees. Spitting of blood from the lungs has alſo been cured by the ſame method; and Scultetus gives a remarkable inſtance of a woman, who by the repeated application of ſix cupping-glaſſes, without ſcarification, to her thighs, was not only relieved of the troubleſome ſymptoms ariſing from an obſtruction of the menſes, but was alſo freed from the obſtruction itſelf.

Dry-cupping is alſo uſed with ſucceſs to make a revulſion by applying the glaſſes to the temples, behind the ears, or to the neck and ſhoulders, for the removal of pains, vertigos and other diſorders of the head; they are alſo applied to the upper and lower limbs, to drive blood and ſpirits into them when they are paralytick, and laſtly to remove the ſciatica, or other pains in the joints: the operation in theſe caſes is to be repeated till the part looks red and becomes painful. *Heiſter*'s Surgery, p. 308.

DRY-*meat*, in the manege, is uſed for corn and hay. After taking the horſe from graſs, or houſing him, he is frequently put to *dry-meat*.

DRYAS, in botany, the name of a genus of plants called alſo by ſome *Dryadæa*, and by Tournefort and others, made a ſpecies of the caryophyllata. The characters are theſe: The perianthium is compoſed of one leaf divided into eight ſtrait obtuſe equal ſegments, ſomewhat ſhorter than the petals of the flower. The flower conſiſts of eight oblong expanded emarginated petals inſerted into the cup. The ſtamina are numerous, very ſhort capillary filaments inſerted into the cup. The antheræ are ſimple and ſmall. The germina are numerous, ſmall and ſet cloſe together; the ſtyles are capillary, and are inſerted into the ſides of the germina, and the ſtigmata are ſimple. There is no fruit, but the ſeeds ſtand naked together, and are numerous, and of a roundiſh compreſſed figure, and ſuſtain a number of hairy ſtyles. *Linnæi* Gen. p. 223. Tourn. 151.

DRYINUS, *Oak-ſnake*, a ſpecies of ſerpent, ſo called from its being uſually found about hollow oaks. Bellonius, who has mentioned it, ſays, that ſcarce any ſerpent grows to a larger ſize, or makes a more terrible hiſſing. Authors in general ſeem however ſo little agreed about its deſcription, that it is not eaſy to aſcertain the name to any peculiar ſpecies of ſnake. *Ray*'s Syn. Anim. p. 290.

DRYITES *Lapis*, in natural hiſtory, a name given by authors to a ſubſtance but ill deſerving the name of a ſtone; it being only foſſil wood, found in detached maſſes, not in whole trees or compleat branches; which when taken up is found to retain ſo much of its vegetable nature, as to burn, tho' it appears plainly to have imbibed ſome ſtony matter. There is much of this foſſil wood found in Italy, in the banks and on the ſhores of rivers. We know alſo by what we ſee of the foſ-

ſil wood of England, that it may be found in all degrees of petrifaction, from that of almoſt unaltered wood, to abſolute ſtone or mineral matter, with only the ſuperficial grain of wood. Of the firſt kind is all our bog wood, or the trees or parts of trees found in bogs, which burn at leaſt as well as the *Dryites* of the antients; and of the latter, is the wood found in our ſtone quarries or gravel pits, converted as it were into a mere ſtone; and in our clay pits, ſo filled with the matter of the common vitriolic pyrites, as only to ſhew the external appearance of wood, the inſide being merely a maſs of that mineral matter. The famous petrifactions of the lake called Lough Neagh in Ireland, afford us alſo an inſtance of wood being partly petrified, partly left unaltered, except as to its natural decay; ſome of the maſſes found there, being in one part hard ſtone, and in the other wood, yet capable of burning and only decaying thro' moiſture without the leaſt particle of ſtony matter among them. See FOSSIL *Wood*.

DRYOPEIA, Δρυοπεια, in antiquity, an anniverſary day obſerved in memory of Dryops, one of Apollo's ſons. *Potter* Archæol. Græc. l. 2. c. 20. T. 1. p. 385.

DS JERENANG, a name by which ſome authors have called a kind of ſpecies of palm-tree from the fruit of which is procured a dragons blood. *Kempfer*, Amœn. exot. p. 552.

DUCENTESIMA, in antiquity, a tax of the two hundredth penny, exacted by the Roman emperors. Vid. *Pitiſc.* Lex. Ant. in voc.

DUCK, *anas*, in zoology, the name of a very large genus of birds, the characters of which are theſe. The beak is ſhorter in proportion, than that of the gooſe, and the feet proportionably larger. The legs are ſhorter and are placed farther backward, and the back is flatter, and the body more compreſſed. Some of theſe love the freſh waters, others are found only at ſea, and of both theſe there are very numerous ſpecies. *Ray*'s Ornitholog. p. 276.

This fowl is furniſhed with a peculiar ſtructure of veſſels about the heart, which enable it to live without reſpiration a conſiderable time under water, as is neceſſary for it in diving. This made Mr. Boyle think it a properer object for experiments by the air pump, than any of the other birds. A full grown duck being put into the receiver of the air pump, of which ſhe filled one third part, and the air exhauſted, the creature ſeemed to bear it better for the firſt moments, than a hen or other ſuch fowl; but after about a minute, ſhe gave great ſigns of diſcompoſure, and in leſs than two minutes her head fell down, and ſhe appeared dying, till revived by the leting in the air. Thus whatever facility of diving, this and other water fowl may have, it does not appear, that they can ſubſiſt without air for reſpiration, any longer than other animals. A young callow *Duck* was afterwards tried in the ſame manner, and with the ſame ſucceſs, being reduced very near death in leſs than two minutes. But it is obſervable, that both birds ſwelled extremely on the pumping out of the air, ſo as to appear much larger to the ſpectators, eſpecially about the crop. It not being intended that any water fowl ſhould live in an exceedingly rarify'd air, but only be able to continue on occaſion ſome time under water. Nature tho' ſhe has provided them with the means of this, has done nothing for them in regard to the other.

The ſtrongeſt inſtance of this creatures being calculated to live any where, we have in the accounts of the blind *Ducks* of the Zirchintzer lake in Carniola. It is now well known, that this lake communicates with another lake underground in the mountain Savornick, and fills or empties itſelf according to the fulneſs or emptineſs of that lake; the waters of the upper lake running off at the time of its emptying by large holes in the bottom, and that in vaſt quantities. The *Ducks* which are very plentiful in the water, are often carried down with it, and forced into the ſubterraneous lake the waters retire to. In this unnatural habitation, many of them doubtleſs periſh, but ſome remain alive; theſe become blind and loſe all their feathers, and in the next filling of the lake, both they and vaſt numbers of fiſh are thrown up with the water. They are fat at this time, but make a ſtrange appearance in their naked ſtate, and are eaſily caught, for want of ſight to avoid the danger. In about a fortnight they recover their ſight and their feathers, and are then of the ſize of a common wild duck, but of a black colour, having a white ſpot upon their forehead. When opened on being taken on their firſt coming up in their blind ſtate, their ſtomachs are found full of ſmall fiſhes, and ſomewhat reſembling weeds. It ſeems from this, that they cannot be abſolutely blind, but that the degree of light to which they have been accuſtomed in their dark habitation, had formed their eyes to ſee by that ſmall quantity, ſo well as to get their food by it; and their blindneſs on coming into broad day light again, is no other than that of a man who has been long in the dark, on having in an inſtant a large blaze of candles ſet juſt under his eyes. The eye in neither caſe can bear the ſudden change, and muſt be habituated to it, before it can ſee objects by it. Theſe blind *Ducks* are not only caſt up in this lake, but after great rains they are frequently thrown up at a hole in the mountain Storſeg near the town of Laas. The water guſhing out at this hole with great force on theſe occaſions, brings away with it theſe blind and bald ducks; and their frequency on theſe occaſions in theſe places, makes them eſteemed no rarity; but the common people underſtand that there are underground lakes, which they inhabit, and out of which they are thus thrown. Phil. Tranſ. N°. 191.

Northern DUCK, *Anas arctica*, a name given by Cluſius to a water fowl well known on our coaſts, and called by ſeveral other names both by authors and our own common people. Aldrovand calls it *Pica Marina*, and Fratercula from Geſner, and Wormius and Hoier, the *Lunda*. We call it in ſome places the *Puffin*, and in others the *Golden-head*, *Bottlenoſe*, *Helegug*, *Coulta-neb* or *Counterneb* and the *Mullett* and *Pope*. It is ſmaller than the common *Duck*; its beak is flatted ſideways, and is broad and ſhort, ſomewhat of a triangular figure, and ending in a point; it has a callous ſubſtance at its baſe, like that over the beak of the parrot. It is partly grey, partly red and has three remarkable furrows on it. Its legs are placed very backward, and are yellow when the bird is young, they afterwards are red, and have no hinder toe. Its head, neck and back are black, its breaſt, throat and belly white; but there is a remarkable black ring which ſurrounds the throat. The ſides of the head are alſo whitiſh, or of a very pale grey. Its wings are extremely ſhort, and furniſhed with very ſmall feathers; yet by the help of theſe it flies very nimbly along the ſurface of the water, but it cannot fly at all except its wings continually touch the water. It builds no neſt, but lays its eggs on the naked earth, or in the deſerted rabbit-holes; and what is very remarkable, each lays only one egg. This is very large, and of a reddiſh colour. They breed with us, but are birds of paſſage, leaving us in autumn, and returning about March in ſmall numbers, as if to examine the place; after which they again depart, and in May return with the whole numbers; and if it happens to be a ſtormy ſeaſon, multitudes of them are thrown dead upon the ſhores. For they are neither able to travel, nor to get food, except in calm weather. *Ray*'s Ornitholog. p. 244.

Braſilian DUCK, *Anas Braſilienſis*, the name of an American bird of the *Duck*-kind, but of the ſize of the gooſe. Its beak, legs, and feet are brown, and its body is all over black, except that the upper part of the wings is white. It is not however, of a dead or dusky black, but has a very ſtrong gloſs of green among it. It has a creſt compoſed of black feathers on its head, and over the origin of the bill a large red fleſhy tubercle, and a naked red membrane round its eyes. They fly up to the tops of the higheſt trees, and are a very fleſhy and delicately taſted bird. *Margrave*'s Hiſt. Braſ.

The ſharp-tailed DUCK, *Anas Caudacuta*, in zoology, the name of a peculiar ſpecies of *Duck*, having a long tail like a pheaſant. It is called in ſome places the ſea pheaſant, but more generally is known with us, by the name of the *Cracker*. See the article CRACKER.

Horn-DUCK, *Anas Cornicenſis*, the name of an American *Duck*, deſcribed by Nieremberg, and having its name from its imitating with its note, the ſound of the huntſman's horn. It is a very bold tho' a weak bird, and is very difficultly tamed. This is one of the many birds mentioned by this author, which from his imperfect account, it is impoſſible to know whether a new ſpecies, or ſome of thoſe deſcribed by Margrave or others. *Ray*'s Ornithol. p. 100.

Indian DUCK, *Anas Indica*, the name of a bird of the *Duck* kind deſcribed by Geſner and others, as a diſtinct ſpecies, but ſeeming by the deſcription to be the ſame, with what we call the Muſcovy *Duck*.

Lybian DUCK, *Anas Lybia*, a name given by Aldrovand, Bellonius, and ſome authors to a ſpecies of *Duck*, brought from that part of the world, but which appears to be the ſame with what we commonly know, by the name of the *Muſcovy Duck*. *Ray*'s Ornitholog. p. 295.

Muſcovy DUCK, *Anas Moſcata*, the name of a ſpecies of *Duck*, the largeſt of all the *Duck* kind. The general colour both in the male and female is a purpliſh black, though the female is ſometimes quite white. It has red fleſhy protuberances about its beak and its eyes, and its voice is hoarſe, very ſoft, and ſcarce to be heard, unleſs when it is angry. The eggs of this bird are of a remarkably round figure. *Ray*'s Ornitholog. p. 294.

The fly-catching DUCK, *Anas Muſcaria*, a name given by ſeveral authors to a ſpecies of *Duck*, from its catching flies that play on the ſurface of the water. It is deſcribed as a diſtinct ſpecies, but Mr. Ray ſuppoſes it the ſame with our wild *Duck*.

The black DUCK, *Anas niger*, a ſpecies of *Duck* larger than the common kind. The head and neck in this, are of a greeniſh black, the legs and feet red on the anterior part, and yellow below, and behind; the webs of the feet very black; all the body is black except a ſtreak of white of an inch long on the wings, and a white ſpot on each ſide of the head behind the eyes. All the feathers are ſo gloſſy and ſhining, that the bird looks as if coated with the fineſt ſattin. It never

never appears with us, except in very hard winters. On the coaſts of Norway, there are large flocks, of it. *Ray*'s Ornitholog. p. 278.

Hook-bill'd DUCK, *Anas roſtro adunco*, it is of the ſhape and ſize of the common *Duck*, but differs from it in the ſhape of the bill, which is ſomewhat longer and hooked downwards; and in the head, which is ſmaller and ſlenderer. See *Ray*'s Ornitholog. p. 294.

St. Cuthbert's DUCK, *Anas St. Cuthberti*, the name of a ſpecies of *Duck*, ſeeming to be the ſame with the *Eider* of Wormius, and other authors. The male is black and white, the female all brown. See CUTHBERT and EIDER.

Tufted DUCK, a ſpecies of *Duck* with a black head; otherwiſe called *Capo Negro*. See CAPO *Negro*.

There are four other ſpecies of *Duck*, under the following denominations, *viz.*

ANAS *Clypeata*, a ſpecies of *Duck*, called in Engliſh the *Shoveler*. It has both theſe names from the remarkable ſhape of its beak, which is broad, and rounded and hallowed at the extremity. See the article SHOVELER.

ANAS *fiſtularis*, a name given by many to the common wigeon, more generally known by the name *Penelope*. See PENELOPE.

ANAS *Strepera*, in zoology, a name by which ſome authors have called the *Gadwall* or grey, a ſmall ſpecies of wild *Duck*. See GADWALL.

ANAS *Platyrinchos*, a name given by Aldrovand and ſeveral other authors, to a ſpecies of ſea *Duck*, more commonly known by the name of *Clangula*, and called in Engliſh the *Golden Eye*. *Aldrovand.* Hiſt. p. 225. See CLANGULA.

DUCKUP, a word uſed at ſea by the ſteerſman, or he that is at the helm, when either main-ſail, fore-ſail, or ſprit-ſail hinder his ſight ſo, that he cannot ſee to ſteer by a land-mark, or the like; for then his word is, *Duckup* the clew lines of thoſe ſails: and as to the ſprit-ſail, when a ſhot is to be made by a chaſe-piece, and the clew of that ſail hinders the ſight, they ſay, *Duckup* the clew lines of the ſprit-ſail, that is, hale the ſail out of the way.

DUCTUS (*Cycl.*)—DUCTUS *pneumaticus*, in ichthyology, the name of a certain duct or canal, found in all thoſe fiſh, which have an air-bladder, reaching from that bladder to the orifice of the ſtomach, or ſome other part of it. This *Duct* is variouſly ſituated in the different kinds. In ſome, as in the ſimple bladders, it ariſes from their top or ſummit, and enters the orifice of the ſtomach. This is the caſe in the coregones, ſalmons, &c. In ſome others, as the clupeæ, it ariſes from the middle of the ſimple bladder, and is inſerted in the lower part or fundus of the ſtomach. In the double bladders, it generally ariſes from the beginning of the loweſt lobe, and enters the ſtomach at the diaphragm, this is the caſe in all the cyprini. The uſe of this pneumatic duct or canal, is evidently to admit the air from the ſtomach into the bladder, deſtined to receive it, in which it is retained, and which ſerves by its greater lightneſs than water, ſo far to balance the over-weight of the bones and muſcular fleſh of the fiſh, that it can remain ſuſpended by means of it at any depth. The pleuronecti and ſuch other fiſhes as have no air bladder, have no trace of this duct, and they always remain at the bottom of the water; and even thoſe which have it may be reduced to the ſame ſtate, by piercing it through with a needle, in which caſe the fiſh can no more riſe to the top of the water, but creeps as it were about the bottom continually. *Artedi* Ichthyolog.

DUCTUS *Roriferus*, in anatomy, the ſame with *Ductus Chyliferus*. See THORACIC *Duct*, *Cycl.*

DUKE (*Cycl.*) — DUKE, among Hebrew grammarians, is an appellation given to a ſpecies of accents anſwering to our comma. See ACCENT, *Cycl.*

DULCICHNIUM, in botany, a name given by ſome authors to the *cyperus dulcis*, or ſweet cyperus. *Ger. Emac.* Ind. 2.

DULCINO, in the Italian muſic, a wind inſtrument, otherwiſe called *Quart-fagotto*. It ſerves for tenor to the hautboy, and is no more than a little baſſoon. *Broſſ.* Dict. Muſ. in voc.

DULEDGE, in gunnery, a peg of wood which joins the ends of the ſix fellows, which form the round of the wheel of a gun-carriage; and the joint is ſtrengthened on the outſide of the wheel by a ſtrong plate of iron, called the *Duledge plate*.

DULKAK, among Arabian writers, a fabulous ſea monſter in form of a man riding on an oſtrich, which attacks ſhips, and fights with the men on board. *Hofm.* Lex. in voc.

DULL, in the manege. The common marks of a *dull*, ſtupid horſe, are white ſpots round the eye, and on the tip of the noſe, upon any general colour whatever. Though the vulgar take theſe ſpots for ſigns of ſtupidity, yet it is certain they are marks of the goodneſs of a horſe; and ſuch horſes as have them, are very ſenſible and quick upon the ſpur. The French call theſe ſpots *Marques de Ladre*. *Guillet.*

DULMA, a Turkiſh diſh made of any vegetable, as cucumbers, onions, cabbage leaves, *&c.* ſtuffed with forced meat. *Pocock*'s Egypt. p. 183.

DULNESS *of hearing*. See the article HEARING.

DULWICH *Water*, a well known mineral water near London. It contains a kind of cathartic bitter ſalt. It ſeems not to have any iron in it. Phil. Tranſ. N° 461. §. 22.

DUM *non fuit compos mentis*, in law, a writ that lies for one, who aliens any lands or tenements while not of ſound memory or judgment, in order to recover the ſame from the *Alienee*, againſt whom the writ is taken.

DUM *fuit infra ætatem*, in law, a writ which lies for him, who, before he came to full age, made a feoffment of his land, to recover it again of the *Vendee*. *Fitz.* Nat. Br. fol. 192.

DUNDIVER, in zoology, the name of a water fowl, eſteemed a diſtinct ſpecies of bird, not only by the vulgar, but by the generality of authors, but being in reality no other than the female merganſer or gooſander. It is very different from the male in colour, its head being of a dusky reddiſh brown. It has a fine creſt behind its head, and is ſo large as uſually to weigh four pounds and a half. Its back is all over of a pale grey; its breaſt and belly are of a pale aſh colour. The wings both in this and in the male are very ſhort in proportion to the ſize of the body, yet they fly along the ſurface of the water very ſwiftly. *Ray*'s Ornitheol. p. 253.

DUNG, in agriculture, &c. All kinds of *Dung* contain ſome matter, which when mixed with the ſoil ferments therein, and by that fermentation, diſſolves the texture of the earth, and divides and crumbles its particles very much. This is the real uſe of *Dung* in agriculture, for as to the pure earthy part of it, the quantity is ſo very ſmall, that after a perfect putrefaction, it bears an extremely inconſiderable proportion to that of the earth it is intended to manure. *Tull*'s Husbandry.

The fermenting quality of *Dung* is principally owing to the ſalts it contains, and yet thoſe or any other ſalts applied immediately to the roots of plants always deſtroy them. This proves that the buſineſs of the *Dung* is not to nouriſh but to divide and ſeparate that terreſtrial matter, which is to afford the nouriſhment to vegetables, through the mouths of their roots. And the acrimony of the ſalts of *Dung* is ſo great, that the niceſt managers of vegetables we have, the (floriſts) have wholly baniſhed the uſe of it from their gardens. The uſe of *Dung* ſhould be alſo forbid in kitchen-gardens, for it is poſſible to ſucceed full as well without it; and it gives an ill taſte to all the excellent roots and plants, that are to ſtand in the earth in which it is an ingredient. The water of a cabbage raiſed in a garden, manured with *Dung*, if boiled is of an intolerable ſtink; but this is not ſo much owing to the nature of the plant, as of the manure uſed to it; for a field-cabbage being boiled, the water has ſcarce any ſmell, and what it has, is not diſagreeable.

It is alſo a well known fact in the country, that a carrot rais'd in a garden, has nothing of that ſweet flavour, that ſuch as grow in the fields have, but in the place of this natural reliſh, the garden one has a compound taſte, in which the matter of the manure has no ſmall ſhare. And there is the ſame ſort of difference in the taſte of all roots, nouriſhed with ſuch different diet. *Dung* not only ſpoils the flavour of the eſculent vegetables, but it ſpoils the drinkables into the original compoſition of which it enters: they are obliged to uſe *Dung* to the poor vineyards in Languedoc, and the conſequence is, that the wine is nauſeous. The poor who only raiſe a few vines for the wine they drink themſelves, and cannot be at the expence of this manure, have the leſs of it, but then it is better by many degrees than the other: and it is a general obſervation which the French expreſs in theſe words, that the poor people's wine in Languedoc, is the beſt, becauſe they carry no *Dung* into their vineyards. *Tull*'s Horſehoing Husbandry, p. 20.

Another diſadvantage attending the uſe of *Dung* is, that it gives riſe to worms. It is for this reaſon, that garden carrots are generally worm eaten, and field carrots ſound; and the ſame obſervation will hold good in other vegetables, in the field and in the garden. Vegetable and animal *Dung* are in fact only the putrefaction of earth, after it has been altered by paſſing through vegetable or animal veſſels. Vegetable *Dung*, unleſs the vegetable be buried alive in the ſoil, makes a much leſs ferment in it, than animal *Dung* does: but the *Dung* or putrid matter of vegetables is much more eligible and wholeſome for the eſculent roots and plants, than that of animals is. Venomous animals are found to be very fond of *Dung*, and are brought into gardens by the ſmell of the *Dung* uſed in them as manure. The ſnakes uſually frequent *Dung*-hills, and lay their eggs in them; and gardens where *Dung* is much uſed, are always frequented by toads; whereas the fields where roots are planted, are much leſs infeſted by them.

However unneceſſary and prejudicial *Dung* is in gardens, it is however very neceſſary in the corn fields, and little can be done without it in the old method of husbandry. *Dung* is not ſo injurious in fields as in gardens, becauſe it is uſed in much ſmaller quantities in proportion to the quantity of ſoil, and cabbages, turnips, potatoes and other things growing in fields, and intended only for the food of cattle, will not be injured by *Dung*, tillage, and hoeing all together; for the crops will by this means be the greater, and the cattle will like the food never the worſe. *Dung* is very beneficial in giving large crops of wheat; and it is found by experience, that the country farmers at a diſtance from a large town, can never have ſo good crops by all his tillage, as thoſe who live in the neighbourhood of cities, where *Dung* is produced in great plenty,

and eaſily had. The *Dung* uſed in fields, beſides its diſſolving and dividing virtue is of great uſe in the warmth its fermenting gives to the young plants of the corn in their weakeſt ſtate, and in the moſt ſevere ſeaſons; the laſting of this ferment is not eaſily determined, becauſe the degrees of heat, are very difficult to be judged of when they become ſmall.

The farmers uſually underſtand by the term *Dung*, not only the excrements of animals, with the litter, but every thing that will ferment with the earth; ſuch as the green ſtalks and leaves of plants buried underground and the like. And every thing they add to it except fire.

The uſes of the *Dungs* of ſeveral animals are ſufficiently proved every day. They are uſed to repair the decays of exhauſted and worn-out land, and to cure the ſeveral defects in different naturally bad ſoils; the faults of which are as different, as the nature of the different *Dungs* uſed to improve them. Some land is too cold, moiſt and heavy, and the other too light and dry: and to improve and meliorate theſe, we have ſome *Dung* hot and light, as ſheep's, horſes's, pidgeons, &c. and others fat and cooling, as that of oxen, hogs, &c.

There are two remarkable qualities in *Dung*; the one is to produce a certain ſenſible heat capable of bringing about great effects. The other is to fatten the ſoil, and render it more fertile. The firſt of theſe is ſeldom found in any other *Dung*, but that of horſes and mules, while newly made and a little moiſt. The great effects of this, are ſeen in the kitchen garden, where it invigorates and gives a new life to every thing, ſupplying the place of the ſun; and to this we owe in a manner, all the vegetable delicacies of the ſpring.

Beſide this, horſe *dung* is the richeſt of all improvements that can be had in any quantity for poor hungry lands; yet when either too new, or when uſed alone, it is very prejudicial to ſome lands; and if ſpread too thin on dry lands in ſummer, it becomes of very little ſervice, the ſun ſoon exhaling all its richneſs, and leaving it little more than a heap of ſtubble or dry thatch. And though too much of it can hardly be uſed in the kitchen garden among colliflowers, cabbages, and the like, yet it is eaſy to over *dung* land intended for corn, and gives riſe by that means to a very fatal quantity of weeds.

Horſe *dung* is always beſt for cold lands, and cow *dung* for hot ones; but being mixed together, they make a very good manure for moſt ſorts of ſoils, and for ſome they are very properly mixed with mud.

Sheep's *dung* and deer's *dung* differ very little in their quality, and are eſteemed by ſome, the beſt of all *dung* for cold clays; for this purpoſe ſome recommend the beating them to powder, and ſpreading them thin over the autumn or ſpring crops, at about four or five loads to an acre, after the ſame manner, as aſhes, malt-duſt, &c. are ſtrewed. And in Flanders and ſome other places, they houſe their ſheeps at nights in places ſpread with clean ſand, laid about five or ſix inches thick, which being laid on freſh every night, is cleared out once a week, and with the *dung* and urine of the ſheep, is a very rich manure, and ſells at a very conſiderable price. It is principally uſed for ſtubborn lands; but Mr. Quinteney is of opinion, that it is the beſt of all manure for land in general.

Hog's *dung* is by many recommended as the fatteſt and richeſt of all *dung*, and is found on experience, to be better than any other kind for fruit trees, apples, pears and the like; it is alſo a very rich *Dung* for graſs, and is ſaid to do as much good in one load, as any other *Dung* whatever in two.

The *Dungs* of pidgeons, hens and geeſe are great improvers of meadow and corn land. That of pidgeons is unqueſtionably the richeſt that can be laid on corn land; but before it is uſed, it ought to be expoſed for ſome time out of the dove-houſe to the open air, to take off its fiery heat. It is in general very proper for cold clay lands, but then it always ſhould be well dried before it is laid on, becauſe it is apt to clod in the wet. It is beſt alſo to mix it with ſome dry earth to break its parts, that it may be ſpread the more regularly; and it is in itſelf ſo very rich and hot, as to bear ſuch an admixture, without any great impoveriſhing it. This *Dung* is alſo by ſome recommended as better than any other for aſparagus, and ſtrawberries, and for the propagation and culture of the tenderer garden flowers.

The *Dung* of pidgeons is alſo particularly recommended by Mr. Gentil for thoſe trees, whoſe leaves are apt to turn yellow, if they grow in cold ſoils; but for this uſe it ſhould firſt lie three years in a dunghil, and then be applied ſparingly in autumn, laying about an inch thickneſs of it at the root of the tree, and ſuffering it to remain there till the March following.

The *Dung* of poultry being hot and full of ſalts, tends much to facilitate vegetation, and is abundantly quicker in its operation than the *Dung* of animals, which feed on the leaves of plants. It is an obſervation of Sir Hugh Plat, that one load of grains will enrich ground, more than ten loads of common *Dung*; and it is eaſy to infer from hence, that the ſame grain muſt needs be of greatly more virtue, when it has paſſed through an animal body. Human *Dung* is alſo a great improver of all cold and ſour lands, but ſucceeds beſt when mixt with other *Dungs* or earths to give it a fermentation.

But for all ſtubborn clayey ſoils, there is no manure ſo good as the cleanſing of London ſtreets; the parts of tough land will be more expeditiouſly ſeparated by this, than by any other compoſt, and where it is to be had, it is of the greateſt value both for field and garden land. *Miller*'s Gard. Dict.

Gooſe-DUNG. This is a very valuable manure, and as uſeful to the farmer as pidgeon's *Dung*, or that of any other fowl. The antients thought otherwiſe, and condemned it as prejudicial both to corn and graſs, and many are of the ſame opinion ſtill; but without any foundation in fact. Indeed where corn is high, and when graſs is ready to mow, theſe birds if they get among it will do great damage by treading it down with their broad feet, but their *Dung* inſtead of being hurtful to the land, does it great ſervice. Near Sutton in Notinghamſhire, there is a barren piece of land given by the town, for a gooſe-paſture; the geeſe have been kept in it many years, and their *Dung* has ſo enriched it, that it is one of the fruitfulleſt pieces of ground, in the whole country. There has been an opinion alſo, that cattle feeding on graſs, where theſe creatures had much dunged the ground, would ſuffer by it; but it appears from trial, that cattle are moſt fond of all of thoſe parts of paſtures, where the geeſe have dunged moſt; and that they ſuffer no alteration by it, except the growing fat upon it.

The *Dung* of fowls in general is very enriching to land. Fig-trees, aſparagus-beds, and ſtrawberries, and many curious flowers ſucceed better in earth manured with pidgeon's *dung* than in any other; and Fowley Iſland in Lancaſhire, a place ſo called from the abundance of wild fowl continually found on it, is ſo enriched with their *Dung*, that it fattens ſheep in a ſurpriſing manner. *Mortim*'s Husbandry.

DUNG-WORMS, a ſpecies of fly-worms of a ſhort and ſomewhat flat body found in great plenty among cow-dung in the months of September and October. Theſe have all their metamorphoſes into the fly ſtate, performed within a ſhell of their own skin.

The worm in its firſt transformation, and when it is become only a caſe to the encloſed nymph, is not diſtinguiſhable by the eye from another that is living, but by its wanting motion, and on feeling, it always appears ſtiff and rigid in this ſtate.

The fly produced from this worm, is one of Reaumur's firſt claſs of the two winged flies; it has a trunk with lips, and has no teeth; it is of the claſs of thoſe with the ellipſoid bodies, but its body is remarkably long for one of thoſe, and is compoſed of ſix rings: its head is very round, and nearly of a ſpherical form, and is large in proportion to its body; it has antennæ of the lenticular or battledore form; its reticular eyes are of a deep cheſnut brown, and its three ſmall eyes are placed in the common manner: its corcelet is of a fine gilded green, and its back is not eaſily to be deſcribed as to colour, for it is changeable and ſeems compoſed of a violet colour, and of a deeper and a paler copper colour. The under part or belly, is of a pale yellow, and the legs and balancers of a yet paler yellow. *Reaumur*'s Hiſt. Inſect. v. 4. p. 350.

DUNLIN, in zoology, an Engliſh name of a bird of the ſnipe-kind, not diſtinguiſhed by the Latin authors by any particular name. It is of the ſize of the ſmaller ſnipe, its beak is furrowed, its breaſt is white, as is alſo its throat, and both are variegated with black ſpots; the middle of the belly is black, variegated with white, and all the back and other upper parts of a rediſh hue, variegated with ſpots of black, and with a little white; its wings are of a bluiſh brown, its legs long and black, and the hinder toe very ſhort; the tail is variegated with brown reddiſh and white. It is common in watery places in the northern counties of England, and picks up its food out of the mud. *Ray*'s Ornitholog. p. 226.

DUNTER-*Gooſe*, a ſpecies of the wild gooſe found in Zetland. Phil. Tranſ. N° 473. §. 8.

DUODENUM (*Cycl.*) — The deſcription and draughts of the *Duodenum*, as given by moſt anatomiſts, appearing faulty, Mr. Monro has endeavoured to rectify their omiſſions and miſtakes in the Med. Eſſ. Edinb. vol. 4. art. 11.

This inteſtine is ſometimes found ſo large, as to be called *ventriculus ſuccenturiatus*. Id. ibid.

Authors ſeldom take notice of the *Duodenum* as the ſeat or cauſe of any particular diſeaſe; but its diſtenſion and preſſure on the many veſſels to which it is contiguous, may diſturb the functions of the animal œconomy.

DUPLICATE *Root*, among botaniſts, one compoſed of two coats. See ROOT.

DUPLODES. See GAMBEZON, *Cycl.*

DURALE, or DURO, in the Italian muſic, ſignifies hard, harſh, or more properly ſharp. This name is given to B natural, by reaſon its ſound is ſharp, when compared with B mol, or flat. *Broſſ.* Dict. Muſ. in voc.

DURANTA, in botany, the name of a genus of plants firſt deſcribed by *Plumier* under the name caſtorea. The characters of the genus are theſe. The cup is a one leaved erect perianthium divided into five acute ſegments, containing the germen of the piſtil, and remaining after the flower is fallen. The flower is monopetalous, and of the gaping kind. The tube is long and cylindric. The limb is divided into two lips; the

the upper one is oval, erect, and concave; the lower is divided into three principal ſegments. The two ſide ones roundiſh and expanded, and the middle one divided again into two roundiſh ſegments. The fruit is a round berry covered with the cup, containing four angular ſeeds in one cell. *Plumier*, p. 17. *Linnæi* Gen. Plant. p. 521.

DURION, in natural hiſtory, the name of a fruit common in China and the Eaſt Indies, and eſteemed by the Indians the fineſt of all fruits; but the Europeans do not allow it this, becauſe of its diſagreeable ſmell. The tree which bears it is large and much branched, and its wood is like that of the hazel. The leaves are of a very ſingular figure, being about ſix inches long, and ſixteen or eighteen inches broad: they terminate in a long and ſlender point. The upper ſide of the leaves is of a dusky green, the under ſide is whitiſh with ſome yellow ſpecks. The leaves grow on ſhort pedicles, which are joined to the ſtalks by a protuberance or oblong knot. The fruit grows to the large branches, adhering to their middles by a ſtrong wood ſtalk. It is of the ſize of an ordinary melon, and of a conic ſhape, pointed at the extremity, and is all over beſet with prickles reſembling thoſe of a hedge-hog: they are green, and very large and thick. When thoroughly ripe, the fruit opens at the extremity into five parts, and the cracks or openings running by degrees up to the top, the inner ſubſtance or pulp is diſcovered. This is of a whitiſh colour, and of a very agreeable flavour, which may not unaptly be compared to that of cream and ſugar; but it is of a more firm conſiſtence. This fruit contains in every compartment five large ſeeds perfectly reſembling the common cheſnut, but that they have no other covering than their own skin.

The courſe of vegetation is elegantly ſeen in diſſecting the pedicle which ſupports this fruit; for in this are ſeen the three different juices which ſerve to the nouriſhment of the three different parts of the fruit. In cutting this pedicle tranſverſly, we firſt find between the bark and the woody fibres, a yelloviſh, thick, and glutinous juice: this ſerves for the nutriment of the thorns. A ſecond juice diſcovers itſelf within the firſt woody fibres, which is white and more ſolid, and leſs glutinous. This gives nouriſhment to a thick skin of a ſilvery white, which lines the pulpy part of the fruit. And, finally, in the center of the pedicle there runs a third, much whiter and ſofter than the former, which ſerves to the nouriſhment of the pulp, or ſoft and ſweet-taſted part of the fruit.

The fruit itſelf, were its ſmell as agreeable as its taſte, would vye with any fruit in the world; but its very diſagreeable ſcent requires time and cuſtom to enable any one to bear it; but uſe makes the natives wholly diſregard it. The ſmell is very like that of onions, that have lain in heaps till they are very rotten. The fruit is not only agreeable to the taſte, but of a very cordial virtue; but it will intoxicate and get into the head, if eaten in a large quantity, eſpecially ſuch of the fruits as are of a yelloviſh colour. The natives make debauches with it, as our poorer people do with ſpirituous liquors. But it is not ſo eaſily come at as thoſe, and therefore is very fatal to many families among them, who will ſell their liberties for a time to purchaſe enough of it for a debauch.

The *Durion* tree flowers in January. The flowers are of a dusky colour, and of the ſize of a nut. As ſoon as theſe fall, the fruit begins to appear. It afterwards increaſes ſlowly in ſize till the month of June, in which it begins to ripen. Others continually ſucceed theſe early ones during the whole ſummer, ſo that there is a ſucceſſion of them during that ſeaſon, and they do not begin to grow ſcarce till about the middle of October. Mem. Acad. Scienc. Par. 1699.

DURUNEGI, in the materia medica, a name given by the Arabian writers to the root of the doronicum, which is ſo well deſcribed by Aviſenna, that we are very well informed of its nature, and find it to be the root of the ſame plant, which we at this time know by that name. He ſays it came to them in pieces, looking like the ſhort joints of a woody root; and that it was either yellow or white on the inſide, and of a greyiſh colour on the ſurface, and that it was conſiderably hard and ponderous.

The doronicum we know at this time has a root that very well anſwers theſe characters; and tho' yellow, when freſh, is very apt to become whitiſh in decaying. The interpreter of Aviſenna, whoſe comments are moſt generally received, adds, that the pieces of *Durunegi* in the ſhops were about the length and ſize of the laſt joint of the thumb. But it is not eaſy to make out this from the text without making very free with the words; and indeed the pieces of the doronicum we now receive from Germany are generally longer and thinner than this deſcription ſeems to make them, though they very well anſwer to the account of Aviſenna of their coming off in a ſort of joints. The root being naturally jointed, or compoſed of a great number of pieces.

The name *Durunegi* is a very plain copy of the Greek name of the ſame plant, which is not doronicon, as might be ſuppoſed from the Latin doronicum, but *durunizi*, or δωρωνιζι. The change of the ζ into a *g*, or the *g* into a ζ, is very common in the turning Greek into Arabick, or Arabick into Greek names. Thus the zedoar of the Greeks is the geduar of the Arabians, and ſo in a thouſand other inſtances.

The word *Durunegi*, or, as it is ſometimes written, *Duronegi*, is however ſometimes made to expreſs another plant, whoſe ſhape, as well as virtues, are very different from that abovementioned.

The ſecond kind of *Durunegi* was a root not jointed, but formed all of one piece, and very much reſembled our zedoary in ſhape. It was always white on the inſide, and grey on the ſurface, 'twas of an agreeable taſte, and was preſcribed as an aromatic and cardiac in many compoſitions. In the viaticum Conſtantini we find it preſcribed along with ſpikenard, cinnamon, and zedoary; and in another part of the ſame piece, nutmeg, caſtor, duronegi and zedoary are preſcribed together. It is very evident from this, that the *Durunegi* here meant, could not be the poiſonous doronicum; and it is much to be lamented, that we do not find different names for ſo very different plants. We have at this time two plants of the doronicum kind, the one called thora, and the other antithora; the one allowed to be a poiſon, the other by many eſteemed an alexipharmic. The thora, or poiſonous kind, is yellow within, and the antithora is white. Theſe may probably be the two kinds of *Durunegi* mentioned by the Arabians: and if ſo, the poiſonous qualities of the one, and the virtues of the other, ſtand on a higher record than many have ſuppoſed. Theſe two roots were lately ſent over into England among four parcels of gentian, and did much miſchief, many people ſuffering greatly by the bitter infuſions in which they made a part. This was probably owing wholly to the thora, or yellow root, which has a poiſonous ſmell; not to the other, which has all the appearances of being innocent.

DUST *Moſs*, in botany. See BYSSUS.

DWARFS (*Cycl.*)—*Dwarfs* were called *Nani* and *Nanæ* amongſt the Romans; and were held in ſuch requeſt, that artificial methods were uſed in order to prevent the growth of boys deſigned for *Dwarfs*, by incloſing them in a box, or binding them with bandages. Auguſtus's niece Julia, was mighty fond of one of theſe *Dwarfs* called Sonopas, who was only two feet and a hand-breadth high. *Pitiſc.* See DWARFING.

DWARF-*Trees*, were formerly very much in requeſt in gardens, but ſince the introducing of Eſpaliers, they are much neglected. The manner however of propagating *dwarf* pears, which have been found to ſucceed the beſt of any *Dwarfs*, is this: they are to be grafted on a quince ſtock, and that at about ſix inches above the ground, and when the bud has ſhot ſo far as to have four eyes, it is to be ſtopped, to give riſe to lateral branches. Two years after the budding, the trees will be fit to tranſplant to where they muſt remain. They ſhould be ſet at five and twenty feet ſquare diſtance, and the ground between may be ſown or planted for kitchen uſe, while the trees are young, only obſerving not to plant too near their roots. There ſhould be ſtakes driven down all round the tree, to which the branches muſt be nailed with liſt, while they are young, training them into an horizontal direction, and no branches are to be ſuffered afterwards to croſs one another, and in the ſhortening the ſhoots, the uppermoſt eye muſt always be left outwards. The ſummer and autumn pears are thoſe which do beſt in *dwarfs*, for the winter ones never ſucceed well on them.

Apples are alſo ſometimes planted as *Dwarfs*, and are for this purpoſe moſt commonly grafted on paradiſe ſtocks. Theſe ſpread much leſs than the pears, and therefore need only be ſet at about eight feet diſtance. Some alſo plant apricocks and plumbs for *Dwarfs*, but theſe being of a more tender conſtitution ſeldom ſucceed well. *Miller*'s Gard. Dict.

DWARF *Fern*, in botany. See FILICULA.

DWARFING, a term uſed by ſome authors for the ſtopping the natural growth of animals, and rendering them ſmaller than they would naturally be. In Bononia they are very fond of ſmall dogs; and inſtead of ſtopping their growth by the way in uſe here, of giving them milk wherein daiſy-roots are boiled, they do it by waſhing their feet and their back-bone every day, from the time they are pupped, with either cold water alone, or water with aſtringent ingredients, ſuch as biſtort and oak-bark boiled in it. This prevents the extenſion of the parts by hardening and corrugating them. They preſcribe alſo a method of *dwarfing* of men by anointing their back-bones in their infancy with the greaſe of moles, bats, and dormice. But this ſeems merely imaginary. The other operating by natural cauſes may poſſibly have ſome effect; and perhaps the addition of alum to the water, and making them take ſpirituous liquors internally, might be of great uſe. Act. Erud. Lipſ. 1670.

DYES *Yellow*. See the article YELLOW.

DYERS's Weed. See LUTEOLA.

DYEING (*Cycl.*) — The art of *dyeing* is indebted for many of its valuable colours to the vegetable kingdom; and may be much more ſo, if the world will be at the pains of enquiring into the properties of the plants that grow about the fields. Mr. Juſſieu obſerved in the drying plants between ſheets of paper, in order to the making a hortus ſiccus in the common way, that

ſome

ſome plants tinged the paper with colours the ſame with thoſe they naturally poſſeſs, and others with different ones; and that many plants in drying aſſumed a colour which was not natural to them. Alkanet, woad, the ſeveral ſorts of gallium, and ſome of the ſpecies anonis, tinge the papers between which they are dried to a yellowiſh or reddiſh colour, becauſe their ſtalks, or ſome other part of them, are of that colour. The common ros ſolis, or ſun dew, whoſe leaves are red, tinges the paper red alſo; and the ros ſolis of Portugal diffuſes this tinge through three or four ſheets of paper. The alpine veronica, though green in itſelf, leaves its mark in red upon the paper; and many of the common leguminous plants always become black in the drying. The common mercury, which is green while growing, becomes blue in the drying; and turneſol has the ſame change, though it is white in its natural ſtate.

One great reaſon of theſe changes of colour is, that all paper is impregnated with alum; and this ſalt may very eaſily extract, or even alter the colours of plants, whoſe juices it receives; and in ſuch caſes, where the alum is not in ſufficient quantity to do this, it is no wonder that it ſhould however ſo far affect the leaves as to turn them black.

On this principle Mr. Juſſieu attempted, by means of alum, to ſeparate colours from ſeveral plants, not known or uſed at preſent among the dyers, which might prove ſerviceable to them. The firſt experiments made on this occaſion proved, that there were many plants not uſed at preſent, which afford colours not at all inferior to thoſe in common uſe. The experiments the ſame gentleman tried on the drugs uſed for *dyeing* in the Indies, proved very plainly that they were no way ſuperior in many caſes to vegetables of our own growth; and that in order to have the moſt lively colours from ſuch ſubſtances, it is always neceſſary to have recourſe to ſome ſalt.

Among the other drugs uſed abroad in *dyeing*, there were ſent over to France, on this occaſion, certain yellow flowers of the radiated kind, which afforded on trial a very beautiful yellow dye; and Mr. Juſſieu found, on trying parallel experiments, that there were alſo yellow flowers in Europe of a like radiated kind, which were capable of affording a like beautiful yellow *dye*.

The flower which Mr. Juſſieu tried theſe experiments upon, was the common yellow corn marygold, the chryſanthemum ſegetum of Lobell. This plant flowers in the middle of July, and Mr. Juſſieu drying its flowers between papers at that time of the year, found that they did not loſe their colour, as moſt others do in the operation, but became of a deeper yellow than before. Hence it was eaſy to judge, that this flower contained a matter proper for colouring; and decoctions being made of it of different ſtrength, cloths of different kinds dipped into them became tinged to a light pale yellow, and kept this colour after being boiled in fair water. A little alum was after this added to the decoctions, and cloths dipped in theſe became much more finely *dy'd*, the colour being greatly ſtronger and more lively. They alſo imbibed the colour much more ſpeedily from theſe decoctions; and on boiling afterwards in water, they loſt no part of it, but remained as ſtrongly and as lively tinged as before. This experiment was afterwards tried by a *dyer*, under whoſe hands it ſucceeded much better than before with Juſſieu, who was unacquainted with the regular methods of the trade. The decoction of the flowers gave a ſort of ſulphur colour; but linnen, woolen, and ſilken things, which had been the day before ſteeped in alum water, received from this decoction a very beautiful and ſufficiently ſtrong yellow. Another decoction of the flowers made ſtronger than the firſt, tinged a woollen cloth to a greeniſh lemon colour; and the ſame decoction gave a bright gold yellow to ſilk: and a piece of woollen cloth, before *dyed* blue with indigo, on dipping it in this decoction became of a beautiful deep green. A ſmall quantity of chimney-ſoot added to the decoction made it tinge cloth to a yellowiſh brown; and a ſmall quantity of roucou added to the ſimple decoction produced an olive yellow.

The mixture of ſeveral other drugs uſed to be added to the decoctions of the common luteola or dyer's weed to vary its tinge, produced the ſame changes with the decoction of this flower, and abundantly teſtify'd its value and uſe in the *dyeing* trade. Mem. Acad. Par. 1724.

There is great reaſon to believe, that the art of *dyeing* might be carry'd to much greater perfection than it is at preſent, if the attempts to improve it were in proper hands, and the perſons employ'd in it could be enabled to ſet out with all the knowledge there is at preſent in regard to its ſeveral materials, and their manner of uſe, as a fund of real facts on which to ground future diſcoveries. This however ſeems difficult to be brought about, for the people who exerciſe the art generally are acquainted only with a certain ſet of rules, which though they know not why they follow, yet they will not depart from them, and eſteem every thing loſs of time that can be propoſed to them as improvements. They keep their knowledge alſo a cloſe ſecret from thoſe who might be expected to improve upon it; and uſually one man trades only in ſome one part of it without any knowledge of the reſt. Hence the difficulties attending the acquiring a knowledge of the firſt principles of the art are very diſcouraging, but they are not unſurmountable. The idea which preſents itſelf moſt naturally to us, as to the manner in which ſtuffs are *dy'd*, is, that the colouring particles which ſwim in the liquor, immediately attach themſelves to the ſurface of the body that is plunged into it, and there adhere in ſo firm a manner, that there is no removing many of them without wholly taking off the ſurface of the body. The barely plunging a white ſubſtance into a coloured liquor is not however ſufficient for the *dyeing* it in many caſes. Indeed there are only a few colours which will ſtrike with this eaſe and facility; and the others require that the matter to be *dy'd* ſhould have firſt received the particles of another fluid, which is in moſt caſes a ſolution of alum and tartar in common water. And, according to the nature of the colour that is to be given the ſtuff afterwards, the alum is put in in large quantities, or the ſtuff boiled in the liquor a longer or a ſhorter time. After boiling in this liquor, a ſtuff is in the proper condition to receive the greater part of the common colours: but for blue, ſtuffs require no preparation at all; and for ſcarlet, the liquor in which they are firſt boiled is made without alum.

The matter of the ſtuff to be *dy'd* makes it neceſſary alſo to change the liquor in which it is to be boiled, or to vary the ingredients; and the greateſt naturaliſt, without a mechanical knowledge of *dyeing*, would be amazed to ſee, that if a ſkain of white wool, and another of white cotton, be plunged together into the ſcarlet *dye*, and this even after they have both received the ſame previous boiling and preparation, the ſkain of cotton would come out of the liquor as white as it was put in, while the wool comes out tinged to a beautiful fire colour. The dyer however ſees this every day without any admiration of the cauſe, and never troubling his thoughts about how it is done. He uſes it daily to *dye* any thing woollen to a ſcarlet colour, leaving a part white: in order to which, he knows there requires no more than that the part to be left white ſhould be of cotton.

Mr. Dufay ſuppoſing this to be owing to the cotton's imbibing much more ſlowly than the wool, the liquor in which they are both previouſly boiled to make them receive the colour, as cotton is well known not to take wet ſo ſoon as wool, ordered a ſort of cloth to be wove, the warp of which was wool, and the woof cotton; and ſending this to the fuller's, the two ſubſtances were ſo well blended together, that it became impoſſible for the one to receive the impregnation of any liquor without the other. With all theſe precautions however, the whole came out of the ſcarlet *Dye* in the ſame condition as if nothing had been done, the cotton remaining wholly white, and the wool being marked with fire colour and white; ſo that it may be eſteemed a certain fact, that the colour of cochineal cannot be given to cotton by the means of acids; the ſame alſo holds good of kermes and gumm-lac, both which are uſed inſtead of cochineal to *dye* in ſcarlet; but neither of theſe, any more than the cochineal, will *dye* cotton. It is not to be concluded from hence however, that cotton cannot be *dy'd* ſcarlet by theſe ſubſtances; the whole is, that it requires a different treatment; and as wool, to take the ſcarlet *dye*, requires only to be firſt impregnated with tartar; cotton requires to be firſt impregnated with alum, as wool does, for the generality of the other colours. The acid of ſea-ſalt, of vitriol, vinegar and verjuice, all ſerve to *dye* wool to a ſcarlet with cochineal, but none of theſe will make it give any tinge to cotton, to which alum alone can ſerve.

The ſame *Dye* will give very different colours to the different parts of a cloth, which have been differently prepared. And this gentleman ſhewed before the academy a piece of cloth, which he had careſully prepared in a different manner in the different parts, which being all plunged together into the *Dye*, when taken out and dry'd was found to be of a dirty red in that part where it had not been impregnated with any thing; and in the other parts, where it had been differently impregnated, was found of all the degrees of red, from a pale damask roſe colour to the deepeſt ſcarlet, and this while it had in every part been dipt an equal time in the ſame *Dye*. This equally holds good of the other colours. And in theſe experiments the dirty colours given to ſuch parts of the cloth as have received no previous impregnation, will be waſhed away and quite carried off, while the others remain in all their perfection.

Another circumſtance very worthy attention in the *dyeing* of ſcarlet is this, that the *Dye* is evidently compoſed of a clear or common water, in which the colouring particles are ſuſpended, and from which it is eaſy to ſuppoſe that they are ſeparated and applied to the ſtuff in *dyeing*. As this is naturally ſuppoſed to be the caſe in regard to all colours; ſo it appears very evidently to be a fact in this, ſince the colouring particles adhere in ſuch quantities to the matter, and ſeparate themſelves ſo readily and perfectly from the water, that after an hour and half's boiling of the *Dye* with a proper quantity of the ſtuff in it, the whole colour'd matter ſhall be attached to the ſtuff, and the remaining liquor be only clear water; and what

might appear wonderful is, that all the boiling in the world will never diſlodge any of the colour from the ſtuff, or occaſion its being received into the water again.

It might be ſuppoſed that this was wholly owing to the particles of ſalts, which had been imbibed into the ſtuff in its prior preparation; that theſe attracting the particles of the colour to the ſtuff, while the water of the *Dye* had none of them to cauſe ſuch an attraction in it, they did not remain in it. But this appears not to be the caſe, but that the ſtuff will attract the colour, whether it be previouſly prepared, or the preparation and the *dyeing* be all one act; ſince the dyers ſometimes *dye* ſcarlet at once in this manner, only plunging the ſtuff into a dye made of cochineal, a ſolution of tin mixed in a large quantity of water, with a ſmall quantity of ſal armoniac and cream of tartar. All theſe ingredients are mixed together before the ſtuff is put in; yet after it has boiled about an hour and half, all the colour is in the ſtuff, and the liquor is become colourleſs as water. The event is the ſame in the dyes made of woad and of indigo for the *dyeing* blue, and indeed in the greater part of other colours; but as the ingredients of theſe are not ſo pure as the cochineal, and there are uſually many heterogene particles among them, the liquor does not become ſo wholly colourleſs in theſe, as in the caſe of the ſcarlet. But the dyers, who well know that ſo long as there is any colour left in the liquor, ſo long the ſtuff will be profited by remaining in it, always take ſmall quantities out of it, and examining it by pouring it gently down againſt the light, they know when it is that the ſtuff has received all the tincture it can, by there being no more colouring matter ſuſpended in the *Dye*.

Experience ſhews, that all colours do not attach themſelves with equal readineſs to the ſtuff, or remain equally firmly united to it. Woad, indigo, cochineal, kermes, and many other colours, never reach farther than the ſurface of the ſtuff. The liquor of the *Dye* penetrates indeed perfectly through the body of it, but the colouring particles ſtopping at the ſurface become entangled there, and never penetrate, at leaſt not in any great quantity, to the central part, which remains either quite white, or only very ſlightly tinged. This however only happens to ſuch ſtuffs as are thick, and of a very cloſe texture: others are coloured throughout. And this is only the caſe in regard to ſome *Dyes*, not to all ſorts, ſince the moſt of the wood colours penetrate wholly through the ſtuff be it ever ſo thick, and colour it equally every-where. Whence it ſeems probable, that the colouring particles of the woods are either more minute and fine, or much more intimately blended with the water, than thoſe of cochineal, indigo, and ſuch others as do not penetrate beyond the ſurface.

It might ſeem ſtrange, that the ſtuffs which are thus readily coloured on the ſurface, ſhould not afterwards, by the continued boiling of the water, have the colouring particles carried farther down into the body, as the water continually penetrates the whole from each ſurface to the center, and might naturally be expected to carry a part of the colouring particles in along with it. But if we conſider the whole proceſs from the beginning, we find that the colouring particles are ſtrongly attracted by the ſtuff, and ſcarce at all by the water. Whence they almoſt immediately leave the water, and attach themſelves to the firſt part of the ſtuff they come in contact with, which is its ſurface; and when once fixed there, it is no wonder that the particles of water, ever ſo long paſſing by them, do not attract or take them away from this ſurface, as they muſt do in order to carry them in; ſince we have before had proof, that their attraction to the water is greatly weaker than that to the ſtuff. And the difference between the wool and the cotton, the one receiving, and the other not receiving at all the coloured particles in its natural ſtate, or with the ſame impregnation by means of which the other does, ſeems reſolvable into the ſame principle, that tho' the attraction in wool be much greater in regard to the coloured particles than that of the water, and therefore it robs the water of them; yet the attraction in cotton being leſs than in water, the colouring particles remain in the water without any tendency to attach themſelves to the cotton.

In *dyeing*, the ingredients uſed for the colours are well known to be of very different kinds. Some of them are ſuch as communicate a colour, which will a long time reſiſt the injuries of the air, and theſe are therefore called the good or ſtanding colours; and there are others which the bare expoſition to the air will deſtroy or deface in a very little time, theſe are therefore called the falſe or fading colours. In what manner is the action of the air upon theſe laſt to be explained? Does it take away, or carry off from the ſtuff, the very particles of the colours; or does it only break and deſtroy that beautiful and regular texture of each particle on which the colour depends? The dyers very often have recourſe to ſeveral ingredients, in order to produce one colour; and reaſon ſeems to urge, that one of theſe falſe or fading colours might be render'd laſting by mixing it with a permanent one: the dyers are alſo of this opinion. But it is nevertheleſs a wholly erroneous one; for repeated experiments have proved, that one of theſe falſe colours fades as ſoon, when it is mixed with a ſtanding or laſting colour, as when it is uſed alone. There are but few colours on which this experiment can be tried, ſo as to come to a regular deciſion. One of the principal is the mixing a blue and a yellow, for the producing a green. In this experiment, if the blue and the yellow be both ſtanding or permanent colours, the ſtuff will perfectly hold its colours, and ſucceed alike, whether it be *dyed* firſt blue, and afterwards yellow; or firſt yellow, and afterwards blue. But if one of the two colours be a falſe or fading colour, it is found that the green produced by the mixture will not ſtand, tho' the other be ever ſo good or permanent a colour.

There is a ſhorter way of trying the permanence of many colours of this kind than that of expoſing them to the air, ſince in boiling only five minutes in a pint of water, in which there has been diſſolved half an ounce of alum, they will loſe as much colour as they would have done by being expoſed two days to the air in ſummer. Some colours require different methods of trial, but this ſerves for almoſt all. The ſhades of blue, yellow, red and green, purple and green, are the fineſt colours to experiment theſe things upon, as the ſame previous preparation or impregnation of the ſtuff ſerves for both, and both depend upon blue for their baſis, the purple being made of blue and red, and the green of blue and yellow.

It ſhould not ſeem ſurpriſing, if the ſtuff be firſt dipped into a *Dye* of a ſtanding blue, and afterwards into a fading red or yellow, to turn it green or purple, that the action of the air, or boiling in alum water, ſhould carry off thoſe falſe colours, which had only been applied to the ſtuff after it was before ſaturated with a ſtanding colour. But it might be expected, that when the ſtuff was firſt impregnated with them, and afterwards had the blue added upon them, that either the blue muſt be the colour that went off, or that they muſt all remain. But, in effect, nothing of this difference is found, but the blue remains, while the fading colours go off, however or in whatever manner or order they are applied. Mem. Acad. Scienc. Par. 1737.

DYKE-*Reeve*, a bailiff or officer, that has the care and overſight of the *Dykes* and drains in deepening fens, *&c.* We find mention made of this officer anno 16 and 17 Car. 2. c. 11.

DYSENTERY *(Cycl.)* — In this diſorder, ſome, after bleeding and vomiting, give their patients ſmall doſes of calomel once a day, till their breath begins to be tainted; the purging being moderated by opiates, glutinous food, drink, and anodyne glyſters, which is the more neceſſary, as the guts in this caſe are eaſily irritated. Medic. Eſſ. Edinb. abridg. Vol. 1. p. 72. The vitrum antimonii ceratum has been found a moſt efficacious remedy in this diſtemper. See the article VITRUM *Antimonii ceratum.*

Repeated doſes of ipecacuanha, and of rhubarb with calomel, with opiates in the evening, have alſo been found ſucceſsful. Medic. Eſſ. Edinb. abridg. Vol. 1. p. 65. where it is obſerved, that aſtringent medicines, without gentle revulſions and evacuations, generally retard the cure.

Ipecacuanha and the ſimarouba have often had great effects in this diſtemper. See *Juſſieu* in Mem. Acad. Scienc. ann. 1729. This gentleman ſays that the ſimarouba may be compared to, and ſubſtituted for the *macer* of the antients, which is by ſome ſuppoſed to have been a ſpecific in this diſtemper. See the article SIMAROUBA.

Jo. Ge. Henr. Kramerus aſſures us, we may depend on the ſame effect in the cure of a *Dyſentery*, from the decoction of common millet ſeed, called St. Ambroſe's ſyrup, as is promiſed from the *ſimarouba* by Mr. Juſſieu. Med. Eſſ. Edinb.

Dr. Killner tells us of two people, who were cured of an epidemic *Dyſentery* by violent drubbing. Act. Acad. Nat. Curioſ. Vol. 4. Obſ. 113.

DYSESTHESIA, in medicine, is uſed for a difficulty of, or fault in ſenſation. *Blancard*, Lex. Med. in voc.

DYSEPULOTICA, in medicine, great ulcers beyond cure. Id. ibid.

DYSOREXIA, in medicine, a want of appetite, proceeding from an ill diſpoſition, or diminiſhed action of the ſtomach. Id. ibid.

DYSPEPSIA, in medicine, a difficulty of digeſtion in the ſtomach and guts. Id. ibid.

DYSPHONIA, in medicine, a difficulty of ſpeech from an ill diſpoſition of the organs. Id. ibid.

DYSPNOEA, in medicine, a difficulty of breathing, wherein the breath is drawn often and thick, occaſioned by the ſtuffing of the lungs. Id. ibid. See ASTHMA, *Cycl.* and *Suppl.*

DYSTHANATOS, a word uſed by the antient writers ſometimes to ſignify any diſeaſe which occaſions a painful and ſlow death, and ſometimes for the perſon dying in ſuch a lingring manner.

E.

EAGLE, *Aquila*, in zoology. See AQUILA.

EAGLE *Owl*, in zoology, a name given by ſome to the great horn owl, or bubo, which is of the ſize of an *Eagle*, and as voracious and deſtructive. *Ray*'s Ornithology.

EAGLES, a name found very frequently in the antient hiſtories of Ireland, and uſed to expreſs a ſort of baſe money that was current in that kingdom in the firſt years of the reign of Edward the firſt, that is, about the year 1272. There were, beſides the *Eagles*, lionines, roſades, and many other coins of the ſame ſort, named according to the figures they were impreſſed with. *Simon*'s, Hiſt. Coins.

The current coin of the kingdom was at that time a compoſition of copper and ſilver in a determined proportion, but theſe were ſo much worſe than the ſtandard proportion of that time, that they were not intrinſically worth quite half ſo much as the others. They were imported out of France, and other foreign countries. When this prince had been a few years eſtabliſhed on the throne, he ſet up mints in Ireland for the coining ſufficient quantities of good money, and then decry'd the uſe of theſe *Eagles*, and other the like kinds of baſe coins, and made it death, with confiſcation of effects, to import any more of them into the kingdom.

EAR (*Cycl.*)—By a ſtatute of Henry the VIIIth, maliciouſly cutting off the ear of a perſon is made a treſpaſs, for which treble damages ſhall be recovered; and the offender is to pay a fine of 10 pound to the king. 37 Hen. VIII. c. 6. §. 4. In the index to the ſtatutes at large, it is ſaid, that this offence may be puniſhed as felony, by 22 and 23 Car. II. c. 1. ſect. 7. commonly called Coventry's act; but *Ear* is not mentioned in that ſtatute.

EAR *of Fiſhes*—All the cetaceous fiſhes have external meatus auditorii, or paſſages for hearing; but other fiſh have nothing of theſe external appearances, and ſeem neither to be intended by nature to make any ſounds, or to hear any. Though ſound being a tremulation in the air, it may be felt by them as motion, though not diſtinguiſhed as ſound. It may eaſily be proved, that they do not hear our voices in ſpeaking, by walking near the ſide of a pond or river well ſtored with fiſh about the edges, if the body and its ſhadow be kept out of their ſight, they will never ſtart at the voice.

Yet how far fiſhes are deaf and dumb, ſeems a queſtion not yet perfectly decided. See FISH.

EAR, in gardening, a name given to the ſeminal leaves of plants, or thoſe two green and ſucculent leaves which firſt appear from the ſeed, and are very different in all reſpects from thoſe which follow. Thus in the melon plants, the two firſt leaves are called *Ears*, and the leaves, with their ſtalks, which ſhoot out afterwards, are called knots, and denominated the firſt, ſecond, and third knot, according to their place, and time of growing. The cutting off every third knot in this plant, is the great means of procuring the fineſt and largeſt fruit. Phil. Tranſ. N°. 45.

Wounds of the EAR. Wounds of the external *Ear* are eaſily united by ſticking-plaiſters, unleſs the cartilage is entirely divided, and then it will require the help of the needle, and the application of vulnerary balſams, with the proper compreſſes and bandages. When the *Ear* is wounded in the neighbourhood of the meatus auditorius, great care muſt be taken to prevent the diſcharge of blood and matter into that paſſage, which would do great miſchief to the tympanum; but this may be done only by filling the internal *Ear* with lint or cotton. *Heiſter*. Surg. p. 81.

EAR, in anatomy—Mr. le Cat, in his treatiſe of the organ of ſound, has new figures of ſeveral parts of the *Ear*. Med. Eſſ. Edinb. abr. T. 2. p. 481. ſeq.

We have alſo ſome treatiſes on the *Ear* by Dr. Caſſehom, containing very minute deſcriptions of the parts. Ibid.

Running of the EARS, in infants. See INFANT.

EAR *Picks*—The Chineſe are particularly fond of entertaining themſelves with picking and tickling their *Ears*; this they do either for themſelves, or interchangeably for one another, and have a great number of inſtruments of peculiar ſhapes and ſtructure, invented for this purpoſe. Some years ago there was an India cabinet brought over from China, filled with the utenſils and inſtruments of the place, among which there were ſeveral of this kind, uſed to pick and cleanſe, as well as to tickle the *Ear*. One of theſe was made of a ſmall pearl, faſtened to the end of a horſe-hair, or hog's briſtle, the other end let into an ivory handle, and fitted to be uſed by the perſon's ſelf, as are moſt of the others on occaſion. Another was made of fine ſilver wire twiſted into a wreathe, and formed into a round loop at the top; this was alſo ſet into a handle for uſe. Another was made of a large piece of ſilver wire, flatted at the end, and ſet in the ſame ſort of handle; another was made of the ſame ſilver wire, but not flatted, but had its end made into a hook; another was very much of the nature of our *Ear-pickers*, but longer, and made of ſilver ſet in tortoiſeſhell; another was made of ſeveral hog's briſtles, ſet at the end of a ſort of handle, made like one of our pencils; another was of the ſame kind with this, but made of downy ſoft feathers inſtead of hog's briſtles.

Theſe, and many other inſtruments, are at this day uſed to the ſame purpoſe by the Chineſe; but Sir Hans Sloane very judiciouſly obſerves, that the uſe of them ſeems very prejudicial, for that, among many people in England who had applied to him on account of deafneſs, the far greater part were thrown into their complaints by too often picking their *Ears*, and thereby bringing humours, or ulcerous diſpoſitions, on them. Phil. Tranſ. N°. 246. p. 406.

EAR *Shell*, *auris marina*, in natural hiſtory, the name of a genus of ſhell-fiſh, the characters of which are theſe: It conſiſts only of one ſhell, or valve, and is of a flatted ſhape, in ſome meaſure reſembling that of the human *Ear*, and has an extremely wide mouth, or aperture, at its baſe, the wideſt of that of all ſhells, except only the patella or limpet, which is all mouth below. See Tab. of Shells, N°. 3.

Aldrovand and Rondeletius have given this genus the name of *patella fera*, the wild limpet; but in this they have been followed by no author, as it confounds the *auris marina* and *patella*, which are two abſolutely diſtinct genera. Theſe authors have alſo ranked both this and the limpet among the bivalve ſhells, but nothing can be more abſurd than this.

The French call it generally *oreille de mer*, and, in ſome places, *ormeau*. Bellonius calls it the great boufdin; and ſome of the Hollanders have given it the ſtrange name of the ſtock-fiſh. Hiſt. Nat. Eclairc. pt. 2. p. 243.

This genus of ſhells ſometimes yields ſmall pearls, the rudiments of which are very frequently ſeen in thoſe ſhells which have not perfect ones, and the whole inſide of the ſhell is of the colour of the fineſt mother of pearl. This alſo appears on the outſide, when the rough coat is ſo far eaten away by acids, as to leave this pearly ſurface bare, in this caſe it makes a very elegant appearance, being of the ſplendor of the moſt perfect mother of pearl both within and without, and it is frequently preſerved in cabinets in that ſtate.

The inſide and outſide of this ſhell are both ridged with very high ribs, which run from one ſide to the other, and there is in all theſe ſhells a row of holes near one edge, of which ſix are uſually open, and there are beyond theſe the marks of three or four others, which do not go through the ſhell. Theſe are form'd in the growth of the fiſh, which, as it enlarges, enlarges alſo the ſhell, and when a new rim is form'd, in which there is an open hole, one of the hinder ones is always cloſed up by the growth of freſh ſhelly matter over it. *Aldrovand.* de Aquat. *Rondelet.* de Aquat.

Liſter places the *auris marina* among the turbinated ſhells, and ſays, that this is its proper place, becauſe it is twiſted and claviculated, and therefore, as he thinks, very badly ranked with the patellæ. But it is to be obſerved, that, according to this rule, almoſt all ſhells would be found of the turbinated kind, up to the porcelain ſhells, or conchæ veneris, which have all a twiſted pyramid, or clavicule, which is flatted, and enters into the ſhell near the ſummit. *Liſter*. Hiſt. Conch.

There is one very ſingular ſpeciesof the *auris marina*, which differs from all the others in its length; this is a large kind, and is brought from the Eaſt Indies, but is not found in the European ſeas. We have, however, one of a ſomewhat longer form than the common kinds; this is ſmall, and very thin, and is ſingular in not having that fine pearly appearance on the inſide that the others have. The general ſpecies we ſee, are of four kinds. 1. Some have ſix holes. 2. Some have ſeven holes, and are more pearly than the reſt. 3. Some are of an oblong form: And 4. There is one ſpecies which has no mark of apertures at all. The known ſpecies under theſe diviſions, or genera, are theſe:

Of the ſix-holed kind we have only one ſpecies, which is the common one, called *auris veneris*. Of the ſecond kind, which have ſeven holes, we have, 1. The rugoſe and ſtriated *Auris*, which, when poliſh'd, appears ſmooth, and is kept in many cabinets as another ſpecies. 2. The green *Auris*. 3. The red *Auris*: And 4. The green and brown ſpotted *Auris*.

Of the third, or oblong kind, we have, 1. The oblong *Auris*, with an irregular baſe. 2. The oval *Auris*: And 3. The green *Auris*. Of the laſt kind, the only known ſpecies is the dull *Auris*, not pearly within, and without any apertures. This laſt is a very rare ſhell Hiſt Nat. Eclairc. pt. 2. p. 244.

EAR of *Corn*, in ſtone. See Tab. of Foſſils, Claſs 6.

EARINÆ *Veſtes*, among the antient Greeks, a habit worn in the ſpring, which was made of wool, and dyed green. The cuſtom of wearing green veſtments in this ſeaſon, has not been unknown in modern times.

Dempſter ſays, it was cuſtomary, in his time, for the king, and nobility of England, to go a hunting in the ſpring, dreſſed in green, that they might be of a ſimilar colour with the ſeaſon. *Hofm.* Lex. in voc.

The word comes from the Greek Ear, the *ſpring*.

EARING, in a ſhip, that part of the bolt-rope, which, at the four corners of the ſail, is left open, in the ſhape of a ring. The two uppermoſt parts are put over the ends of the yard-arms, and ſo the ſail is made faſt to the yard; and into the lowermoſt *Earings* the ſheets and tackles are ſeized, or bent at the clew.

EARTH (*Cycl.*)—*Figure of the* EARTH—That the figure of the *Earth* is ſpheroidical, is agreed upon by all: But whether it be an oblong, or oblate ſpheroid, i. e. whether the axis be longer or ſhorter than a diameter at the equator, has been for ſome time a matter of doubt.

Three ſeveral methods have been propoſed to determine this controverſy; 1. By experiments, as by the different lengths of pendulums vibrating ſeconds, in different latitudes. 2. The figure of the earth's ſhadow in lunar eclipſes: And 3. By the actual meaſurement of the lengths of a degree on the meridian, in different latitudes.

It is certain, if the lengths of the degrees of latitude decreaſe, as we go from the equator toward the poles, then the axis is greater, and the figure an oblong ſpheroid; but, on the contrary, if theſe lengths increaſe, as you remove towards the poles, the axis is leſs than a diameter at the equator, and conſequently the figure an oblate ſpheroid.

Mr. Caſſini, and others, judge the *Earth* to be of an oblong ſpheroidical figure; and the obſervations made in France, if entirely to be depended upon, prove this hypotheſis to be a matter of fact.

Sir Iſaac Newton, Mr. Huygens, and others, make the earth to be an oblate ſpheroid, higher at the equator than at the poles; and this figure of the *Earth* is undoubtedly the true one, if the obſervations lately made near the arctic circle be admitted as certain and exact.

Mr. Celſius takes notice that the inſtruments, aſtronomical obſervations, and trigonometrical operations, performed in France, render the obſervations there made uncertain.

The obſervations made at Tornea were undertaken at the charge of the king of France, by five ſkilful gentlemen, three of them members of the royal academy at Paris, who were joined by Mr. Celſius and the Abbè Outhier. The trigonometrical part of the work was performed near the river of Tornea, the direction of which is the ſame with the meridian of Tornea; the coaſts of the gulph of Bothnia being found very inconvenient for that purpoſe. By the favourable ſituation of five mountains, they formed eight triangles, which took in ſpace enough for their deſign. All the five gentlemen obſerved, one after another, each angle of theſe triangles, ſetting them down in writing ſeparately.

They afterwards determined the diſtance between Tornea and mount Kittis, under the ſame meridian, by a baſis, meaſured on the river, when frozen over, the length of which was 7406 toiſes 5 feet, by the firſt meaſurement; and, when meaſured again, was barely four inches over. This diſtance between the two places they found to be $55023\frac{1}{2}$ toiſes.

The firſt part of their work being thus finiſhed, the next was to find the difference of latitude of theſe two places; this they did by the help of a teleſcope, fixed to a ſector of nine feet, made at London, by the care and direction of Mr. George Graham, to whom the lovers of aſtronomy are indebted for the curious and well-contrived inſtruments with which he has ſupplied them. The ſtar they obſerved at Tornea was α *Draconis*. They repeated their obſervations three times, and the greateſt difference between them was but two ſeconds. Removing to mount Kittis, they took the ſame number of obſervations, of the ſame ſtar, without finding more than one ſecond of difference. The reſult was, that the amplitude of the arch, in the heavens, between Tornea and mount Kittis (allowing for the preceſſion of the equinox, and the time elapſed between the two obſervations, according to Mr. Bradley's Theory) was 57 minutes 26 ſeconds. Hence the magnitude of a degree, on the earth, interſecting the polar circle, was found to be $57437\frac{9}{10}$ toiſes, which is greater than a mean degree of France, or 57060 toiſes, by $377\frac{9}{10}$ toiſes; and differs 900 toiſes from what it ſhould have been, according to Mr. Caſſini's hypotheſis: And if the correction, according to Mr. Bradley's theory, were omitted, the difference would have amounted to above a thouſand toiſes; the conſequence of which is, that the *Earth* is not only flatted towards the poles, but that it is much more ſo than Sir Iſaac Newton or Mr. Huygens thought it.

This unexpected difference being ſo very great, made them reſolve upon a careful, as well as new kind of verification of the whole. In the firſt place, they repeated their aſtronomical obſervations three ſeveral times at Tornea and Kittis, with the ſame inſtrument, but on another ſtar, *viz.* δ *Draconis*: The difference of latitude between the two places was found to be the ſame, within three ſeconds and an half, with the firſt: They then not only examined the truth of their meridian line, the exactneſs of the ſector, in the different diviſions upon the limb, chiefly in the two degrees employed in obſerving α and δ *draconis*, but ſuppoſed that in their trigonometrical operations they had erred in each triangle, by twenty ſeconds in each of the two angles, and forty ſeconds in the third; and that all theſe errors tended to diminiſh the length of the arch; the calculation, upon this ſuppoſition, gives but $54\frac{1}{2}$ toiſes for the greateſt error that could be committed. See Phil. Tranſ. N°. 457. Sect. 1. compared with Mr. Maupertuis's fig. of the *Earth* determined, p. 162 of the Tranſlat. by Mr. Murdoch.

We have ſaid that Mr. Celſius doubted of the accuracy of the French obſervations, and he gives good reaſons for his doubts. Their angles were not accurately determined, and when theſe are properly corrected, thoſe very meaſures of a degree in the ſouth and north of France, brought to overturn Sir Iſaac Newton's theory, have, like the meaſures taken in Lapland, confirmed it. See Phil. Tranſ. N°. 457. Sect. 1. Mr. Celſius's diſſertation, entitled, *De obſervationibus pro figura telluris determinanda, in Gallia habitis diſquiſitio*, Upſal. 1738. 4°. may be farther conſulted.

By the obſervations in the north of France, extending from Paris to Dunkirk, a mean degree was found to conſiſt of 56960 toiſes. And by the obſervations made in the ſouth of France, from Paris to Collioure, near the Pyrenees, a degree was found to be 57097 toiſes. From whence it would follow, that the *Earth* is an oblong ſpheroid.

But Mr. Celſius obſerves, that the diſtance between the royal obſervatory at Paris, and the perpendicular to the meridian of Collioure, properly corrected, will amount to no more than 358980 toiſes. This, divided by the mean difference of their latitudes 6°. 19′. 11″. will give 56803 toiſes for the length of a degree, one with another, between Paris and Collioure, which is pretty near the truth, and leſs than the length of a mean degree, found by Mr. Picard, and rated at 57060 toiſes: So that the degrees decreaſe as you go towards the equator; and conſequently the *Earth* is higher there than at the poles, as Sir Iſaac Newton and Mr. Huygens determined. Phil. Tranſ. loc. cit.

The obſervations of ſome gentlemen of the French academy, who have been at the pains to re-examine the meaſures formerly taken in France, confirm the Newtonian theory.

And the obſervations made in Peru are an additional confirmation of the ſame. See Mr. Bouguer's book lately publiſhed.

The meaſure of a degree of the meridian in the latitude of 66°. 20′. was found to be $57437\frac{9}{10}$ French toiſes, but in the latitude of 49°. 21′. only 57183 toiſes. Suppoſing thoſe degrees accurately meaſured, the axis, or diameter, that paſſes through the poles, will be to the diameter of the equator as 177 to 178. Hence, the *Earth* will be 22 miles higher at the equator, than at the poles [a]. If the earth was of an uniform denſity from the ſurface to the center, then, according to the theory of gravity, the meridian would be an exact ellipſis, and the axis would be to the diameter of the equator, as 230 to 231, and the difference of the ſemi-diameter of the equator, and the ſemi-axis, would be about 17 miles [b]. —[a Treat. Pract. Geom. p. 44, 45. b Ibid. p. 45.] See the article DEGREE.

According to Mr. Maupertuis's meaſures, if the ſemi-diameter of the equator be $= 1$, and the ſemi-axis $= a$: Then will $1 - aa = 0.022$. See Mr. *Murdoch*'s Mercat. Sailing. p. 7.

Or if the ſemi-diameter of the equator be to the diſtance of the focus of the generating ellipſis from the center, as m to 1, then will $mm : 1 :: 1000 : 22$. For, by the nature of the ellipſe, $1 : \sqrt{1 - aa} :: m : 1$, or $1 : 1 - aa :: mm : 1$; conſequently $mm : 1 :: 1 : 0.022$, or $mm : 1 :: 1000 : 22$. This is the analogy made uſe of to compute the meridional parts in a ſpheroid. See MERIDIONAL *Parts*.

Mr. Eiſenſchmidt having compared the meaſures of a degree, taken in different latitudes, by Riccioli, Snellius, &c. found that the lengths of degrees grew leſs towards the pole, and hence, admitting theſe meaſures to be exact, he juſtly inferred, that the figure of the *Earth* was oblong, and not oblate. This was the hypotheſis Mr. Caſſini endeavoured afterwards to confirm. Dr. Burnet, in his theory of the *Earth*, has mentioned Mr. Eiſenſchmidt and his concluſion; for which, both the Doctor, and the author he quotes, were roughly cenſured by Mr. Jo. Keill, who draws the contrary concluſion from Eiſenſchmidt's facts; but Keill himſelf was here greatly miſtaken: Eiſenſchmidt and Burnet were miſled by inaccurate meaſures, but did not draw falſe conſequences from thoſe ſuppoſed facts. Jo. Caſp. Eiſenſchmidii *diatribe de figura telluris elliptico-ſphæroide*, &c. Argentorati, 1691. 4°.

Changes of the EARTH—Mr. Boyle ſuſpects there are great, though ſlow internal changes, in the maſs of the *Earth*. He argues from the varieties obſerved in the change of the magnetic needle, and from the obſerved changes in the temperature of climates. But as to the latter, we doubt whether he could have diaries of the weather ſufficiently exact to direct his judgment. *Boyle*'s Works abr. vol. 1. p. 292, 293. See SINKING *of the Earth*.

Magnetiſm of the EARTH—The notion of the magnetiſm of the *Earth* was ſtarted by Gilbert; and Mr. Boyle ſuppoſes magnetic

magnetic effluvia moving from one pole to the other. See Works abr. vol. 1. p. 285, 290.

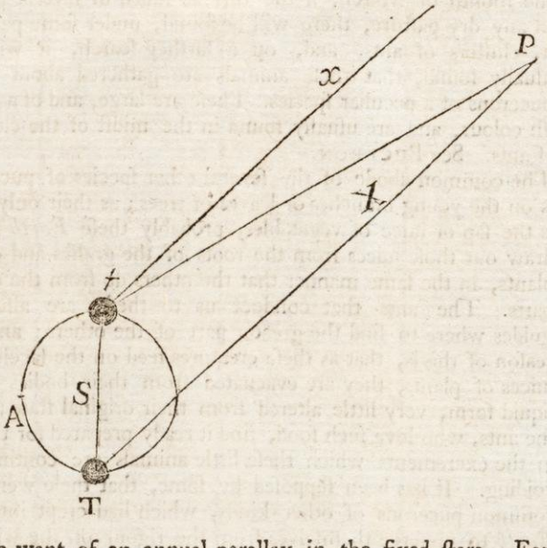
Dr. Knight alſo thinks, the *Earth* may be conſidered as a great loadſtone, whoſe magnetical parts are diſpoſed in a very irregular manner; and that the ſouth pole of the *Earth* is analogous to the north pole in magnets, that is, the pole by which the magnetical ſtream enters. See MAGNET.

He obſerves, that all the phæmomena attending the direction of the needle, in different parts of the *Earth*, in great meaſure correſpond with what happens to a needle, when placed upon a large terella; if we make allowances for the different diſpoſitions of the magnetical parts, with reſpect to each other, and conſider the ſouth pole of the *Earth* to be a north pole, with regard to magnetiſm. The *Earth* might become magnetical by the iron ores it contains, for all iron ores are capable of magnetiſm. It is true, the globe might notwithſtanding have remained unmagnetical, unleſs ſome cauſe had exiſted capable of making that repellent matter producing magnetiſm move in a ſtream thro' the *Earth*. See MAGNET.

Now the Doctor thinks that ſuch a cauſe does exiſt. For if the *Earth* revolves round the ſun in an ellipſis, and the ſouth pole of the *Earth* is directed towards the ſun, at the time of its deſcent towards it, a ſtream of repellent matter will thereby be made to enter at the ſouth pole, and come out at the north. And he ſuggeſts, that the *Earth*'s being in its perihelion in winter, may be one reaſon why magnetiſm is ſtronger in this ſeaſon than in ſummer.

The cauſe here aſſigned for the *Earth*'s magnetiſm muſt continue, and perhaps improve it from year to year. Hence the doctor thinks it probable, that the *Earth*'s magnetiſm has been improving ever ſince the creation, and that this may be one reaſon why the uſe of the compaſs was not diſcovered ſooner. See Dr. *Knight*'s *Attempt to demonſtrate, that all the Phænomena in Nature may be explained by Attraction* and *Repulſion*. Prop. 87. ſeq.

Motion of the EARTH—The annual motion of the *Earth* about the ſun is now generally admitted by aſtronomers. The principal argument againſt this annual motion of the *Earth*, is



the want of an annual parallax in the fixed ſtars. For let T A *t* repreſent the *Earth*'s orbit about the ſun S, T X the axis of the earth, and A *x* parallel to T *x*, will repreſent the poſition of the ſame axis at the oppoſite point *t*. Suppoſe T X to be directed towards the ſtar P; and it is manifeſt, that the axis of the *Earth* will not be directed to the ſame ſtar, when it comes to the ſituation *t x*, but will contain an angle *x t p* with the line *t* P, joining the *Earth* and ſtar, equal to the angle *t* P T, under which the Diameter T *t* of the *Earth*'s orbit appears to a ſpectator, viewed from the ſtar P. It might be expected therefore, that by obſerving the fixed ſtar P, from the different parts of the *Earth*'s orbit, we might judge of the angle T P *t*, and conſequently of the proportion of T P, the diſtance of the ſtar to T *t*, the diameter of the *Earth*'s orbit, or double diſtance of the ſun. Yet it is certain that aſtronomers have not hitherto been able to diſcover any difference in the apparent ſituation of the fixed ſtars, with reſpect of the axis of the *Earth*, or to one another, that can ariſe from the motion of the *Earth*: Tho', ſince the reſtoration of the Pythagorean doctrine of the *Earth*'s motion, they have taken great pains to examine the matter.

The ſeeming motion of the pole ſtar, obſerved by Mr. Flamſtead, was by ſome miſtaken for a proof of its annual parallax; but this phænomenon has ſince been accounted for in the moſt ingenious manner by Mr. Bradley, from the motion of light, combined with that of the *Earth* in its orbit. See LIGHT.

The objection to the *Earth*'s motion, from there being no diſcernible parallax of the fixed ſtars, is anſwered by obſerving, that the diſtance of the fixed ſtars is ſo great, that the diameter of the *Earth*'s orbit bears no ſenſible proportion to it; ſo that the parallax is not to be diſcovered by our exacteſt inſtruments. Nor is this immenſe diſtance of the fixed ſtars advanced by the Copernicans merely as an hypotheſis, for the ſake of ſolving the objection. For there ſeems great reaſon to ſuppoſe the fixed ſtars like to our ſun, and hence to conclude their diſtance to be vaſtly great, ſince they appear to us with ſo faint a light, and of no ſenſible diameter, even in the largeſt teleſcopes.

But from the diligence and accuracy of late aſtronomers, we learn ſeveral curious things in confirmation of the motion of the *Earth* about the ſun, and ſerving to ſolve this only material objection againſt it. See LIGHT.

EARTHS, in natural hiſtory, are the various ſpecies and kinds of earthy matter found in digging, or lodged on the ſurface of the terraqueous globe. Theſe are either ſimple, or compoſed of entirely ſimilar particles; or compound, having a mixture of heterogeneous ones, as ſand, or the like, among them.

Earths are defined to be friable, opake, inſipid bodies; not inflammable, vitrifiable by extream heat, diffuſible in water, and ſeparable from it by filtration.

The ſimple *Earths* are divided into two orders; and under thoſe into five genera. Of the firſt order are thoſe *Earths* which are naturally moiſt, of ſmooth ſurfaces, and of a firmer texture; and of the ſecond are thoſe which are naturally dry, of rough duſty ſurfaces, and of a looſer texture. Of the firſt of theſe orders, there are three genera, the boles, the clays, and the marles; and of the ſecond there are two, the ochres, and the tripelas. The ſeveral diſtinguiſhing characters of which are theſe.

Of the firſt order: 1. *Boles* are *Earths* moderately coherent, ponderous, ſoft, not ſtiff or viſcid, but, in ſome degree, ductile while moiſt, compoſed of fine particles, ſmooth to the touch, eaſily breaking between the fingers, readily diffuſible in water, and freely and eaſily ſubſiding from it. See BOLE.

2. *Clays* are *Earths* firmly coherent, weighty, and compact, very ſtiff and viſcid, ductile to a great degree while moiſt, ſmooth to the touch, not eaſily breaking between the fingers, nor eaſily diffuſible in water, and, when mixed in it, not readily ſubſiding from it. See CLAY.

3. *Marles* are *Earths* but ſlightly coherent, not ductile, ſtiff, or viſcid, while moiſt, moſt eaſily diffuſible in, and diſunited by water, and by it reduced to a ſoft, looſe, incoherent maſs. See MARLE.

Of the ſecond order are, 1. *Ochres*. Theſe are *Earths* ſlightly coherent, compoſed of fine, ſmooth, ſoft argillaceous particles, rough to the touch, and readily diffuſible in water. See OCHRE.

2. *Tripelas* are *Earths* firmly coherent, compoſed of fine, but hard, particles, and not readily diffuſible in water.

The compound *Earths* are two; the loams, compoſed of clay and ſand; and the moulds, compoſed of earthy and putrified vegetable and animal matters. See TERRA.

EARTH *of Malta*. See MELITENSIS *Terra*.

EARTH *of Nocera*. See NOCERIANA *Terra*.

EARTH *of Portugal*. See PORTUGAL *Earth*.

Lemnian EARTH. See LEMNIAN.

Livonian EARTH. See LIVONIAN *Earth*.

EARTH, among chymiſts—There is plainly a ſubtile *Earth*, which may be ſeparated from all animal and vegetable ſubſtances, and is the ſame in all, and is the baſis of all. This remains after the ſeparation of the other principles by chymiſtry, from all animal and vegetable ſubſtances, and neither coheres together, nor ſuffers any change in the fire. The aſſayers acknowledge no difference between the *Earth* of animals and vegetables, but make their teſts for the niceſt uſes equally of both. If water be poured on theſe aſhes, they acquire ſome degree of tenacity, ſo as to become capable of being formed into veſſels; but if oil be added, they cohere into a much ſtronger, and more compact maſs; hence it ſhould appear, that oil and *Earth* are the principles which give conſiſtence and tenacity to plants. This oil, as well as this *Earth*, ſeems the ſame in all, and poſſeſs nothing of the poiſonous or medicinal virtues of the peculiar plant, they being all ſeparable by decoction, diſtillation, and other proceſſes of that kind, and not remaining in the caput mortuum, which conſiſts of the *Earth*, and this connecting oil. Long drying will diveſt plants of all their virtues, ſo that nothing but theſe principles ſhall remain in them, theſe giving ſolidity and figure, the plant retains its former appearance, but only theſe remaining, it poſſeſſes none of its virtues. *Boerhaave*'s Chymiſt. part 2. p. 21.

To obtain this chymical principle pure and unmixed from the common analyſis of vegetables, and other bodies, let the remaining maſs, after diſtillation, be thoroughly calcined, then boiled in ſeveral waters, to get out all its ſalt, and after this dry'd in a clear fire, or in the ſun, and the dry'd maſs will be the pure earth. *Shaw*'s Lectures, p. 151.

EARTH *of Dew*, an *Earth* much valued by many of the chymical experimenters, and prepared in the following manner: A large quantity of dew is to be collected, and ſet in a wooden veſſel, in a cool ſhady place, covered with a canvas, to keep out duſt and flies, there will in time come on a putrefaction in the liquor. It is ſometimes three weeks, ſometimes longer firſt; during the time of this putrefaction, certain films are daily formed on the ſurface of the liquor, and theſe falling down to the bottom, one after the other, form, by degrees,

a ſediment of a ſort of mud. This is to be thrown away, and the dew, when ſeparated from it, is to be filtred clear, and evaporated to a dryneſs, the remainder is a greyiſh *Earth*, which is the true *Earth* of dew; this is very light and friable, and is of a foliated ſtructure in the maſs, looking like ſo many leaves of brown paper, ſpread very thin and even over one another. Phil. Tranſ. N°. 3.

This *Earth*, expoſed to a ſmart fire, looſes its foliated texture, and runs into a maſs, reſembling a mixture of ſalt and brimſtone melted together, but it is not at all inflammable. This, ground on a levigating ſtone, tinges the water to a purpliſh colour. A pound of this *Earth*, properly treated by calcination and elixiviation, will yield an ounce of a pure and white ſalt, ſomewhat reſembling nitre. The chymiſts have been at great pains to procure this *Earth*, but they do not ſeem yet to have made any very important uſe of it, and, in all probability, it is no other than that common ſpar which we know to be contained in all water, and which encruſts the ſides of our teakettles, and other veſſels, in which water is often boiled. We know, by manifold inſtances, that ſpar is rarifiable into vapour with water, and therefore it would be a greater wonder if dew were found not to contain it, than that it does.

EARTHS *of mineral waters*—All mineral waters contain *Earth* of ſome kind, though very different in quantity and in nature. Theſe are found, in different waters, of very different colours and appearances, ſome white, ſome grey, ſome yellowiſh, ſome reddiſh, and ſome brown. They are alſo as different in their qualities as in their form, ſome of them are ſoluble in acids, others are not ſo; ſome fuſible in the fire, others not; and ſome retain their natural colour after burning; others change it in the fire. By this we learn, that ſome are marly, others argillaceous, others ochreous, and ſome ſandy; others there are which are produced by the concretion of certain juices, ſaline or ſulphureous, and others not ſo. Some are ſimply mineral, others are metallic. And as many of theſe are very different from any of the known *Earths*, even in their pure and ſeparate ſtate, they are yet much leſs diſtinguiſhable when mixed one with another, as they very frequently are in the waters of even our common ſprings, much more ſo in the mineral medicinal ones.

The ſimple infuſions of certain ſulphureous mineral *Earths* may notably alter the waters of wells and fountains, without having any thing of thoſe *Earths* remaining, after their diſtillation, in the ſame manner as nothing is ſeparable, by art, from certain liquors, rendered emetic by antimony. The hot mineral waters may contract ſome alteration from the ſulphureous and bituminous matters which they meet with in their courſe; for theſe ſubſtances all contain ſubtile ſalts, which hot water may take up, and carry away with it.

Compound EARTHS, in natural hiſtory, are a claſs of foſſile bodies, uſually confounded with the genuine and ſimple *Earths*, as if ſubſtances of the ſame kind, but being of a very different nature and origin. They are foſſils compoſed of argillaceous and marly particles, ſeparated and divided by adventitious matter, and never found free from thoſe admixtures, or in the ſtate of pure ſimple marls or clays.

Of this claſs of foſſils there are two general orders; thoſe of the one are known by the name of loams, and are compoſed of ſand and clay; and thoſe of the other are called moulds; theſe are the *Earths* that vegetables grow in, and are compoſed of argillaceous and marly particles, ſeparated by ſand, ſmall pebbles, and the gritt of ſtone, and uſually intermix'd with, and enrich'd by, the putrify'd remains of animal and vegetable ſubſtances: Of each of theſe there are ſeveral genera. *Hill*'s Hiſt. of Foſſils. See the articles LOAM and MOULD.

EARTH *Bag*, in fortification. See SAND *Bag*.

EARTH *Banks*, in huſbandry, &c. are a very common fence about London, and in ſeveral other parts of England. Where ſtones are not to be had cheap, theſe are to be preferred to all other fences, both for ſoundneſs and laſting.

The beſt manner of making them is this: Dig up ſome turf in a graſſy place, a ſpit deep, or nearly to the breadth of the ſpade, and about four or five inches thick, lay theſe turfs with the graſs outward, even by a line on one ſide, and on the backſide of theſe lay another row of turf, having a foot ſpace of ſolid ground on the outſide, to prevent the bank from ſlipping in, if it ſhould any way be faulty. On the outſide of this make a ditch, or elſe let the ſides be lowered both ways with a ſlope two foot deep, and there will be no paſture loſt by the fence, becauſe it will bear graſs on both ſides.

The *Earth* that is dug out of the ditches, or from the ſlopes, muſt be thrown in between the two rows of turf, till the middle is made level with the reſt. Then lay on two more rows of turf in the ſame manner, and with more of the *Earth* fill up, and make level as before. Let this method be continued till the bank is raiſed four foot high, or more if neceſſary, only obſerving, that the higher it is to be carried, the wider the foundation muſt be made. As the bank is carried up, the ſides muſt not be raiſed perpendicular, but ſloping inward both ways, ſo that at the top it may be about two foot and a half wide. This ſort of fence, when made with leſs care, and faced with clay, is left naked, and ſerves very well in ſome places; but when it is thus managed with the turf, the joining of the ſeveral pieces are hid in a little time, by the growth of the graſſy part of the turf on each ſide, and it makes a beautiful fence, of as green and pleaſant a colour as the reſt of the field. *Mortimer*'s Huſbandry, 12.

The great improvement upon this plan, is the planting quickſets, or young white-thorn plants, in the middle of the top of the bank. The *Earth* on each ſide of theſe may be raiſed up with a ſort of wall, and the rain that falls all preſerved for the plants. This plenty of water, and depth of fine *Earth*, makes the young plants grow quicker and more vigorouſly than any other way; and the moſt beautiful of all hedges is propagated this way. When this ſort of hedge is young, there muſt be placed on each ſide of it a ſhort dry hedge, of about a foot high, to keep the ſheep from cropping the young plants, but this may be taken away after a little time.

There is one caution neceſſary in regard to the making of theſe banks, which is, that they muſt never be made in a very dry ſeaſon, becauſe if much rain ſhould follow, the *Earth* of the bank would ſwell and burſt out, or ſpoil the ſhape of the bank; but if this ſhould happen, it is eaſily enough repaired. This beautiful fence may be made at a ſmaller price than thoſe unaccuſtomed to theſe things may imagine. In good digging ground, where men work for fourteen pence a day, it may be made and planted with quick for two ſhillings a pole. It may be made proper for the keeping in of deer, only by the ſmall addition of planting, at every eight or ten foot diſtance, a poſt a little ſlanting, with a mortiſe in it; let this ſtand about two foot above the bank, and into the mortiſes all along, put a rail made of a bough of any tree, no deer will ever go over this, nor can they creep under it, as they often do when a pale tumbles down. The quick, on the top of this bank, may be kept clipped, and will grow very thick, and afford the beſt ſhelter for cattle of any fence in uſe with us. *Mortimer*'s Huſbandry.

EARTH *Pitch*. See PISSASPHALTUM.

EARTH *Pucerons*, in natural hiſtory, a name given by authors to a ſpecies of puceron very ſingular in its place of abode. In the month of March, if the turf be raiſed in ſeveral places in any dry paſture, there will be found, under ſome parts of it, cluſters of ants, and, on a farther ſearch, it will be uſually found, that theſe animals are gathered about ſome pucerons of a peculiar ſpecies. Theſe are large, and of a greyiſh colour, and are uſually found in the midſt of the cluſters of ants. See PUCERON.

The common abode of the ſeveral other ſpecies of pucerons is on the young branches or leaves of trees; as their only food is the ſap or juice of vegetables, probably theſe *Earth* kinds draw out thoſe juices from the roots of the graſſes and other plants, in the ſame manner that the others do from the other parts. The ants that conduct us to theſe, are alſo our guides where to find the greater part of the others; and the reaſon of this is, that as theſe creatures feed on the ſaccharine juices of plants, they are evacuated from their bodies in a liquid form, very little altered from their original ſtate; and the ants, who love ſuch food, find it ready prepared for them, in the excrements which theſe little animals are continually voiding. It has been ſuppoſed by ſome, that theſe were the common pucerons of other kinds, which had crept into the *Earth* to preſerve themſelves from the rigour of the winter. But this does not appear to be the caſe, for they are uſually found in places very diſtant from trees or plants on which they ſhould be ſuppoſed before to have fed; and it is very certain, that though many of theſe inſects are killed by the cold, yet many eſcape, and are found very early in the ſpring, ſucking the buds of the peach tree. There is no doubt of theſe creatures being in a feeding condition when under-ground, becauſe otherwiſe the ants would have no temptation to follow them; and it is equally certain, that the ſeveral ſpecies of the pucerons, like thoſe of the caterpillar kinds, have each their peculiar herbs on which they feed, many of them dying of hunger, rather than feeding on any other; and it is therefore not at all likely, that theſe *Earth* pucerons had been uſed to feed on leaves of trees and plants, and had left that food for the roots of graſs. *Reaumur*, Hiſt. Inſ. vol. 6. p. 79.

The opinion of their being a diſtinct ſpecies is alſo ſtrengthened by this, that there are many other ſpecies which find their nouriſhment at the roots of plants. Mr. Juſſieu diſcovered a peculiar ſpecies at the roots of the lychnis; and Mr. Reaumur ſeveral others at the roots of camomile, yarrow, and other plants. He goes ſo far as to believe, even that the number of ſubterraneous ſpecies may be equal to that of thoſe which are found above-ground, and that, upon the whole, the ſpecies of this little inſect may be equal in number to thoſe of the known plants, which, upon the moſt moderate computation, cannot be leſs than ſixteen thouſand. The ſeveral kinds found at the roots of particular plants may be diſtinguiſhed each by the particular name of the plant they feed on, while thoſe found under the turf, and feeding on the roots of graſs, may be called *Earth* pucerons.

EARTHQUAKE (*Cycl.*)—In the philoſophical tranſactions, N°. 462. Sect. 11. we have a journal of the ſhocks of *Earthquakes*,

snakes, as felt in New England: And in N°. 463. an account of one felt in Italy, in 1742.

EARTH *Worm*, a well known inſect, containing the parts of generation in both ſexes in each individual; long, deſtitute of feet, and of a reddiſh colour. They are, by ſome, eſteemed of great virtues in medicine, and are ſaid to be diuretic, diaphoretic, and anodyne, as alſo diſcutient, emollient, and openers of obſtructions; and are preſcribed in apoplexies, ſpaſms, and all nervous affections, and in the jaundice, dropſies, and colics. *Dale*, Pharm. p. 353.

EARTHING of a brick-kiln. See BRICK.

EASE *the Helm*, at ſea, imports to let the ſhip go more large, or more before the wind, or more larboard.

EASTERLING *Money*. See STERLING, *Cycl.*

EBBING and FLOWING *of the Sea*. See TIDES, *Cycl.*

EBDOMARY, *Ebdomadarius*, an officer, antiently appointed weekly in cathedral churches, to ſuperviſe the regular performance of divine ſervice, and preſcribe the particular duties of each perſon attending in the choir, as to reading, ſinging, and praying. To this purpoſe the *Ebdomary*, at the beginning of his week, drew up in form a bill, or writing, of the reſpective perſons, and their ſeveral offices, called *Tabula*, and the perſons there entered were ſtiled *Intabulati*. *Jacob* from *Baldock*'s Stat. Cath. of St. Paul.

EBDOME, Ἑβδόμη, in antiquity, a feſtival kept on the ſeventh of every lunar month, in honour of Apollo, to whom all ſeventh days were ſacred; becauſe one of them was his birthday, whence he was ſometimes called *Ebdomagenes*. For the ceremonies of this ſolemnity, ſee *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 385.

EBEREMORTH, or EBEREMORS, in our old laws, the ſame as *Eberemurdrum*, or *Aberemurder*. See ABEREMURDER.

EBEREMURDRUM, or ABEREMURDRUM, in our old writers. See ABEREMURDER.

EBOLICS, *Ebolica*, in pharmacy, medicines which help the delivery, in hard labour: Alſo medicines which cauſe abortion. *Blancard*, in voc. See ECBOLICS.

EBRICCATUM, a term uſed by Paracelſus to expreſs the partial loſs, or deprivation of reaſon, as it happens during drunkenneſs, but with the addition of the epithet *cæleſte* it ſignifies, with the ſame author, a much more exalted ſtate, a ſort of divine enthuſiaſm, or inſpiration, ſuch as the ſybils of old boaſted of, and, among the moderns, the French prophets, and ſome other religious ſects have pretended to. Paracelſus himſelf pretended, at times, to be be under ſome ſuch influence, but his mad fits ſeemed to have very little of inſpiration in them.

EBRILLADE, in the manege, a check of the bridle, which the horſeman gives to the horſe by a jerk of one rein, when he refuſes to turn. An *Ebrillade* differs from a *Saccade*, the latter being made with both reins at once, and the former only with one. Moſt people confound theſe two words under the general name of a check or jerk of the bridle, called in French *coup de bride*. It is a chaſtiſement, and no aid, and is diſuſed in academies. *Guillet.*

EBRIZIUS *Color*, a term uſed, by ſome of the old writers, to expreſs a very fine yellow. The word ſeems originally to have been obryzium, and was certainly derived from the *aurum obryzum*, or fine gold, of which this *Ebrizius* expreſſed the colour.

EBSEMECH, in chemiſtry, a word uſed by Langius, and ſome other authors, for quickſilver.

EBULLITION *of the Blood*, *Ebullitio Sanguinis*, in medicine, a term uſed by ſome of the old writers, to expreſs what they ſuppoſed to be the occaſion of the motion of the heart, which they attributed to a ſort of *Ebullition* of the blood contained there. Dr. *Lower* was the firſt who wrote againſt this ſyſtem, and proved not only that this *Ebullition* would be ineffectual to the end propoſed by it, as it would be as great an obſtacle to its ſyſtole, as they expected it to prove an aſſiſtance to its diaſtole; but that the heart evidently owed all its motions to its fibres and nerves, the motion of it being in all things conformable to that of other muſcles, and no more unintelligible than theirs. The whole motion of the heart indeed is its ſyſtole, for the diaſtole is no other than its reſtitution. There is a neceſſary commerce between the heart and brain, but both ultimately depend upon the ſtomach, as the conſtant purveyor and furniſher of the matter both of blood and ſpirits. Phil. Tranſ. N°. 45.

All the blood in the body paſſes thro' the heart thirteen times in an hour; and the florid colour of the arterial blood, which has been ſuppoſed by the arguers for the ebullitio ſanguinis to proceed from ſuch another principle, the accenſion, as they call it, in the heart, ariſes from the admixture of air with it in the lungs. The change of chyle into blood is another thing which has greatly perplexed theſe writers, and of which they have given as erroneous accounts as of the reſt. It is certain, that nothing paſſes from the ſpleen through the *vas breve* into the ſtomach, but that the ferment of the ſtomach proceeds immediately from the blood itſelf; the ſeparation of the chyle is performed in the inteſtines, and to facilitate its paſſage, it is diluted and refined by the juice of the pancreas ſecreted into the duodenum. This chyle is, by the ductus thoracicus above, tranſmitted into the blood and heart; and then, by degrees, and ſucceſſive changes, it is at laſt converted into blood, and ſerves for the nouriſhment of the ſeveral parts of the body. *Lower* de Corde.

EBULUS, *the dwarf Elder*, in medicine—The roots and leaves of dwarf alder are ſaid to be briſk cathartics. The flowers are eſteemed ſudorific, and the leaves, boiled till perfectly ſoft, make a good cataplaſm for the *ſciatica*.

EBUR *foſſile*, in natural hiſtory. See *Foſſile* IVORY.

EBUR *foſſile variegatum*, in the natural hiſtory of the antients, a name given to the ſubſtance which we now call the rough or native turquoiſe.

Foſſile ivory, and the bones of other animals, are frequently found bury'd at great depths in the earth, and are found to have preſerved their ſubſtance, texture, and colour in different degrees, according to the nature of the matter they happen to have lain among. Sometimes they are firm and ſolid, and ſcarce altered in colour, and ſometimes more or leſs hardened, and tinged to different colours by the different matter they have lain among.

Of this kind was the ſpotted foſſile ivory of the antients, which was in all reſpects the ſame with our rough turquoiſes of many places, which are no other than the teeth and bones of animals accidentally lodged in the way of particles of copper. Theſe are tinged more or leſs perfectly with a green or blue colour from theſe particles, and are often found of their native whitiſh caſt in the greater part of their ſubſtance, and only ſtreaked and ſpotted with ſmall variegations of a deep blue, which, by the aſſiſtance of a proper degree of heat, is diſlodged from theſe particular places, and diffuſed through the whole ſubſtance, tinging the whole with a fine pale blue. The antients have not been perfectly underſtood in their deſcription of this foſſile; for the Greeks, expreſſing its variegations by the word μέλανι, which is uſually tranſlated black, Pliny copies them in that ſenſe, and from him all the world have declared the variegated foſſile ivory of the antients, to be black and white. Theophraſtus however is the firſt who expreſſes the colours of this ſubſtance by the word μέλανι, and the ſame author, ſoon after expreſſing the male ſapphires, or thoſe of a deeper blue, by the ſame word; it is evident he could not mean by it any other than a deep blue, and plainly that what they called their variegated foſſile ivory, was no other than the rough turquoiſe. They ſeem however not to have known the art of diffuſing the colour through this ſubſtance by fire, and ſo converting it into a fine turquoiſe; but what they called callais was a turquoiſe of another kind, the botryoide copper ore, now uſually called alſo by the name of that gem. *Hill*'s Theophraſt. p. 94. See TURQUOISE.

ECACOATE, in zoology, a name by which the natives of ſome parts of America call the rattle-ſnake. See RATTLE-SNAKE.

ECALESIA, Ἐκαλησια, in antiquity, a feſtival kept in honour of Jupiter, ſurnamed *Hecalus*, or *Hecaleſius*, from *Hecale*, one of the borough towns in Attica. See *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 385.

ECASTOR, in antiquity, an oath wherein Caſtor was invoked. It was a cuſtom for the men never to ſwear by Caſtor, nor the women by Pollux. *Pitiſc.* Lex. Ant. T. 1. p. 703. in voc.

ECATESIA, Ἑκάλησια, in antiquity, an anniverſary ſolemnity, obſerved by the Stratonicenſians, in honour of Hecate.

The Athenians likewiſe had a public entertainment, or ſupper, every new moon, in honour of the ſame goddeſs. The ſupper was provided at the charge of the richer ſort, and was no ſooner brought to the accuſtomed place, but the poor people carried all off, giving out, that Hecate had devoured it. For the reſt of the ceremonies obſerved on this occaſion, ſee *Pott.* Arch. Græc. l. 2. c. 20.

ECATÆA, Ἑκάλαια, in antiquity, ſtatues erected to the goddeſs Hecate, for whom the Athenians had a great veneration, believing that ſhe was the overſeer of their families, and that ſhe protected their children. *Pott.* Arch. Græc. l. 2. c. 20. T. 1. p. 386.

ECATOMBÆON, Ἑκατομβαιων, in chronology, the firſt month of the Athenian year. It conſiſted of thirty days, and began on the firſt new moon after the ſummer ſolſtice, and conſequently anſwered to the latter part of our June, and beginning of July. The Bœotians called it *Hippodromus*, and the Macedonians *Lous*. See MONTH.

The word is a derivative from the Greek Ἑκατόμβη, an hecatomb, becauſe of the great number of hecatombs ſacrificed in it. *Pott.* Archæol Græc. l. 2. c. 26.

ECAVESSADE, in the manege, is uſed for a jerk of the caveſſon.

ECBASIS, Ἐκβασις, in rhetoric, is uſed for a digreſſion.

ECBOLE, Ἐκβολη, in rhetoric, is uſed for a digreſſion

ECBOLICS, *Ecbolica*, in the writings of the antient phyſicians, a term uſed to expreſs ſuch medicines as were given to promote delivery in child-birth. See DELIVERY.

ECBRASMATA. In the writings of ſome of the earlier phyſicians, a word uſed to expreſs eruptions, or puſtules, of a fiery and enflamed nature, appearing on different parts of the body. Virgil calls theſe ardentes papulæ, and ſeems to attri-

bute them to the wearing cloaths made of the wool of ſheep which had died of a murrain, which he there deſcribes.

ECBRYSOMATA, a word uſed by Galen, and the old phyſicians, for thoſe eminences or protuberances of the bones at the joints, which appear through the ſkin.

ECCATHARTICS, a name given, by different writers in medicine, to medicines of different kinds, and producing very different effects. We underſtand by the word ſimply purging medicines, and generally write it cathartics. Gorræus uſes it to ſignify ſuch remedies as are applied to the ſkin, to open the pores; ſome others mean deobſtruents of all kinds, by the word, and others have applied it to the medicines which promote expectoration.

ECCHYMOMA, in medicine, marks and ſpots in the ſkin, ariſing from the extravaſation of blood. *Blancard.*

ECCHYMOSIS (*Cycl.*)—An *Ecchymoſis*, or extravaſation of blood under the ſkin, is an accident too common, after bleeding in the arm. This ſometimes is ſo violent in degree, that the arm, after ſwelling, and becoming black and blue, is violently inflam'd, with acute pain, and either a ſuppuration, or beginning mortification. This accident frequently happens from the vein's having been cut quite aſunder in the operation, but oftener by the patient's uſing the arm too ſoon after bleeding, in violent and long exerciſes, in which the contractions of the muſcles make the veins ſwell, and force their blood through the orifice into the interſtices between the fleſh and ſkin.

In ſlight accidents of this kind there is no danger, the ſtagnating blood being eaſily diſperſed by a compreſs dipped in vinegar and ſalt, or in ſpirit of wine. And ſometimes it ſuppurates, and, making its way through the integuments, becomes naturally diſcharged, and the wound will heal with a diachylon plaiſter. But where the quantity of extravaſated blood is large, there is no hope of its being diſperſed ſo eaſily, but the diſorder generally terminates in an abſceſs or gangrene. To prevent theſe accidents, the ſurgeon's buſineſs is to ſcarify the livid parts, and apply warm fomentations. *Heiſter*'s Surgery, p. 285.

ECCLISIS, a word uſed by Hippocrates, and from him by many other of the old phyſicians, for a receſſion of a bone from its proper ſituation, that is a luxation.

ECCOPÆUS, the name of an inſtrument, deſcribed by ſome of the antient writers in medicine, and uſed for the ſame purpoſes for which the modern ſurgeons employ a lenticular or raſpatory. The antient inſtrument was a ſort of knife, with which they cut down morbid eminences of bones, or took out bones, in the caſe of a fractur'd ſkull.

ECCRIMOCRITICA, in medicine, ſigns to judge of a diſtemper, from particular excretions. *Blancard*, in voc.

ECCRINOLOGICA, a term uſed, by ſome writers, for that part of medicine which relates to the doctrine of excretions, or the diſcharge of any of the excrements out of the body.

ECCRISIS, a concretion of any excrementitious or morbid matter from any of the natural emunctories, as it happens in a perfect criſis. The matter thus excreted is alſo ſometimes called by this name.

ECDICI, Εκδικοι, among the antients, patrons of cities, who defended their rights, and took care of the public monies. *Hofm.* Lex. in voc.

ECDORA, a word uſed, by the antient phyſicians, to expreſs any kind of excoriation, but in a more particular manner that of the urethra.

ECDORIA, a term uſed, by the antient writers in medicine, for ſuch cauſtic or eſcharotic medicines, as have a power of taking off the ſkin.

ECDYSIA, Εκδυσια, in antiquity, a feſtival obſerved by the Phœſtians in honour of Latona. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 387.

ECHAPE', in the manege, is uſed to denote a horſe, got between a ſtallion and a mare, of a different breed and country.

ECHAPER, in the manege, is uſed in the French academies for giving the horſe head, or putting on full ſpeed. Hence they ſay, *Laiſſez echaper de la main.*

ECHAUGUETTE, in the French military art, an elevated and covered place for a centinel. Richelet explains it by the Latin *ſpecula*, *excubiæ*. See GUERITE, *Cycl.*

Some diſtinguiſh the *Echauguette* from the guerite, giving the former name to centry-boxes made of wood, and ſquare; and the latter name to thoſe made of ſtone, and round. *Guillet.* in voc. *Guerite.*

ECHENEIS, in ichthyology. The antients have uſed this as the name of the petromyza, of ſome kinds; and Appian, in particular, plainly means by it our common lamprey.

ECHENEIS is alſo the name of a genus of fiſhes, the characters of which are theſe: The branchio ſtege membrane on each ſide contains about nine bones. The head is depreſſed, and marked on the upper ſide with tranſverſe rough ſtriæ. The body is oblong and roundiſh, but ſomewhat compreſſed. The back fin is oblong, and placed very far toward the tail. This is the fiſh called the remora by authors. Its under jaw is longer than its upper. It has a great number of teeth in both jaws. The colour of its body is hoary, and it has ſeven fins. Two pectoral ones, two ventral ones placed farther from the ſnout than the pectoral ones, one at the anus, one on the back, and one at the tail. The ſtriæ of the head are twenty-two in number, they are rough and tranſverſe, but are divided as it were into two ſeries by a middle longitudinal line. *Artedi*, Gen. Piſc. 11. See the article REMORA.

ECHIDNA, in natural hiſtory, a name given, by ſome authors, to the ſeveral kinds of ophites, or ſerpent ſtone, from Εχιδνα, a viper, or ſerpent.

ECHINI *Foſſiles*. It is a very remarkable obſervation of Auguſtino Scilla, that all thoſe foſſile *Echini* which he had found in the Meſſineſe and Calabrian hills, and about Malta, were, when bruiſed, as was frequently the caſe, always bruiſed by a perpendicular preſſure. The cruſt of all *Echini* has two centers, one directly oppoſite to the other, ſo that if they happened to lie in the liquid mud, in ſuch a manner as that the loweſt center was perpendicular to the horizon, they were bruiſed ſo as not to loſe their circular figure, only they were much compreſſed. If they are found, on the contrary, lying on one ſide, they are ſqueezed out of that ſhape, and the membranes of their ligatures are parted variouſly from each other, according to the variety of the ſituation of the ſhells in the mud, at that time. All which evidently ſhew, that however hard they are now, they were once ſoft ſhells, and that they were brought, in their perfect ſtate, into the places where we find them, not generated there, as ſome have idly imagined, and that, as the liquid mud, into which they were received, dry'd, the ſuperincumbent weight preſſed perpendicularly upon them, and they were ſqueezed, compreſſed, or hurt by it, in the poſture in which they then lay, and have ever ſince continued. See ECHINUS, *Cycl.*

It appears alſo, that their open mouths had, according to the ſituation in which the ſhell lay, received more or leſs of the liquid mud into them, and that ſometimes a greater, ſometimes a ſmaller, part of the ſhell became filled by it, and, according to the quantity of mud thus receiv'd, the preſſure from above has acted variouſly upon the ſhells containing it: Thoſe which have moſt of it having always ſuffered leaſt by this preſſure from above; and thoſe which have leaſt having ſuffered moſt. If we conſider that this mud, tho' liquid, when firſt received, had probably begun to harden into a ſolid maſs, before the weight from above affected it. It will be eaſy to conceive how, in this hardened ſtate, it made a counter preſſure againſt that from above, and ſo ſaved the containing ſhell in great part. *Aguſt. Scill.* de Petrifac.

ECHINI *Spatagi*. It is obſerved, that the foſſile *Echini ſpatagi* are very frequent in the iſland of Malta, and people who are for having all foſſile ſhells to be real terreſtrial bodies, produced of ſeeds in the earth, and never to have been parts of real animals, object to theſe having ever been ſuch, their being found ſo plentifully in this foſſile ſtate, and ſo rarely in the native or recent one. This is no objection of weight; becauſe the cornua ammonis give a much ſtronger, they being a more common foſſile, and never being found recent at all. This is no argument of weight, however, ſince it is eaſy to conceive, that the ſea, at the time of the univerſal deluge, might throw up ſhells from its deep bottoms, which we never can get at in fiſhing or otherwiſe. And Scilla has proved the abſurdity of the objection, in regard to the *Echini ſpatagi*, and ſhewn that thoſe people who raiſed it, have been led into it by their ignorance. For he has affirmed, that they may be picked up by hundreds at a time in the port of Meſſina, and that himſelf once took up more than a hundred recent ones in an hour.

The ſhells of this ſpecies, found foſſile in the iſland of Malta, are very frequently full of the marle, of which the upper ſtratum of that iſland conſiſts; and ſome of them are crack'd, and have been depreſſed a little inwards. This is an evident proof that they once were real ſhells, they having, in this caſe, given way, as far as the included marle would let them, on the preſſure of ſome external force. See Tab. of Shells, N°. 24.

ECHINITES, or ECHINITÆ, in natural hiſtory, the name given by authors to the foſſile ſhells of the ſeveral ſpecies of *Echini marini*, and to the ſtones formed in them. Of theſe there is almoſt an endleſs variety in the foſſile world. Many of thoſe which we daily find in our chalkpits are the ſame with thoſe now known to us in their recent ſtate, or living in the ſea; but we have numbers of others, of which our imperfect knowledge of the animal world gives us no certain account, in their recent ſtate.

The ſhells of ſome of theſe are found ſcarce at all altered from their original condition. In many others we have plated ſpar filling the places of the ſhells, and retaining every lineament of them. But their moſt frequent appearance is in the form of maſſes of hard flint, or other ſtone, which have been caſt and formed in them, having been received, while in a fluid ſtate, into the hollow of the ſhell, and therefore retaining all the lineaments of the inner ſurface. And, not unfrequently, theſe alſo are coated over with a ſparry or ſtony matter, ſupplying the place of the ſhell they were formed in; and having been made, by the inſenſible depoſition of hard matter, in the place of the particles of the ſhell inſenſibly waſting away, theſe retain all the lineaments of the outer part of the ſhell, as the formed flint does of the inner one. Sometimes pure cryſtal is found in the place of flint in theſe, and often cryſtal

but

but lightly debaſed by earth; and theſe make very elegant ſpecimens. *Hill*'s Hiſt. of Foſſils, p. 651.

The various genera of foſſile echini, or *Echinitæ*, are uſually known among authors by the names of *ſpatagi*, *cordati*, *galeati*, *pileati*, *diſcoides*, *ovarii*, *pentaphylloides*.

What is generally underſtood by the word *Echinitæ*, is a ſort of arched ſhells, or ſtones formed in them, covered with divers eminences and cavities, ſome of which are diſpoſed into beautiful lines, diverging from the ſummit; and always having two apertures, the one for the mouth, the other for the anus of the animal: Of theſe,

The *echini cordati* are ſuch as have a remarkable furrow on one ſide, or end, which is uſually broader than any other part of the body, and, by means of this furrow, repreſents, in ſome degree, the figure of a heart at cards.

The *galeati* are ſuch as have the baſis ſomewhat oblong, and the apertures; one in the very margin, and the other near the margin, on the oppoſite ſide. The *pileati* and *diſcoides*, are ſubdiſtinctions of this kind.

The *pileati* are higher, and approach to a conic figure.

The *diſcoides* are flatter, and more compreſſed.

The *ovarii* have only one aperture at the baſe, and have large and unequal tubercles and papillæ.

The *pentaphylloides* have rows of ſhort lines, which are ſo diſpoſed as to repreſent a cinquefoil leaf.

The *ſpatagi* is a very comprehenſive term, taking in moſt of the others as ſubdiſtinctions. It comprehends all that have two apertures in the baſe, and that are covered with ſmall tubercles. See Tab. of Foſſils, Claſs 9.

ECHINODERMA, in natural hiſtory, the name of the ſea animal more commonly known by the name of the *echinus marinus*, or ſea hedge-hog. Theſe are fiſh living in an arched ſhell, of various figures, according to the various ſpecies; and always, beſides a vaſt number of ſmaller protuberances and cavities, having two remarkable apertures, the one ſerving for the mouth, the other for the anus of the animal; which are variouſly placed in the different genera and ſpecies.

There are yet wanting, in natural hiſtory, the proper characters and diſtinctions of cruſtaceous and teſtaceous fiſhes, and, till that is fix'd, there is no ſaying whether theſe creatures belong to the teſtaceous or cruſtaceous tribe. The coverings of the pectuncles, and other fiſh, uſually diſtinguiſh'd with us by the name of ſhell-fiſh, are univerſally allowed to be all ſhells; and thoſe of the crab and lobſter kinds are called cruſts, or cruſtaceous covering: But the Echini marini are yet wholly undetermined by authors, as to which of theſe claſſes of animals they belong to. Pliny calls their covering ſometimes a ſhell, ſometimes a cruſt, uſing the words teſta and cruſta indifferently. Some allot them a place in the cruſtaceous tribe, becauſe they have teeth like thoſe of the cruſtaceous kinds, which the ſhell-fiſh want, but we are very far from knowing yet, whether the cruſtaceous, or the echini, have all of them teeth, or not.

Many affirm that the ſpines of the echini ſerve them in the place of legs; but there are many alſo who deny this, and ſome affirm, that they have, in the living fiſh, found legs in another part, affixed not to the ſhell, but to the body of the animal. *Klein*, Echinod. p. 4.

ECHINOMETRA, a name given by ſome to the ſeveral depreſſed ſpecies of the *Echinodermata*. See Tab. of Teſtaceous Animals, N°. 15, 16, 17, and the article ECHINODERMA.

ECHINOPHORA, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form, and theſe are collected into an umbellated head, and contained in the circuit of one common cup, which finally becomes an unicapſular fruit, containing an oblong ſeed.

The ſpecies of *Echinophora*, enumerated by Mr. Tournefort, are theſe: 1. The prickly ſea *Echinophora*, called by authors the prickly ſampire, and the ſea parſnep. 2. The parſley-leav'd *Echinophora*. *Tourn.* Inſt. p. 656.

ECHINOPHORA. According to Linnæus, the characters of this genus of plants are theſe: The general cup is an one-leav'd involucrum, divided into many ſegments of a turbinated form, containing many flowers, and ſurrounding the germens. The particular cup of each flower is very ſmall, compoſed of one leaf, divided into five ſegments, ſtanding upon the germen, and not falling with the flower. The ſeparate flowers are pentapetalous; the petals unequal, and ſtanding very wide aſunder at the mouth. The ſtamina are five ſimple filaments. The apices are of a roundiſh figure. The piſtil conſiſts of an oblong germen, placed under the cup, and within the general covering. The ſtyles are two, and are ſimple; the apices are alſo ſimple. The involucrum becomes finally indurated and echinated, and contains the ſeeds, which are of an oblong figure. *Linnæi* Gen. Plant. p. 525. *Tourn.* 423.

ECHINOPHORA, in ichthyology, a name given by Rondeletius to a ſpecies of ſea-ſnail, of the round-mouth'd kind, or claſs of the cochleæ lunares.

He calls it *Echinophora*, becauſe it is all over beſet with tubercles, but this is a very ill choſen name, as it confounds it with the echini, or ſea eggs; he had much better have called it cochlea tuberculoſa. See LUNARES, *Cochleæ*.

ECHINOPHTHALMIA, in the works of the antient writers on medicine, the name of a diſeaſe, which was an inflammation of that part of the eyelids, which is beſet with hairs, or on which the eye-laſhes grow.

ECHINOPUS, *globe thiſtle*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of a globoſe ſhape, and of the floſculous kind, being compoſed of a number of floſcules divided into ſeveral equal ſegments at the ends, and placed on the embryo ſeeds, but each having its peculiar ſquammoſe cup, which is affixed to the thalamus of the flower, and contains the embryo, when it has ripened into a ſeed. The ſpecies of *Echinopus*, enumerated by Mr. Tournefort, are theſe: 1. The common *Echinopus*, or globe thiſtle. 2. The great *Echinopus*, with white flowers, and blue ſtamina in the middle. 3. The leſſer *Echinopus*. 4. The fine-leav'd *Echinopus*, with violet-coloured flowers. 5. The leſſer *Echinopus*, with white flowers. 6. The leſſer annual *Echinopus*, with large heads. 7. The American ſhrub *Echinopus*, with flowers at the joints of the ſtalks, and with ilex leaves hoary underneath. *Tourn.* Inſt. p. 463.

ECHINUS, the hedge-hog. See ERINACEUS.

ECHINUS *Marinus*. See ECHINODERMA.

ECHIUM, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is an erect perianthium, divided into five tapering ſegments, and remains after the flower is fallen. The flower conſiſts of one petal, which forms a ſhort cylindric tube, with an erect edge widening by degrees, and divided into five ſegments, the two upper longer than the reſt, and the loweſt ſmaller than the reſt, and bending backward. The ſtamina are five tapering filaments of the length of the flower. The antheræ are oblong, and laid upon them. The piſtillum has four germina. The ſtyle is ſlender, and of the length of the ſtamina. The ſtigma is obtuſe and bifid. The cup ſerves in the place of a fruit, becoming ſtiff and rigid, and containing in its bottom four roundiſh and obliquely pointed ſeeds. *Linnæi* Genera Plant. p. 60.

ECHIUM, called in Engliſh *vipers bugloſs*, according to Tournefort is the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, of a funnel ſhape, and a little crooked, the upper edge ſtanding much farther out than the inner one. The cup is divided, even to the baſe, into ſeveral ſegments, and from it there ariſes a piſtil, which is fixed in the manner of a nail to the hinder part of the flower, and is ſurrounded by four embryo's, which afterwards ripen into as many ſeeds. Theſe are of the ſhape of a viper's head, and remain in the cup, which becomes much enlarged to receive them. *Tourn.* Inſt. p. 135.

The ſpecies of *Echium*, enumerated by Mr. Tournefort, are theſe: 1. The great rough white flowered *Echium*. 2. The great rough blue flowered *Echium*. 3. The Portugal *Echium*, with very large leaves. 4. The common *Echium*. 5. The white flowered common *Echium*. 6. The broad-leav'd cretick red flowered *Echium*. 7. The variegated flowered cretic *Echium*. 8. The narrow-leav'd red flowered cretick *Echium*. 9. The hairy ſpotted wild *Echium*. 10. The large flowered ſea *Echium*. 11. The annual procumbent *Echium*, with blackiſh red flowers. 12. The narrow-leav'd hairy *Echium*. And 13. The roſemary-leav'd *Echium*.

Pliny has made a ſtrange miſtake in his account of this plant: He ſays, the antients were acquainted with two ſpecies of it, the deſcriptions of which he gives correctly enough from dioſcorides; but then he adds, that there is a third kind, called by ſome perſonata, a plant with extremely large leaves, and with burrs, or prickly nodules, by way of fruit.

It is clear from this, that the author confounded the words *Arctium* and *Echium* together, though ſufficiently unlike both in ſound and orthography, to have been diſtinguiſhed; and his third *Echium* is no other than the great arctium, or burdock. The flowers of the *vipers bugloſs* are ſuppoſed to poſſeſs the virtue of cordials, in the ſame degree with the borrage and bugloſs. Some authors greatly recommend a decoction of the dried plant in epilepſies. It is ſaid that very ſingular cures have been done by it.

ECHO (*Cycl.*)—There is an *Echo* at Bruſſels which anſwers fifteen times; but this is nothing when compared to one near Milan, where, upon firing a piſtol, fifty-ſix reiterations of the noiſe are heard, and when a louder piſtol was diſcharged, above ſixty reports were counted. The firſt twenty *echoes* were with ſome diſtinctneſs, but then, as the noiſe ſeem'd to fly away, and anſwer at a greater diſtance, the repetitions are ſo doubled, that they can hardly be all counted. Phil. Tranſ. N°. 480. p. 220.

ECHO, in muſic, pieces compoſed in imitation of *echoes*. *Broſſ.* Muſ. Dict. in voc.

Sometimes alſo the word *Echo* ſtands for *Piano*, intimating that the inſtrument, or voice, is to play or ſing after a ſoft and ſweet manner. Organs and harpſichords have what they call an *echo*-ſtop. Id. Ibid.

ECHPHYAS, an excreſcence, or appendix, a word uſed by many of the antient writers in medicine. The appendicula vermiformis is thus called by many authors.

ECHTHELYNSIS, a term uſed, by the antient phyſicians, for a laxneſs, or flabby ſoftneſs, of the fleſh of the legs, or any other part of the body. Some have alſo uſed the word to expreſs a fault in bandages, when too looſe.

ECLAMPSIS, a word uſed by Hippocrates in deſcribing the epilepſy, and, by moſt people, ſuppoſed, by a forced explanation, to mean the change which children undergo at the age of puberty, a time of great conſequence in this diſeaſe, at which nature ſhines forth in new luſtre, by the increaſe both of ſtrength and underſtanding. But the more natural and obvious ſenſe of the word ſeems to be the expreſſing thoſe reſplendent flaſhings and ſparklings of light which ſtrike the eyes of perſons ſubject to this diſtemper, and which are called by Cælius Aurelianus *ſcintillarum micæ* and *circuli ignei*: And the ſame author, in deſcribing one of his epileptic caſes, particularly mentions the flaſhings of lightning, as it were, which were frequent before his eyes. It is not to be omitted that Hippocrates and Galen have both alſo uſed this word in another ſenſe, to expreſs the higheſt degree of a fever, juſt before and at the criſis, when it is in its utmoſt degree of heat, and exerts itſelf with its utmoſt violence.

ECLECTICS, the name of a certain ſet of phyſicians among the antients, of whom Archigenes was one, who ſelected from the opinions of all the other ſects, that which appeared to them beſt, and moſt rational; hence they were called *Eclectics*, and their preſcriptions medicina eclectica.

ECLECTOS, a name given, by many writers, to that form of medicine which we call a *Linctus*; a compoſition, made to be gently ſwallowed down, in coughs, and the like diſorders, and uſually containing oil of ſome kind.

ECLIPSE (*Cycl.*)—In the philoſophical tranſactions, N°. 461. Sect. 9. we have a contrivance to repreſent ſolar *eclipſes*, by means of the terreſtrial globe, by Mr. Seguer, profeſſor of mathematics at Gottingen.

ECLISIS, a word uſed, by the antient phyſicians, for a general faintneſs and feebleneſs of all parts of the body. Hippocrates uſes it for a loſs of voice, with a general decay of ſtrength, and, in ſome other places, for a great weakening of the body, by violent diſcharges by ſtool.

ECLOGARII, among the antients, were perſons who excerped or picked out the beſt pieces of the books they read, which, for that reaſon, were called *Eclogues*, or ſelect pieces. See ECLOGUE, *Cycl.*

ECMARTYRIA, Εκμαρτυρια, in antiquity, a kind of ſecond-hand evidence, admitted in the Athenian courts. It was not founded on the knowledge of the witneſs himſelf, but on that of another perſon, who had been an eye-witneſs of the fact in queſtion, but was at this time either dead, or in a foreign country, or detained by ſickneſs; for, except in ſuch caſes, the allegations of abſent perſons were never taken for lawful evidence. *Pott.* Archæol. Græc. l. 1. c. 21. T. 1. p. 117.

ECNEPHIAS, a word uſed, by Galen, to expreſs a peculiar ſort of fever, which, he ſays, was at once hot and humid, and which he therefore reſembles, by the name, to the ſun breaking out from a watery cloud.

ECOUTE', in the manege, is uſed for a pace, or motion of a horſe, when he rides well upon the hand and the heels, is compactly put upon his haunches, and hears, or liſtens, to the heels or ſpurs; and continues duly ballanced between the heels, without throwing to either ſide. This happens when a horſe has a fine ſenſe of the aids of the hand and heel.

ECPHONESIS, Εκφωνησις, in rhetoric, the ſame with exclamation. See EXCLAMATION, *Cycl.*

ECPHRAXIS, in medicine, is a taking away obſtructions in any part. *Blancard.*

ECPHYSESIS, in medicine, is a diſeaſe in which the patient breathes thick.

ECPHYSIS, in anatomy, is any proceſs that coheres with, or adheres to a bone.

ECPIESMUS, Επισμος, in the antient writers of medicine, a word uſed to expreſs a diſtemperature of the eye, which conſiſts in a very great prominence of the entire globe of the eye, which is, as it were, thruſt out of its ſocket, or orbit, by a great flux of humours, or an inflammation.

ECPLEROMA, in the writings of the antient phyſicians, the name given to a kind of cuſhion of leather, ſtuffed with ſome firm ſubſtance, and fitted to the cavities of the armpits, uſed in reducing luxations of the humerus.

ECPLEXIS, in the writings of the antient phyſicians, a word uſed to expreſs a tranſport of mind, proceeding from ſome ſudden perturbation. Hippocrates and Galen uſe the word to ſignify a ſtupor, or ſtupefaction, in which the patient lies without motion, without ſpeaking or ſtirring, and with his eyes open.

ECPNEUMATOSIS, in medicine, the ſame with expiration.

ECPNOE, a word uſed by medical writers, to expreſs that part of reſpiration, in which the breath is expelled out of the lungs.

ECPTOMA, a word uſed, by the antient phyſicians, in three or four different ſenſes. It is ſometimes made to expreſs a luxation, or diſlocation of a bone. Sometimes it is uſed for the falling off of any corrupted part, ſometimes for the excluſion of the ſecundines after child-birth, and ſometimes for a falling down of the womb, or a deſcent of the omentum, or the inteſtine, into the ſcrotum.

ECPTOSIS, in ſurgery, the ſame with luxation.

ECPUCTICA, in the materia medica, are condenſing medicines. See INCRASSANTIA.

ECREGMA, properly the name of a part, piece, or ſegment of any thing; but Hippocrates has, in ſome places, uſed it as the name of an eruption.

ECRITHMUS, in medicine, an irregular pulſe, which obſerves no method, nor number, incident to any age. *Blancard.*

ECSTASIS *Cutis*, an extenſion of the ſkin, a term uſed by the antients, as the oppoſite to corrugatio, or wrinkling.

ECSTATICI, Εκστατικοι, in antiquity, a kind of diviners, who were caſt into trances or ecſtaſies, in which they lay like dead men, or aſleep, deprived of all ſenſe and motion, but after ſome time returning to themſelves, gave ſtrange relations of what they had ſeen and heard. *Pott.* Archæol. Græc. l. 2. c. 12. T. 1. p. 302.

ECSTROPHIUS, a name given by the antient writers in medicine, to any thing that threw out the internal tumours of the piles, ſo that external applications might be made to them.

ECTHLIMA, an ulceration ariſing from a violent compreſſion in the ſurface of the ſkin. *Blancard.*

ECTHYMA, a name given, by Hippocrates, to any puſtule, or cutaneous eruption.

ECTOMIAS, a name, uſed by the antient phyſicians, to expreſs a caſtrated animal.

ECTRIMMA, excoriation or galling. Hippocrates has uſed the word particularly to expreſs exulcerations of the ſkin about the os ſacrum, contracted by lying long in one poſture, in caſes of fractures of the thigh, or in lingering illneſſes, in which the patient is confined to his bed for a long time.

ECTROPIUM, that diſtemperature of the eyelids in which they are everted, or retracted, ſo as to ſhew their internal or red ſurface, and cannot ſufficiently cover the eye. Sometimes this is a ſimple and original diſorder, and ſometimes it is only a ſymptom of ſome other, as of an inflammation, ſarcoma, tumour, or the like. This ſometimes owes its original to the contraction of the ſkin of the eyelids, by the ſcar of a wound, ulcer, burn, *&c.* or to the induration and contraction of the ſkin, after an inflammation, and ſometimes it in a great meaſure proceeds from the injudicious uſe of aſtringent collyriums, or eye-waters.

When this diſorder is become inveterate, it is not eaſily cur'd; while recent, it is to be attempted by relaxing and elongating the ſkin of the eyelid, by the application of emollients, ſuch as the vapours of hot milk, or water, oil of almonds, mucilage of quince ſeed, and ointment of marſh-mallows. Theſe muſt be repeated every day, the ſkin of the eyelid drawn frequently towards its right poſition, and when the patient goes to bed, the eyelids ſhould be brought together, and reſtrained in their proper poſture by a plaiſter compreſs and bandage. But if all this fail, and the caſe yet appear not incurable, manual operation muſt take place.

The operation is performed in the following manner. Firſt a ſemilunar inciſion is to be made in the external ſkin of the eyelid, next its tarſus, or cartilaginous margin, making the angles of the inciſion, downward in the upper lid, and upward in the under, that by this means the ſkin may be elongated. If it does not appear ſufficiently let out by one inciſion, two or three more may be made, running parallel with the firſt, and at the diſtance of a ſmall packthread. When the eyelid is thus ſufficiently elongated, the inciſions muſt be dreſſed firſt with dry lint ſtuffed into them, and afterwards with lint, armed with ſome vulnerary unguent, which will prevent the ſkin from growing together again, and will occaſion new fleſh to be formed in the place, which will elongate the ſkin. Laſtly, to forward the extenſion and cure, a piece of ſticking plaiſter ſhould be faſtened to the eyelid, to keep it extended, and this muſt be continued till the eye will ſhut cloſe. When this caſe has continued from the patient's birth, the cure is very difficult, and it is a yet more hopeleſs caſe, when it happens to old people, from a weakneſs of the orbicular muſcle. *Heiſter*'s Surgery, p. 372.

ECTROTICA, a name given, by the antient phyſicians, to ſuch medicines as have power to occaſion abortion.

ECU *Antient*, in heraldry, a term ſignifying the antient ſhield. By this they mean the antique triangular-ſhap'd ſhield, on which the arms of the noble families of France have been painted, which ſerves very conveniently, where the arms conſiſt of a large number of figures, and that number not even. Thus, if five animals are to be repreſented, this kind of ſhield receives very conveniently three at the bottom, and two at the top; and if three, then one at the top, and two at the bottom. This ſhield is to be ſeen on old gems, and ſome ruins; but the modern ſhield, which is ſquare, and rounded, and pointed at the bottom, has baniſhed the uſe of this. *Niſbet*'s Heraldry, p. 12.

ECURIE, in the manege, the covert-place for the lodging or houſing of horſes. The word is French. We uſe *Stable* in common diſcourſe.

ECUYER, in the French manege, is uſed for the riding-maſter. Sometimes it denotes certain officers in the king of France's houſhold, who help the king in mounting his horſe and alighting, and follow him on horſeback, and carry his ſword. Theſe are called *Ecuyers de Quartier*.

Gentlemen-uſhers to the queen of France, and the maſters of the horſe to princes, and perſons of quality, are alſo called *Ecuyers*. Beſides theſe, there are others called *Ecuyers Cavalcadours*. See CAVALCADOUR. *Guillet*.

ECZEMA, a name given, by the antient phyſicians, to any fiery puſtule on the ſkin.

EDESSENUM, the name of a famous collyrium, reckoned among the number of the monohemera, or ſuch as cur'd certain diſorders of the eyes, in one day. It is ſuppoſed to have had its name *Edeſſenum* from the city of Edeſſa, where it was firſt invented, and in great uſe. Its compoſition was this: Take Gum arabic, tragacanth, ſarcocolla, acacia, and ſtarch, of each two drams, opium four drams, cerus eight drams, cadmia ſixteen drams; theſe were all to be reduced to a fine powder, and afterwards mixed with a ſufficient quantity of water, to be uſed to waſh the eyes.

EDGE *in with a ſhip*, in the ſea language, is ſaid of a chace, that is making up to him.

EDGINGS, in gardening, the ſeries of ſmall, but durable, plants, ſet round the edges or borders of flower-beds, *&c.* The beſt and moſt durable of all plants for this uſe, is box, which, if well planted, and rightly manag'd, will continue in ſtrength and beauty for many years. The ſeaſons for planting this are the autumn, and very early in the ſpring. And the beſt ſpecies for this purpoſe, is the dwarf Dutch box. The edgings of box are now only planted on the ſides of borders next walls, and not as was ſome time ſince the faſhion, all round borders or fruit-beds, in the middle of gardens, unleſs they have a gravel walk between them, in which caſe it ſerves to keep the earth of the borders from waſhing down on the walks in hard rains, and fouling the gravel.

In the laſt age, it was alſo a very common practice to plant borders, or edgings, of aromatic herbs, as thyme, ſavory, hyſſop, lavender, and the like: But theſe are all apt to grow woody, and to be in part, or wholly, deſtroyed in hard winters. Daiſies, thrift, or ſea julyflower, and chamomile, are alſo uſed by ſome for this purpoſe; but they require yearly tranſplanting, and a great deal of trouble, elſe they grow out of form; and theſe are alſo ſubject to periſh in very hard ſeaſons. *Miller*'s Gardener's Dict.

EDULCORATION, (*Cycl.*) in metallurgy, is the ſeparating, by a ſolution in water, the ſalts that have been left adhering to a body after any operation. This is properly a kind of moiſt ſolution, the ſaline parts adhering to bodies, not ſoluble in water, being by that menſtruum taken up, and eaten off from the body, and the ſolution afterwards ſeparated from the remaining ſolid, either by ſubſidence or filtration.

It is proper, in this operation, to enlarge the ſurface of the body to be edulcorated, by pounding it in a mortar, that the ſolution may have the ſpeedier ſucceſs; and for this purpoſe, it ſhould alſo be kept continually ſtirring with a ſtick, while the water is on it, that all the parts of the body to be edulcorated, which otherwiſe would ſome of them ſink to the bottom, and remain applied againſt the bottom of the veſſel it is perperform'd in, may be made equally at one time or other contiguous to the particles of the edulcorating fluid, by which all ſolutions are indeed greatly facilitated. Boiling water is alſo, in ſome caſes, requiſite, for the heat of that, by the inward motion, and rarefaction it occaſions, promotes, in an extraordinary manner, ſaline ſolutions.

A perfect ablution from the ſalt, however, is not always obtained by this method; for as every part of the menſtruum contains in it a proportionable quantity of the matter diſſolv'd, and there remains always ſome part of the menſtruum thus impregnated in the body to be edulcorated, it is evident that there alſo remains in it the proportionable quantity of ſalt for that menſtruum. Let us take, for inſtance, the alkaline ſalt in wood-aſhes, pour hot water on ſuch aſhes, and let them boil together for ſome time, then by decantation, or otherwiſe, ſeparate the lye or water impregnated with the ſalt of the aſhes, from the aſhes themſelves; there will remain, after all you can do to pour it off, at leaſt one fourth part of the lye among the aſhes, and of courſe a proportionable part of the diſſolved ſalt. Pour more water on this, and decant it off again, a quantity of ſalt, tho' much leſs than the former, will again remain; and ſo on, if the operation be repeated ever ſo often, only the ſalt will be in leſs and leſs quantity every time. Very frequent repetitions of this operation are therefore always neceſſary, and even where the operator has tir'd himſelf with them, a nice experimenter will always find ſome ſmall portion of the ſalt remaining.

To this remaining of the ſaline particles, in ſome degree, after ever ſo often repeated waſhings, is owing the great loſs artificers uſually find in reducing the calxes of gold and ſilver, made with acids. For the ſmall remainder of the acids which yet adhere, being agitated by an impetuous, and eſpecially if by an open fire, carry off in their evaporation a great many particles of the metals with them, not even excepting aqua fortis itſelf, which nevertheleſs is ſaid to be, nay, and really is, of a fixing nature, but that only in a certain degree. *Cramer*, Art of Aſſ. 196.

EEL, *Anguilla*, (*Cycl.*)—There is ſcarce any animal, the generation of which has ſo much perplexed and puzzled the thoughts of the learned and curious as this. Ariſtotle firſt gave birth to an opinion, that *Eels* were of no ſex, nor did propagate their ſpecies like other animals, but were equivocally gender'd of the mud: And as wild and abſurd a ſyſtem as this is, there have not been wanting many, even in theſe later and more enlightened times, who have given into it.

Eels are found in pools and ditches newly dug, and where no parent animals of the ſame kind could come to give them origin. This has given occaſion to people's falling into the opinion, that they were equivocally engender'd there: And Myllius, who has written of the generations of animals; and Morhofius of the tranſmutation of metals, have given a proceſs for the ſtocking any new pond with *Eels*, as they ſay it was at that time practiſed by the Dutch. The method was this:

In the months of May and June, ſome graſſy turfs are to be cut up early in a morning, at which time they ſuppoſe there falls a dew, which afterwards becomes enlivened into *Eels*: Theſe turfs are to be laid in a double row, with their graſſy ſides together, and are to be placed on the warmeſt ſide of the pond, or ditch. The heat of the ſun, they ſay, will there finiſh the formation of the *Eels*, and they will crawl down into the water, where they will live and grow. This proceſs ſeems much of the ſame kind with that for the making live crayfiſh, by bruiſing and burning the full grown ones, and then ſteeping them in water. This is gravely delivered by no leſs a man than Sir Kenelm Digby, but has few believers at this time. Phil. Tranſ. N°. 238. p. 93.

The preſent age has been ſo well inſtructed in the ſyſtem of animal generation, by the works of Swammerdam, Lewenhoeck, Malpighi, Redi, Ray, and a great number of other writers, of the ſame valuable ſtamp, that there is left no room to doubt but all animals are produced by the copulation of parents like themſelves; and the oddity of *Eels* being found in new ponds, is eaſily accounted for, when we know that Dr. Plot, and many others, have given accounts of whole droves of them leaving one ditch or pond, and croſſing the meadows together, to go to another. We know that the *Eel*, of all fiſhes, lives the longeſt out of water, and it is not difficult to conceive, that it may, without any inconvenience, ſpend ſo much time out of that element, as is neceſſary for the paſſing from one water to another; and when a parcel of theſe fiſhes have found a new pond, it is no wonder that they continue in it, ſince they feed on worms and other inſects of the earth; and there is probability that theſe may be found in peculiarly great abundance in a place where the earth has been newly diſturbed, and where they have not been prey'd upon.

Pliny tells us, that an *Eel* will live ſix days out of water without hurt; but this is not neceſſary for the poſſibility of their making the ſhort journey here mentioned. Geſner tells a ſtory from Albertus, of a parcel of *Eels* which, in a very cold winter, in the year 1125, not only left their natural element, but were found bedded together, in vaſt numbers, under a dry hay-ſtack.

Eels, by their ſhape and motion, which both reſemble thoſe of ſerpents, are much better qualify'd for living or travelling out of water than any other animal of the fiſh kind; but they do not ſeem the only ones; for we have, at this time, what are called foſſile fiſh, which are dug up out of the ſands, near rivers; and as long ſince as in the times of Theophraſtus, they were thought to be ſo numerous, that he has written a whole treatiſe concerning them, which he has entitled *De Piſcibus in Sicco viventibus*, of thoſe fiſhes which live out of water: And Aurelius Severinus has republiſhed this, with additions, in the Latin language, at Naples, in 1655. Ariſtotle tells us, that the Cerian and Paphlagonian fiſhes wander about upon the dry ſands, and return into the water occaſionally: And George Pictorius relates the ſame of fiſh of the river Cherati in Judea. Rondeletius aſſents to the poſſibility of this in particular fiſhes, and adds, that *Eels* have all the requiſites for it; their ſlit for the gills being very narrow, and calculated to prevent any too ſudden or forcible appulſe of the external air, which is what kills other fiſhes on their lying out of water. Phil. Tranſ. N°. 238. p. 97.

Tho' the learned world at this time generally allows, that *Eels* are produced like other animals, by parents of their own kind, yet there remain many doubts, about the manner in which this is performed, ſome allowing the *Eels* to be like the generality of other animals of different ſexes, in the different individuals; and others affirming that they are all hermaphrodites, each having the parts of generation of both ſexes. Rondeletius affirms they are of different ſexes: And Mr. Allen, who has given a very curious paper concerning them, in our philoſophical tranſactions, is of the ſame opinion;

and both ſay, that the parts of the ſexes may be diſcovered, on a careful inſpection, and ſome found to be males, and others females; but theſe parts are, in both ſexes, they ſay, buried in a large quantity of fat, and they are of opinion, that hence proceeded the miſtake of Ariſtotle and his followers, who, not being able to find theſe parts, concluded that they did not exiſt at all.

Among thoſe who allow the *Eel* to be produced like other animals, from animal parents, which have the ſexes, ſome are of opinion that they are viviparous, and others, that they are oviparous; but a gentleman of our nation, Mr. Chartwynd, ſeems to have determined this great controverſy, by obſerving, that if the aperture under the belly of the *Eel*, which looks red in the month of May, be cut at that time, the young *Eels* will be ſeen to come forth alive, after the operation. Mr. Allen alſo affirms them to be viviparous; but his obſervation concerning the place of their conception, does not appear analogous to that care and induſtry of nature, in providing convenient receptacles for the fœtus; neither is it conſonant to reaſon, that when nature has provided an uterus in all animals, not only the viviparous, but the oviparous, and even in inſects, that the *Eel* and the ſwordfiſh ſhould be without this part, as Bartholine ſuppoſes, much leſs that the guts, which are appointed by nature for the ſecretion of nouriſhment, and expulſion of the fœces, and which are in continual motion to anſwer theſe purpoſes, ſhould be deſtined in one ſingle animal to the reception of a fœtus. This gentleman mentions a ſlender gland lying near the bowels, and, in all probability, this was the uterus. For Mr. Lewenhoeck, who took much pains in examining this fiſh, ſays, that he found an uterus, not only in ſome, but in every *Eel* he examined, and he therefore concludes *Eels* to be hermaphrodites; nay, he goes ſo far as to ſuppoſe, that there are no male parts of generation, of the common form of thoſe in other animals, but that the office of theſe is performed by a liquor analogous to the male ſeed of animals, which is contained in certain glands, ſituated on the inſide of the uterus itſelf.

Nature having, in all animals, hitherto diſſected, been found to have provided in the females not only an uterus, but alſo two tubes, which, from Fallopius, the perſon who firſt diſcovered them, are called Fallopian tubes, and which ſerve to convey the ovum from the ovary into the uterus, the ſyſtem of Mr. Allen, and thoſe others who ſuppoſe the bowels the ſeat of generation in *Eels*, is rendered highly improbable, by the want of ſuch parts as theſe. This gentleman obſerves, that he had ſeen the embryos within the parent *Eel*, both in the egg and animal ſtate; that the eggs were always found to lie on the outſide of the inteſtines, and the young *Eels* within them. Now, as we have no idea how theſe embryos ſhould get within the gut, from an egg on the outſide, any more than how an egg ſhould come in that place, the whole ſyſtem of this gentleman, though favoured by many people, ſeems built on ſo bad a foundation, as not to merit any longer the countenance of the world. It is probable, that all his obſervations were founded upon errors, for it is a very common caſe to find *Eels* ſubject to worms in their guts, ſuch as we have, and of all the kinds that we are ſubject to; ſome of theſe might be eaſily miſtaken by the author of this ſyſtem for embryo *Eels*; and poſſibly the eggs he deſcribes on the outſides of the bowels, might be no other than ſmall lumps of fat.

The conger, or ſea *Eel*, uſually grows to a very great bigneſs; but the common freſh water *Eel* ſeems intended to have been limited to a certain ſmall ſize; yet, at times, there have been caught ſome which have greatly exceeded this their ſeemingly ſtated limit. The common ſize of the conger, or ſea *Eel*, at full growth, is the length of nine or ten foot, and the thickneſs of a man's thigh; and, when of this ſize, they will weigh from thirty to forty or fifty pounds: Though Salvian ſays, they uſually do not exceed thirty. Strabo tells us of ſome of them growing to eighty pound weight; but, by what we ſee of them, there is reaſon to believe, that between twenty-five and thirty pounds weight ſeems their natural ſtint, at full growth, and that thoſe which ſo much exceed it are like the monſtrous common *Eels*, accidentally encreaſed to a preternatural bulk. Pliny and Solinus talk of *Eels* of thirty foot long; but the largeſt we find, even of our monſtrous ones, come greatly ſhort of that. The conger always has a ſort of barbs; and an *Eel* that has not thoſe, may always be aſſuredly known by that character alone, to be a true freſh water *Eel*, though ever ſo large. Of this kind the Thames, and ſome other rivers about London, ſeem to have furniſhed the largeſt of any part of Europe. Mr. Dale commemorates the taking of two of theſe, in the philoſophical tranſactions; the one near Crickſea in Eſſex, was five foot five inches long, and meaſured twenty-two inches round. The weight of this was about twenty pounds, which is the ſtint that Aldrovand gives to the freſh water *Eel*, ſaying, that they ſometimes, tho' very rarely, do come up to this, but that they never exceed it. The other was caught near Maldon, and was ſeven feet long, twenty-ſeven inches in circumference, and its weight was thirty pounds. Out of its back and belly there were taken five pounds of fat. This creature ſeemed to have been brought down the river by the violence of ſome land flood, and was in a wounded condition when taken by the fiſhermen, having a hurt upon its back, which it ſeemed to have got in paſſing through ſome mill. Both this and the other were evidently freſh river *Eels*: And, long ſince theſe, ſo lately indeed as in this preſent year 1748, one of theſe large *Eels* was taken at Limehouſe, where it was left on ſhore by the tide; it was five foot ſix inches long, and as thick as a man's thigh; its weight was twenty ſeven pounds.

The fine ſilver *Eel* may be catched with many ſorts of baits, and with great eaſe to the fiſher. Powdered beef is the very beſt bait for many places; next after this are lobworms, minnows, or other ſmall fiſh, and, in the place of theſe, chickens guts, and even fiſh garbage will do. The *Eel*, for the ſix winter months, remains conſtantly buried in the mud; and even in warmer weather, this fiſh ſeldom appears above the bottom by day-light, ſo that night is the beſt time for fiſhing for it. The hooks may be bated, and thrown into the water at night, and the ends of the lines faſtened to the ſhore; and one general line may have a great many other ſhorter ones, with each its hook tied to it, depending on it. When theſe are laid in over night, they may be left to themſelves afterwards; and when they are taken up in the morning, the *Eels* will be found hung. A very good method for large *Eels* is this. Take five or ſix lines, each of them about ſixteen yards long, and at every two yards ſpace make a nooſe, and at every one of theſe nooſes hang on a hook, faſtened to a ſhort line of ſtrong ſilk; ſome uſe wire, but ſilk will anſwer the purpoſe, and give the fiſh leſs ſuſpicion, bait the hooks with millers thumbs, loaches, minnows, and ſmall gudgeons; let the long line be drawn quite acroſs the deepeſt part of the brook or river, and the two ends faſtened down, with a peg driven faſt into the ground on each ſide: Theſe are to be laid in at night, and the ſportſman muſt either ſit up and watch them, or elſe be up very early to take them up, for otherwiſe many of the *Eels*, which were hung, will be got away again; and what is moſt provoking is, that thoſe are the largeſt which thus eſcape.

With proper management and attendance, there will ſeldom fail being three or four *Eels* on each line. When there are very large *Eels* in any place, the beſt bait is a moderate ſized roach: This muſt be faſtened to a ſtrong ſingle night-line, and the hook muſt be hid in the mouth of the bait.

Eels have been obſerved to move directly upwards, and ſo to get over perpendicular obſtacles ſeveral feet above the ſurface of the water. They ſlide thus upwards with as great eaſe, ſeemingly, as if they had been going along the level ground. See Phil. Tranſ. N°. 482. Sect. 8.

The dried livers and galls of *Eels* are recommended by Mr. Boyle to aſſiſt women in a hard labour. *Boyle*, Works abr. Vol. 1. p. 93.

Indian EEL, *Anguilla Indica*, in zoology, the name of the Eaſt Indian *Eel*, of which there are two kinds, the one all over ſpotted with brown, and the other of a fine yellow colour, ſtreaked with red. The fleſh of this is not accounted wholeſome. *Ray*'s Ichthyogr. app. p. 3.

Sea EEL, *Anguilla Marina*, a fiſh common under holes of rocks, about the ſhores in many parts of the Eaſt Indies. It is of a duſky brown colour, variegated with rhomboidal ſpots, not unlike thoſe on the ſkins of ſnakes. The anterior part of its body is thin and ſlender, the hinder part very thick; its noſe is long, its mouth large, and commonly gaping open, and its teeth very ſharp, but very ſmall. It grows extremely fat, and is very wholeſome and well taſted; yet thoſe who kill a number of them are ſaid to be affected with tremors, and ſometimes with a drowſineſs, which however goes off without farther miſchief. *Ray*'s Ichthyogr. app. p. 3.

Microſcopic EELS *in four paſte*. The long bodied animalcules, diſcovered by the microſcope in vinegar, ſour paſte, and many other ſubjects, have, from their figure, been generally diſtinguiſhed from the reſt of the microſcopic animalcules, by the name of *Eels*. Theſe, and the other kinds, have been, by the moſt judicious naturaliſts, ſuppoſed to be produced of the eggs of other animalcules of the fly kind, floating in the air. But thoſe in paſte are diſcovered to be viviparous animals, producing living creatures of their own ſhape; whereas, were the uſual opinion juſt, they ought, according to the common courſe of nature, in the larger inſects, to be in the condition of flies, while in the ſtate of maggots, or butterflies in that of caterpillars, never producing their own likeneſs in theſe ſtates, but after ſeveral changes paſſing into flies.

On cutting one of theſe paſte *Eels* in two acroſs the middle, a long and ſlender tube is ſeen to ſhoot out from each of the divided ends, and a number of ſeeming ova iſſue from this; but theſe, examined ſtrictly, appear to be living *Eels* of different growths, and all included in their proper membranes; ſome move themſelves but ſlowly, while others coil and uncoil themſelves pretty briſkly, and the moſt mature are ſeen to make ſtrong efforts toward the diſengaging themſelves of their enveloping membranes, and at length ſucceed, and ſwim at liberty, like their parent animal. The tube thruſt out each way, on dividing the body, is properly the uterus of the animal. This, in the larger *Eels*, is eaſily ſeen to be full of dark ſpots, which are the embryo *Eels*, and theſe

theſe ſpots, with care, are alſo to be obſerved in the young ones, as ſoon as produced. Phil. Tranſ. N°. 478. §. 13.

EELS in vinegar. See VINEGAR.

EEL-*Fares*, is uſed for the fry, or brood, of *Eels*. Stat. 25 *Hen.* 8.

EEL *Pout*, in ichthyology, the Engliſh name of the muſtela fluviatilis, a fiſh of the gadus kind, according to Artedi, and diſtinguiſhed from the others by the name of the bearded gadus, with two fins on the back, and with both jaws of the ſame length. See GADUS.

This fiſh is caught in the Trent, and many other of our rivers, and in ſome places called a barbot.

The name is derived from the German name *Aelput*, which is, in that language, the name of the ſame fiſh, and is compounded of the words *Ael* an *Eel*, and *Puit*, or *Pudd*, a frog, ſo that the Engliſh word ſhould properly be the *Eel-frog*. It is commonly, when full grown, about fourteen inches long, and is ſlender in proportion to its length, and ſomething of the *Eel* ſhape, but too ſhort for its thickneſs, to be truly ſo. It is very ſoft and ſlippery to the touch, like the *Eel*, and is covered either merely with a ſlimy matter, or elſe with extremely minute ſcales. It is of the colour of a tench; its head is large and flat, its noſtrils ſmall and round, and its jaws beſet with very ſmall teeth, which make them feel rough like a file, and there is, beſide theſe, a ſemicircular ſpot in the palate, rough in the ſame manner. There are two fins on the back, and one on the belly, reaching from the anus to the tail, and it has a little beard from the extremity of the lower jaw, and between the noſtrils and end of the ſnout two others, and ſeven gills. *Willoughby*'s Hiſt. Piſc. p. 125.

EFFEMINATE, *Effeminati*, according to the vulgate, are mentioned in ſeveral places of ſcripture. The word is there uſed to ſignify ſuch as were conſecrated to ſome profane god, and proſtituted themſelves in honour of him.

The Hebrew word *Kadeſh*, tranſlated *Effeminatus*, properly ſignifies conſecrated, and hence was attributed to thoſe of either ſex, who publickly proſtituted themſelves, in honour of Baal and Aſtarte.

Moſes expreſsly forbids [a] theſe irregularities among the Iſraelites; but the hiſtory of the Jews ſhews, that they were notwithſtanding frequently practiſed [b].—[[a] *Levit.* xxiii. 18. [b] *Calmet.* Diction. Bibl. in voc.]

EFFERVESCENCE (*Cycl.*) ariſes from an inteſtine motion, excited in various fluids, either by the mixture of fluids with others of a different nature, or by dropping ſalts, or powders, of various kinds, into fluids. The two moſt common oppoſites, acids and alcali's, on being mixed, cauſe a great ebullition or frothing, but no great heat; but the ſolutions of ſome metals in aqua fortis, cauſe intenſe heat, and emit flame. The mixing aromatic oils with acid mineral ſpirits, actually kindle, and burn with violent exploſions; and ſome vegetable ſubſtances, putrefying with moiſture, will ſometimes heat ſo, as to kindle what lies dry about that part of the heap where the putrefaction happens. Thus heaps of dung will grow hot, and haycocks often kindle into actual fire. Phil. Tranſ. N°. 476. p. 475.

The principal bodies in which *Effervеſcences* happen, are, 1. Native vegetable acids, as moſt juices of trees, ſhrubs, and plants, that run in the ſpring: Moſt juices of unripe ſummer fruits: Particular juices, when ripe, as thoſe of oranges, lemons, citrons, tamarinds, ſorrel, wood-ſorrel, and crabs; fermented vegetables, as the meals when they turn ſour, Rheniſh and Moſelle wine, and tartar; vegetables twice fermented, native and diſtilled vinegars; the acids of animals, from tartiſh or acid vegetable aliment; as in the chyle, ſour milk, whey, buttermilk, and the whey thereof. 2. The native foſſile acids, as the acid of ſulphur, allum, or vitriol; or theſe acids, as they lie concealed in ſulphur, or vitriol ſtones, or as thence extracted by a violent fire, or a ſtronger acid, as in the ſpirit of nitre, ſalt, allum, vitriol, or ſulphur. 3. True fixed alcalies, made of any vegetable matter, by burning; the more volatile alkali's, whether ſpontaneous, as in garlick, onions, ſcurvygraſs, muſtard, &c. produced by putrefaction, from animal or vegetable ſubjects, or procured from the ſame by diſtillation and burning. 4. Certain bodies, improperly called alkalies, only on account of their agreeing with the genuine alkalies, in fermenting with acids; theſe are many of the boles, and other earths, bones, chalk, corals, crabs-eyes, horns, hoofs, and nails of animals, pearls, ſhells of fiſh, &c. ſtones, and teeth. 5. The ſeven metals. 6. The ſemi-metals, antimony, biſmuth, lapis calaminaris, hæmatites, lime, and the like. *Boerh.* Chem. pt. 2. p. 340.

Hence we have four general rules. 1. That the bodies of the firſt claſs almoſt conſtantly make an effervеſcence with thoſe of the third and fourth, either ſooner or later, and with more or leſs ſtrength, as they are in themſelves weaker or ſtronger; this *Effervеſcence* continues till the point of ſaturation is obtained, and then ceaſes, and at that time uſually the acrimony both of the one and the other of the ſubſtances is ſoftened. 2. The bodies of the firſt claſs make an *Effervеſcence* with thoſe of the fifth, though only ſome with others, and not univerſally; ſome do this with more, and others with leſs ſtrength, and, at the end, vitriols are uſually produced. 3. The bodies of the firſt claſs act in the ſame manner with thoſe of the ſixth. 4. The bodies of the third, fourth, fifth, and ſixth claſſes, being mixed together, are ſcarce found to make any *Effervеſcence*, hence acids are found to have this effect, in particular along with the reſt, though here it is limited. The beſt ſpirit of vinegar, poured upon oil of tartar *per deliquium*, makes no *Effervеſcence* at firſt, but it does afterwards, and, in doing it, weakens the alkali.

Pure volatile alkali, when freed from its oil, makes an *Effervеſcence* with diſtilled vinegar, but much more cold than heat ariſes in the ebullitions of this kind; whereas the generality of other *Effervеſcences* produce heat in various degrees, from the leaſt ſenſible warmth, up to actual flame. A dram of oil of cloves mixed with two drams of Glauber's ſpirit of nitre, raiſes a thick ſmoak, and in the midſt of it a ſtrong red flame, and the matter is reduced to a dry ſpungy maſs, in this caſe the *Effervеſcence* is not made with acid and alkali; but with acid, and a very rich oil. There are alſo too hard and cold bodies, *viz.* iron and ſulphur, which being ground together, and made into a paſte with water, make a ſpontaneous *Effervеſcence*, and will even produce actual fire and flame. *Boerh.* Chem. pt. 2. p. 340.

EFFERVESCENCE, in vintage, a term appropriated by Portzius and others to ſignify that working of wine, which is by ſome, though improperly, called fermentation, thereby confounding two very different things. Fermentation, according to theſe authors, is nothing elſe but the action and reaction of the internal parts of the acid and alkali of the fluids, by which the ſpirits are ſeparated without precipitation; whereas, they ſay, by *Effervеſcence* there are no ſpirits ſeparated, ſo that all fermentation is done by means of *Effervеſcence*; but all *Effervеſcence* does not amount to fermentation. Fermentations are properly the mutual ſtrugglings between contrary principles, as between acid and alkali, or the like; but *Effervеſcences* will happen between principles of the ſame kind, provided one be much ſtronger than the other. Thus a ſtronger acid poured upon a weaker, will raiſe an *Effervеſcence*, but no fermentation. The *Effervеſcence* of wine is not however of this kind, but the acid and alkali which are in them, muſt raiſe this by their action upon one another, the alkaliſate parts combating with the acid ones, till they have wholly ſated them, and then the *Effervеſcence* ceaſeth.

It has been obſerved by many, that wine in the caſks will always efferveſce, more or leſs ſtrongly, at the time of the bloſſoming of the vines. This has been ſuppoſed by the vulgar to be owing to ſomething of ſympathy, or ſuch hidden cauſes; but it is only owing to the heats of that ſeaſon which ſet the two ſalts at work upon one another. *Portzius* de Vin Rhenan.

EFFLUENT *Fever*, is ſometimes uſed for an inflammatory fever. Med. Eſſ. Edinb. abr. Vol. 2. p. 461.

Dr. Morgan propoſes to cure ſuch by ſweats raiſed by low cooling drinks.

EFFLUVIA (*Cycl.*)—The earth ſends forth *Effluvia* and ſteams in great abundance, and many things, attributed to other agents, are really performed by them. Dr. Woodward has very juſtly attributed great effects to them on foſſils of many kinds; and it is poſſible many more of the preſent appearances of ſubterranean bodies may be owing to them, than are at preſent imagin'd. The figures and delineations on ſtones, in form of trees and ſhrubs, have often their origin from theſe *Effluvia*, getting into the cracks of them; and it is poſſible that the ſtalactitæ, which we find on the roofs of caverns, may be in great part alſo formed by their means. Phil. Tranſ. N°. 169. p. 920.

In ſome places however we have inſtances of their effects on the ſurface of the earth. The many bubbling or boiling fountains which we ſee in England, and other countries, are principally occaſioned by the forcible burſting up of theſe *Effluvia* through the mud and water. Our burning well, in Lancaſhire, has no peculiar property in its water, but only an inflammable vapour riſes through it, making it boil and bubble on the ſurface of the water; and this vapour will, as ſoon as ſet at liberty from the water, take flame at a lighted candle. The famous boiling ſpring near Paroul, in the neighbourhood of Montpelier, which was ſo long ſuppoſed to be of a peculiar nature, was found by Mr. Ray to be but common water, through which a vapour of the ſame kind made its way. This has been ſince alſo farther confirmed by Dr. Robinſon, who obſerved that all the water thereabouts was more or leſs affected by this bubbling; the vapour making its way thro' the whole ſurface of the earth there. Water, taken up with an earthen veſſel, had none of this property, nor any peculiar taſte or virtue, and the ſand, or mud, from the bottom, had no effect upon other water. But what is a farther proof of the whole appearance being owing to *Effluvia* from beneath is, that the cracks of the earth all thereabouts perſpire ſtrongly a vapour of this kind; ſo that if little ſtraws, or ſticks, be laid upon the ſurface, they will be blown up; and if a hole be dug in the ground, in any part, and common water poured into it, it will boil up and bubble in the ſame manner as theſe

ſprings. The like ſort of ſprings are common in Switzerland, and ſome other places. Theſe are known to be owing to *Effluvia* from beneath, by the water of them being cold; but there are others which actually boil with an addition of heat, and are hot enough to boil an egg; ſuch are the famous boiling fountains of Solfatara near Naples, and ſome others; and in theſe it is evident, that ſomething elſe beſide cold *Effluvia* is concerned. Phil. Tranſ. N°. 169. p. 923.

From obſervation of theſe various ſprings, it is eaſy to find, that there muſt be a manifold variety in thoſe exhalations which produce the effects in them, ſome of them being cold and dry, and merely reſembling wind, as is the caſe of that of Peroul. Some being of an inflammable and bituminous nature, and yet actually cold, as ours in Lancaſhire, and ſome naturally hot, and impregnated with various principles, as thoſe in the ſweating vaults and caverns, and thoſe in the mountains of Italy, and in the vulcano's of Bajæ, Cuma, and Puzzoli. Others are of a poiſonous nature, containing particles of arſenic, ſulphur, and other minerals, that either kill or ſuffocate; theſe and other ſuch *Effluvia* may eaſily be ſuppoſed to influence the waters, through the beds of which they paſs.

It is very probable, that the mineral ſubſtance, called pyrites, may contribute greatly to the effects of theſe ſteams, for it is frequent almoſt every where, and when it has lain in ſuch places as it can be diſſolved in, it readily imparts its principal ingredients, which are ſulphur and vitriol, either to air or water, or to whatever elſe paſſes through, or comes into contact with it. And it is obſerved that the pyrites is found in great plenty all about Veſuvius, Solfatara, and other places where vulcano's are frequent. Phil. Tranſ. N°. 169. p. 926.

The wonderful extenſion of *Effluvia*, and the ſmall diminution of the body they iſſue from, is one of the ſtrangeſt problems in phyſicks. Mr. Boyle refers the doctrine of *Effluvia* to ſeveral heads, as to the ſtrange extenſibility of ſome bodies, while their parts yet remain tangible; the multitude of viſible corpuſcles that may be afforded by a ſmall quantity of matter; the ſmallneſs of the pores at which the *Effluvia* of ſome bodies will get in; and finally the great quantity of ſpace that may be filled as to ſenſe by a ſmall quantity of matter, when rarify'd or diſperſed. The efficacy of ſeveral *Effluvia*, and their acting on one another, is a ſecond thing as obſervable in regard to them. This is done by either the great quantity of corpuſcles emitted, or their penetrating or pervading nature, or elſe by their celerity, or other modification of their motion, or by the congruity or incongruity of their bulk and ſhape to the pores of the bodies they are to act upon; or by the motions of one part upon another, which they excite or occaſion in the body they work upon, according to its ſtructure; and finally by the fitneſs and power which they have to make themſelves be acted upon by the more catholic agents of the univerſe, which then aſſiſt them in their working.

The determinate natures of *Effluvia*, according to the principal inſtances we have of them, are reducible to theſe three heads: 1. That theſe *Effluvia* being, by condenſation, or otherwiſe, reunited, they appear to be of the ſame nature with the body that emitted them. 2. Their determinate nature may be ſometimes diſcovered by the difference that may be obſerved in their ſenſible qualities, foraſmuch as thoſe *Effluvia* which are endowed with them proceed from the ſame ſort of bodies, and yet thoſe afforded by one kind of bodies being in many caſes manifeſtly different from thoſe which fly off from another, this evident diſparity in their exhalation argues, that they retain diſtinct natures, according to the nature of each body from which they proceed. 3. We may diſcover this different nature of *Effluvia* from their effects upon other bodies than the organs of our ſenſes, conſidering that the effects which certain bodies produce on others by their effluviums, being conſtant and determinate, and always different from thoſe which other agents produce by their emiſſions on the ſame or other ſubjects, the diſtinct nature of the corpuſcles, emitted on this occaſion, may be ſufficiently judged of, were it only from this. *Boyle* on Effluvia.

EFFRACTURA, a word uſed by Ambroſe Parey for a peculiar ſpecies of fracture of the ſkull, in which the bone is at once broken and depreſſed. *Hofm.* Lex. in voc.

EFFRONTES, in church hiſtory, a ſect of heretics who ſcraped their forehead with a knife till it bled, and then poured oil into the wound. This ceremony ſerved them inſtead of baptiſm. See BAPTISM.

They are likewiſe ſaid to have denied the divinity of the Holy Spirit.

EFFUSION (*Cycl.*)—EFFUSION *of blood*, *effuſio ſanguinis*, in our old writers, is uſed for the mulct, fine, or penalty, impoſed for the ſhedding of blood. This the king uſed frequently to grant to lords of manors. Among others it was granted to the abbot of Glaſtenbury.

EFT, or EFF, in zoology, the name of a creature very common in all parts of England, and called alſo the *Newt*, and the *Swift*, and by others the common lizard, *lacertus vulgaris*.

The beak of this creature is oval and obtuſe, its back of a ruſty iron colour; its feet have each five toes, and are armed with very ſharp tho' ſmall claws. That toe which is in the place of the forefinger with us is the longeſt of all, and that which anſwers to our thumb is placed lower. *Ray*'s Syn. Quad. p. 264.

We have ſeveral ſpecies of this animal with us. 1. The common land *Eft*, with the black ſpotted belly. 2. The ſnake-like *Eft*, which is frequent in our heaths. 3. The ſmall brown land *Eft*. This is very ſcarce. 4. The yellow ſcaly land *Eft*, deſcribed by Plot in his hiſtory of Staffordſhire. And 5. The brown and black ſpotted water *Eft*. *Plot*'s Staff. p. 252.

The water *Eft* affords an excellent opportunity of ſeeing the circulation of the blood by means of the microſcope, particularly of the ſolar one. By this apparatus the veſſels are ſeen beautifully delineated on the ſkreen; and the tide of blood, in the large ones, is equal to that of the ſtream of water which is ſhewn, in hydroſtatical experiments, thrown out of a veſſel by condenſed air. In either of theſe caſes, you can ſee no appearance of ſeparate drops or globules, but the whole forms one continued body. In the leſſer veſſels the globules are ſeen paſſing along very ſwiftly, yet evidently ſeparate one from another: They are uſually of an oblong form, and reſemble what are called ant's eggs, and ſometimes they are ſeen continued into a ſort of chains, or like the beads of a necklace, each touching the other at the ends. But in this manner of obſerving the globules, there is never ſeen any comminution of them; and, in the common way, there is never obſerved any thing of this change of the ſhape of the globules: But every thing, in this manner of viewing them, is magnified to ſo great a degree, that it is no wonder the leaſt departure from the globular figure is eaſily ſeen in the narrow paſſages. Theſe globules are ſeen ſtanding almoſt ſtill for ſome time, and afterwards forming themſelves into a longer and narrower ſhape, till they have got by this ſtrait part of the veſſel, and there aſſuming their own form again, and going on with the ſame ſwiftneſs. But the moſt remarkable phænomenon of all, is the ſhape and odd motion of ſome of them near the extremity of the edge of the tail.

Theſe exactly reſemble the tadpole, both in figure and motion, except that they have not quite ſo much of the riggling motion of the tail as thoſe animals have, when in the water. The round part, or head of the globule, as it may be called by way of diſtinction, has exactly the ſame motion, and the whole globule greatly reſembles an animal of that figure roaming about for prey; and frequently turning to the right and left, as the animalcules in pepper water do; and they ſometimes will ſtop ſuddenly in the midſt of their courſe. It would be very natural for a haſty obſerver to declare theſe to be real animals, living in the veſſels of the creature, among the blood, as the animalcules do in the ſemen; but it ſeems not difficult to account for all the motions we ſee in them, on the mere principle of their being globules, without their having any ſort of animal life, and the ſtate of the blood, at that time conſidered, together with the ſtate of the veſſels, the effect will be eaſily conceived to proceed from plain and natural cauſes. It is to be obſerved, that the blood, at the time it found theſe globules, was near ſtagnating; and it will be found by experiment, that a drop of common water, on a ſmooth ſurface, as on a plane of glaſs, placed in a ſlanting direction, will move down it ſlowly, and with a ſort of tail, and will not run ſtrait down, but with the ſame ſort of meanders.

It is remarkable, that, in the tail of this animal, there ſeem a greater number of veſſels than are immediately neceſſary to the circulation of the blood; for, when thus examined, there will be often ſeen two parallel veſſels, in one of which only the circulation is perform'd, and this ſucceſſively in one and the other of the veſſels, the tide often leaving the one wholly empty, that had juſt before been full and circulating in the other. Phil. Tranſ. N°. 460. p. 728.

EFT *Stones*, in the materia medica of the American Indians, a name given to certain ſtones, ſaid to be found in the ſtomach of a certain ſpecies of water newt, or *Eft*, in the manner of the bezoars in other animals. The waters of Braſil, Cuba, and Mexico, abound with this ſpecies of *Eft*; but it does not ſeem well atteſted, that this ſort of ſtone was ever found in any of them by thoſe who have diſſected numbers of them, on purpoſe to ſearch for it. We have in Europe ſwallow ſtones, and other ſuch things, whoſe names, and their fabulous hiſtories, would import their being produced in animals. As many ſwallows have been deſtroyed in England, in looking for theſe ſtones, as newts in Mexico in looking for thoſe; and, by the appearance of the American as well as the European ſtones, they both ſeem to be dug out of the earth, and to have been once the teeth, or other parts, of fiſhes. *Redi* Experim.

The virtues of the *Eft-ſtone* of Mexico are celebrated by Ximenes, and all others who have been upon the ſpot. It is ſaid to be a certain remedy for the gravel, and all other nephritic complaints, and even to break and diſſolve the ſtone, when already concreted in the bladder. But this account of its virtues ſeems as improbable as that of its origin. Redi try'd theſe and many other ſtones of famous character

among writers, and found no effect in any of them. Theſe *Eft-ſtones* never produced any viſible effect in his trials, in nephritic complaints, nor the eagle-ſtone in womens labour, nor the ſtones ſwallowed by Caymans in quartans, tho' Menardes looks on theſe laſt as infallible in this caſe.

EGESTION, in medicine, the ſame with dejection.

EGG (*Cycl.*)—We have an account from no leſs an author than Wormius, of a woman's laying two eggs: They were brought into the world, he ſays, with a live child, by the common labour pains, and were of the ſize of a common hen's egg. The women, who attended the lying-in woman, broke the firſt, and found it to have a white and a yolk, like a hen's egg; but the other was preſerv'd whole, and given to Wormius, to enrich his collection of curioſities, where it remained ſome time, and was afterwards given to the king of Denmark, and preſerved in his muſæum at Copenhagen. There is at this time ſhewn there a ſeeming egg; but whether this was the real egg voided by the woman, or whether the ſtory of the other, which was broken, having a regular white and yolk, was true, it is not eaſy, at this time, to determine: Probably there has been either ſome miſtake, or ſome fallacy, in the affair.

The learned Mr. Monro has given us a ſummary of ſeveral obſervations made by the curious about eggs, and of the changes made in them by incubation, in order to determine the queſtion about the nutrition of the fœtus in oviparous animals. See Med. Eſſ. Edinb. vol. 2. art. 10.

Some part of the humours of the egg eſcapes thro' the ſhell, and is not ſupplied by any thing from without, as evidently appears from an egg's becoming ſo much ſpecifically lighter, as to ſwim in water after incubation, tho' it ſunk in it when recent.

The eggs of the ſmaller animals are not leſs taken care of by the female that lays them, than thoſe of larger ones. In the butterfly claſs, the eggs have no increaſe of bulk to arrive at, in the body of the female, all they have there to wait for, is to be fecundated by the male, and as ſoon as this is done, they are always ready to be laid. The female takes a proper time to lay them, and not only their number, but the nicety with which ſhe arranges them, and prepares for the family that is to be produced from them, makes this no ſmall ſpace. This is indeed the whole buſineſs of her life, and when they are all laid, ſhe dies.

The female does not depoſit them on any plant at random, on which ſhe happened to be placed when the male coupled with her, but ſearches out ſuch a ſpecies of plant for the leaving them on, as is what ſhe loved when in the caterpillar ſtate, and what the young caterpillars to be hatched from them, will be able to feed on, that they may find food ready for them at the moment of their birth. She does not ſcatter them about irregularly, and without order, but ſhe diſpoſes them with perfect ſymmetry, and faſtens them one to another, not by their own glutinous nature, but by a viſcid liquor, which ſhe ſeparates from her own entrails for that purpoſe. In many ſpecies alſo where the hinder part of the body of the female is covered with long hairs, ſhe, by degrees, throws off all thoſe hairs, and with them makes a neſt for the eggs ſhe is laying, where they are kept very ſoft, and ſafely, till the time of their hatching. Memoirs Acad. Scienc. Par. 1736.

The eggs of butterflies are of very different ſizes, according to the ſpecies; they are alſo of many different figures, ſome are ſpheric, others ſegments of ſpheres, others conic, in different forms and degrees; nor is this all, their ſurfaces are very different alſo in the different kinds. Some are elegantly wrought, as it were, ſome dented, and others more deeply notched at the ſides, and others channell'd or furrow'd all over; in ſhort, the moſt ingenious artiſt could ſcarce contrive ſo many various ornaments as there are on theſe eggs, all which alſo are inviſible to the naked eye, being diſcoverable no way but by the microſcope.

Preſervation of EGGS. Mr. de Reaumur, of the Paris academy, thinking nothing, that could be a public benefit, beneath the cognizance of a philoſopher, beſtowed conſiderable pains on the finding a method of preſerving eggs for a long time, and ſuceeded at length ſo far in it, as to be able to produce eggs of months, nay years old, which taſted as freſh and well as if they had been laid but the day before. The egg always is quite full, when it is firſt laid by the hen, but from that time it gradually becomes leſs and leſs ſo, to its decay; and however compact and cloſe its ſhell may appear, it is nevertheleſs perforated with a multitude of ſmall holes, tho' too minute for the diſcernment of our eyes. The effect of theſe, however, is evident by the daily decreaſe of matter within the egg, from the time of its being laid; a fluid matter is continually perſpiring thro' theſe perforations of the ſhell, which occaſions the decay, and this is carried on in a much quicker manner in hot weather than in cold. To preſerve the egg freſh, there needs no more to be done, than to preſerve it full, and ſtop its tranſpiration, and the plain and rational method of doing this, is by ſtopping up theſe pores, thro' which the matter tranſpires, with a matter which is not ſoluble in watery fluids, and therefore cannot be waſhed away by the matter perſpired by the egg; and on this principle, all kinds of verniſh, prepared with ſpirit of wine, will preſerve eggs freſh for a long time, if they are carefully rubbed all over the ſhell. This might ſeem to moſt people a very common and cheap ſubſtance, for this purpoſe, but the misfortune is, that in country places, where it ſhould be put in practice, no ſuch thing is to be had, and the poorer ſort of country people are not eaſily brought into the uſe of any thing they are not uſed to.

To obviate the difficulty ariſing from this, Mr. Reaumur thought of ſubſtituting in the place of verniſh ſome other ſubſtance, more common among theſe ſort of people, and ſoon found that another ſuhſtance, which is very cheap, and every where to be had, would very well ſupply the office of verniſh; for experiments proved, that any hard fat would have the ſame effect. Mutton fat may every where be had, and eggs carefully rubbed over with this, will keep as long as thoſe coated with verniſh. Common tallow, of which candles are made, ſerves equally well to the ſame purpoſe; but this might breed a diſtaſte in nice people; and the beſt of all fat for this purpoſe is found to be a mixture of that of mutton and of beef, theſe ſhould be melted together over the fire, and ſtrained thro' a linen cloth into an earthen pan; and a pot of five or ſix pounds of this may eaſily be kept in a farm-houſe, and will ſerve for a vaſt quantity of eggs. When it is to be uſed, the pan is to be ſet over a gentle fire till the whole is melted, which is done in a few minutes, and when thoroughly melted, an egg is to be dipped into it, and immediately taken out again, and it is then in a ſtate to keep perfectly freſh more than a twelve-month. The fat continues fluid a long time, and a great number of eggs may be ſucceſſively dipped into it, and it will ſerve again at other times for great numbers of others. Memoirs Acad. Scienc. Par. 1735.

The only difficulty attending this method is, that the eggs cannot eaſily be ſo plunged into the fat, as that all their ſurfaces ſhall be covered by it; for if they are held in a pair of pincers, the parts of the egg where the pincers touch will be bare; but this may be remedied by uſing ſuch pincers as touch only in ſmall points, and theſe bare ſpaces may eaſily have a little of the melted fat rubbed over them with a feather, or a pencil; or the eggs may be ſuſpended by a loop at the end of a thread, and, by that means, plunged in, and the thread being then coated over with the fat as well as the ſurface of the egg, will preſerve that part which it covers, as well as the coat of fat will the reſt. The great care is to uſe this means while the eggs are perfectly freſh; it ought indeed to be done on the very day when they are laid, for if the evaporation is begun, and the empty ſpace once made, there is room for a fermentation, which never terminates but in the deſtruction of the egg.

There is one advantage in this uſe of fat, rather than verniſh, which is, that the eggs rubbed over with it boil as quick as if nothing had been done to them, the fat melting off as ſoon as they touch the hot water; whereas the verniſh, not being ſoluble even in hot water, only becomes moiſtened by it, and ſtill hanging about the egg, prevents the tranſpiration of juices, neceſſary to bring the egg to that ſtate in which it is to be eat. When the egg, which has been preſerved by fat, is taken out of the water, there remains very little fattyneſs upon it, and what there does is eaſily wiped off with a napkin, the egg is as nicely freſh as if laid but the day before, and no palate can diſtinguiſh the leaſt taſte of fattyneſs in it.

The method of preſerving them by means of fat, is greatly preferable alſo to that by verniſh, when they are intended for putting under a hen to be hatched. So long as the egg remains in the ſtate of a freſh one, the embryo lives, either of the methods of preſerving them will therefore ſucceed ſo far as to keep the embryo ſtill living; but, when the hen ſits upon them, the warmth of her body cauſes a tranſpiration of their juices, which is eſſential to their hatching, and this cannot be done through the adventitious coat of fat or verniſh; but the fat eaſily melts off by the heat, while the verniſh remains on, and much impedes the progreſs of the chicken. If the heat of the body of the hen ſhould not be thought ſufficient to melt off the coat of greaſe, it may eaſily be taken away by dipping the egg in water, made juſt ſo warm as to melt the fat, without at all affecting the inſide of the egg, which cannot be done in regard to the verniſhed ones. Memoirs Acad. Scienc. Par. 1735.

There is one great advantage in this manner of preſerving eggs, which is, that we may thus have the eggs of foreign fowls preſerved upon the ſpot, and ſent over to us, which will be readily hatched by ſetting them under a hen, and will afford us a great variety of the birds of value from other countries, in the eaſieſt and moſt natural way, and, thus hatch'd with us, they will be much more likely to live, than if brought over alive. Eggs are infinitely more eaſily brought over in ſhips, than birds, as requiring, when thus managed, no care but a ſafe package; whereas the birds muſt be carefully watched, and fed, and very frequently they die, in ſpite of all the care that can be taken of them. Many very beautiful and valuable birds might thus be naturalized among us; and as we have already been able, without this ready means, to make paroquettes and Canary birds breed with us, there is no doubt

doubt but that we might, by this better way, breed many of the hardier birds, as the China and Egyptian hens, the partridges of other nations, as well as their pheaſants, and perhaps many other delicate fowls, of which we have not yet ſo much as the names with us. Theſe would eaſily be hatched with us by their eggs thus preſerved, and placed under ſetting hens, and when thus hatched in any conſiderable number, there is no doubt but that the males and females among them would propagate their ſpecies, and perpetuate themſelves among us, as the turkeys, and many other birds, originally of foreign extract, have at times done.

Hard fat is, of all the preſervatives of eggs, that which may be had more eaſily every where, which is very cheap, and which eaſily comes off from the egg; but it is very certain, that any matter which can prevent the tranſpiration of the egg, will equally well preſerve it; it is only neceſſary, that the ſubſtance uſed ſhould be naturally hard; oil, for inſtance, if rubbed over eggs, would, unqueſtionably, in a great meaſure, ſtop their pores, and prevent tranſpiration; but oil, being a fluid, would never remain upon every particular part as it ought to do, to preſerve it, and even the act of tranſpiration of the juices would be ſufficient to diſlodge the thin coat of oil, and make their way through it. Wax, or a mixture of wax and pitch, or reſin, are able to preſerve the egg as well as fat, but they are dearer, leſs ready at hand, and do not come ſo eaſily off from the egg in the dreſſing. All the aqueous gums, as gum arabic, and iſinglaſs, will preſerve eggs freſh much longer than they would naturally remain ſo, but not ſo long as the before mentioned ſubſtances. Memoirs Acad. Scienc. Par. 1735.

This method of preſerving is not ty'd down to eggs alone, but may be of great uſe in keeping all ſorts of ſubſtances where an internal fermentation is feared. Mr. Reaumur try'd on bodies of many different kinds, and found it ſucceed in all.

Artificial Method of hatching EGGS. See HATCHING.

Ant-EGGS. See the article ANT.

EGGS *of Flies*. After the congreſs with the male, the female fly is ſeldom ſo much as twenty-four hours before ſhe begins to depoſit her eggs on ſome ſubſtance proper to give nouriſhment to the worms that are to be produced from them.

Theſe eggs in general are white and oblong, but there are ſome of them which are ſingular, and vary from this form. The deſcription of one ſpecies of theſe may give an idea of the reſt, and it may not be improper to take, for this purpoſe, thoſe of the eggs of the fly found on hog-dung, and on other ſuch matters. This fly is of the claſs of the great blue fleſh fly, but differs from it in many particulars. Its body is more round, and a little hollowed on the belly ſide, eſpecially that of the male. The hinder end of the male is bent alſo into a ſort of hook. The wings croſs one another on the body, and exceed it in length. The male is yellow, often of a very beautiful, and ſomewhat reddiſh yellow. This colour is principally owing to a multitude of hairs with which the body is covered. The corcelet is of a paler yellow than the body, and has ſome ſlight tinge of brown with it. It has only a number of black hairs on it, fewer, and placed more diſtant than thoſe of the body. The female has much fewer hairs, and is browner than the male. *Reaumur*, Hiſt. Inſ. v. 4. p. 376.

Two pairs of theſe flies having been taken in the month of October, and ſhut up in a box, with a quantity of hog's dung, on which they were found, the females ſoon began to depoſit their eggs.

The eggs of this ſpecies are white and oblong, like thoſe of the great blue fleſh fly, but their figure has notwithſtanding ſomething very ſingular in it. At one end of each of thoſe eggs there are two little wings, which are ſeparated from one another in the manner of two horns, theſe do not reach beyond that end of the egg, and have their inſertion between that end, and the middle of the egg. Ibid. p. 377.

Thoſe wings ſeem formed of the ſame membrane, which makes the outer covering of the egg, but they ſeem to have no buſineſs to contain any part of the ſubſtance of the egg, or any thing neceſſary to the life of the embryo worm. The uſe of theſe wings, however, will be eaſily diſcovered, when we conſider that the fly, as ſoon as ſhe has laid them, always thruſts them into the dung: This is neceſſary to the future hatching, as the coat of the egg muſt neceſſarily be kept ſoft, otherwiſe the embryo could never force its way out of it. It is eaſy to conceive alſo, that if the whole egg were thus buried, the creature would be ſuffocated in the ſubſtance it was buried in, as ſoon as hatched. Nature has therefore ſo provided for its ſafety, that a part of the egg only ſhall be immers'd in the matter, and kept moiſt, and part remain out. This great proviſion is made by theſe wings, for the fly makes the egg enter the dung as ſhe lays it. It enters eaſily at its ſmaller end, which is the part firſt protruded from her body; but when it comes to be immerſed as far as theſe wings, the reſiſtance encreaſes, and the upper part of the egg remains open to the air. Ibid. p. 378.

The eggs are but a little time in hatching, and the growth, and all the changes of the animal, take up but a little time. The creature is found to make its way out of the upper part of the egg, and it is not more than three weeks from the laying the egg that is taken up, before the creature is ſeen in form of a perfect fly; if a female; and ready to depoſit hers. Ibid. p. 379.

Among the butterfly claſs, the female has but one congreſs with the male, and immediately after it begins to depoſit her eggs, and continues ſo doing, without interruption, till ſhe has finiſhed; but it is much otherwiſe with the two winged flies, for they, after having laid one ſet of eggs, have repeated congreſſes with the male for ſeveral days, and, after every one of theſe, lay a new ſet. Ibid. p. 380.

The eggs of the different ſpecies of the two winged flies, are of very different figures, and doubtleſs the great author of nature has had reaſons for allotting the peculiar form of each, tho' we cannot always determine what thoſe reaſons were.

Some ſpecies there are which faſten their eggs to the ſides of veſſels of water, theſe all lay oblong eggs, ſome of them, however, are perfectly ſmooth in all parts, and thoſe of other ſpecies ſmooth only on their inner ſurface, and ridged longitudinally on the other. What is alſo the more remarkable in theſe, is, that they all have a fine thin flake running down all along the two ſides, diametrically oppoſite, and theſe two bands ſurrounding the whole egg in this manner, have much the appearance of a caſe, and give the egg the appearance of being encloſed in a paper frame. 'Tis probable, that the uſe of this frame is to hold the body of the egg the better, faſtened againſt the veſſel; and probably thoſe eggs which have it not, are depoſited from the body of the female fly with a viſcous matter about them, in ſufficient quantity to faſten them on without this aſſiſtance. Ibid. p. 381.

Some eggs of the fly kingdom there are, which muſt neceſſarily be held faſt to ſome other body, in order for the worm to be able to make his efforts toward the opening of them, without carrying them away; and ſome of the ſpecies require much more ſtrong attachments of this kind than others. There is a fly a little ſmaller than the common great blue fleſh fly, but of the ſame genus, whoſe body is of a greyiſh brown, and the whole a mixture of grey ſpots upon a black ground. This ſpecies depoſits its eggs alſo on meat, but their figure is different from that of the eggs of the great blue fly. They are ſhorter than thoſe, and are larger in the middle than at either of the ends; they are alſo ſomewhat flatted, and one may diſtinguiſh on them two ſides; the one, which is more rounded and convex, is covered with very fine furrows, and the other, which is flatter, has only five high ridges, and conſequently only five furrows. Notwithſtanding theſe differences in the eggs of this ſpecies from thoſe of the common blue fly, the worms, hatched from them, ſeem much the ſame, and to undergo the ſame changes. Ibid. p. 382.

On the ſtalks of the common meadow graſſes there are alſo frequently found the eggs of flies depoſited in great numbers. Theſe, examined by the microſcope, have all the form of ſmall ſnow-white boats, or rather of ſmall ſhips, with the deck ſtanding up above their ſides. The places where they are lodged, ſhew evidently the care of the creature which laid them; the fly is not known, but they always produce a ſmall white worm, with a variable head, and two hooks. Ibid.

On other ſtalks of graſs, one may often ſee alſo yellow ſpots and blotches, which may naturally enough paſs with an incurious obſerver for maladies of the plants, but, when examined with the microſcope, all theſe appear to be, in reality, cluſters of eggs of the ſame boat-faſhion'd form, and amaſſed in different numbers; ſometimes alſo they are formed perfect and whole, and at others with their ends eaten. Theſe laſt are ſuch eggs from which the worms have made their way. Theſe worms are white, and have a variable head, armed with two hooks, but their changes are not known. *Reaumur*, Hiſt. Inſect. Vol. 4. p. 383.

EGGS *of Gnats*. There are few creatures in the winged kingdom more prolific than the gnat. Its whole ſeries of changes, from the egg to the perfect animal, is uſually accompliſhed in three weeks, or a month, and there are commonly ſeven generations of them in a year, in each of which every female is the parent of two or three hundred young ones, if all the eggs come to good. Theſe eggs are arranged by the animal in the form of a ſmall boat, and each ſeparate egg is of the ſhape of a ninepin; the thicker ends of theſe are placed downwards, they are all firmly joined to one another by their middles, and their narrower, or pointed parts, ſtand upward, and make the upper ſurface of the boat of eggs, as it were rough or prickly. *Reaumur*, Hiſt. Inſ. T. 4. p. 615.

When theſe eggs are examined ſingly by the microſcope, they appear not exactly of the ninepin ſhape; the larger end is rounded, and terminated by a ſhort neck, the end of which is border'd with a ridge which makes a kind of mouth. The neck of each of theſe is ſunk within the water on which the boat ſwims, for it is neceſſary that it ſhould keep on the ſurface, ſince, if wholly ſubmerged, the worms could never be hatched.

The arrangement of theſe eggs in ſuch nice and exact order, is a thing very worthy our admiration, and which cannot have been effected, but by the utmoſt care and caution in the creature, while in the act of laying them. It is only in the morning hours that the gnats are to be found laying their eggs, and then they will frequently be found about the ſurfaces of ſuch

waters as are in a proper condition to give ſupport to their young. The female gnat here places herſelf on a ſmall ſtick, the fragment of a leaf, or any other ſuch matter uſually near the water's edge, and places her body in ſuch a manner, that the laſt ring but one touches the ſurface of the water, the laſt ring of all, where there is the paſſage for the eggs, is turned upward, and every egg is thruſt out vertically, and the creature, when it is almoſt diſengaged, applies it againſt the ſides of the already formed cluſter, to which it readily adheres, by means of a mucilaginous ſticking matter with which it is naturally covered, like the eggs of many other inſects. Ibid. p. 619. The greateſt difficulty to the creature, is the placing the firſt laid eggs in a proper poſition to receive the reſt, and ſuſtain themſelves and them in a proper direction; theſe ſhe with great precautions, places exactly, by means of her hinder legs, and when a ſufficient number of them are thus arranged together, the reſt is eaſy, they ſerving as a ſupport to all the following. Ibid. p. 620.

EGILOS, in botany, a name given, by Serapion's Interpreters, to the plant which that author and Avicenna call alachuin. Their deſcriptions of the plant abundantly prove, that it is the ſame with the achillæa of the Greek writers, and this word *Egilos* ſeems only a barbarous name for that plant, formed on a miſ-ſpelling of the achillæa; the ſame authors give us fair ground for this ſuſpicion by another of their names, which is *ſidrichis*, this being plainly no other than a falſe ſpelling of *ſideritis*, *Woundwort*, another of the names of this plant, given it for the great virtue it was poſſeſſed of, in curing freſh wounds.

EGITILLIA, a name by which ſome have called the ſtone *Ægyptilla*. See ÆGYPTILLA.

EGOITOS, a term uſed by Van Helmont to expreſs the light of underſtanding, by which we reflect and reaſon within ourſelves.

EGRA *Water*, *Egrana Aqua*, the water of a medicinal ſpring, near that place, in the German dominions. It is famous for cleanſing the viſcera, obſtructed with viſcid matter, and is found of great ſervice in all hypochondriachal caſes, and in all diſeaſes ariſing from infarctions of the viſcera; it gently purges by ſtool; and affords a ſalt, known among the German writers by the name of *Egranum ſal*, which has the ſame properties, and is a ſort of native Glauber's ſalt.

The teſts which Hoffman gives, by which, to prove whether the *Egra water* be genuine, are theſe: 1. It makes a manifeſt ebullition, on mixing ſpirit of vitriol with it. 2. Oil of tartar, poured into it, makes no change in it, nor at all alters its pellucidity, whereas it turns almoſt all other waters milky or turbid. 3. When freſh taken from the ſpring, they become purple, on being mixed with powder of galls. But when this trial is made on them, after their being carried to foreign countries, unleſs they have been very carefully ſtopt, the purple colour does not appear. This is a proof that theſe waters contain but a very ſmall portion of that martial earth, which produces this effect in many others. 4. On mixing ſyrup of violets with them, there ariſes a ſlight green colour, which is a proof that the alkali predominates in them. 5. A ſolution of the vitriol of iron throws down a yellow ſediment, in form of little cluſters of ſmall particles; but this is not ſo much owing to any thing contained in the waters, as to the vitriol uſed in the experiment; the acid of that vitriol uniting with the alkaline ſalt in theſe waters, leaving the ferrugineous part of it to precipitate itſelf to the bottom, that being a ſubſtance not to be ſuſtained in water, when not in a ſtate of ſolution. 6. A pint of this water, chymically analiſed, affords twenty-four grains of a ſaline ſediment, which, on being mixed with oil of vitriol, produces no efferveſcence, nor emits any volatile fume; whence alſo it appears, that it contains no ſea ſalt in its natural form. *Hoffman*. Opera, T. 5. p. 143.

EGRA *Salt*, *Egranum Sal*, a name given by Hoffman, and other writers, to a purging ſalt, extracted from the waters of *Egra* by evaporation. The waters of this place are in great eſteem for many diſeaſes, and are, by Hoffman himſelf, in ſome reſpects, preferred to the pyrmont, as containing leſs ochre and calcarious earth. The ſalt is wholly of the nature of Glauber's ſalt, as is alſo that of many other ſprings thereabout, and even in our own country; the *nitrum calcarium* of Dr. Liſter being plainly the ſame with this, or Glauber's ſalt, produced in the bowels of the earth by a mixture of a vitriolic acid with that alkaline earth, which is the baſis of ſea ſalt. This ſalt, or one analogous to it, is found alſo concreted into a ſolid form in the earth in many places. There are accounts of it in the memoirs of the Paris academy, in Spain, in France, and in ſome parts of the Eaſt; and in England, we have earths which contain it. *Hoffman*. Oper. vol. 5. p. 143.

EGUILLETTE, in the manege. See YERK.

EIA, or EY, in our old writers, is uſed for an iſland. Hence the names of places ending in *ey*, denotes them to be iſlands. Thus, Ramſey, the iſle of rams, Sheppey, the iſle of ſheep, &c.

EIA is alſo ſometimes uſed for water, and hence the names of places near waters, or lakes, terminate in *ey*. *Du Cange*.

EJACULATOR, (*Cycl.*) in anatomy, a name given by Santorini to a muſcle of the pudenda, which he alſo calls in men the elevator urethræ, tho' in women he calls the ſame muſcle the depreſſor urethræ. Winſlow calls it the inferior proſtatic muſcle, and Albinus the *tranſverſus alter perinæi*, to diſtinguiſh it from the *tranſverſus penis* of others, which he calls *tranſverſus perinæi*.

EIDER, in zoology, the name of a ſpecies of ſea duck, called by Wormius *Anas plumis molliſſimis*, the ſoft feathered duck. The male and female differ very much in this ſpecies; the male very much reſembles the common duck; its beak is black, it has two oblong black ſpots, made of very ſoft feathers, running from the beak over the eyes, with a narrow white ſtreak in the middle of each; its neck, the lower part of its head, its breaſt, and the upper part of its back and wings, are all white, but the wings and tail are black. The female is all over of the ſame colour, a duſky brown, ſpotted with black. They build in the holes of rocks on the ſea ſhore, and lay abundance of eggs, which are very delicate and well taſted. Their feathers alſo are very remarkably ſoft, and fit for ſtuffing beds, &c. *Ray*'s Ornithology, p. 277.

EJECTIONE *Cuſtodiæ*, *Ejectment de Garde*, in law, a writ which lies againſt him, that caſts out the guardian from any land, during the minority of the heir. Reg. Orig. 162. Fitz. Herb. Nat. Brev. 139.

EIGNE, in law books, is uſed for eldeſt, or firſt-born. Thus we ſay, baſtard *Eigne*, and mulier *puiſne*, for the elder baſtard, and the younger lawfully born.

EILAMIDES, a word uſed by Hippocrates to expreſs the meninges, or membranes of the brain, the dura mater and pia mater.

EINBLINDER, in zoology, the name of a ſort of lamprey, without eyes, called by the writers on theſe ſubjects the lampetra cæca, or blind lamprey. It is very ſmall, not exceeding the common dew-worms in length or thickneſs. It has no ſcales, but its body is divided, by annular lines, into eighty-four rings, juſt in the manner of the large worms. Its mouth is in the under part of its head, and is round, and always open. It has a cavity in the middle of its head, like the reſt of the lampreys, for admitting water, and has ſeven gill-holes on each ſide. It has the common long fin running on the ridge of the back, but has no other, *Willoughby*'s Hiſt. Piſ. p. 107.

EINECIA, in our old writers, is uſed for primogeniture. It is ſometimes writ *Eſnecia*, and *Eſnecy*. See ESNECY.

EIRESIONE, Ειρεσιωνη, in antiquity, an olive branch bound about with wool, and crowned with all ſorts of firſt fruits, which was carrried in proceſſion in the Athenian feſtival, called *Pyanepſia*. Pott. Archæol. Græc. l. 2. c. 20. T. 1. p. 428. See PYANEPSIA, *Cycl.*

EISETERIA, Εισητηρια, in antiquity, the day on which the magiſtrates at Athens entered upon their office; upon which it was cuſtomary for them to offer a ſolemn ſacrifice, praying for the preſervation and proſperity of the commonwealth, in the temple of *Jupiter* Βελαίου, and *Minerva* Βελαία, i. e. the counſellors. Pott. Archæol. Græc. l. 2. c. 20. T. 1. p. 385.

ELÆAGNUS, in botany, a name uſed by ſome authors for the gale frutex, the Dutch myrtle or gaule. Merret. Pin. p. 82.

ELÆAGNUS, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a one-leav'd perianthium, very ſlightly divided into four ſegments; it is placed erect, is ſhaped like a bell, is rough on the outſide, and coloured within, and falls before the ripening of the ſeed. There are no petals. The ſtamina are four very ſhort filaments, inſerted between the ſegments of the cup. The antheræ are oblong, and lie upon theſe. The germen of the piſtillum is roundiſh, and is placed below the cup. The ſtyle is ſimple, and ſcarce of half the length of the cup. The ſtigma is ſimple. The fruit is an oval obtuſe ſmooth drupe, punctated at the extremity. The ſeed is an oblong obtuſe nut. *Linnæi* Genera Plant. p. 51.

ELÆOMELI, in the writings of the antient phyſicians, the name of a ſubſtance, thus deſcribed by Dioſcorides. In Palmyra, a country of Syria, the *Elæomeli*, which is an oil thicker than honey, and of a ſweet taſte, flows from the trunk of a tree. Two cyathi of this oil, he adds, drank with a hemina of water, evacuate crude and bilious humours by ſtool. There was much good obtained from the giving this medicine, but it had this remarkble effect, that thoſe who took it were ſeized with a torpor, and privation of ſtrength for a time; this was, however, of no ill conſequence, but people knew of and expected it, and uſed always to keep thoſe perſons awake who had taken it, and the ſymptoms ſoon went off. The ſame author alſo adds, that the oil was ſometimes prepared from the buds of the tree, and ſuch of this kind was eſteemed the beſt that was old, thick, fatty, and not foul or turbid. It was judged of a heating nature, and frequently applied externally to the eyes, with good effect in the cure of dimneſs of ſight, and contributed to the cure of leproſies, and pains of the nerves. Hermolaus Barbarus has a ſtrange conjecture in regard to this ſubſtance, which is, that it was the ſame with the manna mentioned in ſcripture, only uſed in medicine inſtead of food; but the account Dioſcorides gives of the effects of it is a very ſufficient anſwer

to the abſurdity of ſuch an opinion. *Dioſcorides*, l. 1. c. 37.

ELÆOSACCHARUM. After the chemiſts had juſtly ſhewn phyſicians the ſpirit reſiding in eſſential oils, containing, in a ſmall volume, all the particular virtues of the plant, phyſicians prudently reflected, that they hence had an excellent inſtrument in their art, but that the ſpirit, as it remained in the unctuous tenacity of the oil, was not in a condition to be uſed with perfect ſafety, becauſe theſe oils were extreamly ſharp, and, by their tenacity remaining fixed to one part, they often cauſed inflammations. Hence they began to think of a method of rendering theſe oils miſcible with water, and thus uniformly conveying their virtues to the places intended; and this they found might be effected by means of ſugar. Grind an ounce of fine and dry loaf ſugar to an impalpable powder, in a glaſs mortar, with a glaſs peſtle, then add to it, by degrees, a dram of any eſſential oil, or half a dram, if the oil be very tenacious; continue rubbing them together till the oil be thoroughly mixed, and drank into the ſugar. The oil, in this operation, uſually diffuſes a fragrance to a great diſtance, wherefore, to prevent the loſs of its finer parts, the operation ſhould be performed as quick as poſſible, and the mortar covered, and the peſtle ſurrounded by a clean linnen cloth; and if a little quantity of the white of an egg be added in the grinding, and mixed in with the ſugar and oil, the oil thus becomes more eaſily miſcible, but the mixture will not keep ſo long without growing rancid. Thus ſugar, which is a pure ſoap, or a true eſſential oily ſalt, divides the glutinous tenacity of the oil, interpoſes itſelf between the principles thereof, unites them cloſely with itſelf, and makes an extemporaneous ſoap, which may be commodiouſly diluted with water for medicinal uſes. *Boerh.* Chem. pt. 2. p. 100.

Though this mixture is not ſo perfect as an actual ſoap, or true eſſential ſalt, yet it ſuffices for uſe; nor is there reaſon to apprehend any inconvenience from the ſugar in this preparation, for ſugar is unjuſtly ſaid to be unwholſome, as there are no ſolid proofs extant of this; on the contrary, it is a wonderful ſalt that perfectly mixes with water, and ferments therewith into wine, and yet, what is ſurpriſing, it appears oleaginous and perfectly inflammable in the fire, whence it is known to conſiſt of oil and ſalt.

If theſe *Eleoſaccharums* be carefully prepared, and put up in clean dry glaſſes, exactly cloſed with glaſs ſtoppers, they may be preſerved perfect a long time; and in this manner very effectual medicines may be eaſily carried from place to place, and, upon occaſion directly uſed upon a journey, by mixing a ſmall quantity of them in a glaſs of wine. An *Elæoſaccharum*, or mixture of the ſame nature, at leaſt, might be alſo made, by mixing an eſſential oil with a fixed alkaline ſalt, by grinding, by which means alſo a kind of ſoap is obtained; but alkali's, thus mixed, deſtroy the grateful properties of the eſſential oils, and change their natural taſtes and odours. Such mixtures alſo would preſently reſolve in the air, and thence be eaſily altered; but, by the method with ſugar, the phyſician may always readily prepare a medicine rich in virtues. If the *Elæoſaccharum* of mint, for inſtance, be diſſolved in mint water, then ſtrengthened with the addition of ſpirit of mint, and the mixture ſweetened with ſyrup of mint, the whole virtues of the plant will be thus obtained. *Boerh.* Chem. pt. 2. p. 100.

The ſaponaceous property of ſugar is very evident in this proceſs, this fits it for breaking, and dividing the body of the oils, as if they were in a manner fermented with it, and, at the ſame time, it is ſo far from diminiſhing the virtues of the oils, that it rather encreaſes them; hence the antients, who were unacquainted with ſugar, always uſed honey to this purpoſe; and hence we learn the virtue of ſugar in the body, where, being diluted with the natural juices, it affords a ſaponaceous lixivium, which, by the force of circulation, diſſolves viſcous and unctuous ſubſtances; whence it does not generate phlegm, but diſſolves it, nor does it encreaſe the bile, or itſelf turn into bile, as has been vulgarly ſuppoſed, but, on the contrary, it opens, attenuates, and divides that juice, tho' by diſſolving the oleaginous parts too much, it may occaſion leanneſs, as by atteneuating too much, it produces a weakneſs in the parts, and is thence improper in rickets and in the ſcurvy.

ELÆOTHESIUM, Ελαιοθεσιον, in antiquity, the place, or room, in the gymnaſium, where thoſe who were to wreſtle, or had bathed, were anointed. It was alſo called Αλειπτηριον. *Pott.* Archæol. Græc. l. 1. c. 8. p. 38.

ELANULA, in medicine, the name of a peculiarly hard allum.

ELAPHEBOLIA, Ελαφηβολια, in antiquity, a feſtival kept in honour of Diana Ελαφηβολος, i. e. the huntreſs, for which reaſon a cake made in the form of a deer, and upon that account called Ελαφος, was offered to her. For a farther account of it, ſee *Pott.* Archæol. Græc. l. 2. c. 20.

ELAPHEBOLION, Ελαφηβολιων, in antient chronology, the ninth month of the Athenian year. It conſiſted of thirty days, and anſwered to the latter part of our February, and beginning of March. See MONTH.

It was thus called from the feſtival *Elaphebolia* kept in it. See ELAPHEBOLIA.

ELAPHIS. See the article ELAPS.

ELAPHOBOSOUM, in botany, the wild parſnep. See PARSNEP.

ELAPHOCAMELOS, in zoology, a name by which ſeveral authors have called the Peruvian camel, uſually called *Glama*, and employed there as a beaſt of burthen. See GLAMA.

ELAPHONESUM *Marmor*, a name uſed by the antients to expreſs a ſpecies of marble, uſed in ſtatuary, and called alſo *Proconenſium Marmor*; it was of a bluiſh white, variegated with ſlender veins of black. See PROCONENSIUM.

ELAPS, or ELAPHIS, by ſome called alſo *Elops*, the name of a ſerpent deſcribed by many authors, and met with by Bellonius in the iſland of Lemnos. It grows to about three foot long, and is on the back of a dark grey, with three longitudinal black lines, running from the head to the tail, and on the belly of a bright yellow, according to Aldrovandus. The people of Lemnos call it *Laphiati*. *Ray*'s Syn. Anim. p. 290.

ELASMIS, in natural hiſtory, the name of a genus of foſſile bodies, of the talc claſs, the diſtinguiſhing characters of which are, that they are compoſed of ſmall plates, in form of ſpangles, each of which is either ſingle, and not farther fiſſile, or, if complex, fiſſile only to a certain degree, and that into ſomewhat thick laminæ. See Tab. of Foſſils, Claſs 1.

The word is derived from the Greek Ελασμὸς, a lamina, or plate. The ſeveral component parts of theſe maſſes being ſo many ſmall plates.

The bodies of this genus have been uſed to be named *mica*, *glimmer*, and *catſilver*, by authors, in the ſame manner with the *bractearia*. There are only four known ſpecies of this foſſil: 1. A bluiſh brown one, with ſmall ſpangles, found in Germany and England. 2. A dull pale red one, with variouſly ſized ſpangles, which ſeems peculiar to England. 3. An orange coloured one, with very large and very thick flakes, found in the Eaſt Indies, and containing ſome lead and a little ſilver. And 4. A bright purple one, a very beautiful ſubſtance, found on the ſhores of rivers in the Eaſt Indies, and in New Spain. The laſt ſpecies is uſed in the Eaſt Indies, as a medicine for the ſtone, the reſt have not been put to any medicinal or mechanical uſe. *Hill*'s Hiſt. of Foſſils, p. 84, 85, 86, 87.

ELASTICITY (*Cycl.*)—The *Elaſticity* of compreſſed air may be long preſerved. Dr. Deſaguliers tells us, he has kept ſeveral wind guns ſtrongly charged for half a year together, in which the air loſt none of its *Elaſticity*; others have found the air as ſtrong after a year. Nay, it is credibly ſaid, that a wind gun having been laid by and forgotten for ſeven years, did afterwards diſcharge its air as many times, and with as much force, as it uſed to do. Phil. Tranſ. N°. 454. §. 6. See SPRING.

ELATE, in natural hiſtory, a word uſed by the antient Greeks in three different ſenſes, the not attending to which has occaſioned ſome very notorious errors in thoſe who have quoted and commented upon their works. The common ſenſe of the word is the *fir tree*, and in this ſenſe alſo it is generally underſtood, and tranſlated from the original authors in whatever ſenſe they uſed it. We find by Theophraſtus, that the word *Elate* was however alſo uſed for the tender budds of the ſheaths, or caſes of the young leaves of the palm tree, when juſt budding out, theſe contained a fine viſcous matter, as thoſe of many of the trees of warm countries do beſide, and for this fragrant reſin they were much ſought after, and uſed in the ſweet unguents of the Eaſtern nations.

Pliny, finding mention of the word *Elate* on theſe occaſions, has underſtood it as meaning the fir tree, in ſome places, but, in others, finding it coupled with the palm, he has made it the name of a peculiar genus of palm, and created an imaginary plant, not ſeeing that it was only a name of the leaf buds of the common palm. From this tender bud of the palm being called *Elate*, there grew a cuſtom of calling ſeveral other young ſhoots of plants *Elate*, and, in fine, a peculiar kind of ſallad herb, that always uſed to be eaten while young, was called *Elate* by the Greeks. Heſychius tells us, that *Elate* was the common name both of the fir tree, and of a common ſallad herb; ſome have thought that the plant, now called *Elatine*, or *Fluellin*, was eaten by the Greeks in its young ſtate, and, if ſo, probably enough this was the very plant which they called *Elate*. We find Epicharmus mentioning the word *Elate* in this ſenſe; ſpeaking of the eſculent vegetables, he mentions the radiſh, *Elate*, and ſeveral others together. His commentators have taken great pains to alter the word into ſomething elſe, but we have ſufficient proof in Theophraſtus, and many others, that it is properly written as it ſtands, and that the author meant no other than the ſallad herb, then commonly known by that name.

ELATE is alſo uſed, by ſome authors, for a genus of plants, called by Linnæus *Phœnix*, and, in the *Hortus Malabaricus*, *Ratovindel*. Muſ. Cliffort 12. See PHOENIX.

ELATINE, *Fluellin*, in botany, the name of a genus of plants, character'd by Linnæus, and made to comprehend the potamopithys of Buxbaum, and the alſinaſtrum of Vaillant. The characters are theſe: The perianthium conſiſts of four roundiſh leaves of the ſize of the petals of the flower. The flower conſiſts of four oval obtuſe petals, expanded into a plane. The ſtamina are eight filaments, of the length of

the flower. The antheræ are ſimple. The germen of the piſtil is large, and of a globoſe, but ſomewhat compreſſed figure. The ſtyles are of the length of the ſtamina, they are four in number, and ſtand erect, and are of equal length. The ſtigmata are ſimple. The fruit is a large capſule, of a compreſſed orbicular figure, and is compoſed of four valves, and contains four cells. The ſeeds are numerous, and of a lunated figure, they ſtand erect, and ſurround the receptacle in a circular direction. *Linnæi* Gen. Plant. p. 173. *Buxbaum*, ap. Act. Petrop. *Vaillant* Bot. Baris 1. f. 6.

ELATINE, in medicine, is greatly recommended as an aperient, reſolvent, and vulnerary. Its ſimple water has been uſed for the ſame purpoſes, though it retains very little of the virtues of the plant. The infuſion is much better, and the expreſſed juice preferable ſtill. It is praiſed by ſome in leprous and ſcrophulous caſes; alſo externally for cancrous and other eating ulcers. An ointment is made of it for theſe purpoſes. At preſent, however, it is very little uſed. *Hill*'s Hiſt. Mat. Med. p. 377.

ELATITES, *Fir Stone*, in natural hiſtory, a name given by authors to that ſort of petrify'd wood which ſhews the lineaments of the fir tree wood, and has been originally either that or ſome wood of a like kind.

ELATITES was alſo a name uſed by the antients for an iron ore, eſteemed a ſpecies of hæmatites; it was of a yellowiſh white colour, and was more uſually called *Xanthus*. *Hill*'s Theophr. p. 98. See XANTHUS.

ELUTHERII *Cortex*, in the materia medica, a name by which ſome authors have called the *Caſcarilla*, or *Cortex Thuris*, called Indian bark. *Schroder*. Vol. 4. p. 166.

ELAWANDUM, in zoology, the name of a remarkable ſpecies of monkey, common in the iſland of Ceylon; its hair is whitiſh, or of a pale grey, and it has a long and beautiful black beard hanging from its chin. *Ray*'s Syn. Quad. p. 188.

ELDRIENE, in zoology, a name by which ſome call the ſmall fiſh, known in Engliſh by the name of the *Minnow*, and called by authors *Varius*, from the various colour of its ſides and belly. *Willughby*'s Hiſt. Piſc. p. 269. See the article VARIUS.

ELEATIC *Philoſophy*, among the antients, a name given to that of the Stoics, becauſe taught at Ἐλέα, in Latin *Velia*, a town of the *Lucani*. *Hofman*. Lex. in voc. See STOICS, *Cycl.*

ELECAMPANE, *Helenium*. See HELENIUM.

ELECTARIUM, the ſame as *Electuarium*. The latter has been the uſual way of ſpelling the word; but the late London pharmacopœia has adopted the manner of ſpelling it without the (u) as Cælius Aurelianus, who is the firſt author that uſes the word, always ſpells it in that manner. *Pemberton*'s Lond. Diſp. p. 233. See ELECTARY.

ELECTARIUM *e Scammonio*, a new name given, in the London pharmacopœia, to the compoſition commonly called *Electuarium Caryocoſtinum*. The compoſition is alſo ſo much altered, that inſtead of an ounce, a dram and half is now a common doſe. The preſcription for it is this: Take ſcammony an ounce and half, cloves and ginger, of each ſix drams, oil of caraway-ſeeds, half a dram, honey, half a pound: Mix all into an electuary. *Pemberton*'s Lond. Diſp. p. 336.

ELECTARY (*Cycl.*)— To make *Electaries* in perfection, where a ſyrup is the baſis of the compoſition, as in the *Electary* of ſaſſafras, and the like, the ſyrup ſhould be prepared in a cloſe veſſel, that none of the virtues of the ingredients may be loſt; the powders, to be afterwards added to this, ſhould be freſh, and very finely ſifted; the gums, when there are any in the compoſition, ſhould be well cleanſed and diſſolved in their proper menſtruums, and the whole muſt be reduced to a ſmooth maſs of ſuch a conſiſtence as will neither be ſubject to candy nor ferment.

Where ſyrups are uſed only to bring *Electaries* into form, care muſt be taken that they are not boiled too high, for that will ſubject them to candy in the *Electary*, and ſpoil the whole, as the being too low boiled, or thin, will leave them ſubject to ferment in hot weather, and afterwards grow ſour, ſo as to change, invert or deſtroy the nature of the medicine.

Electaries, made of the pulp of fruits, are leſs diſpoſed to keep than others, on account of the great tendency theſe ſubjects have to ferment and putrefy. Hence lenitive *Electary* can never keep long, eſpecially if made too thin.

Juſt the contrary of this is the caſe, however, with the capital *Electaries*, as Venice treacle, mithridate, and the like, for theſe require to be ſome time made, that the ingredients may digeſt or ripen, as it were, and grow mellow together, as the gums and ſpices that are in that compoſition keep it from any decay, provided the honey do not candy, which ſome prevent by uſing it unclarify'd; and if theſe *Electaries* prove too dry, they are to be moiſtened with Canary wine, and thus they improve by keeping. This, however, is not the caſe with the diaſcordium, which loſes of its aſtringency as the ingredients become mellow together; and this is much better made up with ſugar of roſes, or ſyrup of diacodium, inſtead of honey. *Shaw*'s Lectures, p. 209.

The way of powdering and ſifting the ingredients for *Electaries* is liable to loſe their finer and lighter parts, in form of a light duſt, and that of grinding them in an horſe-mill has the ſame inconvenience, with the additional one of a great quantity of ſtony matter mixing itſelf from the mill-ſtones with the powder. The beſt way would certainly be, by means of two iron rollers moving againſt one another in a cloſe box, as in the making of chocolate, and to grind together all the ingredients, with the honey and wine, and bringing all at once to a proper conſiſtence. Perhaps, indeed, a much better way than all, though a very troubleſome one, would be to get out the full virtues of all the ingredients ſeparately, in the form of extracts and eſſential oils, *&c.* and mix theſe with a proper quantity of honey, and, by this means, to concentrate the medicine, ſo that it might be given agreeably in very ſmall doſes.

ELECTI, in church hiſtory, a ſect of heretics who neither eat fleſh, nor married. See *Hofm.* lex in voc.

ELECTION (*Cycl*)—ELECTION *of a Clerk of Statutes Merchant*, in law, a writ that lies for the choice of a clerk aſſigned to take ſtatutes merchant. It is granted out of chancery, on ſuggeſtion that the clerk, formerly aſſigned, is gone to dwell at ſome other place, or is under an impediment to attend the duty of his office, or that he has not lands ſufficient to anſwer his tranſgreſſions, if he ſhould act amiſs. *Fitz. Herb.* Nat. Brev. 164.

ELECTION *of Eccleſiaſtical Perſons*. *Elections* for the dignities of the church ought to be free, according to the Stat. 9 Ed. 2. c. 14. If any perſons, that have a voice in *Elections*, take any reward for an *Election* in any church, college, ſchool, *&c.* the *Election* ſhall be void. And if any perſons of ſuch ſocieties reſign their places to others for reward, they incur a forfeiture of double the ſum; and both the parties are rendered incapable of the place. Stat. 31 *Eliz.* c. 6.

ELECTION *of a Verderor of the Foreſt*, (*Electione Viridariorum Foreſtæ*) in law, a writ that lies for the choice of a verderor, where any of the verderors of the foreſt are dead, or removed from their offices. This writ is directed to the Sheriff, and the verderor is to be elected by the freeholders of the county, in the ſame manner as coroners. New Nat. Brev. 366.

ELECTORS *of Members of Parliament*. See VOTE.

ELECTUARY. See ELECTARY.

ELEEMOSYNARIUS, in our old writers, is uſed for the almoner, or peculiar officer who received the eleemoſynary rents and gifts, and diſtributed them to pious and charitable uſes. There was ſuch an officer in all religious houſes. The biſhops alſo uſed to have their almoners, as now the king has. *Linn.* Provinc. Lib. 1. tit. 12. See alſo *Du Cange*, Gloſſ. Lat.

ELEGIA, in botany, a name given, by ſome authors, to the *Arundo Scriptoria*, or writing reed common in Greece and Italy. *Park.* Theatr. p. 1211.

ELEMENT (*Cycl.*)—See PRINCIPLE.

ELENCHUS, in antiquity, a kind of ear-rings ſet with large pearls.

ELEOSELINUM, in botany, a name by which ſome authors have called the paludapium or ſmallage. *Ger.* Emac. Ind. 2.

ELEPHANT, *Elephas*, in the Linnæan ſyſtem of zoology, the generical name of a diſtinct genus of the jumenta; it includes the *Elephant* and *Rhinoceros*. The characters which thoſe creatures have in common, and which make the diſtinction of this genus, are, that they have two paps placed on their breaſt, have no *dentes inciſores*, or cutting-teeth, and the *canine*, or dog-teeth, of the upper jaw, very long. The *Elephant* this author diſtinguiſhes by his ſnout. The rhinoceros he calls *Elephas naſo cornigero*, the *Elephant*, with the horn on his noſe. *Linn.* Syſtem Natur. p. 40.

Taming of ELEPHANTS. The method of taking and taming this creature, in the iſland of Ceylon, is as follows: The natives pitch upon a proper place for a warren, or park, which is broad at the entrance, and grows narrow farther in, till, at the end, it is ſo narrow, that an *Elephant* cannot turn himſelf, and it runs on of this narrowneſs ſo far, that twenty *Elephants* may ſtand in it one behind another. When the encloſure of this warren is finiſhed, all the people of the neighbouring places aſſemble, and make a circumference round the woods, where they know there are *Elephants*, which takes in, perhaps, ſixty miles. The men now ſtand at twenty-five yards diſtance, and kindle fires between them, and make all the noiſe they can, by ſhouting, blowing horns, beating drums, and the like, and, by degrees, approach nearer and nearer the warren. The *Elephants* run from the fires and noiſe, and conſequently can go no where but towards the warren, the men, who every way ſurround them, except on the warren ſide, follow upon them in this manner, till they come together, and make a ring, and the *Elephants* are driven into the encloſure. When theſe creatures perceive that they are thus taken, they make reſiſtance, and often turn upon the men, but there are always near the warren fences of poles, lying flat upon the ground, which the hunters need only raiſe up, and they keep in the prey, ſo that they can neither eſcape, nor injure them, they then purſue the *Elephants* with fire-brands,

and drive them into the narrow part where they cannot turn.

They are, from this place, taken one by one, and led to the ſtable, each between two tame *Elephants* bred for that purpoſe, the points of whoſe long teeth are cut; and theſe, if the wild *Elephant* be troubleſome, will lay hold of his trunk with theirs, and beat him with their teeth. A man, ſitting upon each of the tame *Elephants*, directs them by a ſtaff with a hook at the end, with which he occaſionally touches their heads, and orders them as he pleaſes, without bridle, or any other furniture. When they are brought into the ſtable, they are led between two poſts, with ſtakes put athwart before their breaſts, and under their bellies, and are ſo tied that they cannot ſtir, nor lie down upon the ground, for, if permitted to lie down, they would become ſorrowful, and refuſe to eat, and would die. They are here fed with the trunks of plantains, a food they much delight in, and when they have been kept thus about ſix weeks, they become tame enough for ſale. If not ſold at that time, they feed them about ſix weeks longer in the ſtable with coco-leaves, and they are, at the end of that time, perfectly tame as a ſpaniel, and will eat graſs with the oxen in the fields. Phil. Tranſ. Numb. 277. §. 1.

The *Elephants* of Ceylon have been ſo long hunted, that they now know man for their mortal enemy, and ſeldom fail to ſeize upon and kill him wherever they meet him; but if a man lie upon the ground, and pretend to be dead, they never meddle with him. Several people have, in this iſland, lain aſleep while *Elephants* paſſed by them, and ſome have only pretended ſleep, and a perfect ſtillneſs has always been found to preſerve them, even tho' the creature came up to examine them.

ELEPHANT *Caterpillar*, a name given, by ſome authors, to a ſpecies of inſect, commonly known in Ireland by the name of Connough worm, and ſuppoſed to be poiſonous to cattle which feed on it. See CONNOUGH *Worm*.

ELEPHANT's *Noſe*, or *Elephant's Neuſe*, as it is called by the Dutch, is a ſpecies of the acus, or needle fiſh, caught in the Eaſt Indies, ſo called from the reſemblance of its ſnout to the trunk of an *Elephant*. It is a very ſingular ſpecies, the lower jaw running out into a very long and ſharp-pointed ſpine. It is round bodied, and beautifully variegated with ſpots, and has on each ſide a green line running from head to tail. It is caught in ſalt waters. *Ray*'s Ichthyogr. app. p. 4.

ELEPHANTOPUS, in botany, the name of a genus of plants, the characters of which are theſe: The cup is an involucrum, compoſed of three broad and ſharp-pointed leaves, this is large and permanent, and contains ſeveral flowers. Within this ſtands the common cup, which always contains four flowers, and is of an oblong imbricated figure, compoſed of ſquamma of an oblong and ſubulated figure, and prickly at the ends. Theſe ſtand erect, and there are four of them longer than the reſt, and equal one to another. The flower is compound and tubular, and is compoſed of either four or five ſmall flowers, each of which conſiſts of only one petal, and is of a ligulated form, and has a narrow mouth ſlightly divided into five ſegments. The ſtamina are five very ſhort and capillary filaments, the antheræ are of a cylindric figure, and tubulate. The germen of the piſtil is oval and coronated. The ſtyle is capillary, and of the length of the ſtamina; and the ſtigmata are two, and are ſlender, and ſtand open. The cup remains unaltered, after the flower is fallen, and contains the ſeeds, which are ſingle and compreſſed, and crowned with a ſeries of ſhort hairs or briſtles. *Linnæi* Gen. Plant. p. 384.

ELETTARI, in the materia medica, a name uſed by ſome authors for the common ſmall cardamom of the ſhops. Hort. Mal. B. 11. p. 9.

ELEVATIO, in proſody, the ſame as *arſis*. See ARSIS, *Cycl.*

ELEVATOR (*Cycl.*)—ELEVATOR *Alæ naſi*, in anatomy, a name given by Cowper to one of the muſcles of the noſe, called by Winſlow the tranſverſalis, or inferior naris, and by Albinus the compreſſor naris. Coſſerius has deſcribed it under the name of the parvus naſi muſculus, and Fallopius under that of muſculus alius carneus naſi, and Riolanus by that of alius externus naſi.

ELEVATOR *Humeri*, in anatomy, a name given by ſome authors to a muſcle, now generally known under the name of the deltoides. See DELTOIDES.

ELEUTHERIA, Ελευθερια, in antiquity, a feſtival in honour of Jupiter Eleutherius, *i. e.* the aſſertor of liberty: It was kept at Platææ from almoſt all the cities of Greece.

This ſolemnity was inſtituted upon the defeat of Mardonius, the Perſian General, in the territories of Platææ, and was held every fifth year, and great prizes appointed to be contended for.

The Platæans had an anniverſary ſolemnity, called *Eleutheria*, kept in memory of thoſe that had valiantly loſt their lives in defence of their country's liberty. For the ceremonies obſerved at it, ſee *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 388. ſeq.

The Samians had another feſtival of this name, in honour of the god of love. And ſlaves, when they obtained their liberty, were wont to keep a ſtated holy-day in remembrance of the happy day on which they were made free. *Potter*, loc. cit.

ELFS *Arrows*, a name given by the people of ſome parts of Scotland, to certain ſtone weapons which they find, and which had been in uſe before tools and weapons of iron were uſed there. It is not only in Scotland that theſe are found, but in America, and many other places alſo. They are ſtiled by ſome ceraunia, and thunder-bolts, and are ſuppoſed to have fallen from the clouds in ſtorms of thunder; others, not leſs erroneouſly, ſuppoſe them to be natural foſſils; but their true origin is from the workmanſhip of man, out of common flints and other ſtones. It is probable that they firſt broke large flints to pieces, and then ſelecting ſuch of thoſe fragments as were of the neareſt approach to the ſhape they wanted, they finiſhed the forming them to their minds, by breaking off their angles, and hewing their edges with other ſtones of the hardeſt kinds they could get; in this manner they formed them into the heads of arrows, and other ſuch things, and we at this day find ſuch evident marks of that rude kind of rude workmanſhip upon them, that this cannot be doubted. Thoſe arrow-heads found in Scotland and Ireland are of a mixed grey and brown colour, like thoſe of ſome of the northern parts of America, that being the colour of the flints in thoſe places, as appears by breaking them. Thoſe of the Ladrones iſlands are uſually of a yellowiſh colour, and thoſe of many parts of America are of the ſame appearance. Others ſeem to partake of the nature of the onyx, or agate, having been hewn out of ſtones of that kind. Some of theſe are deeply bearded, others not at all ſo; and beſide the ſhort and broad ones, which are the moſt common kind, and were the heads of their common arrows, ſome are found which are much longer, and have been the heads of javelins; ſome alſo are broad and flat, and have ſerved as the heads of hatchets. In Perthſhire ſome red ones are found, which have the appearance of the heads of ſmall arrows. Brown and coarſe ſtones are found in New England, wrought into the heads of axes, and into wedges. Very ſmall arrow-heads, made out of a talky fiſſile ſtone, are found in Virginia and Barbadoes. Theſe were more eaſily made than any of the others, but they could be of leſs uſe, being not capable of ſo ſharp an edge as the finer and more homogene ſtones. In Ireland the browniſh flint they are made of is almoſt as pellucid as an onyx, and there ſeems to have been more work beſtow'd upon them there than in any other part of the world, ſome of them being very nicely ſhaped, and finely bearded all along the edges.

Stones have been found in Tuſcany ſhaped into hatchet heads, and theſe are generally very hard and heavy, containing iron, and being of the nature of a coarſe emery; and in the iſland of Guacu, one of the Ladrones, it is common to find ſtones of an oblong figure, thick in the middle, and tapering toward each end to an edge, ſo as to form a ſort of double edged hatchet-head. Theſe are always made out of a beautiful ſtone, of the jaſper kind; its ground is red, and it is variegated very beautifully with white and blue. It is ſuppoſed that the inhabitants had been uſed to employ theſe as ſtones to throw out of their ſlings, with which they are ſaid to have been very dexterous, and to have done great miſchief. *Woodward*'s Cat. Foſſ. Vol. 2. p. 52.

ELHANNE, in botany, a name given by ſome authors to the liguſtrum ægyptiacum, or eaſtern privet. *J. Bauhine*, vol. 1. p. 541.

ELICA *Paſhnum*, in natural hiſtory, a name given by the people of the Eaſt Indies, to a kind of red orpiment, found very frequently in that part of the world, and given internally, after calcination, in intermitting fevers.

ELICE, or HELICE, in botany, a name by which the antient Greek writers have ſometimes called the willow, tho' its more general name among them is *Hea*. Heſychius gives many inſtances of the willow being called *Helice*. The names of this tree have generally been ſuppoſed to be all derived from its quick growth. Its original name in the Greek *Hea*, from ἑᾶναι, to go ſwiftly. The Latin ſalix has alſo generally been ſuppoſed to be derived *a ſaliendo*, from its riſing up in height, by jumps at a time as it were. But this ſeems forced and erroneous, the preſent name *Elice* was derived from Ελκω, to draw, the lightneſs of the wood of this tree recommending it to the Greeks for their making carriages of all kinds of it. This, Theophraſtus tells us, was the principal uſe made of it in his time, and from this word *Elice*, the Latin ſelix and ſalix ſeem to have been derived.

The changing the termination é into x is nothing uncommon among theſe authors, for the maſtich of the Greeks was originally turned into maſtix in the Latin, the Delphici into into Delphix, and ſo on of the reſt of the like kind. As to the adding an S in the beginning, nothing was more common among the Latins in their derivatives, the ὄλκος of the Greeks was made the *ſulcus* of the Latins, the ὕλη, *ſylva*, and ſo of many other words.

ELIDRION, a word uſed, by the earlier writers in medicine, in ſeveral very different ſenſes; ſome uſing it as the name of maſtich, others of rhapontic, and others of crude mercury.

Some of the chymical writers have alſo made it expreſs a certain mixed metal, compoſed of three parts, one ſilver, another braſs, and the third Gold.

ELIGII *Morbus*, a name given by ſome medical writers to a *fiſtula*.

ELIGMA, a name given by Nicolaus, Myrepſius, and ſome other authors, to that form of medicine uſually now called a *Linctus*, or *Lambative*.

ELIQUATION, in metallurgy, is a ſeparation of the different parts of mixed bodies, by the different degrees of fire required to melt them. When the nature of ores, or of metallic mixtures, is ſuch, that while one part of them melts in the fire, the other more refractory and difficult of fuſion remains ſtill ſolid; the firſt, when the maſs is placed in a mild fire, flows out of the interſtices of the other, and is thus ſeparated from it. The perfection of this operation requires a different fluidity of the parts that conſtitute the maſs. Lead, for inſtance, melts into one maſs with copper, by a ſtrong fire, whereas theſe metals cannot diſſolve each other in a moderate one; but if the maſs, compoſed of both theſe, thus blended together, is afterwards expoſed to a mild fire on an inclined plane, the lead alone melts, the copper becoming only brittle and ſpungy, and remaining in its ſolid form, even when the lead has run out of it. This ſeparation, however, is not ſo perfectly made, but that there ever remains ſome lead in the copper, and ſome ſmall part of the copper is alſo carried away with the lead, wherefore it is neceſſary for this experiment, that the metals are not mixed in too minute proportions, for if one thouſandth part only of lead were to be mixed with copper, or the ſame ſmall proportion of copper with the lead, the ſeparation, by *Eliquation*, could not be effected.

It is generally neceſſary alſo, in order to make this operation ſucceed, to add ingredients that are capable either of deſtroying the force by which the different parts cohere together, or of procuring an eaſier flux of the metals; for the mixtures of the other metals will not be ſeparated like thoſe of copper and lead, without the admixture of other ſubſtances. For inſtance, gold, ſilver, and copper, melted together, and perfectly blended by that means with one another, remain in the ſame ſtate in any degree of fire; to make the *Eliquation* of the gold and ſilver, therefore, out of ſuch a mixture, the ſame additions muſt be uſed as in the operation of *precipitation by fuſion*. Sulphur added, in this caſe, does indeed diſpoſe the copper to abandon the gold and ſilver; but if theſe two, as it moſt commonly happens, are mixed in a very ſmall quantity with a very large one of copper, then you cannot yet obtain the ſeparation of them; for beſide, that very ſmall quantities are no more to be ſeparated here than in the former inſtance of copper and lead, ſulphur renders the copper fluid by almoſt the ſame degree of fire by which the ſilver and gold are melted; a conſiderable quantity of lead muſt therefore be added, in this caſe, that by the help of that addition, the gold and ſilver may be fuſed in a gentle fire, and the copper thus ſeparated from them.

Precipitations by this method, and by fuſion, are both of infinite uſe in metallurgy; for, by means of them, minute portions of gold and ſilver may, without any great expence, be ſeparated from a large maſs of other metals, which it has not hitherto been found poſſible to effect with advantage by any other method. *Cramer*, Art. Aſſ. 188.

ELIXIR (*Cycl.*)—ELIXIR *Aloes*, a name given, in the late London diſpenſatory, to the medicine commonly known by the name of *Elixir Proprietatis*, which is there alſo ordered to be made in the following manner. Take tincture of myrrh a quart, powder of aloes, and fine ſaffron, of each three ounces, digeſt them a due time, and then preſs off the tincture, and filter it for uſe. *Pemberton*'s London Diſp. p. 283.

ELIXIR *Paregoricum*, a name given, in the late London Diſpenſatory, to the *Elixir Aſthmaticum* of Quincey; which is there order'd to be made thus:

Take flower of benjamin, and ſtrained opium, of each a dram; camphire, two ſcruples; eſſential oil of anniſeeds, half a dram; rectify'd ſpirit of wine, a quart. Digeſt all together a proper time, and then ſtrain off the ſpirit. *Pemberton*'s Lond. Diſp. p. 283.

ELIXIS, a name given, by ſome of the old writers, to that form of medicine now called a *linctus*. See LINCTUS.

ELK (*Cycl.*)—The *Alce*, or *Elk*, is an animal ſo differently deſcribed by the antients, that it is evident they either knew very little of it, or elſe different writers have deſcribed different animals under this name. Pliny tells us, that the *Elk* reſembles the horſe, but that the length of the neck, and largeneſs of the ears, diſtinguiſh it. And Solinus, who is a copier of Pliny, afraid to give it ſo large a ſize, ſays, that it is like a mule. Theſe authors both add to this, what is ſaid alſo by many of the other Latin writers of the *Elk*, that its upper lip is ſo large, that it cannot feed without going backwards all the time. Pliny alſo, in another place, ſays this of the maclis, or machio, an animal of Scandinavia, which he deſcribes by hearſay, for he acknowledges, that it never had been ſeen at Rome, but ſays it was like the *Elk*. It is very poſſible, that this might be the *Elk* under another name. Other authors compare the *Elk* to the goat, and others to the ſtag, but they all ſpeak of its long neck. Some ſay it was of a ſimple duſky yellowiſh colour; and Cæſar, in his commentaries, ſays, on the contrary, that it was variegated with ſpots. Pauſanius tells us, that it was like the ſtag kind, but reſembled the camel in the length of its neck. It is probable that the *Elk* of Cæſar, and the *Elk* of Pliny and Solinus, are two different animals. See Tab. of Quadrupeds, N°. 6.

ELK in zoology, a name by which many have called the cygnus ferus, or wild ſwan. See the article CYGNUS.

ELKE is mentioned, in our ſtatutes, as a kind of yew to make bows of. 32 *Hen.* 8. cap. 9. *Cowel.*

ELLIPSIS, (*Cycl.*)—It has been long known, that if a parallelogram, circumſcribed about a given *Ellipſe*, have its ſides parallel to the conjugate diameters, then will its area be of an invariable or given magnitude, and equal to the rectangle contained by the axes of the figure: But this is only a caſe of a more general propoſition: For if, upon any diameter produced without the *Ellipſe*, you take two points, on each ſide of the center, at equal diſtances from it, and four tangents be drawn from theſe points to the *Ellipſe*, thoſe tangents will form a parallelogram, which is always of a given or invariable magnitude, when the *Ellipſe* is given, if the ratio of thoſe diſtances to the diameter be given. And when the ratio of thoſe diſtances to the ſemi-diameter is that of the diagonal of a ſquare to the ſide (or of $\sqrt{2}$ to 1) the parallelogram will have its ſides parallel to the conjugate diameters. Phil. Tranſ. N°. 468. p. 326.

Triangles, trapezia, or polygons, of any kind, may be determined, which, circumſcribed about a given *Ellipſe*, are always of a given magnitude. For

If, upon any diameter produced without the *Ellipſe*, any number of points be taken, on the ſame, or on different ſides of the center, at diſtances from it, that are each in ſome given ratio to that diameter; and from theſe points tangents be drawn to the *Ellipſe*, in any one certain order; the polygon, formed by theſe tangents, is always of a given magnitude in a given *Ellipſe*, and is equal to a polygon deſcribed by a ſimilar conſtruction about a circle, the diameter of which is a mean proportional betwixt the tranſverſe and conjugate axis of the *Ellipſe*.

The polygons inſcribed in the *Ellipſe*, by joining the points of contact (thus formed) and the ſectors, bounded by the ſemi-diameters, drawn to theſe points, are alſo of given or determined magnitudes; and the parts of any tangent intercepted betwixt the interſections of the other tangents with it, or betwixt theſe interſections and the point of contact, are always in the ſame ratio to each other in the ſame figure. See *Maclaurin*'s Fluxions, Vol. 1. p. 8. who obſerves that there is an analogous property of the other conic ſections.

ELLOTIA, Ἑλλώτια, among the Greeks, a feſtival in memory of Europa, Agenor's daughter; who was called Ἑλλωτις by the people of Crete. *Hofm.* Lex. univ. in voc.

ELLYCHNIOTOS, in the medical writings of the antients, the name of a ſort of tent uſed by the ſurgeons, and made of cotton or lint, rolled up into the form of the wick of a lamp or candle. See ELLYCHNIUM.

ELLYCHNIUM, a name given, by the antients, to that ſort of matter, whatever it was, which ſerved them in common uſe for the wicks of their lamps, and had, beſide this, its uſe in ſurgery. Galen expreſsly directs the uſe of the ſofteſt *Ellychnium*, ſuch as that of Tarſus inſtead of ſponge, in chirurgical caſes. But we are far from being aſcertained, at preſent, of what this *Ellychnium* of Tarſus was. Pliny mentions ſeveral kinds of *Ellychnia*, one compoſed of the fruit of the ricinus, which he particularly commends for its clearneſs; another of the papyrus, or paper reed; a third, of the downy matter from the plant called phlomis, and from this uſe of its down, afterwards lychnitis; and fourthly, a kind in which ſulphur was a very principal ingredient. He does not, however, give the epithet of Tarſenſe to either of theſe, or tell us of their being invented in, or brought from, Tarſus.

Galen is indeed the only author of early date that mentions the Tarſan kind, and that in two places: In the one of which he is talking of bringing ulcers to a cicatrix; and, in the other, of curing an œdematous ſwelling. In the laſt caſe he adviſes oxycrate to be applied, by wetting with it a ſponge, or elſe the Tarſan *Ellychnium*. The commentators have gueſſed differently as to the meaning of the word; and Cornarius ſuppoſes it to ſignify a ſort of ſpongy and light fungus, which, when properly wrought up, might be made to ſerve for the wicks of lamps, being very inflammable, as we well know many of the fungus's to be, particularly that ſort which the people of ſome countries call ſpunck, and uſe inſtead of tinder, to catch fire from the ſparks of flint and ſteel; and when in its natural lax ſtate, might, by its open ſpongy texture, be very well ſuited to imbibe any medicinal fluid, and retain it a long time, while applied to any diſeaſed part: Others have gueſſed it to be the xylon, or cotton of the antients; but from Galen's propoſing it to be uſed inſtead of ſponge, it ſeems much more probable to have been what Cornarius ſuppoſes. *Galen*, L. 13 and 14. *Cornar.* Comment. in 3. κατ. τοπ.

ELLIPOMACROSTYLA, in natural hiſtory, the name of a genus of cryſtals. The word is derived from the Greek

ἐλλιπὴς, imperfect, μακρὸς, long, and στυλος, a column, and expreſſes an imperfect cryſtal, with a long column. The perfect figure of cryſtal being a column terminated by a pyramid at each end, thoſe which want this character are eſteemed imperfect, and accordingly the bodies of this genus are defined to be imperfect cryſtals, with ſingle pyramids, one end of their column being affixed to ſome ſolid body; and compoſed of thin and ſlender hexangular columns, terminated by hexangular pyramids. Of this genus there are ſeveral ſpecies: 1. The common *ſprig cryſtal*, which is found in almoſt all parts of the world. 2. The purer pellucid colourleſs kind. This is common both in the Eaſt and Weſt Indies, and in ſome parts of Germany, and has been ſometimes found in *England*. 3. The dull whitiſh kind, with very ſhort pyramids. This is common in our mines, as alſo in thoſe of Germany. 4. The bright brown one, with a long pyramid. This is well known, among our lapidaries, under the name of *brown cryſtal*, and is found in the Eaſt and Weſt Indies, and in Sileſia and Bohemia, and ſometimes in England; of this there has lately been alſo brought over a very large quantity from the Scotiſh ſhore. 5. The dull brown kind, with a ſhort pyramid. This is often confounded with and miſtaken for the other, to the no ſmall loſs of the purchaſer. It is produced in great quantities in many parts of Germany. 6. The bright hexangular *brown cryſtal*, with a ſhort pyramid. This is a ſpecies ſubject to various tinges, and, among the reſt, very frequently to yellow, and has been of late cut by many of our lapidaries, under the name of the Saxon topaz. It is found in Saxony at Goſſelaer, and other places, and has lately been diſcovered alſo in America. 7. The bright brown kind, with a very long pyramid, called, by many of our jewellers, the *beryll*. This is found in Italy, and in ſome parts of Germany. 8. The whitiſh kind, with a very long pyramid, called the *iris* by authors. Some have indiſcriminately called all the cryſtals of this genus by the common name *iris*; but thoſe who firſt gave it, applied it only to this kind, which is particularly famous for giving the rainbow colours in reflection. It is common in Germany and Italy, and is ſometimes ſeen in England. 9. The yellow kind, with a ſhort pyramid, called the *citrine* by the jewellers. This is common in the Weſt Indies, and in Bohemia, and is of ſo beautiful a yellow, that ſtones for rings, cut out of it, when they have paſſed through two or three hands, are uſually miſtaken for topazes. And 10. That with a ſhort pyramid, and a thick reddiſh cruſt. This is found in Germany, Italy, France, and England, and is a very beautiful ſpecies. See Tab. of Foſſils, Claſs 3.

ELLIPOPACHYSTYLA, in natural hiſtory, the name of a genus of cryſtal. The word is derived from the Greek ἐλλιπὴς, imperfect, παχὺς, thick, and στύλος, a column, and expreſſes a cryſtal of the imperfect kind, with a thick column. The bodies of this genus are cryſtals, compoſed of an hexangular column, conſiderably thick and ſhort, and affixed irregularly, at one end, to ſome ſolid body, and terminated at the other by a hexangular pyramid. Of this genus, there are only two known ſpecies. 1. A bright and colourleſs kind, found in great plenty in New Spain, and in ſome other parts of America, but no where in Europe, ſo far as is yet known. And 2. A duſky brown kind, which is common in Germany, and is ſometimes found in England and Ireland. *Hill*'s Hiſt. of Foſſ. p. 182. See Tab. of Foſſils, Claſs 3.

ELM.—Mr. Dodart, in a diſcourſe made before the Paris academy, on the great fecundity of vegetables, and their prodigious encreaſe, choſe this tree as an example of it. He obſerved an elm of about ſix inches diameter in the body, and about twenty foot high to the branches, he ordered one of the branches to be cut off, and, without reckoning the ſeeds which had been ſhaken off by the blows of the weapon, or loſt by the fall, he counted the reſt only which remained on. This branch was about eight foot long, and on this there were 16450 ſeeds. Counting in a very moderate way, there muſt be reckoned, at leaſt, ten ſuch branches as this, on an elm of that growth. The product of theſe ten branches will be then 164500 ſeeds.

All the branches, which are ſhorter than eight foot, on the ſame tree, taken together, on the moſt moderate computation, muſt be allowed to make a ſurface more than double that of theſe ten branches. The product of this ſurface of the ſhort branches, therefore, will be 329000.

An *Elm* may very reaſonably be ſuppoſed to live a hundred years, and as the *Elm*, here mentioned, was but of twelve years growth, it cannot be ſuppoſed, in that ſtate, to be yet arrived at its middle degree of fertility in ſeeds; therefore the ſmalleſt addition that can be made to the 329000, will bring it to at leaſt 330000, for the mean yearly product of ſeeds of the tree; and to know what is the whole product of an *Elm* in ſeeds, according to this computation, this ſum muſt be multiplied by a hundred, the number of years of the duration of the tree. Thus the ſmalleſt amount will be thirty-three millions of ſeeds, produced by an *Elm* originally raiſed from one ſingle ſeed. Hiſt. Acad. Par. 1700.

This, however, is no more than the natural produce of the tree, in its wild ſtate; we all know very well, that proper management will make trees yield abundantly more fruit than they naturally would. Thus, if this *Elm*, at a proper ſtage of its growth, had been lopped off at the head, it would have puſhed out infinitely more numerous branches; and a ſet of theſe would have appeared in a circle round the trunk, at about half an inch from the place where it was cut off, and this would have been the caſe in whatever part, or at whatever height, it had been cut. All the trunk of the tree, from the ground up to the beginning of the natural eruption of the branches, being then full of theſe rudiments of branches, placed in circles, and ſeparated by circular ſpaces of about half an inch deep, compoſe ſo many circles of branches, or rudiments of branches, as there are half inches in meaſure from the ground up to the firſt natural rudiments; all theſe rudiments are formed, therefore, all ready to appear in form of compleat branches, and all contain, in miniature, their proportion of ſeeds, and any circle of them may be made to ſhoot out and appear, by only cutting off the trunk juſt above them; theſe are all, therefore, to be allowed really to exiſt, and all to be brought into the account of the providence of nature, in the fecundity of the tree, as all are formed and provided for it. There are therefore evidently contained, in this *Elm*, ſo many times thirty-three millions of ſeeds, as there are half inches in twenty foot, which was its meaſure from the ground to the firſt branches: That is to ſay, this tree contains actually in itſelf 15840000000 rudiments of ſeeds, or has ſo many bodies incloſed in itſelf, by each, or any one of which, it is capable of multiplying its ſpecies, and is capable of producing ſo great and aſtoniſhing a number of trees. The imagination is ſtartled at being conducted to ſo amazing a ſcene by reaſon.

What are we to think then of the immenſity of the works of the great creator of the univerſe, when we conſider that every one of theſe ſeeds contains in itſelf a tree, loaded with an equal number of ſeeds, and each of thoſe another tree, loaded in the ſame manner, and ſo on beyond the utmoſt extent of our capacity; and that conſequently here is a geometrical proportion, or progreſſion of increaſe, the firſt term of which is 1, the ſecond 15840000000, the third the ſquare of that number, the fourth the cube, and ſo on to infinity. Reaſon and imagination are loſt together in the immenſity of ſuch a calculation. Mem. Acad. Par. 1700.

All this is deduced from principles, every one, by the modeſt calculations of the author, reckoned much to low; but all that could be ſaid of this tree, muſt, in regard to the laſt calculation, fall infinitely ſhort of a calculation made from fern, a plant greatly more prolific in ſeeds than this tree.

ELM, among gardeners, &c.—All the ſpecies of the *Elm* may be propagated either by layers, or by ſuckers taken from the old roots; but as theſe are often taken up with very bad roots, and are therefore very ſubject to miſcarry, the method by layers is much the beſt, and is very eaſy to be practiſed, as a ſmall ſpace of ground would be ſufficient to furniſh nouriſhment for a number of ſtools, or roots for laying, which would annually yield a great number. The beſt ſoil for a nurſery of this kind, is a moderately light and dry hazel loam, and the beſt ſeaſon for laying the branches is autumn. When they have taken root, they ſhould be removed from the old plant, and ſet in rows in nurſery beds, where, after four or five years, they will be ſtrong enough to be tranſplanted into the places where they are to remain. In the planting them, great care is to be taken not to bury their roots too deep, which, when the ſoil is moiſt and ſtiff, often deſtroys them. The common *Elm* ſeldom produces ſeeds in great perfection, but the witch *Elm* produces great quantities of good ones, from which ſome people raiſe nurſeries of the trees. *Miller*'s Gardeners Dict. See ULMUS.

ELMOROSIA, a name given by the Moors to a diſh they are very fond of. It is made of pieces of beef, or of camel's fleſh, ſtewed with butter, honey, and water; ſome add rob of wine to it, and others garlick; but there is always added onions, ſaffron, and ſalt. Philoſ. Tranſ. N°. 253.

ELOANX, a name given by ſome writers to *auripigmentum*, or orpiment.

ELODES, in botany, an epithet given to a very ſoft and woolly ſort of St. John's wort, or *hypericum*.

ELODES is alſo uſed, among the antient writers in medicine, for a ſpecies of fever, attended with profuſe ſweats.

ELOHA, in ſcripture, the ſingular of *Elohi*, one of the names of God. See ELOHI.

ELOHI, ELOI, or ELOHIM, in ſcripture, one of the names of God. But it is to be obſerved, that angels, princes, great men, judges, and even falſe gods, are ſometimes called by this name. The ſequel of the diſcourſe, is what aſſiſts us in judging rightly concerning the true meaning of this word. It is the ſame as *Eloha*. One is the ſingular, the other the plural. Nevertheleſs *Elohim* is often conſtrued in the ſingular number, particularly when the true God is ſpoken of; but when falſe Gods are ſpoken of, it is conſtrued rather in the plural. *Calmet*. Diction. Bibl.

ELOI. See ELOHI.

ELOINE, in our laws, ſignifies to remove, or ſend a great way off. Thus it is ſaid, if ſuch as be within age be *eloined*, ſo that they cannot come to ſue perſonally, their next friends ſhall be admitted to ſue for them. Stat. 13 *Edw.* 1. cap. 15.

ELOME, a name given by ſome authors to orpiment. See AURIPIGMENTUM.

ELONGATA, in law, is a return of the ſheriff, that cattle are not to be found, or removed, ſo that he cannot make deliverance in replevin.

ELOPITINUM, a name given by ſome of the old chemiſts to vitriol.

ELOPS, Ἔλοψ, in zoology, the name of a ſerpent, otherwiſe called *Elaps*. See ELAPS.

ELOPS was alſo the name of a fiſh much eſteemed among the Greeks, and thought to be the ſame with the *Accipenſer*. *Hofm.* Lex. in voc. See ACCIPENSER.

ELOSSITES, in natural hiſtory, the name of a ſtone, mentioned with great reſpect by the writers of the middle ages; they have left us, however, ſo ſhort a deſcription of it, that it is impoſſible to determine what it was; they only ſay, that it was no very beautiful ſtone, but that, if worn in the pocket, it had a wonderful virtue in curing pains, and all other diſeaſes in the head.

ELPIS, a name given, by ſome of the chemical writers, to the ſcoriæ of ſilver.

ELPISTICI, Ελπιστικοι, among the Greeks, a ſect of philoſophers who made hope the ruling paſſion of mankind. *Hofm.* Lex. in voc.

ELTHYMUM, in the materia medica of the antients, a name given to the epithymum, or dodder, growing upon thyme. *Aviſenna*.

ELVELA, in botany, a name given by Linnæus to a genus of fungus's called, by Micheli, fungoidaſter, and fungoides. Theſe differ from all the other kinds of fungus's, in that they are ſmooth both on the upper and under ſide, having no marks of lamellæ, pores, or fibres, in any part.

ELVERS, an Engliſh name for a ſmall ſort of eels, caught in ſome parts of the kingdom, particularly about Glouceſter and Tewkſbury. Theſe are, in reality, young congers, or ſea eels. They get up into rivers while very ſmall. They are taken in prodigious numbers in the rivers, in dark nights, and are eſteemed a very delicate food. *Willughby*'s Hiſt. Piſ. p. 112.

ELUL, one of the Hebrew months, anſwering pretty near to our Auguſt. There are but nine and twenty days in it. It is the twelfth month of the civil year, and the ſixth of the eccleſiaſtical. Upon the ſeventh or ninth day of this month the Jews faſt, in memory of what happened after the return of thoſe who went to view the promiſed land. Numbers xiii, xiv.

Upon the twenty ſecond of this month the feſtival of the *xylophori* was obſerved, when wood was carried to the temple. Selden ſays, that it was celebrated on the eighteenth day of the month *ab*. On the twenty-ſixth of the ſame month, the dedication of the walls of Jeruſalem by Nehemiah was commemorated. *Joſeph*. l. 2. c. 17. p. 811. Nehem. xii. 27, *&c*. *Calmet*, Diction. Bibl.

ELUTRIATION, in metallurgy, is the ſeparating the lighter matters from the mixt ores of metals, by means of great quantities of fair water. Solid bodies, not diſſoluble in water, are by this operation ſeparated from each other by water very well ſtirred, ſo that the lighter and the finer parts are carried away with the water, and the heavier and more ſolid remain at the bottom of the veſſels.

Some of the ſtones, earths, and other bodies naturally mixed with the ores of metals, are much lighter than the metalline parts of thoſe ores, and are therefore very eaſily thus ſeparated from the reſt by this operation, either by barely pounding and waſhing them, or by firſt calcining them, and then extinguiſhing them in water, and afterwards waſhing them.

The kinds of ores proper to be made the ſubjects of this operation, are known from the great ſpecific gravity of the ore, which ſhews us that the metallic maſſes, adhering to their matrix, are firm and ſolid, and combined in large molecules, not ſmall, and ſcattered and diſperſed ſparingly through it; they are known alſo by the comparative lightneſs and brittleneſs of their ſtony matrix. Whether this laſt property be naturally inherent in the ſtony matter, or whether it be eaſily brought on by fire in calcination, for in each caſe it renders the comminution of the compound maſs eaſy. In this caſe, however, it is proper that the ore itſelf be of a nature ſufficiently fixed afterwards in the fire, and do not fly away in the roaſting.

When ſtones, containing ore in them, are light, and brittle, but hold a great quantity of ſulphur, and are interſperſed only with very minute maſſes of the metalline particles, or when theſe are incloſed in a very ponderous and hard matrix, not eaſily affected by fire, this method of ſeparation has no place. *Cramer*. Art. Aſſ. 195.

ELYCRYSUM, in botany, the name of a large genus of plants, the characters of which are theſe: The flower is of the floſculous kind, being compoſed of ſeveral ſmall floſcules, divided into ſegments, arranged in a ſtellated form at the ends; theſe ſtand on the embryo fruit, and are contained in a common ſcaly huſk or cup, which is of a very gloſſy and ſplendid appearance, and of a gold or ſilver colour, or of ſome other gaudy tinge. The embryos finally ripen into ſeeds, winged with down.

The ſpecies of *Elycryſum*, enumerated by Mr. Tournefort, are theſe: 1. The *Elycryſum*, called narrow-leaved citrine ſtæchas. 2. The *Elycryſum*, or citrine ſtæchas, with extreamly narrow leaves. 3. The *Elycryſum*, with a few oblong leaves, narrower than thoſe of the common citrine ſtæchas. 4. The Spaniſh ſea umbellated *Elycryſum*. 5. The Sicilian *Elycryſum*, with rough trifid leaves. 6. The Sicilian *Elycryſum*, with ſingle flowers, and leaves green on each ſide. 7. The broad-leav'd wild *Elycryſum*, with ſingle flowers. 8. The broad-leav'd wild *Elycryſum*, with larger ſingle flowers. 9. The broad-leav'd wild *Elycryſum*, with conglobated heads. 10. The ſmall branched water *Elycryſum*, with foliated heads. 11. The ſpiked *Elycryſum*, called the long-leav'd, or Engliſh upright cudweed. 12. The mountain *Elycryſum*, with round purpliſh flowers, called the mountain cudweed, or cat's-foot. 13. The mountain *Elycryſum*, with a round white flower. 14. The mountain *Elycryſum*, with a round bright red flower. 15. The mountain *Elycryſum*, with a round variegated flower. 16. The mountain *Elycryſum*, with long leaves, and purple flowers. 17. The mountain *Elycryſum*, with long leaves, and white flowers. 18. The oriental *Elycryſum*. 19. The broad-leav'd *Elycryſum*, called the broad-leav'd citrine ſtæchas. 20. The German *Elycryſum*, with a reddiſh yellow cup. 21. The German *Elycryſum*, with blood-red cups. 22. The wild narrow-leav'd *Elycryſum*, with conglobated heads. 23. The broad-leav'd American *Elycryſum*. 24. The long-leav'd erect *Elycryſum*, with conglobated heads. 25. The American *Elycryſum*, with a woolly and undulated leaf, like the roſe campion. 26. The American tree *Elycryſum*, with the ilex leaf. 27. The broad-leav'd woolly African *Elycryſum*, with a very large ſilvery cup to the flower. 28. The coris-leav'd ſhrubby African *Elycryſum*. 29. The roundiſh-leav'd hoary and woolly African *Elycryſum*. 30 The yellow-flowered ſweet-ſcented umbellated African *Elycryſum*. 31. The poley-leav'd yellow African *Elycryſum*. 32. The red-flowered narrow-leav'd hoary and woolly African *Elycryſum*. 33. The roſemary-leav'd African tree *Elycryſum*. 34. The plantain-leav'd African *Elycryſum*. 35. The very large-leav'd ſtinking African *Elycryſum*. 36. The dwarf *Elycryſum*. 37. The dwarf alpine *Elycryſum*, with capillaceous leaves. *Tourn*. Inſt. p. 452, 453.

ELYTRON, properly a covering of any ſort, and for any ſubſtance. Hippocrates has appropriated the word to ſignify the membranes which involve the ſpinal marrow.

ELZIMAR, a name given, by ſome of the chemical writers, to the flowers of braſs.

EMARGINATED *Leaf*, among botaniſts. See LEAF.

EMBALMING (*Cycl.*)—The way of *Embalming* dead bodies among the Egyptians was a follows: When a man died, his body was carried to the artificers, whoſe trade it was to make coffins; they took the meaſure of the body, and made a coffin for it, proportioned to its ſtature, the dead perſons quality, and the price that people were willing to give, for there was a great diverſity in the prices. The upper part of the coffin repreſented the perſon who was to be ſhut up in it, whether man or woman. If it was a man of condition, this was diſtinguiſhed by the figure which was repreſented on the cover of the coffin; there were generally added paintings and embelliſhments, ſuitable to the quality of the perſon. Vid. *Caſſian*. Collat. 15. c. 3. & *Cicero*, Tuſc. Quæſt. l. 1. *Herodot*. l. 2. c. 86. *Diodor*. l. 2. c. 5.

When the body was brought home again, they agreed with the embalmers, at what rate particularly they would have it *embalmed*, for the prices were different; the higheſt was a talent, twenty minæ was a moderate one, and the loweſt price was a very ſmall matter. The Egyptian talent is ſuppoſed to be worth three hundred pounds ſterling. They immediately ſent for a deſigner, who marked the body, as it lay extended, at the place where it ſhould be opened, on the left ſide, and the length of the inciſion. A diſſector, with a very ſharp Ethiopian ſtone, made the inciſion, and hurried away as faſt as he could, becauſe the relations of the perſon deceaſed, who were preſent, took up ſtones, and purſued him as a wicked wretch, with an intention to ſtone him.

This operation being finiſhed, the *Embalmers*, who were looked upon as ſacred perſons, entred to perform their office. They drew all the brains of the dead perſon through his noſtrils, with a hooked piece of iron, provided particularly for this purpoſe, and filled the ſkull with aſtringent drugs; they likewiſe drew all the bowels, except the heart and kidneys, through the aperture which they had made in the ſide. The inteſtines were waſhed in wine from the palm tree, and in other ſtrong and binding drugs. The whole body was anointed with oil of cedar, with myrrh, cinnamon, and other ſpices, for about thirty days, ſo that it was preſerved entire, not only without putrefaction, but had a good ſcent with it. Αιγυπτιοι δε τα εϋοδμα εξελοντες ταριχευσιν αϋλες. And the *Perſians*, as the ſame author *Sextus Empiricus* obſerves, were uſed νίτρῳ ταριχευειν. Sext. Empir. Pyrrhon. Hypoth. l. 2. c. 24. Bodies thus preſerved are called *Mummies*, from the *Arabic* word *Mam*, which ſignifies wax, this being an ingredient in the preparation.

After this the body was put into ſalt for about forty days: Where-

Wherefore when Moſes ſays, that forty days were employed in embalming Jacob, we are to underſtand him as meaning the forty days of his continuing in the ſalt of nitre, without including the thirty days paſt in performing the other ceremonies above mentioned, ſo that, in the whole, they mourned ſeventy days in Egypt, as Moſes likewiſe obſerves.

Afterwards the body was taken out of the ſalt, waſhed, wrapt up in linnen ſwadling bands, dipped in myrrh, and rubbed with a certain gum, which the Egyptians uſed inſtead of glue. Then the body was reſtored to the relations, who put it in a coffin, and kept it in their houſes, or in tombs made particularly for this purpoſe. There are ſome found, at this day, in Egypt, in chambers, or ſubterraneous vaults, which fully juſtify the truth of what is here ſaid.

They who were not rich enough to bear this expence, contented themſelves with infuſing, by a ſyringe, through the fundament, a certain liquor extracted from the cedar, and leaving it there, wrapt up the body in ſalt of nitre. This oil preyed upon the inteſtines, ſo that when they took it out, the inteſtines came along with it dried, and not in the leaſt putrefied. The body being incloſed in nitre, grew dry, and nothing remained beſides the ſkin glued upon the bones. They who were too poor to be at any conſiderable expence, did no more than cleanſe the inſide, by ſyringing a liquor into it; this done, they put the body, without further ceremony, into nitre for ſeventy days, in order to dry it. *Calmet.* Diction. Bibl.

It is no wonder that we find human bodies preſerved without corrupting for many ages, by means of ſpices, and other ingredients, proper to reſiſt putrefaction, applied with the niceſt care; but it is ſtrange that there ſhould be a ſort of *embalming* performed by nature, in ſome places, where bodies are preſerved merely by the virtues of the ſoil in which they lie, yet this is evidently the caſe in ſome inſtances. We have, in the philoſophical tranſactions, an account of a man and a woman who were loſt in the great ſnows on the moors of Hope, near the woodlands in Derbyſhire, on the fourteenth of January, 1674. Theſe perſons were not found till the third of the May following, at which time they ſmelt ſo ſtrong, that the coroner prudently ordered them to be buried on the ſpot. Theſe bodies lay buried in the peat moſs twenty-eight years before they were looked at again, when ſome people of the country, who had heard of the ſtrange virtues of the ſoil thereabouts in preſerving dead bodies, opened the ground, and found them no way altered, the colour of the ſkin being fair and natural, and the fleſh as ſoft as that of perſons newly dead. Phil. Tranſ. N°. 434. p. 415.

After this the place was remarked where they lay, and they were ſhewn for a ſight for twenty years, though they were much changed by having been ſo often uncovered in that time; and in the year 1716 they were found in the following condition: The body of the man was perfect, his beard was ſtrong, and about a quarter of an inch long; the hair of his head was ſhort. The ſkin of all parts was hard and tough, and of the colour of tanned leather, or of the wet in which it lay. He had on a broad cloth coat, which was as ſound and ſtrong as ever. The body of the woman had been taken out of the ground, and was much decayed, one leg was off, and the fleſh of it in a bad condition, but the bone was ſound, and the fleſh of one hand was decayed, but the bone alſo ſound, and, on her face, her upper lip and the tip of her noſe was decayed, but all the reſt ſound; her hair was long and ſpringy, like that of a living perſon. One of the teeth being at that time taken out of her mouth, was as elaſtic as a piece of ſteel, and would bend round the finger, but immediately recover its ſtrait ſhape again; but this quality it ſoon loſt when out of the ground. After this they were buried in Hope church, where, after a few years, they were found wholly conſumed.

In their firſt grave they lay at about a yard deep, and the ſoil was wet, but no water ſtood in the place. When the ſtockings were drawn off, the man's legs, which had never before been uncovered, were very fair; the fleſh, when preſſed with the finger, pitted a little, and the joints were moveable, without any ſtiffneſs, the other parts were much decayed. The people, at one time or other, had cut off and carried away the greateſt part of their cloaths as curioſities, but what was left was firm and good.

EMBASIS, in the writings of the antient phyſicians, the name of a large veſſel, in which they prepared their medicated baths, and which was capable of holding the perſon to be bathed at his full length.

EMBATTLED *Line*, (*Cycl.*) in heraldry, a term uſed to expreſs one of the common lines in coats of arms, repreſenting the battlements of a houſe, and ſaid to have been originally given to the families on three very different accounts. Some having obtained it for eminent ſervices, in attacking or defending the battlements of a caſtle, or other place of defence, in time of war; others for their eminence in the ſkill of architecture, and others only for being deſcended of antient and honourable houſes, none being ſuffered, in antient times, to imbattle their houſes, but thoſe who had great dignities, as the barons, and the like. Cambden proves this in his account of Tunſtall's ſeat in England, in which he expreſſes it as a ſignal mark of the royal favour, that he had liberty given to embattle it.

The heralds expreſs this embattled line by the term *crenelle*; and when it has the embattling on both ſides, which is the more rare, they then call it *bretеſſe*. *Neſbet*'s Heraldry. See BRETESSE.

EMBER (*Cycl.*)—EMBER-*Gooſe*, in natural hiſtory, a ſpecies of the wild gooſe, found in Zetland, that is ſaid to hatch her young under her wing. This is certain, that none ever ſaw her on the land, or out of the water, and that they have a cavity under one of their wings capable of containing a large egg. Phil. Tranſ. N°. 473. §. 8.

EMBERIZA, in zoology, a name, with the epithets of white and yellow, expreſſing the bunting and yellow-hammer. See BUNTING and YELLOW-HAMMAR.

EMBLEM (*Cycl.*)—According to Lord Bacon, *Emblems* are of uſe in the art of memory, as ſenſible objects ſtrike the mind ſtronger than what is intellectual. Thus, it is eaſier to retain the image of a ſportſman hunting a hare, of an apothecary ranging his boxes, an orator making a ſpeech, a boy repeating verſes, or a player acting his part; than the correſponding notions of invention, diſpoſition, elocution, memory, and action. Works abr. Vol. 1. p. 136. and Vol. 2. p. 475. Vol. 3. p. 106.

EMBRACE *a Volt*, in the manege, is uſed when a horſe, in working upon volts, makes a good way every time with his fore legs. The oppoſite term to embracing a volt, is beating the duſt, which is putting his fore feet near the place from whence he lifted them.

Embracing the ground is uſed in the ſame ſenſe with embracing the *Volt*. A horſe cannot take in too much ground, provided his croupe does not throw out; that is, does not go out of the *Volt*. See BEAT.

EMBRACERY, in law, the act or offence of embraceors. See EMBRACEOR, *Cycl.*

EMBRYO (*Cycl.*)—EMBRYO *Worms*. It is a matter of no ſmall curioſity, to obſerve the arrangement of the multitudes of the *embryo* worms, as they are lodged in the bodies of the viviparous two-winged flies.

An accurate diſſection of one of theſe little animals, ſhews very plainly the parts where the *embryo* worms are encloſed. This diſſection is eaſily made with a pair of fine pointed ſciſſars, taking off the whole upper ſhell of the body from the lower; and that part which covers the belly may be turned back upon the corcelet, without the internal parts being at all diſturbed by the operation, and the form and arrangement of the parts which contain the *embryo* worms in theſe, will be found very different from that of thoſe which contain the eggs in the common flies. In thoſe we find the eggs contained, as it were, in two bladders, and placed in two great parcels, one on the right ſide, and the other on the left; but, in the viviparous fly, nothing analogous to this is found; but the thing that moſt attracts the obſerver's eye is a ſort of band, or cord, which follows the whole circumference of the body, except that at the junction of the corcelet it leaves a little ſpace for the pulmonary veſſels. Examining more cloſely, one ſoon finds alſo that this circular band is not ſingle, but that it has ſeveral other convolutions within it, and is rolled in a ſpiral from the center of the body to the extremity of either ſide, and that it encircles a ſmall ſpace there, and afterwards makes five circles before it terminates.

What the ovarys are to the oviparous flies, that is this band to the viviparous, it is, in ſhort, the part where the *embryo* worms are encloſed, and is properly the womb of the inſect. Notwithſtanding that this appears no other than a cord, or band, as one views it in the body of the creature, the taking it out ſhews it to be a ſort of flat veſſel, but of ſome thickneſs, wound round like the ſpring of a watch, and containing, at different diſtances, a vaſt number of the *embryo* worms. This veſſel, drawn out and extended, often meaſures more than two inches in length, which is very conſiderable, in proportion to the length of the body of the fly, which is not more than about four lines. Ibid. p. 416.

Notwithſtanding the extream ſmallneſs of the worms contained in this part, they are very eaſily diſtinguiſhable from eggs, and cannot, by a nice obſerver, be taken for any other than *embryo* worms; the microſcope alſo puts this beyond all poſſibility of diſpute, ſince, in thoſe which are the moſt forward, and neareſt the time of their being depoſited from the body of the creature, one plainly diſcovers the rings of the body, and even the hooks with which almoſt all the fly-worms of the firſt claſs are armed at tne mouth. Ibid. p. 417.

One cannot, without amazement, conſider the number of *Embryos* contained within the body of one fly, of any one of theſe ſpecies; and yet another more ſtrange thing than this is, that notwithſtanding all this fecundity of the parent fly of this ſpecies, the flies of it are much more rare than thoſe of the cow-dung worm, in the parent fly of which are ſeldom found more than two large eggs: But the whole reaſon of this muſt be, that theſe worms of the viviparous flies are the deſtined food of ſome other creature, from which very few of them eſcape. Ibid.

Notwithſtanding that the uterus of theſe flies contains ſuch immenſe numbers of worms, and thoſe ſo cloſely arranged, yet each ſeparate *Embryo*, while there, has its diſtinct and peculiar ſkin, or film, in which it is encloſed.

Tho' the flies of the viviparous kind, hitherto mentioned, are all of a larger ſort, there are not wanting, even among the moſt minute ones, ſome of this kind. The common heaps of cowdung afford us myriads of extreamly ſmall worms, which, after a proper time, in that form, paſs into the nymph ſtate under a ſhell of their own ſkin, and thence into flies much ſmaller than the head of a pin, yet theſe the microſcope ſhews to be viviparous. Ibid. p. 428.

Nor are we to imagine theſe the ſmalleſt of this kind. To the great creator of all theſe, large and ſmall are the ſame; and as the microſcope has of late ages diſcovered to us millions of animals in liquors where we never ſhould have imagined we ſhould have found them, it is much more than poſſible, that multitudes of theſe, after having paſſed that part of their life we are acquainted with, under the form of water worms, may afterward become flies too minute for our obſervation; flies, to which the ſmalleſt of thoſe we know may be of an enormous magnitude, and that of theſe many may be viviparous. Ibid. p. 430.

EMBRYONATUM *Sulphur*, in the writings of ſome chemiſts, the name of one of the three general claſſes of *Sulphur* which they conſtitute. The firſt of theſe they call the univerſal *Sulphur*, or reſin of the earth; this is never united with any thing: By this they ſeem to mean what Boerhaave, and other late chemiſts, have called the vague acid. The ſecond is this ſame ſulphur united to metals and minerals; and the third is the ſame *Sulphur*, when ſeparated by art from theſe metals and minerals. This laſt ſeems ſulphur in its moſt advanced ſtate, and the ſecond kind is what they call the *Sulphur Embryonatum*, as it is in the metals, *&c.* in an embryo ſtate, and ready to be diſcloſed into its laſt form.

EMBRYULCUS, in ſurgery, the name of an inſtrument, in form of a ſort of crotchet, or hook, uſed for drawing out the fœtus in difficult labours.

EMERALD (*Cycl.*)—See SMARAGDUS.

Counterfeit EMERALD. The manner of making *counterfeit Emeralds* in paſte is this: Take cryſtal prepared two ounces, common minium, or red lead, four ounces; mix theſe well together, then add of good verdigreaſe two pennyweights, and crocus martis made with vinegar, eight grains. Mix all theſe well together, and ſet the whole in the hotteſt part of a potter's furnace. As long as the fire laſts it muſt be put into a ſtrong crucible, and covered with a lute. When it is cold take off the lute, and, if it is baked enough, it will be clear to the bottom; otherwiſe relute the pot, and put it into the furnace again. Twenty-four hours commonly is ſufficient for the making this; ſometimes it requires a little more. The paſte, thus made, is harder than ordinary, and is of a fine colour, and capable of a good poliſh. *Neri*'s Art of Glaſs, p. 128.

If the paſte be deſired of a very deep *emerald* colour, take prepared cryſtal one ounce; red lead, ſix ounces and a half; of verdigreaſe, three pennyweight and thirteen grains; and of crocus martis, made with vinegar, ten grains. This requires a longer baking than the other, and is leſs hard, though of a deeper colour. *Neri*, p. 129.

The proportions of theſe Ingredients may be varied at pleaſure, and the colour be made of all degrees of deepneſs; but the more lead is added, the more baking is required, and, after all, the paſte will be ſo much the ſofter.

EMERALD *Colour*, in the glaſs trade, the way of giving this beautiful dye to glaſs is this: In the pots of melted metal, made of palverine, and without manganeſe, when the matter is well purified, put a little crocus martis calcined with vinegar. About three ounces of this crocus is enough for a hundred weight of glaſs, let it ſtand till thoroughly mixed, then put into every hundred weight of metal two pound of calcin'd braſs; this muſt be added at ſix different times, letting the metal ſtand two hours every time. When this is all in, make a proof of the metal, and if it have any bluiſhneſs, add more crocus martis, a ſmall quantity at a time. When the whole is of a fine leek green, let it ſtand twenty-four hours to mix thoroughly, and then work it. *Neri*'s Art of Glaſs, p. 51.

EMERUS, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the papilionaceous kind, and the piſtil, which ariſes from the cup, becomes finally a ſlender pod, uſually containing cylindric ſeeds.

The ſpecies of *Emerus*, enumerated by Mr. Tournefort, are theſe: 1. The great podded ſcorpioide *Emerus*. 2. The low dwarf ſcorpioide *Emerus*. 3. The American *Emerus*, with crooked pods. *Tourn.* Inſt. p. 650.

EMERY, *Smiris*, (*Cycl.*) in natural hiſtory, medicine, *&c.* a kind of iron ore, diſtinguiſhed from all the others by its peculiar hardneſs. It cuts glaſs like a diamond; but makes no efferveſcence with any of the acid menſtrua.

Emery is ſaid to have a corroding and almoſt cauſtic quality; but this without any juſt foundation. It is recommended by the antients as an aſtringent and dentrifice. In this laſt intention, however, it muſt be uſed with great caution, as its hardneſs and ſharpneſs are ſuch, that it will be apt to wear off the enamel of the teeth. *Hill*, Hiſt. Mat. Med. p. 10. See SMIRIS.

EMETIC (*Cycl.*)—The antient phyſicians were very fond of *Emetics*, as preſervatives againſt diſeaſes, and Hippocrates, in particular, has recommended the giving them twice a month, during winter and in the ſpring. His *Emetics* were very eaſy, ſimple, and gentle ones. One very common preſcription, to this purpoſe, was a decoction of hyſſop, with an addition of ſo much vinegar and ſalt as would make the patient nauſeate it. This was to be taken by ſtrong and robuſt people, in the morning faſting, and, by the more weakly, after dinner or ſupper. Diodorus Siculus has aſſured us, that the great practice of the antient Egyptian phyſicians conſiſted in glyſters, vomits, and abſtinence. Aſclepiades, who was a great enemy to purges, yet often ordered his patients gentle vomits after ſupper.

The *emetic* medicines are of two very different kinds, ſome being naturally mild and gentle, others harſh and rough; of the former kind, warm water with butter, or the water of the naturally warm mineral ſprings, are often capable of doing very great ſervice. The medicine of the general uſe at preſent, ipecacuanha, ſeems of a happy middle nature between theſe, and the more rough ones, of which the vegetable kingdom afford us a great number, as aſarabacca, white hellebore, gamboge, and all the purges in too large doſes. The mineral world, however, affords much more numerous and more violent ones; ſuch are all the preparations of copper, and of the vitriols, the antimonial vomits, and the mercurial ones.

The antients, in violent diſeaſes, ſuch as madneſs, epilepſies, and ſome other diſorders, not attended with a fever, gave the white hellebore root as an *Emetic*, with great ſucceſs; but we now uſe remedies leſs dangerous, as death has been ſometimes known to have been the effect of this medicine. Our ipecacuanha is a celebrated remedy for fluxes, nor is the obſervation new, that vomits are the greateſt of all remedies in theſe caſes. Celſus, l. 1. c. 3. affirms, that vomits in general ſtop fluxes, yet always keep the body open. The country people, with us, frequently uſe aſarabacca as a ſuccedaneum, for the ipecacuanha. It is rougher, indeed, than that medicine, but, if taken in decoction, the boiling carries off its acrid and too pungent quality, and it retains its *emetic* power in a more gentle degree, and, with it, has a balſamic and corroborating virtue, and has been known to cure inveterate quartans, and to do great ſervice in jaundices and dropſies.

Among the antimonial vomits, the beſt is the *emetic* tartar, prepared from the crocus metallorum, not from the glaſs of antimony, for that makes it doubly rough and harſh in the working. Three or four grains of this alone, or yet leſs of it, mixed with ipecacuanha, are often given with great ſucceſs, and when the intention is to purge and vomit at the ſame time, then three grains of this *emetic* tartar, added to a ſolution of manna, prove an excellent medicine. In aſthmatic and pituitous caſes, the oxymel of ſquills is a very efficacious and perfectly ſafe medicine; but all the preparations of copper, and the rougher antimonial vomits, are to be rejected as being very dangerous and very uncertain, working either too little, or greatly too much, according to the ſtate of the humours in the ſtomach. The ſtronger *Emetics* beforementioned, as ſafe ones, are often neceſſary in caſes of poiſons, eſpecially of the narcotic kind, and the infectious particles received from the effluvia of perſons in contagious diſeaſes, which being ſwallowed into the ſtomach with the ſpittle, would otherwiſe infallibly create the ſame diſeaſe. In diſorders ariſing from a vitiated or thick bile, formed, as it were, into a kind of viſcid coagulum, and ſtopping up the biliary ducts, as is the caſe in jaundices, and ſome other complaints, *Emetics* are frequently uſed with great ſucceſs, after all the common methods have failed. In anaſarcas alſo, and leucophlegmaſies, and œdematous ſwellings of the parts, and in a curable aſcites, *Emetics*, exhibited in large doſes, uſually carry off by ſtool, though rarely by vomit, the aqueous ſerum from the liver, and the ducts and glands of the inteſtines, meſentery, and pancreas; nor are theſe the only caſes in which *Emetics*, properly adminiſter'd, are capable of doing very ſingular ſervice; but there ſtill requires great care and caution in the giving them, as it is an infallible rule, that the medicine which can do great good, may alſo do great harm. *Hoffm.* Medic. Rational Syſtem.

'Tis proper, in order to make *Emetics* work the more eaſily, always to give them in a liquid form, or in a ſufficient quantity of ſome moiſtening, relaxing, and fatty vehicle; for vomiting not only requires a ſtrong contraction of the pylorus, and bottom of the ſtomach, but alſo a relaxation of the ſuperior orifice of the æſophagus. During the operation of *Emetics*, and after it is over, the patient muſt be carefully guarded againſt the cold, and to abſtain from all cold liquors, from all hot or ſtimulating medicines, and from all violent emotions of the mind: And about four hours after the operation of a vomit is over, it is extreamly proper to drink half a pint of aſſes milk, if it can be readily had.

Whenever bleeding and vomiting are both neceſſary, bleeding ſhould always be done firſt. Sydenham, who very judiciouſly gives this caution, had been long uſed to give vomits in febrile diſorders; and in the ſmall pox, his uſual *Emetic* was the vinum benedictum, and, according to his own account of the ſucceſs, it does not appear that our ſubſtituting the ipecacuanha in its place has been of any ſervice to the world in theſe caſes.

The antients in general have recommended the giving vomits in

in tertians and quartans, before the coming on of the fit; and Alexander Trallian has been very earneſt in the recommending them on this occaſion. The practice is highly conſonant with reaſon, and all the known rules, and may be of great advantage not only in theſe, but in many other caſes, in which it is not at preſent thought of.

Dr. Harris has obſerved of the antimonial vomits, that they are very ſafe in the heat of ſummer, but very dangerous in colder ſeaſons. This author alſo recommends a decoction of the herb digitalis, or fox-glove, as a very ſafe, though powerful *Emetic*; and there is an account of another plant, uſually eſteemed of the dangerous kind, that is, the common creeping meadow crowfoot, from which a very ſafe and efficacious *Emetic* is to be prepared, and has been adminiſtered in many parts of England with great ſucceſs. The method of preparing it is only by diſtilling, in the common way, a ſimple water from the plant; this is very acrid and pungent to the taſte, and requires to be lowered, either by drawing a very large quantity from a little of the herb, or elſe by mixing common water with it. The method of giving it is this: Let the patient drink about a quart of warm water, then give an ounce of this diſtilled water, and the whole will be immediately brought up with great eaſe; and the whole operation is then over for that doſe, and the water and medicine are again to be repeated as often as is judged neceſſary. *Harris*'s Diſſertation.

If vomits operate too violently, common ſalt is a well known remedy. This ſeldom fails to check or ſtop them. Mild aromatics and opiates alſo have the ſame effect, and corroborating medicines, either taken internally, or applied by way of cataplaſm, or embrocation, to the region of the ſtomach.

Dr. Shaw thinks the moſt ſafe, gentle, and agreeable *Emetic* yet known, is an infuſion of the ipecacuanha root in white wine, without heat. This is made by putting two drams of the root, in fine powder, into half a pint of white Liſbon wine, and, after ſtanding two days, adding a freſh quantity of wine to the remaining powder, when this is poured clear off. Theſe wines are to be mixed together, and given in a doſe ſuited to the ſtrength of the patient. This is greatly preferable to the vinum benedictum, *emetic* tartar, and all the medicines of a like kind, which are attended with danger and uncertainty in their operation; and while we have this, there is no reaſon why all the violent *Emetics* ſhould not be wholly diſcarded the practice of phyſic. *Shaw*'s Lectures, p. 221.

EMETIC *Wine*.—Small doſes of *emetic* wine have been recommended as deobſtruent and ſudorific in ſlow fevers, in many chronical diſeaſes, and eſpecially in an obſtinate rheumatiſm. See Medic. Eſſ. Edinb. Abr. Vol. 1. p. 170. and *Huxham*, Obſ. de Aere & Morb. epidem.

EMEU, in zoology, the common name of the caſſowary, a large bird of the oſtrich kind. See the article CASSOWARY.

EMIR *Hadge*, the name of a highly dignified office in the eaſtern nations. He is the prince of the pilgrims that go to Mecca; and is named yearly from Conſtantinople, tho' he is generally left two years in his office to make amends for his great expence in equipage in the firſt; and ſometimes, if he have capacity, and intereſt at the porte, he is continued ſix years, but rarely longer, for if they conduct the caravan ſeven years, the Grand Seignior preſents them with a collar of gold, and it is ſaid that their perſons, after this, become ſacred, and they cannot be publickly cut off. This officer has command over the eſtates that go to Mecca. The perquiſites of his office, beſide what he is allowed by the porte, conſiſt in having a tenth of the effects of all the pilgrims who die in the journey. *Pocock*'s Egypt. p. 165.

EMISSARIUM, in antiquity, a ſluice, or drain, to draw off the water uſed in watering gardens, fields, &c. *Pitiſc.* Lex. Ant. in voc.

EMITES, in natural hiſtory, the name uſed, by ſome authors, for the chermites, a beautiful ſpecies of white marble, of which the tomb of Darius, and many other of the great works of antiquity were made. It was valued for its fine poliſh.

EMMELIA, Ἐμμέλεια, in antiquity, a dance peculiar to tragedy, which had all that gravity and dignity that was ſuitable to the action then repreſenting, and was deſigned to inſpire the audience with ſentiments of compaſſion and benevolence for the unfortunate and oppreſſed, with indignation againſt the guilty, and with love for virtue, and abhorrence for vice.

The movements of ſuch a dance as this, muſt have been very ſolemn and majeſtic, and have bore a great affinity to the action of an orator; it was the only one, excepting the military dances, that had the approbation of Plato. Mem. Acad. Inſcript. Vol. 2. p. 160. See DANCE, *Cycl.*

EMMIELLURE, in the manege, a kind of compoſition of honey, and other ingredients, uſed for ſprains and ſhoulder-ſplaits of horſes. See CHARGE.

The word is French, derived from *miel*, honey, which is a part of the compoſition.

EMODIA, in medicine, a word uſed, by ſome authors, to expreſs a ſtupor of the teeth.

EMPATTEMENT, in fortification, a term uſed by ſome to denote the ſame with *talus*. See TALUS, *Cycl.*

EMPEROR, (*Cycl.*) among Hebrew grammarians, is an appellation given to a ſpecies of accents ſerving to terminate a ſenſe compleatly, and anſwers to our point. See ACCENT, *Cycl.*

EMPETRON, in botany, a name by which ſome authors, as Dodonæus, &c. have called the kali, or glaſswort. *Ger. Emac.* Ind 2. See KALI.

EMPETRUM, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the apetalous kind, conſiſting of a number of ſtamina; but theſe are barren, the fruit appearing in other parts of the ſame plants. Theſe reſemble berries, and contain two or three hard or cartilaginous ſeeds.

The ſpecies of *Empetrum*, enumerated by Mr. *Tournefort*, are theſe: 1. The black-fruited mountain *Empetrum*, called berry-bearing heath, and 2. The white-fruited Portugal *Empetrum*. *Tourn.* Inſt. p. 579.

EMPETRUM is alſo a name uſed, by ſome authors, for the *alypum*, commonly called *herb terrible*. *Chabræus*, p. 48.

EMPHRACTIC, (*Cycl.*) *Emphractica*, in medicine, a name applied to ſuch external remedies as, applied to any part of the body, adhere firmly, and ſtop the pores.

EMPHRAXIS, in medicine, an obſtruction in any part.

EMPHRUE, in botany, the name given, by the people of Guinea, to a ſpecies of tree, the leaves of which they boil in wine, and give, as a great reſtorative, in caſes of weakneſs and decay. Its leaves are exactly of the ſhape of thoſe of the common mulberry, but they are not indented at the edge. Petiver has thence called it arbor Guineenſis mori folio non crenato. Philoſ. Tranſ. N°. 232.

EMPHYSEMA, (*Cycl.*) in ſurgery, a name given to any flatulent tumour, but peculiarly appropriated, by ſome writers, to a ſoft tumour, ariſing from air contained in the cavities of the membrana celluloſa. Hippocrates uſes the word to expreſs an inflation of the belly, and in ſome parts of his writings, in a more general ſenſe, for any tumour.

EMPIS, in natural hiſtory, the name given, by authors, to a large ſpecies of gnat, found about rivers and ponds; it is diſtinguiſhed from all the other kinds, by a circle of white paſſing round the middle of its body.

EMPLASTRUM *Attrahens*, the drawing plaſter, a plaſter ordered, in the late London pharmacopœia, to ſupply the place of the melilot plaſter, in the dreſſing of bliſters. The college are ſatisfied that the herb is of no ſort of uſe in the compoſition, and that very groſs abuſes are practiſed to give the green colour to the plaſter; for which reaſon they have ordered the plaſter to be now made in this manner: Take yellow reſin, and yellow wax, of each three pound; tried mutton ſuet, one pound; melt all together, and ſtrain while it is hot. *Pemberton*'s Lond. Diſp. p. 351.

EMPLASTRUM *Commune*, a name given, in the new London pharmacopœia, to what has been long called diachylon plaſter. The apothecaries had been long uſed to make this by a ſhorter way than was preſcribed them, and the college has now authorized that method, ordering it to be made of only a gallon of oil of olives, and five pounds of litharge, boiled together with about a quart of water, to keep them from burning till they are perfectly mixed, and have the conſiſtence of a plaſter. *Pemberton*'s Lond. Diſp. p. 352.

EMPLASTRUM *ex Ammonicaco cum Mercurio*, a form of medicine, in the late London diſpenſatory, ordered to be prepared in the following manner:

Take gum ammoniacum ſtrained, a pound; quickſilver, three ounces; ſimple balſam of ſulphur, a dram. Rub the quickſilver with the balſam of ſulphur, till it no longer appear, then add, by degrees, the gum ammoniac melted, and almoſt cooled again, and make the whole into a plaſter. *Pemberton*'s Lond. Diſp. p. 351.

EMPLASTRUM *Roborans*, the ſtrengthening plaſter, a form preſcribed in the London diſpenſatory, and ordered to be made thus: Take of the common plaſter two pound, of frankincenſe half a pound, of dragon's blood three ounces; melt the plaſter, and then add to it the other ingredients in powder. *Pemberton*'s Lond. Diſp. p. 358.

EMPNEUMATOSIS, in medicine, a word uſed, by ſome writers, to ſignify an inflation of the ſtomach; but by others, in a more general ſenſe, for inflations of the womb, or of any other part.

EMPORIUM, in medicine, is often uſed for the common ſenſory in the brain. See BRAIN.

EMPRION, in the medical writings of the antients, a word uſed to denote a peculiar pulſe, in which the artery is felt to be diſtended in one part more than in another, at every ſtroke, and, by that means, is made to reſemble any ſerrated body, or the light teeth of a fine ſaw.

EMPTOR *Familiæ*, *Buyer of a Family*, in the Roman law, he who purchaſed the inheritance of a perſon, or the privilege of being appointed his heir by will.

This was done with the ceremony of ſcales and weights, before five witneſſes, with the uſe of a peculiar formula of words.

Such *buyer* differed from the heir, *hæres*, as the teſtator, in ſome meaſure, alienated the right to the former, during his own life-time; whereas the latter had only a right by his death. *Briſſon.* de Formul. l. 7. p. 585. *Pitiſc.* Lex. Ant. T. 1. p. 713. voc. *Emptor*.

EMPTOR *Fiduciarius*, *Fiduciary Buyer*, he who receives a thing, in the way of pledge, till the money he has advanced

be repaid. *Salmaſ.* de Mod. Uſur. c. 14. *Pitiſc.* Lex. Ant. T. 1. p. 713. voc. *Emptor.*

EMPUSA, Εμπουσα, among the antients, a kind of hobgoblin, or bugbear, under the direction of Hecate, who uſed to ſend it to frighten people who laboured under misfortunes. *Hofm.* Lex. in voc.

ENAMEL (*Cycl.*)—The workers in *Enamel* muſt be very cautious of the good or bad qualities of the oil of ſpike they employ to mix their colours with. It is a thing very ſubject to adulterations. Sometimes with ſpirit of wine; ſometimes with oil of turpentine. In the firſt caſe it wants body, as there is uſually too much ſpirit added; and, in the latter, the ſmoak of the turpentine, when heated, ſpoils the colours. A ſmall mixture of ſpirit of wine does well; and the beſt method, for the nice artificer, is to refine the oil, and afterwards add to it ſuch a quantity of ſpirit as is found beſt.

The common matter, which is the baſis of all *Enamels*, is thus made: Take fine lead, thirty pound; fine tin, thirty-three pound; calcine theſe together in a kiln, then ſift them; boil this powder in water, in clean earthen veſſels, and pour off the water, which will carry with it the finer part of the calx; put freſh water on the remainder, boil it again, and pour off in the ſame manner; do this ſo long as the water will carry off any part of the calx. Recalcine the remaining matter, and waſh off its finer part in the ſame manner again, then evaporate all the waters, which have waſhed off the finer calx, and keep the fire low, towards the end of the operation, that the calx may not be waſted, this will be found, at the bottom, of an extream fineneſs.

Take of cryſtal frit, made with tarſo, and of this fine calx, each fifty pound, white ſalt of tartar, eight ounces; powder and ſift theſe, and mix them well. Put this mixture into a new earthen pot, give it a fire for ten hours, then powder it, and keep it in a dry covered place. *Neri*'s Art of Glaſs, p. 147.

This is the common plain *Enamel*, or matter, of which all the other *Enamels* are to be made. In the making theſe, the following general cautions are neceſſary to be obſerved. 1. That the pots muſt be glazed with white glaſs, and muſt be ſuch as will bear the fire. 2. That the matter of *Enamels* muſt be very nicely mixed with the colours. 3. When the *Enamel* is good, and the colour well incorporated, it muſt be taken from the fire with a pair of tongs. 4. The general way of making the coloured *Enamels* is this. Powder, ſift, and grind all the colours very nicely, and firſt mix them well with one another, then with the common matter of *Enamels*; then ſet them in pots in a furnace, and when they are well mixed and incorporated, caſt them into water, and, when dry, ſet them in the furnace again to melt, and, when melted, take a proof of it. If too deep coloured, add more of the common matter of *Enamels*, and, if too pale, add more of the colour.

Azure ENAMEL. To make this, take of the common matter of *Enamels*, four pound; zaffer prepared, two ounces; braſs thrice calcined, forty-eight grains. Mix all theſe well together, and melt them in the furnace in the uſual way. *Neri*'s Art of Glaſs, p. 150.

Black ENAMEL. To make the black *Enamel*, take of the common matter of *Enamels*, four pound; tartar, four ounces; mangeneſe, two ounces. Grind and mix theſe powders well with the matter of the *Enamel*, then ſet them in a furnace in a large pot; when melted and refined, caſt them into water, and, putting them again into the furnace, let them refine. *Neri*'s Art of Glaſs, p. 153.

Green ENAMEL. To make this, take of the common matter of *Enamels*, four pound; melt it, and caſt it into water, return it again to the furnace, and, when purified, add of braſs, thrice calcined, two ounces; crocus martis, made with vinegar, forty-eight grains. Mix theſe firſt in fine powder, and put this in at three ſeveral times; when all is well incorporated, take it from the fire. *Neri*'s Art of Glaſs, p. 157.

Milk-white ENAMEL. To make this uſeful colour in *Enamels*, requires no more than this; take the common matter of *Enamels*, ſix pound; manganeſe prepared, forty-eight grains; melt them in the furnace, caſt the whole into water, and afterwards return it again into the furnace, and, when refined, uſe it. *Neri*'s Art of Glaſs, p. 149.

Purple ENAMEL. To make this, take of the common matter of *Enamels*, ſix pound; of manganeſe, three ounces; braſs, thrice calcined, ſix ounces; mix all well together, and ſet them in a furnance, let them refine, then caſt them into water, return the matter to the furnace again, and, when thoroughly melted, take it out for uſe. *Neri*'s Art of Glaſs, p. 153.

This mixture, with a ſmaller proportion of braſs, makes the red *Enamel*.

Violet-coloured ENAMEL. The method of making the violet-coloured *Enamel* is this: Take of the common matter of *Enamels*, ſix pounds; of manganeſe prepared, three ounces; of thrice calcined braſs, forty-eight grains; mix the two powders well together, then mix the whole, put them into the furnace, and, when refined, caſt them into water, return the matter again to the furnace, and, when refined, take it out. *Neri*'s Art of Glaſs, p. 157.

Yellow ENAMEL. To make this, take of the common matter of *Enamels*, ſix pound; of tartar, three ounces; of manganeſe, ſeventy two grains; mix all well together, and put them into the furnace in a large pot, when refined, caſt them into water, then return them to the furnace again, and, when melted, take it out for uſe. *Neri*'s Art of Glaſs, p. 155.

ENARGIA, Εναργεια, in rhetoric, a figure, which, paſſing from the narrative ſtile, points out, and, as it were, ſets the ſubject before the eyes of the audience. *Voſſ.* Rhet. l. 3. p. 361.

ENCANTHIS (*Cycl.*)—This tubercle grows out either of the caruncula lacrymalis, or from the adjacent red ſkin, and is ſometimes ſo large, as not only to obſtruct the puncta lacrymalia, but alſo part of the ſight, or pupilla of the eye itſelf. In this diſorder the tears continually run down the cheek, which not only greatly deforms the eye and face, but often gives riſe to an ophthalmy.

The *Encanthis* is of two kinds, the one mild, and without hardneſs or pain, and the other malignant, livid, and painful; this laſt tends, in ſome degree, to a cancerous nature.

In the beginning of the mild *Encanthis*, it is beſt to ſcarify, and apply a mild cauſtic, as burnt allum, or vitriol, mixed with ſugar. This powder may be ſprinkled into the tumour, and carefully waſhed out of the eye afterwards with warm milk or water; but, if this is not ſufficient, it may be carefully touched with the common cauſtic; and, to give a turn to the humour, internal medicines, as purges, and the like, muſt be given, and iſſues, or ſetons, muſt be made. *Heiſter*'s Surgery, p. 373.

If theſe methods take no effect, and the tubercle is of a malignant kind, it is to be drawn out either with a hook, or a pair of plyers, or, if very large, by a threaded needle paſſed through it, taking hold of both ends of the thread, and gently raiſing it till it can be cut off; but, in this, great care is to be taken not to wound the lacrymal caruncle. If the tubercle appear livid and cancerous, it is by all means to be let alone, the irritating ſuch with medicines always is of very bad conſequence.

ENCARDION, in botany, a name given by the Greeks to what the Latins properly call the mediata in trees, the heart of the wood, or central hard part of it.

ENCATHISMA, in the medical writings of the antients, a term uſed to expreſs a ſort of bath, in which the patient was only to be plunged up to the belly.

ENCAUMA, in ſurgery, a name given, by ſeveral writers, to the puſtule, or excoriation, owing to a burn. The ſame word is uſed alſo by ſome as the name of a peculiar kind of ulcer of the eye. Aetius ſays, that the ſuperficial exulcerations of the eyes, which are owing to defluctions of humours, are called, by the authors who wrote in early times, by three names, according to their differences. 1. A *Caligo*. This is a ſuperficial ulcer, of a bluiſh colour, formed in the black of the eye, and covering moſt of it; when the pupil itſelf is affected by this, the ſight is uſually much impaired. 2. The *Nubecula*. This was a ſmaller, deeper, and whiter ulcer, formed alſo in the black of the eye. 3. The *Epicauma*. This was a roughneſs of the whole black of the eye, in which it appeared parched, or burnt, and was of a greyiſh colour over the entire ſurface. 4. The laſt of theſe diſorders was the *Encauma*. By this name they expreſſed an ulcer, which produced an impure and ſordid cruſt, either in the black or white of the eye, and uſually was produced by a fever. And the corroſion of the matter of this ſort of ulcer was ſo ſharp, that the coats of the eye were not unfrequently eaten through, and the humours fell out. *Aetius*, Tetrabibl. 2. c. 3.

ENCAUMA, in the old writers on medicine, is alſo uſed to expreſs the ſcoriæ of ſilver.

ENCAUSTUM *Sacrum*, a name given, by many authors, to that fine red colour, uſed for illuminating the capital letters in ſome old manuſcripts. The Latin writers have got a way of calling all thoſe liquid paints, which may be uſed by means of a pen, by the general name of atramenta, and we call them inks. Thus the tincture of logwood, or Brazil-wood, is called red ink; the tincture of fuſtic, brown ink; and the ſolution of gamboge, yellow ink. The Greeks expreſſed ink by the word *Melan*, which ſignifies only black, and the atramentum of the Latins is as plainly derived from atrum, ſignifying alſo black. The Greeks kept ſtrictly to this ſenſe of the word, and acknowledged only two kinds of ink, the graphicon, and the burſodepſicum; the firſt uſed in writing, and the other in dreſſing of leather. Some ſuppoſe that they mentioned a third kind, under the name of melan indicon, which many have been idle enough to imagine the ſame that we call by the name of Indian ink; but they have uſed the word melan not as a ſubſtantive, or the name of ink, but as an adjective, expreſſing deep blue, as Theophraſtus uſes it, ſpeaking of the deep blue of the fine ſapphire, and others of the violet. This red colour, uſed in the illuminations, was never called ink by the Greeks. Procopius calls it baphe, ſome

have called it coccus, and ſome cinnabar. It is ſaid that it was made of the purple colour, extracted from the murex, or purple fiſh, with ſome other additions. It is to be obſerved, that however well this colour, when laid on the parchment, or paper, might reſemble the colours of enamel, yet it was as improper to call it *Encauſtum*, which ſignifies a colour burnt in, as in enamelling, as it would have been to have called it atramentum, or ink.

ENCEINTE, in fortification, the wall, or rampart, which ſurrounds a place, ſometimes compoſed of baſtions and curtains, either faced or lined with brick, or ſtone, or only made of earth.

The *Enceinte* is ſometimes only flanked by round or ſquare towers, which is called a Roman wall.

ENCEPHALITES *Lapis*, in natural hiſtory, the name given, by authors, to a ſort of coarſe ſtone, ſuppoſed, in ſome degree, to reſemble the human brain. We have, in the foſſile world, many ſtones, named from the parts of animals, which they have, in reality, been form'd from, or owed their original to; and theſe are properly enough called by names denoting the things whoſe forms they wear: But it is a very wrong practice, from ſome ſlight external reſemblances, to give ſuch names to things that never can have been ſuppoſed to be ſo intitled to them. No one can be ſo abſurd as to imagine a human brain can be petrify'd, though a ſtone may accidentally ſomewhat reſemble its form. The perſon poſſeſſed of ſuch an accidental ſpecimen, ſhould have ranked it among the ſtones to which it properly belonged as a ſtone, whether a flint, a pebble, or a nodule, and have named, as an accident only, this form of it; not to have given it a peculiar denomination, as if it were a new ſpecies.

The reſemblances of things are not always to be depended upon, and are often more the effect of imagination in the poſſeſſor, than of any real likeneſs in the thing. Thus a collector of foſſils, in London, many years preſerved in his muſæum a handſome ſpecimen of the ſeptaria, or ludus helmontii, (the only one he chanced to have ſeen) under the name of petrify'd ſturgeon, from a fancied reſemblance of the ſepta of that ſtone, to the bands with which the people, who pickle ſturgeon, uſually tye the pieces up, to prevent their breaking.

ENCERIS, in pharmacy, a word uſed by Galen to ſignify ſmall concretions of wax, which formed themſelves in melted plaiſters, of which wax was one of the ingredients. As they cooled, the wax cooling firſt, and collecting itſelf into little grumes, which ſpoiled the conſiſtence and form of the whole compoſition.

ENCHELUS, in ichthyology, the name given, by Ariſtotle, Appian, and all the Greek writers, to the *eel*. See the article EEL.

ENCHESON, a French word, uſed in our law-books and ſtatutes, ſignifying the occaſion, cauſe, or reaſon, wherefore any thing is done. Stat. 5 Edw. 3. c. 3.

ENCHYMA, in the medical writings of the antients, a word uſed in ſeveral ſenſes. Some have made it expreſs only an infuſion; others have uſed it for what the modern phyſicians call *plethora ad vaſa*, that is, a fulneſs of the veſſels, ſimply conſidered, as relative to themſelves; and others have made it the name of certain forms of liquid medicines, to be injected into the ears, into the thorax, or any other part.

ENCHYMOMA, in the writings of the antient phyſicians, a word uſed to expreſs that ſudden effuſion of blood into the cutaneous veſſels, which ariſes from joy, anger, ſhame, or any other violent emotion of the mind, and is what we uſually call *bluſhing*.

ENCHYMOMA is alſo an afflux of the blood, whereby the external parts are rendered black and blue, as in the ſcurvy, blood-ſhot eyes, &c. *Blancard.* in voc.

ENCHYMONITES, in natural hiſtory, the name of a kind of ſtone, found in Macedonia, and ſome other places, which was alſo called pæonites and pæanites: It was ſuppoſed to be of great virtues to aſſiſt women in labour, and is deſcribed as itſelf often bringing forth young ones. Pliny, and many other of the antient writers, have mentioned ſtones bringing forth ſtones, and it has generally been underſtood, that they alluded to the ætites, or eagle-ſtone, in theſe accounts, as having a ſmall ſtone within it; but the ſame thing is ſaid of this *Enchymonites*, and that, with ſuch other particulars, as prove that it is not the eagle-ſtone that they mean by this. They ſay it was formed of congealed ice, that is, of water congealed into a ſolid body; and that it was found no where but in ſubterranean caverns. It ſeems, by this, to have been that ſparry ſtone which is really a congelation of the ſtony parts of water, and theſe ſtones formed into larger and ſmaller ſtalactites, or icicles, and the round ſtalagmitæ, or dropſtones, continually encreaſing, give great ſhew of reaſon to the opinion of their producing one another, the great ones throwing off the ſmaller, as if they were their offſpring. This gave opinion to the vulgar, that they were of a nature like parturient animals, and that they muſt be good, by ſympathy, for thoſe who were bringing forth children.

ENCHYSMA, the ſame with clyſter, or enema. See ENEMA.

ENCHYTA, in the medical writings of the antients, a name given to ſuch medicines as were injected into the eyes, or into any part.

Some alſo have uſed the ſame word to expreſs a ſort of funnel, contrived to convey the fumes of medicines to any part of the body.

ENCÆLIA, a word uſed, by many of the antient medical authors, to expreſs the viſcera, contained in the abdomen, or lower belly.

ENCONDRUS, in the old Greek writers, a word uſed to expreſs any thing made up of a great number of ſmall pieces, or flakes, or ſmall grains of any thing. The manna of the antients was not in large flakes, as we have it at preſent, but it was formed of a vaſt number of ſmall granules, and was therefore called by Dioſcorides, and ſome others of the Greeks, by this name. The word manna alſo ſignified, with them, the ſame thing, and they not only expreſſed the ſubſtance by it which we at preſent call ſo, but any other thing that was in ſmall flakes, or pieces, was called manna. Thus the manna thuris, ſo much talked of among the old Greeks, was only a collection of thoſe pieces which flew off from frankincenſe in the breaking. *Dioſcorides*, *Trallian*. See MANNA *Libanotis*.

ENCOPE, in ſurgery, an inciſion of any part, as in a gangrene, &c.

ENCRANIUM, in anatomy, the ſame with *Cerebellum*.

ENCRASICOLUS, the anchovy, a ſmall ſea fiſh, one of the harengiform kind, but wanting the row of ſerrated ſcales on the belly. They are caught in vaſt plenty in the Mediterranean, the Engliſh, and many other ſeas, and are well known in pickle in moſt nations of Europe. *Willughby's* Hiſt. Piſc. p. 228.

ENCRAULOS, in ichthyology, the name given, by Ariſtotle, and many other of the antient Greeks, to the fiſh which we call the anchovy. Authors deſcribe this under the diſtinct name of enchraſicholus; but Artedi proves it to be a ſpecies of the ſame genus with the herring, and calls it the clupea with the upper jaw longer than the under. This name carries a diſtinction with it that cannot be miſtaken.

ENCRINOS, in natural hiſtory, a name given by authors to a ſpecies of aſteropodium, or that plated and imbricated body which makes the baſe, or root, of the aſteria. This is compoſed of a number of ſmall plates, convex on one ſide, and concave on the other, and, when found in fair pieces, is ſaid very exactly to reſemble a part of a ray of the magellanic ſtar. See the articles ASTEROPODIUM and ASTERIA.

ENCRIS, in the medical writings of the antients, ſignifies a ſort of cake made of fine flour, mixed with oil, and ſweetened with honey.

ENCUMONIS, in natural hiſtory, a name given, by ſome of the old writers, to the ſparry incruſtations on the tops of grottoes, in ſome places, where they hang like icicles, or lie on the ground in globules, or little balls. The antients called it alſo enchymonites, and thought it poſſeſſed of great virtues for women, in the time of bringing forth children. Many of the virtues attributed to the eagle-ſtone, were, by the authors, meant of this. The account which the antients gave of theſe ſtones bringing forth one another, being ſuppoſed to allude to the eagle-ſtone, becauſe it has a ſmall ſtone in it. *Solinus*. See ENCHYMONITES.

ENCURECK, in natural hiſtory, a venomous inſect, found in Perſia, and ſuppoſed, by ſome, to be a kind of tarantula. It neither ſtings nor bites, but lets fall its venom like a drop of water, which cauſes inſufferable pain in the part for a time, and afterwards ſo profound a ſleep, that, we are told, nothing can raiſe the patient from it, but cruſhing one of thoſe creatures on the part affected. It is nevertheleſs ſaid, that the ſheep eat theſe inſects without damage. *Olearius* ap. *Boyle*, Works abr. Vol. 1. p. 37. Ibid. p. 38.

END *for* END, in the ſea language. When a rope runs all out of the block, that it is unreeved, they ſay it is run out *end for end*.

ENDECERES, in the naval architecture of the antients, a word uſed to expreſs a galley, which had eleven ſeries or tires of rowers. Thoſe with two or three tires were very much in uſe among the antients, and from thoſe to ſuch as had five or ſix tires. Thoſe of nine tires were ſometimes uſed, but it was very ſeldom; and thoſe of eleven, fifteen, and ſo on, were rather for ſtate than ſervice. We read of them carried ſo high, as to contain twenty, thirty, and forty rows of oars. One of this largeſt ſort was built for Philopater, which required four thouſand men. *Meibom.* de Trirem.

ENDEIXIS, in medicine, an indication of diſeaſes, whereby is ſhewn, what is to be done; as for example, a *Plethora*, or too great fulneſs of blood, indicates the opening of a vein. *Blancard*, in voc.

ENDEIXIS, Ενδειξις, in antiquity, an action brought againſt ſuch as affected any place, or thing, of which they were incapable by law. *Pott.* Archæol. Græc. l. 1. c. 23. T. 1. p. 125. See DISEASE.

ENDEMIAL *Diſeaſes*, a word confounded by ſome, in its ſenſe, with epidemic, but extreamly different in the ſignification correct authors put upon it. The epidemic diſeaſes being thoſe

thoſe which indifferently affect any nation, and ariſe from a fault in the air, or from other cauſes, and are contagious; but the endemic properly being thoſe diſeaſes which are in a manner national, and peculiar to the people of one place. *Junk.* Conſp. Med. p. 258.

ENDESIS, a word uſed, by Hippocrates, to expreſs that part of the foot where the bones of the tibia end, and which is connected by ligaments to the ankle.

ENDICA, a word uſed by the alchymiſts for the fæces which ſubſide to the bottom of the veſſel in infuſions; to ſome of which they attribute great virtues.

ENDIVIA *Marina*, the *Sea Endive*, in natural hiſtory, the name of a ſpecies of ſea plant, deſcribed by count Marſigli: There are two ſpecies of it, the one having broad and jagged leaves, reſembling thoſe of the vine, the other much narrower. This laſt kind grows on ſtones, ſhells, pieces of wood, or any other ſubſtances, accidentally found at the bottom of the ſea. It ſeldom grows in very deep water, and thrives beſt in places where the ſea is calm and quiet. It is of a duſky greeniſh colour, variegated in ſome places with yellow. It exactly reſembles the ſhape of the endive common in our gardens, and its leaves are cut and fringed in the ſame manner; but they are of ſo tender a ſubſtance, that a ſlight touch deſtroys them; they are indeed tenderer and more delicate than thoſe of any other known plant, either of the ſea or land. When this plant is examined by the microſcope, its ſurface is found to be compoſed of a great number of eminences, and cavities, or little holes, between and among them; and when the leaves are cut tranſverſely, there are ſeen a great number of glandules in them. *Marſigli*, Hiſt. de la Mer, p. 72.

ENDOSIS, in the medical writings of the antients, a word uſed to expreſs a remiſſion of any kind, as when a tumour, inflammation, or hardneſs of any part, becomes leſs violent; and when the patient becomes eaſier, after the exacerbations in fevers of the continual kind, and after fits of the intermittent.

ENDYMATIA, in antiquity, a kind of dance uſed among the Greeks. Mem. Acad. Inſcript. Vol. 14. p. 473. ſeq.

ENELIAXIS, Ενναλιαξις, or rather *Enyaliaxis*, Ενυαλιαξις, in antiquity, a feſtival in honour of *Enyalius*, whom ſome will have to be the ſame with Mars, others only one of his miniſters. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 394.

ENEMA, *Clyſter*, a liquid form of medicine, intended to be thrown up the anus into the body. In Holland, England, and Germany, clyſters are given by means of a pipe of ivory faſtened to a bladder, the patient being made to lie on one ſide, and to retain the liquor as long as he is able. The French, and ſome other nations, uſe a ſort of ſyringe, holding a pint, or more, for this purpoſe; and this is evidently the better method, as, by this means, liquors are not only more quickly, but more forcibly thrown into the inteſtines, and are made to paſs farther than by the Engliſh method. Some alſo uſe a leather pipe of half an ell long, which is faſtened to the ſyringe, and to the pipe introduced into the anus, and by this means the patient can give himſelf the clyſter.

Great care muſt be taken in adminiſtring clyſters, that the liquor be neither too hot nor too cold, but only tepid, or moderately warm, both extreams being capable of doing great injury to the bowels.

Clyſters are properly uſed where a coſtive ſtate is to be removed, and the body rendered ſoluble. 2. For alleviating the pains ariſing from the colic, ſtone, dyſentery, violent hæmorrhoids, and other diſorders of the abdomen. 3. For making revulſions from the head in apoplexies, lethargies, deliriums, and other diſorders of that part. 4. In difficult labours, whether the fœtus be dead or alive, eſpecially if the mother be coſtive, as alſo for expelling the ſecundines, when they adhere too firmly to the womb, or remain longer behind than they ought. 5. Clyſters are able to nouriſh perſons, who, from their power of deglutition, being impair'd, muſt otherwiſe periſh of hunger; and for this purpoſe nouriſhing liquors muſt be uſed, ſuch as broths, and the like, to which a little wine may be added, if the nature of the caſe will allow it.

This practice of giving nutritive clyſters, is no new invention, but has been known even in the earlieſt times of which we have accounts; and though, both among the antients, and at this time, there have been ſome who have laughed at it as idle and ineffectual, yet experience has often proved the certain truth of it; and it is not to be doubted, indeed, when we reflect that there are, in the large inteſtines, lacteal veſſels, capable of abſorbing and conveying to the maſs of blood the nutritive liquors injected, by which means it frequently happens that the clyſter does not return, but is wholly retained.

A very remarkable clyſter, which ſeems to have been invented by the Engliſh, and, from us, propagated to other nations, is the ſmoak of tobacco. When all other clyſters have proved ineffectual for rendering the body ſoluble, in the iliac paſſion, and ſome other caſes, the end has ſometimes been obtained by injecting a large quantity of the ſmoak of tobacco, by means of a proper inſtrument. There are ſeveral kinds of inſtruments invented for this purpoſe, and deſcribed by Bartholine, Valentini, and others. The general method of making them is this: A box is provided, capable of holding about half an ounce of tobacco; this has two pipes, the one made of ivory, to be introduced into the anus, the other reſembles the mouth-piece of ſome muſical inſtruments, and, by means of blowing into this, the ſmoak of the lighted tobacco in the box is driven forcibly up the anus: This is to be continued till the patient find a ſtrong ſtimulus to go to ſtool, and if once doing it does not produce the effect, it is to be repeated till it ſucceeds. This is of prodigious ſervice in obſtinate incarcerated hernias of the ſcrotum. And Heiſter obſerves, that he always found it ſucceed ſo well, as never to reduce him to a neceſſity of having recourſe to the knife. When tobacco alone will not anſwer the purpoſe, other more ſtimulating ingredients may be added to it in the box; and this acrid ſmoak ſo contracts the diameters of the inteſtines, that the prolapſed ones are much more eaſily drawn back into the abdomen, than they otherwiſe could be.

Clyſters of the liquid kind are prepared of different ingredients, according to the intentions propoſed to be anſwer'd, and as, in practice, thoſe intentions are principally four, *viz.* To alter and change, to evacuate, to corroborate, and to mitigate pain, ſo clyſters are accordingly contrived to ſoften the indurated fæces, to correct the acrid, acid, and ſaline recrements, to evacuate the contents of the large inteſtines, and to corroborate the weak and languid fibres of the inteſtines in general, and ſo ſtrengthen their periſtaltic motion; or, laſtly, to mitigate the ſpaſms of their contracted coats, and relax their conſtricted fibres. *Hoffman.*

When clyſters are intended to lubricate and ſoften the dry and indurated fæces, or to obtund acrid, ſaline, corroſive, and acid humours, in the large inteſtines, they are to be prepared with the emollient ingredients, ſuch as broths, milk, decoctions of emollient herbs, as marſhmallows, and the like, with manna, oil, and the like aſſiſtances; and, as all theſe ingredients have a power of relaxing ſpaſms, as well as of ſoftening the fæces, clyſters of this kind are extreamly beneficial in all ſpaſmodic diſorders, fevers, pains, and caſes where the patient is coſtive, whether it be from ſpaſms of the inteſtines, or from induration of the fæces.

When the intention is at once to evacuate the inteſtines, and to carry off ſtagnant humours, then ſalts, added to the decoctions, admirably anſwer the end. Glauber's ſalt, Epſom ſalt, and ſal gem, are all uſeful to theſe purpoſes. In ſome caſes alſo ſal armoniac; And experience ſhews, that half an ounce of one of theſe ſalts, in a clyſter, will do more toward the evacuating the contents of the bowels, than four ounces of any of the common purging electuaries. Corroborating clyſters are to be prepared of the four greater hot ſeeds, bay and juniper berries, the carminative oils, *&c.* and in violent diſorders of the head, ſuch as apoplexies, palſies, lethargies, and the like, rue, marjoram, thyme, roſemary, and lavender flowers, are conveniently added to clyſters; as are mugwort, pennyroyal, feverfew, and the like. When there is any diſorder of the womb, or ſuppreſſion of the menſes, the clyſters of the ſedative kind are principally to be compoſed of oil, or the like fatty ingredients, and ſuch as conſiſt purely of oil alone, are found often to do wonders, in allaying the moſt violent pains.

ENEOS, a word uſed, by the antient writers on medicine, for a perſon born deaf, or unable to perform the common offices of life, for want of any of the principal organs.

ENERGETICAL *Bodies*, or *Particles*, are ſuch as are eminently active, and which produce manifeſt operations of various natures, according to the various circumſtances and motions of ſuch bodies, or particles.

ENGASTRIMANTES, Εγγαστριμαντεις, in antiquity, a deſignation given to ſuch diviners as were poſſeſſed with demons, which either lodged, or ſpoke within their bodies. *Pott.* Archæol. Græc. l. 2. c. 12. T. 1. p. 301.

ENGASTRIMYTHI, Εγγαστριμυθοι, in antiquity, the ſame with *Engaſtrimantes*.

ENGRAULIS, in zoology, a name given, by ſome authors, to the anchovy, called alſo, by ſome, lycoſtomus, and, by others, halecula. *Willughby*'s Hiſt. Piſc. p. 228. See ENCRASICOLUS.

ENGYTHECA, in antiquity, a cup-board, or place where cups and other veſſels uſed to be laid. *Pitiſc.* Lex. Ant. in voc.

ENHARMONIC, (*Cycl.*) in the antient muſic, was the name of one of their genera.

The intervals conſtituting the *enharmonic* genus, are the ſemi-tone minor, the *enharmonic* dieſis, and the third major. Phil. Tranſ. N°. 481. p. 272.

This is to be underſtood of what the *enharmonic* ought, accurately ſpeaking, to be. Salinas has thus defined it, and others after him. This diviſion is alſo approved of by Dr. Pepuſch [a]. The antients do not agree in the numbers, by which they expreſs theſe diviſions of the *enharmonic* genus; but the differences that occur are not ſufficient to conſtitute any ſubordinate ſpecies of the *enharmonic*; and therefore they agree

agree in not ſubdividing it [b].—[[a] Phil. Tranſ. ibid. [b] Vid. *Wallis*, appendix ad Ptolem. Harmon. p. 165, 166.]

ENGAMOS, in natural hiſtory, the name given by the people of ſome parts of Guinea, to a root very common there, and much reſembling our larger ſort of turneps, but not ſo ſweet or juicy: They commonly boil theſe with their pattatas, in the ſame kettle with their meat. The latter of theſe roots, which is conſiderably different from our potatoe, gives a fine flavour to the whole, and makes the broth and meat taſte as if roſe-water were added to it. The *Engamos* alſo partake of the flavour, and, in this caſe, become very agreeable. Phil. Tranſ. N°. 108.

ENHYDROS—Some of the antients have ſuppoſed this ſtone ſo called, becauſe its ſurface was always wet, as if by the effect of water ouzing from within. But Pliny tells us directly the contrary, that the water was contained within, and made no ſhew on the outſide, and that the ſurface of the ſtone was white and ſmooth. From this it appears, that the *Enhydrus* of the Romans, or at leaſt the kind known to Pliny, was not the ferrugineous one, common in our time, but the flinty kind. Of theſe we alſo have ſome in England. They are, as he ſays, white and ſmooth on the ſurface, and are flints perfectly round, covered with a white cruſt, of the bigneſs of a large apple, and containing a quantity of water, lodged in their central cavity, and rattling in it on ſhaking.

ENLARGE, in the manege, is uſed for making a horſe go large, that is, making him embrace more ground than he before covered. This is done when a horſe works upon a round, or upon volts, and approaches too near the center, ſo that it is deſired he ſhould gain more ground, or take a greater compaſs. To *enlarge* your horſe, you ſhould prick him with both heels, or aid him with the calves of your legs, and bear your hand outwards. If your horſe narrows, he is enlarged by pricking him with the inner heel, and ſuſtaining him with the outer leg, in order to preſs him forwards, and make his ſhoulders go. Upon ſuch occaſions the riding-maſters cry only *large, large*. See IN.

ENNEACTIS, in natural hiſtory, a name given, by Linkius, to a ſort of ſtar-fiſh, of the more branched or aſtrophyte kind, which has only nine rays, where they firſt part from the body, but theſe divide into a vaſt number of others afterwards.

ENNEAHAEDRIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek ἐννέα, nine, and ἕδρα, a ſide.

The bodies of this genus are ſpars, compoſed of nine planes, in a trigonal column, terminated at each end by a trigonal pyramid. Of this genus there are four known ſpecies. 1. One with long pyramids, and a ſhort column, found in the mines of Germany, and ſometimes with us in Devonſhire and Cornwall. 2. One with very long and ſlender pyramids, and a ſhort column. This is found in the iron mines, in the foreſt of Dean. 3. A ſlender kind, with very ſhort pyramids, found in England and Germany, but no where ſo plentifully as in Ireland. 4. One with ſhort flat pyramids, and a ſhort column. This is very frequent in the mines of Goſſelaer in Saxony, and ſometimes is ſeen in *England*. *Hill*'s Hiſt. of Foſſ. p. 208.

ENNEANDRIA, in botany, a claſs of plants, with hermaphrodite flowers, and nine ſtamina, or male parts, in each.

The word is derived from the Greek, ἐννέα, nine, and ἀνὴρ, male. The plants of this claſs are the bay-tree, rhubarb, &c.

ENNEEMIMERIS is one kind of the *Cæſura* of a Latin verſe, where, after the fourth foot, there is an odd ſyllable ending a word, which helps to make the next foot with the following word; as in this inſtance,

Ille latus Niveum Molli fultus Hyacintho.

where all the four kinds of the *Cæſura* occur.

ENNEOPHTHALMOS, in zoology, a name given, by ſome, to the lamprey. *Willughby*'s Hiſt. Piſc. p. 107.

ENNERIS, in the antient ſhip-building, a name given to thoſe galleys, or veſſels, which had nine tires of rowers. Theſe were of a very conſiderable ſize; tho' Meibom has found ſo convenient a method of placing the rowers, that he has taken off very much from that immenſe height others ſuppoſed they had above the water. We read of the teſſaracontes, and other amazing veſſels of this fabric; that of Philopater having forty rows of oars, and that of Ptolemy Philadelphus thirty; and ſome others which are ſpoken of, twenty. It has been diſputed by many, whether ſuch large veſſels as thoſe were ever actually built, or uſed; but Meibom gives great reaſon to believe, that they really were, tho' he, at the ſame time, alledges againſt Salmaſius, and the more ſanguine admirers of the works of the antients, that very few veſſels were built larger than theſe *Enneres*, or nine tired ones, and proves it from Livy and Plutarch, and from Polybius. We are apt to admire, in many caſes, what we ought alſo to imitate, but never attempt it. This is the caſe in theſe galleys; and Meibom, who has given the rules of this antient naval architecture, is of opinion, that by imitating it at preſent, our modern galleys and galleaſſes might be built much more conveniently both for ſtrength and celerity, and alſo at leſs expence than they are at preſent. *Meibom*, de Trirem.

The modern form is indeed allowed to be better than theirs, but if, in the ſtructure, the proportion of the long ſhips of the antients were obſerved, we might greatly improve them; in our way of five men ſitting at one oar in the galleaſſes, much ſtrength is waſted to no purpoſe, becauſe they ſit too near to the fulcrum, or ſtay, whereas a ſmaller number of rowers, at a greater diſtance from the ſtay, would give more ſtrength, and throw the veſſel along much more ſwiftly, and would require leſs charge. Galleys of this ſort, thus managed at a ſmall expence, would be found of great uſe in the larger rivers, and in the ſhallow ſeas, and therefore convenient for the Baltic, the Britannic, and the Mediterranean ſeas, and would be the moſt uſeful of all veſſels for the tranſporting great numbers of forces.

ENOLMIS, Ενολμις, in antiquity, a deſignation given to Apollo's prieſteſs at Delphi, becauſe ſhe ſat on the tripod which was called *olmos*, ολμος. Hence alſo Apollo is called *Enolmos*, Ενολμος. *Pott*. Archæol. Græc. l. 2. c. 9. T. 1. p. 275.

ENORAINE, in the manege, a wither-wrung horſe, or one that is ſpoiled in the withers. The word is obſolete. *Guillet*.

ENORCHIS, in natural hiſtory, the name given, by many authors, to that ſpecies of *Ætites*, or eagle-ſtone, in which the callimus, or internal nucleus, is not looſe, ſo as to rattle in it when ſhaken, but remains fixed to one ſide. The Germans call this *Hodenſtein*. The outer cruſt is uſually of a whitiſh colour, and the internal nucleus is yellowiſh or browniſh, and it is uſually of the ſize of a pigeon's egg, and of the ſhape of the human teſticle; whence the name.

ENRICHING *Plants*, a term uſed, by the Engliſh farmers, to expreſs ſuch plants as are found to do good to land, rather than to exhauſt it, and in conſequence of which the ſame piece of land will produce a good crop of corn, tho' it would, without the aſſiſtance of their having been planted on it, have yielded a very poor one. The myſtery of this difference between plants, ſome of which are found to burn up, that is, impoveriſh land, while others enrich it, and leave it fitter for ſucceeding crops than they found it, had been long a perplexing thing to account for. Though it was eaſy to conceive that ſome plants might exhauſt the earth more, and others leſs, yet it was hard to conceive, while all exhauſted it in ſome degree, how any could leave it better than they found it; but this was at length explained by Mr. Tull. This author having obſerved, that breaking the earth, by digging, or horſehoing, between the plants, gave them great encreaſe, found that it was this practice that enriched the earth, and that, while corn and ſuch plants as ſtand cloſe, and cannot be hoed between, impoveriſh the ground, and ſuffer no means of enriching it again to be uſed, there were ſome other things, the crops of which being planted thinner, gave room to the earth to be plowed, dug, or hoed between, and that theſe were the plants which were called the enriching kind, by the farmers; and the whole ſecret lay in this, that the hoing, plowing, or otherways breaking the earth between them, in order to kill the weeds, enriched the ground greatly more, in proportion, than theſe plants exhauſted it; and the conſequence was, that though they had thriven very well, yet the earth was left richer than before, notwithſtanding all that they had imbibed from it. *Tull*'s Horſehoing Huſbandry, p. 37.

On this obſervation, this excellent author ſeems to have founded the ſyſtem of what he calls horſehoing huſbandry, concerning which he has written a large and uſeful treatiſe. He found that this ſtirring up of the earth enriched it ſo greatly, that, where it was uſed in a proper manner, the kind of plant need not be changed, but that the ſame earth would yield a ſucceſſive ſeries of crops of the ſame plant, and, that even without dunging, or ever lying fallow, and every crop, for a long time, would be better than the former ones. The method of ſowing, to this purpoſe, is not by ſcattering the corn with the hand, but ſowing it in rows, and leaving large intervals between, the naked earth of which might be turned up by the hoe. See the articles INTERVAL and HOING.

ENSAL, in the materia medica, a name uſed, by ſome authors, for the common ſmall cardamom of the ſhops. *Herman*. Muſ. Zeyl. p. 66.

ENSIFORM *Leaf*, among botaniſts. See LEAF.

ENSIGNS, in a ſhip, are thoſe colours which are placed in the ſtern, or poop. There are few ſhips, whether men of war, or merchants, but have their *Enſigns*. Their chief uſe is, that when any ſtrange ſhips meet at ſea, or make into any harbour, by heaving out the colours in the poop, that is, putting theſe *enſigns* abroad, they diſcover of what part and country they are. Thus the Britiſh heave out their colours with the union croſs; and ſo all other countries with ſome particular diſtinction, whereby they may be known. The *Enſigns* ſerve alſo for many other uſes. See FLAG, *Cycl.*

Roman ENSIGNS. See the article SIGNA.

ENS (*Cycl.*)—*En Sprimum Salium*, a name given by Paracelſus to a preparation of ſea ſalt, which he calls alſo a perpetual oil, and *ſal circulatum*, which ſee.

ENSTASIS, Ενστασις, in logic, a manner of replying to an opponent,

ponent, either by confuting his argument, or denying the juſtneſs of his concluſion. *Voſſ.* Ret. l. 3. p. 380.

ENSTASIS, in the writers of medicine, a term uſed to expreſs the ingreſs of moleculæ into the vacuity of the pores, which obſtruct them, and thereby cauſe diſeaſes. It is a word familiar with Eraſiſtratus and Aſclepiades, who was a follower of Democritus, and taught that moſt diſeaſes were cauſed by ſuch an ingreſs of matter into the pores. Thus Aſclepiades defined a phrenſy to be ſuch an *Enſtaſis* in the membranes of the brain. Plutarch, in his precepts of health, alſo mentions this *Enſtaſis*; and Galen, and Caſſius, who is ſuppoſed to have been of the ſect of the rationaliſts, expreſſes the ſame ſenſe by the ſame word.

ENTABLER, in the manege, is ſaid of a horſe whoſe croupe goes before his ſhoulders, in working upon volts: For, in the regular manege, one half of the ſhoulders ought to go before the croupe. Thus we ſay, your horſe *entables*; for, in working to the right, he has an inclination to throw himſelf upon the right heel; which fault you may prevent, by taking hold of the right rein, keeping your right leg near, and removing your left leg as far as the horſe's ſhoulder. A horſe cannot commit this fault without committing that called *Aculer*, but *Aculer* may be without *Entabler*. See ACULER.

ENTALI, in the materica medica, a name given, by ſome authors, to foſſile alum.

ENTALIUM, the *Pipe Shell*, in the materia medica, a ſhell of the ſame genus with the *dentalia*, being a ſpecies of the *tubuli marini*. It is frequent in the Eaſt Indies, and ſometimes is found on our own ſhores. The virtues aſcribed to it are the ſame with thoſe of the *dentalium*; but neither of them have any title to more than thoſe of alkaline abſorbents, like the other teſtaceous powders.

ENTASIS, *Diſtention*, a word uſed in various ſenſes, by different authors in medicine, but by moſt applied to the parts of generation. And thence *entatica* were medicines, in whatever form, meant as provocatives.

ENTERADENES, in anatomy, a name by which many authors have called the inteſtinal glands.

ENTEROMPHALUS, or HERNIA *Umbilicalis*, a rupture of the navel, or the bunching out of the guts at the navel, See HERNIA.

ENTERORAPHE, in ſurgery, a name given to the ſutures of the inteſtines.

ENTERTAINMENTS, *Epulæ*, among the antients, were of various kinds, as 1. Funeral *Entertainments*, *Epulæ funebres*. 2. *Entertainments* given by the huſband on bringing home his wife, called *Epulæ geniales*. 3. Thoſe beſtowed on the ſoldiers, called *Epulæ militares*; which was done before or after an engagement, or on occaſion of proclaiming the general *Imperator*. 4. Birth-day *Entertainments*, *Epulæ natalitiæ*.

There were many other kinds, denominated either from the place where, the perſons by whom, or the occaſion for which, they were given; for which ſee *Pitiſc.* Lex. Ant. in voc. *Epula* & *Cæna*.

ENTERENCHYTÆ, in medicine, a name given by authors to the ſeveral inſtruments contrived for throwing clyſters into the bowels, ſuch as the bladder and pipe, the ſyringe, and the like, for liquid clyſters, and the box with the double pipe for conveying the ſmoak of tobacco. See ENEMA.

ENTHALIUM, in natural hiſtory, a name given by ſome to a ſpecies of the tubuli marini, more uſually known by the name of penicillum marinum and pinceau de mer. *Klein.* de Tub. Mar. p. 1. See PENICILLI *Marini*.

ENTHEAMATA, in the antient writers of medicine, a word uſed to expreſs ſuch medicines as were immediately put into large freſh wounds, to ſtop the hæmorrhage, and prevent inflammation, or other bad conſequences.

ENTHETOS, in the writings of the old phyſicians, a name given to certain applications intended to be thruſt up the noſtrils to ſtop hæmorrhages.

ENTIER, in the manege, is uſed for a ſort of reſty horſe, that refuſes to turn, and is ſo far from following, or obſerving the hand, that he reſiſts it. If your horſe is *Entier*, and refuſes to turn to what hand you will, provided he flies, or parts from the heels, you have a remedy, by putting the Newcaſtle on him; that is, a caveſſon, made after the Duke of Newcaſtle's way.

The word is French, and is alſo uſed among them to denote a ſtone horſe.

ENTIERTIE, from the French *entier*, is uſed in our law-books in contradiſtinction to moiety, and denotes the whole. Thus a bond, damages, *&c.* are ſaid to be entire, when they cannot be divided or apportioned.

ENTORSES, iu the manege. See PASTERN.

ENTRANCE *of Hounds*, a phraſe uſed by our ſportſmen to expreſs the inſtruction of theſe creatures in the art of hunting. They are ſaid to be enter'd when they are thoroughly taught this.

The time of entering of hounds, is when they are ſeventeen or eighteen months old, they are then to be taught to take the water and ſwim; they are to be led abroad in the heat of the day, to enure them to fatigue and exerciſe, and they muſt be frequently led through flocks of ſheep, and warrens, to uſe them to be under command, and to know that they are to run at nothing but what the huntſman orders. They muſt be carefully inſtructed each to know his own name, and to underſtand the voice of the huntſman, and the notes of the horn uſed in the hunting, and finally to uſe their own voices in a proper manner.

The beſt time of entering them is about noon, and it ſhould be in a fair warm day, for if they be entered in the morning, they will give out when the heat of the middle of the day comes on. Take the moſt advanced, that the game may not ſtand long before them, and let them be well rewarded when all is over. This ought to be repeated at leaſt once a week, for two months ſucceſſively; by this means they will be ſo fleſh'd and ſeaſoned with what game you enter them at, that they will never afterwards leave off the purſuit. The new hounds ſhould always be entered with the beſt and ſtaunchеſt hounds that can be had, and there is not to be one barking dog ſuffered in the field on this occaſion.

Whatever chace the hounds are intended for, the hare is the beſt game to enter them at, becauſe, in this chace, they will learn all the turns and doubles that they can poſſibly meet with in any other kind, and how to come to the hollo. They will learn alſo, from this chace, to have a perfect and nice ſcent, and hard feet, by being uſed to highways, beaten paths, and dry hills. The hounds, when firſt entered, muſt have all the advantages given them that can be. When the hare is put up from her form, it muſt be obſerved which way ſhe went, and the ſcent muſt be left to cool a while, and then they muſt be laid in and helped, as much as can be, by wind, view, hollow, or pricking the paſſage; nor will it be amiſs, for the firſt time, to give them a hare tired the ſame morning in her courſe.

Care muſt be taken that they hunt fair and even, without lagging behind, ſtraggling on either ſide, or running wildly a-head, and if any of them are found faulty this way, they are to be beaten back into the pack, and forced to ſmell the ſcent among the reſt.

The ſame is to be done if they refuſe to ſtrike upon a default, but run on babling and yelping without the ſcent; by doing which they draw away the reſt of the dogs, till ſome of the elder ones take it: Then let them be cheriſh'd with horn and hollos. If any of the young whelps truſt more to their own ſcents than to the reſt of the pack, and are, in conſequence of this, thrown behind, and after this work out the default by their own noſes, and come to hunt juſt and true, they muſt, in this caſe, have all manner of encouragement and aſſiſtance, and be left to work it out at their own pace; for ſuch dogs as theſe can never prove bad ones, if they are not ſpoiled by the over haſtineſs and indiſcretion of their maſters. A little patience in the huntſman, and their own experience, will ſoon bring theſe to be the leaders of the pack.

When the hare is killed, the dogs muſt not be allowed to break her up, but they muſt be beaten off, and ſhe is to be ſkinn'd and cut to pieces by the huntſman, and the young hounds muſt be rewarded with the pieces.

Some are of opinion, that the beſt way to enter young hounds is to take a live hair, and trail her upon the ground, ſometimes one way, and ſometimes another, and then to draw her off to a convenient diſtance, and hide her, that the dogs, taking the ſcent, may follow all the traces through which ſhe was drawn, and, at length, find her.

The huntſman ought very well to underſtand the nature and diſpoſition of his hounds, in finding out the game; for ſome hounds are of that temper, that when they have found the ſcent, they will run forward with it, not making any noiſe, nor ſhew of the tail; others, when they have found a head, will ſhew the game, and ſome, having found the footings of the beaſt, will prick up their ears a little, and either bark, or only wag their ears, or the hinder part of their bodies. This difference of natural diſpoſition the huntſman is particularly to obſerve in the young and newly enter'd pack, otherwiſe he will never underſtand them, nor ever be able to hunt them to any credit or advantage.

Some hounds cannot keep the ſcent when they have it, but wander up and down, and hunt counter, taking up any falſe ſcent; and there are others which cannot hunt, either by ſcent or foot, but only in the ſight of the game. This would make very uncertain work of the chace, if a whole pack were ſuch; but where it is only a few, the reſt ſet them right.

For entering the hound at hart or buck, he ſhould be in the prime of greaſe, for then he cannot ſtand up, or hold the chaſe ſo long. The foreſt pitched upon ſhould have all the relays at equal diſtances, as nearly as may be; but then the young hounds ſhould always have ſome old ſtaunch ones to enter them, and they ſhould be led to the fartheſt and laſt relay, and the hart, or buck ſhould be hunted to them. Being come up, the old hounds ſhould be uncoupled, and when they have found the hart, and well enter'd the cry, then the young ones are to be uncoupled alſo, and if any of them are found to lag behind, they muſt be whipped and beaten forward.

In whatever place the hart is killed, the neck ſhould be immediately flay'd, and the hounds rewarded; for it is beſt al-

ways to do this while the flesh is hot. Another very good method of entering hounds at the buck, is to take one in the toils, or nets, and wound one of his legs so as to disable him from running either very swift, or very far; then let him loose, and first let a blood-hound trace the creature, then let loose all the young hounds, and when they have run down the animal, reward them with the neck.

Some enter their hounds within a toil, but this is a bad way, for the hart being, in this case, always in sight, and not able to run an end, makes a great number of doubles and turnings: This is very different from the chaces they are to meet with afterwards; and, when they find a hart run in the common way, strait forward, and out of sight, they will leave the chace, as unlike that by which they were taught.

It is observed, that whatever animal the hounds are intended to be employed in hunting, it must always be that animal that they are enter'd at; for it is found, that they are always afterwards most fond of that, whose flesh they were first rewarded with.

ENTRAVES, *Entravons*, in the manege. See LOCKS.

ENTREPAS, in the manege, is a broken pace, or going, properly a broken amble, that is neither walk nor trot, but has somewhat of an amble. This is the pace, or gait, of such horses as have no reins or backs, and go upon their shoulders, or of such as are spoiled in their limbs.

ENTRICHOMA, in anatomy, the name of the outer edge of the eyelid, on which the hairs grow.

ENTRING *a Ship*, in the sea language, the same with boarding her. See the article BOARDING.

ENTRING-*Ladder*, in a ship, is of two sorts; one is used by the ships sides, in a harbour, or in fair weather, for persons to go in and out of the ship; the other is made of ropes, with small staves for steps, and is hung out of the galley to enter into the boat, or to come aboard the ship from thence, when the sea runs so high, that they dare not bring the boat to the ship's side, for fear of staving her.

ENTRING *Ports*, in a ship. See PORTS.

ENTRING *Ropes*, in a ship. See ROPES.

ENTROCHUS, in natural history, the name of a genus of fossils, of a very regular figure and structure, supposed, by many authors, to be *lapides sui generis*, and stones in their native state. They are, however, in reality, the fossile remains of some marine animal, probably either of the echinus, or of the star-fish kind, filled like the fossile species of the echini, with a plated spar. Our imperfect knowledge in the animal history has not yet been able to ascertain to what creature they really belong; but their analogy with the other animal remains, found in the fossile world, plainly evince, that they are of that origin. They are cylindric columns, usually about a inch in length, and are made up of a number of round joints, like so many small wheels, or segments of cylinders. These joints, when found separate, and natually loose, as they sometimes are, are called *trochitæ*. They are all striated, from the center to the circumference, and have a cavity in their middle, which is sometimes found empty, but more frequently filled up with various matter, of the nature of the stratum, in which they have lain, or of other of the native fossile substances.

The *Entrochi* are composed of the same sort of plated spar with the asteriæ, and the spines and shells of the fossile echini; and this is in these usually of a bluish grey colour, and very bright and glossy, where fresh broken. They are subject to accidental injuries, like the other extraneous fossiles, which have been formed in animal moulds, and are frequently met with, compressed, or crooked. Their joints are not all of the same size, even in the same species; but, in the same specimen, some usually swell out much more, and are much larger, than the rest. The middle cavities of the *Entrochi* are of no determinate, or certain shape; they are, in some species, perfectly round, in others nearly, but not exactly of that shape; and in many they are pentangular, or of stellate figures of other numbers of angles, and resemble the shape of the asteriæ. See TROCHITÆ.

In many of the *Entrochi* also, a slight impression of a star is seen on each side the joints, and the *Entrochi* of this kind are distinguished, by some authors, under the name of *Entrocho asteriæ*. Most frequently the joints of the *Entrochi* are smooth, and the body even and simple; but sometimes there appear, on several parts, the rudiments of appendages, or branches, in the manner of the wires of the asteriæ, but these seldom run to any great length. *Hill*'s Hist. of Fossils, p. 633.

That the *Entrochi* are of marine origin, is evident from this, that they have not unfrequently sea shells found adhering to them, and, when these are broken off, there remain on the *Entrochi* no deficiencies, but the shells themselves shew that they have been form'd upon, and have grown to the *Entrochi*, there being always natural hollows in them, to answer to that part of the *Entrochus* from which they have been separated; whence it appears very plainly, that these *Entrochi*, however altered since in their substance, were, however, existing in their present shape, in those very seas where these shells had their growth.

There are not unfrequently found, among the *Entrochi*, larger or smaller fragments of plated bodies, which have plainly been once a part of the animal to which the *Entrochi* belonged, these being sometimes found affixed to them in their natural postures. These fragments are always composed of small flakes, of a convex or concave figure, laid in an imbricated manner over one another. The Germans call these bodies modioli; but they are ever so imperfect, that there can be no very probable conjecture founded on them, as to the nature of the body they have belonged to. Among the trochitæ, and modioli, there is also not unfrequently found, what may be called the inner nucleus of the *Entrochi*; this is a substance of stony, sparry, or other mineral structure, which has once filled up the cavity of one of these bodies, and has, since that time, been left naked by the outer substance of the *Entrochus*, having been destroyed, or worn away: This is exactly the same sort of fossil with the flinty echinitæ, and other casts of stone, made in the cavities of shells, since perish'd. This might sometimes be easily mistaken for a very different body from what it really is; but, at other times, it carries more traces of its original figure, the rounded parts of the several joints of the *Entrochus* being only worn away.

The entrocho asteriæ, as they are called, are sometimes plain *Entrochi*, with faintly stellate ends; but, at others, they have such elegant starry cavities and marks, with such precise and determinate angles, that they seem only to be asteriæ, surrounded by some foreign matter at every joint, and, by that, shaped into roundness.

We meet with the *Entrochi* of all the sizes, from that of a pin's head to a finger's length, and the thickness of ones middle finger. They are, in some places, found loose upon ploughed lands, in others they are lodged in great quantities in the strata of clay, and very often in stones of different kinds, and different hardness. The Derbyshire marble is extremely full of them, and owes its beauty, when polished, principally to them. *Hill*'s Hist. of Foss. p. 653.

Some of the Yorkshire *Entrochi* are swelled or tumid in the middle, and go off tapering to each end, and some others resemble the lapides judaici. These, however, are true *Entrochi*: They are jointed in the same manner with the rest, and consist of a small stalk, or pedicle, formed of three or four joints, and on this an oval body is placed, broken off at both ends. Some of these have also been the natural summits, or fastigia of the bodies, for they have a little jointed button on the top, hollow, and not seeming to have been divided, or broken off from any thing else. Phil Trans. N°. 100.

The hollows of the *Entrochi* are usually filled up with earthy or stony matter, but sometimes with another smaller *Entrochus*, so that they resemble a pair of screws, one nicely fitted into the other, and the one making a sort of pith to the other, and having gone regularly through its whole length.

The *Entrochi* possess all the medical virtues of other sparry petrifactions. See SPAR, BELEMNITES, OSTRACITES, *&c.*

ENTROCHO-*Asteriæ*, in natural history, the name given, by authors, to a peculiar kind of *Entrochus*, differing from the common kind, in having a stellar cavity, instead of a round one, in its center. See ENTROCHI.

ENTROCHUS *Pyramidalis*, a name given, by some of the writers in natural history, to the ortho-ceratites, or tubulus marinus concameratus, a species of shell-fish, not known to us in its recent state, but very common in the stones brought over from Sweden for pavements. *Klein.* de Tubul. Marin. p. 7. See TUBULUS *Concameratus*.

ENTROCHUS *Ramosus*, in natural history, the name of a fossile body, the several parts of which resemble the entrochi; but as they are joined together in this body, when perfect, they shew themselves in their proper light, and a sight of them, in this state, is sufficient to explode the opinion, advanced by some persons, of the entrochi being of a vegetable nature; or, as they have pleased to call them, rock plants. This fossile has evidently once been a stella marina, or sea star-fish, consisting of twenty rays, at the extremity of the body. The manner of insertion of these has been this: The body is of a pentagonal figure, and from this there have arisen five rays. These, at their extremity, have been divaricated, each into two, so as to make the number ten in the second progression, and each of these last being again divaricated into two at its extremity, the third and last progression is of twenty rays. All this is easily distinguishable in the fossile when perfect, and seems to have been the whole figure of the animal while living. The prototype, or living animal, however, is not found; but this is not an accident peculiar to this fossile, the cornua ammonis, and conchæ anomiæ, with many other bodies that have been once evidently shell-fish, being no where, at this time, found in their recent state, though so very numerous in the fossile world. This remarkable fossile star-fish is the body called, by some authors, *lilium lapideum*. *Keppeler*'s Epist. ad *Klein* de Entrochis.

ENTROCHORUM *Radix*, in natural history. See RADIX.

ENTRY (*Cycl.*)—ENTRY *in Casu Consimili*, in law, a writ that lies, where tenant for life, or tenant by the curtesy, aliens in fee, *&c.* He in reversion shall have this writ by Stat. Westm. 2. c. 24. See CASU *Consimili*, *Cycl.*

ENTRY *in Casu Proviso*, in law, a writ that lies where tenant

in dower aliens in fee, or for term of life, or of another's life; then he, in the reverſion, ſhall have this writ, provided by Stat. of Glouc. 6 Edw. 1. cap. 7. By which it is enacted, that if a woman alien her dower in fee, or for life, the next heir, &c. ſhall recover by writ of entry. And the writ may be brought againſt the tenant of the freehold of the land, on ſuch alienation, during the life of the tenant in dower, &c. New Nat. Br. 456. Theſe writs of *Entry* may be all brought, either in the *Per*, or in the *Cui*, or *Poſt*.

ENTRY *ad Communem legem*, in law, a writ of *Entry*, which lies where tenant for term of life, or for term of another's life, or by the curteſy, &c. aliens and dies, when he in the reverſion ſhall have this writ againſt whomſoever is in poſſeſſion of the land. New Nat. Br. 461.

ENTRY *ſine Aſſenſu Capituli*, in law, a writ of *Entry* that lieth where a biſhop, abbot, &c. aliens lands or tenements of the church, without the aſſent of the chapter or convent. F. N. B. 195.

ENTRY *ad terminum qui præteriit*, in law, a writ of *Entry* brought againſt a tenant for years, who holdeth over his term, and thereby keeps out the leſſor: And if the huſband and wife leaſe the wife's land for years, and the huſband dieth, and the tenant holds over his term, the wife may have a writ of *Entry ad terminum qui præteriit*, &c. But ſhe muſt count that ſhe and her huſband leaſed the land, &c. Alſo the grantee, in reverſion, may have this writ againſt the leſſee, or his aſſignee, &c. New Nat. Br. 447. 448.

ENTYPOSIS, in anatomy, the articulation of the ſhoulder with the arm.

ENULÆ *Radix*, *Elecampane*. See HELENIUM.

ENULION, a word uſed by ſome medical writers for the fleſh of the gums.

ENUMERATION, in rhetoric. See SYNATHROISMUS.

ENUR, a word uſed, by ſome of the chemical writers, to expreſs the occult, or unſeen vapour of water, of which they ſuppoſe ſtones to be produced.

ENURE, in law, ſignifies to take place, or be available; and is as much as to have effect. Thus, for inſtance, a releaſe made to tenant for life ſhall *enure*, and be of force and effect to him in the reverſion. *Littlet*.

ENXYLON, a name uſed, by the Greek authors, for a ſpecies of worm, or maggot, hatched from the egg of a beetle, and having its habitation in wood; which in this ſtate, it erodes and burrows into in various directions. The old Greeks called it alſo dex and thrips, and uſed the pieces of wood, eroded by it in remarkable figures, as ſeals. See the article THRIPS.

ENYSTRON, a word, uſed by Ariſtotle, for the ſecond ventricle, in ruminating quadrupeds, in which the food is elaborated and concocted.

EON, a word uſed, by ſome anatomical writers, to expreſs the whole ambit, or compaſs of the eye.

EPACTHES, Επαχθης, in antiquity, a feſtival celebrated in honour of Ceres, named Αχθεια, from Αχθος, *i. e.* grief, in memory of her ſorrow, when ſhe had loſt her daughter Proſerpine. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 394.

EPAGOGION, a word uſed by Dioſcorides, and ſome other old writers, for the prepuce.

EPANADIPLOSIS, Επαναδιπλωσις, in rhetoric, the ſame with what is otherwiſe called *Epanalepſis*. See EPANALEPSIS.

EPANALEPSIS, Επαναληψις, in rhetoric, the repetition of the ſame word in the beginning of one ſentence, and at the end of another. Thus Virgil,

Ambo florentes ætalibus, Arcades ambo.

EPANAPHORA, Επαναφορα, in rhetoric, the ſame with *Anaphora*. See ANAPHORA, *Cycl.*

EPANASTASIS, a word uſed by Hippocrates, and others of the old phyſicians, for a critical tumour, or tubercle, in certain diſeaſes. Thus Hippocrates obſerves, that tumours about the eyes, upon the recovery of the patient, prognoſticate diarrhæas.

EPANASTROPHE, Επαναστροφη, in rhetoric, the ſame with what is otherwiſe called *Anadiploſis*. See ANADIPLOSIS.

EPANEYLOTOS, a ſort of wreathed bandage, deſcribed by Oribaſius.

EPANODUS, Επανοδος, in rhetoric, a repetition of the ſame words, in an inverted order; thus:

Nox brevis nimis, ah! nimis brevis nox. Voſſ. Rhet. l. 5. p. 298.

EPAPHÆRESIS, a term uſed, by Galen, for frequently repeated evacuations of the veſſels by phlebotomy.

EPAPHALESIS, in medicine, an iterated or repeated phlebotomy. *Blancard.*

EPARCHUS, Επαρχος, an officer under the Greek emperors of Conſtantinople, who had the command of the guards, or government of a province. *Hofm.* Lex.

EPARER, in the manege, is uſed to ſignify the flinging of a horſe, or his yerking and ſtriking out with his hind legs. In caprioles a horſe muſt yerk out behind with all his force; but in ballottades he ſtrikes but half out; and in croupades he does not ſtrike out his hind legs at all. All horſes that yerk are reckoned rude. See YERK.

EPARITA, in the materia medica, a name given, by Paracelſus, to a ſort of fine earth, of a liver colour, ſeemingly the ſame with the Tokay bole.

EPARMATA, in medicine, are tumours of the glandules, called *Parotes*, behind the ears. *Blancard.*

EPARSIS, in the medical writings of the antients, a word ſometimes applied indifferently to any tumour, but more uſually appropriated to a parotis.

EPEMBOLE, Επεμβολη, in rhetoric, the ſame with *Parembole*. See PAREMBOLE.

EPENCRANIS, a name by which ſome of the old authors, particularly Eraſiſtratus, have called the cerebellum.

EPENDYTES, Επενδυτης, among the Greeks, a garment worn under the *pallium*, and above the *interula*, or inner coat, called in Greek ὑποδυτης. *Hofm.* Lex. in voc.

EPERLANUS, in ichthyography, the name uſed, by moſt authors, for the common ſmelt. It is claſs'd, by the generality of writers on theſe ſubjects, among the truttaceous kinds, and is acknowledged to have a general external reſemblance to the ſalmon. Its characters, by which it is diſtinguiſhed from all the reſt of the truttaceous kinds, are, 1. That it is much ſmaller than any other. 2. It is longer and ſlenderer, in proportion to its ſize: And 3. It has a very grateful ſmell, which ſome have compared to that of the violet. Some authors have hence called it the viola, and others, particularly Schonefeldt, calls it the *ſpirinchus*. *Willughby*'s Hiſt. Piſc. p. 202.

EPERON, in natural hiſtory, the ſpur ſhell, ſo called from its reſembling, in ſome degree, the rowel of a ſpur. It is a ſpecies of ſnail, of the round-mouthed kind, or claſs of the cochleæ lunares; all its volutæ are ſurrounded with double rows of prickles. See LUNARES COCHLEA.

EPERVIERS, in natural hiſtory, a name given, by the French authors, to a claſs of butterflies, which make the ſixth in Reaumur's method. They have a way of poizing themſelves on the wing in the manner of kites, and other birds of prey; and always live upon the wing, never ſettling themſelves upon the flowers they feed upon, but keeping flying with a humming noiſe, like a humble bee, while they thruſt in their trunk, and ſuck the juices of the flower. *Reaumur*'s Hiſt. Inſect.

EPHÆTIUM, in botany, a name by which ſome authors have called the ranunculus, or crow-foot. *Ger.* Emac. Ind. 2.

EPHEBÆUM, Εφηβαιον, in antiquity, the place where the ephebi, or youth, exerciſed; or, as ſome ſay, where thoſe who deſigned to exerciſe, met, and agreed what kind of exerciſe they ſhould contend in, and what ſhould be the victor's reward. *Pott.* Archæol. Græc. l. 1. c. 8. p. 38.

EPHEBI, Εφηβοι, among the Athenians, a deſignation given their young men, when they arrived at eighteen years of age; at which time they had their names entered in a public regiſter. *Pott.* Archæol. Græc. l. 1. c. 9. T. 1. p. 48.

EPHEDRA, in botany, the name of a genus of plants, the ſpecies of which are theſe. 1. The *Ephedra*, or anabaſis of Bellonius, called, by ſome, the climbing ſea knot graſs. 2. The great ſea *Ephedra*, called the ſea grape, or great ſea knot graſs. 3. The dwarf ſea *Ephedra*. 4. The Spaniſh ſhrubby *Ephedra*, with very narrow and thick ſet leaves. *Tourn.* Inſt. p. 663.

EPHEDRA is alſo a name given, by many of the old writers on plants, to the *Equiſetum*, or horſe-tail. It ſeems only a corruption of the *Ephydrum* of the Greeks, which was given as a name to horſe-tail, becauſe of its growing in watery places. Pliny deſcribes, under this name alſo, a plant which, he ſays, hangs down in long and naked filaments from the branches of trees. This was certainly no other than our uſnea or hairy tree moſs, which reſembling the horſe-tails in the nakedneſs of the branches, was called by ſome other of its names, and finally by this, though very badly applicable to it. *Pliny.*

EPHELÆUM, in anatomy, is the place from which the hypogaſtrum, or lower part of the abdomen, to the ſecret parts. *Blancard*, in voc.

EPHELCIS, a word uſed, by the antient Greek phyſicians, ſometimes for the cruſt of an ulcer, and ſometimes for a ſmall abraſion, or bloody fragment, brought up by coughing in an hæmoptyſis.

EPHELIS, a name uſed, by the antient writers on medicine, for a diſorder of the face, brought on by the ſun, and drying winds, and of the nature of what we call ſun-burning. It was a certain roughneſs, hardneſs, and bad colour of the ſkin. The antients cured it by a mixture of honey, reſin, and ſal gemm.

EPHEMERA, (*Cycl.*) in medicine, the name of a ſpecies of fever, continuing the ſpace of one day, or ſometimes more; for the medical writers expreſs themſelves by ephemera ſimplex vel plurium dierum. It is, properly, an attempt of nature to eaſe herſelf of the load of a plethora, either by an abſolute diſcharge of part of the blood by an hæmorrhage, or, by reſolving it into ſerum, and expelling it in that form, the ſecretory, and excretory motions, being encreaſed beyond their natural degree. The diary fever, properly ſo called, laſts only twenty-four hours; but this differs in nothing, except the time of its duration, from the ephemeron plurium dierum, which commonly laſts four days. To this it is to be added, that ſome authors have called the ſudor anglicus,

Ephemera maligna, a malignant diary fever, as it generally deſtroyed the patient in the ſpace of one day.

The ſimple diary fever uſually ſeizes the patient without any preceding ſhivering, and immediately is attended with a degree of heat of the fleſh, which continues the ſame without intermiſſion or exacerbation, till the cloſe. This is uſually not very violent, and is always attended with pains in the head, ſometimes heavy and dull, ſometimes pulſative and very acute. Such perſons as fall into this fever, from drinking large draughts of cold liquors while they are hot, as is very frequently the caſe, always have a pain in the right hypochondrium. The face is red, and inflated in this diſeaſe, and there is a laſſitude and wearineſs in all the limbs, the pulſe is ſtrong and quick, the urine is of a deep orange colour, and depoſits a reddiſh ſediment. *Junker*'s Conſp. Med. p. 263.

This fever uſually goes off in a moderate ſweat, and ſometimes, tho' leſs frequently, by a hæmorrhage at the noſe. It is ever of ſhort duration, for, if it exceeds the firſt day, it is always terminated, at the utmoſt, on the fourth or fifth. There is either very little, or very bad ſleep, during the whole time. The patient often never cloſes his eyes at all, or, if he ſleeps a little, is never ſenſible himſelf that he has ſlept.

The perſons moſt ſubject to this fever, are young men, who have much blood, and feed heartily; and ſuch as have had any habitual diſcharge of blood ſtopped upon them, whether natural, as in the hæmorrhoidal, or menſtrual diſcharges; or artificial, ſuch as frequent bleeding, cupping, and the like. And thoſe who have thrown their blood into violent emotions, by the too free uſe of ſpirituous liquors, too violent exerciſe, unuſual watchings, long ſtay by large fires, a ſudden repreſſion of ſweats by cold water, or by violent paſſions, particularly anger.

Cauſes of it. The principal general cauſes of this fever, are a plethoric diſpoſition, and a commotion of the blood; the accidental ones are a high diet, and ſedentary life, great heat of the body, from violent exerciſe, and from the ſun in hot weather; violent ſweating or heating medicines, injudiciouſly adminiſter'd; and ſudden chilling of the body when much heated.

Prognoſticks in it. The ſimple *Ephemera*, when wholly left to itſelf, is of no danger, if the perſon be kept warm, and in a ſtate of reſt; and all that need be done, in common caſes, to aſſiſt nature in it, is the frequent drinking of warm diluting liquors. When it is improperly treated, or diſturbed by a wrong regimen, it often has worſe conſequences, and, indeed, the doctor often changes this into an inflammatory or ſynochal fever, properly ſo called. It is known, that matters are properly managed, and that nature is taking her due courſe, if the urine and ſweat are properly excreted.

Method of Treatment. When the peculiar diſpoſition of the blood, or other accidents, render this fever worſe than it naturally would be, the proper courſe is to attemperate the violent emotions of the blood with nitrous, and the fixed antimonial medicines, and occaſionally, with the gentle acids, ſuch as lemon juice, and the like: And indeed, in all caſes of this kind, the frequent uſe of warm and weak liquors, with lemon juice among them, is highly to be commended. The free eruption of the ſweat, by which nature attempts to eaſe herſelf of the diſeaſe, is to be promoted by the gentle ſudorificks; nitre, crabs-eyes, and a ſmall quantity of juice of lemons, juſt enough to ſaturate the alkali of the crabs-eyes, prove an excellent medicine, to be repeated in ſmall doſes every three or four hours; and, toward night, the ſudorificks ſhould be joined to theſe, ſuch as the contrayerva root, or the like. And when it is over, there ſhould be given a few doſes of ſome gentle purge, as an infuſion of rhubard and ſena, or the like. Bleeding is unneceſſary in this fever. *Juncker*'s Conſp. Med. p. 264.

EPHEMERON, a name given by authors to a ſmall fly, called, by us, the *day fly*. It is an inſect found about the mouths of the Rhine, and ſome other rivers in Germany, and ſeems a ſort of middle ſpecies between the may fly, common with us, and bred from the Cadew-worm, and the libella, or dragon fly. It has four wings, two long, and two ſhort; two ſhort horns, ſix legs, and two very long ſtrait hairs, iſſuing from the tail. They are ſeen flying about the ſurface of the water, about midſummer, for three days, and no longer; they eat nothing, and their only buſineſs is to drop their eggs on the ſurface of the water, after they have copulated. Theſe eggs, ſinking to the bottom, produce a ſort of worms, or maggots; theſe ſoon hollow themſelves cavities in the clay, where they remain three years, growing every year about an inch in length. When the worm is come to its full growth, it riſes to the ſurface of the water, about ſix o'clock in the morning, and there iſſues from it this fly, which lays its eggs, and dies about ſix o'clock the ſame night; ſo that the life of the creature, in the fly ſtate, is only about twelve. *Swammerdam*, Hiſt. Inſ.

EPHEMERUM, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the liliaceous form, and is compoſed of three petals, and ſtands on a three-leav'd cup. The piſtil finally becomes an oblong fruit, divided into three cells, and containing ſeeds like grains of wheat.

The ſpecies of *Ephemerum*, enumerated by Mr. Tournefort, are theſe: 1. The Virginian *Ephemerum*, with large blue flowers. 2. The Virginian *Ephemerum*, with large purple flowers. 3. The Virginian *Ephemerum*, with large deep blue flowers. 4. The Virginian *Ephemerum*, with ſmaller blue flowers. 5. The Virginian *Ephemerum*, with ſmaller purple flowers. 6. The Virginian *Ephemerum*, with ſmaller white flowers. 7. The Virginian *Ephemerum*, with bluiſh white flowers. 8. The Virginian *Ephemerum*, with white and violet-coloured flowers. 9. The American *Ephemerum*, with cannacorus leaves. 10. The Indian *Ephemerum*, with arum leaves. *Tourn.* Inſt. p. 367.

EPHIDROSIS, in the medical writings of the antients, a word uſed to expreſs a ſweat, ſometimes ſlight, and not critical, and, at others, a ſymptomatick one, appearing only on the head, neck, and breaſt. Theſe are both bad ſymptoms in many diſeaſes, tho' they are often miſtaken, by the injudicious, for good ſigns, and forwarded by hot medicines, to the deſtruction of the patient. See SWEAT and SWEATING.

EPHIPPITES, in natural hiſtory, the *ſaddle ſtone*, a name given, by authors, to a ſort of ſoft ſtone, with certain depreſſions, which give it the figure of a ſaddle. See HIPPURITES.

EPHYDOR, Εφυδωρ, in antiquity, an officer in the Athenian courts of juſtice, who was to provide the plaintiff and defendant with equal water hour-glaſſes. When the glaſs was run out, they were not permitted to ſpeak any farther; and therefore we find them very careful not to loſe or miſpend one drop of their water. Whilſt the laws, quoted by them, were reciting, or if any other buſineſs happened to intervene, they gave order that the glaſs ſhould be ſtopped. *Pott.* Archæol. Græc. l. 1. c. 21. T. 1. p. 118.

EPHYDRUM, Εφυδρον, in botany, a name given, by ſome of the Greek writers, to the plant now called equiſetum, or horſe-tail. It would have been well for the world, if the authors of antiquity would have confined themſelves to ſome one name, in regard to each plant they have deſcribed to us, ſince we then ſhould have had the advantage of all the knowledge they have left behind them; but, as it is, they call the ſame plant by ſo many names, and ſome of theſe often ſynonimous to other plants alſo, that it is not eaſy to ſay, of which they meant to ſpeak. We have no other plant, mentioned in them, under the name of *Ephydrum*, but the horſetail; and if they would therefore have confined themſelves to this name, for this plant, we ſhould always have underſtood what they meant by their accounts of its virtues; but ſome have called it Hippuris, and others from that word equiſetum; theſe alſo are ſo appropriated to the plant, that they probably would not have been miſunderſtood; But when they have called it ſymphytum and polygonum, the one the name of comfry, and the other of knot-graſs, though theſe names might be both as applicable to the horſetail, for its agglutinating quality, and for the multitude of joints in the ſtalk, as to the other plants deſigned by them; yet, as they were before the received names of other plants, it might have been eaſily foreſeen, that miſtakes would ariſe from the confuſed uſe of theſe words. See *Pliny*, *Dioſcorides*, *Theophraſtus*.

Pliny has miſtaken the meaning of the authors he takes his accounts from, on this occaſion, and gives the characters of the horſetail and knot-graſs, two as different plants as well can be, in the ſame deſcription; and conſequently that deſcription can ſuit with no plant at all. Dioſcorides ſeems alſo to have fallen into the ſame error, in regard to the common name ſymphytum, which was given to this plant, and to comfry and elecampane; he recommends the horſetail in difficulties of breathing, and ſeems to mean the elecampane, not the horſetail; though in the manner in which the paſſage ſtands, it can only be conſtrued of the horſetail. This plant, the comfry, and the elecampane, all were found to agree in the quality of agglutination, whence they had their name of ſymphytum; but their other virtues are ſo very different, that the perſon who ſhould give one for the other, would run into a very great error.

EPIALOS, in the medical writings of the antients, the name of a fever, in which the patient labours under a preternatural internal heat, while he at the ſame time ſhivers with cold. It has, by ſome, been called the ſhivering fever; and the Romans named it *quercera*. Galen ſays it proceeds from a putrify'd acrid phlegm. The word is, by ſome, alſo applied to any gentle fever, or feveriſh complaint, and, by others, to the cold or ſhivering fit preceding a fever. Hippocrates calls by this name that peculiar fever which attends young women, whoſe menſes are ſtopped by taking cold, or other accidents.

EPIBATÆ, Επιβαται, among the Greeks, marines, or ſoldiers who ſerved on board the ſhips of war. They were armed in the ſame manner as the land forces, only that more of them wore full or heavy armour. *Pott.* Archæol. Græc. T. 2. p. 140.

EPICALYMMA, a word uſed by ſome of the old writers on ſhell-fiſh, and not well underſtood by their commentators. Ariſtotle has the word in his treatiſe of animals, and gives a very good explication of its meaning. He ſays that the buccinum, the purpura, and all the ſtromboide ſhells have a ſort of covering with which they ſtop up the orifice of the ſhell at

pleaſure, and that under this is placed the tongue of the creature. *Ariſtotle.*

It is plain, from this, that the author meant by the epicalymma, that ſmall oval ſhelly ſubſtance, placed at the head of the fiſh, which we call the operculum, and with which it ſhuts up the mouth of the ſhell, when it retires into it. This operculum may be at any time ſeen in the common wilk, while freſh. And as this is the original author who uſed the word, we are always to underſtand the operculum to be meant by it, if the author, who uſes it himſelf, knew what was its true ſenſe.

EPICAUMA, in medicine, a cruſty ulcer that ſometimes happens to the black of the eye.

EPICHIROTONIA, among the Athenians. It was ordained by Solon, that once every year the laws ſhould be carefully reviſed, and examined; and if any of them were found unſuitable to the preſent ſtate of affairs, they ſhould be repealed: This was called επιχειροτονια των νομων, from the manner of giving their ſuffrages, by *holding up their hands.* See a farther account of this cuſtom in *Pott.* Archæol. Græc. l. 1. c. 26. T. 1. p. 142.

EPICHORDIS, in anatomy, a name given, by ſome, to the meſentery.

EPICLEROS, Επικληρος, among the Athenians, a daughter that had no brothers, and therefore inherited her father's whole eſtate. *Pott.* Archæol. Græc. l. 1. c. 24. T. 1. p. 127.

EPICRANIUM, in anatomy, a name given, by Albinus, to the fleſhy covering of the head, divided by authors into ſeveral different muſcles. The head is covered with a thin coat; the hinder parts of this coat are called the occipital muſcles, and the forepart the frontal muſcles.

EPICRASIS, in medicine, is a gradual evacuation of ill humours in the blood.

EPICRISIS, Επικρισις, in rhetoric, a clear and brief declaration of the ſpeaker's judgment, concerning the ſubject in hand: Thus, *ego ſic ſtatuo, in optimo imperatore quatuor has res ineſſe oportere,* &c. *Voſſ.* Rhet. l. 6. p. 495.

EPICYEMA, a word uſed, by Hippocrates, to ſignify a fœtus, or a falſe conception, or mole coming on after the conception of a former or regular fœtus.

EPIDAURIA, Επιδαυρια, in antiquity, a feſtival celebrated by the Athenians, in honour of *Eſculapius.* *Hofm.* Lex. in voc.

EPIDELOS, a word uſed, by Hippocrates, for a youth in the time of his growth, from the age of ſeven to that of fourteen. The ſame author alſo uſes it in a very different ſenſe, expreſſing by it the obſervable days in a diſeaſe, ſuch as the fourth, eighth, and eleventh, which indicate what ſort of criſis is to be reaſonably expected on the great critical day.

EPIDEMIA, Επιδημια, in antiquity, private feſtivals, and times of rejoicing, when a friend, or a relation, had returned from a journey. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 394.

EPIDEMIA *Apollinis*, a Delphian feſtival, in memory of a journey of Apollo. *Potter*, loc. cit.

EPIDENDRA, in natural hiſtory, a word uſed by Sir Hans Sloan, and ſome authors beſide, to expreſs thoſe plants which grow upon others, ſuch as the miſletoe, which grows upon the apple-trees, &c. Theſe are more commonly diſtinguiſhed by the name of paraſitical plants.

EPIDICASIA, Επιδικασια, among the Athenians—Daughters inheriting their parents eſtate, were obliged to marry their neareſt relation; which gave occaſion to perſons of the ſame family to go to law with one another, each pretending to be more nearly allied to the heireſs, than the reſt. The ſuit was called Επιδικασιας δικη, and the virgin, about whom the relations conteſted, Επιδικος. *Pott.* Archæol. Græc. l. 1. c. 24. T. 1. p. 147.

EPIDROMUS, in the antient ſhipping, a ſail near the ſtern, which was the largeſt but one in the ſhip. *Pitiſc.* Lex. Ant. in voc.

EPIGLOUTIS, a word uſed, by ſome of the old writers in medicine, to expreſs the upper part of the buttock.

EPIGONATIS, a name given, by ſome anatomiſts, to the patella. See PATELLA.

EPIGONION, Επιγονιον, a muſical inſtrument among the antients, with forty ſtrings. Mem. Acad. Inſcript. Vol. 5. p. 167.

EPIGRAPHES, Επιγραφεις, among the Athenians, officers that rated all thoſe of whom taxes and contributions were required, according to every man's ability, kept the public accounts, and proſecuted ſuch as were behind-hand with their contributions. *Potter*, Archæol. Græc. l. 1. c. 14. T. 1. p. 81.

EPILEPSEY (*Cycl.*)—*Hofman* extols the uſe of ambergreaſe in this diſorder. Oper. Tom. 3. Sect. 1. c. 1. §. 4. as alſo of muſk, ib. §. 9. He recommends alſo the ſpirit of hartſhorn, or of ivory, either ſimple or ſuccinated. The decoctions of the woods, guaiacum, ſaſſafras, ſantals, &c. are alſo uſeful, ib. §. 4. He adviſes great caution in the uſe of opiates, in caſes of children, and weak perſons. Ib. Cautel. Pract. §. 5.

EPILESMON, a term uſed, by the old writers in medicine, to expreſs loſs of memory.

EPIMEDIUM, *Barrenwort*, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a four-leav'd perianthium, the leaves of which are oval, obtuſe, hollow, and ſet wide open; they are ſmall, and are not placed alternately, under the petals of the flower, but one immediately under each. Theſe fall with the flower. The flower is compoſed of four petals, of an obtuſe oval form, ſomewhat hollowed, and ſpread open. It has alſo four nectaria, formed like ſo many ſmall cups; theſe are obtuſe at the bottom, and of the breadth of the petals on which they lean. They are affixed to the receptacle at their rims. The ſtamina are four pointed filaments, applied cloſe to the ſtyle; the antheræ are oblong, erect, and contain each two cells, they are bivalve and ſplit longitudinally. The germen of the piſtillum is long, the ſtyle ſhorter, and reaching to the length of the ſtamina; the ſtigma is ſimple. The fruit is an oblong, pointed pod, compoſed of one cell, but divided by two valves; the ſeeds are very numerous and oblong. *Linnæus*, Genera Plant. p. 47.

There is only one known ſpecies of this genus, which is thus characterized by Tournefort: The flowers conſiſt of four leaves, diſpoſed in form of a croſs; theſe are all tubulated. The piſtil ariſes from the cup, and, at length, becomes a pod unicapſular, and compoſed of two valves. *Tourn.* Inſt. p. 232.

EPIMELIS, a name given, by the old writers in medicine, to a ſpecies of medlar, or, as ſome will have it, to a kind of ſummer apple.

EPIMETRON, in antiquity, an allowance given the taxgatherers in the Roman provinces, over and above the juſt quantity of wine or grain they were obliged to furniſh. The *Epimetron*, or over-meaſure, in different provinces, was different, being always greater in thoſe that were remote, than in the nearer provinces. The different kinds of things wherein it was given, made likewiſe a difference in the quantity allowed. The reaſon of allowing an *Epimetron*, or overmeaſure, was to make good the leakage of the wine, and waſte of grain, that would neceſſarily happen by tranſporting it to Rome. *Pitiſc.* in voc.

The provinces whoſe taxes were converted into money, and paid in ſpecie, were free from the *Epimetron.* Id. ibid.

EPIMORIOS, an epithet given, by Galen, to certain differences in the pulſes, with reſpect to their inequality as to the time of their beating. All times, rythms, or modulations of the pulſe, according to number, conſiſt, he obſerves, of equal, or unequal proportions. Of equal, when the time of the diſtention is equal to that of contraction; and of unequal, when the one of theſe exceeds the other; and this inequality may be from certain or uncertain exceſſes The certain exceſſes may be either in multiple proportion, or as number to number, which is the epimorion.

EPIMULIS, a name given, by ſome anatomiſts, to the patella, or knee-pan.

EPIMYTHION, Επιμυθιον, in rhetoric. See FABLE, *Cycl.*

EPINEUCOS, in the old writers of medicine, a word uſed to denote a ſort of unequal pulſe, beating differently in the different parts of the ſame artery; as when it riſes ſtrongly againſt the two middle fingers of the phyſician who feels it, and weaker at the extreams; this ſort of pulſe is deſcribed by Galen as common to hectic patients, and is called alſo perineucos.

EPINEPHELOS, in the writings of the antient phyſicians, a term uſed to expreſs the cloudy matter ſeen floating in the urine in fevers, &c.

EPINEUX *des Lombes*, in anatomy, a name given by Winſlow, and ſome other of the French authors, to certain ſmall muſcles of the loins, not mentioned by the old anatomiſts; but called, by Albinus, *inter ſpinalis lumborum.*

EPINYCTIS, in the writings of the antient phyſicians, a term uſed to expreſs a ſort of malignant puſtule, which commonly breaks out in the night. It is uſually of about the bigneſs of a large pea, and is ſometimes white, ſometimes black, according to the nature of the humour it contains, and always has a violent inflammation all round it, when it is opened there is an efflux of ſanies, and a mucous exulceration is found within; it is attended with violent pain, and uſually breaks out in the upper parts of the body. This is the account Celſus gives of the *Epinyctis*; but Paulus and Aetius underſtand it rather to be a puſtule, which gives no great pain in the day, but is very troubleſome in the night. Both accounts, however, may be right, and it may both firſt appear, and be moſt painful in bed.

EPIPACTIS, in botany, a name uſed, by ſome, for the helleborine, or wild, or baſtard black hellebore. Rondeletius alſo uſes the ſame word as the name of the herniaria, or rupture-wort. *Ger.* Emac. Ind. 2.

EPIPEDOMETRY, in mathematics, ſignifies the meaſuring of figures that ſtand on the ſame baſe. *Harris.*

EPIPETRON, in botany, a name given, by Theophraſtus and Ariſtotle, to a plant, ſuppoſed by many to be the ſame with the empetrum of Dioſcorides. But there is great reaſon to doubt whether the *Epipetron* of the two older authors be the ſame plant; and whether, if they mean two different plants by this name, either of them agree with the empetrum of Dioſcorides.

corides. Theophraſtus ſays, that his *Epipetron* never flowers; and Ariſtotle ſays, that his *Epipetron* grows on rocky places, and continues to grow after it is taken up, as the orpin and ſome other plants will do.

EPIPETRON, in botany, a name by which ſome authors have called the epimedium, or barrenwort. *Ger.* Emac. Ind. 2.

EPIPHÆNOMENA, in the writings of the antient phyſicians, a term uſed to expreſs ſuch of the ſymptoms, in certain diſeaſes, as did not uſually appear till the time that the diſeaſe was actually formed, called alſo epiginomena.

EPIPHANIA, a word uſed, by ſome of the antient phyſicians, to expreſs the external habit of the body. Galen has the word from Theon.

EPIPHEOS, in botany, the name given by the antients to the dodder, or cuſcuta, which grew upon the ſhrub they called phæos. This was the ſtæbe of the modern Greeks, deſcribed by Honorius Bellus. It was a cuſtom, among the old writers, to name the cuſcuta, or dodder, from the plant it was found growing upon, as they ſuppoſed that it in ſome degree partook of the virtues of that plant; thus that which grew upon thyme was called epithymum, and that upon the nettle, epiurtica, and that upon flax, epilinum, ſo of many others.

The ſhrub pheos was alſo called ſtæbe by Dioſcorides and Theophraſtus; and hence this dodder was ſometimes called epiſtæbe. The epiſtæbe and epipheos were therefore evidently the ſame thing; but there is yet another name often given to it, which has occaſioned a very great confuſion among the antients themſelves; ſome, inſtead of epipheos, have called it hippopheos, perhaps by a mere corruption of the word, perhaps by deſign, as expreſſing its riding on the pheos, as on a horſe. The word hippopheos very often occurs in a different ſenſe. Theophraſtus, and others of the beſt writers, uſing it as nearly ſynonymous with the word pheos, but only expreſſing the larger plants.

Dioſcorides has mentioned the hippopheos and ſtæbe as the other antient Greeks have, but tho' they have all made theſe ſynonymous names expreſſing the ſame plant, he mentions them in different parts of his works, and ſeems to look upon them as having no alliance in their nature and virtues one with another. The ſtæbe he gives, in one place, as an aſtringent, and in another he mentions the hippopheos, or, as he calls it, the hippophaës, as a purge good to carry off redundant bile. The commentators have been ſtrangely perplexed to reconcile theſe paſſages, as the ſtæbe of all the antient Greeks beſide is equally the name of the pheos and the hippopheos; and Galen, Neophytus, and Heſichius, with all the other commentators of note, render both pheos and hippopheos by the word ſtæbe. But the caſe ſeems to have been, that Dioſcorides means both theſe plants by the word ſtæbe, and that his hippopheos, which he has ſeparated from that plant, and to which he has given ſuch different virtues, is the epipheos, or cuſcuta, growing upon the pheos or ſtæbe. See EPISTÆBE.

EPIPHLEBOS, in the writings of the old phyſicians, a term uſed to denote ſuch perſons as were lean, and of a hot temperament, and whoſe veins, for that reaſon, appeared uſually very turgid and prominent, in the hands, *&c.*

EPIPHYLLOSPERMOUS *Plants*, are the ſame with the capillaries, herbs which bear their ſeed on the back part of their leaves. See CAPILLARY.

EPIPLOCE, Επιπλοκη, in rhetoric, the ſame with *Climax*. See CLIMAX, *Cycl.*

EPIPOROMA, a word uſed, by Hippocrates, and the other old writers, for a callous concretion happening at, and moleſting the joints.

EPISARCIDIUM, a name given, by many of the old authors, to an anaſarca. See ANASARCA.

EPISCENIUM, Επισκηνιον, in antiquity, a place upon the top of the theatre, where all the machines for moving the ſcenes were kept. *Potter*, Archæol. Græc. l. 1. c. 8. p. 42.

EPISCEPSIS, Επισκηψις, in antiquity, an action brought to prove the *Diamartyria*, or proteſtation that the perſon deceaſed had left an heir, to be falſe and groundleſs. *Potter*, Archæol. Græc. l. 1. c. 24. T. 1. p. 128.

EPISCIRA, Επισκιρα, in antiquity, a feſtival celebrated at Scira in Attica, in honour of Ceres and Proſerpine. *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 395.

EPISCION, a name given, by the old Greek writers, to the pubes.

EPISCIROSIS, Επισκιρωσις, the ſame with *Epiſcira*.

EPISCOPALES *Valvulæ*, called alſo, by ſome, valvulæ mitrales; two valves in the pulmonary vein, which prevent the reflux of the blood to the heart.

EPISCOPALIA (*Cycl.*)—Theſe cuſtomary payments have been otherwiſe called *Onus Epiſcopale*; and were remitted, by ſpecial privilege, to free churches and chapels of the king's foundation, which were exempt from epiſcopal juriſdiction. *Kenn.* Gloſſ. ad Paroch. Antiq.

EPISCOPISSA, a word uſed, by writers of the middle ages, to denote a biſhop's wife. *Hofm.* Lex. in voc.

EPISEMASIA, in medicine, is the very time that a diſeaſe firſt ſeizes a perſon, and is properly called *ſignificatio*. *Blancard.*

EPISPHÆRIA, in anatomy, are windings and turnings in the outer ſubſtance of the brain, that the ſanguiferous veſſels may paſs more ſecurely. *Blancard.*

EPISTÆBE, in botany, a name given to the cuſcuta, or dodder, found growing on the plant ſtæbe of the antient Greeks, that is, their pheos, or hippopheos, as the dodder growing on thyme is called epithymum, and that on flax epilinum. It were well if this cuſcuta had no other name, for great confuſion has ariſen from its being alſo called epipheos, or, as ſome write it, hippopheos, making it the ſame word with the name of the larger pheos. This has even led Dioſcorides into an error, who has deſcribed, probably, from ſome other author, the epipheos, under the name of hippopheos, not diſtinguiſhing it to be only cuſcuta growing on this plant, and has given it virtues well enough agreeing indeed with cuſcuta, but not at all with the hippopheos, as moſt authors underſtand that word, that is, the larger pheos. Himſelf alſo appears to have underſtood the thing he was deſcribing, not as what it really was, but as the ſhrub itſelf; but this may be the leſs wondered at, when we recollect that the ſame author, in his account of that common kind of cuſcuta, called epithymum, did not know what it was, but took it for a more than ordinary ſtout and hardy thyme, approaching to the nature of the thymbra, ſo his own words expreſs it, not at all underſtanding that it was a ſeparate plant, which poſſeſſed none of the qualities of thyme, nor was any more of its nature, than the moſs is of the nature of the oak, beech, or other tree, on which it chances to grow.

EPISTAPHILINS, in anatomy, a name given by Winſlow, and other of the French writers, to a muſcle called, by Morgagni, the columellæ muſculus teres, and the azygos uvulæ, which laſt name has been continued to it by moſt authors. Douglas calls it the palatoſtaphilinus; and ſome of the French, the muſcle de la luette.

EPISTITES, in natural hiſtory, the name of a ſtone, deſcribed by the writers of the middle ages, as being of a beautiful red, and ſhining very elegantly. It was renowned for its many magical virtues, according to the idle tradition of thoſe times; they ſaid it drove away all noxious animals, and kept off ſtorms from the place where any one was who had it about him.

EPISTOLARES, among the Romans, under-ſecretaries to the *magiſter ſcrinii epiſtolarum*, or ſecretary, who wrote the emperor's letters. They were thirty-four in number. *Danet.* See MAGISTER.

EPISTOMIA, in anatomy, are the utmoſt gapings and meetings of veſſels.

EPISTROPHE, Επιστροφη, in rhetoric, a figure wherein that which is ſuppoſed of one thing, is ſtrongly affirmed of another. Thus, *Are they Hebrews? ſo am I. Are they Iſraelites? ſo am I. Are they the ſeed of Abraham? ſo am I*, &c. *Voſſ.* Rhet. l. 5. p. 287.

EPITHEM (*Cycl.*)—There are, principally, three kinds of theſe external applications, the liquid, the ſolid, and the ſoft, or pultice kind.

The liquid epithems are ſometimes conſiderably thick; but when they are intended to penetrate deep, they are much better if very thin and fluid. And as the part to which the *Epithem* is immediately applied, is not what it is always intended to act upon, but ſomewhat lying deep within, the *Epithems* intended for this purpoſe ſhould conſiſt of the moſt penetrating ingredients; for which reaſon aſtringents and inſpiſſating remedies can be of no uſe in this form; ſince they cannot be abſorbed ſo deep, and indeed prevent their own ingreſs, by bracing up the mouths of the pores. Hot wine alone is ſometimes uſed as an *Epithem*; and frequently ſuch medicines as are not to be ſafely taken inwardly, ſuch as highly rectify'd ſpirits, preparations of lead, henbane, mandrake, and other poiſonous plants, and the like. But we are carefully to remember, in regard to theſe, that the pores are capable of abſorbing them, and ought therefore to know the effects they are capable of producing, when thus abſorbed in the body. As to the vehicles of liquid *Epithems*, they are very various, ſuch as linen or woollen cloaths, ſilk, ſtupes, toaſted bread, crumb of untoaſted bread, the dry *Epithems*, or bags, and ſometimes the hot liquor is tied up in a bladder, and that only applied to the part. When a great quantity of the liquor is to be uſed, flannel ſtupes do beſt; but, when the heat is to be long retained, and only the finer particles of the liquor admitted, then the bladder preſerves and retains beyond all other means.

Epithems are, in ſome caſes, to be applied hot, and in others cold; when the intention is powerfully to reſolve, penetrate, and attract, then thoſe of the hot kind are greatly to be preferred; but heat is injurious to parts conſtricted by intenſe cold, and thoſe that are cold, or, at leaſt, tepid, are to be uſed. Spirituous and volatile liquors are alſo eaſily diſſipated by heat, and all ſuch ought therefore to be applied either cold, or barely tepid.

The dry *Epithems* are medicated powders, uſually ſewed up in a cloth, and applied to different parts of the body; for this purpoſe the powders muſt be coarſe, ſince otherwiſe their particles would fall through the cloth; and ſometimes the liquid *Epithems* are added to the dry, to reduce the whole to a conſiſtence, ſuch as may be ſpread upon cloth, and applied.

The antients uſed chaff of wood to mix with their powders, in the *Epithems* of the coarſer kind, and cotton in thoſe which were finer. Among the dry *Epithems* is alſo to be accounted the uſe of a bag of hot ſand. This is of ſingular ſervice where heat is to be retained a long time; and ſometimes the liquid *Epithems* are added to this, its heat being of power to throw them much farther in, than they otherwiſe would reach. The bags in which any of theſe dry *Epithems* are put, muſt not be filled hard, but only the matter muſt be lightly put in, that they may remain pliant and ſpungy. Some make the bags, for dry *Epithems*, of ſilk, and ſome of woollen cloth; but linen, which has been much worn, is greatly preferable on all occaſions. The figure of the bag is to be accommodated to the part it is to be applied to, and the intention it is to anſwer. For the head, it is commonly made in the form of a hood; for the forehead, ſquare; for the heart, pyramidal; for the ſtomach, in form of a ſhield; for the liver, in form of a creſcent; and for the ſpleen, in ſhape of an ox's tongue. When the bags are ſmall, it is ſufficient to ſow up the end, when the matter is put in; but when they are large, they muſt be ſewed acroſs in ſeveral places, in the manner of quilting, to keep the matter equally diſtributed. When they are thus prepared, they are to be applied either alone, being firſt warmed, or moiſtened with any proper liquor. Pigeons applied to the feet are alſo properly a ſort of *Epithem.*

Volatile EPITHEM, *Epithema volatile*, a form of medicine preſcribed in the late London pharmacopœia, and ordered to be made of equal weights of common turpentine and ſpirit of ſal armoniac. The turpentine is to be kept continually ſtirring in a mortar, and the ſpirit gradually dropt in, till the whole is reduced to a white maſs.

The ſpirit of ſal armoniac, uſed in this mixture, muſt not be that made in the common way; with the addition of quick lime, but with the alkali ſalt. *Pemberton*'s London Diſp. p. 377.

EPITHESIS, in ſurgery, a word uſed, by ſome writers, to expreſs the reducing, or rectification, of crooked limbs, by means of proper inſtruments.

EPITHRICADIA, Επιθρικαδια, in antiquity, a feſtival in honour of Apollo. *Potter.*

EPITHYME, *Epithymum* (*Cycl.*)—Many of the writers of the middle ages have fallen into great errors about this plant, deſcribing it in their writings as a kind of thymum, or thyme, different from the common ſpecies, but not at all underſtanding that it was a plant of a wholly different kind, and that had no ſort of connection with the thyme, other than its growing on that plant, as the plant itſelf does on the earth. Some have ſuppoſed from this, that they meant an herb different from our epithymum, and that though the dodder, or cuſcuta, growing on thyme, be now called epithymum, yet, in other ages, a peculiar ſpecies of thyme itſelf was called by this name. To this it is eaſily anſwered, that the virtues of thyme are corroborative, carminative, and cordial, and that theſe muſt take place in all ſpecies of thyme, one as well as another; and that the virtues of cuſcuta, or dodder, are cathartic and cholagogue; and that theſe alſo muſt take place in dodder, grow it on what plant it will. Now the authors who deſcribe epithymum as a kind of thyme, ſtill give it the virtues of a cathartic, and particularly a purger of bilious humours, and not one of thoſe of the thyme itſelf: It is evident, from hence, that their deſcription was bad, and that their epithymum, was the ſame with ours, tho' they ſeem never to have ſeen it. It is to be obſerved, that, in all theſe falſe deſcriptions, the terms are very exactly the ſame. They all ſay it was more hard and woody than the common thyme, and approached to the nature of thymbra. This ſhews that they are all copied one from another, and the original we can trace up to an author, whom it grieves one to cenſure on ſuch an occaſion, no leſs than Dioſcorides being at the head of it. It is evident that this author had no knowledge of any ſuch plant as cuſcuta, or dodder, growing on the ſeveral other vegetables, on which ſome of his predeceſſors had found it, and preſcribed it in medicine. The dodder growing on the pheos, or ſtæbe, a prickly ſhrub of Crete, uſed by the fullers, was called, by the old writers, epipheos and epiſtæbe. Dioſcorides has written it hippopheus, the very name of the larger ſpecies of pheos, and yet has given it the purging virtues of cuſcuta; and, in the ſame manner, he has deſcribed the epithymum as a kind of thyme, more ſhrubby than the others, and reſembling thymbra. Theſe are his expreſs words, as well as thoſe of later writers; yet he has given this alſo its proper virtues, as dodder, ſaying, that it is a purge and a cholagogue, and thus has proved that he meant our cuſcuta, though he has deſcribed it in ſo very improper a manner.

EPITHYMUM, in medicine. See DODDER.

EPITROCHASMUS, Επιτροχασμος, in rhetoric, a figure wherein we ſlightly paſs over ſeveral things of great moment, by only mentioning them in general. Such is the ſaying of Cæſar, *veni, vidi, vici.* And the following paſſage of Virgil, Æn. 4.

——————*Faces in caſtra tuliſſem,*
Impleſſemque foros flammis, natumque patremque
Cum genere exſtinxem, memet ſuper ipſa dediſſem.
Voſſ. Rhet. l. 5. p. 374.

EPIZEUXIS, Επιζευξις, in rhetoric, a figure where the ſame word is repeated, without any others intervening: Thus, *age, age*; *adeſte, adeſte*; and that of Virgil, *nunc, nunc inſurgite remis*, are inſtances of it. *Voſſ.* Rhet. l. 5. p. 292.

EPNEUMATOSIS, in medicine, the ſame with expiration.

EPOBOLIA, Επωβολια, in antiquity, a fine laid upon thoſe that could not prove the indictment they had brought againſt their adverſaries.

It was ſo called, becauſe they were obliged to pay the ſixth part of the value of the thing they contended for, viz. an obolos out of every drachm. Some of theſe ſums were depoſited in all law-ſuits, a very few excepted, before the trial could proceed. *Potter*, Archæol. Græc. l. 1. c. 21. T. 1. p. 117.

EPOCHETEUSIS, a word uſed by Hippocrates, and others of the old writers in medicine, to expreſs the derivation of the blood, or juices, from one part to another.

EPODOS, in medicine, a word uſed to expreſs the curing of diſeaſes by incantation.

EPOICODOMESIS, Επωικοδομησις, in rhetoric, is ſometimes uſed for what is otherwiſe called *Climax*. *Voſſ.* Rhet. l. 5. p. 294. See CLIMAX, *Cycl.*

EPOMIS, in anatomy, a name given, by ſome authors, to a muſcle now generally known by the name of the *Deltoides*. See DELTOIDES.

EPOMPHALION, any medicine which purges, on being applied to the navel.

EPOPS, Επωψ, in zoology, a name by which ſome of the antient writers have called the bird we call the upupa, or hoopo. *Ray*'s Ornitholog. p. 100. See the article UPUPA.

EPOSILINGA, a word uſed, by ſome of the chemical writers, to expreſs the ſcales which fly off from iron, when hammered at the ſmith's forge.

EPOTIDES, in the antient ſhip building, two large thick pieces of wood on each ſide of the prow of a galley, which reſembled two ears, whence they had their name.

The *Epotides* were chiefly deſigned to ward off the blows of the roſtra of the enemies veſſels. *Pitiſc.* Lex. Ant.

EPSOM *Salt.*—What we now meet with, in the ſhops of chemiſts, under this name, is no other than a ſalt made from the bittern, or remaining brine after the making of common ſalt: But when the world was firſt made acquainted with a purging ſalt, under this name, it was truly what its name expreſſed, being really made from the purging waters of that place. This ſalt is bitter, and of a ſtrongly purging quality, and, when ſuffered to ſhoot freely, and its cryſtals at a due diſtance, it always form'd them into rectangular priſms, with four parallellogram planes; by this, and by divers other properties, it appeared evidently different from all other ſalts known at that time. It was ſuppoſed to partake of the nature of allum, and the waters of the place were called alluminous waters; but Dr. Grew has evidently proved the error of that opinion; others ſuppoſed this ſalt the ſame thing with the ſalt of lime, or the nitre of old walls, but this was equally erroneous. The beſt method of taking it was found to be diſſolving it in a proper quantity of its own water; by this means the water was made to work both more quickly and more effectually; and it proved of great ſervice in diſorders of the ſtomach, as want of appetite, and the like, and in colics, diabetes, the ſcurvy, and rheumatiſm, and many other chronic diſeaſes. Phil. Tranſ. N°. 216. p. 76.

Mr. Bolduc has given much the ſame deſcription of the manner of making *Epſom ſalt*, as Mr. Brown had done in Phil. Tranſ. N°. 337. §. 10. and N°. 378. §. 11; that it is the ſalt which cryſtalizes, after boiling to a due conſiſtence, the bittern, which is the liquor remaining in the ſalt-pans, after the ſea ſalt is ſeparated. See Mem. Acad. Scienc. 1731.

EPSOM *Water.*—This is a water eaſily imitated by art. By only diſſolving half an ounce of *Epſom* ſalt in a quart of pure water, made ſomewhat briſk or quick by a few drops of ſpirit of vitriol and oil of tartar, ſo as to let the alkali prevail. *Shaw*'s Lectures. p. 90.

EPTACTIS, in natural hiſtory, a name given by Linkius, and ſome other authors, to a ſpecies of ſtar-fiſh, of the aſtrophyte kind, whoſe rays, or branches, at their firſt going out from the body, are only ſeven in number; but which very ſoon ſpread into more. See STELLA *Marina*, and ASTROPHYTE.

EPULÆ, *Entertainments*, among the antients. See ENTERTAINMENTS.

EPULARES, in antiquity, an epithet given thoſe who were admitted to the ſacred *Epulæ* or entertainments, it being unlawful for any to be preſent at them who were not pure and chaſte. *Pitiſc.*

EPULETIC *Medicines*, the ſame with *Cicatrizantia*. See CICATRISIVE, *Cycl.*

EPULIDES, in ſurgery, certain fleſhy tubercles, or excreſcences of the gums: Theſe are of two kinds, ſome being of a

mild

mild nature, others painful, malignant, and inclining to be cancerous. Surgeons diſtinguiſh them alſo into the larger and the ſmaller, and the harder and ſofter; they are ſometimes ſupported by a broad, ſometimes by a narrow root. Theſe excreſcences not only deform the mouth, but hurt the ſpeech and maſtication, and are always beſt ſpeedily extirpated.

When they grow to a ſmall root, they are beſt extirpated by ligature, or tying a thread firmly about the root; but when the root is broad, they are beſt eaten off by cauſtics, as the oil of tartar, ſpirit of ſal armoniac, and the like, and when theſe mild ones prove ineffectual. It is beſt not to have recourſe to ſtronger, but to raiſe the tubercle with the hook or pliers, and carefully extirpate it with the knife, not cutting off the gums, ſo as to uncover the roots of the teeth, which would be probably attended with a caries of the bone. The blood ſhould be permitted to flow from theſe for ſome time, but if the hæmorrhage continues too long, the patient muſt waſh his mouth with hot red wine, with allum diſſolved in it, repeating it till it ceaſes. And afterwards tincture of myrrh, and honey of roſes, ſhould be uſed till the parts are perfectly well; and, if the tubercles ſhould ſprout up again, they ſhould be taken down in time by the ſame methods. *Heiſter*'s Surgery, p. 462. See alſo *Schelhammer* de Epulide.

EPULONES, in antiquity, a claſs, or order of prieſts, who had the management of feaſts, games, and feſtal ſacrifices, under their inſpection. *Pitiſc.* Lex. Ant. in voc.

EQUANT *Circle*, in the old aſtronomy, a circle deſcribed on the center of the *Equant*. Its principal uſe is to find the variation of the firſt inequality.

EQUATED *Bodies*. On Gunter's ſector there are ſometimes placed two lines, anſwering one another, and called *the lines of equated bodies*: They lie between the lines of ſolids and ſuperficies, and are noted with the letters D, I, C, S, O, T, for Dodecahedron, Icoſihedron, Cube, Sphere, Octahedron, and Tetrahedron.

The uſe of theſe lines are, 1. When the diameter of the ſphere is given, to find the ſides of the five regular bodies, ſeverally equal to that ſphere. 2. From the ſide of any of the bodies being given, to find the diameter of the ſphere, and the ſides of the other bodies, which ſhall be equal ſeverally to the firſt body given.

If the ſphere be firſt given, take its diameter, and apply it over in the ſector in the points S, S: If any of the bodies be firſt given, apply the ſide of it over in its proper points: So the parallels taken from between the points of the other bodies, ſhall be the ſides of thoſe bodies, equal ſeverally to the firſt body given.

EQUATION (*Cycl.*)—*Cubic* EQUATION. The ſecond terms of a cubic *Equation* being taken away, they may be all reduced to this form: $x^3 + ax + b = 0$. Where

$$x = \sqrt[3]{-\tfrac{1}{2}b + \sqrt{\tfrac{1}{4}bb + \tfrac{1}{27}a^3}} + \sqrt[3]{-\tfrac{1}{2}b - \sqrt{\tfrac{1}{4}bb + \tfrac{1}{27}a^3}}.$$

This rule is commonly aſcribed to Cardan, and from him has been called *Cardan's Rule*; but it is ſaid by ſome [a], that Tartalea was the inventor, and, by others [b], Scipio Ferreus, to whom, it is ſaid, Cardan himſelf aſcribes the invention.—[a *Lagni* Elem. d'Arithmet. & d'Algebr. p. 479. b *Wolf.* Elem. Matheſ. Tom. 1. p. 336. Edit. 2. and *Saunderſon*'s Algebra, p. 702.]

When, in a cubic *Equation*, $x^3 - ax \pm b = 0$, a is negative, the expreſſion $\sqrt{\frac{1}{4}bb + \frac{1}{27}a^3}$, will be transformed into $\sqrt{\frac{1}{4}bb - \frac{1}{27}a^3}$, which becomes impoſſible, or imaginary, when $\frac{1}{27}a^3$ is greater than $\frac{1}{4}bb$; for $\sqrt{\frac{1}{4}bb - \frac{1}{27}a^3}$ will then be the ſquare root of a negative quantity, which is impoſſible. And yet, in this caſe, the root x may be a real quantity. But algebriſts have not yet been able to find a real expreſſion of its value. This caſe is called the *irreducible*, *ireductible*, or *impracticable* caſe. See IRREDUCIBLE.

The irreducible caſe may be ſolved by the triſection of an arc, for which the reader may conſult Saunderſon's algebra, p. 713.

This method requires a table of ſines, and if ſuch be not at hand, we may have recourſe to Dr. Halley's univerſal method of extracting the roots of *Equations*, in the philoſophical tranſactions, or in Lowthorp's abridgment, Vol. 1. C. 1. §. xx. Vid. infra.

There are ſeveral other methods, of extracting the roots of cubic *Equations*, extant in books of Algebra.

Mr. Cotes obſerves, in his logometria, p. 29, that the ſolution of all cubic *Equations* depends either upon the triſection of a ratio, or of an angle. See this method explained and demonſtrated in *Saunderſon*'s Algebra, p. 718.

Biquadratic EQUATION.—Des Cartes gave a method of reducing biquadratic *Equations* to cubic. This method is explained in moſt treatiſes of algebra, ſince his time; and very clearly by the marquis de l'Hôſpital in his conic ſections, Art. 356. See alſo *Maclaurin*'s Algebra, p. 228. ſeq.

Hence a biquadratic *Equation* being propoſed, it may be ſolved, by reducing it firſt to a cubic *Equation*; and then finding the roots of this new *Equation*, by the triſection of an angle, or of a ratio. Theſe roots, ſo found, having a given relation to the roots of the propoſed biquadratic, theſe will alſo be given.

EQUATIONS *of higher Degrees*.—We have no univerſal rule to expreſs, algebraically, the roots of *Equations*, higher than biquadratic. But ſuch *Equations* may be ſolved univerſally in numbers, by Dr. Halley's method of approximation.

This method proceeds by aſſuming the root deſired, nearly, true to one or two places; which may be done by a geometrical conſtruction, or by a few trials; and then correcting the aſſumption, by comparing the difference between the true root and the aſſumed, by means of a new *Equation*, whoſe root is that difference, and which he ſhews how to form from the *Equation* propoſed, by ſubſtitution of the value of the root ſought, partly in known, and partly in unknown terms.

The Doctor's method will eaſily be underſtood by an example. See p. 9.

Dr. Brook Taylor found that this method was capable of a greater degree of generality, and that it was applicable, not only to *Equations* of the common form, that is, to ſuch as conſiſt of terms, wherein the powers of the root are poſitive and integral, without any radical ſign, but alſo to all expreſſions in general, wherein any thing is propoſed as given, which by any known method might be computed; if, *vice verſa*, the root were conſidered as given. Such are all radical expreſſions of binomials, trinomials, or of any other nomial, which may be computed by the root given, at leaſt, by logarithms, whatever be the index of the power of the nomial; as likewiſe expreſſions of logarithms, of arches by the ſines or tangents, of arcs of curves by the abſciſſæ, or any other fluents, or roots of fluxional *Equations*. See Phil. Tranſ. N°. 352. *Jones*'s Abridg. Vol. 4. c. 1. §. xvii.

The method of finding the roots of *Equations* by approximation, extends to all kinds of *Equations*, and though it be not accurately, yet it is practically true; as it gives the value ſought, to a very great degree of exactneſs, nay, to any aſſignable degree, if any one will take the pains of computation.

The method of Sir Iſaac Newton, and of Mr. Raphſon, is, in effect, the ſame as that mentioned in the Cyclopædia, under the head APPROXIMATION. See further in *Newt.* Meth. of Flux. and Mr. *Colſon*'s Comment. p. 186. But Dr. *Halley*'s Method is more expeditious in practice. See Phil. Tranſ. N°. 219. or *Lowthorp*'s Abridg. Vol. 1. c. 1. §. xx. The principles of theſe methods may alſo be found in Mr. Maclaurin's algebra, part. 2. c. 9. or in Mr. Simpſon's algebra, p. 147. ſeq. who gives ſeveral formulæ for the approximating to the roots of *Equations*. This gentleman has alſo another method for this purpoſe, which we ſhall mention further on.

Mr. Daniel Bernoulli, in the *Acta Petropolitana*, Tom. 3. p. 92. ſeq. has given a new and ingenious method of approximating to the roots of *Equations*, without any previous trials. The method is deduced from the nature of recurring ſeries. The book wherein it is publiſhed being in few people's hands, we ſhall here give a full account of this method.

Let the propoſed *Equation* be put into this form:

$$1 = ax + bxx + cx^3 + ex^4 +, \&c.$$

Then form a ſeries, beginning with as many arbitrary terms as the *Equation* has dimenſions, but with this condition, that if A, B, C, D, E, &c. denote the terms following each other in direct order, then muſt $E = aD + bC + cB + eA +$, &c. and let there be two proximate terms, M, N, in this ſeries ſufficiently continued; then will the antecedent M, divided by the conſequent N, be nearly equal to the required root.

For inſtance, let $1 = -2x + 5xx - 4x^3 + x^4$. Form a ſeries, beginning with four arbitrary numbers, 1 . 1 . 1 . 1 (as the propoſed *Equation* is of four dimenſions) and let a new term always be formed from the double of the laſt preceding, taken negatively, more the quintuple of the penultimate, leſs the quadruple of the antepenultimate, more the penantepenultimate. This ſeries will be 1 . 1 . 1 . 1 . 0 . 2 . — 7 . 25 . — 93 . 341 . — 1254, &c. and the approximated root of the *Equation* propoſed will be nearly $= -\frac{341}{1254}$.

Again, let $1 = x + 2xx + 3x^3 + 4x^4 + 5x^5$. Form a ſeries, beginning with five arbitrary terms, 1 . 1 . 1 . 1 . 1 . 1 . 15 . 29 . 71 . 183 . 477 . 1239 . 3171, &c. Here $\frac{1239}{3171}$ or $\frac{413}{1057}$ will be nearly equal to one of the roots of the *Equation*.

The root here found is the leaſt of the roots, without attending to the ſigns; that is, the root ſo determined is that which is leaſt diſtant from nothing.

To find the greateſt root of a propoſed *Equation*, let it be diſpoſed in the following manner:

$$x^m = ax^{m-1} + bx^{m-2} + cx^{m-3} \ldots\ldots + d.$$

Then form a ſeries, beginning with as many arbitrary terms as there are dimenſions in the *Equation*, ſo that if A, B, C, D, E, &c. denote ſo many contiguous terms directly following each other in the ſeries, E muſt be every where $= aD + bC + cB + dA$, &c. Laſtly, let there be two proximate terms, M and N, in this ſeries, ſufficiently continued, then will

will the conſequent term N, divided by the antecedent M, be nearly equal to the required root.

For inſtance, let us take one of the foregoing *Equations*, the leaſt root of which was found to be $-\frac{341}{1254}$; and let the *Equation* be thus diſpoſed:

$$x^4 = 4x^3 - 5xx + 2x - 1.$$

Then form this ſeries,

1 . 1 . 1 . 1 . 0 . — 4 . — 15 . — 41 . — 97 . — 209.

And $\frac{209}{97}$ will be nearly equal to the greateſt root of the propoſed *Equation*.

In the application of the rule for finding the leaſt root, the author obſerves, that ſome difficulties may ariſe in two caſes. Firſt, when the leaſt root of the *Equation* may be taken either affirmatively, or negatively. Secondly, when the leaſt root is imaginary, as if the *Equation* had theſe roots, $+\sqrt{-4}$, $-\sqrt{-4}$, and 5; of which the laſt is to be conſidered as greateſt, that is, according to his definition, as fartheſt diſtant from nothing.

In the firſt caſe, the alternate terms only are to be conſidered, and if they tend towards a conſtant ratio, while the contiguous terms deviate, it will argue an equality between the affirmative and negative root. And, in this caſe, a term in the ſeries muſt be divided by the alternate term following; and the ſquare root of the quotient will be the root of the *Equation*: For inſtance, if we had, $1 = -y + 4yy + 4y^3$; then forming a ſeries according to the firſt rule, we ſhall have

1 . 1 . 0 . — 4 . 36 . — 20 . 148 . — 84 . 596 . — 340. 2388, &c.

And the tenth term 596, divided by the alternate term following, or the twelfth, 2388, gives $\frac{596}{2388}$, or $\frac{149}{597}$, nearly equal to the ſquare of the required root, which will therefore be, nearly, $\pm\sqrt{\frac{149}{597}}$. This example ſhews that the rule approximates ſufficiently faſt; for the number found $\frac{596}{2388}$ differs from the truth only by $\frac{1}{2388}$, the true root being $\pm\frac{1}{2}$.

The inconvenience, here mentioned, might alſo be remedied, by taking $x = y \pm a$; and then finding the root of the tranſformed *Equation* by the firſt rule.

In the ſecond caſe, when the leaſt root is imaginary or impoſſible, it is to be conſidered whether the root will be affirmative or negative; if the former, put $x = y + a$, if the latter, $x = y - a$. And then the value of y may always be found by the rule; providing that a be aſſumed greater than x. But though we ſhall never be diſappointed by taking any greater number for a; yet it is to be obſerved, that the leſs $a - x$ is, the more eaſily and quickly will the ſeries tend to the required root. Some circumſpection is therefore requiſite.

For inſtance, let $1 = \frac{x + xx - x^3}{2}$.

If we form a ſeries without any previous examination, ſuch as

$$1 . 1 . 1 . \frac{1}{2} . \frac{1}{4} . \frac{1}{8} . — \frac{3}{16} . — \frac{9}{32} . — \frac{11}{64} . — \frac{17}{128} —, \text{ \&c.}$$

we ſhall never find any root, as the terms of the ſeries do not tend to any conſtant ratio. But ſuppoſing $x = y - 2$ (for it is viſible that the negative root cannot be great) we ſhall have

$$1 = \frac{15y - 7yy + y^3}{8}$$

or, to avoid fractions, ſuppoſe, $y = 8z$, that is, $x = 8z - 2$. Then we have

$$1 = 15z - 56zz + 64z^3.$$

From this *Equation* the following ſeries ariſes:

1 . 1 . 1 . 23 . 353 . 4071 . 42769 . 436151 . &c.

Hence $z = \frac{42769}{436151}$; and $x = -\frac{530150}{436151}$

For a ſecond example, take this *Equation*,

$1 = \frac{-x - xx + x^3}{2}$; from whence this ſeries ariſes,

$$1 . 1 . 1 . — \frac{1}{2} . \frac{1}{4} . \frac{5}{8} . — \frac{11}{16} . \frac{5}{32} . \frac{37}{64} . — \frac{91}{128} . \text{ \&c.}$$

Which gives no root; but taking $x = y + 3$ (as it appears that x muſt be affirmative) this *Equation* will ariſe, $1 = \frac{-20y - 8yy - y^3}{13}$, or rather taking $y = 13z$, that is, $x = 13z + 3$, we ſhall have $1 = -20z - 104zz - 169z^3$. This laſt *Equation* gives the following ſeries:

1 . 0 . 1 . — 20 . 296 . — 4009 . 52776 . — 688608

Whence $z = -\frac{52776}{688608}$; and $x = \frac{1379736}{688608} = 2{,}0036$ nearly; x being exactly $= 2$.

As to the caſe before mentioned, of the equality of two roots, it is alſo to be obſerved, that a like rule may be applied, where more than two roots are equal, providing they be real. But in caſe ſome of theſe equal roots ſhould be impoſſible, and the reſt real; as if $x^4 - 1 = 0$, where $x = 1$, $x = -1$, $x = \sqrt{-1}$, and $x = -\sqrt{-1}$, all which roots, by our author's definition, are to be conſidered as equal, or equally diſtant from nothing. We may obviate this inconvenience, by ſuppoſing $x = y \pm a$; which is therefore an univerſal remedy.

This will lead us to a method of extracting the roots of powers. For inſtance, if we wanted the cube root of 2.

Then $x^3 = 2$ or $1 = \frac{x^3}{2}$

The ſeries, formed according to this *Equation*,

$$1 . 1 . 1 . \frac{1}{2} . \frac{1}{2} . \frac{1}{2} . \frac{1}{4} . \frac{1}{4} . \frac{1}{8} . \frac{1}{8} . \frac{1}{8} . \text{ \&c.}$$

only ſhews, that $x^3 = 2$. But taking $x = y + 1$, the propoſed *Equation* will be tranſformed into the following, $1 = 3y + 3yy + y^3$. From whence this ſeries may be derived,

1 . 1 . 1 . 7 . 25 . 97 . 373 . 1435 . 5521 .

Therefore $y = \frac{1435}{5521}$; and $x = \frac{6956}{5521} = 1.2597$ nearly.

Again, let it be required to extract the biquadrate root of 20: then $x^4 = 20$, and ſuppoſing $x = y + 2$, we ſhall have

$1 = 8y + 6yy + 2^3y + \frac{1}{4}y^4$; from whence this ſeries is obtained, 0 . 0 . 0 . 1 . 8 . 70 . 610 . 5316 $\frac{1}{4}$. 46332 .

This gives $y = \frac{21265}{185328}\left(= \frac{5316\frac{1}{4}}{46332}\right)$ and $x = \sqrt[4]{2}\,\frac{21265}{185328}$.

Which root approaches very near to the truth; ſo that it is much to be doubted whether the ſame could be obtained ſo quickly, and ſo accurately, by any other method.

Suppoſe again, that the ſquare root of 26 were required. Then $xx = 26$. Let $x = y + 5$. And $1 = 10y + yy$. Hence we have the ſeries 0 . 1 . 10 . 101 . 1020 . 10301 . 104030.

Therefore $y = \frac{10301}{104030}$; and $x = \sqrt{26} = 5\,\frac{10301}{104030} =$ 5 . 09901951360, differing only by unit from 5 . 09901951359 found by the common method.

In the caſe where the greateſt root of the *Equation* is required, the like obſervations may be made, as when we ſeek the leaſt root, *viz.* that we may obviate all inconveniencies by ſuppoſing $x = y \pm a$. Both methods often take place without any preparation; ſometimes only one, and ſometimes neither; but this rarely. Both will ſucceed by a proper ſubſtitution of $x = y \pm a$, providing the *Equation* have real roots.

To avoid fractions in both caſes, ſuppoſe, firſt, the general *Equation* $a = bx + cxx + dx^3 +$ &c. where $a, b, c, d,$ &c. are integers; to which form all *Equations* may be reduced. Then we avoid fractions by ſuppoſing $x = ay$. In the ſecond method, we have the general *Equation* $ax^m = bx^{m-1} + cx^{m-2} \ldots\ldots + d$ where we may put $x = \frac{y}{a}$; but this ſubſtitution may often be well omitted.

It is to be obſerved, that this method may be ſometimes uſefully extended to literal *Equations*. Thus in the general cubic *Equation*, $1 = ax + bxx + cx^3$, form the ſeries 0 . 0 . 0 . 1 . a . aa . $aa + b$. $a^3 + 2ab + c$. $a^4 + 3aab + 2ac + bb$. $a^5 + 4a^3b + 3aac + 3abb + 2bc$, &c. then will the proximate value of $x = \frac{a^4 + 3aab + 2ac + bb}{a^5 + 4a^3b + 3aac + 3abb + 2bc}$.

The learned author of theſe methods afterwards applied them to the reſolution of infinite *Equations*; for which we muſt refer the reader to the Acta Petropol. Tom. 5. p. 63—82.

The ingenious Mr. Simpſon, gives us the following method for the ſolution of *Equations* in numbers, when only one *Equation* is given, and one quantity (x). to be determined.

Take the fluxion of the given *Equation*, ſuppoſing $\dot{x}$ to be the variable quantity; and having divided the whole by $\dot{x}$, let the quotient be repreſented by A. Eſtimate the value of x pretty near the truth, ſubſtituting the ſame in the *Equation*, as alſo in the value of A, and let the error, or reſulting number, in the former, be divided by this numerical value of A, and the quotient be ſubtracted from the ſaid former value of x; and from thence will ariſe a new value of that quantity, much nearer the truth than the former, wherewith proceeding as before, another new value may be had, &c. till we arrive to any degree of accuracy deſired.

For inſtance, ſuppoſe $300x - x^3 - 1000 = 0$. To find x, take the fluxion of the given *Equation*, and expunging $\dot{x}$, we have, $300 - 3xx = A$. It appearing, by inſpection, that $300x - x^3$, when $x = 3$, will be leſs, and when $x = 4$, will be greater than 1000, eſtimate x at 3 . 5, and ſubſtitute it inſtead thereof both in the *Equation*, and in the value of A. The error in the former $= 7 . 125$. and the value of the latter $= 263 . 25$: Wherefore taking $\frac{7 . 125}{263 . 25} = 0 . 027$ from 3 . 5, there remains 3 . 473 for a new value of x. With this proceeding as before, the next error, and the next value of A will be 0 . 00962518 and 263 . 815 reſpectively. Hence the third value of $x = 3 . 47296351$. which is true to 7 or 8 places.

The propoſed *Equation* need not always be delivered from radicals, though this be ſometimes convenient, yet it is alſo ſometimes inſupportably tedious. Thus, if we had the *Equation* $\sqrt{1 - x} + \sqrt{1 - 2xx} + \sqrt{1 - 3x^3} - 2 = 0$; the clearing it from ſurds would be very tedious; but Mr. Simpſon's method gives the root without any previous reduction.

The like is to be obſerved, when two *Equations* are given, and as many unknown quantities (x and y) are to be determined. For all which we refer to the author himſelf, in his eſſays printed 1740. p. 82. ſeq.

The old method of Vieta, for ſolving adfected *Equations*, was extremely tedious. It was formed by analogy, from the common method of extracting the roots of pure powers. See Vietæ Oper. Math. ap. Elzev. p. 173. or *Wallis*'s Algebra, *Oughtred*'s Clavis, *De Lagny* Elemens d'Arithm. & d'Algebr. p. 515, *&c.*

EQUATION *of the Center*, in aſtronomy.—This *Equation* not being conſtant, there is a place in the planet's orbit where it is greateſt. Hence ſeveral queſtions in aſtronomy ariſe; as, what is the greateſt *Equation* for every planet? To what mean anomaly does this *Equation* correſpond? Alſo, as the greateſt *Equation* is determined by the excentricity of the planets orbit, it may be reciprocally requiſite to determine the excentricity by the greateſt *Equation*.

The rigorous ſolutions of theſe queſtions being no where extant, Mr. Euler has enquired into them, in Mem. de l'Acad. de Berlin. Tom. 2. p. 225. ſeq. Where he ſolves the following problems.

1°. To find the true and mean anomaly, correſponding to the planet's mean diſtance from the ſun; that is, when the planet is in the extremity of the conjugate axis of its orbit.

2°. The excentricity of a planet being given, to find the excentric anomaly correſponding to the greateſt *Equation*.

3°. The excentricity being given, to find the mean anomaly correſponding to the greateſt *Equation*.

4°. From the ſame data to find the true anomaly correſponding to this *Equation*.

5°. From the ſame data to find the greateſt *Equation*.

6°. The greateſt *Equation* being given to find the excentricity. Mr. Euler obſerves, that this problem is very difficult, and that it can only be ſolved by approximation, and tentatively, in the manner he mentions. But, if the excentricity be not great, it may be then found directly from the greateſt *Equation*. Thus, if the greateſt *Equation* $= m$, and the excentricity $= n$, then,

$$m = 2n + \frac{11}{48}n^3 + \frac{599}{5120}n^5 +, \&c.$$

Whence by converſion

$$n = \frac{1}{2}m - \frac{11}{768}m^3 - \frac{587}{2^{10}\cdot 15}m^5 -, \&c.$$

Where the greateſt *Equation* m, muſt be expreſſed in parts of the radius, which may be done by converting the angle m, into ſeconds, and adding 4.6855749 to the logarithm of the reſulting number; for this will be the logarithm of the number m.

The mean anomaly to which this greateſt *Equation* correſponds, will be, $x = 90° + \frac{5}{8}m - \frac{5}{2^9\cdot 3}m^3 - \frac{1}{2^9\cdot 5}m^5 -$, *&c.*

Whence, if to 90° we add $\frac{5}{8}$ of the greateſt *Equation*, we ſhall ſufficiently approximate to this mean anomaly.

Mr. Euler gives us a table, in which may be found the greateſt *Equations*, the excentric and mean anomalies, correſponding to theſe greateſt *Equations*, for every hundredth part of of unity, which he ſuppoſes equal to the greateſt excentricity, or when the diſtance of the foci and the tranſverſe axis become infinite. The laſt column of his table alſo gives us the logarithm of that diſtance of the planet from the ſun, where its *Equation* is greateſt. By the help of this table, any excentricity being given, we may find the greateſt correſponding *Equation*, by interpolation. But the principal uſe of the table is, to determine the excentricity when the greateſt *Equation* is known, and Mr. Euler thinks the queſtion inſoluble without this help. See the Table, lib. cit. p. 245. ſeq.

EQUESTRIA, among the Romans, a place in the theatre, where the equites, or knights, ſat. *Hofm.* Lex. in voc.

EQUESTRIAN (*Cycl.*)—EQUESTRIAN *Cohort*, in antiquity. See COHORS *Equitata*.

EQUESTRIAN *Games*, *ludi Equeſtres*, among the Romans, horſe-races; of which there were five kinds, the *prodromus*, or plain horſe race, the chariot race, the decurſory race about funeral piles, the *ludi ſevirales*, and the *ludi neptunales*. *Pitiſc.* Lex. Ant. in voc.

EQUINUS *Barbatus*, a kind of comet. See HIPPEUS, *Cycl.*

EQUIRIA, in antiquity, a feſtival inſtituted by Romulus, in honour of Mars, at which there were horſe races. *Pitiſc.*

EQUISELL, in ichthyology, a name given, by Gaza, and ſome other writers, to the dorado, or dolphin: The coryphæna with the forked tail of Artedi. See CORYPHÆNA.

EQUISELIS, in natural hiſtory, the name of a large fly, of the ſize of a hornet, but having only two wings and no ſting. It otherwiſe much reſembles the common hornet in ſhape. This fly is found only in Macedonia. We have alſo, in England, flies which nearly reſemble the hornet, waſp, and bee, but in their wanting ſtings, and having only two wings.

EQUISELIS, in ichthyography, a name uſed, by ſome authors, for the hippurus, a ſea-fiſh, caught on the Spaniſh ſhores, and ſuppoſed by many to be the ſame with the dorado. *Willughby*'s Hiſt. Piſc. p. 213. See the article HIPPURIS.

EQUISETUM, *Horſetail*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the apetalous kind, being compoſed of a number of ſtamina, each furniſhed with a muſhroom-like head, and all diſpoſed in a ſort of ſpiked form. Theſe flowers are barren, and the ſeeds of the ſame ſpecies grow on plants of a very different figure, which have no flowers, and only produce black rough ſeeds. To this it is to be added, that the plant conſiſts of ſeveral joints, one received into another, in the manner of larger and ſmaller tubes. See Tab. 1. of Botany, Claſs 15.

The ſpecies of *Horſetail*, enumerated by Mr. Tournefort, are theſe: 1. The marſh *Horſetail*, with long branches. 2. The marſh *Horſetail*, with ſhorter branches. 3. The field *Horſetail*, with very long briſtles. 4. The wood *Horſetail*, with very ſlender briſtles. 5. The ruſh-like naked, or not branched *Horſetail*. 6. The great marſh *Horſetail*. 7. The great naked, but branched *Horſetail*. 8. The ſmall naked variegated *Horſetail*. *Tourn.* Inſt. p. 532.

The common great marſh *Horſetail* is uſed in medicine as an aſtringent and vulnerary. Schroder recommends it in all kinds of hæmorrhages, and exulcerations of the kidneys and bladder.

EQUITATA *Cohors*, in antiquity. See COHORS *Equitata*.

EQUUS, the *Horſe*, in the linnæan ſyſtem of zoology, this makes a diſtinct genus of animals, of the jumenta kind, the characters of which are, that the creatures have two paps, ſituated in the groin, the dentes inciſores are ſix in each jaw; the canine, or dog-teeth, are placed at a diſtance from the others, and are but little longer than they. According to theſe characters, the author includes in this genus, the horſe, the aſs, the wild aſs, and mule, and the zebra, or, as he calls it, the ſtriped horſe. *Linnæi* Syſtem. Natur. p. 40.

EQUUS *Marinus*, in zoology, a name given, by ſome, to an animal very different from the hippopotamus, or river horſe, and more uſually known by the name of the morſe. See MORSE.

ERA, in chronology. See ÆRA, *Cycl.*

ERANDGAAS, in zoology, the name of a fowl, of the gooſe kind, deſcribed by ſome authors. It is ſaid to be ſomewhat ſmaller than the common wild gooſe. Its head grey, and its neck adorned with a red ring. Its breaſt, wings, and neck, are grey, and its feet red. Mr. Ray much ſuſpects the account of this bird. *Ray*'s Ornithol. p. 308.

ERANTHEMUM, in botany, a name given, by ſome authors, to the flos Adonis, or red maithes. *J. Bauhin.* vol. 3. p. 129.

EREBENNUS, Ερεβεννὸς, a name given by Galen, and ſome other of the Greek writers, as a diſtinctive epithet for the black chamæleon thiſtle, which was eſteemed poiſonous, and was by this word diſtinguiſhed from the ægleus, or ἀιγληὶς, or white chamæleon, which was an eſculent plant, and uſed by ſome as an antidote. It has happened, however, that the white chamæleon thiſtle has been by ſome called a poiſon, as well as the black, but this is only owing to a miſtake of Pliny, in ſuppoſing the effects of birdlime to have been attributed to this plant, becauſe yielding a viſcous, but ſafe gum, at its root. It was called, by ſome, ixios chamæleon. *Galen.*

ERECT *Leaf*, *Erectum folium*, among botaniſts. See LEAF.

EREGMOS, a word uſed, by the antients, to expreſs a bean decorticated, and broken into ſmall pieces, in order to be boiled in ptyſans. This name was not, however, kept ſtrictly to this ſenſe, but they applied it indifferently to all the leguminous fruits, broken in the ſame manner. Foëſius will have it to ſignify bean meal, but others are againſt this; and Galen, in ſome places, uſes it only to expreſs a bean divided into two parts.

ERETHISMOS, a word uſed by Galen and Hippocrates, to expreſs any thing that irritates. Galen ſays, that Hippocrates means by it alſo every thing that reduces the habit of body to an infirm ſtate, among which are to be reckoned, before all other things, irritating, acrimonious, and pungent humours in the ſtomach and bowels, particularly in the mouth of the ſtomach, worms aſcending from the inteſtines into the ſtomach, nocturnal itchings of the whole ſkin, or of ſome part of it, which, by their irritation, and prevention of ſleep, greatly exhauſt ſtrength.

ERETRIA *Terra*, *Eretrian Earth*, in the materia medica, the name of a very peculiar kind of bole, dug in the Negropont, near the antient *Eretria*, and once in great uſe as an aſtringent and a ſudorific.

The antient writers in medicine all mention the *eretrian* earth; and Dioſcorides and Galen deſcribe two kinds of it, a grey and a white. The grey is what is properly diſtinguiſhed by this name, being an earth of a different kind from all the other boles. The white, though the antients ſeem not to have obſerved it, yet was plainly, from their own deſcriptions, the ſame with the white bole armenic, tho' found in a different place. *Hill*'s Hiſt. of Foſſ. p. 5.

The grey, or genuine *eretrian* earth, is a fine and pure greyiſh white earth, moderately heavy, naturally of a ſmooth ſurface, of a friable texture, eaſily crumbling to pieces between the fingers, but not ſtaining the ſkin in handling; it ſticks firmly to the tongue, but melts into a butter-like ſubſtance in the mouth; it burns to a perfect ſnow white, and effervesces violently

violently with aqua fortis. But what abundantly diſtinguiſhes it from all other earths, is, that if a little wetted and drawn over a plate of braſs or copper, ſo as to mark a line, the mark will, a little after, appear bluiſh. This is recorded of it ſo early as in the writings of Dioſcorides, and experiment proves it to be true. It ſeems plainly owing to an alkaline quality in the earth; this it plainly manifeſts, by its fermenting ſo ſtrongly with acids; and it is a well known thing, that alkalies draw a blue tincture from copper.

The antients all eſteemed it a great medicine, and were particularly careful in their way of preparing it for uſe, by frequent waſhing. It is now unknown in the ſhops; but its highly alkaline quality, in which it is ſo much ſuperior to all the earths now in uſe, might make it worth the bringing into uſe again, and it may ſtill be had in its old place, in almoſt any quantities.

ERETIA *Terra alba*, in the materia medica, a name by which the antients called the white bole armenic, a ſmall quantity of which was alſo found near *Eretria*. *Hill*'s Hiſt. of Foſſ. p. 8.

ERGALIA, a word uſed, by the alchemiſts, to expreſs that part of their treatiſes which explains the inſtruments employ'd in their operations.

ERGASIMA, a name given by Dioſcorides, and other of the antients, to a very foul and coarſe kind of myrrh.

ERGASTERIUM, a word uſed, by the writers in chemiſtry, ſometimes to expreſs the whole elaboratory, and ſometimes that part of a furnace on which the bottom of the retort, copell, or crucible, is to reſt in an operation.

ERGASTINÆ, Εργαστιναι, in antiquity, a ſelect number of virgins employed in weaving Minerva's peplos, or robe, which was carried in proceſſion at the Athenian feſtival *Panathenæa*. See PEPLOS, *Suppl.* and PANATHENÆ, *Cycl.*

ERGASTULUM, among the antients, a houſe of correction, or work-houſe, where ſlaves, by the private authority of their maſters, were confined, and kept at hard labour, for ſome offence. It was likewiſe called *Sophroniſterium*. *Hofm.* Lex. in voc.

ERGATIA, Εργατια, in antiquity, a Laconian feſtival, in honour of Hercules. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 394.

ERGOT, in the manege, is a ſtub like a piece of ſoft horn, about the bigneſs of a cheſnut, placed behind and below the paſtern joint, and commonly hid under the tuft of the fetlock. To *diſ-ergot*, or take it out, is to cleave it to the quick with an inciſion knife, in order to pull up a bladder full of water, that lies covered with the *Ergot*. This operation is ſcarcely practiſed at Paris, but in Holland is frequently performed upon all four legs, with intent to prevent watry ſores, and foul ulcers.

ERICA, *Heath*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the campaniform kind, and conſiſts of one leaf, from the bottom of which there ariſes a piſtil, which finally becomes a fruit, uſually of a roundiſh figure, and, when ripe, opening into four parts, and divided into four cells, each of which contains a number of ſmall ſeeds.

The ſpecies of *Erica*, enumerated by Mr. Tournefort, are theſe: 1. The common purple-flowered ſmooth *Heath*. 2. The common ſmooth *Heath*, with white flowers. 3. The tamariſk-leav'd hairy *Heath*. 4. The great coris-leav'd white *Heath*. 5. The great purple *Heath*, with longer leaves. 6. The juniper-leav'd many flowered *Heath*. 7. The foreign ſhrubby *Heath*. 8. The greater *Heath*, with purpliſh green flowers. 9. The great beſom *Heath*, with deciduous leaves. 10. The ſquare-leav'd blackiſh red beſom *Heath*. 11. The dwarf *Heath*, with a grey bark, and flowers like the arbutus. 12. The dwarf *Heath*, with a grey bark, and white arbutus-like flowers. 13. The Engliſh hairy *Heath*. 14 The purple-flowered three branched *Heath*. 15. The three-leaved procumbent *Heath*, with fleſh-coloured flowers. 16. The green-flowered procumbent *Heath*. 17. The procumbent *Heath*, with pale purple flowers. 18. The great flowered *Heath*, with myrtle-like leaves, hoary underneath. 19. The green African *Heath*, with very narrow and ſhort leaves, and cluſtered flowers. 20. The African *Heath*, with hairy flowers diſpoſed along the branches. 21. The hoary African *Heath*, with very narrow leaves. 22. The African *Heath*, with ſhort capillaceous leaves, and roundiſh purple flowers. 23. The ſmall-leav'd African *Heath*, with round whitiſh flowers. 24. The juniper-leav'd African *Heath*, with long ſpiked flowers. 25. The coris-leav'd African *Heath*, with long ſpiked flowers. The juniper-leav'd African *Heath*, with oblong flowers, diſpoſed in umbells. 27. The coris-leav'd African *Heath*, with long purple flowers growing from the alæ of the leaves. 28. The coris-leav'd African *Heath*, with ſhort flowers growing from the alæ of the leaves. 29. The bladder flowered coris-leav'd African *Heath*. *Tourn.* Inſt. p. 602.

ERICA *Marina*, *Sea Heath*, a name given, by many authors, to a very beautiful ſea plant, of the fucus kind, called by Mr. Ray, and ſome others, *fucus ericæ folio*. This differs ſo much in bigneſs, in different places, that it has been ſuſpected to be of two diſtinct ſpecies; thoſe plants of it which are found about the ſhore ſeldom exceeding ten inches in length, and thoſe in deeper water often growing to three foot.

It is compoſed of a vaſt number of ramifications; the bottom ſtalk is woody, and often of the thickneſs of a man's little finger, yet even in theſe there is no diſtinction of nerves or fibres, the large branches are rough and knotty, and ſend off many other ramifications, the larger of which are round, but the extream ones flat.

At different ſpaces over this plant, one obſerves certain knots, or tumours; theſe are no other than the branch in that part ſwell'd, and the uſe of the ſwelling is to contain the capſules which encloſe the ſeed; theſe, and their arrangement in theſe ſwellings, are wholly like thoſe of the common fucus, and there are uſually ten or twelve capſules contained in every ſwelling, or bladder of the ſtalk. They are not arranged in any regularity in the ſwelling, but are always found nearer the upper than the lower extremity of it. The ſeeds are round, and a very great number of them are contained in every capſule.

The ſwellings which contain theſe capſules, are ſometimes placed at conſiderable diſtances from one another on the ſtalks of the plant, and ſometimes they ſtand ſo cloſe, as to repreſent the beads of a necklace. Some branches of the plant alſo are very full of them, and others ſcarce have any at all upon them. Sometimes the bladders are found empty on this plant, as they are in the common ſea wrack; but, in this caſe, there may always be ſeen the marks of the places where the capſules have once been, though ſince periſhed by ſome accident. Mr. Reaumur, who gives this deſcription of this plant, never ſaw its flowers; but there ſeems no doubt but that they are compoſed of ſhort filaments, like thoſe of the other plants of this kind; and his not examining the plant at a proper ſeaſon, was probably the reaſon of his not finding them, for the flowers and ſeeds of theſe plants are uſually both large enough to be ſeen by the naked eye; and when the ſeed is ſo in moſt caſes, the flower is alſo. Mem. Acad. Par. 1712.

ERICA, in ichthyology, a name given by Gaza, and ſome others, as the interpretation of the chalcis of Ariſtotle, that is, as the name of the common herring.

ERICERUM, a name given by Aëtius, and other authors, to a ſort of collyrium, uſed in weakneſſes of the eyes, in which the herb erica, or heath, was an ingredient.

ERIGERUM, or SENECIO, *Groundſel*, beat into a very coarſe pulp, and applied cold to the pit of the ſtomach, has had very good ſucceſs in curing of agues. It is to be uſed only on the days free from the fit. It vomits ſtrongly ſome hours after application. See Medic. Eſſ. Edinb. Vol. 2. art. 5. or Abridg. Vol. 1. p. 203. See SENECIO.

ERINACEA, in botany, the name of a genus of plants, the characters of which are theſe: The flowers and fruit are the ſame with thoſe of the broome; but the whole plant is ſo beſet with prickles, as to reſemble a hedgehog. *Tourn.* Inſt. p. 646.

The ſpecies of *Erinacea*, enumerated by Mr. Tournefort, are theſe: 1. The Spaniſh *Erinacea*, with bluiſh purple flowers, and 2. The Cretic *Erinacea*, called, by ſome, the Cretic tragacanth.

ERINACEUS, in zoology, the name of the common hedgehog. The head and ſnout of this animal reſemble thoſe of a hog, but the noſtrils, and extremity of the ſnout, have more reſemblance to thoſe of a dog; the ears are very broad, and like thoſe of the mouſe kind, and its eyes are ſmall and prominent. Its legs reſemble thoſe of the dog, and each foot has five toes, all armed with ſharp claws; of theſe the hinder is ſhorter than the reſt. Its head, back, and ſides, are covered with ſharp ſpines, and its belly, throat, and legs, with ſoft white hair.

Authors deſcribe two ſpecies of hedgehog, the one the canine, or dog kind, the other the hog kind. In England we have only the canine kind, which is the above deſcribed; and Mr. Ray much queſtions whether there be any other kind in being. *Ray*'s Syn. Quad. p. 231.

In the Linnæan ſyſtem of zoology, the *Hedgehog* makes a diſtinct genus of animals, in which the author includes the armadillos. The characters of the animals of this claſs are theſe: They have eight paps, two of which are ſituated on the breaſt, and the other ſix on the belly; and their body is cloathed or defended with a ſort of armour. *Linnæi* Syſtem. Naturæ, p. 37.

ERINACEUS is alſo a name given by Dillenius, and ſome other botaniſts, to the pectinated agarics, called, by others, *hydna*. Theſe differ from the agarics, properly ſo called, which are lamellated underneath, and from the others, which are porous, for theſe are echinated, or beſet with pointed prickles.

ERINOPTERUS, the *Privet Fly*, in natural hiſtory, the name of a ſmall ſpecies of fly, which is all over of a ſilver colour, and of a duſty appearance. It looks, as it ſits, like a fragment of a white feather. Its wings are divided into ſeveral long ſegments, like thoſe of birds feathers, and ſeem, in the ſame manner, compoſed of long feathers, tho' that is not really

rea ly the caſe. It is found very frequently in gardens, particularly on the privet hedges, and on the ſingle ſhrubs of that ſpecies.

ERINUS, in botany, a name given by Linnæus to a genus of plants, called, by Tournefort, and other authors, ageratum. *Linnæi* Gen. Plant. p. 301. See AGERATUM.

ERIOPHORUM, in the Linnæan ſyſtem of botany, the name of the cotton-graſs, or cotton-ruſh, common in marſhy places, and called linagroſtis by other writers. This is, by that author, made a diſtinct genus of plants, whoſe characters are, that the flower cup is an imbricated ſpike, made up of oblong oval ſcales, a little bent in, and ſeparating the flowers. It has no petals. The ſtamina are three capillary filaments; the antheræ are erect and oblong. The germen of the piſtil is extremely ſmall; the ſtyle is thread-like, and of the ſame length with the ſcales of the cup; the ſtigmata are three, longer than the ſtyle, and bent backward. The ſeed is three-corner'd, pointed, and covered with hairs longer than the ſpike. *Linnæi* Genera Plant. p. 12.

ERIOPHORUS, in botany, a name given, by Vaillant, to a genus of plants, ſince deſcribed by Linnæus, under the name of andrygala. See ANDRYGALA.

ERIOX, or EROX, in ichthyology, a name given by Albertus, and ſome other authors, to the common ſalmon, called, by others, *anchorago*, and *ſalmo*. See SALMO.

ERISTALIS, in natural hiſtory, the name of a ſtone, mentioned by Pliny and the antients, and of which a very memorable quality is recorded by them, which is, that tho' it was naturally white, it would become red, as if with bluſhing at any immodeſt action, or even thought of the perſon who wore it.

ERISTICI, in botany, ſuch authors as have attempted the ſtudy of that ſcience in a philoſophical way, and have been publickly engaged in diſputes about the true foundation of its ſeveral diſtinctions, &c. *Linnæi* Fund. Bot. p. 1.

ERITHACE, a name given, by the antients, to the yellow matter collected on the hinder legs of the bees, after their excurſions in ſearch of the materials for their hives; we uſually eſteem this to be real wax, and the French call it *cire brute*, or rough wax: It is very certain, however, that tho' the matter, of which wax is to be formed, is contained in this ſubſtance, yet the Dutch, and ſome other nations, have the moſt juſt idea of it, in calling it *pain des abeilles*, or the food of the bees.

This ſubſtance is only the farina of flowers, and no experiment has been able to ſeparate real wax from it. The moſt probable opinion concerning it, is, that it ſerves the bees as food, and that, after this, it is converted, in their bowels, into the ſubſtance called wax. *Reaumur*'s Hiſt. Inſ. Vol. 10. p. 50.

ERITHACUS, in zoology, a name by which many have called the red breaſt, or, as it is more commonly called, in Latin, the *Rubecula*. See RUBECULA.

ERIX, a word uſed, by Galen, to expreſs the ſuperior part of the liver.

ERMESIA, the name given to a compoſition uſed among the antients, and famous for its effect in making people beget handſome children. It conſiſted of honey, myrrh, ſaffron, and palm wine, all beat together. This maſs was to be taken, mixed in milk. The women took it as well as the men, and many had great faith as to its effects.

ERMINEUM *Animal*, the *Ermine*, or creature whoſe ſkin is the *Ermine*, ſo much eſteemed as a fine furr.

This creature is properly a ſpecies of weaſel, and is called by Mr. Ray, and other authors, *muſtela candida*, the white weaſel. It is in all reſpects like the common weaſel, and is all over of a pure ſnow white, except the tip of the tail, which is of as beautiful a black, and that it has a little yellowiſh grey about the eyes, and a mark, or ſpot, of the ſame colour, on the head, another on the ſhoulders, and a third near the tail. Its colour is, however, very different in degree and elegance, according to the ſeaſon of the year. It is frequent about rivers, and in meadows, in thoſe countries which produce it, and feeds on moles, mice, and other ſmall animals. *Ray*'s Syn. Quad. p. 198.

ERNES, in our old writers, ſignify the looſe ſcattered ears of corn that are left on the ground, after the binding or cocking of it.

It is derived from the old Teuton *Ernde*, harveſt; *ernden*, to cut or mow corn: Hence to *ern* is, in ſome places, to glean. *Kennet*'s Gloſſ. in voc.

ERODINUM, a word uſed, by ſome of the enthuſiaſtic writers in alchemy, to ſignify the prognoſtic, good or bad of any operation.

EROSUM *Folium*, among botaniſts. See LEAF.

EROTESIS, Ερωτησις, in rhetoric, the ſame with interrogation. See INTERROGATION, *Cycl.*

EROTIA, Ερωτια, a feſtival among the Greeks, in honour of Cupid, being celebrated every fifth year with ſports and games. *Pott.* Archæol. l. 2. c. 20.

EROTIDIA, Ερωτιδια, the ſame with *Erotia*. See EROTIA.

EROTYLOS, in natural hiſtory, the name of a ſtone of which we have no deſcription left us, but which the antients are ſaid to have uſed in divination.

ERRATIC (*Cycl.*)—ERRATIC *Fevers*, in medicine, a term uſed to expreſs ſuch fevers as, according to the language of medical writers, obſerve no regular type, that is, are not determinate either in their attacks, or in their general period: They are thus called by way of diſtinction from the typic fevers, which are regular in both. *Junker*'s Conſp. Med. p. 252.

ERRHINA, (*Cycl.*) *Errhines*, in the materia medica, medicines deſigned to purge away pituitous humours from the head, without making the patient ſneeze, tho' to be taken up the noſe. They are either liquid, ſoft, or ſolid.

The liquid are made of the juice of cephalic cleanſing herbs, extracted by wine, or other liquors; to which ſpirit of wine is ſometimes added; or of a decoction of fit ſimples, to which are ſometimes added juices, honey, ſyrup, and powders.

The ſoft are made of powders, with honey, oil, or juices, boiled to a kind of ointment.

The ſolid is given either in the form of a powder, and that has place, eſpecially in medicines, which provoke ſneezing; or in form of a pellet, and it is called *naſale*, and is prepared of fit powders, mixed with viſcid extractions from ſeeds, gums, roots, &c. with wax, or with turpentine. *Blancard.* Lex. Med. in voc.

ERRIPSIS, in medicine, is uſed in different ſenſes, ſometimes for a weakneſs of the whole body, ſometimes only of ſome one part. When applied to the whole body, it expreſſes that utter dejection and proſtration of ſtrength which makes a man fall down like a dead carcaſs; and, when applied to the eyes, it expreſſes ſuch a debility, as renders it impoſſible to keep them open.

ERRONES, *Erratic* or *Wandring Stars*, in aſtronomy, the ſame with planets. See PLANETS, *Cycl.*

ERROR *Loci*, a term often uſed by Boerhaave. This author obſerves, that in the body there is a decreaſing ſeries of veſſels; by which he means, that the firſt orders of the veſſels are adapted to receive the red globules of the blood, while the reſt are, perhaps, ſmaller, and receive only the ſerum, the next in order the lymph, and the next the yet finer fluids. Now when the red globules of blood are propelled into the veſſels deſtined only to receive the ſerum, or when the ſerum gets into thoſe veſſels in which a finer fluid only ought to circulate; this he calls an *Error Loci*, and attributes much to it.

ERVA *Baboſa*. See CARAGUATA.

ERVA *De Sancta Maria*, a name by which ſome authors have called the dracontium, or great garden dragons. *Piſo*, p. 240.

ERUCA, the *Caterpillar*. See CATERPILLAR, *Cycl.*

The *Caterpillar* ſtate is that through which every butterfly muſt paſs before it arrives at its perfection and beauty, and in the ſame manner all the known winged animals, except only the puceron, paſs through a reptile ſtate, none of them, except this, being produced in their winged form. The change from caterpillar to butterfly was long eſteemed a ſort of metamorphoſis, a real change of one animal into another; but this is by no means the caſe. The egg of a butterfly produces a butterfly, with all the lineaments of its parent, only theſe are not diſcloſed at firſt, but, for the greater part of the animal's life, they are covered with a ſort of caſe, or muſcular coat, in which are legs for walking, which only ſuit it in this ſtate; but its mouth takes in nouriſhment, which is conveyed to the included animal, and, after a proper time, this covering is thrown off, and the butterfly, which all the while might be diſcovered in it by an accurate obſerver, with the help of the microſcope, appears in its proper form. Before it paſſes into this ſtate, however, there requires a time of reſt for the wings to harden, and the ſeveral other parts to acquire their proper firmneſs; this is tranſacted in a time of perfect reſt, when the animal lies in what is called the nymph or chryſalis ſtate, in appearance only a lump of unenlivened matter. There is a ſettled and determinate time for each of theſe changes in every ſpecies, but in the ſeveral different kinds the periods are very different. Some caterpillars are produced from the eggs of their parent butterfly in ſpring, as ſoon as the trees, on whoſe leaves they are to feed, begin to bud; after a life of thirteen days, they paſs into their chryſalis ſtate; and, after remaining at reſt three weeks in that, they iſſue forth with wings, with all the beauty of their parents. *Reaumur*, Hiſt. Inſ. Tom. 2.

As ſoon as they arrive at this their final ſtate, their wings are ſcarce dry before they ſeek to copulate to propagate their ſpecies; this done, the male dies, and the female only lives to depoſit her eggs, and then follows him. This is their whole buſineſs in this ſtate, and they are ſo ſenſible of it, that they ſeem weary of a uſeleſs life, as ſoon as they have done; nature, never intending that they ſhould eat in this ſtate, has given them no organs for that purpoſe; ſo that they muſt neceſſarily die of hunger ſoon, could they eſcape their natural death, or the great devourers of them the birds. Many ſpecies of theſe ſpring butterflies have no farther being, except in the embryo included in the egg, till the ſucceeding ſpring; they lay their eggs very carefully, and in extreamly nice order, round about the ſtalk of a perennial plant, or the young branch of a tree, and there they remain thro' the heats of the

ſummer, and colds of the winter, and are never hatched till the ſucceeding ſpring; and though thus expoſed, it is obſervable, that the ſevereſt winters do them no harm. Other ſpecies of theſe are ſooner hatched from the egg, and live the remainder of the ſummer on the leaves of the tree. They, after this, paſs the whole winter in the caterpillar ſtate, uſually hiding themſelves in ſome ſheltered place, covered with webs of their own ſpinning. Theſe remain torpid all the winter, and, at the return of ſpring, leave their webs as the others do their eggs, and feed a few weeks longer, after which they paſs through the chryſalis ſtate to their perfect form. The butterfly of this ſpecies, therefore, enjoys a much longer time of life than the other which remains ſo long in the egg; tho' the ultimate duration of the animal, from its excluſion from the parent, till its death, is much the ſame; ſo great a part of it being paſſed in the egg ſtate by the one, and ſo ſmall a part by the other. *Reaumur*, Hiſt. Inſ. Tom. 2.

Other ſpecies of theſe animals remain the whole winter in the chryſalis ſtate, and are butterflies in ſpring, and, after paſſing the middle of ſummer in the egg, are caterpillars in the autumn. The difference of this ſtage of life is remarkably great, in proportion to the whole duration of the animal; in ſome ſpecies it does not exceed a fortnight, and in others continues eleven months. Mr. Reaumur, however, tried the experiment of lengthening the lives of ſome of theſe animals, by continuing them longer in their living ſtate, and ſucceeded in it, as well as in ſhortening the general duration of others, by making their paſſage out of the chryſalis earlier than it would naturally have been, and theſe, as ſoon as they came out of this ſtate, copulating, depoſiting their eggs, and dying, the term of their total duration was made ſhorter than the year.

There is no ſign of ſex in the animal, while in the caterpillar ſtate; the propagation of the ſpecies is the buſineſs of the creature in its ultimate perfection, and, till that, theſe parts are never excluded. One female butterfly, when ſhe has been impregnated by the male, will produce three hundred or four hundred eggs, or even more. While the young ones, produced from theſe eggs, remain in the ſtate of caterpillar, there is no union of the ſexes, no inclination for it between them, nor any deſires, except of food. But tho' the caterpillar is cold in this reſpect, the butterfly, or ultimate ſtate of the animal, is as remarkably warm. Scarce is this creature out of the ſhell of the chryſalis, which, is as it were, its egg, ſcarce are its wings dry enough for flight, before it mounts into the air to ſeek the female. Its deſire of food is now no more, it has now no idea of eating, nor any organs for it; its whole deſire is that of the propagating its ſpecies. The moment it finds a female, it attacks her, and ſhe as readily conſents. From her, in a few minutes, he flies in ſearch of another, thence to another, and ſo on for his whole life; all the ſex being his concubines, and all ready to receive and love him.

There is no way of knowing the different ſexes of theſe little creatures, by viewing the parts; but the whole figure and manner of the animal makes the difference. The females are always larger than the males; they are alſo more ſlow in their motions; and ſome of them have no wings, or, at the utmoſt, only very ſmall ones. The males, however, have a ſort of beards, more beautiful than the autennæ, or horns of the females; the female is much ſtronger, as well as bigger, than the male, and not unfrequently, at the approach of danger or diſturbance, flys away with him in the time of copulation. Some join their bellies in the copulation, ſome hold their bodies directly oppoſite to one another; and, in ſome ſpecies, the male all the time claps his wings, whereas in others he remains perfectly ſtill. On diſſecting the female, her uterus affords an aſtoniſhing ſight; the number of eggs in the tubes is amazing; but theſe have not all the ſame figure; and in ſome ſpecies, as the ſilk worm, *&c.* the eggs are of a beautiful blue; if any yelloviſh ones are ſeen among them, they are judged to be defective. The outer covering of the egg is not a ſhell, but a more tough and leſs hard ſubſtance, more reſembling leather; and there is almoſt an infinite variety in their ſhapes; in ſome ſpecies they are round, in ſome cylindric, in ſome pyramidal, in others cylindric and elegantly ridged and ſtriated; in ſome the ſurface is perfectly even and ſmooth, and in others, beſides theſe indentings, there are numerous little protuberances uſually of regular figures, and diſpoſed with perfect regularity. The care of all the butterfly tribe, to lodge their eggs in ſafety, is ſurpriſing. Thoſe whoſe eggs are to be hatched in a few weeks, and are to live in the caterpillar ſtate during part of the remaining ſummer, always lay them on the leaves of ſuch plants as they know will afford them a proper nouriſhment; but, on the contrary, thoſe whoſe eggs are to remain unhatched till the following ſpring, foreknowing that the leaves of trees fall off in winter, always lay them on the branches of trees and ſhrubs, and uſually are careful to ſelect ſuch places as are leaſt expoſed to the rigours of the enſuing ſeaſon, and frequently cover them from it in an artful manner. Some make a general coat of a hairy matter over them, taking the hairs from their own bodies for that purpoſe; others hide themſelves in hollow places in trees, and in other ſheltered cells, and there live in a ſort of torpid ſtate the whole winter, that they may depoſit their eggs in the ſucceeding ſpring, at a time when there will be no ſeverities of weather for them to combat. The day butterflies only do this, and of thoſe but a very few ſpecies; but the night ones, or phalenæ, all without exception, lay their eggs as ſoon as they have been in copulation with the male, and die immediately afterwards. *Reaumur*, Hiſt. Inſ. T. 2.

The *Erucæ* furniſh us with an inſtance of the falſity of that rule eſtabliſhed by moral writers, that man is the only animal that deſtroys his fellow creature, which, they ſay, even the ſavages of the deſarts ſpare. It is a very certain truth, that many animals feed on the weaker of their own ſpecies. The pike, among fiſh, is an inſtance of it; but nothing gives ſo clear a view of it, as the examining theſe leſſer animals.

It is well known that the common and natural food of theſe creatures is the leaves and verdure of vegetables, yet as weak and harmleſs as they ſeem, they will many of them deſtroy their fellows whenever they get an opportunity. Reaumur gives us an inſtance of this in twenty caterpillars of the oak, which he kept in a box, with a ſufficient quantity of their natural food, yet their numbers daily decreaſed, till at length there remained only one.

He obſerved that the manner of their preying on one another was this; the ſtronger ſeized the weaker by the throat, and there giving him a mortal wound, left him to die at leiſure, only watching him all the time; but as ſoon as he was dead, the murderer immediately began eating him, feeding upon the entrails and juices, and leaving only the ſkin, with the head and feet. This is, however, only the caſe in ſome few ſpecies, the generality of theſe animals being very peaceable, and many ſpecies living comfortably together in the ſame place, without feeding upon, or at all moleſting, one another. Theſe ſpecies however, tho' freed from theſe dangers, are expoſed to others of a much more terrible kind; the worms or maggots of ſeveral ſorts of flies are frequently found about them, ſome preying upon their outſide; others lodged within them, under the ſkin, but both kinds eating the poor defenceleſs creature up alive. Thoſe which feed on the outſides are eaſily diſcovered, the others are more hid, and frequently the caterpillar, which ſeems very hearty and vigorous, and very fleſhy, ſhall be found, upon opening, to be a mere ſkin, the internal parts being all eaten away, and all the food that he ſwallows ſerving only to feed a vaſt number of worms, or maggots, which crawl about at liberty within him. Theſe devouring worms are of many different ſpecies, ſome being of the gregarious, ſome of the ſolitary kinds, and ſome ſpinning webs of their own ſilk to transform themſelves in, others undergoing that change without any ſuch covering. The beautiful cabbage caterpillar is one of thoſe unhappy kinds which frequently are infeſted with the gregarious kinds, large numbers of which ſpin themſelves webs one after another, and afterwards come out in the ſhape of the parent fly, to whoſe egg they owed their origin. *Reaumur*, Hiſt. Inſ. vol. 2. p. 1. p. 211.

Theſe inteſtine enemies are a ſure prevention of the butterfly's appearing at its proper time; and as many of the former naturaliſts, who knew what butterfly to expect from a peculiar ſpecies of caterpillar which they preſerved, often ſaw a parcel of flies come out in the place of it, they having no idea that the fly had laid its eggs in the fleſh of the poor creature, ſuppoſed that this was one of the natural transformations of the creature, and that certain ſpecies of caterpillars ſometimes produced butterflies, ſometimes ſmall flies. Goedart imagined that the poor caterpillar was ſo careful for theſe its children, as to ſpin them their ſilky bed, or covering, out of its own bowels.

Theſe, and many other deſtroyers, among which the birds are to be reckoned in the principal place, ſerve a noble purpoſe in preventing the too great numbers of theſe miſchievous animals. Their uſual habitation being the leaves and flowers of plants, they are, in their feeding, much expoſed to all thoſe deſtroyers; yet nature has taken care to preſerve a great number, by making many of them ſo exactly of the colours of the leaves they feed on, that they are not eaſily diſtinguiſhed from them; and by giving others a caution of keeping on the under part of the leaves, and being, by that means, out of ſight. But ſome ſpecies are much leſs expoſed, and of much more miſchief to the plants they feed on, by devouring more eſſential parts of them. Of theſe ſome eat the roots, and others the interior part of the trunk, deſtroying the veſſels that imbibe, and thoſe that diſtribute the juices. Theſe are different from the common caterpillars, in that their ſkin is much leſs, tough, and hard, and theſe are ſecure from our obſervation, and, in general, from their great deſtroyers the birds. They are not, however, abſolutely ſafe from the common dangers of the other ſpecies, for there are a kind of worms that find their food and habitation even in the bodies of theſe. Their habitations are the branches of the oak, elm, and poplar, when they begin to decay in the middle. They uſually lodge themſelves in the blea, and are able to pierce the hardeſt wood when they have occaſion to change their habitation. Some of the largeſt ſpecies of caterpillars that we know of, live in this manner; and it may be known that they are in poſſeſſion of

a branch, by ſeeing a quantity of duſt continually iſſuing out of a hole in the bark. Mr. Reaumur obſerved this in the branch of an apple tree in his garden, and tying a bag of linen over the hole, he caught the animal in its winged ſtate, and it proved to be a large kind of greyiſh phalæna. Three or four other kinds of theſe wood caterpillars have been diſcovered at different times, but it is ſo very difficult to find them, or to get at them when found, that probably there are many ſpecies of them yet unknown. *Reaumur*, Hiſt. Inſ. vol. 2. p. 1. p. 288.

The root caterpillars, and thoſe which live within the branches of plants, are much more eaſily found out. The roots of ſcrophularia, and the ſtalks of lettuces, and ſome other plants, afford caterpillars which ſeem all of the ſame ſpecies. Thoſe found in the lettuces are extremely plentiful ſome years, and deſtroy vaſt quantities of that plant. Theſe uſually have their firſt habitation in the ſtalk, near the root, and they increaſe it in ſize as they grow and feed. The ſkin of this kind is white and tranſparent, but has a few brown ſpots; theſe finally produce a ſmall phalæna. The ſame ſpecies is ſometimes found in the ſtalks of elecampane; and it is well known that there is another kind which lives always in the heads of the thiſtle kinds. Theſe, and a few others, are the known ſpecies of this kind; but as the habitation of all theſe is ſo much out of the common road, that nothing but the greateſt accidents can diſcover it, it is very probable that there yet remain many kinds unknown. The fruits of ſeveral kinds become alſo the food and lodgement for ſeveral ſpecies of caterpillars; and it is ſingular among theſe, that they will eat indifferently of ſeveral kinds of fruit, as pears, plums, apples, and peaches, whereas the generality of the common caterpillars that feed on leaves, are allotted only ſome one peculiar kind, and will rather die than eat of any other, tho' this is not a rule without exception even in them.

Nothing more ſurpriſes us, in regard to inſects, than their induſtry, and in this the caterpillars yield to no kind; not to mention their ſilk, the ſpinning of which is one great proof of it. The ſheaths and caſes which ſome of theſe inſects build for the paſſing their transformations under, are, by ſome, made of the ſilk, with their own hair mixed, with pieces of bark, leaves, and other parts of trees, with paper, and other materials, and the ſtructure of theſe is well worthy our attention.

There are others whoſe workmanſhip, in this article, far exceeds theſe. There is one which builds in wood, and is able to give its caſe a hardneſs greater than that of the wood itſelf in its natural ſtate. This is the ſtrange horned caterpillar of the willow, which is one of thoſe that eat their exuviæ. This creature has extremely ſharp teeth, and with theſe it cuts the wood into a number of ſmall fragments; theſe fragments it afterwards unites together into a caſe, of what ſhape it pleaſes, by means of a peculiar ſilk, which is no other than a tough and viſcous juice, which hardens as it drys, and is a ſtrong and firm cement. This alone, however, would probably not ſuffice to give the work a due ſtrength and ſolidity, were it practiſed on the rough pieces of wood, as they are cut from the tree, becauſe it would only act upon the ſuperficial part of each piece. In order, therefore, to make it ſink into the very ſubſtance of every fragment, the creature moiſtens every one of them, by holding them ſucceſſively a conſiderable time in its mouth. By this means they are penetrated with the ſalival moiſture, and their pores give eaſy acceſs to the viſcous fluid they are afterwards to be impregnated with. The ſolidity of the caſe being thus provided for, we are to conſider, that the caterpillar encloſed in it is to become a butterfly, and the wonder is, in what manner a creature of this helpleſs kind, which has neither legs to dig, or teeth to gnaw with, is to make its way out of ſo firm and ſtrong a lodgement as this, in which it is hatched. It has been ſuppoſed by ſome, that the butterfly, as ſoon as hatched, diſcharged a liquor which ſoftened the viſcous matter that holds the caſe together, and ſo its ſeveral fragments falling to pieces, the way out lies open. This is evidently the truth of the caſe, tho' thoſe who ſuppoſed it, did it by mere conjecture; for, on a ſtrict examination, this liquor is always to be found in the animal, and is of the moſt proper kind for ſuch a ſervice. Reaumur judged, from the effects, that this liquor muſt be of a ſingular nature, and very different from the generality of animal fluids; and on diſſecting this creature in the caterpillar ſtate, there will always be found, near the mouth, and under the æſophagus, a bladder, of the bigneſs of a ſmall pea, full of a limpid liquor, of a very quick and penetrating ſmell, and which, upon divers trials, proves to be a very powerful acid; and, among other properties, which it has in common with other acids, it ſenſibly ſoftens the glue of the caſe, on a common application. Phil. Tranſ. N°. 469. p. 463.

It is evident that this liquor, beſide its uſes to the caterpillar, remains with it in the chryſalis ſtate, and is the very thing that gives it a power of diſſolving the ſtructure of the caſe, and making its way through in a proper manner, at the neceſſary time. Dr. Boerhaave has adopted the opinion, that there are no true acids in animals, except in the ſtomach, or inteſtines; but this familiar inſtance proves the error of that determination.

Near the head, on the under part of the firſt ring of the body, there is placed a ſort of fleſhy protuberance, or nipple, while the creature is in the caterpillar ſtate. This nipple, in its common ſtate, is hid within the fleſh, and only appears on preſſing the body of the animal. This is not peculiar to this caterpillar, for many other kinds have an organization of this kind, tho' not all. In ſome it is ſingle, in others double, in ſome others divided into three parts, and in this particular inſtance, into four.

Mr. Reaumur, in the ſecond volume of his hiſtory of inſects, has given a full account of the changes, and manner of living, of theſe little, and generally eſteemed contemptible animals; not any of which may not afford great ſubject of admiration in the mind of a curious enquirer into the works of nature; but, among the great number he has there deſcribed, there are ſome which appear ſo very ſingular, as to call for a more than ordinary attention. Of theſe, one very remarkable one is the ſpecies which, from is manner of carrying its head and the fore part of its body erect, he has called the ſphinx. A ſecond is extreamly remarkable in its hinder part, where it carries two long and immoveable pipes, ſtanding in a line with the body. Theſe are plainly hollow, and, when the animal pleaſes, there iſſues out from them a kind of tail, which is very long and flexible, and turns with great eaſe any way the creature pleaſes. The uſe this is deſigned by nature for, ſeems the wiping off any thing, that may incommode the creature, from any part of its body. Mr. Reaumur never ſaw this tail proceed out of more than one of theſe pipes at a time; but it ſeems probable that there is a tail to each pipe, ſince their ſtructure ſeems wholly the ſame, and it is eaſy to ſee of what great uſe this part may be to the creature that poſſeſſes it.

There is alſo another caterpillar to which the author has given a name, as to the ſphinx, from its peculiar attitudes; this he calls the ziczac. This creature is diſtinguiſhed from all the other caterpillars by the ſtrange and unnatural motions (as they appear to us) into which it is continually twiſting and bending its body.

Beſide the common actions of all the caterpillar kind, which are daily ſeen, and the cauſes and ends of which are evidently known, there are others which are very myſterious. Some caterpillars ſpin all the way as they walk, and leave behind them, wherever they paſs, a thread of ſilk, which marks their journey. A waſte of this kind might appear, at firſt ſight, very unnatural, and very prejudicial to the creature; but nature has provided for it by a proper ſupply; and if we trace the creature's journey till we chance to ſee it fall by accident, we ſhall then ſee that this thread is not abſolute waſte, for it then preſerves the creature, being faſtened to the leaf and twigs it paſſes over, and being of ſtrength to ſupport the hanging weight of the animal, without breaking. It in this manner ſtops the creatures fall, for it is in its own power to ceaſe ſpinning when it pleaſes; and if it does not wholly ceaſe, ſo that the fall is not entirely ſtopp'd, it is, however, at leaſt, made very eaſy. Nor is this all the advantage, for it can, if it pleaſes, by means of this thread, re-aſcend to the place from whence it fell, by ſeizing the thread between its legs, and by the help of its head and theſe, gathering up the thread, and replacing itſelf on the leaf; when it is ſafely got up again, it diſengages its legs from the thread, and continues its motions as before, and ſeems no way affected by the accident.

Another very curious and myſterious artifice, is that by which ſome ſpecies of caterpillars, when the time of their changing into the chryſalis ſtate is coming on, make themſelves lodgements in the leaves of trees, by rolling them up in ſuch a manner, as to make themſelves a ſort of hollow cylindric caſe, proportioned to the thickneſs of their body, well defended againſt the injuries of the air, and carefully ſecured for their ſtate of tranquillity. The niceſt pair of hands could not roll up theſe leaves more elegantly than it is done by theſe little creatures, which have neither hands, nor any thing analogous to them, for the doing it with.

Theſe caſes have ſometimes five or ſix turns, and the manner of the creature's performing the work is this; when it is to be done, the caterpillar places itſelf on the upper ſide of a leaf, at ſuch a diſtance from the edge, that it can, at pleaſure, reach it with its head, and in turning itſelf round, it can then bring this edge of the leaf to another point, or place, exactly oppoſite to it. It then draws lines from this edge of the leaf to this before-mentioned point; and, doing this all the way along the leaf, its narrowneſs toward the point makes it form a cloſe caſe there, tho' it did not ſo where it began. It ſtrengthens this firſt bending of the leaf by many parallel threads, and when it has perfectly ſecured it, it then faſtens other threads to the back part of the leaf in this already half form'd circle, and fixing thoſe to another point, it draws them as tight as it can, and the bending of the leaf is finiſhed, and the caſe of the animal form'd. The ſame method repeated makes the ſeveral after turns, and, by this ingenious contrivance, the lodging is at length compleatly finiſhed.

The creature continually adds to the ſtrength of its threads, by bringing others acroſs them in different directions, and ſo continues it, that in the five or ſix rolls that it makes, every one makes the force of the laſt, or more inner one, uſeleſs.

The caſe being thus compleated with walls ſo many times doubled,

doubled, the creature enters it, there to ſuffer its deſtin'd change. In this caſe, however, the covering it has made ſerves it not only for a lodging, but alſo for food; for ſo long as it finds it neceſſary to eat, it may feed upon the walls of its caſtle, in a prudent manner, not devouring too haſtily, for all may be eaten away, except the outer one of all, which is of itſelf alone ſufficient for the purpoſe. It is probable, that every caterpillar who makes a caſe of this kind, makes it of a ſufficient number of turns, or doubles, to ſerve the neceſſary calls of its future hunger, and, in many of the ſmaller kinds, the ſtrength of the whole is little or nothing impaired by their eating, ſince they eat only the parenchymatous ſubſtance of the leaves, without touching the ribs, which are the main ſtrength and ſupport of the whole.

Beſide theſe caterpillars, which in this manner roll up the leaves of plants, there are other ſpecies which only bend them once, and others which, by means of thin threads, connect many leaves together to make them a caſe. All this is a very ſurprizing work, but all much inferior to this method of rolling.

The different ſpecies of caterpillars have different inclinations, not only in their ſpinning, and their choice of food, but even in their manners and behaviour one to another. They are all hatched from the eggs of butterflies, many ſpecies of which always depoſit a great number of eggs on the ſame place. Theſe all hatch very nearly at the ſame time, and it would be very natural to ſuppoſe, that the young brood, in all the ſpecies, ſhould be enclined to continue and live together. But this is not the caſe, the different ſpecies have their different inclinations, and conduct themſelves always in in the ſame kind by the ſame ſtated rules. Some never part company from the time of their being hatch'd to their laſt change, but live and feed together, and undergo together their laſt change into the chryſalis ſtate. Others ſeparate one from another as ſoon as able to crawl about, and each hunts its fortune ſingle; and there are others which regularly live to a certain time of their lives in community, and then ſeparate each to ſhift for itſelf, and never to meet again in that ſtate.

Thoſe which live wholly together, begin by forming a line, with their little bodies, upon a leaf, their heads ſtanding all regularly even, and in this manner they move and eat together; and often there are ſeveral ranges of this ſort, which make ſo many phalanxes, in an order as regular as the military one, and eat into the leaf they ſtand on with perfect equality.

This is the caſe with many, while young, which, when they grow larger, firſt make one common habitation, ſurrounded by a web, which is the joint work of them all, and within which there is a peculiar neſt of every one, of its own ſpinning, When they have made this common lodging, they ſeparate, and each takes its courſe over the tree, or buſh, for food, well knowing where they are all to meet. In this manner, many hundreds of theſe animals form a ſort of republic, where every thing is carried on in perfect order and regularity, and the ſeparate cell of each, in the general habitation, is finally the place where it is to paſs, in tranquillity, its change into the chryſalis ſtate. There are other ſpecies of caterpillars which do not ſeparate from one another, even for theſe neceſſary occaſions of feeding, and their transformation: Theſe live their whole time together, and are uſually found in their ſtate of chryſalis all huddled together, and their caſes frequently ſticking to one another, and numbers of them making only one confuſed maſs.

There is one thing yet to be obſerved, in regard to the cuſtoms and manners of theſe little animals, this is the regularity of their marches. Nothing can produce an union between a number of ſubjects, ſo well as an abſolute obedience to ſome one chief; and this is regularly obſerved by theſe communities of caterpillars. When they have occaſion to change their quarters, one of their number, who ſeems to have the ſole power and direction of the rout, marches ſingly firſt whichever way he pleaſes. He is followed by two others, who keep their bodies very nicely in the ſame direction with his, and, after theſe, there follows a large party; theſe regulate their motions by the former, and ſo the order is continued through the whole company. When the leader turns to the right, or to the left, the whole body is immediately ſeen to do the ſame; when he ſtops, they all immediately ſtop, and march again the moment that he begins to advance. This chief ſeems, however, to be no particular favourite, nor to have any laſting power, but it ſeems mere chance that conſtitutes him in his poſt. This, however, is always certain, that while he is in power, the reſt are perfectly obedient. *Reaumur*, Hiſt. Inſ. T. 2.

Caterpillars are very deſtructive and pernicious in gardens, particularly thoſe of two ſpecies. The one of theſe is that which afterwards becomes the common white butterfly. This is of a yellowiſh colour, ſpotted with black, and infeſts the leaves of cabbages, cauliflowers, and the Indian creſs, of which it eats off all the tender parts, leaving only the fibres entire, ſo that whole plantations are often ſeen deſtroyed by them in autumn, eſpecially ſuch as are near large buildings, or are crouded with trees. There is no remedy againſt this evil, but the pulling the creatures off before they are ſpread from their neſts, and watching the butterflies, which are daily, in the hot weather, depoſiting their eggs on theſe plants. Theſe, however, feed principally on the outſide of the leaves of the plants, and are therefore the eaſier taken off; but the other kind lives near the center, and therefore is with much more difficulty diſcovered. This is much larger, and the ſkin is very tough, and of a brown colour. It is called, by the gardeners, a grub, and is extreamly pernicious. The eggs which produce it are uſually depoſited in the very heart, or center, of the plant, particularly in cabbages, and the creature, when form'd, and grown to ſome ſize, eats its way through all the leaves, and leaves its dung in great quantity behind it, which ſpoils the cabbage. This inſect alſo burrows under the ſurface of the ground, and makes ſad havock among young plants, by eating off their tender ſhanks, and drawing them into the holes. This miſchief is chiefly done in the night; but wherever a plant is ſeen thus deſtroyed, if the earth be ſtirred with a finger an inch deep, the creature will be certainly found, and this is the only way of deſtroying them. *Miller*'s Gardner's Dict.

When theſe inſects attack fruit trees, the beſt method of driving them off is this; boil together a quantity of rue, wormwood, and the common tobacco, of each equal parts, in common water; make the liquor very ſtrong, and ſprinkle it on the leaves and young branches every night and morning, during the time when the fruit is ripening. *Munting*, de Plant.

ERUCÆ *Aquaticæ*, *Water Caterpillars*.—It might ſeem incredible that there is any ſuch creature as a caterpillar, whoſe natural habitation is under water; but experience and obſervation prove that there are ſuch, and that they feed on the water plants as regularly as the common kinds do on thoſe at land. Theſe are not named at random, like many of the aquatic animals of the larger kinds, the ſea wolf, and the ſea horſe, *&c.* which might as well be called any thing elſe as wolves and horſes, but they are properly what they are called, and do not reſpire in the manner of the fiſh tribe, but by their ſtigmata, as other caterpillars. Mr. Reaumur, in his obſervations, met with two ſpecies of theſe, the one upon the potamogiton, or pond-weed, the other upon the lenticula, or duckmeat. Theſe are both very induſtrious animals; but the firſt being much the larger, its operations are more eaſily diſtinguiſhed.

This, though truly an aquatic animal, ſwims but badly, and does not at all love to wet itſelf. The parent butterfly lays her egg on a leaf of the potamogiton, and, as ſoon as the young caterpillar is hatched, it gnaws out a piece of the leaf of a roundiſh ſhape. This it carries to another part of the ſame leaf, and lays it in ſuch a manner, that there may be a hollow between, in which it may lodge. It then faſtens down this piece to the larger leaf with ſilk of its own ſpinning, only leaving certain holes at which it can put out its head, and get to gnaw any of the leaves that are near. It eaſily gets out, though the aperture be naturally ſmall, ſince a little force from its body bends up the upper leaf, and bends down the lower, both being flexile, and when the creature is out, it has a ſort of down that defends itſelf from being wetted, and the natural elaſticity of the leaves, and of the ſilk, join the aperture up again, ſo that no water can get in. The leaves of this kind of plant are alſo naturally very ſlippery, and not eaſily wetted by water. It ſoon happens, that this habitation becomes too ſmall for the animal, in which caſe it makes juſt ſuch another, and after that, at times, ſeveral others, each being only made fit for it at the ſize it is then of. The changes of this creature into the chryſalis and butterfly ſtate, are in the common method. The butterfly gets out of a chryſalis which was placed on the ſurface of the water, the lightneſs of the animal eaſily ſuſtains it on the water till its wings are dried, and it then leaves that element never to return to it again. Mem. Acad. Par. 1736.

ERUCÆ *Sylveſtres*, *Wood Caterpillars*. See WOOD.

ERUCA, *Rocket*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of four leaves, and is of the cruciform kind. The piſtil ariſes from the cup, and becomes, at length, a pod, divided into two cells by an intermediate membrane, and uſually containing roundiſh ſeeds. To theſe marks it is to be added, that all the plants of this genus have the ſame peculiar taſte.

The ſpecies of *Rockett*, enumerated by Mr. Tournefort, are theſe: 1. The broad-leav'd white flowered garden *Rockett*. 2. The garden *Rockett*, with leaves divided into ſegments. 3. The broad-leav'd, narrow podded *Rockett*, called the *Rockett* gentle, or Roman *Rockett*. 4. The daiſy-leav'd *Rockett*. 5. The fine leav'd perennial yellow flower'd *Rockett*. 6. The great yellow *Rockett*, with rough ſtalks. 7. The ſmaller yellow wild *Rockett*, with ſhepherd's purſe leaves. 8. The Indian tawny-leav'd *Rockett*. *Tourn.* Inſt. p. 226.

ERUCAGO, in botany, the name of a genus of plants, of which there is only one known ſpecies. The characters of this are theſe: The flower conſiſts of four leaves, diſpoſed in form of a croſs; and the piſtil ariſes from the cup, and afterwards becomes a remarkable pod, of the ſhape of a ſquare club, which is divided into four cells, and contains roundiſh

and roſtrated ſeeds. This plant has been called, by other authors, the ſquare podded rockett, and the echinated muſtard. *Tourn.* Inſt. p. 232.

ERUPTIONS, in infants. See INFANTS.

ERVUM, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the papilionaceous kind, and from its cup ariſes a piſtil, which finally becomes a pod, undulated on each ſide, and, as it were, knotty; it contains ſeveral roundiſh ſeeds. To this it may be added, that the leaves grow in pairs on the ribs. *Tourn.* Inſt. p. 398.

The ſpecies of *Ervum*, enumerated by Mr. Tournefort, are theſe: 1. The true *Ervum*, called, by ſome, the orobus, with jointed pods. 2. The true *Ervum*, with purpliſh flowers. 3. The *Ervum*, with ſmall ſeeds: And 4. The *Ervum*, with obtuſe triangular ſeeds.

ERYNGIUM, *Eringo*, in botany, the name of a peculiar genus of umbelliferous plants, the characters of which are theſe: The flower is of the roſaceous kind, conſiſting of ſeveral petals, the points of which uſually turn inwards, and which are arranged, in a circular order, on a cup that afterwards becomes a fruit, compoſed of two ſeeds: Theſe are ſometimes foliated, ſometimes plain, of an oval figure, while in their involucrum, which they, however, often throw off, and then appear like corns of wheat. To this it may be added, that the heads of flowers have all a circle of leaves placed under them.

The ſpecies of *Eryngium*, enumerated by Mr. Tournefort, are theſe: 1. The ſea *Eryngium*. 2. The Portugal *Eryngium*, with larger leaves. 3. The common *Eryngium*. 4. The Portugal *Eryngium*, like the common kind, but with broader leaves. 5. The blue alpine *Eryngium*, with dipſacus heads. 6. The very prickly alpine *Eryngium*, with long ſhaped, dipſacus-like heads. 7. The broad leav'd plane *Eryngium*, with round heads. 8. The broad leav'd plane *Eryngium*, with white flowers, and greeniſh white ſtalks. 9. The baſtard *Eryngium*, produced from the ſeeds of the plane kind. 10. The blue mountain *Eryngium*. 11. The blue alpine *Eryngium*, with larger and paler heads. 12. The ſmall Portugal blue *Eryngium*, with longer leaves. 13. The leſſer plane *Eryngium*. 14. The dwarf mountain *Eryngium*. 15. The Sicilian *Eryngium*, with pſyllium heads. 16. The ſtinking American *Eryngium*. 17. The ſweet-ſcented ſmall marſh *Eryngium*. 18. The Portugal erect marſh *Eryngium*, with pſyllium heads. 19. The horned Portugal marſh *Eryngium*, and 20. The procumbent Portugal marſh *Eryngium*. *Tourn.* Inſt. p. 327.

The root of *Eryngium* is attenuant and deobſtruent, and is therefore eſteemed a good hepatic, uterine, and nephritic. Its whole virtue, it is to be obſerved, conſiſts in the external or cortical part.

ERYNGIUM is alſo a name given, by ſome of the old authors, to aloes, a medicine as different from the root of this name as any one thing can well be from another.

There are ſeven different ſpecies of the *Eryngium* plant propagated in the gardens of the curious, but the common ſea kind is the only one of any uſe. The roots of this are in great quantities, both dried and candied in the ſhops; they may all be propagated, either by parting their roots, or ſowing their ſeeds; but the firſt is the moſt convenient and expeditious method. This is to be done in February, or in the beginning of March, before the plants have ſhot out their leaves; and the ſoils they moſt delight in are gravel and ſand, but in dry ſeaſons they require a great deal of watering. The ſecond year after their removal from the old plant they will flower, but the flowers are not ſo ſtrong as in the older plants. They ſpread very much at the root. *Miller*'s Gardener's Dict.

There is a very remarkable tradition, among ſome authors, concerning this plant, which is, that if a goat happens to take into its mouth a head of the *Eryngo*, the whole flock that he is with will all ſtare upon him with aſtoniſhment, and ſtand as if rooted to the earth. Ariſtotle is the firſt author we find aſſerting this, and after him Caryſtius in his book *De Admirabilibus*. Pliny has not omitted this wonderful ſtory, but he has ſtrangely miſrepreſented it in the telling: He ſays, that if any perſon takes one of the goats of a flock by the beard, the reſt will all ſtand as if rooted to the earth with aſtoniſhment. It will not be eaſy for the unlearned reader to find how this ſtory can be the ſame with the other, but the whole is eaſily explained by obſerving, that Pliny's careleſſneſs, has made him tranſlate the word πρυγγον, a beard, inſtead of a plant. This appears, by comparing his tranſlation with the original, to have been plainly the caſe; and he adds, from ſome other author, that the ſame thing happens when any one of them chances to bite a certain herb; but he does not name the word *Eryngium*, which he had juſt before tranſlated a beard, as the name of the plant, but omits to mention what it was.

Theophraſtus has the ſame ſtory of the goats, but his manner of telling it very plainly ſhews, that he underſtood it from his maſter Ariſtotle, as ſpoken of the goats eating *Eryngo*, not being taken by the beard. For he expreſsly ſays, that as ſoon as the creature has taken this plant into its mouth, it ſtops, and ſo do all the reſt. The whole of this ſtrange ſtory may have no more in it, than that as ſoon as one of theſe creatures, who has been browſing upon other herbs, chances to take a head of this into his mouth, the thorns about it prick him, and he ſtops ſhort, and the reſt of the flock, being timorous animals, ſtop alſo till they ſee whether any danger threatens them.

ERYSIMUM, *Hedge Muſtard*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of four leaves, which are diſpoſed in form of a croſs. The piſtil ariſes from the cup, and finally becomes a pod, divided into two cells by an intermediate membrane, and containing ſmall roundiſh ſeeds. To this it may be added, that the *Eryſimums* have all a peculiar general appearance. They gave, 1. The common *Eriſymum*. 2. The *Eryſimum* with pods, reſembling thoſe of rockett. 3. The horned *Eryſimum*. 4. The great broad-leav'd ſmooth *Eryſimum*. 5. The greater narrow-leav'd *Eryſimum*. 6. The Pyrenæan horned *Eryſimum*, with leaves like thoſe of woad. 7. The perennial *Eryſimum* of the Pyrenæan mountains, with dandelion leaves. *Tourn.* Inſt. p. 228.

ERYSYMUM, in medicine, is famous as an attenuant. It reſolves tough humours in the lungs and fauces, and promotes expectoration in a very remarkable manner. It is good in aſthmas, inveterate coughs, and hoarſeneſs. We uſed to have a ſyrup of it in the ſhops, but it is now diſuſed.

The *Eryſimum* is recommended by Dr. Stahl for ſcirrocancrous tumours, taken internally, and alſo externally applied to the tumour. We have two hiſtories of its good effects, by Mr. Bingert, in Act. Med. Berol. dec. 3. vol. 1. p. 59.

ERYSIPELAS (*Cyc.*)—In *eryſipelatous* fevers, which are juſtly ranked among the exanthematous kind, the blood and humours being in an intenſe motion, an acrid ſerum of a ſulphureous and cauſtic nature is, by that means, propelled to the ſurface of the body, and produces a ſwelling, accompany'd with redneſs, heat, and pain.

This fever is far from being innocent and ſimple, as it is generally thought, and is often violent and dangerous, nay mortal, and, in ſome caſes, appears to be nearly allied to peſtilential fevers, the moſt formidable of all diſorders. The ſymptoms in both are of the ſame kind, and on the third or fourth day the morbid matter in both is thrown out to the ſurface, and the violence of the ſymptoms on this ſomewhat abates. But the great difference is, that the one is contagious, the other not ſo, and the peſtilential is much more fatal than the other uſually is found to be.

Phyſicians diſtinguiſh the *Eryſipelas* into two kinds, the ſimple, and the ſcorbutic. The ſimple or genuine *Eryſipelas* affects only the ſurface of the body, and eaſily gives way to proper remedies, in a ſhort time; but the ſpurious, or ſcorbutic kind, is more deeply rooted, and hard to be removed. There is alſo a third kind, called an exulcerated *Eryſipelas*, in which the eruptions are yellow, and contain an acrid pungent humour, which gives a terrible gnawing pain. This diſeaſe affects every part of the body, but particularly the face, and happens at all times of the year, but moſt frequently at the cloſe of ſummer. It ſometimes ſpreads over the whole face, and ſwells and inflames it in ſuch a manner as to endanger ſuffocation. It often ſeizes people in a moment, while they are abroad, and is called by the country people a blaſt; it, in reality, differs very little from the effects of the ſtings of waſps and bees, except that the heats often riſe into puſtules. One kind of *Eryſipelas* wholly reſembles the ſtinging of nettles; this is uſually brought on by drinking, and is very troubleſome, the pimples appearing and diſappearing at times, ſometimes for a long while together.

However mild the more common kinds of this diſorder may naturally be, yet ill management will make even the ſlighteſt of them dangerous, and the ſtriking the eruptions in has been often known to be of fatal conſequence. Hoffman mentions a patient he knew, who by taking a vomit, and a draſtic purge, in the time of the eruption, had an inflammation of the ſtomach brought on, and died in a few days. In many kinds of the *Eryſipelas*, nature does much, and, with a little proper aſſiſtance, the whole terminates kindly in a ſhort time; but the bad kinds, nay, and too often the beſt, when treated unſkilfully, turn to violent burning fevers, and the eruptions to gangrenes.

The true method of curing an *Eryſipelas* conſiſts in three intentions; firſt, that the febrile motion of nature be by no means hinder'd, but rather promoted, if it be found defective, and only reduced to a due temperament, if exceſſive. Secondly, that the ſubtle cauſtic matter be corrected, and prepared for ſecretion and excretion; and thirdly, that the inflammatory ſtagnation of putrid and cauſtic lymph in the external parts be diſcuſſed, and perfectly expelled. Bleeding in an *Eryſipelas* is ſometimes beneficial, ſometimes hurtful, and a good general rule is to order it in plethoric habits, and perſons accuſtomed to drink ſpirituous liquors, but to forbid it in others. When the inflammation is mild and gentle, it may ſometimes be removed by external warmth alone, but when it is more violent, it requires the help of internal, and ſometimes external remedies: Of the internal kind, the *mixtura ſimplex* is one ſtanding good medicine, and of the external, an oint-

ointment made of elder bark, or the rob of elder, are known to have performed great cures.

There is, beſide the common kinds of the *Eryſipelas*, yet one more to be mentioned, which is always very terrible, and often fatal; this is an *Eryſipelas* of the lungs. In this caſe the patient is ſeized with a highly burning fever, and an acute pain both in the anterior and poſterior parts of the body, but eſpecially about the ſpine. He always holds his neck ſtrait upright when he breathes, and his noſtrils dilate with an exceſs of heat and pain, and, in the more advanced ſtages, his tongue hangs out of his mouth like that of a dog that pants with heat and wearineſs. He vomits ſometimes bile, and at other times phlegm, and is ſubject to very frequent faintings: He coughs much, and either ſpits not at all, or elſe a yellowiſh or bloody matter. This diſeaſe almoſt always proves mortal, and the only accident that can give the patient the leaſt hope, is its quitting the internal parts, and ſhewing itſelf on the ſurface.

Heiſter thinks that the grand intention, in the curing this diſorder, muſt be to dilute the inſpiſſated blood, and break and divide it where it ſtagnates and is obſtructed. Plenty of thin and weak drinks are therefore to be adminiſtred, by which a gentle and laſting ſweat may be excited, and the teſtaceous powders, and nitrous medicines, are frequently found alſo to have great and good effects. If the inflammation be but very ſlight, it is often cured by external warmth; but when warmth alone does not prove ſufficient, cloths, with the rob of elder ſpread upon them, are found of great benefit, being laid warm on the part, and kept on by warm compreſſes, and the proper bandages. Ointments made of the middle green bark of elder, are alſo very beneficial; and notwithſtanding that many do not approve the practice, yet ſpirit of wine camphorated, with a mixture of ſaffron and Venice treacle, are found often of very great ſervice, applied warm with coarſe paper, or with linen rags: And a mixture of lime water, and ſpirit of wine camphorated, often does great ſervice. It ſometimes happens, that an *Eryſipelas* comes to ſuppuration; and from this generally ariſe the moſt untractable ſpreading and eating ulcers. In this caſe, the ulcer is to be carefully cleanſed, and dreſſed with ointments of ceruſs, red lead, or litharge, and plaſters of the ſame ingredients; and muſt, at the ſame time, take internal remedies to ſweeten the blood, ſome gentle purges, and a ſtrict regimen in regard to diet. *Heiſter*'s Surgery, p. 193.

ERYSIPELATODES, in medicine, is a ſwelling like that of the *Eryſipelas*, tho' with eaſier ſymptoms; and therefore may be taken for a kind of *Baſtard Eryſipelas*; in this the ſkin is of a more dark colour.

ERYTHOXYLUM, in botany, a name uſed, by ſome authors, for the tree called arbor braſilia by others, the wood of which is the common brazil wood. *Herm.* Par. Bot. p. 2. p. 333.

ERYTHREMA, a word uſed, by the old writers in medicine, to expreſs a redneſs of the cheeks, occaſioned by the violent heat in fevers. Some alſo have applied the ſame word in the plural number, to the red inflammatory eruptions in an eryſipelas. See ERYSIPELAS.

ERYTHRINA, in botany, a name given, by Linnæus, to a genus of vegetables, called by Tournefort, Dillenius, and the generality of other writers, corallodendron, and coral. *Linnæi* Gen. Pl. p. 342. *Tourn.* 446. *Dillen.* Hort. Elth. 20. See CORALLODENDRON.

ERYTHRINUS, in ichthyology, the name of a fiſh, called by ſome authors alſo the *Rubellio*, *Travolino*, and *Alboro*, or *Arboro*, by the Venetians. It is a ſmall fiſh, ſomething like the aurata or gilthead in ſhape, but much ſmaller, and of a pale red colour all over. Its tail is very forked; its noſe conſiderably ſharp, and its eyes very large, and with ſilvery iriſes, with ſometimes a ſlight tinge of red among the white. The mouth is ſmall, and the fore teeth broad, the hinder ones are rather tubercles than teeth. The coverings of the gills are ſcaly. It has only one back fin, the anterior rays or nerves of which are prickly, the others ſoft and ſmooth to the touch. *Rondelet.* de Piſc. l. 5. c. 13. p. 144.

ERYTHRODANUM, in the materia medica, a name by which ſome authors have called the rubia tinctorum, or madder. *Ger.* Emac. Ind. 2.

ERYTHROPHTHALMUS, the *Red Eye*, in zoology, the name of a fiſh of the bream kind, called, by ſome, Rootang, which, in the German language, ſignifies the ſame. It very much reſembles the common river bream in ſhape, but that it is ſomewhat thicker. The fins are all red, and the whole body of the fiſh is ſtained with a very elegant red, but no part of it ſo much as the iris of the eyes. When the ſcales are off the body is of a greeniſh hue, and it has a yellow ſpot under the tongue. It much reſembles the river mullet in ſome particulars, but it is of a more beautiful colour, and its eyes are more red. Its largeſt ſize ſeems a foot in length. It is a well taſted fiſh, and ſpawns in May, under cover of the roots of trees. *Ray*'s Ichthyography, p. 249.

ERZ, or ERZI, in the botanical writings of the antients, a word uſed originally by the Hebrews, and by them made the name of the cedar. The Arabian phyſicians Serapio and Aviſenna uſe it alſo as the name of the cedar, but they do not keep ſtrictly to this, its proper meaning. They call common reſin, or colophony, by the name retenegi, and tell us that it is produced by the *Arz* or *Alarzi*. Hence it is plain, that they confounded together the names of the pine and fir kinds with the cedar; but this is not peculiar to them, for we find Pliny making the cedria, or reſin of the cedar, and the cedrelæum, or oil ſeparated from it in melting, to be the ſame with the common pitch and piſſelæum ſeparated from it; and even the Greeks, as well as Latins in general, have confounded and blended together all the trees which produced pitch or reſin, and we find the fir, the pine, the cedar, and the turpentine tree, all called by the ſame general names.

ESAPHE, a word uſed by Hippocrates, to expreſs the touching the mouth of the uterus, in order to diſcover its ſtate or diſeaſes.

ESCH, in ichthyology, a name given, by Hildegard and others, to the fiſh we call the grayling, or umber, and the generality of authors, the thymallus. It is of the coregonus kind, and is diſtinguiſhed by Artedi by the upper jaw being longer, and the back fin containing twenty-three bones. The Germans call it aſch, and the Italians temello.

ESCHARA, in botany, the name of a genus of plants, the characters of which are theſe. They are of a ſtony, or coral-like hardneſs, and reſemble a woven cloth in their texture. *Tourn.* Inſt. p. 576.

The ſpecies of *Eſchara*, enumerated by Mr. Tournefort, are theſe. 1. The common retiporous *Eſchara*. 2. The foliaceous retiporous *Eſchara*. And 3. The great black hat-faſhion'd retiporous *Eſchara*.

ESCHAROPEPA, a word uſed, by the old writers in medicine, to expreſs a coarſe kind of barley meal, which had been torrified over the fire.

ESCHAROTIC (*Cycl.*)—A compoſition of ſulphur, roſin, and honey, proves an *Eſcharotic*, with little or no pain. *Le Dran.* Obſ. Chir. Tom. 2. Obſ. 100.

ESCHATON, in muſic, the difference between the dieſis enharmonica and the hyperoche; that is, what remains, after taking the difference between the ſemi-tone minor and dieſis enharmonica, from the latter. *Henfling* in Miſc. Berolin. Vol. 1. p. 279, 280.

Thus the difference between the ſemi-tone minor and the enharmonic dieſis is $\frac{25}{24} : \frac{128}{125} = \frac{3125}{3072}$, and this taken from the dieſis, is $\frac{128}{125} : \frac{3125}{3072} = \frac{393216}{390625}$. This interval is about $\frac{53}{100}$ of a comma, as will eaſily appear by logarithms. Mr. Henfling has taken notice of this interval. He calls it *Eſchaton*, from its being the leaſt and the laſt interval that occurs in his ſyſtem. The word is Greek, ἔσχατον. Ibid. p. 265. ſeq. See INTERVAL.

ESCHEL, in mineralogy, a term uſed, by the ſmalt workers, to expreſs a ſort of grey ſubſtance reſembling aſhes, which is uſually mixed with the ſmalt when in fuſion. This is carefully ſeparated from it, before it is powdered for uſe, otherwiſe it would debaſe the colour. Phil. Tranſ. N°. 396.

ESCLAME, in the manege, an obſolete French word, formerly uſed to ſignify a light bellied horſe.

ESCROW, a deed delivered to a third perſon, to be the deed of the party making it, upon a future condition, when ſuch a thing is performed; and then it is to be delivered to the party to whom made. It is to be delivered to a ſtranger, mentioning the condition; and has relation to the firſt delivery. 2 Roll. Abr. 25, 26. 1 Inſt. 31.

ESCULUS, in botany, a name given, by many authors, to the phagus, or ſweet oak, called alſo the eſculent oak. *C. Bauhin.* Pin. p. 320.

ESEBON, a name given by ſome of the chemical writers, to common ſea ſalt.

ESNECY, *Æſnecia*, *Dignitas Primogeniti*, in law, a private prerogative, allowed to the eldeſt *Coparcener*, where an eſtate is deſcended to daughters for want of heirs male, to chuſe firſt after the inheritance is divided. *Fleta.* l. 5. c. 10.

Jus Eſneciæ is *Jus Primogenituræ*; in which ſenſe it may be extended to the eldeſt ſon, and his iſſue, holding firſt: In the ſtatute of Marlbridge, c. 9. it is called *Initia pars hereditatis*. Co. Lit. 166.

ESOX, in ichthyology, the name of a genus of fiſhes, the characters of which are theſe: They are of the malacopterygious or ſoft finned kind. The branchioſtege membrane contains fourteen bones. The body is oblong; the back fin not large, and is placed very near the tail. The ſpecies of this genus, enumerated by Artedi, are theſe: 1. The *Eſox* with a depreſſed ſnout; this is the common pike, the lucius of authors. The lower jaw is longer than the upper, and the vertebræ are ſixty-one in number. 2. The *Eſox* with a cuſpidated long, ſlender, and cylindric ſnout; this is the acus primus of authors, and is called, in Engliſh, the garfiſh. The lower jaw is longer than the upper. It is evident that authors of old times diſtinguiſhed but very badly the characters of fiſhes, when they called this and the ſyngnathus by the ſame name acus. 3. The *Eſox* with the upper jaw longeſt, and with the tail ſquare. This is the fiſh called by Liſter, in his appendix to Willughby, the acus maxima ſquammoſa.

This grows to more than two feet in length; the mouth opens very wide, and the ſcales ſtand very thick and cloſe, and in a very beautiful order. *Artedi*, Gen. Piſc. 10.

The word *Eſox* is truly Roman. Pliny, and other of the antient Latin authors, have uſed it as the name of the ſame fiſh. It ſeems to have been derived from the verb *Eſito*, to eat; for all the ſpecies of this fiſh are very voracious.

ESPALIERS, *(Cycl.)* in gardening, are rows of trees planted in the manner of hedges; either to ſurround a whole garden, or the ſeveral quarters of it. They are trained up flat and in a cloſe hedge, and ſerve not only for fruit bearing, but alſo to ſhelter and defend the tenderer plants kept within the quarters. They are moſt commonly made of fruit trees trained up to a lattice of wood-work, formed either out of aſh-poles, or ſquare pieces of fir-wood, and their moſt uſual office is the ſheltering, and at the ſame time hiding the quarters of kitchen-gardening.

The trees principally planted for *Eſpaliers* now, are apples and pears and ſome plumbs. The apples intended for *Eſpaliers*, ſhould be grafted on crab-ſtocks, for large gardens, and for ſmaller on codling-ſtocks. The trees for the ſame hedge in an *Eſpalier*, ſhould be all ſuch as are of the ſame age, from the grafting; and produced from the ſame ſtocks, that ſo the hedge may be the more regular. The more quick-growing, and ſpreading ones, muſt be planted at twenty-two feet aſunder, and thoſe of ſmaller growth, at ſixteen or eigtheen; the walk between them in a large garden ſhould be ſixteen feet wide, and if the *Eſpaliers* are intended to be carried up high, it ſhould be more, that both hedges may have the benefit of the ſun.

The beſt ſorts of apples for *Eſpaliers*, are the golden pippen, the nonpareil, the rennet griſe, the aromatic pippen, the Holland pippen, the French pippen, Wheeler's ruſſet, and Pile's ruſſet; for the naming and pruning of theſe trees, ſee the articles PRUNING and APPLES.

The pears fitteſt for *Eſpaliers*, are the ſummer and autumn kind; for the winter ones never ſucceed well. Theſe, if deſigned for a ſtrong moiſt ſoil, ſhould be on quince ſtocks; but if for a dry ſoil, more free ſtocks ſhould be choſen. The diſtance for pears grafted on free ſtocks ſhould be eighteen feet, and for the moſt vigorous ſhooters, it ought to be twenty-five feet. And the beſt kinds of pears for this purpoſe, are the jargonelle, the blenquette, the poire ſans peau, the ſummer boncretien, Humbden's bergamot, the poire du prince, burre du roy, the St. Michael, the le marquis, the monſieur Jean, and the creſſane.

The third year after the trees are planted, the frame-work of the *Eſpalier* ſhould be made. Till this time the young ſhoots ſhould only be trained to upright ſtakes, nailing them with liſt to different heights of theſe, as nearly as can be in an horizontal direction. The beſt way of making the wood-work is of aſh-poles, which are not only cheap, but ſtrong and durable; the branches are all to be trained horizontally to theſe, and none ſhould be ſuffered to croſs one another, nor to come too near. In the trees which produce large fruit, no branches ought to be nearer to each other than eight inches, in the ſmaller fruited ones five or ſix inches is ſufficient; the advantages of the trees planted in *Eſpaliers*, over thoſe propagated as dwarfs, in the place of which theſe have been introduced, are many and very great. They take up very little room in a garden, and are of no injury to the plants cultivated in the quarters; and the fruit is always more regularly ripened and better taſted, as the ſun and air can have every way free acceſs to it. *Miller*'s Gardners Dict.

ESPHLASIS, a term uſed by the old writers in medicine, for the receding inward of the ſkull in depreſſions from contuſions.

ESPLEES, *Expletiæ*, from *Expleo*, in law, the products which ground or land, &c. yield; as the hay of the meadows, the herbage of the paſture, corn of the arable, rents, ſervices, &c. and of an advowſon, the taking of tithes in groſs by the parſon; of wood, the felling of wood; of an orchard, the fruit growing there; of a mill, the taking of toll, &c. Theſe and ſuch like iſſues are termed *Eſplees*. And it is obſerved, that in a writ of right of land, advowſon, &c. the demandant ought to alledge in his count, that he or his anceſtors took the *Eſplees* of the thing in demand; otherwiſe the pleading will not be good. Terms de Ley, 310.

Sometimes this word hath been applied to the farm, or land, &c. themſelves—*Dominus E. habebit omnia expletias & profi-cua de corona emergentia.* Plac. Parl. 30. *Edw.* 1.

ESPOUSALS, *Sponſalia*, in law, a contract or mutual promiſe between a man and a woman to marry each other. Marriage or matrimony is ſaid to be an *Eſpouſal de preſenti*. *Wood*'s Inſt. 57.

ESQUIAVINE, in the manege, an old French word ſignifying a long and ſevere chaſtiſement of a horſe in training him.

ESSATUM, a word uſed by ſome of the chemical writers, to expreſs the medicinal power or ſanative property reſiding in ſimple medicines.

ESSAY *(Cycl.)*—ESSAY-*Hatch*, is the miners term for a little trench or hole, which they dig to ſearch for *ſhoad* or ore. See TIN.

ESSEDARIUS, among the Romans, a gladiator, who fought in a car, or chariot. See Hiſt. Acad. Inſcript. Vol. 2. p. 376. ſeq.

ESSENCE *(Cycl.)*—ESSENCE *of Wine*, a term uſed by Paracelſus, and ſome of the German chemiſts ſince his time, to expreſs what is called ſometimes the philoſophical ſpirit of wine, or the ſpirit of wine of the antients. It is not a diſtilled ſpirit like what we call ſpirit of wine, but approaches more to what Stahl has greatly recommended to the world, under the name of concentrated wine, or wine whoſe ſtrength has been reduced to a ſmaller compaſs, by the ſeparating its aqueous part only by freezing. Stahl recommends the immediately expoſing wine to the froſty air on this occaſion, but the proceſs ordered by Paracelſus for the preparation of this liquor is more tedious. He orders that the fineſt and beſt flavoured wine be choſen, that it be put into a glaſs filling it up three parts in four, and the neck being then ſealed hermetically, it is to be put into horſe dung for three months, and then expoſed to the froſty air for a month, after which the ice is to be thrown away, and the liquid part, which is the Eſſence, preſerved. *Shaw*'s Chemical Eſſays.

ESSENDO *Quietum de Tollonio*, in law, a writ to be quit of toll, and lies for citizens and burgeſſes of any city or town that by charter or preſcription ought to be exempted from toll, where the ſame is exacted of them. Reg. Orig. 258.

ESSENTIA *Dulcis*, in chemiſtry, a name given by Kunkel, and ſome others of the German authors, to a menſtruum of which they relate wonderful effects; but the preparation of which ſeems hitherto a ſecret. They ſay this menſtruum has nothing acid or corroſive in it, but that it approaches to the nature of ſpirit of Wine, yet, that it is capable of diſſolving the moſt denſe metals, and of converting any of them into a pure white ſalt, which has all their virtues, but nothing of that vitriolic acrimony, which they have when prepared the common way. The ſalts of mercury and of gold thus prepared, have great praiſes beſtowed on them, and are ſaid to cure epilepſies, the venereal diſeaſe, and many other diſtempers, without any violence or danger. *Kunkel*, de Salis Metal. See the article METAL.

ESSENTIAL *Oils*. See OILS *Eſſential*.

ESSERE, SORA, and SARE, in medicine, are little puſhes or wheals, ſomething red and hard, which quickly infect the whole body with a violent itching, as if one were ſtung with bees, waſps, flies, or nettles; yet they vaniſh after a little time, and leave the ſkin as ſmooth and well-coloured as before. It differs from an *Epinyctis* in this, that an *Epinyctis* ſweats out matter, but an *Eſſere* does not. *Blancard.*

ESSLISORS, in law, perſons appointed by a court of law, to whom a writ of *venire facias* is directed, to impanel a jury, on challenge to the ſheriff and coroners. They are to return the writ in their own names, with a panel of the jurors names. 15. *Edw.* 4. 24. pl. 4.

ESSOIN *(Cycl.)*—ESSOIN *de malo Villæ*, in law, is when the defendant is in court the firſt day, but gone without pleading; and being afterwards ſurprized with ſickneſs, &c. cannot attend, but ſends two *Eſſoiners*, who openly proteſt in court that he is detained by ſickneſs in ſuch a village, that he cannot come, *pro lucrari & pro perdere*; and this will be admitted: for it lieth on the plaintiff to prove whether the *Eſſoin* is true or not.

ESTABLISHMENT *of Dower*, in law, is the aſſurance and ſettlement of *Dower*, made to the wife by the huſband, on marriage: and *aſſignment of dower*, ſignifies the ſetting it out by the heir afterwards, according to the *Eſtabliſhment*. Brit. cap. 102, 103.

ESTACHE is uſed, in our old writers, for a bridge, or ſtank of ſtone and timber. *Cowel.*

ESTERLING *Money*. See STERLING, *Cycl.*

ESTIÆA, Εστιαια, in antiquity, ſolemn ſacrifices to Veſta, called in Greek Εστια, of which it was unlawful to carry any away, or communicate any part to any beſides the worſhippers. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 396.

ESTIATORES, Εστιατορες, among the Athenians, perſons appointed by lot to provide an entertainment for the whole tribe. Beſides thoſe appointed by lot to this office, others voluntarily undertook it to ingratiate themſelves. *Potter*, Archæol. Græc. l. 1. c. 15. T. 1. p. 86.

ESTIMIONE, in natural hiſtory, a name by which ſome call the harmeſion. See HARMESION.

ESTIVAL *Occident*. See OCCIDENT.

ESTIVAL *Orient*. See ORIENT.

ESTRAC, in the manege, ſignifies a horſe that is light bodied, lank bellied, thin flanked, and narrow cheſted. See BELLY.

ESTRAPADE, in the manege, is the defence of a horſe that will not obey, but to get rid of his rider, riſes mightily before, and while his fore hand is yet in the air, yerks furiouſly with his hind legs, ſtriking higher than his head was before; and during this countertime goes back rather than advances.

ESULA, *(Cycl.)* in botany, a name given by many authors to ſome of the ſmall ſpecies of ſpurge. See the article TITHYMALUS.

ESULA *Rara*, in botany, a name given by John Bauhine and ſeveral other authors to a plant, called alſo by ſome *alypum*, but properly a ſpecies of dog's bane, and diſtinguiſhed by Mr. Tournefort by the name of *apocynum maritimum venetum ſalicis folio flore purpureo*, or the purple flowered ſea dog's bane of Venice with willow like leaves. See APOCYNUM.

Esu-

ESULÆ *Radix*, in the materia medica, the name of a root of a plant of the ſpurge kind ſometimes uſed in medicine. The root conſiſting of a cortical part and an inner ſticky one, the bark only is uſed, and ſuch ſhould be choſen as is new dried, and of a reddiſh colour without and within, and ſuch as when held in the mouth affords a very diſagreeable taſte, with very great acrimony. It is a very violent purge, and has been ſaid to have performed cures in dropſical caſes, when more gentle medicines have proved ineffectual. It is a good method to macerate it a day or two in vinegar before it is uſed.

The plant which produces it is, the *Eſula riveri et officinarum* of Mr. Ray, it is cultivated by ſome curious people in their gardens. *Pomet*'s Hiſt. of Drugs, p. 30.

ETAPPIER, in war. See ETAPPE, *Cycl.*

ETHESIUS *Lapis*, a name given by ſome authors to the chryſolite.

ETHMOIDES *(Cycl.)*—The figure of this bone is very ſingular, and may be ſaid to be in ſome meaſure cubical. This bone may be divided into a middle, and two lateral portions; in the middle three parts may be diſtinguiſhed, an upper, a middle, and a lower. The upper part of the middle portion is an eminence called criſta galli, which is often ſolid, ſometimes however it has been found hollow in ſeveral degrees and perforated by a ſmall opening which communicates with the frontal ſinuſes: a groove is ſometimes alſo met with in its anterior edge which leads to the ſpinal or blind hole in the os frontis. The middle part of this portion is a ſmall horizontal plate perforated by ſeveral holes, and called lamina cribroſa; and in its back part it has a little notch for its articulation with the ſphenoidal bone; this lamina may be called the body of the bone, as being what principally ſupports all the other parts of it.

The lower part is a perpendicular lamina, which makes part of the ſeptum narium: The edge of this is rough and uneven, for its better connection with the verna: The lateral portions of the ethmoidal bone, are by far the moſt conſiderable if we regard ſize only; each of theſe may be divided into two, one ſuperior, which is the largeſt, and which may be called the labyrinth of the noſtrils, it being full of turnings and windings, and irregularly cellular; and one inferior in the ſhape of a ſhell. It is a very tender and delicate ſtructure, tho' compact and without any diploe, being almoſt all compoſed of thin bony plates. It is joined to the os frontis, os ſphenoides, oſſa naſi, oſſa maxillaria, oſſa unguis, oſſa palati, and verna; the uſes of it are to be a very principal part in the organ of ſmell, and to give a very great extent to the pituitary membrane, in a ſmall compaſs. *Winſlow*'s Anatomy, pag. 29.

ETHOLOGUS, among the antients, a mimic or actor who could repreſent all the various habits and diſpoſitions of the mind. *Pitiſc.*

ETHOPOEA, among the antients, ſignified the art of repreſenting or imitating the manners and geſtures of any perſon ſo perfectly, that the original might be known by the repreſentation. *Pitiſc.*

ETINDROS, a name given by the writers of the middle ages, to a ſtone which they ſay is as clear and pellucid as cryſtal; and which when expoſed to the air was continually ſeen to exſudate drops of water by reaſon of its cold. We are rather apt to believe it was by reaſon of its heat, and that the writers of theſe dark ages had collected this account from ſome author, who only called ice by this name.

ETRUSCA *Terra*, in the materia medica, a kind of bole of which there are two ſpecies, the white and the red; theſe are called by many authors, the *terra ſigillata alba & rubra magni ducis*, as they are brought to us ſealed with different impreſſions.

The white Tuſcan earth is a denſe and compact ſubſtance of a dull deadiſh white, which in drying acquires ſome degree of yellowneſs; it is of a ſmooth ſurface, and does not ſtain the fingers in handling. It is not eaſily broken, and but ſlightly adheres to the tongue, and freely melts into a ſubſtance like butter in the mouth. It makes a ſlight effervеſcence with acid menſtruums. *Hill*'s Hiſt. of Foſſils, p. 4.

The red Tuſcan earth is an impure bole, very heavy and of a ſomewhat lax texture, and of a pale red colour. It is naturally of a ſmooth ſurface, breaks eaſily between the fingers, and is apt to ſtain the hands; it adheres ſtrongly to the tongue, and melts freely in the mouth, and has a ſtrongly aſtringent taſte, but leaves a ſandy harſhneſs between the teeth. It makes no effervеſcence with acid menſtrua. Theſe are the characters by which both theſe earths may be known from others of the ſame colour; they are both dug in ſeveral parts of Italy, particularly in the neighbourhood of Florence: They are kept in the ſhops there, and preſcribed with ſucceſs in fevers of many kinds, and in diarrhæas, dyſenteries, and the like caſes. *Hill*'s Hiſt. of Foſſils, p. 12.

ETYMOLOGICON is uſed for a book containing the etymologies of any language. See ETYMOLOGY, *Cycl.*

EUANTHI *Colores*, in painting, a term uſed by the Greeks to expreſs what the Romans call the floridi colores: theſe were ſuch colours as had a remarkable brightneſs in their works. The other coarſer and duller colours the Romans called auſteri colores, and the Greeks bathyci. Of the firſt ſort were cinnabar, lapis armenus, chryſocolla, minium, indigo, and purpuriſſa, according to the Romans; but the Greeks, as we find by Dioſcorides, made cinnabar one of the auſtere colours.

EVANTO, a name given by ſome authors to the panthera lapis.

EVAPORATION, *(Cycl.)*—The *Evaporation* of fluids is generally ſuppoſed an effect of heat, but experience proves that cold which is juſt a contrary cauſe is able alſo to produce the ſame effect, and that in a very conſiderable degree; the *Evaporations* of liquors in the ſevereſt froſts being at leaſt equal to thoſe when the air is in that degree which we call temperate. An ounce of water by weight being ſet out at ſix in the evening to freeze, Mr. Guateron found that by eight of clock the next morning, it was reduced to a ſolid lump of ice, and had loſt twenty-four grains in weight; and this ice being thawed into water with all poſſible caution, the water weighed twelve grains leſs than the ice. The ſame experiment repeated ſeveral times always gave the ſame phænomenon, only in different degrees; the loſs of quantity being always greater as the weather was more ſevere, or the wind higher. This effect is alſo different in different fluids. This gentleman ſet out to freeze at the ſame time an ounce of common water, the ſame quantity of nut oil, the ſame of brandy, the ſame of oil of turpentine, and the ſame of mercury. The water froze almoſt immediately and loſt ſix grains in weight; and the oil of nuts in the ſame time loſt eight grains; the brandy and the oil of turpentine loſt twelve grains each; but oil of olives and the mercury ſeemed rather to have encreaſed than diminiſhed in weight. The next morning, the loſs of the water was thirty-ſix grains; that of the nut-oil was forty grains, tho' it had not been frozen; and the loſs of the brandy and oil of turpentine was fifty four grains each, tho' neither had been at all frozen; the mercury and the oil of olives remained as before. The greater cold, and more rough winds always encreaſed the *Evaporation*, and the leſſer cold and calmer weather made it leſs. Water when reduced to the ſtate of ice does not ceaſe to *evaporate*: for this ice of an ounce of water had loſt thirty-ſix grains from eight of clock in the morning to three in the afternoon, and thirty-ſix more between that and eight at night; and during the night the *Evaporation* had not been continued in any leſs degree, and upon the whole, an ounce of ice was found to loſe by *Evaporation* a hundred grains in twenty-four hours. Mem. Acad. Par. 1709.

EVASION, *Evaſio*, in law, is uſed for any ſubtil endeavouring to ſet aſide truth, or to eſcape the puniſhment of the law; which will not be endured. Thus if a perſon ſays to another that he will not ſtrike him, but will give him a pot of ale to ſtrike him firſt; and accordingly he ſtrikes, the returning of it is puniſhable; and if the perſon firſt ſtriking be killed, it is murder: for no man ſhall evade the juſtice of the law, by ſuch a pretence to cover his malice. 1 *Hawk.* P. C. 81.

EUCHYMIA, in medicine, a good temper of the blood, or other juices and fluids in an animal body.

EUCLABRIS, in antiquity, a table whereon the ſlaughtered victim was ſpread, in order to have its inteſtines carefully inſpected. It was from this table that the veſſels uſed in ſacrifices were called *Euclabria*.

EVERRIATOR, in antiquity, an officer who was obliged in a ſolemn manner to cleanſe ſuch houſes as were defiled by dead bodies, called *domus funeſtæ*. *Pitiſc.* Lex. Ant. in voc.

EVERRICULUM, in ſurgery, the name given by Paré to a ſort of ſpeccellum or ſpoon, uſed to clear the bladder of gravel and grumes of blood left in it after the operation of lithotomy.

EVES-DROPPERS, in law, ſuch perſons as ſtand under the *Eves* or walls of a houſe, by night or by day, to hearken after news, and carry it to others, and thereby cauſe ſtrife and contention in the neighbourhood. *Terms de Ley*, 317. They are puniſhed in the court leet by fine, by the Stat. Weſtm. c. 33.

EUEXIA, in medicine, a good ſound habit of body.

EUGENIA, in botany, the name given by Micheli and Linnæus to a genus of plants deſcribed in the Hortus Malabaricus. The characters are theſe: The perianthium conſiſts of one leaf divided into four, oblong, obtuſe, concave, and permanent ſegments. The flower is compoſed of four oblong, and hollow obtuſe petals twice as large as the ſegments of the cup; the ſtamina are a great number of ſlender filaments inſerted in the cup and reaching the length of the flower; the antheræ are ſmall. The germen is of a turbinated form, and is placed below the cup. The ſtile is ſimple and of the length of the ſtamina; the ſtigma is ſimple; the fruit is a coronated drupa of a quadrangular figure containing only one cell, in which is contained a large roundiſh and ſmooth nut. *Linnæi*, Gen. Plant. p. 211. *Micheli*, Nov. Gen. p. 108. Hort. Mal. v. 1. p. 17, 18. v. 4. p. 6, 7.

EUMARIDES, among the antients, a kind of ſhoes common to men and women. *Hoffm.* Lex. in voc.

The *Eumarides* were uſed for pomp and delicacy, being neat and painted with various colours. Id ibid.

EUMECES, in the writings of the antient naturaliſts, the name of a ſtone which Pliny tells us reſembled a flint, and was found in Bactria; the antients had an idle opinion, that if laid under the head, it occaſioned true and prophetic dreams, foretelling to the perſon the more remarkable future events of his life.

EUMENIDES, in antiquity. See FURIES, *Cycl.*

EUMENIDEIA, Ευμενιδεια, in antiquity, an annual feſtival obſerved in honour of the furies. It was otherwiſe called

Σεμνων Ἐριδων, becauſe the Athenians called the furies, Σεμναι Θεαι, i. e. *venerable Goddeſſes*. *Pott.* Archæol. Græc. l. 2. c. 20.

EUMETRES *Beli*, in natural hiſtory, the name given by the antients to a gem which the Aſſyrians held ſacred to their God, and which many other nations learned from them, to ſuppoſe very powerful againſt magick. Many have ſuppoſed this to be the ſtone we now call occulus beli; but this is an error, ſince Pliny, in his account of the *Eumetres*, ſays, that it was of a very fine green. It was probably a gem of the emerald kind, that ſtone having ever been in very high eſteem in the eaſtern part of the world, as it is alſo to this day.

EUNOFIUS, a name given by ſome authors to the ætites or eagle ſtone.

EVOCATI, among the Romans, ſoldiers who having ſerved their time in the army, went afterwards voluntiers at the requeſt of ſome favourite general. *Hoffm.* Lex. in voc.

EVOCATION, *Evocatio*, among the Romans, a religious ceremony always obſerved by them at undertaking the ſiege of a town, wherein they ſolemnly called upon the gods and goddeſſes of the place to forſake it and come over to them. Without the performance of this ceremony, they either thought that the place could not be taken, or that it would be a ſacrilege to take the gods priſoners.

The form of *Evocation* uſed at taking the city of Carthage is related by Macrob. Sat. III. 9. in the following words. *Si deus, ſi dea es, cui populus, civitaſque Carthaginienſis eſt in tutela, teque maxime ille, qui urbis hujus, populique tutelam recepiſti, precor, venerorque, veniamque a vobis peto, ut vos populum civitatemque Carthaginienſium deſeratis, loca, templa, ſacra, urbemque eorum relinquatis, abſque his abeatis: eique populo, civitatique metum, formidinem, oblivionem injiciatis, proditique Romam ad me meoſque veniatis; noſtraque vobis loca, templa, ſacra, urbs acceptior, probatiorque ſit: mihi quoque, populoque Romano, militibuſque meis præpoſiti ſitis, ut ſciamus, intelligamuſque*, &c. *ſi ita feceritis, voveo vobis templa, ludoſque facturum.*

They always took it for granted that their prayer was heard, and that the gods had deſerted the place and came over to them, provided they were able to make themſelves maſters of it. *Pitiſc.* Lex. Ant. in voc. *Deus.*

EVOCATORIÆ *Epiſtolæ*, among the Romans, letters ſent by the emperors to command the attendance of any perſon; or letters granting licence to any one to wait on the emperor; every perſon not being allowed this privilege till they had deſired and obtained the *Evocatoriæ Epiſtolæ*. *Hoffm.* Lex. in voc.

EVOLUTE, *Evoluta (Cycl.)*—The variation of curvature of the line deſcribed by the *Evolution* of a curve, is meaſured by the ratio of the radius of curvature of the *Evoluta*, to the radius of curvature of the line deſcribed by the *Evolution*. See *Mac Laurin*'s Flux. Art. 402. Prop. 36.

EUÆMIA, a word uſed by Tremelius, and ſome other writers, to expreſs a good and healthy ſtate of the maſs of blood.

EUONYMUS, the *Spindle-Tree*, in the Linnæan ſyſtem of botany, this makes a diſtinct genus of vegetables; the characters of which are theſe. The cup is a flat perianthium, compoſed of one leaf divided into four ſegments which are of a roundiſh figure. The flower is compoſed of four flat oval petals, longer than the ſegments of the cup, and ſpread wide open; the ſtamina are four upright pointed filaments ſhorter than the cup, and ſituated on the germen of the piſtill; the antheræ are double. The germen of the piſtill is pointed; the ſtyle is ſhort and ſimple; the ſtigma is obtuſe; the fruit is a quadragonal, juicy capſule, of a different colour from the reſt of the ſhrub, and having four angles, four points, and four cells, with their valves. The ſeeds are ſingle, of an oval figure, and encloſed in the cup. *Linnæi* Genera Plantarum, p. 48.

According to Tournefort's method the characters are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals arranged in a circular form; the piſtil ariſes from the cup, and finally becomes an angular membranaceous fruit divided into different cells and containing oblong ſeeds.

The ſpecies of *Euonymus* enumerated by Mr. Tournefort are theſe.

1. The common *Euonymus* with red fruit. 2. The black fruited *Euonymus*. 3. The broad leaved *Euonymus*. 4. The pyracantha-leaved American *Euonymus*, with ever-green leaves and red verrucoſe fruit. 5. The African *Euonymus*, with ſhining ſerrated leaves. 6. The broad-leaved cluſtery American *Euonymus*, with pentangular blackiſh purple fruit. *Tourn.* Inſt. p. 647.

It is generally ſuppoſed that the *Euonymus* of the antients is the ſame plant that we at this time call by this name. The words of Theophraſtus have probably given occaſion to this opinion; as they ſound at firſt reading like words expreſſing the characters of the fruit of this tree; but on a cloſer inſpection, they will be found to expreſs a fruit of a very different kind. This author ſays, that the fruit of the *Euonymus* is like the pod of the ſeſamum, marked with four protuberant ribs, and hard within, and divided into places for four orders of ſeeds. It is plain by this, that as their ſeſamum bore an oblong pod marked with four ribs, ſo as to ſeem of a quadrangular figure; ſo did their *Euonymus*, and that in this long pod there were four orders of ſeeds, each of theſe orders containing a great many ſeeds. Now the fruit of our *Euonymus* is ſhort and not at all like a pod, and contains only four ſeeds and not four orders of ſeeds: there is alſo this farther proof of our *Euonymus* not being that of the antients, that ours is a wholeſome food to cattle, and they are very fond of cropping it whenever they can reach it, and never get any hurt by it; whereas the *Euonymus* of the Greeks was poiſonous to cattle, according to Theophraſtus. *Pliny*, *Theophraſtus*. See FUSANUS.

EUPATORIUM, in botany, the name of a genus of plants, the characters of which are theſe; the flower is of the floſculous kind, and is compoſed of a number of ſmall corollulæ, from each of which there grows a long capillament bifid at the end. Theſe are divided into many ſegments, and ſtand on embryo ſeeds, being contained in a long ſcaly and cylindric cup: the embryos afterwards become ſeeds winged with down.

The ſpecies of *Eupatorium* enumerated by Mr. Tournefort are theſe.

1. The common *Eupatorium*. 2. The *Eupatorium*, with long wrinkled leaves and purple ſtalks. 3. The larger *Eupatorium*, with great long and wrinkled leaves and green ſtalks. 4. The nettle-leaved New England *Eupatorium*, with purple flowers and ſpotted ſtalks. 5. The hairy betony-leaved *Eupatorium* of New England, with white flowers. 6. The perfoliate Virginian *Eupatorium*, with very long pointed ſage-like leaves. 7. The mullein-leaved *Eupatorium* of Virginia. 8. The ſoft hairy nettle-leaved American *Eupatorium*. 9. The ſhrubby American *Eupatorium*, with atriplex leaves and white flowers. 10. The purple flowered American *Eupatorium*, with ſlix-weed leaves. 11. The purple flowered ſhrub American *Eupatorium*, with ground-ivy leaves. 12. The American *Eupatorium*, with butter-bur leaves. *Tournef.* Inſt. p. 455.

EUPATORIUM, or the common hemp agrimony, ſtands recommended as a hepatic and vulnerary, and has been alſo uſed in catarrhs; but it is at preſent very little known in the ſhops.

EUPETALOS, in natural hiſtory, the name of a gem deſcribed by the antients as famous for its variety of colours. Pliny L. 37. C. 10. tells us that it ſhewed at once blue, fire colour, red lead colour, and yellow. It ſeems to have been the opal, and that Pliny's deſcription of it in this place was taken from ſome author he did not perfectly underſtand, as is the caſe in many of his accounts from the Greeks.

EUPHEMISMUS, Ἐυφημισμος, in rhetoric, a figure which expreſſes things in themſelves diſagreeable and ſhocking, by terms implying the contrary quality; thus, the Pontus, or black ſea, having the epithet of ἄξενος, (i. e. inhoſpitable) given it on account of the ſavage cruelty of thoſe who inhabited the neighbouring countries; this name, by *Euphemiſm*, was changed into that of *Euxinus*. Thus Ovid. Triſt. l. 3. eleg. 13.

Dum me terrarum pars pene noviſſima Ponti,
Euxinus falſo nomine dictus habet.

In which ſenſe, it only makes a ſpecies of irony. But every *euphemiſm* is not irony; for we ſometimes uſe improper and ſoft terms in the ſame ſenſe with the proper and harſh. See *Voſſ.* Rhet. l. 4. p. 186. ſeq.

EUPNOEA, in medicine, is a right and natural reſpiration.

EUPORIA, in medicine, is an eaſy preparation of medicines, or the eaſineſs of their operation. *Blancard.*

EUPHORBIA, in botany, a name given by Linnæus and others to the *Euphorbium* plant, and to ſome ſpecies of the tithymalus and tithymaloides of Tournefort. See TITHYMALUS and TITHYMALOIDES.

The curious in gardening propagate twelve ſpecies of the *Euphorbium* plant in their ſtoves; they are all natives of very warm climates, and being replete with a milky juice, they require very little water; nor muſt they ever be planted in a rich ſoil, which is very hurtful to them. The proper ſoil for them is a mixture of one half ſea-ſand, one quarter light freſh earth, and one quarter lime-rubbiſh. This ſhould be mixed three months before it is uſed, and very frequently turned in the mean time. *Miller*'s Gardners Dict.

The plants are propagated by planting in this ſoil, their cuttings, in the months of June and July. Theſe ſhould always be taken off from the old plant at a joint, and ſhould be laid by for a week in a dry ſhady place before they are planted, that the part cut off from the old plant may have time to harden and dry. They ſhould then be ſet in very ſmall pots and have a little water to ſettle the earth to their roots. They are after this to be ſet for a day or two where they may have the morning ſun, and after this to be plunged into a hot bed of tanner's bark, and ſhaded in the great heats of the day. In ſix weeks will have ſhot out their roots, and are then to be treated as the cereus's and other ſucculent plants of the ſame kind.

EUPHRASIA, *Eye-bright*, in botany, the name of a genus of plants the characters of which are theſe; the flower is of the perſonated kind, divided into two lips, and having the upper one placed erect and divided into ſeveral ſegments. The lower one divided into three principal ſegments, each of which is alſo bifid. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the back part of the flower: this finally

finally ripens into a capſule of an oblong ſhape, containing ſmall ſeeds.

The ſpecies of *Eye-bright*, enumerated by Mr. Tournefort, are theſe: 1. The common *Eye-bright*. 2. The white-flowered more branched meadow *Eye-bright*. 3. The leſs branched *Eye-bright*, with a bluiſh purple flower. 4. The ſmall alpine yellow-flowered *Eye-bright*. And 5. The narrow-leav'd *Eye-bright*, with finely divided leaves. *Tourn.* Inſt. p. 174.

Eye-bright is much recommended in diſorders of the eyes, eſpecially weakneſs and dimneſs of ſight. It is given in ſeveral forms, but the powder of its leaves is thought moſt effectual, as well as ſafeſt, the doſe being from one to three drams. *James*, Med. Dict. in voc.

EUPHROSYNUM, in botany, a name uſed by Pliny, and ſome other authors, for the common borage. *Ger.* Emac. Ind. 2. See BORAGE.

EUREOS, in natural hiſtory, the name of a ſtone, deſcribed by Pliny, and ſeeming plainly to be the ſame with the tecolithus, which he mentions in another place, and to be the ſtone now called *lapis Judaicus*, and known at this time to be the petrify'd ſpine of a ſort of echinus marinus, or ſea urchin. Pliny ſays it was ſhaped like the ſtone of an olive, that it was regularly ſtriated, in the manner of ſome ſhells, and that it was of a whitiſh colour, but not perfectly white. No one can miſs ſeeing that this is a good deſcription of the *lapis Judaicus*; and we are not to ſuppoſe it otherwiſe, becauſe Pliny has before deſcribed that ſtone under another name, without any reference to this; ſince we are to conſider that Pliny was the general collector of the natural hiſtory of his time, and took his accounts of things from different authors then extant, who did not pay the regard to one another that the modern writers do, of referring to each others work, ſo that Pliny has often mentioned the ſame thing twice under two names, as he found accounts of it in two different authors, without perceiving that they were deſcribing the ſame ſtone. This particular is but one inſtance of a thouſand, that might be brought of this; and much error has got into the world by means of it.

EURICHORIA, a word uſed, by ſome of the old writers in medicine, to expreſs an internal ſinus, or cavity in ulcers, *&c.*

EURYNOMIA, Ευρυνομια, in antiquity, an anniverſary ſolemnity in honour of Eurynome, by ſome thought to be the ſame with Diana, by others one of Oceanus's daughters. *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 397.

EUSEBES, the name of a ſpecies of marble, mentioned by Pliny; he has given us no deſcription of it, but only tells us, that there was a ſeat made of it in the temple of Hercules at Tyre, from which the prieſts pretended that the gods uſed to ariſe.

EUTHANASIA, in medicine, a ſoft and quiet death, or paſſage out of this world.

EUTHYMIA, Ευθυμια, among the Greeks, ſignified ſuch a diſpoſition, or ſtate of the mind, as could not be ruffled either by good or bad fortune, by ſickneſs or health, good or evil. Mem. Acad. Inſcript. Vol. 14. p. 131.

EUTROPHIA, in medicine, is uſed for a due nouriſhment of the body.

EWAGE, *Ewagium*, in our old writers, the ſame with *Aquage*, which is toll paid for water-paſſage. It is derived from the French *eau*, water.

EXACTIS, in natural hiſtory, a name given by Linkius, and ſome other authors, to a ſpecies of ſtar-fiſh, of the more branched kind, whoſe rays are ſix in number, when they firſt part from the body, but very ſoon branch out into a great number more. See the article STELLA *Marina*.

EXACTOR *Regis*, in law, the king's exactor, or collector. Sometimes it is taken for the ſheriff. But generally, *Quicunque publicas pecunias, tributa, victigalia & res fiſco debitas exigit, proprie nominatur exactor regis.*

EXANASTOMOSIS, in medicine, is an opening of the extremity of the veſſels. *Blancard.* Lex. Med. in voc.

EXANNUAL *Roll*, in the old way of exhibiting ſheriff's accounts, the illeviable fines and deſperate debts were tranſcribed into a roll, under this name; which was yearly read, to ſee what might be gotten. *Hale*'s Sher. Acc. 67.

EXAUCTORATIO, among the Romans, differed from *miſſio*, or a diſcharge. In the latter, the ſoldiers were quite diſmiſſed from the ſervice; and this was done after they had ſerved twenty years: But in the former caſe, they only loſt their pay, being ſtill kept under their colours or *vexilla*, tho' not under the eagle, *aquila*, which was the ſtandard of the legion. Whence, inſtead of *legionarii*, they were called *ſubſignani*, and were ſtill retained till they had either ſerved out their time, or had lands aſſigned them. The *Exauctoratio* commonly took place after they had ſerved ſeventeen years. *Pitiſc.* Lex. Ant. in voc.

EXCHEQUER (*Cycl.*)—The court of *Exchequer* is an antient court of record, for all matters relating to the revenues of the crown. Vid. 4 Inſt. 103. 2 Inſt. 104, 105, 551.

In the *Exchequer* there are ſeven courts, 1. The court of pleas. 2. The court of accounts. 3. The court of receipt. 4. The court of *Exchequer* chamber, being the aſſembly of all the judges of England for matters in law. 5. The court of *Exchequer* chamber, for errors in the court of *Exchequer*. 6. The court of *Exchequer* chamber, for errors in the king's bench. 7. The court of equity in the *Exchequer* chamber. Vid. New Abr. Law, vol. 1. p. 597.

By the 33d Hen. 8. cap. 39. the court of *Exchequer* has power to diſcharge all debts and duties due to the king, upon any equity diſcloſed; and it is by virtue of this act, that they diſcharge recognizances; and it ſeems, by the ſaid act, they may diſcharge penal laws made before this ſtatute; but all penal laws made after the ſtatute cannot be diſcharged, but muſt be compounded.

The court of *Exchequer*, in Scotland, has the ſame power, authority, privilege, and juriſdiction over the revenue of Scotland, as the court of *Exchequer* in England has over the revenues there; and all things and matters competent to the court of *Exchequer* in England, ſo far as they relate to the king's revenue, are likewiſe competent to the *Exchequer* of Scotland. The judges are likewiſe inveſted with the power of paſſing ſignatures, gifts, and tutories, and to reviſe and compound them in the ſame manner as was done by the Lord High Treaſurer, commiſſioners of the treaſury, and court of *Exchequer* in Scotland, before the union. All ſerjeants at law, barriſters at law, of five years ſtanding, in any of the four inns of court of England, and advocates of five years ſtanding, in the college of juſtice in Scotland, are qualified for being barons of this court; whoſe commiſſions are *Quam diu ſe bene geſſerint. Chamberl.* Pr. State of Gr. Br. p. 386.

EXCIPIENT, in pharmacy, a term uſed to expreſs that ingredient in a compound medicine, the buſineſs of which is to receive all the reſt; ſuch is the conſerve in electuaries, the ſyrup in boluſſes, *&c.*

EXCISION, in ſurgery, the cutting out, or cutting off any part of the body.

EXCLUSORIUM, in medicine, a name uſed, by ſome, for ſuch drugs, or compoſitions, as are capable of producing abortion.

EXCUSATI, in church hiſtory, a term uſed to denote ſlaves, who flying to any church for ſanctuary, were excuſed and pardoned by their maſters; but theſe were obliged to take an oath to that purpoſe before they could have them again; and, if they broke the oath, they were puniſhed and fined as perſons guilty of perjury. *Hofm.* Lex. in voc.

EXCUTIA *Ventriculi*, the *Stomach Bruſh*, a name given, by modern ſurgeons, to an inſtrument made of ſoft briſtles, formed into a bundle, and fixed upon a flexible braſs wire, for cleanſing the throat, or even the ſtomach.

The *ſtomach bruſh* is compoſed of ſoft hair faſtened together into a bundle by a twiſted braſs or ſteel wire, and the handle or ſtem of it is inveſted with ſilk. This has been greatly recommended, by ſome, to remove foreign bodies out of the fauces and æſophagus; and, to ſcower the ſtomach. The method of uſing it is this:

The patient is firſt to drink a ſmall draught of warm water, then the bruſh is to be received into the œſophagus, and gently protruded down into the ſtomach, by twiſting round and round its handle, and, when in the ſtomach, it is to be drawn up and down many times, like the ſucker in a ſyringe, and at length wholly extracted. The advantages ſaid to ariſe from this, are very great, ſuch as the prolonging life to a great age, and the like; but few people have been willing to try the effects of ſo diſagreeable and troubleſome an operation. Wedelius and Teichmeir have written expreſs treatiſes on this inſtrument, and one of them has attempted to prove it no new contrivance, but a thing very early known, deſcribed, and uſed in phyſic. *Heiſter*'s Surgery, p. 2. p. 2.

EXECRATION, *Execratio*, among the antients, a kind of puniſhment, conſiſting of direful curſes and marks of infamy. Livy relates an inſtance of it, which was uſed againſt Philip, king of Macedon, by the Athenians. A general aſſembly of the people being called, they made a decree, that all the ſtatues and images of that king, and of all his anceſtors, both of the male and female ſex, ſhould be demoliſhed, and their very names razed; that all the feſtivals, ſacred rites, prieſts, and whatever elſe had been inſtituted in honour of him, ſhould be profaned; that the very places where there had been any monument or inſcription to his honour, ſhould be deteſtable, and that nothing ſhould be ſet up, or dedicated in them, which could be done in clean places; and laſtly, that the public prieſts, as often as they prayed for the Athenian people, allies, armies, and fleets, ſhould as many times deteſt and execrate Philip, his children, kingdom, land and ſea forces, and the whole race and name of the Macedonians. *Hoffm.* Lex. in voc.

Cornelius Nepos, in his life of Alcibiades, calls it *devotion*.

At the taking and demoliſhing of a city, it was frequent to pronounce direful curſes and execrations upon whoever ſhould endeavour to rebuild it; which ſome imagine was the reaſon that Troy could never be raiſed out of its aſhes, tho' ſeveral perſons attempted it, being devoted to eternal and irreparable ruin by Agamemnon. This ſeems to have been a very antient cuſtom, and derived from the eaſtern nations; for we find Joſhua, at the deſtruction of Jericho, to have

fixed an imprecation upon the perſon who ſhould rebuild it, which was accompliſhed in Hiel the Bethelite many ages after. *Potter*, Archæol. T. 2. p. 97.

EXECUTIONE (*Cycl.*)—EXECUTIONE *Judicii*, in law, a writ directed to the judge of an inferior court, to do *Execution* upon a judgment therein, or to return ſome reaſonable cauſe wherefore he delays the *Execution*. F. N. B. 20.

If *Execution* be not done on the firſt writ, an *alias* ſhall iſſue, and a *pluries*, with this clauſe, *Vel cauſam nobis ſignifices quare*, &c. And if, upon this writ, *Execution* be not done; or ſome reaſonable cauſe returned why it is delayed, the party ſhall have an attachment againſt him who ought to have done the *Execution*, returnable in B. R. or C. B. New Nat. Br. 43.

EXEMPLIFICATIONE, in law, is a writ granted for the exemplification of an original record. Reg. Orig. 290.

EXERCISE, (*Cycl.*) in the military language, is uſed for the practice of all thoſe motions, actions, and management of arms, whereby a ſoldier is taught the different poſtures he is to be in under arms, and the different motions he is to make to reſiſt an enemy. Theſe he muſt be perfect in, before he be fit for ſervice.

EXERGASIA, Ἐξεργασια, in rhetoric, the ſame with *expoſition*. See EXPOSITION, *Cycl.*

EXFOLIATIVUM, the name of a chirurgical inſtrument, uſed to take off the vitiated ſurfaces of bones, and uſually called a raſpatory at this time.

EXFREDIARE, in our old writers, denotes the breaking of the peace, or committing open violence. Leg. H. 1. c. 31.

The word is formed from the Saxon *Frede*, peace.

EX GRAVI QUERELA, in law, a writ that lies for him to whom any lands or tenements in fee are deviſed by will, (within any city, town, or borough, wherein lands are deviſable by cuſtom) and the heir of the deviſor enters, and detains them from him. Reg. Orig. 244. Old Nat. Br. 87. And if a man deviſes ſuch lands or tenements unto another in tail, with remainder over in fee, if the tenant in tail enter, and is ſeized by force of the intail, and afterwards dieth without iſſue, he in the remainder ſhall have the writ, *ex gravi querela*, to execute that deviſe. New Nat. Br. 441. Alſo where a tenant in tail dies without iſſue of his body, the heir of the donor, or he who hath the reverſion of the land, ſhall have this writ, in the nature of a *Formedon* in the reverter. Ibid.

EXHALATION. See VAPOUR.

EXHEBENUM, in natural hiſtory, the name of a white and ſmooth ſtone, uſed by the antient artificers in poliſhing gold. It ſeems to be the ſame with the lapis Samius, a ſmall ſmooth ſtone which they often found in the Samian earth.

EXHIBITION, (*Cycl.*) *Exhibitio*, in our old writers, is uſed for an allowance of meat and drink, ſuch as was cuſtomary among the religious appropriators of churches, who uſually made it to the depending vicar. The benefactions ſettled for the maintaining of ſcholars in the univerſities, not depending on the foundation, are alſo called *Exhibitions*. Paroch. Antiq. 304.

EXHORTATION, *Hortatio*, in rhetoric, differs only from *ſuaſion*, in that the latter principally endeavours to convince the underſtanding, and the former to work on the affections. *Voſſ.* Rhet. l. 1. p. 31.

EXILIUM, in law, ſignifies a ſpoiling: And, by the ſtatute of Marlbridge, it ſeems to extend to the injury done to tenants, by altering their tenure, ejecting them, *&c.* And this is the ſenſe that *Fleta* determines; who diſtinguiſhes between *vaſtum*, *deſtructio*, and *Exilium*. For he tells us, that *vaſtum* and *deſtructio* are almoſt the ſame, and are properly applied to houſes, gardens, or woods; but *Exilium* is when ſervants are enfranchiſed, and afterwards unlawfully turned out of their tenements.—*Vaſtum & deſtructio fere æquipollent, & convertibiliter ſe habent in domibus, boſcis & gardinis; ſed* Exilium *dici poterit, cum ſervi manumittuntur, aut a tenementis ſuis injurioſe ejiciuntur.* Flet. l. 1. c. 11.—*Venditionem vel* Exilium *non faciant de domibus, boſcis vel hominibus*, &c. Stat. Marlb. c. 25.

EXITERIA, Ἐξιτηρια, in antiquity, oblations or prayers to any of the gods for a proſperous expedition or journey. *Pott.* Archæol. Græc. l. 2. c. 20.

EXOCÆTUS, in ichthyology, the name of a genus of fiſhes, of the malacopterygious or ſoft fin'd kind, the characters of which are theſe: The branchioſtege membrane contains ten bones, four of which are broad, and are covered by the opercula of the gills, and all of them are very difficult to be counted. The pectoral fins are very long. There is but one fin on the back, and that is placed toward the lower part of it. The ſcales are large. Artedi enumerates only two ſpecies of this genus: The firſt is the common mugil alatus of authors, or the flying fiſh. The ſcales of this are large, it reſembles the mullet in ſhape; the head and body are compreſſed, the ſnout is ſubacute, and the lower jaw is, when the mouth is opened, ſomewhat longer than the upper. The eyes are not covered with a ſkin. The mouth is ſmall, and has no teeth, and the tongue is ſlender. The back fin is very ſmall, and has thirteen bones. The pectoral fins reach to the tail, and have ſixteen articulated bones, or, at leaſt, nodoſe ones, divided at the end into ſeveral ramifications. The belly is flat, and the anus is but a little way from the tail. The inteſtine is ſingle, running ſtrait from the throat to the anus. The ſecond ſpecies of the *Exocætus* is the anguilla of the Venetians. This is a ſmall fiſh of a ſilvery colour, and pellucid; the mouth is large, and looks upward. The eyes are large. It has black ſpots on the back. The pectoral fins have each fourteen bones. This ſecond ſpecies ſeems to belong to the genus of the gobii. See Tab. of Fiſhes, N°. 41. *Artedi*, Gen. Piſc. 6.

EXODIARIUS, among the Romans, the perſon who, after the drama or play was ended, ſung the *Exodium*. See EXODIUM, *Cycl.*

EXOLICETUS, in natural hiſtory, a name uſed, among the writers of the middle ages, to expreſs a ſmall ſtone which had ſuch a variety of colours, that it dazled, as they ſay, peoples eyes in looking at them. It is ſaid to have been found in Lybia. The name is probably only a corruption of the hexacontalithos of Pliny, and the older writers; and this ſeems to have been no other than a name for the opal.

EXOMIS, in antiquity, a ſtrait narrow garment through which the ſhoulders appeared. It had ſomething in common with the tunic, and ſomething with the pallium. *Pitiſc.* Lex. Ant. in voc.

EXOMPHALIS, the name of a diſtempered ſtate of the body in ſome fœtus's, in which the viſcera, or part of them, are contained in a bag or ſack hanging out from the navel. In one of theſe caſes, which Mr. Mery has given an account of, the infant was born alive, but died after fourteen hours; the tumour was very large, and, on opening it, the liver, ſpleen, ſtomach, and inteſtines, were found all incloſed in it, yet its aperture at the navel was but little more than an inch in diameter. The moſt natural conjecture, in this caſe, ſeemed that the viſcera had been forced out of the body by ſome accident during pregnancy, and that the peritoneum, as they inlarged in growth, had extended itſelf, by degrees, to the dimenſions of this ſack. But, on a ſtrict enquiry, the ſack was found to be compoſed of a double membrane, ſo that it could not be a production of the peritoneum, which is ſingle, but it muſt neceſſarily have been an extenſion of the membranes of the placenta, which, uniting, form the umbilical cord; and it was not leſs eaſy to determine, that the viſcera could not have been forced out of the body, when at any conſiderable growth, as the aperture was ſo ſmall, the liver alone being of ſix times its diameter. It appears, therefore, that in theſe caſes the viſcera get out while very ſmall, and grow and enlarge in their unnatural ſituation. The parent of the infant, being aſked if ſhe had received any injury during her pregnancy, could not recollect any, but only obſerved that, while young with child, ſhe had been very ſtrongly affected by the ſight of the entrails of an ox hanging out of its belly at a butchers. Mem. Acad. Par. 1716.

EXONEIROSIS, a nocturnal pollution, or emiſſion of the ſemen in dreams. This, if it happen but rarely, is uſually a ſign only of redundant vigour; but if it happens frequently, is a ſign of a weakneſs of the ſeminal veſſels, which is moſt frequently the caſe.

EXONERATIONE *Sectæ*, in law, a writ that lay for the king's ward, to be freed from all ſuit to the county-court, hundred-court, leet, *&c.* during the wardſhip. F. N. B. 158.

EXONYCHOS, in botany, a name given, by ſome of the antient writers, among whom are Dioſcorides and Pliny, to the Gromwel or Lithoſpermum; it had this name from its ſeeds, the hardneſs and texture of which were ſuppoſed to reſemble the exterior part of the human nail; hence this name was compoſed of ἔξω and ὄνυξ: But ſome authors ſuppoſing this not ſufficiently expreſſive of the hardneſs of the ſeed, have called it ægonychon, reſembling it to a goats claw, as that animal, being continually among rocks, its hoof, or claw, was ſuppoſed harder than that of other animals, whoſe feet were not uſed in ſuch hard places.

EXOPHTHALMIA, in medicine, is a protuberance of the eye, out of its natural poſition.

EXORMISTOS, in ichthyology, a name given, by ſome of the old writers, to that ſpecies of the *petromyzon* which other authors call the *lampetra fluviatilis*, and we in Engliſh the lampern. This is diſtinguiſhed by Artedi by the name of the *petromyzon*, with only one ſeries of ſmall teeth in the verge of the mouth, and ſome large ones below. See the articles MUSTELA, LAMPETRA, and PETROMYZON.

EXOS *Piſcis*, in ichthyology, a name given by Geſner and Rondeletius, to the fiſh which we call the huſo, or ichthyocolla piſcis, from the drug called ichthyocolla or iſinglaſs being procured from it. It is properly a ſpecies of the accipenſer, and is diſtinguiſhed from the common ſturgeon by its having no tubercles. See ACCIPENSER.

EXOSTOSIS, (*Cycl.*) is properly an acute eminence, or exceſcence, puſhing preternaturally above the bone, but creating ſometimes no diſturbance, pain, or deformity, and unaccompanied with a caries or ſpina ventoſa. When this is the caſe, it is always beſt to let it alone, for the attempt to remedy often proves much worſe than the diſeaſe, and, by laying the bone bare, a caries, or other inconvenience, is brought on. On the other hand, when this diſorder occaſions pain, or deformity, or impedes any action, or produces other miſchief, it

may be remedied by taking off the protuberant part of the bone, in the same manner as in cases of the spina ventosa. *Heister*'s Surgery, p. 267.

EXOSTRA, in the antient theatre, a place where such parts of the play were recited, as were supposed to be acted privately in the house.

EXOSTRA was likewise the name of a warlike engine used in the sieges of towns. *Pitisc.* Lex. Ant. in voc.

EXOUCONTII, in church history, a kind of Arian heretics, who maintained that the son of God was made out of nothing. ἐκ των ὐκ ὀντων. *Hofm.* Lex. in voc.

EXPANSION (*Cycl.*)—Solid bodies, as well as fluid, easily *expand* with heat; this is proved by this easy experiment: Let an iron ring be made, just capable of admitting one end of a solid rod of the same metal. Then heat that end of the rod in the fire, and, when red hot, it will be found too large to go into the ring, though as soon as it is cold, it will again readily go through it. This appears to be the property of all solid bodies, on being heated, tho' cedar wood has, upon some trials, been thought not to *expand* with heat, or contract with cold. *Shaw*'s Lectures, p. 27.

EX PARTE TALIS, in law, a writ that lies for a bailiff or receiver, who, having auditors assigned to take his account, cannot obtain of them reasonable allowance, but is cast into prison. The course, in this case, is to sue this writ out of chancery, directed to the sheriff to take four mainpernors to bring his body before the barons of the exchequer, at a certain day, and to warn the lord to appear at the same time. F. N. B. 129.

EXPECTORANTS. As all substances which promote excretion, do not operate in the same manner, since some render the matter moveable, and dispose it for evacuation, others open the emunctories, that it may be separated from the juices, and others stimulate the vessels and ducts to an excretory motion, so *Expectorants* operate in the same variety of manners. For if the humour secreted be thin and acrid, and the pores of the glands, from which it is to be thrown, be too much constricted, those medicines are to be given to promote expectoration, which relax, soften, and widen the passages, obtund the acrimony of the humours, and coagulate the too thin and fluid parts of them. To this purpose liquorice root, sperma ceti, saffron, mallows, red poppies, oil of almonds, and the styrax pill, may be given; but when a large quantity of thick and viscid matter is lodged in the bronchia of the lungs, and impedes respiration, then some stimulus to respiration becomes necessary, and expectoration must be assisted by substances which can resolve the tough and viscid matter. For this purpose decoctions of scabious and the other pectoral herbs, with the terra foliata tartari, solutions of crab's-eyes, and antimoniated nitre, are very proper. The nervous coats of the bronchia are also stimulated to an excretory motion by a certain acrid, subtle, and oleous principle, found in gum ammoniac and benjamin, and the like stimulating gums.

The roots of elecampane, and florentine orris also, and all the preparations of sulphur, serve excellently to this purpose. And where a yet stronger stimulus is required, as in a pituitous asthma, oxymel of squills, and the spiritus asthmaticus, which is prepared with gum ammoniacum and crystals of copper, are found remedies of very great power. Great caution is necessary hence in the exhibition of *Expectorants*, and the practitioner who gives the common medicines, known by that name, at random, and without informing himself thoroughly of the nature of the case, is likely to do great mischief, instead of good, by them. In coughs of the moist and chronical kind, as also in a pituitous asthma, in which large quantities of phlegm fall into the bronchia of the lungs, sweet substances, linctus's, and oily medicines, weaken the stomach, whose strength and tone are already too much impaired, diminish the appetite, digestion, and chylifaction, and not only promote the generation of more recrementitious matter, and the increase of the disease, but also dispose the patient to a cachexy, or to œdematous tumors, or a dropsy. In these cases, it is therefore much more proper to use balsamic pectorals, and such as are grateful to the stomach. *Hofm.* Med. Ration. Syst.

Expectorants ought to be cautiously used in a phthisis, in spittings of blood, and in dry coughs, difficulties of breathing, and violent pains in the breast, which rather arise from a congestion of blood, than from matter to be expectorated; and *Expectorants*, whether of the softening or the stimulating kind, must certainly add to the congestion of the blood and humours, rather than to the relief of the patient.

In pleurisies and peripneumonies also *Expectorants* are to be very cautiously used in the beginning; lest by their means the inflammatory stagnation of the blood should be encreased. But when these disorders are upon the decline, and the greater part of the inflammatory matter is discussed, then they are very properly and commodiously used to draw the viscid and concocted matter out of the pulmonary canals.

EXPENDITORS, in law, are the persons appointed by commissioners of sewers to pay, disburse or expend the money collected by the tax for the repairs of sewers, &c. when paid into their hands by the collectors, on the reparations, amendments, and reformations ordered by the commissioners; for which they are to render accounts when thereunto required. Laws of Sewers, 87, 88.

These officers are mentioned in the statute 37 H. 8. c. 11. and other statutes. The steward who supervises the repair of the banks and water-courses in Rumney-Marsh is likewise called the *Expenditor*.

EXPENSIS *Militum non levandis*, &c. in law, an antient writ to prohibit the sheriff from levying any allowance for knights of the shire, upon those that hold lands in antient *demesne*. Reg. Orig. 261.

There is also a writ *de expensis militum levandis*, for levying expences for knights of the parliament. See EXPENSIS, *Cycl.*

EXPILATOR, in the civil law, a peculiar kind of thief or robber. See EXPILATION, *Cycl.*

Besides the meaning put upon *Expilation* in the Cyclopædia, it was used in a more special manner to signify a robbery committed by night; whence an *Expilator* was looked upon as a greater criminal than a common thief.

The *Expilators* were so called from their robbing and stripping people of their cloaths. *Pitisc.* Lex. Ant. in voc.

EXPLEES, in law, the rents or profits of an estate, &c. See ESPLEES.

EXPONENT, (*Cycl.*) in arithmetic and algebra. *Exponents* are commonly written above, and somewhat towards the right hand of the number or quantity whose power they express. Thus 3^5, a^5, signifies the fifth power of 3, and of a.

EXPOSING (*Cycl.*)—EXPOSING *of Children*, a barbarous custom practised by most of the antients, excepting the Thebans, who had an express law to the contrary, whereby it was made capital to expose children, ordaining, at the same time, that such as were not in a condition to educate them, should bring them to the magistrates, in order to be brought up at the public expence. *Pott.* Archæol. Græc. T. 2. p. 333.

Among the other Greeks, when a child was born, it was laid on the ground, and if the father designed to educate his child, he immediately took it up, but if he forbore to do this, the child was carried away, and exposed. *Pitisc.* Lex. Ant. in voc. *Expositio.*

The Lacedemonians indeed had a different custom, for, with them, all new-born children were brought before certain tryers, who were some of the gravest men in their own tribe, by whom the infants were carefully viewed, and if they were found lusty and well favoured, they gave orders for their education, and allotted a certain proportion of land for their maintenance; but if weakly, or deformed, they ordered them to be cast into a deep cavern in the earth, near the mountain Taygetus, as thinking it neither for the good of the children themselves, nor for the public interest, that defective children should be brought up. *Pott.* loc. cit.

Many persons *exposed* their children only because they were not in condition to educate them, having no intention that they should perish. It was the unhappy fate of daughters especially to be thus treated, as requiring more charges to educate and settle them in the world than sons. *Pott.* loc. cit.

The parents frequently tied jewels and rings to the children they *exposed*, or any other thing whereby they might afterwards discover them, if providence took care for their safety. Another design, in adorning these infants, was either to encourage such as found them, to nourish and educate them, if alive; or to give them human burial, if dead. *Pott.* T. 2. p. 334.

The places where it was usual to *expose* children, were such as people frequented most. This was done in order that they might be found, and taken up by compassionate persons, who were in circumstances to be at the expence of their education. With this intention the Egyptians and Romans chose the banks of rivers, and the Greeks the highways. *Pitisc.* loc. cit.

EXPOSITION, *Expositio*, in rhetoric, is sometimes used for *division*. See DIVISION.

EXPOSTULATION, *Expostulatio*, in rhetoric, a complaint addressed to a person from whom we have received some injury. It varies according to circumstances. See *Voss.* Rhet. l. 3. p. 420.

EXPRESSION (*Cycl.*) — *Diversifying of* EXPRESSION, in rhetoric. See DIVERSIFYING.

EXPROBRATION, *Exprobratio*, in rhetoric, is the reproaching a person with ingratitude, and unmindfulness of some particular benefit conferred upon him. See *Voss.* Rhet. l. 3. p. 422.

EXQUIMA, in zoology, the name of a species of monkey common on the coast of Guinea. The hair on its back is of a reddish brown, and looks as if it had been singed or burnt, and resembles a rusty iron colour; among this there are a number of small white spots; its belly and chin are wholly white, and it has a very beautiful beard of a snow white, composed of hair of two finger's length, and always lying as neatly and regularly as if it were combed. When this creature is provoked, it draws back its lips, and, shewing all its teeth, shuts its jaws very nimbly, and chatters remarkably loud. It is very nimble, and

and leaps ſurpriſingly; it feeds on the fruits it finds in the woods. *Ray*'s Syn. Quad. p. 156.

There is alſo another ſpecies of this creature in Guinea of the ſize of the former, and of a blackiſh brown on the greateſt part of the body, but of a bluiſh grey on the belly, and the lower half of its tail is of a ſort of tawney colour; its mouth and noſe are blue, and its cheeks adorned with a multitude of yellow hairs cluſtered together like thoſe of a goat's beard. Its legs and feet are wholly black, it is a ſprightly animal, and ſkips and plays like the other; beſides theſe there is alſo a third of the *Exquima* kind ſmaller than the others, and of a mixt colour of brown, yellow, and grey; this has a long tail, a ſmall head, and no beard.

EXSIBILANTES, in antiquity, a kind of hiſſers, who, in the theatre, and other public auditories, uſed to make a noiſe with their feet, and even ſometimes beat the ſeats with battons. *Pitiſc.* Lex. Ant. in voc.

EXSUCCATIO, a word uſed by ſome chirurgical writers to expreſs an *enchymoſis*, or ſugillation. See the article ENCHYMOSIS.

EXSUFFLATION, a ceremony obſerved in baptiſm, by which the candidate was ſuppoſed to renounce the devil. See BAPTISM.

EXTEND, in the manege. To *extend a horſe* is an expreſſion uſed by ſome, to import the ſame with making a horſe go large. See LARGE.

EXTEND, in law. See EXTENDING, *Cycl.*

EXTENDENTIUM *Interior*, in anatomy, a name given by Spigelius and others to a muſcle of the wriſt, called by Albinus ulnaris externus, and by Winſlow and others cubitalis externus. See CUBITALIS *externus*.

EXTENDI *Facias*, in law, a writ of extent, whereby the value of lands is commanded to be made and levied, *&c.* Reg. Orig.

EXTENSION *(Cycl.)*—The infinite diviſibility of *Extenſion* has been a famous queſtion in all ages. The doctrine of mathematicians on this head is not eaſy to reconcile with the tenets of ſome philoſophers. Thoſe who hold that all *Extenſion* and magnitude are compounded of a certain *minima ſenſibilia*, and that a line for inſtance cannot increaſe or decreaſe, but by certain indiviſible increments or decrements only, muſt conſiſtently with themſelves affirm, that all lines are commenſurable to each other, contrary to the tenth book of Euclid; who demonſtrates, that the diagonal of a ſquare is incommenſurable to its ſide. But if all lines were compoſed of certain indiviſible elements, it is plain one of thoſe elements muſt be the common meaſure of the diagonal and the ſide. This is a gordian knot which none of the philoſophers have yet thought fit to untie. An ingenious author of this age, who has ſaid ſeveral plauſible things againſt the doctrine of mathematicians, aſks, when it is ſaid or implied that ſuch a certain line delineated on paper contains more than any aſſignable number of parts, whether any more in truth ought to be underſtood, than that it is a ſign indifferently repreſenting all finite lines, be they ever ſo great; in which relative capacity it contains *i. e.* ſtands for more than any aſſignable number of parts? and whether it be not altogether abſurd to ſuppoſe a finite line conſidered in itſelf, or in its own poſitive nature, ſhould contain an infinite number of parts? But we own ourſelves at a loſs to ſee how, ſuppoſing a line diviſible into any aſſignable number of parts in its relative capacity only, will ſolve the difficulties attending Euclid's doctrine of incommenſurables, which neither this author nor any other has yet been able to refute. Suppoſing, for inſtance, a line in its own poſitive nature to contain but 10 parts, and ſuppoſe a ſquare formed on this line, this ſquare muſt neceſſarily contain 100 parts. The diagonal of the ſquare muſt have ſome length; but what? Shall we ſay 14 or 15 parts, if the firſt, the ſquare of the diagonal muſt contain 196 parts; if the ſecond, it muſt contain 225 parts, neither of which numbers are double of 100, the parts contained in the ſquare of the ſide. Now it is moſt evident without any intricacy of geometrical demonſtration, that the ſquare of the diagonal of every ſquare muſt be preciſely double of the ſquare itſelf. But farther, ſuppoſing the ſide to contain 100 parts, it is eaſily ſeen as before, that the diagonal can neither be expreſſed by 141 nor by 142; and there can be no fractions in the expreſſion, each part by the ſuppoſition being indiviſible. This leads us to the ſame abſurdity as before, with this addition; that as neither 141 nor 142 are in proportion to 100, as 14 or 15 are to 10, it follows that the Iſoſceles triangle which is the half of a great ſquare is not ſimilar to the Iſoſceles triangle, that is the half of a leſſer ſquare. But can any thing be more inconceivable, more repugnant to the moſt obvious notions of ſimilar figures than this?

But it may be worth while to hear this author himſelf, in another part of his works, urging his difficulties againſt the commonly received doctrine of mathematicians. He obſerves, the infinite diviſibility of finite *Extenſion*, though it is not expreſsly laid down either as an axiom or theorem in the elements of geometry; yet is throughout the ſame every where ſuppoſed, and thought to have ſo inſeparable and eſſential a connection with the principles and demonſtrations in geometry, that mathematicians never admit it into doubt, or make the leaſt queſtion of it. And as this notion is the ſource from whence do ſpring all thoſe amuſing geometrical paradoxes, which have ſuch a direct repugnancy to the plain common ſenſe of mankind, and are admitted with ſo much reluctance into a mind not yet debauched by learning; ſo is it the principal occaſion of all that nice and extreme ſubtilty, which renders the ſtudy of mathematics ſo difficult and tedious. Hence, ſays he, if we can make it appear, that no finite *Extenſion* contains innumerable parts, or is infinitely diviſible, it follows that we ſhall at once clear the ſcience of geometry from a great number of difficulties and contradictions, which have ever been eſteemed a reproach to human reaſon, and withal make the attainment thereof a buſineſs of much leſs time and pains, than it hitherto hath been.

Every particular finite *Extenſion*, which may poſſibly be the object of our thought, is an idea exiſting only in the mind, and conſequently each part thereof muſt be perceived. If therefore I cannot perceive innumerable parts in any finite *Extenſion* that I conſider, it is certain they are not contained in it; but it is evident, that I cannot diſtinguiſh innumerable parts in any particular line, ſurface, or ſolid, which I either perceive by ſenſe, or figure to myſelf in my mind: wherefore I conclude they are not contained in it. Nothing can be plainer to me, than that the *Extenſions* I have in view are no other than my own ideas; and it is no leſs plain, that I cannot reſolve any one of my ideas into an infinite number of other ideas, that is, that they are not infinitely diviſible. If by infinite *Extenſion* be meant ſomething diſtinct from a finite idea, I declare I do not know what that is, and ſo cannot affirm or deny any thing of it. But if the terms *Extenſion*, parts, and the like, are taken in any ſenſe conceivable, that is, for ideas; then to ſay a finite quantity or *Extenſion* conſiſts of parts infinite in number, is ſo manifeſt a contradiction, that every one at firſt ſight acknowledges it to be ſo.

He whoſe underſtanding is prepoſſeſt with the doctrine of abſtract general ideas, may be perſuaded, that (whatever be thought of the ideas of ſenſe,) extenſion in abſtract is infinitely diviſible. And one who thinks the objects of ſenſe exiſt without the mind will perhaps in virtue thereof be brought to admit, that a line but an inch long may contain innumerable parts really exiſting, tho' too ſmall to be diſcerned. Theſe errors are grafted as well in the minds of geometricians, as of other men, and have a like influence on their reaſonings; and it were no difficult thing to ſhew how the arguments from geometry made uſe of to ſupport the infinite diviſibility of *Extenſion*, are bottomed on them. At preſent we ſhall only obſerve in general, whence it is that the mathematicians are all ſo fond and tenacious of this doctrine.

The theorems and demonſtrations in geometry are converſant about univerſal ideas, which is to be underſtood in this ſenſe: To wit, that the particular lines and figures included in the diagram, are ſuppoſed to ſtand for innumerable others of different ſizes; or in other words, the geometer conſiders them abſtracting from their magnitude; which doth not imply that he forms an abſtract idea, but only that he cares not what the particular magnitude is, whether great or ſmall, but looks on that as a thing indifferent to the demonſtration. Hence it follows, that a line in the ſcheme, but an inch long, muſt be ſpoken of, as though it contained ten thouſand parts; ſince it is regarded not in itſelf, but as it is univerſal only in its ſignification, whereby it repreſents innumerable lines greater than itſelf, in which may be diſtinguiſhed ten thouſand parts or more, though there may not be above an inch in it. After this manner the properties of the lines ſignified are (by a very uſual figure) transferred to the ſign, and thence through miſtake thought to appertain to it conſidered in its own nature.

Becauſe there is no number of parts ſo great, but it is poſſible there may be a line containing more; the inch line is ſaid to contain parts more than any aſſignable number; which is true, not of the inch taken abſolutely, but only for the things ſignified by it. But men not retaining that diſtinction in their thoughts, ſlide into a belief that the ſmall particular line deſcribed on paper contains in itſelf parts innumerable: There is no ſuch thing as the ten thouſandth part of an inch; but there is of a mile or diameter of the earth, which may be ſignified by that inch. When therefore I delineate a triangle on paper, and take one ſide not above an inch, for example, in length to be the radius; this I conſider as divided into ten thouſand or an hundred thouſand parts, or more. For tho' the ten thouſandth part of that line conſidered in itſelf, is nothing at all, and conſequently may be neglected without any error or inconveniency; yet theſe deſcribed lines being only marks ſtanding for greater quantities, whereof it may be the ten thouſandth part is very conſiderable, it follows, that to prevent notable errors in practice, the radius muſt be taken of ten thouſand parts, or more.

From what hath been ſaid the reaſon is plain why, to the end any theorem may become univerſal in its uſe, it is neceſſary we ſpeak of the lines deſcribed on paper, as though they contained parts which really they do not. In doing of which, if we examine the matter throughly, we ſhall perhaps diſcover that we cannot conceive an inch itſelf as conſiſting of, or being diviſible into a thouſand parts, but only ſome other line which is far greater than an inch, and repreſented by it. And that when we ſay a line is infinitely diviſible, we muſt mean a line which is infinitely great. What we have here obſerved

ſeems to be the chief cauſe, why to ſuppoſe the infinite diviſibility of finite *Extenſion* hath been thought neceſſary in geometry. The ſeveral abſurdities and contradictions which flowed from this falſe principle might, one would think, have been eſteemed ſo many demonſtrations againſt it; but, by I know not what logic, it is held that proofs à poſteriori are not to be admitted againſt propoſitions relating to infinity. As though it were not impoſſible even for an infinite mind to reconcile contradictions; or, as if any thing abſurd and repugnant could have a neceſſary connection with truth, or flow from it. But whoever conſiders the weakneſs of this pretence, will think it was contrived on purpoſe to humour the lazineſs of the mind, which had rather acquieſce in an indolent ſcepticiſm, than be at the pains to go thro' with a ſevere examination of thoſe principles it hath ever embraced for true.

Of late the ſpeculations about infinities have run ſo high, and grown to ſuch ſtrange notions, as have occaſioned no ſmall ſcruples and diſpute among the geometers of the preſent age: Some are of great note, who not content with holding that finite lines may be divided into an infinite number of parts, do yet farther maintain, that each of thoſe infiniteſimals is itſelf ſubdiviſible into an infinity of other parts, or infiniteſimals of a ſecond order, and ſo on *ad infinitum*. Theſe, I ſay, aſſert there are infiniteſimals of infiniteſimals of infiniteſimals, without ever coming to an end. So that according to them an inch doth not barely contain an infinite number of parts, but an infinity of an infinity of an infinity *ad infinitum* of parts. Others there be who hold all orders of infiniteſimals below the firſt to be nothing at all, thinking it with good reaſon abſurd, to imagine there is any poſitive quantity or part of *Extenſion*, which, though multiplied infinitely, can never equal the ſmalleſt given *Extenſion*. And yet, on the other hand, it ſeems no leſs abſurd, to think the ſquare, cube, or other power of a poſitive real root, ſhould itſelf be nothing at all; which they who hold infiniteſimals of the firſt order, denying all of the ſubſequent orders, are obliged to maintain. Have we not therefore reaſon to conclude, that they are both in the wrong, and that there is in effect no ſuch thing as parts infinitely ſmall, or an infinite number of parts contained in any finite quantity? But you will ſay, that if this doctrine obtains, it will follow the very foundations of geometry are deſtroyed: And thoſe great men who have raiſed that ſcience to ſo aſtoniſhing an height, have been all the while building a caſtle in the air. To this may be replied, that whatever is uſeful in geometry and promotes the benefit of humane life, doth ſtill remain firm and unſhaken on our principles. That ſcience conſidered as practical, will rather receive advantage than any prejudice from what hath been ſaid: But to ſet this in a due light, may be the ſubject of a diſtinct inquiry. For the reſt, tho' it ſhould follow that ſome of the more intricate and ſubtil parts of ſpeculative mathematics may be pared off without any prejudice to truth; yet I do not ſee what damage will be thence derived to mankind. On the contrary, it were highly to be wiſhed, that men of great abilities and obſtinate application would draw off their thoughts from thoſe amuſements, and employ them in the ſtudy of ſuch things as lie nearer the concerns of life, or have a more direct influence on the manners.

If it be ſaid, that ſeveral theorems undoubtedly true are diſcovered by methods in which infiniteſimals are made uſe of, which could never have been, if their exiſtence included a contradiction in it. I anſwer, that upon a thorough examination it will not be found, that in any inſtance it is neceſſary to make uſe of or conceive infiniteſimal parts of finite lines, or even quantities leſs than the *minimum ſenſibile*: Nay, it will be evident this is never done, it being impoſſible. Thus far D. *Berkeley*.

On the other hand it is obſerved by an eminent mathematician, that geometricians are under no neceſſity of ſuppoſing that a finite quantity or *Extenſion* conſiſts of parts infinite in number, or that there are any more parts in a given magnitude than they can conceive or expreſs: It is ſufficient that it may be conceived to be divided into a number of parts equal to any given or propoſed number, and this is all that is ſuppoſed in ſtrict geometry concerning the diviſibility of magnitude. It is true, that the number of parts, into which a given magnitude may be conceived to be divided, is not to be fixed or limited, becauſe no given number is ſo great but a greater than it may be conceived and aſſigned: But there is not therefore any neceſſity for ſuppoſing that number infinite; and if ſome may have drawn very abſtruſe conſequences from ſuch ſuppoſitions, geometry is not to be loaded with them. See Mr. *Maclaurin*'s Treatiſe of Fluxions, Art. 290.

Though geometricians are under no neceſſity of ſuppoſing a given magnitude to be divided into an infinite number of parts, or to be made up of infiniteſimals, they cannot ſo well avoid ſuppoſing it divided into a greater number of parts than may be diſtinguiſhed in it by ſenſe in any particular determinate circumſtances. But they find no difficulty in conceiving this; and ſuch a ſuppoſition does not appear repugnant to the common ſenſe of mankind, but on the contrary to be moſt agreeable to it, and to be illuſtrated by common obſervation. It would ſeem very unaccountable, not to allow them to conceive a given line, of an inch in length for example, viewed at the diſtance of ten feet, to be divided into more parts than are diſcerned in it at that diſtance; ſince by bringing it nearer a greater number of parts is actually perceived in it. Nor is it eaſy to limit the number of parts that be perceived in it when it is brought near to the eye, and is ſeen through a little hole in a thin plate; or when by any other contrivance it is rendered diſtinct at ſmall diſtances from the eye. If we conceive a given line that is the object of ſight to be divided into more parts than we perceive in it, it would ſeem that no good reaſon can be aſſigned, why we may not conceive tangible magnitude to be divided into more parts than are perceived in it by the touch, or a line of any kind to be divided into any given number of parts, whether ſo many parts be actually diſtinguiſhed by ſenſe, or not. If the hyperbola and its aſymptote were accurately deſcribed, they would ſeem to ſenſe to join each other, at various diſtances from the center, according to the different circumſtances in which they might be perceived; but we may conceive the ordinate at the point where they ſeem to join to have a real magnitude, in the ſame manner as we conceive a given line to ſubſiſt when it is carried to ſo great a diſtance that it vaniſhes to ſight, or any ſmall particle (as an atom in the ſun-beams) to exiſt, tho' it eſcape the touch, or have no tangible magnitude. It may perhaps illuſtrate this, if it be it conſidered, that the curve cannot be ſaid to meet its aſymptote in this caſe, in the ſame ſenſe that a circle is ſaid to meet its diameter, which it appears to interſect in all caſes, whatever the diſtance or poſition of the figure, or the acuteneſs of the ſenſe may be; whereas the ordinate of the hyperbola that vaniſhes to ſight at a great diſtance, becomes viſible at a leſs diſtance; and may be diſtinguiſhed into more and more viſible parts, in proportion as it approaches to the eye, or the ſenſe is more acute. And ſurely it muſt be allowed that there is ground for a difference between a line that eſcapes the ſight and vaniſhes, becauſe of its diſtance from the eye, and a line that in no caſe can ever be perceived, or can be ſuppoſed to have any exiſtence. Perhaps it will be ſaid by ſome, that, ſtrictly ſpeaking, it is not the ſame line that in thoſe different circumſtances has a greater and leſs number of viſible parts. In anſwer to this, it is ſufficient for our purpoſe to obſerve, that as there can hardly be any philoſopher but will allow that there is ſome ſenſe in which it is the ſame inch-line that has more viſible parts at eight inches diſtance from the eye than when it is held at the length of the arm; ſo it is not incumbent on us to explain in what ſenſe this is to be underſtood according to every ſcheme of philoſophy: It is enough that this ſenſe muſt be ſuppoſed to be plain and obvious, as it is univerſal, and that geometricians ought to be allowed to conſider lines and figures in this ſenſe as well as every body elſe. Philoſophers and the vulgar equally conceive the ſun and planets, and the other objects of their obſervation and enquiries, to be the ſame bodies, when ſeen at different diſtances or different times: And if they were not allowed to conſider thoſe bodies as made up of more parts than are perceived by ſenſe, and geometricians were under the ſame limitations as to magnitude in general, they would not be a little perplexed; nor is it the more intricate and ſubtile part of thoſe ſciences only that would be thus pared off. The learned author above-mentioned tells us, "That the magnitude of the object which "exiſts without the mind, and is at a diſtance, continues al-"ways invariably the ſame[a]." He ſeems to ſpeak of tangible magnitude. It is not our buſineſs here to enquire how, according to his doctrine, tangible magnitude can be conceived to exiſt without the mind any more than viſible magnitude. This conceſſion perhaps is made only for the ſake of his argument in this place; but the evidence for the exiſtence of ſuch an object may very well be ſuppoſed to approach to that which we have for the exiſtence of any other objects that are not immediately perceived by us. And ſince he admits it, and argues from it, in this treatiſe; it would ſeem that ſome invariable magnitude is to be allowed, which we apprehend by the ſight, though not immediately; and that this magnitude may be conceived to be divided into any given number of parts, from the demonſtrations propoſed by geometricians on this ſubject[b]. In applying which, it ought to be remembered, that a ſurface is not conſidered by them as a body of the leaſt ſenſible magnitude, but as the termination or boundary of a body; a line is not conſidered as a ſurface of the leaſt ſenſible breadth, but as the termination or limit of a ſurface: Nor is a point conſidered as the leaſt ſenſible line, or a moment as the leaſt perceptible time; but a point as a termination of a line, and a moment as a termination or limit of time. In this ſenſe they conceive clearly what a ſurface, line, point, and a moment of time is[c]; and the *poſtulata* of Euclid being allowed and applied in this ſenſe, the proofs by which it is ſhewn that a given magnitude may be conceived to be divided into any given number of parts, appear ſatisfactory: And if we avoid the ſuppoſing the parts of a given magnitude to be infinitely ſmall, or to be infinite in number, this ſeems to be all that the moſt ſcrupulous can require.[d]—[[a] New Theory of Viſion, §. 55. [b] Ibid. §. 54. [c] The Analyſt, §. 31. [d] Mr. *Maclaurin*'s Treat. of Fluxions, Art. 290, 291.]

EXTENSION *of fractured Limbs*, in ſurgery. When the fractured bones maintain their natural ſituation, the ſurgeon has nothing to do but to apply a proper bandage to keep them in it; but when the

the fractured parts recede from one another, ſome degree of *Extenſion* is neceſſary, which muſt always be ſuited to the diſtortion of the limb. The greater diſtance there is between the extremities of the divided parts of the bone, ſo much the ſhorter will the limb become from the natural contraction of the muſcles, and the *Extenſion* muſt be proportionably the greater; but, in theſe caſes, every thing is to be done tenderly, and with great care. 1. The patient is to be kept very firm and ſteady; the poſture of the body muſt be, in this operation, different, according to the different circumſtances of the caſe; ſometimes ſitting, and ſometimes lying, are the moſt proper. 2. An aſſiſtant muſt ſupport the limb with his hands, both above and below the fractured part. 3. The perſon who holds the lower part of the limb, muſt extend it ſtrongly and equally, till the fractur'd bone can be replaced; but when the ſurgeon is called at ſome diſtance of time from the accident, and a tumour and inflammations are come on; it is beſt, in ſuch caſe, to defer the *Extenſion* of the parts till theſe ſymptoms are removed, by letting blood, looſening the bowels, giving the patient large quantities of aqueous fluids, and preſcribing the proper internal remedies for abating inflammations, and fomenting the parts with warm diſcutient decoctions. Theſe applications will uſually ſucceed ſo well as to take down the inflammation, in twenty-four hours, in ſuch a manner, that the *Extenſion* of the limb may be ſafely attempted; but when they do not take place ſo ſuddenly, they are to be repeated till they have the deſired effect; and where the common fomentations fail, the following has often very great and happy ſucceſs: Take two or three handfuls of ſcordium, and boil them for about a quarter of an hour in a pint of water, with ſix ounces of rectify'd ſpirit of wine, afterwards mix with it an ounce of common ſalt, and half an ounce of ſalt petre, and uſe this to the inflamed fractur'd limb. To make the proper *Extenſion* of a limb, the ſurgeon muſt, while it is kept at its proper length by two aſſiſtants, direct it with his hands, ſometimes a little one way, ſometimes another, putting it into different poſitions, as the nature of the caſe ſhall require, till the parts have recovered their natural ſituation. This will be known by the remiſſion or abſence of pain, and by obſerving, that the fractur'd limb is of the ſame length with the ſound one; and if theſe ſigns of ſucceſs, in the operation, are wanting, there is great reaſon to ſuppoſe, that the operation is as yet ineffectual, and the *Extenſion* is to be repeated or continued till the bones are evenly and properly replaced. *Heiſter*'s Surg. p. 108.

EXTENSOR (*Cycl.*)—EXTENSOR *Digitorum Communis*, a compound muſcle, very much reſembling the perforatus and perforans, and lying on the outſide of the fore arm, between the ulnaris externus and radialis externus. It is fixed above, by a tendinous extremity, to the poſterior and lower part of the external or great condyle of the os humeri; and, by a tendinous adheſion on each ſide, to the ulnaris and radialis externus. It has likewiſe ſometimes a ſmall inſertion in the radius; it is divided into four muſcles, like the perforatus and perforans, and four long ſlender ſmall tendons. Three of theſe tendons paſs through the common external annular ligament of the carpus; and the fourth, which goes to the little finger, and which has ſometimes its fleſhy portion diſtinct from the reſt, paſſes thro' a particular ring of the ſame ligament. Afterwards theſe four tendons ſeparate as they go to the fingers, and, in their paſſage, communicate with each other by oblique tendinous ſeries, chiefly near the heads of the metacarpal bones. The tendons of the middle and little finger are ſometimes double, and yet communicate with the reſt.

Each tendon having reached the baſis of the firſt phalanx, is ſlightly inſerted therein by ſome lateral expanſions, fixed in each ſide of the baſis; from thence it advances to the head of the ſame phalanx, where it is divided into two flat portions, which, at the articulation of the firſt phalanx with the ſecond, leave ſome diſtance between them. About the head of the ſecond phalanx they unite again, and are fixed in the convex ſide near the baſis in the third phalanx. The ſeparation of the two portions is, in ſome ſort, rhomboidal, and each portion is ſtrengthened by a common tendon of the lumbricales and interroſſei, and in the ſmall ſpaces between them are ſmall tendinous fræna, more or leſs tranſverſe. *Winſlow*'s Anatomy, p. 199.

EXTENSOR *Digitorum Pedis longus*, a long muſcle, fleſhy in its upper part, but tendinous in the lower, lying between the tibialis anticus and peronæus maximus. It is fixed above by fleſhy fibres in the outſide of the head of the tibia, and inſide of the head of the fibula, in the upper part of the interoſſeous ligament, thro' three fourths of the length of the fibula, and thro' the ſame ſpace, in the tendinous ſeptum belonging to the anterior angle of that bone. It ſeems to mix ſome fibres on each ſide with the two firſt peronæi and tibialis anticus, and is very cloſely united with the peronæus maximus. It contracts in breadth a little above the annular ligament, and, in paſſing through it, is divided into three tendons, the firſt of which is afterwards again divided into two. Theſe four tendons are inſerted along the upper or convex ſide of the bones of the four ſmall toes. *Winſlow*'s Anatomy, p. 222.

EXTENSOR *Digitorum Pedis brevis*, a ſmall complex muſcle, lying obliquely on the convex ſide of the foot, called alſo *pedicus*. It is fixed in the upper and outer ſide of the anterior apophyſis of the aſtragalus, and in the adjoining part of the upper ſide of that bone. Thence it runs obliquely inwards, and is divided into four fleſhy portions, which terminate in four tendons. The firſt is inſerted in the upper part of the firſt phalanx of the great toe, and the other three, joining with thoſe of the *Extenſor longus*, are inſerted along the convex ſides of all the phalanges of the three following toes. When there is a fifth tendon, which ſometimes happens, it goes in the ſame manner to the little toe. *Winſlow*'s Anatomy, p. 223.

EXTENSOR *Indicis proprius*, a ſmall long muſcle, with a long ſlender tendon, lying a little obliquely on the lower and outer half of the fore arm, between the ulna and the fore finger. It is fixed by its fleſhy body, a little higher than the loweſt third part of the outſide of the ulna, below the inſertion of the *Extenſor pollicis*, and it has likewiſe a ſmall adheſion to the interoſſeous ligament. From thence it runs down, ending in a diſtinct tendon, without any communications, which having paſſed through the annular ligament of the *Extenſor communis*, afterwards joins that tendon which goes to the index. *Winſlow*'s Anatomy, p. 200.

EXTENSOR *Minimi Digiti proprius*, a collateral or auxiliary muſcle of the *Extenſor communis*, of which it appears almoſt always to be more or leſs a portion. It is fixed along the ſuperior external half of the ulna, from whence its long ſmall tendon runs down in company with the fourth tendon of the *Extenſor communis*, all the way to the little finger, where it joins it, and is inſerted with it. Sometimes this muſcle is wanting, in which caſe the *Extenſor communis* ſends a double and ſometimes a treble tendon to the little finger. *Winſlow*'s Anatomy, p. 200.

EXTENSORES *Pollicis Manus*, two very diſtinct muſcles, the firſt, or longeſt of which, is ſometimes more, ſometimes leſs, and ſometimes altogether divided into two, in which caſe theſe muſcles are three in number. They are ſituated obliquely between the ulna and the convex ſide of the thumb.

The *extenſor primus* is a long muſcle, more or leſs double, and is fixed above by fleſhy fibres, firſt to the outſide of the ulna, near its upper extremity, below the anconæus minor and inſertion of the ulnaris externus; next to the interoſſeous ligament, under the ſupinator brevis; and laſtly, to the middle part of the outſide of the radius.

From thence it runs down, and paſſes anteriorly over the lower part of the radius, and tendons of the ſupinator longus and radialis externus; and being gradually divided, it terminates in two long flat tendons, more or leſs ſubdivided, which paſs together under a particular annular ligament, being only parted by ſepta or fræna belonging to that ligament. The firſt of theſe two principal tendons is inſerted in the edge of the baſis of the firſt phalanx, near the large tranſverſe ligament of the carpus; when this tendon is ſubdivided, the other portion of it is fixed in that bone of the carpus which ſuſtains the thumb. The other principal tendon, which often belongs to a muſcle entirely diſtinct from the former, is fixed in the convex ſide of the baſis of the ſecond phalanx, where it joins the tendon of the extenſor ſecundus. On account of theſe different inſertions of the two tendons, this muſcle is, by ſome authors, deſcribed as two.

The *Extenſor ſecundus* is ſhorter than the firſt; it is fixed to the ulna below the former, and above the inſertion of the *Extenſor indicis proprius*; and likewiſe to the neighbouring part of the interoſſeous ligament. From thence it runs down obliquely on the middle part of the radius, where it has alſo a ſmall adheſion; after this it paſſes thro' the ſmall channel in the ſtyloide apophyſis of the radius, thro' the annular ligament belonging to the tendons of the radialis externus, and over theſe tendons, being parted from them by a ſmall ligamentary ſeptum. It is inſerted in the convex part of the third phalanx near its baſis, having, as it paſſes over the ſecond phalanx, joined the ſecond or collateral tendon of the firſt *Extenſor*, more or leſs. *Winſlow*'s Anatomy, p. 196.

EXTENSOR *Pollicis longus*, a thin ſingle muſcle, lying between the tibialis anticus and *Extenſor digitorum longus*, by the laſt of which it is almoſt hid. It is fixed to the inſide of the fibula, near the interoſſeous ligament, from the neck down to the loweſt quarter of that bone; to the interoſſeous ligament thro' the ſame ſpace, and a little to the lower extremity of the tibia next the fibula. It there ends in a conſiderable tendon, which paſſing through a diſtinct ring of the common annular ligament, and then through a membranous vagina, is inſerted in the baſis of the firſt phalanx of the great toe, and continued up to the ſecond. *Winſlow*'s Anatony, p. 221.

EXTENSOR *Proprius Auricularis*, in anatomy, a name given, by Albinus, and ſome other late authors, to one of the muſcles of the hand, called by Cowper, and others, the *Extenſor minimi digiti*. Vid. *Supra*.

EXTENSOR *Tarſi*, in anatomy, a name given by Douglaſs, and ſome others, to a muſcle, more generally known by the name of the plantaris. See PLANTARIS.

EXTERMINATION, or EXTERMINATING, (*Cycl.*) in algebra, is uſed for taking away. Thus algebraiſts ſpeak of *exterminating* ſurds, fractions, and unknown quantities, out of equations. See *Maclaur.* Algebr. part 1. ch. 12. where

we

we have ſome general theorems for the *exterminating* unknown quantities in given equations.

EXTERNUS *(Cycl.)*—EXTERNUS *Duverni*, a name given by Douglaſs to one of the muſcles of the ear, called by Cowper and others *obliquus auris*, and by Albinus *Externus mallei*.

EXTERNUS *Mallei*, in anatomy, a name given by Albinus to one of the muſcles of the ear, called by others *obliquus auris* and *muſculus Externus auris*.

EXTINGUISHING *of Fires*.—The world has long been in an opinion, that a more ready way than that in general uſe, might be found for *extinguiſhing* fires in buildings, and it has been generally attempted upon the doctrine of exploſion. Zachary Greyl was the firſt perſon who put this plan into execution with any tolerable degree of ſucceſs. He contrived certain engines eaſily manageable, which he proved before ſome perſons of the firſt rank, to be of ſufficient efficacy, and offered to diſcover the ſecret by which they were contrived, for a large premium given either from the crown or raiſed by a ſubſcription of private perſons. But this ſcheme meeting with no better ſucceſs than things of this nature uſually do, he died without making the diſcovery: Two years after this the people who had his papers found the method, and it was ſhewn before the king of Poland and a great concourſe of nobility at Dreſden, and the ſecret purchaſed at a very conſiderable price. After this the ſame perſon carried the invention to Paris and many other places, and practiſed it every where with ſucceſs.

The ſecret was this. A wooden veſſel was provided holding a very conſiderable quantity of water, in the center of this there was fixt a caſe made of iron plates and filled with gunpowder; from this veſſel to the head of the larger veſſel containing the water, there was conveyed a tube or pipe, which might convey the fire very readily thro' the water to the gunpowder contained in the inner veſſel. This tube was filled with a preparation eaſily taking fire and quickly burning away; and the manner of uſing the thing was to convey it into the room or building where the fire was, with the powder in the tube lighted. The conſequence of this was, that the powder in the inner caſe ſoon took fire, and with a great exploſion burſt the veſſel to pieces and diſperſed the water every way; thus was the fire put out in an inſtant, tho' the room was flaming before in all parts at once. The advantage of this invention was that at a ſmall expence and with the help of a few people, a fire in its beginning might be extinguiſhed; but the thing was not ſo general as it was at firſt expected that it would prove, for tho' of certain efficacy in a chamber or cloſe building, where a fire had but newly begun, yet when the miſchief had encreaſed ſo far that the houſe was fallen in, or the top open, the machine had no effect. This was the thing firſt diſcovered by Greyl, and from which our chemiſt Godfrey took the hint of the machine, which he called the water-bomb, and would fain have brought into uſe in England. Act. Eruditor. Ann. 1721. p. 183. See the article WATER-*Bomb*.

EXTINGUISHMENT *(Cycl.)*—EXTINGUISHMENT *of Common*, in law. By purchaſing of lands wherein a perſon hath common appendant, the common is *extinguiſhed*. Cro. El. 594. A releaſe of common in one acre, is an *Extinguiſhment* of the whole common. *Shower*'s, Rep. 350. And where a perſon hath common of *Vicinage*, if he incloſes any part of the land, all the common is extinct. 1 *Brownl.* 174. If a man hath a high-way appendant to land, and afterwards purchaſeth the land wherein the high-way is, the way is extinct.

EXTINGUISHMENT *of Liberties*, in law. If liberties and franchiſes granted by the king, come again to the crown, they ſhall not be *extinguiſhed*; but it is otherwiſe in the king's grants of felon's goods, waifs, ſtrays, wrecks, *&c.* 9 Rep. 25.

EXTIRPATIONE, in law, a judicial writ, either before or after judgment, that lies againſt a perſon, who when a verdict is found againſt him for land, *&c.* doth maliciouſly overthrow any houſe, or *extirpate* any trees upon it. Reg. Jud. 13. p. 56.

EXTRACT *(Cycl.)*—Mr. Geoffroy who well knew the value of this form of medicine, attempted to improve upon the common method of making *Extracts*, and ſucceeded greatly to his wiſhes; the conſequence of which was his preſenting to the academy of ſciences at Paris his method of doing it.

The hint was taken from a method uſed by the Count Lagarais, to make what he called his eſſential ſalts of plants; which were only dry extracts, prepared by powdering the ſubſtance, and then keeping it in continual motion for ſix or ſeven hours in ſome common water, by means of a chocolate mill turned by a large horizontal wheel; after the matter had ſubſided for an hour, the remaining liquor was poured off and evaporated over a balneum mariæ, or in the ſun, and a valuable dry *Extract* prepared. The method of this proceſs made it impracticable in large quantities of medicines, and Mr. Geoffroy removed the great difficulties that attended it by proving from repeated experiments, that boiling or infuſing the ſubſtances in hot water, extracted from them all that was got out by the long motion of the mill; as was inſtanced in the moſt familiar manner, in the common way of making tea and coffee, which were found to impregnate water with as much of their virtue by the methods of infuſion and decoction, as by ever ſo long an operation in the Count's method. The expence of making *Extracts* of this kind, cannot but be greater than that of managing the ſame medicines any other way; but the eaſe of taking, and the ſmall doſe, cannot but ſufficiently recommend them; and according to Mr. Geoffroy's method, the ſick may prepare them for himſelf. Mr. Geoffroy gives ſome examples of his ſucceſs in theſe preparations.

He took a dram of ſena in powder, and pouring on it a quantity of hot water he left it in infuſion twenty-four hours, then filtering the infuſion he evaporated the liquor in a balneum mariæ, to the thickneſs of a thin ſyrup, and ſpreading this over the bottoms of two or three broad earthen plates he evaporated the remaining humidity over the ſame balneum, and procured twenty-four grains of a dry *Extract*, wholly reſembling Count Lagarais's ſalts, and operating in the ſame manner and with the ſame virtue as a dram of ſena; whether taken in powder, or bolus, or diſſolved in any fluids, in any of which forms it had nothing of the nauſeous taſte of ſena.

The reaſon of ſpreading the remainder of the firſt evaporation on earthen plates is, that unleſs it be thus extended in a thin cruſt it will not dry regularly. The leaves of gratiola, which are a ſtrong purge, being treated in the ſame manner, gave the ſame quantity of a dry *Extract*, which proved a good purge in a doſe of eight, ten, or twelve grains.

Other purgative medicines ſucceeded on trial in the ſame manner; and every one muſt be ſenſible of the value of theſe preparations, which will operate gently, yet ſufficiently in a ſmall doſe and in form of a taſteleſs powder; when he conſiders the neceſſity of giving purges to children; and the antipathy many people have to the taking large doſes of nauſeous cathartics. Memoirs Acad. Scienc. Par. 1738.

The Peruvian bark, whoſe virtues are ſufficiently known, is another medicine very formidable from its large doſe. It uſed to be common to take two drams of it at once in powder when it came firſt into practice; but this doſe was found inſupportable, and infuſions in wine and in water, and *Extracts* made in the common way, were uſed in its ſtead: all theſe however ſtill required large doſes, and retained the diſagreeable taſte of the medicine; but this is perfectly remedied by this method of making a dry *Extract*, which reduces every doſe of the bark to one third of the quantity, and cures as certainly, as when taken in ſubſtance in the whole, ſince the the juices of the ſtomach could have extracted no more virtue from the powder, than the water in the infuſion from which this *Extract* was made does. The utmoſt care in making an *Extract* from a dram of the bark with ſpirit as well as water, can procure only twenty-four grains, the remainder being an inſipid and uſeleſs matter; it is plain therefore that the whole virtue of the dram lies in this twenty-four grains, and ſince this can be ſeparated by water and given alone, why ſhould the palate be offended, or the ſtomach loaded with ſuch a quantity of uſeleſs matter, as two thirds of every common doſe. It is very plain that the method of preparation of even theſe *Extracts* is very troubleſome, but it is much leſs ſo than that of Count Lagarais's ſalts, as it ſpares the buſineſs of the mill; but the ſmallneſs of the doſe and eaſe of taking the medicines uſually moſt of all diſliked, when reduced to this form, muſt recommend it to thoſe who are to give them to nice palates or tender conſtitutions.

EXTRACTS of writings or records, are notes thereof. See ESTREAT, *Cycl.*

EXTRACTA *Curiæ*, in our old writers, the iſſues or profits of holding a court, ariſing from the cuſtomary fees, *&c.* *Paroch.* Antiq. 572.

EXTRACTOR, in midwifry, an inſtrument contrived to extract children in caſes of difficult births. We have the deſcription of a forceps for extracting children by the head, when lodged low in the pelvis of the mother, in the Medic. Eſſ. Edinb. Vol. 3. Art. 20. See alſo the Abridgment of this book Vol. 2. p. 438. where ſome alteration is mentioned of this inſtrument from Giffard's midwifry, and an improvement of it by Mr. Freke.

EXTRACTUM *Catharticum*, a form of medicine in the London Diſpenſatory, intended as an equivalent for the *Extractum Rudii*, commonly called Rudius's pill: it is made in this manner, take ſocotrine aloes an ounce and half, pith of coloquintida ſix drams, ſcammony, and the leſſer cardamom ſeeds huſked, of each half an ounce, proof ſpirit a pint; pour the ſpirit on the coloquintida cut ſmall, then add the ſeeds bruiſed; draw a tincture with a gentle heat continued four days, then to the tincture preſſed out, add the aloes and ſcammony firſt ſeparately reduced to powder, and theſe being diſſolved draw off the ſpirit, and reduce the maſs by evaporation to the conſiſtence of a pill. This is for many reaſons a better compoſition than the Rudius's pill. *Pemberton*'s, Lond. Diſpenſ. p. 168.

EXTRAMUNDANE *Space* is the infinite, empty, void ſpace, which is by ſome ſuppoſed to be extended beyond the bounds of the univerſe, and conſequently in which there is really nothing at all.

EXTRA-PAROCHIAL, ſignifies to be out of any pariſh; thus, where any thing is privileged, and exempt from the duties of

a parish, it is said to be *Extra-parochial.* Stat. 22. & 23. *Car.* 2.

EXTRAVASATED *Blood.* In the contusions, fissures, depressions, fractures, and other accidents of the cranium, one or more of the blood vessels distributed on the dura mater are frequently divided. The blood that is discharged from these vessels greatly oppresses the brain and disturbs its offices, frequently brings on pains and other mischiefs, and often death itself, unless the patient be timely relieved. If the quantity of *extravasated* blood be ever so small, it will certainly corrupt, and affect the meninges, and the brain itself with the same disorder; and from hence will proceed violent inflammations, deliriums, and ulcers, and finally death; and this will frequently be the case, after a violent blow upon the cranium, though the bone should escape without injury. In these injuries of the head, the blood is spilt either between the cranium and the dura mater, or between the dura and pia mater, or between the pia mater and the brain, or lastly into the sinuses of the brain. Either of these cases is attended with very great danger, but the deeper the extravasation happens, so much greater must the danger be. Blood *extravasated* in the cavity of the cranium, will be discovered from the violence of the symptoms that succeed a blow on the head; as if the patient lies still without sense or motion, if blood flows from the mouth, ears, or nose; if the eyes are much inflamed and swelled; if vomitings succeed; when upon the remission of these symptoms the patient complains of a remarkable heaviness of head, sleepiness, vertigo, blindness, spasms, and disorders of this kind. When the quantity of *extravasated* blood on these accidents is very considerable, and oppresses the cerebellum, the patient dies upon the spot; but when it is not in a very large quantity, or does not affect the cerebellum, life still remains, but the symptoms just mentioned come on. In this case, if no fissure or contrafissure is to be found, nor any external injury on the integuments of the head after a violent blow, it proves very difficult to find in what part of the head the extravasation is seated. It will be proper in this case first to shave the head all over, and then thoroughly to examine it, for if any part is softer than ordinary, or is enlarged, or red from stagnating blood, it is plain that this is the part that has received the injury. But if neither this way, nor by enquiry among the persons present at the accident, you can get light into the affair, it will be proper to cover the whole head with an emollient plaister, laying over it medicated bags of herbs, *&c.* well heated. This application will in a few hours time produce a tumour and softness upon the injured part. Sometimes the patient also, tho' he lies speechless, and seemingly senseless, will be continually puting his hand to the injured part; and if either side of the patient has lost sense or motion, and is become paralytic, it is an apparent sign, whatever some might think to the contrary, that the injury has been received on the contrary or sound side. If after accidents of this kind you can discover any wound in the skin, that must be enlarged with the knife till the injury on the cranium, of whatever kind it be, is come at.

When the seat of the injury is discovered, the first intention is to discharge the *extravasated* blood, and then to clean the wound, and remove all splinters, or extraneous bodies. Some have recourse on these occasions to the instant use of the trepan; but patients have been often very successfully recovered without it. It is therefore best first to open a vein, and take away as much blood as the strength of the patient will permit; this will take off the impetus of the vessels, and prevent the *extravasation* of more blood. Prescribe after this a brisk purge to lessen the quantity of the fluids; foment the head with medicated bags, and apply a melilot plaister to it; endeavour to rouse the patient by volatile applications to the nostrils, such as sal volatile, spirit of sal armoniac, or spirit of hartshorn; and give frequently attenuating fluids, such as the decoctions of betony, sage, rosemary, lavender-flowers, sassafras, and the like. This method does not immediately produce the desired effect, but is to be continued for some time, and the prescriptions frequently repeated, particularly when the bad symptoms seem by degrees to abate; and if the patient finds relief from the first bleeding, it will be proper to repeat it a second or third time, especially if he be of an athleletic constitution. When notwithstanding this method, the symptoms are found however rather to encrease than abate, it will be necessary to make a perforation in the cranium with the trepan, to give a passage for the discharge of the confined grumous blood, and when there is no finding out the part affected, the skull must be perforated in several parts till the right is found. *Heister*'s Surg. p. 90.

EXTRAVERSIO, in chemistry, a term used to express the rendering manifest any thing saline, alcaline, or acid, concealed in mixed bodies; and is just the reverse to one of the species of concentration, which hides these qualities.

EXTREME *(Cycl.)*—Extremes, in right angled spherical trigonometry. When one of the five circular parts of a right angled spherical triangle, *viz.* (the three sides and two oblique angles, for the right angle is neglected) is pitched upon for the middle term, then the two circular parts lying immediately next to it are called *Extremes conjunct*; and the two parts remote from the assumed middle part, or not immediately next it, *Extremes disjunct.* See Spherical and Triangle, *Cycl.*

EXTREMITIES *of Figures*, in painting, is used for the head, hands, and feet. These should be drawn with more nicety and exactness, or more terminated than other parts; and thus help to render the action more expressive.

EXTUBERANCES, in medicine, are swellings forth, or risings up in the flesh, or other parts of the body.

EXUCONTIANI, a branch of Arian heretics. See Exucontii.

EXVERRÆ, in antiquity, a kind of brush used in cleansing houses, out of which a dead person had been carried. *Pitisc.* Lex. Ant. in voc.

EXUPORA, in botany, a name by which some authors have called the verbena or common vervain. *Ger.* Emac. Ind 2.

EXUVIÆ *(Cycl.)*—The outer integument of the body, which in man and other larger animals is so durably fixed on the body, is in many of the animals of the reptile kind much more loosely fixed, and is changeable several times during the period of their lives. The serpent kind all shift their skins several times in their lives, and the water-newt has been lately observed to do the same; but no creature in the world does it so often as the caterpillar, almost every species of these insects throwing off their old skin once in ten or twelve days, or less; and this in such a manner as is extremely worthy an attentive observation. Malpighi observed that the common silkworm changed its skin four times during its continuance in that state; the first of these changes happening at eleven or twelve days from its appearance from the egg, and the others at the distance of five or six days each; and probably the rest of the caterpillar kind observe nearly the same periods.

Neither is this change of the skin confined to the few creatures we have mentioned; but among the whole insect class, the most numerous of that of all animated beings we know, there is scarce one species every individual of which does not throw off its skin, once at least, before it arrives at its full growth. The term changing the skin is scarce expressive enough for this operation in the caterpillar kinds; for the creature throws off the external covering of every the minutest part and organ of its body, and the skins they thus deposit have so much the appearance of a compleat insect, that they are very often mistaken for such, presenting us with every thing that we see in the external appearance of the living animal. If the caterpillar has been one of the hairy kinds, the skin which it throws off is hairy, containing the integument as it were of every hair and of each of the legs; and even the claws and other parts which are not visible without the assistance of a microscope, are as plain in this as in the living animal. But what is most of all amazing, is to find that the very solid parts which form the head are also found in the *Exuviæ*, the skull and teeth being plainly distinguishable in them; it is easy to conceive that this must be a strange operation, for an animal in this manner to withdraw the several parts of its body out of their sheaths and cases which they have plainly been fitted into in so nice a manner, and particularly the throwing off an old skull and teeth to make way for new ones, seems an act beyond all comprehension. The operation however appears as tedious and painful to the animal as we can expect; if we examine it strictly, a day or two before this change happens, the creature always refuses to eat, and loses its former activity, either never walking at all, or at the utmost but very slowly; tho' they do not move out of their places, however, they are very full of some particular motions in their body, they turn themselves about from side to side, and often elevate their back and then gently depress it again; they frequently raise up their heads and strike them down rudely against the thing they stand upon, and frequently the anterior half of the body is raised from the place, and thrust very briskly backwards and forwards from side to side, for three or four times together. These are the more obvious motions, but beside these there are other less sensible ones within every ring, these are separately inflated and contracted again alternately, and by this means the skin is greatly loosened from them, and by these motions and the remaining without food, it is that the body by degrees disengages itself from the skin. *Reaumur*, Hist. Ins. V. 1. p. 1. p. 225.

Those caterpillars which live in communities retire into their web which serves them for a habitation, at the time that they are to get off their skins; and those who live solitary and have no such web always spin themselves a silky net-work over the stalk or leaf of a plant, at the time that their change of skin is approaching; the use of this is to entangle their legs in, that they may give a resistance to the motions afterwards to be made by the body in order to throwing off this covering. When the time of the change approaches, all the colours of the skin grow faint and lose their beauty, being deprived of the power of receiving juices for its nourishment, and becoming as it were dry. The skin is then in the condition of the leaf of a tree, which receives no more nourishment and is drying and ready to fall off; and when the creature continues its swelling and shrinking in again of its several rings, at this time the skin being no longer supple or extensible as before, cracks along the middle of the rings on the back of the animal. The second or third ring from the head are always the

part where the crack begins, and immediately on its opening, the new ſkin is ſeen within, and looſe from it, and is eaſily known by the freſhneſs of its colours. As ſoon as the opening is once made, the creature eaſily enlarges it, thruſting up its body, in part, out at the crack, and making it ſerve in the office of a wedge, to enlarge and lengthen out the ſlit; by this means the creature ſoon extends the crack thro' four rings, and it has then a ſpace large enough for it to draw out its whole body at. The firſt efforts are made at the head, which, by ſeveral motions and turnings about, is at length made to be looſened, and finally drawn wholly out of the old ſkull, and elevated through the crack. This is then laid ſoftly upon the old ſkin of that part, and the ſame ſort of motions in the tail end, diſengaging that, in a little time it is alſo drawn out, and in the ſame manner laid ſmoothly and evenly upon the old ſkin. As difficult as this laſt operation may ſeem, it is very ſpeedily effected. It takes the animal indeed many days to prepare for it, but when the crack is once made in the ſkin, the whole remaining work is done in leſs than a minute. The beſt method for obſerving this amazing work, is by ſeeking out a neſt of thoſe caterpillars that live in communities. Theſe are very common in gardens, and in the hedges; and, as many hundreds of them change their ſkin in one day, it is eaſy to be apprized of their being about it, by ſeeing the ſkins hang upon the web; and if they are watched, upon that ſignal, the whole will be ſoon ſeen performed by ſeveral of them, often by many at a time. *Reaumur*'s Hiſt. Inſ. vol. 1. p. 229.

The hairs which are found upon the caſt ſkins of the hairy caterpillars, ſeem, at firſt ſight, to be like the other part of that *Exuvia*, only the caſes or coverings of thoſe parts, in the incloſed inſect; but, in reality, this is found not to be the caſe in regard to them, whatever it be in all the others.

Mr. Reaumur obſerved three or four hairy caterpillars, at the time when they were juſt preparing for their change; and when they ſhewed the very firſt ſigns of its approaching, by ceaſing to eat and move, he cut, with a fine pair of ſciſſars, many of the hairs off, as cloſe to the body as he could. When the change was perfected, and this ſkin thrown off, he examined the hairs of the parts, correſponding to thoſe he had cut them ſhort upon in the old ſkin, while yet upon the animal. If theſe had been the caſes of the new hairs, thoſe muſt certainly have been cut ſhort with them; but, on the contrary, they were found, in the caterpillar, as long in thoſe parts as in any others. It appears from hence, that though all the other parts thrown off are but the ſheaths and caſes to what they covered, yet the hairs are real and ſolid things themſelves; and hence it appears, that the creature, when hatched from the egg, muſt have all its ſkins perfectly formed, one lying under another, and each furniſhed with its covering of hairs, ſo that the old ones are to fall off with the old ſkins, and the new ones to appear with the new; and probably theſe may be one great means of forcing off and diſlodging the old ſkin from every part, by the creature's erecting them in part. *Reaumur*'s Hiſt. Inſ. vol. 1. p. 241.

In making theſe hairs, however, ſo great a means of getting off the ſkin in the hairy caterpillars, we ſeem to leave the ſmooth ones a much harder taſk to execute the ſame operation without theſe aſſiſtances; but probably the ſame ſort of mechaniſm is uſed by all, and all are furniſhed with the ſame ſort of means to accompliſh it, tho' theſe are leſs obvious in ſome than in others.

Many of thoſe caterpillars which appear ſmooth to the naked eye, are found to be really hairy, when examined by the microſcope; and others are covered with a ſort of little eminences or protuberances, which may very well ſerve to the ſame purpoſes in diſlodging the old ſkin.

When a nice diſſection of the upper ſkin is made longitudinally in the place where the crack is to happen for the animals getting out of its old ſkin, and this is done in a caterpillar juſt going to change, the ſkin may be, with care, taken clean off, and the arrangement and diſpoſition of the hairs on the new ſkin, while under cover of the old one, is eaſily ſeen. The hairs on this are diſpoſed in the moſt nice and artful manner imaginable, for their lying ſmooth under the upper ſkin. It is well known that theſe grow all in ſeparate tufts, and each of theſe tufts of hair are found diſpoſed in ſuch directions, that they never lie upon one another, but together form one ſurface, ſome being laid toward the back, others toward the belly, and ſome in other leſs regular directions. Some caterpillars have large tufts of hairs near their heads or tails, or both. Theſe reſemble true feathers, and muſt take up much more room under the ſkin than the others, yet theſe, as well as the ſingle hairs, are contained under the ſkin; for if thoſe of the old ſkin be cut off a few days before the change, the new ones will not be found mutilated by that means, but as long and perfect as if nothing had been done. And theſe alſo, on taking off the upper ſkin, are ſeen laid in a beautiful order on the under one, in the animal, before the change of its ſkin.

One thing very remarkable, in regard to this change of the ſkin in theſe animals, is, that they always appear, immediately after their coming out of the old one, much larger than they did before. The thick tufts of hair on ſome might ſeem to occaſion this appearance; but it muſt be a reality, ſince it is an obſervation as old as Malpighi, that the very head and ſkull are greatly larger, after this change, than they were immediately before. This, however, will be underſtood, if we conſider the operation of the crayfiſh in changing its ſhell. It in the ſame manner is found to appear much larger, when out of the ſkin, than before; and this is, in both caſes, owing to this, that the body had grown ſo much, that it was too big for its covering, which appears to be the principal reaſon of its quitting it. While it remained in it, however, the parts were all compreſſed together, and forced to lie in that narrow room, but as ſoon as the external covering, which occaſioned that compreſſion, is off, every part diſtends itſelf to its proper ſize, and the creature therefore appears much larger than it did before.

It is very certain, that ſo large a ſkull, being of a hard ſubſtance, in the caterpillar, could not have been compreſſed into or contained in the ſmaller, before the change: But the real fact is, that the new ſkull never hardens till the change approaches, and then but imperfectly. It acquires, at that time, thro' neceſſity, from the ſhape of the place it lies in, an oblong form; and in this ſhape is found, a few hours before the old ſkin is caſt off, not incloſed within it, but extending itſelf under the ſkin of the firſt ring of the body. When the old ſkull is thrown off, with the ſkin, the new one is as yet ſoft, and ſoon becomes of its proper rounded figure. *Reaumur*, Hiſt. Inſ. vol. 1. p. 243.

EY, in our old writers, the ſame with *inſula*, an iſland; from which comes *eyet*, a ſmall iſland or iſlet, vulgarly called *eyght*.

EYE (*Cycl.*)—It is no uncommon thing for the *Eyes* to be terribly moleſted by extraneous bodies, accidentally fallen into them, ſuch as a bit of ſand, a ſplinter of wood, the cutting of a quill, or of one's nails, a ſmall inſect, or the like. The moſt eaſy method of getting theſe bodies out, is the opening and extending the eyelid with one's fingers, and agitating it, holding the head down; by this means the foreign bodies are often waſhed out of the *Eye*, by the encreaſed flux of tears, without much difficulty. If this does not ſucceed, the beſt method is next to blow ſome levigated crabs-eyes, or the like fine powder, under the eyelid, that this, being waſhed out by the tears, may carry alſo the other bodies out with it. *Heiſter*'s Surgery, p. 364.

If all this fails, the eyelid muſt be gently and carefully lifted up, and the offending body ſought for, and carefully taken out with the end of a probe, or the like inſtrument. Or another method, is the dipping a fine pencil bruſh, or a ſmall piece of ſponge, tied to a ſmall ſtick, into warm water, and paſſing it under the eyelid, and by that means puſhing the offending matter out. Lime, or any other acrid ſubſtance, ſhould always be waſhed out with milk, or milk and water, and the *Eye*, after theſe accidents, be waſhed with a collyrium made of roſe water, with a little of the white of an egg beat up in it, and a ſmall admixture of ſaccharum ſaturni, or powder of tutty, and if there be any conſiderable inflammation, it will be proper to bleed.

It is well known, from inſpection, and from the writings of anatomiſts, that there are two veins which run one on each ſide the noſe, thro' the canthi majores, or greater corners of the *Eyes*; theſe proceed partly from the forehead, and partly from the *Eyes*, and, like the frontal vein, diſcharge their blood down into the external jugular veins. Bleeding in theſe canthal veins has been approved of by all occuliſts, for inflammations, and other diſorders of the *Eyes*, tho' perhaps with very little ſolid foundation. When this operation is to be performed, a ſtricture is made about the neck, and when the inciſion has been made, the patient muſt hold his head in a proper poſition for the blood to flow, without being troubleſome to his *Eye* or mouth; and when the neceſſary quantity of blood has been diſcharged, a thick triangular compreſs muſt be applied, and ſecured on, with a proper bandage. *Heiſter*'s Surgery, p. 282.

Running of the EYES, in infants. See INFANT.

Scarification of the EYES is a chirurgical operation, by many confounded with that of bleeding in the eyes, but improperly enough, ſince the parts of the operation are different; for bleeding is confined, in this organ, to the white of the eye alone, whereas ſcarification is practiſed as well upon the inner ſurface of the eyelid, as on the white of the eye; and they are alſo performed by different inſtruments.

This is no new operation, ſince Hippocrates, Celſus, *&c.* all preſcribed it, but, of later ages, it grew much into diſuſe.

To perform this operation, the patient is to be ſeated in a good light, and his head held ſtill by an aſſiſtant, while the ſurgeon preſſes his thumb and forefinger on the eyelids, ſo as to open them, and turn them outward, that their interior red ſurface may come into view, this is much more conveniently performed on the under than on the upper eyelid. When the ſurface is thus turned up, the ſurgeon draws the ſcarifying inſtrument backward and forward over it with great ſwiftneſs, as alſo over the white of the *Eye*, if there be occaſion, and, by this means, opens all the turgid veſſels, and makes them bleed

bleed plentifully; this ſhould be promoted by fomenting the *Eye* with a ſpunge dipped in warm water. *Heiſter*'s Surgery, p. 379.

When the operation is over, great care is to be taken, that the wounded parts do not cohere together; the patient muſt move the eyelids about at times to prevent this, and the eye, when bound up at night, muſt have a piece of gold-beater's ſkin applied between the eyelids and the *Eye*.

Many different inſtruments have been uſed for the making the ſcarification. Hippocrates uſed a prickle of a thiſtle, and Celſus and Ægineta, a ſteel raſp. Others have choſen the ſtalks of the naked horſetail, called ſhave-graſs, which do very well; but the beſt of all inſtruments is a beard of barley or rye; theſe beards are furniſhed with rows of ſharp teeth or hooks, and ten, twelve, or fifteen of theſe, are to be cut, and tied together by a ſtring, ſo as to reſemble a bruſh, the teeth of each beard being turned outward all round. Their ſlender ends, in this caſe, form a ſort of handle, by which the body of the bruſh may be moved about.

Contuſions of the EYE. When the *Eye* is, by any accident, contuſed, it will be entirely deprived of ſight, unleſs the contuſion be ſlight, or the proper remedies inſtantly applied. If the *Eye* have received a very ſlight contuſion, it will be proper to waſh it frequently, for the firſt day, with cold ſpring water, laying on it linnen rags, wet with the ſame: On the next day it muſt be rubbed externally with camphorated ſpirit of wine, and covered up with ſtuphs wrung out of decoctions, made in wine of eye-bright, ſpeedwell, hyſſop, ſage, chamomile flowers, and fennel ſeeds; but if theſe things are not to be had, bolſters dipped in warm wine muſt be applied, and renewed very often, and, if the patient be of a plethoric habit, bleeding is alſo neceſſary. If the contuſion of the *Eye* is ſo violent, that you can plainly ſee the extravaſated blood thro' the cornea, and all objects appear red to the patient, a vein muſt be opened either in the foot or neck, the *Eye* muſt be kept continually fomented with warm ſtuphs, wrung out of the ſame decoctions as are before mentioned, and the feet muſt be bathed in warm water two or three times a day, and a few drops of pigeons blood muſt be, two or three times a day, put into the *Eye*; and if all theſe attempts prove fruitleſs, you may very probably ſucceed, by making an opening in the cornea with a lancet. *Heiſter*'s Surgery, p. 97.

Wounds of the EYE. If the *Eye* is wounded, but not ſo as to let out the vitreous or cryſtalline humour, the wound muſt be anointed two or three times a day, with a feather, or fine rag, well dipped in the white of an egg, or elſe in a mucilage made of quince ſeeds, or of fleawort ſeeds, in roſe water; and, after each dreſſing, a compreſs is to be laid on, well ſaturated with a collyrium, made of the whites of eggs. N°. 2. Two ounces and a half of roſe water, half a dram of oil of roſes, and three grains of camphor, well mixed together, and thoroughly ſhook up every time it is to be uſed. If the accident is attended with any great degree of inflammation, as is very frequently the caſe, it will be proper to cover the ſmall compreſs, firſt laid over the *Eye*, with a larger, dipped in warm ſpirit of wine, with camphor. The bowels muſt, in this caſe, be kept open, and the patient blooded, if of a plethoric habit. And if it happen, that the cryſtalline humour, or any part of it, ſticks in the orifice of the wound, it muſt, in this caſe, be pulled out, that it may not bring on a deformity, or worſe miſchief, to the *Eye*. *Heiſter*'s Surgery, p. 80.

Falling out of the EYE. See PROLAPSUS *Oculi*.

Eyes of FISH. Theſe differ ſo much in the ſeveral kinds, that they make a very eſſential part in their deſcription, and often are characters ſufficient for the diſtinguiſhing the ſpecies. Their differences are in regard to their figure, ſituation, proportion, and integuments. In regard to their figure, ſome are flat and depreſſed, as is the caſe in the greater number of fiſhes. 2. Some are convex, as is the caſe in the pleuronecti of many kinds; the *Eyes* of theſe much reſemble thoſe of quadrupeds, the others are very different. 3. Some are rounder than ordinary, as in the Cyprini, conger and petromyzon; and laſtly, ſome are oblong, as the *Eyes* of the eſoces. *Artedi*, Ichthyolog.

Theſe are the differences of the *Eyes* of fiſh, as to figure: In regard to their ſituation they alſo differ as much: 1. In moſt fiſh they are placed in the ſides of the head; inſtances of this poſition are ſufficiently common. 2. In ſome they are placed both in the upper part of the head, as in the uranoſcope, or ſtar-gazer. 3. They are, in ſome, placed very cloſe to one another, as in the pleuronecti, and, in others, they are ſet at very remarkable diſtances, as in the clariæ. They differ alſo greatly in proportion, in reſpect to the body of the fiſh. Thus they are very ſmall in the whales, and other cetaceous fiſhes; and they are as remarkably large in the apua, boops, and gaſteroſteus.

The *Eyes*, in fiſh, differ alſo greatly in regard to their integuments. In ſome fiſh they are free, and are only covered with their proper membranes, as in the ſalmon, cyprini, *&c.* 2. They are, in ſome, covered in part with the ſkin of the head, as in the clupea, mackrel, *&c.* 3. In ſome they are wholly covered with the ſkin of the head, as with a ſort of veil. Examples of this kind there are in the ſyngrathi, pleuronecti, petromyza, and others.

The pupil of the *Eye* is, in moſt kinds of fiſh, either round or oblong; but in ſome, as in the ſalmons and coregones, they run out into an acute angle in the anterior part. The colour of the iris, in ſeveral fiſh, is ſo very diſtinct, that it makes a very obvious and diſtinctive character.

The *Eyes* of almoſt all fiſh are without eyelids, properly ſo called; but ſeveral kinds have, beſide the membranes, and common tunics, a ſort of tranſparent membrane, with which the *Eye* is in part, at times, covered. The cetaceous fiſhes, in particular, ſeem to have real eyelids: Tyſon has demonſtrated them in his accurate and excellent anatomy of the phocæna.

EYES *of Flies*. Every naturaliſt has obſerved, that the *Eyes* of flies are of a reticulated texture; and each reticulated *Eye*, of this kind, is truly an aſſemblage of multitudes, often of many thouſands of ſmall but perfect *Eyes*. The reticulated *Eyes* of flies are large, not only in proportion to the ſize of the creature, but abſolutely and in themſelves. But the ſeveral ſmall *Eyes*, of which they are compoſed, are remarkably minute, in compariſon with thoſe of the butterfly claſs.

Many of the butterfly claſs have, in each of their reticulated *Eyes*, many thouſand ſmall *Eyes*; but the fly claſs greatly exceed them in number of theſe, as many of the *Eyes* of theſe are three times as large as thoſe of the butterflies, and beſides, that each ſmaller *Eye* is vaſtly more minute than the ſmall *Eyes* of the butterflies.

That part of each ſide of the head of a fly which is cut, as it were, into a multitude of ſmall facets, is one of the reticulated *Eyes* of the creature, and is uſually ſomewhat elevated above the ſurface of the reſt of the head, but differently, and of a different form and extent in the ſeveral different flies. *Reaumur*'s Hiſt. Inſ. vol. 4. p. 239.

It is the cuſtom of nature to allot two of theſe reticulated *Eyes* to each fly, and, as they each contain ſuch a vaſt multitude of ſmaller but perfect *Eyes*, one would imagine this to be very ſufficient for all the occaſions of the animal. There are, however, notwithſtanding, certain flies of the ephemeron, or day-fly kind, which have four of theſe reticulated *Eyes*, two of which are placed as is uſual in the fly kind, and are but of ſmall extent; the other two have each the appearance of a ſort of turban, and are placed one beſide the other, upon the upper part of the head.

Theſe have each much of the figure of a muſhroom, the head of it extended a little beyond the ſtalk, and the upper convex ſurface, cut into almoſt an innumerable quantity of facets. Id. Ibid. p. 240.

The firſt pair of the reticular *Eyes* of this fly, which are placed as thoſe of the other flies, are, in colour brown; thoſe of the muſhroom form are of a very beautiful citron colour, and as tranſparent as the moſt pellucid reticular *Eyes* of the other flies; for, among the various ſpecies of flies, ſome have theſe *Eyes* much more tranſparent than others.

The fly, thus remarkably furniſhed with *Eyes*, is produced from a worm of the ſame kind with the common ſpecies of ephemerons; its body is of a pale yellow, and its wings white; the two inferior ones of theſe are ſo ſmall, that they are not eaſily diſtinguiſhed.

Among the fly claſs, theſe reticular *Eyes* are, in different ſpecies, of different colours; there are ſome which have them brown, others yellow, others green, and others red, and this in all the different ſhades of thoſe colours.

Some of them have alſo the gloſs of metals highly poliſhed, others afford us a view of changeable colours, and others have arrangements of different colours, but thoſe fixed and invariable. Id. Ibid. p. 241.

The *Eyes* of one ſpecies of the gad fly, ſo troubleſome to oxen, have ſtreaks of red, green and brown, placed alternately.

One would imagine, that, as every fly has two of theſe reticular *Eyes*, each compoſed of ſuch a multitude of real *Eyes*, they could have no occaſion for any *Eyes* beſide theſe; but ſo it has not appeared to the great hand that formed them, for they have, many ſpecies of them at leaſt, other *Eyes* beſide theſe.

The *Eyes*, already deſcribed, are properly called reticular ones, and, to avoid confuſion, it will be neceſſary to know the other *Eyes*, which are extremely different from thoſe, by ſome determinate name. Theſe other *Eyes*, when examined by the beſt microſcopes, appear of a perfectly ſmooth, gloſſy, and poliſhed ſurface, but plain and ſimple, without the leaſt appearance of a reticulated texture. Theſe are alſo much ſmaller than the reticulated *Eyes*, and may therefore be called, by way of diſtinction, the ſmaller *Eyes*, or the ſmooth *Eyes*. *Reaumur*'s Hiſt. Inſ. v. 4. p. 241.

Mr. De La Hire ſeems to have been the firſt perſon who diſcovered theſe little ſmooth *Eyes*, in the fly race. He obſerved three of them diſpoſed in a triangular form, on the back part of the heads of theſe little creatures. When he found that three ſmall convex ſhining bodies were uſually ſituated in this part, he ſoon diſcovered that they were tranſparent, and thence naturally judged them be of the ſame nature with the corneæ of our *Eyes*, and really to ſerve the ſame office to the creature poſſeſſed of them. Id. Ibid. p. 242.

We find three of theſe ſmooth *Eyes* placed triangularly on the back part of the head of vaſt numbers of the genera of flies,

flies, as well of the two-winged, as of the four-winged kinds; but there are alſo ſome flies of both theſe claſſes, in which they are wanting.

All the ſpecies of gnats, and all the ſpecies of tipulæ, are without theſe ſmooth *Eyes*. The heads of theſe ſpecies of flies are very ſmall, in proportion to the bulk of their body, and are, in a manner, covered with their reticular *Eyes*, which in ſuch a manner meet and touch one another, as to leave no room nor occaſion for the ſmooth *Eyes*.

Theſe flies have the want of their ſmall *Eyes* amply made up by the ſize and extent of the larger; but there are ſome other kinds which want them, but have not this advantage in their place. Of the two-winged flies, with ſhort bodies, the gad flies want theſe *Eyes*; and, among the longer-bodied, and four-winged kinds, the flies, produced from the puceron eaters, want them.

Notwithſtanding, therefore, that many ſpecies of flies have theſe *Eyes*, there are yet ſo many that want them, that if M. De La Hire's opinion, that the reticulated *Eyes* of flies were not true *Eyes*, held good, there muſt be very many of theſe inſects blind. Id. Ibid. p. 243.

Tho' moſt of the flies that have theſe *Eyes*, have three of them, and thoſe triangularly placed, yet there are ſome that have more, and ſome that have leſs, than that number. A certain fly which has two filaments attach'd to the hinder part of its body, and its hinder pair of legs faſtened to the annular portion of its body, has four of theſe ſmooth *Eyes* placed at the four corners of a ſquare; the two anterior tolerably large, and the two poſterior ſo ſmall as to be ſcarce diſtinguiſhable. And other flies, as the papilionaceous ones, produced of water worms, have only two of them. Ibid.

The poſition of theſe *Eyes* varies alſo in the different ſpecies of flies which are poſſeſſed of them, for tho' their uſual place is in the hinder part of the head, there are ſome which have them before. Some ſpecies of the ephemerons have three of theſe *Eyes*, which may be called large, in regard to their uſual ſize in other flies. The one of theſe is placed in the middle of the forehead; the other two at the roots of the antennæ, placed ſideways by them, but a little more backward. This ſpecies has two reticular *Eyes* beſide theſe, but they are ſmaller than is uſual in that ſpecies of fly. Ibid. p. 244.

Theſe *Eyes* are not peculiar to the fly claſs alone, ſome other of the inſects which have reticular *Eyes*, have theſe alſo, among which are the graſshopper, in which they are placed near the noſe.

Notwithſtanding that theſe *Eyes* are not well diſtinguiſhed in flies, without the aſſiſtance of glaſſes, they may, however, ſerve very well for the diſtinctions of genera, among thoſe ſpecies which have them. Id. Ibid. p. 245.

Theſe *Eyes*, though very ſmall in themſelves, yet, in compariſon with the ſingle *Eyes*, which form the reticular ſort, they are very large. See INSECT.

EYES *of Horſes*, in the manege, &c. Theſe ſhould be bright, lively, full of fire, pretty large, and full; but not too big, gogling, or ſtaring out of the head. They ſhould alſo be reſolute, bold, and briſk. A horſe, to appear well, ſhould look on his object fixedly, with a kind of diſdain, and not turn his eyes another way.

In the *Eye* of a horſe is diſcovered his inclination, health, and indiſpoſition. When the *Eyes* are ſunk, or that the *Eyebrows* are too much raiſed up, and, as it were, ſwelled; it is a ſign of viciouſneſs and ill nature. When the pits above the *Eyes* are extremely hollow, it is, for the moſt part, a certain ſign of old age: This, however, does not hold of horſes got by an old ſtallion; for theſe have them very deep at the age of four or five years, as alſo their eyelids and eyebrows wrinkled and hollow.

Two things are chiefly to be conſidered in the *Eye* of a horſe, *viz.* the cryſtalline part, and the bottom or ground. The cryſtalline, or moſt tranſparent part, ſhould, for clearneſs, reſemble a piece of rock cryſtal, otherwiſe the *Eye* cannot be good. When this part is reddiſh, it is a ſign that the *Eye* is inflamed, or elſe, as ſome pretend, influenced by the moon. When it is of the colour of a withered or dead leaf, upon the lower part, and troubled on the upper, it infallibly ſhews that the horſe is lunatic; which diſtemper continues no longer than while the humour actually poſſeſſes the *Eye*.

As to the ground, or bottom of the *Eye*, which is properly its pupil, or apple, it ſhould be large and full, and ought to be carefully inſpected, that there be no *dragon*, as it is called, on it. This is a white ſpot, or ſpeck, which at firſt appears no bigger than a grain of millet, but grows to ſuch a bigneſs, as to cover the whole apple of the *Eye*. It is incurable, never failing to make a horſe blind in the *Eye* where it is found. If the whole bottom of the *Eye* be white, or of a tranſparent greeniſh white, it is a bad indication, tho' perhaps the horſe is not as yet quite blind: However, it ought to be obſerved, that if you view a horſe's *Eyes*, when oppoſite to a white wall, the reflection of it will make their apples appear whitiſh, ſometimes inclining to green, tho' they be really good. When this is perceived, you may try whether his *Eyes* have the ſame appearance in another place.

In caſe you perceive, above the bottom of the *Eye*, as it were, two grains of chimney-ſoot fixed thereto, it is a ſign the cryſtalline is tranſparent; and if, beſides this, the ſaid bottom be without ſpot or whiteneſs, then you may infer that the *Eye* is ſound.

You ought alſo to examine, whether an *Eye* which is troubled, and very brown, be leſs than the other; for if it be, it is irrecoverably loſt.

All *Eyes*, which are ſmall, narrow, and have long pupils, run a greater riſk of loſing the ſight than any others. See BLINDNESS.

The diſeaſes of the *Eyes*, in horſes, proceed either from a defluxion, or from ſome external hurt. In the former caſe, the *Eyes* are watery, hot, red, and ſwollen, the diſtemper advancing by degrees; in the latter, the malady comes ſpeedily to a height, and the ſkin on the outſide of the *Eye* is peeled off.

If the diſtemper takes it riſe from a rheum, or defluxion, it is to be conſidered, whether it proceeds from the *Eye* itſelf, or from another aggrieved part: In the latter caſe, the redreſſing of the part will ſet the *Eye* free; in the former, it is proper to cool the horſe's blood with an ounce of ſal prunellæ, mingled every day with his bran; and when it leſſens his appetite, to change it for liver of antimony, till he recovers his ſtomach.

For ſore *Eyes*, where a ſkin is growing over them, the following receipt is recommended: To the white of an egg add a little fine powdered ſalt; then ſet this on the fire till it be reduced to a powder. This, mixed with a little honey, is to be put into the horſe's *Eye* with a feather. If it is found inſufficient to eat off the ſkin, the powder alone muſt be blown into the *Eye* with a quill.

In caſe of a blow on the *Eye*, take honey, and, having added a ſmall quantity of powder of ginger, put it into the horſe's *Eye*; or elſe take hog's-lard, with the oil of roſes and elder, of each an equal quantity; then, having melted them together, anoint the *Eye* therewith.

Some horſes have naturally tender weeping *Eyes*, which void a ſharp eating humour; theſe are eaſily cured by waſhing or bathing them every morning and evening with brandy. See HORSE.

EYE *of the Branch of a Bridle*, in the manege, is the uppermoſt part of the branch, which is flat, with a hole in it, for joining the branch to the head-ſtall, and for keeping the curb faſt.

We ſay alſo, *a horſe unſhod of one eye*, which is a rallying expreſſion, importing that he is blind of an eye.

EYE *of a Bean*, in the manege, is a black ſpeck, or mark, in the cavity of the corner teeth, which is formed there about the age of five and an half, and continues till ſeven or eight. And 'tis from thence that we uſually ſay, ſuch a horſe marks ſtill, and ſuch a one has no mark.

EYE *of a Pear*, the extremity oppoſite to its ſtalk. See the article PEAR.

EYE, in a ſhip. The hole wherein the ring of the anchor is put into the ſhank, is called the *Eye of the anchor*; and the compaſs, or ring, which is left of the ſtrap to which any block is ſeized, is called alſo the *Eye of the ſtrap*.

EYE *of a Tree*, a ſmall pointed knot, to which the leaves ſtick, and from which the ſhoots or ſprigs proceed.

EYE-*Bright*. See EUPHRASIA.

EYE-BROWS *Wounded*. In wounds of this part, great care muſt be taken to guard againſt inflammations, leſt the *Eyes* ſhould partake of the injury; all hot and ſharp things muſt be avoided, in eating and drinking, and the patient ſhould be blooded, if plethoric; the wound muſt be dreſſed with vulnerary balſams, and the dreſſings covered with compreſſes, dipped in camphorated ſpirit of wine. If the wound be large, and the *Eyebrow* entirely divided, it will be neceſſary to uſe the ſuture and dreſs over it, with a vulnerary balſam, covering both *Eyes*, and keeping them as much as poſſible from motion. *Heiſter*, Surg. p. 79.

EYE-LIDS *Wounded*. Wounds, either of the upper or lower *Eyelid*, will not readily heal, not ſo much from the thinneſs of the parts, as from the great quantity of fluids with which the *Eye* is continually moiſtened. It is neceſſary, therefore, firſt to foment the part with decoctions of chamomile, hyſſop, or eyebright, till the flux of the blood is ſtopped, and the wound well cleanſed; then if the wound is tranſverſe, it muſt be ſtitch'd up in the middle with a fine needle, and ſprinkled over afterwards with the powder of comfrey root, gum arabic, or other ſuch medicines, or anointed with balm of Gilead, or Peru, or Capivi, laying over theſe applications a plaſter of Diachylon, and tying it up in ſuch a manner, that the *Eye* may have very little power to move about. If the wound is made lengthways, it will require ſeveral ſtitches, and muſt be dreſſed over them as before. *Heiſter*'s Surgery, 79.

EYE-GLASS, in our double microſcopes, is uſually a lens convex on both ſides; but Euſtachio Divini long ſince invented a microſcope of this kind, the power of which he places very greatly above that of the common ſort; and this principally depending on the *Eye-glaſs*, which was double, conſiſting of two plano-convex *glaſſes*, ſo placed as to touch one another in the middle of their convex ſurface. This inſtrument is

ſpoken

ſpoken of, with great credit, by Fabri in his optics, and is ſaid to have this peculiar excellence, that it ſhews all the objects flat, and not crooked, and takes in a large area, tho' it magnifies extremely much. Phil. Tranſ. N°. 40.

EYE-SUCKER, in natural hiſtory, a ſmall ſea inſect, which is ſometimes found fixed by the ſnout to the *Eyes* of ſprats; whence it has received its name,. It is about three inches in length, whereof the head is one quarter part. The body is ſomewhat thicker than a hog's briſtle, and of a pleaſant green colour. Phil. Tranſ. N°. 472. §. 7.

EYERY of hawks. See AERY, *Cycl.*

EYESS, a young hawk newly taken out of the neſt. See the articles FALCON and HAWK.

EZQUADUITL, a name by which ſome authors have diſtinguiſhed the tree from which we have the common dragon's blood of the ſhops. *Hernand.* p. 59.

F.

F, in the Italian muſic, is often uſed inſtead of *forte*. See FORTE.

FF, in the Italian muſic, ſtands for *forte forte*, and intimates to play very ſtrong and loud. *Broſs.* Dict. Muſ. in voc.

FABA, bean, in botany. See BEAN.

FABA *purgatrix*, in the Materia Medica, the fruit of a ſpecies of *Ricinus*. See RICINUS.

FABACIUM, a word uſed by the antients to expreſs a ſort of food then in uſe, which was a kind of cake made of bean meal.

FABAGO, in botany, the name of a genus of plants, the characters of which, are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral leaves, diſpoſed in a circular form. The piſtill ariſes from the cup, and finally becomes a ſeed veſſel of the ſhape of a cylinder, with ridges marking it into a ſort of pentangular form. It is quinquecapſular, it ſplits open in five places when ripe, and uſually contains flattiſh ſeeds. To theſe marks, it is to be added, that the leaves ſtand in pairs on the ſtalks.

We know only one ſpecies of this genus; called by different authors, *Fabago*, *Copparis fabaginea*, and *Copparis portulacæ folio*, and in Engliſh *Bean-capers*. *Tourn.* Inſt. p. 258.

FABALIS *lapis*, in natural hiſtory, a ſtone mentioned by many antient authors of repute, as found in the river Nile; of the ſhape of a common bean, and of a black colour. They ſay it had the virtue of curing dæmoniacs, and that dogs dare not bark, if it was laid before them. Theſe and many other like virtues, are attributed to this ſtone, to the great diſgrace of the ſober authors who relate them. The ſtone ſeems to have been of thoſe extraneous foſſils, which Dr. Hill has called *Ichthyperia*, from their having been formerly parts of the boney palates of fiſhes which feed on the ſhell-fiſh kinds; and other authors ſiliquaſtra, from their reſembling the pod of the lupine or bean.

FABARIA, in botany, a name given by ſome authors to the telephinum, or orpine; and by which it is in ſome places call'd in the ſhops. *Rupp.* fl. Jan. p. 103.

FABARIÆ *calendæ*, among the Romans, the calends of June, ſo called becauſe the beans being then firſt ripe, ſome of them were offered to the goddeſs Carna, the wife of Janus. *Hofm.* Lex. in voc.

FABATARIUM, among the antients, ſignifies, according to ſome, a large veſſel, in which beans were kept. Others will have it to have been a kind of diſh or plate into which bean-pulſe was put and offered to the houſehold gods. *Pitiſc.* Lex. Ant. in voc.

FABER, in ichthyography, the name of a fiſh, commonly known in England by the name of the doree, and called by ſome authors *gallus marinus* and *peſce di ſanto pietro*. It is a ſhort and very broad and flat fiſh, being every where of the ſame thickneſs, and ſomething approaching to the plaiſe in figure, but ſwiming upright. Its head is large and very much flatted, its mouth extremely wide, and its eyes large. Its ſides are of an olive colour, beautifully variegated with a bluiſh white; and in the middle of each ſide, there is one large black ſpot of the ſize of a ſilver two-pence. It has two fins on the back, the anterior is the higher, and has ten rigid ſpines, accompanied with ſofter and very large rays, which bend into the form of a reaper's ſickle. The tail ends in a circular figure. At the root of the hinder fin, there is on each ſide a row of ſmall hooked ſpines, bending obliquely, and furniſhed with other ſmaller and finer ſpines on their ſides; and the belly fin which is ſituated behind the anus, has a like ſeries of ſpines on each ſide. From the gills to the belly fins there are alſo two muſcular rows, and in the middle of theſe, there are two larger and ſharper thorns. The hinder part of the head alſo terminates in two ſpines, and lower down at the membranes of the gills, there are alſo on each ſide two more ſpines, the one ſhort and erect and the other larger and procumbent. Its uſual ſize is from ſix to ten inches in length, and it is commonly nearly half as broad as long. See Tab. of Fiſhes, N° 50. *Ray*'s Ichthyograph. p. 294.

The fleſh of the *faber* is well taſted, and by many preferred to that of the turbot. It is caught in the Mediterranean and other ſeas, and is not uncommon on the Cornwall coaſt, and other of the Engliſh ſhores.

The two ſpots on the ſides of this fiſh have given foundation to ſeveral ſtories, the principal of which are, that St. Chriſtopher when he carried our Saviour acroſs the water, caught hold of one of theſe fiſh in his hand, as he went thro', and left the marks of his fingers on all the race of it. And that St. Peter fiezing upon this fiſh at the command of our Saviour to get the money for the tribute penny, left on it an eternal memorial of that memorable incident, hence people have called it the Chriſtopher-fiſh and the St. Peter's fiſh.

FABER *Indicus*, the *Indian doreè*, a fiſh caught in many parts of the Eaſt Indies, and called by the Dutch there, the meer haen, the ſame with the Abacatuaia of Margrave, caught in the Braſilian ſeas. *Ray*'s Ichthyog. Append. 3. See ABACATUAIA.

FACE (*Cycl.*) — FACE, in the military language, a word of command; thus, *face to the right*, is to turn upon the left heel, a quarter round to the right. *Face to the left*, is to turn upon the right heel a quarter round to the left.

FACE *of a gun*, in the artillery, the ſurface of the metal at the extremity of the muzzle of a piece.

FACE *of a plant*, a word uſed by Tournefort and many other botaniſts to convey an idea of that general appearance of plants, which ſhews a ſameneſs in thoſe of the ſame genus, and a diverſity from other genus's, though not eaſily characterred in words, yet very obvious to an eye accuſtomed to theſe reſearches. Thus all the ſpecies of wormwood have the ſame general face, by which they may be taken to be ſpecies of the ſame genus, and ſo of many more; nay in ſome caſes, whole genera and even claſſes, have the ſame kind of family face, as it may be called, by which they may be known: as the umbelliferous plants, except the perfoliata, and a few other inſtances.

It has been attempted by many to make this general face an indicatory note of the virtues of the plant which wears it, and there would certainly be this great advantage in it, if it could be brought to any degree of certainty, that the moſt obvious of all diſtinctions, would be applied to the moſt valuable office: but tho' an abſolute certainty cannot be arrived at in an attempt of this kind, yet allowing for the poſſibility of a few exceptions, general conjectures may be made on the following rules, which will rarely fail. The umbelliferous plants before mentioned, make a very large claſs, and it is their general and obvious character to have their ſeveral flower branches ariſe from one center, and expand into an umbrella, every one having a tuft of flowers at the end; theſe flowers conſiſt of five leaves, and the ſeeds are naked and double, and the leaves of the plants are generally deeply divided, as in parſly, carrots and the like.

This is a general face of a plant not eaſy to be miſtaken, and all the plants which have this face are endowed with the virtues of carminative medicines. They expel wind and are good in the colic and other the like diſeaſes. The ſeeds of moſt of theſe are uſed, and of ſome the roots. The ſeeds of aniſe, caraway, cummin, and the like, are all ſeeds of umbelliferous plants, and the root of angelica is another inſtance of their efficacy. But as an exception to this general rule, the hemlock and hemlock dropwort may be produced, which are poiſons.

The verticillate plants are another claſs, which are eaſily known by their general face; their flowers ſtanding in ringlets round the ſtalks, and being labiated or of ſome ſuch form. The leaves alſo in moſt of theſe plants ſtand in pairs and they have generally an aromatick ſmell. As the virtues of the umbelliferæ lie in the roots and ſeeds, ſo do theſe in the husks of the flowers. It has been a common opinion, that the flowers of theſe plants contained their virtues, but this is erroneous. The flowers of ſage are almoſt inſipid, but the husks taſte very ſtrongly. Theſe plants in general are poſſeſſed of the ſame virtues, and are all of a middle degree between the carminatives before mentioned and the ſpices. They are properly aromaticks, and are all good in nervous diſeaſes, as epilepſies, palſies and the like; one of them which is called mother of thyme, is alone a remedy for the night-mare, a troubleſome diſeaſe, that often baffles other medicines; and the flowers of roſemary, lavender, ſage and the like, may ſtand as inſtances of the virtues of this claſs; and mint, pennyroyal, hyſſop, &c. in their leaves are of great virtue, and a pleaſant flavour.

The ſiliquoſe plants have alſo a ſame general face. Their flowers are compoſed of four leaves, and their ſeeds contained in long pods, or in ſhort and thick ſiliculæ. In theſe plants the ſeeds are found to contain the principal virtue in ſome, and in others the leaves: ſome have alſo virtue in their roots, but the flowers of all are neglected. Muſtard, creſſes and the like, have their virtue in the ſeeds, and ſcurvy-graſs in its leaves, horſeradiſh in the roots, yet all have the ſame general virtue, they are hot like the two laſt tribes, but they exert their power in a very different manner: it conſiſting in a diuretick volatile ſalt, and they are all good in the ſcurvy, dropſy, jaundice, &c. and have been uſed in theſe caſes at all times. Philoſ. Tranſ. N°. 255. p. 200.

External FACE, *Facies externa*, was uſed by Tournefort and other botaniſts, to expreſs the general external appearance of a plant; and by the Ichthyologiſts to expreſs a general form or figure in certain fiſhes, by means of which, they agree with ſome and diſagree with others; and according to which like-

neſs, or diſſimilitude, ſome authors of the late ages have arranged them into genera. This general figure in fiſhes conſiſts in the ſhape of the head and body, and the ſhape, ſize and proportion of the fins and tail, and tho' very obvious, is very indiſtinct; it being in many caſes where two fiſhes have the ſame general *external face*, yet hard to ſay on a cloſe examination, in what it is, that the likeneſs conſiſts. The authors who founded the diſtinction of the genera of fiſhes on theſe external reſemblances, ran into very great errors; for it is not enough in a generical diſtinction for the character to be obvious, but it muſt alſo be preciſe and determinate. What this *Facies externa* had in the firſt of theſe requiſites, it often wanted in the laſt; and in general, it has been found to be no true baſis of diſtinction.

Many fiſh have the *Facies externa*, or general appearance ſo alike, as to be eaſily coupled at ſight into the ſame genus, and that juſtly, as they really belong to the ſame, when more preciſely referred to it, according to their natural and more eſſential character. Of this kind, are the gadi, the clupeæ, the ſalmons, the petromyzæ, the coregones, the pleuronectæ, the rays, and many of the cyprini. In theſe the *Facies externa* is of real uſe, as it is an obvious mark, and leads to the road of truth; but there are beſide theſe many other fiſhes, which though they are truly of the ſame genus, yet differ extremely in their ſeveral external appearances, ſo that any method founded on the *Facies externa* muſt ſeparate them, though nature had really joined them in their real characters. The tench and the trutta lacuſtris, or lake trout, are in regard to their *Facies externa*, extremely alike one to the other, yet here this obvious character deceives us; for the tench is a ſpecies of the cyprinus, and the other a true and genuine ſalmon, two genera of fiſhes eſſentially and very widely different, tho' this method of judging by the external appearance, would have coupled together fiſh belonging to them both. In the ſame manner, the ſcorpæna and the cattus are very like one to the other in their external appearance, but when nicely examined according to the rules of Ichthyology, they are found to belong to two very different genera, and to have very little real likeneſs. From theſe and numerous other examples of a like kind, it evidently appears, that as the *Facies externa* cannot be depended on for the eſtabliſhing the genera of fiſhes, ſome more eſſential characters muſt be enquired after, for the regular and natural completing this neceſſary buſineſs. Therefore the generical characters of fiſh are to be ſought after, in their external and invariable parts, and they are to be arranged into families and genera, according to the agreement of theſe in number, ſituation, figure and proportion. Among all theſe, the characters taken from the number of the parts, where that is certain and invariable, are moſt valuable, as they moſt readily offer themſelves to the eye, and are leaſt of all liable to errors. *Artedi* Ichthyol.

FACETS, (*Cycl.*) among jewellers, a name given to the ſmall triangular faces, or planes, both in brilliant and roſe diamonds. In brilliants there are two ſorts, *skew* or *skill facets*, and *ſtar facets*. *Skill facets* are divided into upper and under.

Upper skill FACETS, are wrought on the lower part of the bezil, and terminate in the girdle.

Under skill FACETS, are wrought on the pavilions, and terminate in the girdle.

Star FACETS, are wrought on the upper part of the bezil, and terminate in the table. *Jeffries* on diamonds. See DIAMONDS.

FACETANUS *lacertus*, in zoology, the name of a peculiar ſpecies of lizard, called at Rome and Naples, the tarantola. See TARANTOLA.

FACK, in a ſhip, is any one round of a cable, when it is quoiled up out of the way.

FÆCES (*Cycl.*)—There have been many opinions of the great power of an oil to be drawn from the *human fæces*, one of which is the effect it is ſuppoſed to have on crude mercury, in fixing it at once into pure ſilver. Mr. Homberg was applied to, with great aſſurances of ſucceſs on this occaſion, and heartily engaged in it. The neceſſary characters of the expected oil were, that it ſhould be colourleſs as water, and void of ſmell; he at length found the way of procuring ſuch an oil as this, but when he had got it, it had not the properties expected in it. As the method of working on this diſagreeable matter, however at length furniſhed him with a very fine phoſphorus, it may be worth the attention of the curious.

An obſervation which he made very early in theſe reſearches was, that ten or twelve ounces of this ſubſtance, when the humidity was evaporated in a balneum mariæ, did not leave more than an ounce or thereabout of dry matter; yet all it loſt in this great evaporation, proved to be only its water, which when the receiver was examined, proved to be very clear and pellucid, and inſipid to the taſte, but ſmelling conſiderably ſtrongly of the matter it was made from. The ſalt, oil and earth of the ſubſtance, all remained behind, and it is remarkable, that all theſe do not make up above one eighth at the utmoſt, often but a tenth or twelfth of the whole. When this was afterwards more nicely examined, the ſalt in it was found to be about equal in quantity to the earth, and both theſe together, to be nearly equal to the oil. The oil of the *fæces* ſimply diſtilled, always appears black and ſtinking. Mr. Homberg to prevent theſe ill qualities, diſſolved it in warm water, allowing a pint to every ounce of the matter. This liquor was then filtered and evaporated to a pellicle, after which it yielded regular cryſtallizations of ſalts, adhering to the ſides of the veſſels; theſe may properly be called the eſſential ſalt of the *fæces*. This ſalt has ſome reſemblance of nitre, and in the manner of that ſalt, melts in the fire, but the flame of the fæcal ſalt is red and dull, whereas that of the ſalt petre is white and very lively; the reaſon of this difference evidently is, that in the one of theſe ſalts there is a large quantity of an oily matter, and in the other there is ſcarce any at all.

This ſalt diſtilled in a glaſs retort, affords toward the end of the operation, a reddiſh fœtid oil; this is preceeded by an aqueous liquor of an acrid and acid taſte. As this oil was not white or limpid, nor ſcentleſs, Mr. Homberg after ſeveral repetitions of the diſtillation, gave over the operation, and went to work again upon the matter ſimply dry'd in the balneum mariæ, and mixed with different intermediate ſubſtances as quick lime, lime extinguiſhed by the air, alum, colcothar, powder of bricks and the like; but all theſe operations only produced an oil more thin and fluid than the former, which ever ſo often repeated rectifications, only rendered clearer, not limpid, nor without its ſtinking ſmell, which it retained to the laſt.

In the diſtilling the fæcal ſalt alone, the matter in the retort always took fire at the time of the riſing of the oil; and in theſe diſtillations of the dried matter with the mixtures of alum or colcothar, when the whole was over, and the veſſels cold, on the opening them, the caput mortuum always in a few minutes took fire on being expoſed to the air. This flame often burſt the retort, and ſometimes when it did not do that, there came out a great body of flame at its mouth; and after that, the remainder at the bottom of the veſſel appeared for ſome minutes ignited in the manner of a burning charcoal.

Still however, the deſired limpid oil was not found; and as it had not been obtained by violent fires, the next trial was made by the gentler means of fermentation, by which the ſeveral principles of a mixed body are uſualy ſeparated one from another, by ſlow and gentle means. The matter was diſtilled to a dryneſs in a balneum mariæ, and afterwards the dry reſiduum being powdered, was mixed with ſix times its weight of its own diſtilled water, and put into a large cucurbit which being ſtopped by another glaſs and ſo made a double veſſel, was kept three months in a gentle balneum mariæ, the water of it being never made more hot than ſo as that one's hand might bear it; after this, a head being luted on to the cucurbit, the diſtillation was performed in the ſame balneum with a gentle fire; the aqueous humidity which came over was ſomewhat turbid, but had loſt its ſtink, having only a faint weak ſmell. This water on trial, proved an excellent coſmetick, by degrees recovering the skin to a delicate whiteneſs and ſoftneſs, tho' before ever ſo much impaired by weather. The remainder in the bottom of the cucurbit was found to have loſt juſt one twentieth part of its weight, and had wholly loſt its diſagreeable ſmell, being become ſomewhat fragrant and agreeable, with an aromatick flavour; the veſſel in which this proceſs had been performed being ſet by open in a corner of the laboratory, acquired after ſome time ſo ſtrong a ſcent of ambergriſe, that it was not to be endured, and was forced to be removed out of the laboratory. Any perſon would have thought it a veſſel in which ambergriſe had been made into eſſence. What can be more wonderful than that a ſimple digeſtion ſhould be thus of power to change one of the moſt diſagreeable ſmells in nature, into the ſcent of one of the fineſt perfumes. Mem. Acad. Par. 1711.

The dry matter taken out of the cucurbit was powdered and put by two ounces at a time into glaſs retorts that held about a pint and half of water, and diſtilled in a ſand heat; there firſt aroſe a little water, but after this came an oil perfectly colourleſs and limpid as water. The ſame degree of fire being continued, there afterwards aroſe an oil as red as blood: the receiver was changed, and theſe two oils kept aſunder; the firſt had ſcarce any ſmell, and what it had was aromatick, and the latter was very fætid and empyreumatick. The white or limpid oil being rectified, there was found to be produced of it, one ounce from every nineteen ounces of the dried matter; but even the fineſt and moſt colourleſs of this oil, will after about a year's keeping become red and change its grateful odour into an empyreumatick ſmell. The change of colour always begins at the bottom of the vial, and it gradually reddens all the way up to the ſurface of the oil. The reaſon appears to be this, that there was originally contained in this pure limpid oil, ſome ſmall quantity of the red oil in diſſeminated particles, and unperceived there, but that in long ſtanding theſe particles being different from the others, collected themſelves together, and by their weight ſubſided to the bottom of the veſſel, where by degrees they contaminated the oil next above them, and by degrees the whole quantity. Thus was the deſired oil obtained, but it had not the properties required of it, nor could by any means be made to effect any change

change in mercury; but by a few days digeſtion, either with that or any other metal, it always became red as blood and afterwards black. The caput mortuum of theſe oils left in the retort, is one of the fineſt of all phoſphori, it takes fire immediately on coming in contact with the air. Mem. Acad. Par. 1711.

FÆSTING-*men*. See FASTERMANS, *Cycl.*

FÆX *Vitri*, in chymiſtry, a name given by Rulandus and ſome other of the writers, unto the common nitre or ſaltpetre, and by others to pot-aſh.

FA FINTO, *a feigned* F, in the Italian muſic, is what we commonly call the flat of any note. *Broſ.* Dict. Muſ. in voc. See FLAT.

FAG, is uſed for a knot or excreſcency in cloth. Stat. 4. Edw. 4. c. 1.

FAGARA, in the Materia Medica, the name of a fruit reſembling the Cubebs, found in the Philippine Iſlands. The part of this fruit which contains the principal virtue, is the outer rind; this is tender and blackiſh and of an aromatick and ſomewhat acid taſte. When the berries are ripe, they eaſily break, and diſcloſe a black ſhining, ſolid kernel, void of taſte and ſmell. The berries according to Aviſenna, are heating and drying and good for a cold, weak ſtomach, to help digeſtion, and are aſtringent to the bowels. They were once much uſed, but of late are ſcarce known in the ſhops.

FAGGOT (*Cycl.*) — There is a thing worth obſerving to the owners of woods, in the article of the making up the underwood into *faggots*. The workmen when they have bound up the *faggot*, trim off the ſuperfluous branches from the ſides and end to make it more neat, and theſe they add to the middle of the next; but they are of little or no advantage there, and ought to be left on the ground, for being ſmall they would ſoon rot there, and would manure the ground ſo as to be of more advantage to the next growth, than is eaſily imagined. The leaves of the trees falling to the earth, manure it very much, but this is nothing to the advantage of theſe little pieces of wood: any rotten wood but in a moderate quantity, will turn a common bad earth, into good garden mould, and the growth of the young trees is more forwarded by this manure where it is left, than by any other means that can be uſed to it. We always ſee the land where wood-ſtacks have ſtood, enriched to a ſurpriſing degree by them, and the ſame advantage will be, wherever wood of any kind is left to moulder and rot upon the ground. *Mortimer*'s Husbandry, v. 2. p. 68.

FAGONIA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral petals, arranged in a circular form. From the center there ariſes a piſtil, which finally becomes a roundiſh fruit, pointed at the end, ſtriated and multicapſular, being compoſed of ſeveral ſmall vaginæ or caſes, each of which contains one roundiſh ſeed. *Tourn.* Inſt. p. 265.

The ſpecies of *Fagonia* are two.

1. The cretick prickly *Fagonia*, called by authors the prickly candy trefoil; and 2. The Spaniſh ſmooth *Fagonia*.

FAGOPYRUM, *Buckwheat*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the apetalous kind, being compoſed of ſeveral ſtamina ariſing out of a cup, divided into five ſegments at the edge. The piſtill finally becomes a triangular ſeed, which remains in a capſule, that was originally the cup of the flower; to this it is to be added, that the flowers grow in tufts, and the roots are fibrous. The ſpecies of *Fagopyrum* enumerated by Mr. Tournefort are theſe, 1. The common erect *Fagopyrum*. 2. The common wild climbing *Fagopyrum*, called black bindweed. 3. The great climbing American *Fagopyrum*.

The common *Fagopyrum* or buckwheat, is cultivated in many parts of England, and is a very great improvement of dry barren lands. The beſt ſeaſon for the ſowing it, is in May, and one buſhel of the ſeed is enough for an acre; the ground is to be dreſſed for it exactly as for barley, and if the ſoil is not very clean, it will yield a very large increaſe, as fifty buſhels an acre, and is excellent food for hogs and poultry. The flower of it is alſo very white, and mixed with wheat flower is eaten in ſome counties, and when broken in a mill, makes a fine addition to corn for horſes, making them ſoon grow fat. It is commonly late in the ſeaſon before it is ripe, but it is in no danger from ſtanding; when it is cut, it is uſually laid many days to dry before it is houſed. Beſides theſe uſes, ſome people ſow it very thick, and ſuffer it to grow up till it is near flowering, they then plough it in, and it makes a very good land for wheat or rye.

FAGOTTINO, in the Italian muſic, a name uſed for the ſingle curtail, which is a muſical inſtrument ſomewhat like the baſſoon. *Broſ.* Dict. Muſ. in voc.

FAGOTTO, in the Italian muſic, the name of the double curtail, being as big again as the fagottino, and in reality the ſame with a baſſoon. *Broſ.* Dict. Muſ. in voc.

FAGUS, *the Beech*, in botany, the name of a genus of trees, the characters of which are theſe. The flower is of the glomerated amentaceous kind, being compoſed of a great number of ſtamina, which ariſe from a bell-faſhioned cup. The embryo fruits grow in different parts of the tree, and finally become a hard and callous fruit of a pointed form, opening at the top into three parts, and containing two trigonal ſeeds. There is no other known ſpecies of this tree, but the common one. *Tourn.* Inſt. p. 884. See Tab. 1. of Botany, Claſs 19. and BEECH.

FAHNELEN, FANÆLEN, or VANLEHEN, among the Germans, a kind of greater fiefs, which the emperor alone could confer.

This was done by the delivery of a ſtandard, whence they had the name of *Fahnelen*, i. e. *feuda vexilli*. We find them mention'd in the golden bull of the emperor Charles IV. an. 1356. *Feudis principum exceptis, & illis quæ* Vanlehen *vulgariter appellantur, quorum inveſtituram & collationem ſoli imperatori, vel regi Romano ſpecialiter reſervamus. Du Cange*, Gloſſ. Lat. in voc. The word is more uſually written *Fahnlehn*.

FAIDA, in our old writers, is uſed for malice or deadly feud. Leg. Hen. 1. c. 88.

FAILURE *of Record*, in law, is uſed when an action is brought againſt a man, who alledges in his plea matter of record in bar of the action, and endeavours to prove it by the record. The plaintiff replies *nul tiel Record*, that is, he denies there is any ſuch record. Upon which the defendant has a day given him by the court to bring it in; and if he fails to do it, he is ſaid to fail of his record, and the plaintiff ſhall have judgment to recover. Terms de Ley.

FAINT *Pleader*, in law, a fraudulent, falſe, or colluſive manner of pleading, to the deceit of a third perſon. Againſt which among other things was made the ſtatute, 3 Edw. 1. c. 29.

FAINTS, in the diſtillery, the weak ſpirituous liquor that runs from the ſtill in rectifying the low wines, after the proof-ſpirit is run off. *Shaw*'s Lectures, p. 217.

FAINTS is alſo the laſt runnings of all ſpirits diſtilled by the alembick. The clearing the worm of theſe, is ſo eſſential a point in order to the obtaining a pure ſpirit by the ſucceeding diſtillation, that all others are fruitleſs without it.

FAINT *viſion*, in optics. See VISION.

FAINTING. See LIPOTHYMIA and SWOONING.

FAIT, *factum*, in law, is uſed for a writing lawfully executed to bind the parties thereto. See DEED, *Cycl.*

FAITHFUL, a deſignation the mahometans aſſume to themſelves. *Hoſm.* Lex. in voc. *Credentes*. See MUSSULMAN. *Cycl.*

FAITIERE, in natural hiſtory, the name of a ſpecies of ſhell-fiſh, called by many authors, by a much leſs determinate name concha imbricata. The French have thus called it, from the word *Faitage*, which in the ſame language, ſignifies the roof of a houſe. The ſhell is of the bucardium, or ox-heart kind, and has ſeven longitudinal ribs, and a great many laminæ running tranſverſely acroſs them, ſo that it greatly reſembles the roof of a houſe, where the rafters and croſs beams are ſeen while it is not covered with tiles.

FAITOURS, is uſed in the ſtat. 7. Ric. 2. cap. 5. for evil doers; and may be interpreted idle livers, from (ſays the author of the *Terms de Ley*) *Faitardiſe*, which ſignifies a kind of ſleepy diſeaſe, proceeding from too much ſluggiſhneſs. In the forementioned ſtatute it ſeems ſynonimous with vagabond.

FALANG, in our old writers, is uſed for a jacket or cloſe coat. *Blount*.

FALANGIE, in the materia medica, a name given by ſome of the antients to the ocymum or baſil. The *Falangie musk* is the ſweet ſcented baſil. Some of the commentators on the works of Aviſenna, have ſuppoſed, that the fruit called fal, was the ſeed or fruit of this plant; and that the word was only an abbreviation of *Falangie*, but this is by no means right. See FEL.

FALCADE, in the manege. A horſe makes *falcades*, when he throws himſelf upon his haunches two or three times, as in very quick curvets, which is done in forming a ſtop, and half-ſtop. A *falcade* therefore is the action of the haunches, and of the legs, which bend very low as in curvets, when you make a ſtop or half ſtop.

They ſay, this horſe ſtops well, for he makes two or three *falcades*, and finiſhes his ſtop with a peſate. This horſe has no haunches, he'll make make no *falcades*. The *falcades* are ſo much the prettier, that in making his haunches are low. Stop your horſe upon the haunches, in making him ply them well, ſo that after forming his *falcades*, he may reſume his gallop without making a peſate, that is, without ſtopping, or making one time. And thus he will make an half ſtop. See STOP, HAUNCHES and TIME.

FALCANOS, a name given by ſome of the chymical writers to arſenic.

FALCATA, in our old writers, was uſed for the graſs freſh mowed, and laid in ſwathes.

FALCATOR, in our old writers, the ſervile tenant who performed ſervice of falcature.

FALCATURE, *Falcatura*, in our old writers, ſignifies one day's mowing of graſs; a cuſtomary ſervice to the lord by his inferior tenants. *Kennet*'s *Gloſs.* in voc.

FALCINELLUS, in zoology, the name of a bird in ſome ſort reſembling the herons, but with a ſhorter beak. It is of a very beautiful colour, a fine gloſſy green with an admixture of a purpliſh tinge; the head and neck are brown, but the upper part of the throat whitiſh with black ſpots; its beak is

like

like that of the curlew, very long, very ſlender and crooked, its legs moderately long; as this bird grows older, it becomes of a browenr hue. It is called by ſome, ardea nigra, the black heron, and by the Italians acion negro. *Ray*'s Ornitholog. p. 218.

FALCO, the *Falcon*, in the Linnæan ſyſtem of zoology, this makes a diſtinct genus of birds of the hawk kind, the characters of which are, that theſe have on their feet three toes before and one behind, none of which are moveable backwards. The birds of this genus are the eagle, the vulture, the buzzard, the kaſtrell hawk and the lanio. *Linnæi* Syſtem Naturæ. p. 44.

The *Falcon* is a bird of prey of the hawk kind, much eſteemed for its ſtrength and activity. There are many ſpecies of this bird, but when the word *Falco* is uſed ſingly without any diſtinctive addition, it is meant of that ſpecies called by authors, the *Falco peregrinus*, from its travelling into different countries, at different ſeaſons of the year.

It has very long and large wings, reaching when folded to the tip of the tail. Its ſhoulders are very large, its tail very long and ending like the ſparrow-hawks in a point, its end being white, variegated with orange coloured ſtreaks. Its feet are of a greeniſh or bluiſh yellow, its neck is long, and its head and back of a pale dove colour. There is a variety of this bird, which are of a much blacker colour on the back, and has been erroneouſly eſteemed by ſome a different ſpeices, probably it is only owing to the difference of age or ſex. This bird is caught in France, Germany and elſewhere, but it is not well known where it builds. It feeds on ducks, geeſe and other large birds. *Ray*'s Ornitholog. p. 43.

The *Falcon* is of the long winged hawk kind, uſed in the diverſion of hawking. There are ſeveral ſpecies of *Falcons*. 1. The *Falco peregrinus*, or common *Falcon*. 2. The ſacer, called *Falco ſacer* by authors. 3. The *Jerfalcon* or *Gyrfalco*. 4. The *Mountain Falcon*. 5. The *Gentle Falcon* or *Falco gentilis*, ſuſpected by Mr. *Ray* to be the ſame with the common or firſt kind. 6. The *Haggard Falcon*, remarkable for the ſhortneſs of its neck. 7. The *White Falcon*, all over of a pure ſnow white. 8. The *Stone Falcon*, of a deep blackiſh blue. 9. The *Tunis* or *Barbary Falcon*, which reſembles the common kind, but is ſmaller. 10 The *red Falcon*, much reſembling the common kind but ſpotted with a reddiſh colour, and the red and creſted Indian *Falcon*, which ſeem to be the male and female of the ſame ſpecies. *Ray*'s Ornitholog. p. 40. to 48. See the articles GYRFALCON, SACRE, LANNARIUS, &c.

The gentle *Falcon* is the moſt valuable of all theſe, as being the moſt tame and managable, and the moſt hardy, enduring all weathers without hurt. This kind of *Falcon* has a natural inclination to fly the heron every way, and is moſt excellent at the brook or river fowling, and eſpecially at the larger birds, as at the ſhovel, wild gooſe and the like. If ſhe be an eyeſs ſhe may be ventured at the crane, otherwiſe ſhe will not be ſo hardy.

Hawks in general prove courageous or cowardly all their lives accordingly as they are firſt quarried; and if they are taken out of the eyrie before they are fully ſumm'd and well penn'd, their wings will never grow to perfection. Their legs alſo will grow crooked, and their train will be full of taints. *Falcons* of one and the ſame kind are called by the ſportſmen by very different names, and eſteemed of ſeveral different kinds according to the places and time of their reclaiming, and the countries from whence they came. Thus the names mewed hawk, ramaged hawk, ſoar hawk, and eyeſſe, came into the world; and theſe are again divided into large hawks, wean hawks and ſlender hawks. All theſe have different mails and plumes, according to the country from whence they come; ſome are black, ſome brown: they have alſo each, its different diſpoſition, ſome being beſt for the field, and others for the brook or river. Different names are alſo given to *Falcons*, according to their different age and time of taking. The *Falcon* is called an eyeſſe, as long as ſhe remains in the eyrie, theſe are always troubleſome in their feeding, they cry very much, and they are not entered without great difficulty, but being once well entered, they prove excellent hawks for the heron and all the large fowl, and are very hardy and full of courage.

The ſecond name given this bird is the ramage *Falcon*. This name ſhe retains from the time of her leaving the eyrie during the months of June, July, and Auguſt. Theſe are always hard to be mann'd; but being reclaimed, they are not inferior to any hawk. The third is the ſoar hawk, ſo called in September, October, and November. Theſe birds keep for a whole twelvemonth the firſt feathers, which they have on when they leave the eyrie, and do not molt them. Theſe are therefore called the ſoar feathers. The fourth is termed the murzarolt or carviſt, quaſi carry-fiſt; for they muſt at this time be almoſt continually carried on the fiſt. They are thus called from January to the middle of May. Theſe are uſually great baters, and very little eaters; they are ſubject to ſeveral troubleſome diſorders, particularly to the ſilanders, more than any other hawk, and they are very ſeldom brought to good. The fifth name is the entermew. They are called by this name from May till December, becauſe all that time they are caſting their coats. Theſe would be excellent hawks if they could be truſted, but they are unſteady. They muſt be kept hard under, and the falconer muſt make his fiſt their perch. The hawk newly taken muſt have all new furniture, and muſt be often ſtroaked with a ſtick to accuſtom her to be gentle. She muſt alſo have two good bells, that ſhe may be well heard when ſhe ſtirs or ſcratches; and her beak and talons muſt be cut a little, but not ſo near as to make them bleed. If there be a ſoar *Falcon* taken that has already croſſed the ſeas, ſhe is uſually very hard to be broken; but that being well done, ſhe is the beſt of all hawks. Her food muſt be good and warm, and it muſt be given her at leaſt three times a day. It ſhould be pigeons, larks, or other live birds; for ſhe muſt be broke by degrees from her accuſtomed manner of feeding. The hawk muſt always be fed with hoop and lure, that ſhe may always know when you will give her meat. She muſt then be gently unhooded, and two or three bits being given her, ſhe muſt be hooded again. And in the night let her rooſt on a perch near ſome perſon's bed, that ſhe may be often waked in the night. When by theſe means ſhe becomes tame and gentle, her uſual food may be changed, and a ſheep's heart given her. After this ſhe may be unhooded in the day-time, but not in company; and after giving her a bit or two, ſhe muſt be hooded again, and then a little more given her. After this by degrees ſhe will be taught to eat before company, and then the buſineſs of taming her will be ſoon accompliſhed. Till ſhe is thoroughly manned, ſhe muſt be born continually on the fiſt, and fed in company, giving her in the morning about ſun riſe a wing of a pullet, and every evening the foot of a hare or rabbit cut off above the joint, ſlead and laid in water, which having ſqueezed give it her with the pinion of a hen's wing. It is beſt to give the hawk waſhed meat, and after this plumage, according as ſhe ſeems to be foul within. She is then to be hooded, and nothing more ſhould be given her till ſhe gleams after caſting: but when ſhe has gleamed and caſt, ſhe ſhould then have ſome hot meat given her toward evening eſpecially, and be made to eat it in company. When ſhe is well reclaim'd, mann'd, and ſharp ſet, ſhe may be fed on the lure.

FALCONE, in zoology, a name by which ſome authors have called the milvus or flying-fiſh. *Willoughby*'s Hiſt. Piſc. p. 283. See the article MILVUS.

FALD-*Fee*, or FALD-*Fey*, was antiently uſed for a rent or fee paid by ſome cuſtomary tenants, for liberty to fold their ſheep upon their own land.

FALDELLA, a word uſed by ſome of the writers in ſurgery for a ſort of compreſs made of liſt contorted together in ſeveral doubles.

FALDUSTOR was antiently uſed to ſignify the higheſt ſeat of a biſhop encloſed round with a lattice. *Blount*.

FALDWORTH, among our old writers, was uſed to ſignify a perſon of age, ſufficient to be reckoned of ſome decennary. *Du Cange*, Gloſſ. Lat. in voc.

FALL, a meaſure of length uſed in Scotland, containing ſix of the ells of that country, each of which is equal to 37 $\frac{2}{10}$ Engliſh inches. Tr. Pract. Geom. p. 3. See MEASURES.

FALL, among ſeamen, denotes that part of the rope of a tackle which is haled upon. They ſay alſo that a ſhip hath *Falls* when ſhe is not *fluſh*, but hath riſings of ſome parts of her decks more than others. Alſo a ſhip is ſaid to *fall off*, when being under ſail, ſhe keeps not ſo near the wind as ſhe ſhould do.

FALL *not off*, at ſea, a word of command from him that conds the ſhip, ſignifying as much as, keep the ſhip near the wind.

FALLOPIAN *Tube* (*Cycl.*) — It is no uncommon thing for a fœtus to be retained in one of theſe tubes inſtead of being in the womb. But there is in the memoirs of the Paris academy a very remarkable account of one contained, not in the tube itſelf, but in a ſack or bag, formed by the external membrane of the right tube. The egg having by ſome unhappy accident faſtened itſelf between that membrane and the inner one, the external membrane became monſtrouſly dilated, as the fœtus in growing naturally preſſed upon that on which it reſted. At the expiration of the ninth month, the ſurgeon who attended the woman, found that it was impoſſible ſhe ſhould be delivered; though he could not gueſs the true circumſtances of ſo unhappy a caſe. He obſerved at the ſame time a tumor near the navel, from which there oozed out a ſerous humour. He was determined to open this tumor with all the neceſſary precautions; and having done ſo, he took out by this means the fœtus, which was dead, and had been ſo a long time. Mem. Acad. Par. 1714.

FALLOW (*Cycl.*)—FALLOW-*Finch*, in zoology, a name of the acanthe, more commonly called the wheat-ear, and by ſome authors Octiflora. See WHEAT-*Ear*.

FALLUM, in ſome of our law lexicographers, is ſaid to be a ſort of land; and for proof of this they quote the *Monaſticon Anglicanum*—De duobus acris & viginti *fallis* in, &c. *Jacob*. But from this paſſage it would rather ſeem that *fallum* ſignified a meaſure of land, as well as *acra*. And to this day a *fall* is a meaſure of land in Scotland. See FALL.

FALSE (*Cycl.*)—False *Gallop*, in the manege. See Gallop, *Cycl.*

False *Alarm*, in war, a feigned, or a miſtaken alarm. See the article Alarm.

False *Judgment*. See Falso *Judicio*, *Cycl.*

False-*Sheat*, on board a ſhip. See Sheat.

False-*Stem*, in a Ship. See Stem.

False *Tokens*, in law, is uſed where perſons get money or goods into their hands by forged letters, or other counterfeit means. This is puniſhable by impriſonment by Stat. 33 Hen. 8. c. 1.

False *Tone*, in muſic.—Some call the interval of two ſemi-tones major by this name; but others, more properly call it a diminiſhed third. Vid. *Ozanam*, Dict. Math. p. 653. See Interval.

FALSIFY, in law, is uſed for proving any thing to be falſe. Hence we find

Falsifying *a Record*, for ſhewing it to be erroneous. Thus lawyers teach, that a perſon purchaſing land of another, who is afterwards outlawed of felony, &c. may *falſify* the record, not only as to the time wherein the felony is ſuppoſed to have been committed, but alſo as to the point of the offence. But where a man is found guilty by verdict, a purchaſer cannot *falſify* as to the offence; though he may for the time where the party is found guilty generally in the indictment, becauſe the time is not material upon evidence. 2 Hawk. Pl. Crown, 459. We alſo meet with

Falsifying *a Recovery*. Thus, it is ſaid, the iſſue in tail may *falſify* a recovery ſuffered by tenant for life, &c.

FALSO *Bordone*, in the Italian muſic, is uſed to denote the burden or ground baſs of a ſong, when it is not exact to the rules of harmony, *i. e.* when the notes move all the ſame way, as is often the caſe in the pſalms, and other parts of divine office. The name is more particularly given to a certain harmony produced by the accompanyments of ſeveral ſixths following one another, which make ſeveral fourths between two higher parts; becauſe the third part is obliged to make thirds with the baſs. *Broſſ.* Muſ. Dict. in voc.

FALUN, a word uſed in many parts of France, as the name of a particular ſort of manure of lands, which is dug out of the earth, and is no other than fragments of ſea ſhells bury'd at conſiderable depths, and amaſſed in prodigious ſtrata in many parts of that kingdom. Theſe they ſpread upon the lands in the manner of dung; and being as it were calcined and very friable, they readily diſſolve, and are the fineſt manure of any for ſome ſoils.

FALX (*Cycl.*)—Falx, the *ſickle fiſh*, in ichthyology, a ſmall fiſh of the tænia kind, common about the ſhores of the Mediterranean; but ſeldom brought to ſale becauſe of its glutinous nature, being wholly converted into a ſort of glue, when dreſſed. It is a ſoft and ſmooth oblong fiſh, and has its name from its reſembling a ſickle in figure. It is often of an ell long, and with that length is not above the breadth of one's hand. It is of a ſilvery colour, but its back fin is red. Its eyes are large, and its head very ill ſhaped. The common people call it the marmot fiſh. *Willoughby*, Hiſt. Piſc. p. 117.

FAMES *Canina*, exceſſive appetite, in medicine. See Orexis, Canine, and Bulimy.

FAMILIA (*Cycl.*)—Familia, in natural hiſtory, a term uſed by authors to expreſs a certain order of animals, or other natural productions, agreeing in their principal characters, and containing numerous individuals, not only different from one another, but that in whole ſets, ſeveral numbers being to be collected out of the ſame family, all of which have the family character, and all ſome ſubordinate diſtinction peculiar to that whole number; or though found in every individual of it, not found in thoſe of any others.

It has been too common to confound the words, claſs, family, order, &c. in natural hiſtory. But the determinate meaning of the word *Familia* ſeems to be that larger order of creatures, under which claſſes and genera are ſubordinate diſtinctions. Among the quadrupeds, the ſeveral genera of the unguiculated creatures agree one with another in many general characters common to all; and in which they differ from the ungulated animals, which have alſo their ſeveral peculiar characters common to all, and yet different from all thoſe of the others. Theſe naturally conſtitute certain larger diviſions into *Families*, and no one would ever break through theſe, or bring the cat and the horſe into the ſame *Family*.

In the ſame manner, in ichthyology, there are ſeveral genera of fiſhes, which agree perfectly in certain common characters, and diſagree from all others in them. The bream and the herring, though very different in genus, may yet be brought into the ſame *Family*, both having many characters in common, as well as many different ones; but no one would ever be for bringing the herring and the whale into the ſame *Family*. The arrangement of natural bodies into theſe *Families*, or general and larger claſſes, is of the utmoſt uſe to natural hiſtory, when it is properly done, and the diviſions are genuine and natural; when otherwiſe, it is hurtful.

Theſe diviſions of animals into *Families* are of two kinds, the one artificial or hypothetical, the other natural. The artificially contrived *Families*, or claſſes of bodies, are founded on certain accidents of the things under conſideration, not made from the parts of the bodies themſelves. Of this artificial kind are thoſe diſtinctions ſo much in uſe among the old naturaliſts, founded on the place of growth and time of flowering of plants, the time and manner of bringing forth in animals, the food of creatures, and their different magnitudes. And to theſe falſe foundations for general diviſions may be added thoſe founded on the number of certain external parts of the creatures.

The abſurdity of the firſt of theſe methods is eaſily ſeen, ſince it requires a prior knowledge of the objects before they come under our conſideration. If an unknown plant, mineral or animal be offered to a naturaliſt, how is he to inform himſelf of its time of flowering, its place of production, or its manner of bringing forth its young. And as this is impoſſible, it is alſo impoſſible that he ſhould ever refer to its *family*, or trace it out among the individuals of it. As to the latter method of making the number of certain external parts, the character of a *family*, it is eaſy to ſee the abſurdity of it in regard to the fiſhes, for the fins of theſe animals are not always the ſame in number, in the different ſpecies truly and properly belonging to one genus. Thus the pearch, gadus, ſyngnathus, and many others have more or fewer fins, in the ſame genus. Theſe are the errors of the artificial or hypothetical claſſes and *families* of natural bodies.

The natural *families* are liable to no ſuch objections. In theſe all the genera refered to the ſame *family*, agree perfectly and punctually in their principal parts; the ſeveral individuals of which theſe *families* are compoſed, being reduced into genera; theſe are to be arranged into their proper claſſes, according to their mutual agreements; and of theſe claſſes, the ſmaller the number, the eaſier and plainer will be the whole method. Theſe natural *families* can be only founded on eſſential characters, and in the quadruped kingdom, they are to be taken either from the figures of the hoofs or claws, or from the teeth. In birds, the figure and proportion of the beak, is a very proper character; and in fiſhes, the figure of the head, and the ſituation of the tail, are to be conſidered; and are ſtable and eſſential characters. The whole animal world may eaſily be thus reduced to *families*, and from thoſe to claſſes, genera, and ſpecies, and the ſtudy of nature rendered much more regular and eaſy, than it can be by any artificial diviſions. *Linnæi* Faun. Suec. *Artedi* Ichthyolog.

FAN, *Flabellum* (*Cycl.*)—That this machine was known to the antients, is very evident from what Terence ſays,

Cape hoc flabellum, *& ventulum huic ſic facito.*

And Ovid Art. Amand. 1. 161.

Profuit & tenues ventos moviſſe flabello.

Theſe *fans* of the antients were made of different materials, but the moſt elegant were compoſed of peacocks feathers, or perhaps painted ſo, as to repreſent a peacock's tail. *Pitiſc.* Lex. Ant. in voc. *Flabellum.*

FANIONS, ſmall flags carried along with the baggage. See Flag.

FANTASIA, in the Italian muſic, ſignifies *fancy*, and is uſed for a compoſition, wherein the compoſer ties himſelf to no particular time, but ranges according as his fancy leads, amidſt various movements, different airs, &c. This is otherwiſe called the *capricious ſtyle:* before ſonnatas were uſed there were many of this kind, ſome of which remain even now. *Broſſ.* Dict. Muſ. in voc.

FANTOME *corn*, in husbandry, a term uſed by the farmers in ſome of our counties for lean, light and lank corn, as they call in the ſame places fantom fleſh, that which is lean and poor, and can hardly hang on the bones. *Ray*'s Engliſh Words, p. 17.

FANUM, among the Romans, a temple or place conſecrated to ſome deity. The deified men and women among the heathens had likewiſe their *Fana*; even the great philoſopher Cicero, erected one to his daughter Tullia. Mem. Acad. Inſcrip. vol. I. p. 488. ſeq.

FARAND MAN, in old writers, a traveller or merchant ſtranger, to whom by the law of Scotland juſtice ought to be done with all expedition, that his buſineſs or journey be not hindered. *Skene* de verb. ſignificat.

FARCIMINALIS *tunica*, the ſame with the *Allantoides.*

FARCEY. We have in the Philoſophical Tranſactions, an account of a horſe being cured of this diſeaſe by hemlock. The diſcovery was accidental, the maſter of the horſe riding near a place were hemlock grew abundantly, ſuffered his horſe to eat greedily of it, and he became better from that time, and in a few days was wholly cured. We generally eſteem hemlock a poiſon, but beſide this proof of its ſalutary effect, it is well known, that its ſeeds are eaten by ſome birds, particularly by the buſtards in very great quantities, and that without any harm.

FARDINGEL was the fourth part of a yard land, or of a plough land, according to Spelman. Vid. *Du Cange*, Gloſs. Lat. voc. *Ferdingel.*

FAREN, in Ichthyology, a name given by the Swedes to a fiſh peculiar to their country. It is of the genus of the cyprini, and is diſtinguiſhed by Artedi, by the name of the yellow ey'd cyprinus, with twenty-ſeven bones in the pinna ani.

FARFARA, a name given by ſome of the antient botaniſts to the plant we call coltsfoot, from the river Farfarus, mentioned by Ovid, as remarkable for its ſhady banks, which afforded a very large quantity of this plant. Pliny mentions this plant with much confuſion, calling it alſo farfano and fargugio, and forgeting that he had before deſcribed it under the name of tuſſilago or belchion. See the article TUSSILAGO.

FARFRUGUM, in botany, a name by which ſome authors have called the caltha paluſtris, or marſh marygold. *Ger.* Emac. Ind. 2.

FARFUGIUM, in botany, a name by which ſome authors alſo call coltsfoot. *Ger.* Emac. Ind. 2.

FARINA (*Cycl.*)—The manner of gathering and preſerving the *Farinæ* of plants for microſcopic obſervations is this; gather the flowers in the midſt of a dry ſunſhiny day, when the dew is perfectly off, then gently ſhake off the *Farina*, or lightly bruſh it off with a ſoft hair pencil, upon a piece of white paper; then take a ſingle talc or iſinglaſs between the nippers, and breathing on it, apply it inſtantly to the *Farinæ*, the moiſture of the breath will make that light powder ſtick to it. If too great a quantity be found adhering to the talc, blow a little of it off; and if there be too little, breathe on it again, and take up more. When this is done put the talc into the hole of a ſlider, and applying it to the microſcope, ſee whether the little grains are laid as you deſire, and if they are, cover them with another talc, and fix the ring; but be careful that the talcs do not preſs upon the *Farina*, ſo as to alter its form. *Baker*'s Microſcope, p. 249.

For the appearances of the *Farinæ* of a great many plants, ſee Tab. of Microſcopical Objects, Claſs 2.

The *Farina* of plants has been ſometimes found to have an effect on neighbouring plants. Thus we read of ruſſetings changed by the *Farina* of a neighbouring tree; and we have obſervations of peaſe of different colours infecting one another in the like manner. Phil. Tranſ. N°. 477. Sect. 7.

FARINA *fœcundans*. See PULVIS *fœcundans*.

FARINAGIUM, in our old writers, denotes toll of meal or flower.

FARIO, in zoology, a term for a ſalmon when about half grown, after it is paſt the ſtate in which it is called a *ſalar*, and before it is of the full growth. *Willough.* Hiſt. Piſc. p. 189. See SALMON.

FARLEU, money paid by tenants in the Weſt of England, in lieu of a heriot. In ſome manors of Devonſhire, *Farleu* is often diſtinguiſhed to be the beſt goods; as heriot is the beſt beaſt, payable at the death of a tenant. *Cowel.*

FARM (*Cycl.*) — It is commonly allowed that a *Farm* ſhould make three rents as they expreſs it, one for the landlord, one for the charges, and one for the farmer to live upon; but it is very ſeldom that a *Farm* will conſtantly do this, or is to be maintained at that charge. In a *Farm* of one hundred pound a year, if the land is worth twenty ſhillings an acre, a hundred pound may defray the charges of it; but if in a *Farm* of the ſame rent the land be worth but ten ſhillings an acre, a hundred and thirty pounds a year muſt be allowed for the charges of this or nearly ſo, and two hundred and fifty acres of ſuch land, muſt be reckoned to a *Farm* of a hundred pounds a year, or elſe the farmer will be ruined, if it be not very improveable land.

FARMER, he that tenants a farm, or is leſſee thereof.

Alſo generally every leſſee for life, years, or at will, is called *Farmer*. Terms de Ley.

As this word implies no myſtery, except it be that of husbandry, husbandman is the proper addition for a *Farmer*. 2 *Hawk.* Pl. Crown, 188.

FARMER, in mining, is the lord of the field, or one that *farms* the lot and cope of the king. *Houghton*'s compl. Miner in the Explan. of the Terms.

FARNIA, or FARNIA *Italorum*, a name by which ſome authors have called the bitter oak: the cerrus, agylops, and aſpris of other writers. *Chabræus*, p. 55.

FARRA, in Ichthyology, a name given by authors to a ſpecies of the *coregones*, not differing eſſentially from the *lavaretus* or *benola*. This ſpecies has had a great number of different names, and been deſcribed as five or ſix different fiſh. But all the deſcriptions of the ſeveral authors agree to prove it to be that ſpecies only of the coregoni, which Artedi has diſtinguiſhed by the name of the coregonus, with the upper jaw longer and flat, and with fourteen rays in the back fin. This name equally agrees with the ſeveral deſcriptions of the *farra* or *ferra*, bezola, laveratus, &c. and they agree in all the eſſential characters with one another. See the article LAVARETUS.

FARRIER (*Cycl.*) — FARRIER's *Pouch*, in the manege, a leathern bag in which they carry drivers, nippers, ſhoes for all ſizes of feet, good ſharp nails, and all that is proper for new ſhoeing a horſe that has loſt his ſhoe upon a road. If you have no *Farrier* with you, you muſt always have in your equipage a *Farrier's Pouch* well provided, and a groom that knows how to drive nails.

FARTHEL, or FARTHELLING, among ſeamen, was uſed for the ſame with what they commonly call *furl* or *furling*; which is taking up the ſails, and binding them cloſe to the yards.

FARTHING (*Cycl.*)—FARTHING *of Land* ſeems to differ from *Farding-Deal*. See FARDING-*Deal*, *Cycl.*

For in a ſurvey book of the manor of Weſt Hapton in Devonſhire there is an entry thus, A. B. holds ſix *farthings* of land at 126 *l.* per ann. *Blount*. So that the *farthing* of land muſt have been a conſiderable quantity, far more than a rood.

FARTHING *of Gold*, a coin uſed in antient times, containing in value the fourth part of a noble, or 20 *d.* ſilver, and in weight the ſixth part of an ounce of gold. It is mentioned in the Stat. 9 Hen. V. c. 7. where it is enacted, that there ſhall be good and juſt weight of the noble, half noble, and farthing of gold.

FARUNDEL *of Land*, the ſame with *Farding-deal*. See FARDING-*deal*, *Cycl.*

FASCETS, in glaſs-making, the irons thruſt into the mouths of the bottles when made, to remove them into the annealing tower. *Neri's* Art of Glaſs, Appendix.

FASCIA (*Cycl.*)—FASCIA *lata*, a muſcular ligament very conſiderable both for its extent and ſtrength, being made up chiefly of two planes of fibres, of which the external are more or leſs longitudinal, the internal more or leſs tranſverſe. It is farther ſtrengthened in ſome places by a great number of other fibres, which augment its thickneſs, and form particular expanſions. The tranſverſe fibres are much ſtronger than the longitudinal. It is fixed above to the edge of the criſta of the os ilium, from the large tuberoſity to the anterior ſuperior ſpine, to the ligamentum fallopii, and to the aponeuroſis of the obliquus externus of the abdomen, on which it runs up by a thin lamina. It is likewiſe fixed in the lateral inferior part of the os ſacrum, and to the neighbouring parts of the ligaments, by which that bone is connected to the oſſa ilium and iſchium; from whence it advances over the glutæi and thigh, between the membrana adipoſa and muſcles, all the way to the anterior and outer parts of the knee. It is very thin on the patella, but may be ſeparated from it. It is alſo continued over the external anterior part of the tibia, covering the muſcles which lie there, and is ſtrongly inſerted in the head of that bone, and in the upper part of the fibula. It ſends off elongations, which, like ſo many ſepta, run in between the muſcles, and ſometimes meet in ſuch a manner as to form vaginæ. It is ſtrongeſt on the anterior and outer parts of the thigh, growing gradually thinner on the inner and back parts. It is ſtrongly inſerted in the linea femoris aſpera, between the vaſtus externus and biceps, forming a ſort of ſeptum between theſe muſcles. It furniſhes particular vaginæ to the muſcles which lie on the inſide of the thigh; and though theſe vaginæ are thin, they are pretty ſtrong, being chiefly made up of tranſverſe fibres. *Winſlow's* Anatomy, p. 204.

FASCIATION, in ſurgery, is the binding of ſwathes about a limb that is to be cured.

FASCICULATA *folia*, among botaniſts. See LEAF.

FASSETS, among jewellers. See FACETS.

FASSUS, in our old writers, is uſed for a faggot of wood. Mon. Angl.

It ſeems to come from the French *faiſſeau*.

FAST *Ground*, or FAST *Country*, a term uſed by ſome of our miners to expreſs what others call the *ſhelf*. In digging, they frequently, after paſſing the ſeveral ſtrata, which have been diſturbed, and give proofs of having been toſſed about in the waters by their irregularity, meet with plain, firm, regular and ſolid ſtrata, which evidently ſhew that they have undergone no change ſince their original formation and inſtitution. The workmen, who are very good philoſophers in this reſpect, aſſign the different ſtructure they thus find in the upper and lower ſtrata of the earth to its juſt cauſe, that is, the deluge; and determine, that all they find irregular has been waſhed up and depoſited there again in the time of that cataſtrophe; but that the ſhelf or *faſt Country* is in its natural ſtate and poſition. They obſerve, in favour of this opinion, that their loads of ore run very irregularly in the irregular ſtrata, but much more regularly in the ſhelf or *faſt Ground*. Phil. Tranſ. N° 69.

FASTIGIATI *Furni*, in chemiſtry, furnaces fitted with ſeveral aludels.

FASTING has been practiſed by moſt nations from the remoteſt antiquity. Some divines even pretend to find its origin in the earthly paradiſe, where our firſt parents were forbidden to eat of the tree of life. But is not this to confound *faſting* with abſtinence? However, certain it is, that the church of the Jews has obſerved *Faſts* from their firſt eſtabliſhment. Moſes appointed one ſolemn *Faſt* before the feaſt of expiation, and others were inſtituted by the following prophets on different occaſions; ſo that in the time of Zacharias there were four regular *Faſts*, *viz.* in the months June, July, September and December. To theſe they have ſince added three others, in memory of ſore diſtreſſes they have at different times ſuffered. Beſides theſe there were various kinds of *Faſts*, ſome for devotion, others for the new moons; and ſome among them kept an anniverſary *Faſt* in memory of the tranſlation of the Septuagint, in order to expiate the baſe compliance of their

doctors for a foreign prince, and the outrage offered to the dignity of their law, which, in their opinion, was only designed for themſelves: *Non fecit taliter omni nationi.*

There is no occaſion to deſcribe exactly the various obſervances that accompanied theſe acts of humiliation, as being known to every body. 'Tis known their abſtinence laſted 27 or 28 hours, beginning before ſun ſet, and not ending till ſome time after ſun ſet next day. On theſe days they were obliged to wear white robes in token of their grief and repentance; to cover themſelves with ſackcloth, or their worſt cloaths; to lie on aſhes; to ſprinkle them on their head; and, on great occaſions, upon the ark of the covenant. Some ſpent the whole night and day following in the temple, or ſynagogue, in prayers and other devotions, barefooted, with a ſcourge in their hands, of which they ſometimes made good uſe to rouze their zeal. Laſtly, in order to compleat their abſtinence, at night they were to eat nothing but a little bread dipped in water, with ſome ſalt for ſeaſoning; except they choſe to add to their repaſt ſome bitter herbs and pulſe. Thoſe that would be particularly informed of theſe auſterities may conſult Maimonides, Leo of Modena, and Buxtorf.

The Egyptians, Phœnicians and Aſſyrians, neighbours to the Jews, had alſo their *Faſts*. The *Faſt* of the Ninivites, occaſioned by the preaching of the prophet Jonas, is too well known to be inſiſted on. The Egyptians, ſays Herodotus, ſacrifice a cow to Iſis, after having prepared themſelves by *Faſting* and Prayer: a cuſtom that he likewiſe aſcribes to the women of Cyrene. According to Apuleius, whoever had a mind to be initiated in the myſteries of Cybele were obliged to prepare themſelves by *faſting* ten days. Porphyry carries the matter ſtill farther, affirming that the Egyptians, before their ſtated ſacrifices, always *faſted* a great many days, ſometimes for ſix weeks, and that the leaſt behoved to be for ſeven days; during all which time the prieſts and devotees not only abſtained from fleſh, fiſh, wine and oil, but even from bread and ſome kinds of pulſe.

Nor were the Greeks without their *Faſts*. Ariſtotle informs us, that the Lacedæmonians having reſolved to ſuccour a city of the allies, ordained a general *Faſt* thro' the whole extent of their dominions, without excepting the domeſtic animals; and this they did for two ends, one that they might ſpare proviſion in favour of the beſieged, and the other to draw the bleſſing of heaven on their enterpriſe. The Athenians among others had the Eleuſinian and Theſmophorian *Faſts*, the obſervation of which, was accompanied with ſtrict *faſting*, particularly among the women, who ſpent one whole day ſitting on the ground in a mournful dreſs, without taking any nouriſhment; on which account, this day was called νηστεια. The Grecians had theſe religious auſterities from the Egyptians, Eumolpus and Erechtheus having communicated them to the Athenians; by whoſe means they were ſpread through all the ſtates of Greece. Jupiter too, had his *Faſts*, as well as Ceres; for his prieſts in the iſle of Crete were by their rules obliged to abſtain all their lives from fleſh, fiſh and baked meats.

In a word, all the Pagan deities, whether of the male or female ſex, required this duty of thoſe that deſired to be initiated into their myſteries, of their prieſts and prieſteſſes that gave the oracles, and of thoſe that came to conſult them.

In Italy *faſting* was obſerved much in the ſame way. The inhabitants of Tarentum, being beſieged by the Romans demanded ſuccours from their neighbours of Reggium, who immediately ordained a *Faſt* throughout their whole territories, with the ſame intention as the Lacedæmonians, viz. to render the gods favourable, and to ſpare proviſions for their allies. Their enterpriſe having had good ſucceſs by their throwing a convoy with proviſions into the town, the Romans were obliged to raiſe the ſiege: And the Tarentines in memory of this deliverance, inſtituted a perpetual *Faſt*. So that here we have two *Faſts* for the ſame event; that obſerved by thoſe who were the means of obtaining the deliverance, and that obſerved by them who received it. The Roman ſenate, Livy tells us, being alarmed by many prodigies happening in a train one after another, order'd the decemviri to conſult the Sibylline books; who having executed their commiſſion, declared that to prevent the fatal conſequences, it was neceſſary to eſtabliſh a *Faſt* in honour of Ceres, to be obſerved every fifth year. That Jupiter had ſtated *Faſts* at Rome, appears from the following paſſage of Horace, where a mother is introduced praying to Jupiter for the recovery of her ſon from a quartan ague, and promiſing that the patient ſhould purify himſelf in the Tiber, on the morning of the *Faſt* day ſacred to that god.

Frigida ſi puerum quartana reliquirit, illo
Mane die quo tu indicis jejunia, nudus
In Tiberi ſtabit.

Faſting muſt have been very ſacred at Rome; ſince we find it practiſed by kings and emperors. Numa Pompilius, Julius Cæſar, Auguſtus, Veſpaſian and others, we are told had their ſtated *Faſt* days: and Julian the apoſtate was ſo exact in this obſervance, as even to outdo the prieſts themſelves, and the moſt rigid philoſophers.

In a word, every country, nation and religion have had at all times, their prieſts, druids, gymnoſophiſts and philoſophers, who diſtinguiſhed themſelves by their frugality, auſterity and abſtinence. The practice of the Pythagoreans is well known; their whole life was a continued lent, but with this difference between them and us, that they believed the uſe of fiſh equally unlawful with that of fleſh. They lived entirely on bread, fruits, and pulſe, with great ſobriety, in imitation of their maſter Pythagoras; though in this reſpect they muſt have fallen far ſhort of him, if we may believe Diogenes Laertius, who ſays, that he continued his *Faſts* for no leſs than forty days. Apollonius Thyaneus, one of his moſt famous diſciples, could never by all his endeavours equal his maſter in this point, though his *Faſts* greatly exceeded the ordinary intervals.

The gymnoſophiſts, or brachmans, reckoned *faſting* among their religious duties. Father le Comte, in his memoirs, tells us, that the Chineſe have at all times had regular *Faſts*, with forms of prayers, for preſerving them from barrenneſs, inundations, earthquakes, and ſuch like public calamities. The Mahometans too, who poſſeſs ſo large a part of Aſia and Africa, have times of *faſting*, called by them *Ramadan*, as regular as we have Lent. And their derviſes are remarkable for their mortification and *faſting*. *Comte*, Mem. T. 2. p. 142.

It was not unuſual among the antients to *faſt* on account of dreams. Sometimes to have the interpretation of them, ſometimes to obtain good and prophetic ones, being perſuaded that to obtain ſuch they muſt obſerve a ſtrict regimen both as to the quantity and quality of their food; for, according to the rules of the onirocritic art, it was neceſſary they ſhould be free from the fumes of meat, and in ſuch a calm, ſerene ſtate, as never fails to accompany a frugal life, that they might receive the impreſſions of the aerial ſpirits in all their perfection.

Faſting was alſo thought an infallible antidote againſt the fatal conſequences of terrible dreams. A piece of ſuperſtition that prevails to this day among the Jews, who, though expreſsly forbid to *faſt* on Sabbath days, think themſelves at liberty to diſpenſe with this duty, when they happen to have frightful and unlucky dreams the night preceeding, that threaten them with great misfortunes. On ſuch an occaſion as this, they obſerve a formal *Faſt* the whole day; and at night the patient having invited three of his friends, addreſſes himſelf to them ſeven times in a very ſolemn manner, ſaying, *May the dream I have had prove a lucky one!* And his friends anſwer as many times, ſaying, *Amen, may it be lucky, and God make it ſo!* After which, in order to encourage him, they conclude the ceremony with theſe words of Eccleſiaſtes, *Go, eat thy bread with joy*, and then ſet themſelves down to table.

The antients, both Jews and Pagans, had alſo their *Faſts* for purifying the body, particularly the prieſts, and ſuch as were any wiſe employed at the altars: for when nocturnal diſorders happened to theſe, it was unlawful for them to approach all the next day, which they were bound to employ in purifying themſelves. On which account, at great feſtivals, where their miniſtry could not be diſpenſed with, it was uſual for them, on the eve thereof, not only to *faſt*, but likewiſe to abſtain from ſleep for the greater certainty. To this purpoſe the high prieſt had under-officers to wake him, if overtaken with ſleep; againſt which other preſervatives were alſo made uſe of. See Mem. Acad. Inſcript. T. 5. p. 38, ſeq.

Mr. Bayle obſerves, that whole books have been written on long *Faſting*. Cyriacus Lentulus has compoſed one, *de prodigioſis inediis*. Fortunius Licetus, Profeſſor of medicine at Padua, beſides a great many others, has publiſhed one book in folio, *de iis qui diu vivunt ſine alimento*, or *de feriis altricis animæ*.

Among theſe long *Faſters* a great many impoſtors have been diſcovered. Fabricius Hildanus, Langius, and ſeveral other authors, relate inſtances of ſuch. Velſchius, a German phyſician, found in a manuſcript of the Augsburg library, a very curious account of a young woman that lived in the time of the emperor Maximilian, who had acquired a great reputation for holineſs, by making people believe that ſhe had *faſted* ſix years. The cheat was diſcovered by the emperor's ſiſter; upon which the girl being baniſhed, ſhe married, and was guilty of ſo many acts of adultery and other crimes, that ſhe made her husband run mad, and was herſelf at laſt condemned to be drowned.

We are not however to paſs the ſame judgment on the following remarkable inſtance of *faſting*, which is related by a perſon of credit, and inſerted in the Nouvelles de la Repub. de Lett. for February 1685.

A madman of Haerlem, believing himſelf to be the true Meſſiah, reſolved, in imitation of our Saviour, to *faſt* forty days and forty nights. Great pains were taken to make him eat, but all to no purpoſe; for, excepting a little water, which he took rather to waſh his mouth than to drink, and ſmoking tobacco, he took no kind of nouriſhment from the ſixth of December 1684, to the fifteenth of January 1685. He even refuſed water wherein they had put any ſpirits or broth. In order to find out if there was any cheat in the caſe, his cloaths and

and place of confinement were carefully ſearched, but nothing found; nor could any thing be conveyed to him in the night time. Beſides, as a proof of his abſtaining from all manner of food, his excrements gradually diminiſhed, and at laſt entirely ceaſed; which happened ſoon after the commencement of his *faſting*.

When the forty days were expired, he prepared himſelf to eat; but refuſed to take broth, which they had got ready for him in order to open the paſſages, and facilitate digeſtion: inſtead of this, he ordered ſome haſty-pudding to be made of a conſiſtence capable of being cut into pieces when cold. It is remarked, that he ſuffered very much from gripes for ſome days thereafter; which going off, he continued to eat as before; but his madneſs remained ſtill the ſame.

FASTING-*Men*, ſee FASTERMANS, *Cycl.*

FAT (*Cycl.*)—We have an obſervation by Mr. Schulze of wax paſſing through the coats of the arteries and veins, when theſe veſſels were injected; of which that coloured with red loſt its colour, while the green kept it. Hence he endeavours to account for the ſecretion of *Fat*, and the production of an œdema. See Com. Lit. Norimb. 1731. Semeſt. 1. Specim. 5.

Mr. Hunauld has the following obſervations on the *Fat* of the body: 1. That though fœtus's and children have much *Fat* under the skin, yet they have only a ſmall piece or two (*pelotons*) at the baſe of the heart; whereas lean, adult bodies have *Fat* all round the baſe, on the veſſels that go out of the heart, and accompanying the larger coronary veſſels, and at the point of the heart. 2. That the omentum of very young children has no *Fat*, and their meſentery very little. 3. That in many people the *Fat* under the skin is exhauſted, while the bowels are overcharged with it. 4. The exterior part of the tunica cellularis is the firſt filled with *Fat*, and the laſt emptied of it. From which, and ſeeing aponeuroſes and membranes ſpread over ſo many muſcles, he concludes, the common opinion of muſcles being lubricated by the *Fat*, to be ill founded. See Mem. Acad. Scienc. 1732.

FAT *of Whales*. See the article BLUBBER.

FATHER-*Laſher*, in ichthyology, an Engliſh name given to a fiſh, called by ſome authors, though improperly, ſcorpœna and ſcorpius marinus. It is properly of the cottus kind, and is named by Artedi the ſmooth cottus without ſcales, with ſeveral ſpines upon the head, and with the upper jaw a little longer than the under. It more reſembles the ſmall fiſh we call the bullhead or miller's thumb than the ſcorpæna. *Arted.* Gen. Piſc. p. 34. See COTTUS and SCORPÆNA.

FATTENING *of Horſes*. The being able to do this ſpeedily is one of the greateſt arts our dealers have, and indeed one of the greateſt niceties of the whole management of that creature. Many methods have been preſcribed, but the following ſeems moſt to be depended on. Take elecampane, cummin-ſeed, tamarisk and aniſeed, of each two ounces; common groundſel, one handful. Boil all theſe very well, with two handfuls of garlick ſcraped and cleaned, in a gallon of good ale; ſtrain the liquor well off, and give the horſe a quart of it every morning made hot; keep him warm after it. After he has taken this for four or five mornings, he may be turned out to graſs, or kept in the houſe, as the ſeaſon will permit. But whenever provender is given him, a quantity of a powder is to be prepared of equal parts of cummin-ſeeds and elecampane, and give him half an ounce of it every time, ſprinkling it in by degrees as he eats, that he may not nauſeate the whole.

If this method does not ſucceed in a ſhort time, then take two ſpoonfuls of diapente; brew it in a pint of ſweet wine, and give it the horſe for three mornings. This will take off any inward ſickneſs, and make the other things take effect. After this feed him with good provender three times a day, that is, after his watering in the morning, after his watering in the evening, and at nine o'clock at night. If he does not eat the provender well and freely, it muſt be changed for ſome other kind.

If all this does not ſucceed, let the horſe be blooded; and then take half a buſhel of coarſe barley-meal, put it into a pail full of water, and ſtir the whole together very well; then let it ſettle by ſtanding. Pour off the clear liquor into another veſſel, and let him drink it for his common drink, and eat the remainder which falls to the bottom of the pail. If he refuſe to eat this alone, there may be ſome bran mixed among it. This ſhould be given him three times a day, morning, noon, and night. If he does not rightly take to the meal with the bran, ſome oats muſt be mixed with it, and this will readily bring him to feed on it. But which ever way is uſed, they muſt be by degrees diminiſhed in quantity, till at length he is brought to eat the meal alone; for that is the thing that muſt fatten him up. Care muſt be taken that the barley is ground freſh every day as it is uſed, for it quickly grows ſour; and when this has once been the caſe with one parcel, no art will ever bring the horſe to touch any of it afterwards. Scarce any horſe but will be well *fatten'd* by keeping him to this diet for about twenty days.

Barley ground in this manner cools and purges the creature; but the greateſt efficacy, as to the *fattenning* him, lies in the water, which by this management takes up all the rich part of the barley into itſelf. When the horſe grows luſty on this diet, it muſt be taken from him by degrees, giving him at firſt oats once, and barley-meal twice a day; and then oats twice, and the barley-meal once, till he is perfectly weaned from it. In the mean time he muſt have good hay, and he muſt not be rid; only it will be proper to walk him gently about an hour or two in the heat of the day. If it be found that the horſe wants a good ſmart purging during the time of his continuing in the barley diet, the beſt time to give it him is after the firſt eight days, and the following is a very proper ſort of phyſic. Take of the fineſt aloes one ounce, agarick in powder half an ounce, and powder of florentine orrice one ounce. Let all theſe be mixed together, and put into a quart of milk warm from the cow. This will work very briskly; and after it is over, the uſual diet is to be continued. If horſes of value were to be kept to this diet once a year, it would make them leſs hot and dry, and not ſubject to many diſeaſes which they are troubled with at preſent, and would be particularly uſeful after campaigns and long journeys. If the horſe loſes his appetite by this diet, it will be proper to tye a chewing ball to his bit, renewing it ſo often till at length he begins to feed heartily on the barley; for theſe balls at once reſtore appetite, and are themſelves of a *fattening* nature. See the article CHEWING *Ball*.

FAVIFORM, in ſurgery, a term uſed to expreſs certain ulcers, which when preſſed upon with the finger emit a ſanies thro' ſeveral ſmall holes in the manner in which honey, on preſſing the comb, iſſues out of the cells.

FAVILLÆ *Salis*, in natural hiſtory, a name given by Vitruvius, and ſome of the more antient writers, to the natrum or nitre of the antients. Our chemical writers, who have been uſed to delight much in hard names, have applied the ſame phraſe to expreſs our nitre: but this is a very different ſalt from the other.

FAVISSÆ, in Roman antiquity, large vaults under ground in the area of the capitol.

Such a ſuperſtitious veneration did the Romans pay to every thing that belonged to their capitol, and to the religious ceremonies there performed, that they carefully depoſited the old ſtatues and other ſacred utenſils, when they happened to be broken, or any wiſe render'd unſerviceable, in theſe vaults; not daring either to deſtroy, or convert them to any other uſe. *Pitiſc.* Lex. Ant. in voc.

FAVONIUS, among the Romans, the wind which blew directly from the weſt. *Hofm.* Lex. in voc.

FAVORITO, in the Italian muſic, is an epithet given to ſuch parts of any compoſition as are performed to the greateſt advantage. Thus, *Choro favorito* is a chorus in which are employed the beſt voices and inſtruments to ſing the recitativos, play the ritornellos, *&c.* This is otherwiſe called the little chorus, or *choro recitante*. *Broſſ.* Muſ. Dict. in voc. See RECITANTE.

FAUSSE *Chenille*, in natural hiſtory, a term uſed by Mr. Reaumur, and other of the French writers, to expreſs a large claſs of worms produced from the eggs of ſeveral ſpecies of four wing'd flies. Theſe worms have greatly the appearance of caterpillars in their general form, ſo that they have deceived many writers on inſects into an opinion that they really were ſo. Their bodies are long in the manner of the caterpillar, and they are compoſed of ſeveral rings or joints. The skin is of the ſame conſiſtence with that of the caterpillar's; and in many ſpecies the creature is variegated with beautiful colours diſpoſed in the ſame manner as thoſe of the ſmooth caterpillars uſually are. Both theſe kinds of inſects have a great number of legs, and thoſe of two kinds; ſome membranaceous, and others ſcaly. Both the worm and the caterpillar have each ſix of the ſcaly legs; but the membranaceous ones are different in number, and are alone ſufficient to conſtitute a difference between them. The caterpillars have never more than ten of theſe, which with the ſcaly ones make ſixteen; the utmoſt number of the legs of any caterpillars. But theſe worms have always at leaſt twelve of the latter kind of legs, which with the ſix ſcaly ones make the whole number eighteen; and many ſpecies have fourteen, ſixteen, or eighteen of the membranaceous ones alone. The membranaceous legs of the worms differ alſo from thoſe of the genuine caterpillars, in that they are not furniſhed with the hooks at their ends, which thoſe of the latter have.

The legs therefore alone give a ſufficient baſis of diſtinction between the caterpillar and the *fauſſe chenille*, or caterpillar worm. But there is a yet more obvious diſtinction between them in the ſhape of their heads; and by this they may always be known from each other at firſt ſight. The heads of the various ſpecies of caterpillars are of ſeveral very different ſhapes; ſome are ſhort, others long; ſome more, ſome leſs flatted; and ſome terminate in a ſharp point, while others are diſtinguiſhed by a ſort of ſlit or diviſion in the back part. Theſe differences are found in the ſeveral kinds of the genuine caterpillars; but the heads of all the *fauſſe chenilles* are of one ſhape, and that very different from all theſe; they are round and very convex, ſo that they appear a part of a ſmall ſphere. The mouth of theſe and of the genuine caterpillars are wholly alike,

alike, and the ſtigmata are placed in the ſame manner. The eyes however of the two kinds ſufficiently diſtinguiſh them; the *fauſſe cheville* having only two, and thoſe very large and prominent, and placed on each ſide of the head; whereas the caterpillar has five eyes on each ſide of its head, and thoſe placed in a circular direction, and too ſmall to be ſeen without the aſſiſtance of glaſſes.

The *Fauſſe Chenilles* are a claſs of animals almoſt as numerous as the caterpillars. They are eaſily diſtinguiſhed into ſeveral genera, according to the different number of legs, as thoſe with eighteen legs, thoſe with twenty, twenty-two, and twenty-four. The *fauſſe chenille* of the alliaria is of this laſt kind. They are of ſeveral colours in the different kinds; ſome are white, ſome brown, others black, but the greateſt number of all are green. There are many of a ſlate colour, or bluiſh black variegated with ſtreaks and ſpots of brown, and other colours. And beſide theſe, there are others variegated on ſeveral other grounds; in general, however, they are much inferior in beauty to the caterpillars. The colours of theſe inſects are however very indiſtinct marks to diſcern them by, ſince they are not permanent, but the creature varies them at different times of its life. Theſe inſects, like the true caterpillars, change their skin ſeveral times in their lives, and with it they change their colours alſo. The young ones of theſe animals are always much more handſome than thoſe more grown; for at every change of the skin there is a loſs of ſome of the variegations; and uſually at the laſt change they are all gone, and the creature puts on a colour different from any that it had before. This is an obſervation of the accurate Vallisnieri, who gives an inſtance of it in a worm caterpillar of the elder. This creature, while young, is of a fine green, with a long ſtreak of brown running all the way down the back; but after the laſt change of its skin, it appears without the ſtreak, and all over of a pale yelloviſh hue.

Theſe creatures differ from the common caterpillars in their manner of remaining on the leaves of a plant. The caterpillar is always extended at its full length, whether it is eating or not; but the *fauſſe chenille*, though it extends its body to the full length while eating, always rolls it up into a ſpiral when at reſt, making ſeveral circular turns with it, of which the head is at the end of the outermoſt, and the tail in the very center of the inner one. They give themſelves various odd contortions when they are ſeizing on their food; and it is a very whimſical ſight to obſerve twenty or thirty of them, in thoſe kinds which live in ſociety, attacking the different portions of the ſame leaf all at once, and each giving its body ſome odd turn at the ſame time. This is a common ſight on the leaves of the oſier; a whitiſh green kind, being very frequent in large companies on that tree, and often ſeen thus feeding in coveys. It is remarkable, that as the caterpillar feeds indifferently on every part of the leaf, this animal uſually attacks only the edges.

Some ſpecies of theſe animals feed only early in the morning, and as the leaves are then wetted with the dew, they cannot avoid taking in a large quantity of water with their food; in conſequence of which, when they are examined afterwards, their bodies are frequently found cover'd with drops of a thick and viſcous water of an ill ſmell. It ſeems probable, that the abundant aqueous matter in this caſe finds its way out at thoſe numberleſs apertures in the skin, at which the creature takes in the air: theſe inſects, as well as the caterpillars, having very numerous tracheæ.

The generality of the animals of this claſs feed on the leaves of plants and trees, but there are ſome which affect other parts of them. There are a ſmall ſpecies very frequently found living within the young branches of the roſe tree, which often deſtroy that part of the ſhrub. Others are found lodg'd in young pears, apples, and other fruit. They ſeem to have been placed there when very young, and always deſtroy the fruit, occaſioning its falling off from the ſtalk before half grown. Some ſpecies of them are alſo found on the leaves of trees, which are render'd tumid, and make what are called leaf galls, theſe being often inhabited by animals of this claſs, in particular the leaf galls of the willow. The creature, when it finds the time of its change into the nymph ſtate approaching, gives itſelf the trouble of forming a caſe in which it may paſs into that ſtate, and remain in it during the deſtin'd time without being ſubject to external injuries. It ſpins a web of ſilk for this purpoſe of the ſhape of a little egg. This on the outſide ſhews nothing remarkable; but when cut open, it is found to be compoſed of two different ſubſtances, at leaſt of two ſubſtances of very different workmanſhip, though the materials are the ſame in both. The outer caſe is reticulated, and formed of very ſtrong threads wove into a looſe open network; but the inner one is formed of extremely fine threads, and thoſe wove into a cloſer ſtuff than all that the loom can come up to. The outer ſtrong and coarſe web was plainly intended for no other purpoſe but for the better defending and preſerving them from injuries. And theſe two diſtinct caſes do not any where adhere to one another, but barely touch; ſo that on pulling aſunder the outer one between the fingers, the inner one comes out whole. The ſtrength of this exterior ſhell is extremely neceſſary, as alſo the cloſe texture of the inner one, for the defending the incloſed animal in the nymph ſtate from ſeveral devouring inſects. The ants in particular are very fond of theſe nymphs, and will hunt out the caſes where-ever they are to be found; and if they can eat their way through them, are ſure to make a meal of the incloſed creature.

The roſe worm or *fauſſe chenille* is very ſingular in the manner of its performing this great work. This is a ſmall greeniſh ſpecies often found on the leaves of the roſe, and famous for the various odd attitudes into which it twiſts its body occaſionally. It uſually carries its tail erect, and often in the ſhape of the letter S. This ſpecies, tho' green on the ſides and belly, is yelloviſh on the back, variegated with ſeveral ſpecks of black or deep brown, from each of which, there grows a long hair. This creature when the time of feeding is over goes into the ground in order to ſpin its double web. The external one is of a reddiſh brown, and the internal one whitiſh. Theſe when taken out of the earth are uſually foul'd with ſmall particles of dirt, ſo that to have them in perfection, it is beſt to keep the animal in a box, where it will ſpin them perfectly clear. There are ſome ſpecies of this animal, that hide themſelves in the holes of trees, and in the cavities between the bark and the wood, and theſe never ſpin any outer web, but are found incloſed in the fine thin internal one alone. They all, after having paſſed a proper time in this ſtate, ſome only a few weeks, others a whole winter, become four winged flies.

The flies produced of theſe inſects are of that kind which have no trunks, but have a ſtrong tooth on each ſide of the head, which meeting one with the other in the middle of the mouth, are able to cut any thing to pieces that the creature has occaſion to make its way through. The firſt uſe of theſe is the eating a hole through the double web, in which the creature finds itſelf encloſed at its birth. All the flies of this kind, have a general reſemblance one to another, and may be known to belong to the ſame family, tho' they are very different in colour, and other obvious characters. They are never very handſome, and are all as it were ſtupid, having very little motion, and ſtanding readily at any time to be caught between the fingers. Their wings always are croſſed over the body and form a ſort of raiſed covering over it; they are not ſmooth and even, as thoſe of moſt other flies, but have prominencies and cavities, and ſeem as if they had been but ill expanded at the time of the creatures hatching from the nymph ſtate. *Reaumur*'s Hiſt. Inſ. v. 9. p. 133.

The ſeveral ſpecies of theſe flies, which are very numerous, differ much leſs from one another, than the creatures do in their reptile ſtate. They are of different colours indeed in their bodies and wings, and have ſome of their eſſential parts of different ſtructure, but they are often very like one another in the fly, when they have been extremely different in the worm ſtate, ſo that their difference in colour, &c. are not always to be expected in the ſeveral ſpecies, which are ever ſo diſtinct. The bodies of ſome are black, thoſe of others are greeniſh, and thoſe of others yelloviſh, and the wings in general are colourleſs and tranſparent, tho' in ſome, they are tinged with grey, and in others with yellow, the *antennæ* are alſo very different in the ſeveral kinds, in ſome they are granulated and in others they are of the elevated kind, the antennæ of the male and female of the ſame ſpecies often differ alſo very conſiderably.

All the females of theſe flies are oviparous, no one ſpecies producing living worms; and as theſe eggs muſt neceſſarily be lodged in cavities or niches, made in the ſtalks or leaves of living plants, nature has provided this creature with two inſtruments, which are deſtined for this ſole purpoſe, and which are real ſaws made in the niceſt manner, with extremely ſmall teeth. The creature has the power of uſing both theſe at once, and conſequently can make an aperture with great eaſe, that ſhall be ſufficient to lodge its eggs in. Notwithſtanding that there are many different ſpecies of flies which have this ſort of inſtrument, and ſeveral of them are extremely frequent on one of the moſt common of all our garden ſhrubs, the roſe-tree; yet no author had obſerved this elegant and wonderful inſtrument, till the time of Vallisnieri, who has deſcribed and figured at large the weapons of a roſe-tree-fly, produced from a falſe caterpillar of that ſhrub, with two rows of teeth, one on each ſide in the manner of the ſaw of the ſerra piſcis, or ſaw-fiſh. It muſt be obſerved, that there are different ſpecies of this inſect, ſince Mr. Reaumer's figures and deſcriptions from the inſtruments we ſaw on the fly of the ſame tree, expreſs only one row of teeth in the ſaw, and make it like our common hand-ſaws with a plain back. It is neceſſary to have recourſe to the microſcope in order to ſee diſtinctly this ſingular inſtrument, yet the naked eye alone, ſhews ſo much of it, as to eaſily engage us in a deſire of knowing it better. If the body of the fly be ſqueezed gently, there will be ſeen an opening between two plates of a hollowed figure, which are ſituated near the anus, and this opening gives a ſight of a fine brown point of a ſlender body to be ſeen within; on farther preſſing the body of the fly, the whole inſtrument, of which this is the point, is forced to ſhew itſelf, and the whole ſaw is placed before the eyes. The two hollow pieces which opened in order to ſhew

it, are only intended by nature as a caſe for it at ſuch times as it is not in action. It has been before obſerved, that in all theſe ſpecies of flies produced from the *fauſſe chenilles*, the male has a long and ſlender body, the female a ſhort and thick one. As the uſe of this ſaw, is the making a proper hole for depoſiting the eggs in, the female is the only ſex that has any uſe for it, and therefore, the ſhort bodied flies are the only ones in which it is to be looked for. If we examine the others in the ſame manner, we find inſtead of the ſaw, only two hooked bodies deſtined for the male to ſieze the female with in order to copulation, and between theſe there may be diſtinguiſhed the aperture at which the male part is thruſt out in the action. See the article ROSE-FLY.

FAUX-BOURDON, *baſtard humble-bee*, a name given by *Reaumur* and other French naturaliſts to the bees uſually called by us drones, and by the common people of that nation bourdons, confounding them with the common humble-bee under that name. Theſe are much larger than the common bees, they never work, and uſually bear the proportion of about one to ten of the working bees of the hive, when moſt frequent. They are the male bees. The working ones are of no ſex at all. The female bee is but one in a ſwarm, and all theſe are of no other uſe to the community, than the fœcundating the vaſt number of eggs included in her body. Theſe bees as they never work, ſo they never eat any of the yellow matter brought home on the thighs of the other bees, and called rough wax, or bees-bread, but feed only on the honey. This is certain from the opening their bodies. Mr. *Reaumur* who opened ſome hundreds of them on different occaſions, always found honey in their ſtomachs and inteſtines, but never met with the leaſt morſel of the rough wax there.

FAUX-PUCERON, in natural hiſtory, a name given by *Reaumur* and others to a genus of inſects much reſembling the *pucerons* in many things, but differing in ſome material circumſtances. The two principal kinds of theſe are found on the back of the leaves of the fig-trees, and in little hollow balls at the ſummits of the branches of box, formed of the upper leaves vitiated by the biting of theſe creatures. See FIG-*Inſect*, and GRUB *of the box*.

FEAL, was antiently uſed for faithful: hence the tenants by knights ſervice uſed to ſwear to their lords to be *feal* and *leal*, that is, *faithful* and *loyal*. *Spelm.* de Parliam. 59.

FEAR. This paſſion has been found to leſſen perſpiration and urine. See PERSPIRATION.

FEATHER, in the manege, a ſort of natural frizling of the hair, found in many parts of a horſe's body, but more commonly between the eyes. Many are of opinion, that when the *feather* is lower than the eyes, it is a ſign of a weak eye-ſight; but this remark is not always certain.

Roman FEATHER, called in French, *epee Romaine*, is a *feather* upon a horſe's neck, being a row of hair turned back and raiſed, which forms a mark like a ſword blade, juſt by the mane.

Mid FEATHER, in the Engliſh ſalt works. See the article MID.

FEAZING, at ſea, is the revelling out of the cable or any great rope at the ends.

FEBRIS, *fever*, in medicine. See FEVER.

Ephemera FEBRIS. See the article EPHEMERA.

FEBRIS *inteſtinalis*. See INTESTINAL *Fever*.

FEBRUARY, *Februarius*, in the Roman chronology, the ſecond month of their year, ſo called from *Februa* a feaſt held therein. See FEBRUA, *Cycl.*

In the firſt ages of Rome, *February* was the laſt month of the year and preceeded January, till the decemviri made an order that *February* ſhould be the ſecond month of the year, and come after January. *Hofm.* Lex in voc.

FEDOA, in zoology, a name uſed by Geſner and ſome other authors for the Godwit, more commonly called ægocephalus. *Geſner* de Avib. See ÆGOCEPHALUS.

FEEDERS, in mining, a term uſed to expreſs the ſeveral ſmall channels in the ſides of a mine ſeeming to open into it, as brooks into rivers in their courſe. The miners in moſt counties, call theſe the *feeders* of the load.

FEEDING *of fiſh*. The owner of fiſh-ponds will find this an article very worthy his conſideration, as the trouble or expence of it are very little, and the profit very great. In a ſtew thirty or forty carps may be kept up from October to March, without any other food than what they will find there for themſelves. And by fiſhing with trammels or flews, it will be proper in March or April to take from the larger waters, ſome to repleniſh the ſtews; but after this, from March to October it is neceſſary to feed them as much as to feed chickens that are coop'd up, and it will turn to as good account. The care of doing this, is beſt committed to the gardener, who is always at hand and on the ſpot; for the regular ſerving them is of the utmoſt conſequence.

Any ſort of grain is good to feed them with, eſpecially peaſe and malt coarſe ground, and grains after brewing while they are freſh and ſweet are very proper; but it is to be obſerved, that one buſhel of malt not brewed, will go as far as two buſhels of grains. Chippings or raſpings of bread ſteep'd in the droppings of malt liquors, eſpecially of ale, are very good for carp. The quantity of theſe ſhould be about two quarts a day, to thirty carps, and it is better to have it given twice a day, that is, morning and evening, than all at once. Peaſe or other ſeeds or grains boiled and prepared for the food of carp, may be let down into the water on a ſquare board like a trencher, ſupported by four ſtrings, one at each corner, and with ſome leads faſtened to its bottom to ſink it at a proper depth; it is to be ſupported by a pole or otherwiſe, and it is a very entertaining ſight to obſerve the manner in which they will come all about it, and take off their food.

When large ponds which contain great numbers of fiſh are to be fed in this manner, it will be ſome expence to the owner; but on taking out the fiſh, and obſerving how they thrive by it, this will be eaſily born with.

Grains are the cheapeſt and moſt ſtaunch food that can be procured for fiſh, and where breweries are near, they are eaſily had, but even in country places it will be eaſy to agree with the neighbouring families who brew, to throw their grains into the pond at a certain price. Carp and tench will be fed like fowls in this manner. Pike alſo may be fed with eels to fatten them quickly, and with any other fiſh at other times. Pearch are not at all proper for this ſort of management.

FEEL, in the manage, they ſay to *feel* a horſe in the hand; that is, to obſerve that the will of the horſe is in the rider's hand, that he taſtes the bridle, and has a good *appui* in obeying the bit.

To *feel* a horſe upon the haunches, is to obſerve that he plies or bends them; which is contrary to leaning or throwing upon the ſhoulders.

FEELERS, *antennæ*, in natural hiſtory, are the horns as they are uſually called upon the heads of inſects.

The word *antennæ* is derived from the Latin *ante* before, and *teneo* to hold or carry; or poſſibly may have been given them from ſome ſort of reſemblance to the part of a ſhip, known in navigation by the ſame name. The *antennæ* in various inſects are extremely various, and in moſt very beautiful; they not only differ in the inſects of different claſſes, but frequently in the different genera of the ſame claſs, tho' never in the ſame ſpecies.

The *antennæ* of flies may ſerve to diſtinguiſh ſeveral genera of thoſe inſects. 1. There are ſome flies which have articulated ones. Theſe are compoſed as it were of ſeveral vertebræ, or of ſeveral ſmall bodies joined end to end, as the beads in a necklace. Of theſe ſome have the beads if they may be ſo called, larger, and others ſmaller. Theſe *antennæ* are uſually much thicker at their origin, than at their extremity. *Reaumur's* Hiſt. Inſ. v. 4. p. 138.

2. There are other flies which have their *antennæ* compoſed like thoſe of the former, of a ſeries of beads or vertebræ, but have them ſmalleſt at their inſertion, and gradually growing larger and larger toward their extremities. The fly produced from the formica leo, has *antennæ* of this kind.

3. Others have their *antennæ* in form of feathered beards; ſeveral of the ſmall flies, gnats, and ſome of the tipulæ have *antennæ* of this kind beautifully plumed.

4. Others have what may be called priſmatic *antennæ*; theſe are articulated, and near their inſertions and extremities are much ſmaller, than in any other part of their length. Of this kind are the *antennæ* of a ſmall tipula which is produced from the worm that eats the oak agarick. Ibid. p. 139.

5. Other flies have branched or forked *antennæ*, each compoſed of two pieces, and appearing double. Ibid.

6. Others, of which there are many ſpecies both among the two winged and four winged flies, have *antennæ* extremely ſhort and thick. Theſe have not above two or three articulations; two or three beads, if they may be ſo called, placed on one another, forming in them a ſupport, or kind of pedeſtal for one much larger than the reſt, by which the *antenna* is terminated. This laſt bead has often the figure of a little battledore, for which reaſon theſe *antennæ* may properly enough be called the battledore kind.

This laſt piece which gives name to theſe *antennæ* is fixed by one part of its edge in the uppermoſt bead of the pedeſtal, which is ſplit to receive it. Sometimes this laſt piece is of an orbicular form, but often it is oblong and elliptic, and in many ſpecies of a priſmatic figure, and in ſome the laſt bead is of the ſame figure with the reſt that compoſe the whole *antennæ*.

Examined with the help of glaſſes, each of theſe extreme bodies is ſeen to have a large hair affixed to it; and this hair is ſometimes ſo divided as to appear like a feathered *antenna*. The two winged fly which reſembles the ſcorpion fly, gives us an example of this; the hair is there ſingle, as it is alſo in the fly produced from the rat-tailed worm. The common houſe fly has its *antennæ* in form of priſms, and a branched hair is produced from their baſe. Ibid. p. 140.

7. Another ſort of *antennæ* there are, very proper to diſtinguiſh certain kinds of the two winged flies, as thoſe which ſuck the blood of oxen or horſes. The *antennæ* of theſe are ſomewhat of the nature of the battledore *antennæ*, but the body which terminates them, has in it ſomething very different from that

which

which terminates theſe. It has ſomething of the figure of a creſcent; and from the baſe of this ſort of creſcent there is produced a ſhort branch, which ſeems to have been cut off. The end of this creſcent, examined with the help of glaſſes, appears articulated, whereas moſt of the battledore *antennæ* have their terminating piece not articulated.

The ſize of the *Antennæ* of ſome flies may alſo ſerve for a diſtinction, as may alſo the manner in which they carry them. The ichneumon flies have theirs in continual motion, making a kind of inceſſant vibrations with them.

The *Antennæ* are of very various forms and ſhapes in different genera of the ſame claſs of animals, and are very judiciouſly made by Reaumur the characters of different genera of the butterfly kinds, among which there are almoſt an infinite variety of them.

The *Antennæ* of inſects in general differ from horns, in that they are moveable at the baſe; and have beſide that power, a number of articulations all along their ſtructure, by means of which they are alſo capable of being turned about any way at the pleaſure of the animal. The differences of their figure and ſtructure in the butterfly claſs, which are made the marks of the different genera, are theſe. Thoſe of the firſt genus are of an equal thickneſs from their origin, till they arrive near their extremity. In all this part they are cylindric, but they are terminated by a large head, and in the whole reſemble a club. Theſe have been called clavated *antennæ* by authors in general; but Reaumur chuſes to call them the button'd *antennæ*. The buttons that terminate theſe *antennæ* are of a very different figure in the various ſpecies. Many of them are oblong and oval, and reſemble an olive. Others are ſhorter and truncated, and reſemble an olive cut off near the middle, their extremity being flat and circular. The buttons, as well as the cylindric part of theſe *antennæ*, are compoſed of ſeveral parts or joints fitted to one another at the ends. The button alone is uſually compoſed of ten, twelve, or fifteen of theſe joints, the pedicle or body of the *antenna* of twenty, thirty, or more. The joints which compoſe the buttons are ſhort and annular, thoſe which form the pedicles are cylindric, being much more ſlender and longer than theſe. Many of the *antennæ* of this genus, when viewed by the microſcope, appear to be beſet with hairs, and many others are perfectly ſmooth. The greater number of the day butterflies, which we ſee continually ſettling upon flowers and plants, are of this kind as to their *antennæ*.

The *Antennæ* of the ſecond genus of butterflies are, in general, much ſhorter in proportion to the body of the animal than the former. But what diſtinguiſhes theſe from all other *antennæ* is, that they gradually increaſe in thickneſs from their inſertion, till they come very near the point or extremity; but there they are terminated by a ſlender ſpine, which iſſues from the lower part, and is ornamented at the end with a round tuft of hairs. Theſe Reaumur calls the club *antennæ*, as they much reſemble the figure of the club, which painters and ſtatuaries put into the hands of Hercules.

When one of theſe *antennæ* is viewed by the microſcope, its extremity is ſeen to be rounded or cylindric, but the bottom near where it joins the head is flatted. Theſe ſort of *antennæ* are found on thoſe ſpecies of butterflies, which we frequently ſee buzzing about flowers, and never ſettling on them, and whoſe wings make a noiſe like thoſe of a humble-bee.

The *antennæ* of the third genus of butterflies are of the nature of the former, inſomuch that they gradually increaſe in thickneſs as they go from the head, but they ſoon terminate the increaſe; and at a ſmall diſtance from their origin their diameter begins to decreaſe, and is carried on in a ſmaller ſize to the extremity, where it terminates in an oval point. It has no cluſter of hairs at the end in the manner of the former. Theſe ſort of *antennæ* are in ſome ſpecies twiſted alſo, ſo as to repreſent the horns of a ram. Theſe are found on ſeveral of the butterflies which frequent our meadows.

The fourth genus have *antennæ* which terminate in a ſharp point. In this they reſemble thoſe of the ſecond genus; but they differ from thoſe, and from all others, in that at a little diſtance from their origin they become very thick, and continue of this diameter the greateſt part of their length, or very nearly to their end, where they turn a little, and terminate in a fine ſharp point; and this ſometimes ſupports another point formed of a cluſter of hairs in the manner of a pencil. Theſe hairs are always of an extreme fineneſs. Theſe *antennæ* have alſo this peculiarity, that their upper ſurface is rounded, but their other part is formed of two regular equal planes. There enter into the compoſition of theſe, as well as of the *antennæ* of other kinds, a vaſt number of ſmall parts, which are nicely jointed at the ends one to another; and on the two flat ſides of each of theſe joints, the microſcope diſcovers two ſeries of fine hairs, which ſtand in an elegant order. Each is placed near the outer edge of the plane it ſtands upon; and the points of each ſeries converge and meet together at ſome height, ſo as to form a ſort of cover'd alley all along the *antenna*, reſembling the ſhady walks in a garden, where the trees planted on each ſide join at the top. Many of the larger ſpecies of butterflies have theſe ſort of *antennæ*; they are uſually thick, but ſhort in proportion to the length of the creature's body. Mr. Reaumur has very properly called theſe priſmatic *antennæ*, as in the greater part of their ſurface they are regularly of a priſmatic figure.

The *Antennæ* of the fifth genus are thoſe which are larger at their origin than in any other part, and gradually diminiſh from thence to their extremity, where they terminate in a point; and in general all thoſe which are no larger near their extremity than in any other part. Theſe Mr. Reaumur calls the conic *antennæ*, or the quadrated ones, becauſe they are eaſily ſeen to be compoſed of a ſeries of granules joined one to another, and running like the beads of a necklace from the baſe to the point, only becoming ſmaller and ſmaller all the way. In ſome of theſe the ſeveral granules they are compoſed of are round, in others they are flatted, and in ſome they very nicely reſemble the joints of the vertebræ. There are a great variety of ſpecies of butterflies, which have theſe kind of *antennæ*, and in ſome they are very long, in others they are as remarkably ſhort.

The ſixth genus of *Antennæ* are thoſe of the moſt ſurpriſing ſtructure; theſe are properly called the plumoſe or feathered ones. Theſe appear to the naked eye to be each compoſed of a ſtalk or pedicle, which continually diminiſhes in ſize from the baſis to the extremity; and from each ſide of this pedicle there grow plumes placed in the manner of thoſe on the barrel of a quill, only that they do not ſtand ſo cloſe together. Thoſe at the baſe of the pedicle are but ſhort, but from that part they become gradually more and more ſhort, till at length they have ſcarce any diſcernible length at the extremity. The microſcope however is neceſſary for the giving a true idea of the ſtructure of theſe ſort of *antennæ*. When viewed in that manner, the pedicle is ſeen to be compoſed of a great number of joints, and the plumage that grows from it is truly of the nature of that of a common bird's feather; every filament being really a feather in itſelf, and having its barrel and its plumage as in birds. The butterflies which have theſe *antennæ* are eaſily diſtinguiſhed as to ſex, the males always having larger and more beautifully plumed *antennæ* than the females, and the plumes upon them ſtanding out in a much bolder manner. The *antennæ* of this genus, as well as of the others, are moveable at their baſe, and the butterflies often carry them erect, often laid down flat and cloſe upon their bodies. Some carry them in the manner that a hare does its ears; and, as they are moveable alſo, ſome haſty obſervers have fancied that theſe creatures had ears. What is moſt of all remarkable in theſe is, that every filament of their plumage is moveable on its baſe in the ſame manner with the whole *antennæ*, and the creature often cloſes them all together, and often expands them more or leſs wide, and ſtops the ſeveral filaments all together in any angle that it pleaſes. But it ſeems as if the animal had no power of moving them ſingly, but that the whole ſeries on both ſides always muſt bend inward, or expand together, ſo that they always ſtand in even rows.

Theſe are the variations of nature in theſe ſmall parts of theſe ſmall animals. They are plainly many of them put together with great artifice and nicety; but we are yet at a loſs to know to what end or purpoſe theſe nice organizations were given them, or why all this has been done by that great hand which does nothing in vain. Different people have formed very different gueſſes as to their uſes. Some have thought them intended to defend the eyes; but though this might ſeem probable in regard to the ſhort plumoſe ones, it can never hold good in the ſlender and ſmooth ones, which can be of no ſuch ſervice. Others have thought them made for wiping and cleaning the eyes. But this is an unneceſſary office, and one they are wholly unfit for: And the forelegs of the creature are always ready for ſuch a purpoſe, and are render'd much fitter for it by the hairs with which they are cover'd, than the *antennæ*, which in moſt caſes are compoſed of joints, and are by no means adapted to ſuch uſes. Others have called them *feelers*, and ſuppoſe that the creature uſed them, as a blind man does a ſtaff, to feel out the way, leſt it ſhould run againſt any thing that would hurt it. But theſe creatures have eyes enough to ſee with; and any one who will obſerve them while they walk, will find that they do not protrude theſe before them, but often keep them erect upon the head. If this were their ſole purpoſe, it is alſo eaſy to ſee that all that beautiful variety in their forms could not have been neceſſary. Poſſibly they may be the organs of ſmelling, ſince we evidently find that many inſects have this ſenſe in a very exquiſite degree, and yet we ſee no external organs, except theſe, to ſerve for it.

It is poſſible that this may be their uſe, but it is mere conjecture; and indeed the bodies of inſects are throughout made of parts ſo different from ours, that we can probably form no more idea of the uſe of their organs, than a man born deaf can of that of the ear. They may have ſenſes different from ours, and theſe may be the organs of them; or the hearing or ſmell may be performed by them.

The pedicles or ſtalks of the ſeveral *antennæ* of butterflies are always hollow, and many of them are ſmooth and gloſſy reſembling horn. Of this kind are moſt of the plumoſe *antennæ*.

And

And the buttons of the *antennæ* of thoſe kinds which have ſuch, are always fleſhy and juicy, ſo that when preſſed, different fluids are forced out of them, firſt a white, then a yellow one, and finally a black. When the creature is held under water with only the *antennæ* above, it is common to ſee bubbles of air diſcharged from the joints and buttons; how far theſe obſervations may aſſiſt in the determining their uſe, is left to farther enquiries.

FEET. See the article FOOT.

FEL, in the materia medica of the antients, the name of a fruit much uſed by them in ſtomachic medicines, but very badly deſcribed to us. All that we know of the matter is, that there were three fruits brought from the Indies at that time, and called *bel*, *fel* and *ſel*; they were all of the ſame virtues, and ſeemed nearly allied to each other in all reſpects. Serapio tells us, that the fruit *fel* was the ſize of the piſtachia nut, and ſomewhat reſembled it in ſhape; and Aviſenna tells us, that it was an Indian medicine, bitter, and hot like ginger; and that it was uſed as a ſtomachic. He alſo ſays the ſame thing of the other two fruits, whence it appears, they were nearly the ſame thing.

It is to be obſerved however, that inſtead of this fruit, the ſame Aviſenna ſometimes mentions another medicine brought from the ſame place under this name. This he ſays, had the virtues of mandrake, and was of a cold and ſleepy nature. In another part of his works, the ſame author confounds theſe two ſo different plants, under the ſame name of *fael*. He ſays, that the *fael* is a fruit over which there is a rind, in colour reſembling the rind of the hazel-nut; that in ſhape it is very like the piſtachia-nut, and has within it a kernel like the pine-kernel, which was by ſome at that time called the granum regium, or royal grain: the colour of this kernel he ſays, was a mixture of red, white and yellow, and that it was this kernel alone, that poſſeſſed the virtues of the fruit. He adds, that this is a hot medicine, and immediately afterwards ſays, that it is a known medicine in the Indies, and poſſeſſes the virtues of the mandrake, and its fruit. This is an evident contradiction to its being hot in its nature; but it is meant of another fruit called by the ſame name. This latter *fel* is mentioned by none of the Arabians but Aviſenna; but the chapter after this is alſo on the feleros. He calls it fael, and in this he deſcribes it in the ſame manner that the others do, and proves it to be the ſame with ours, and very different from the plant, which he ſays, poſſeſſes the virtues of mandrake. See SEL.

FEL *terræ*, *gall of the earth*, a name by which ſome authors have called the ſmall centaury, becauſe of its great bitterneſs. *Ger. Emac.* Ind. 2.

FELAGUS, in our law books, was uſed for a companion, or friend who was bound in the decennary for the good behaviour of another. In the laws of king Ina, it is ſaid, if a murderer could not be found, the parents of the perſon ſlain ſhould have ſix marks, and the king forty; if he had no parents, then the lord ſhould have it; *Et ſi dominus non habet*, Felagus *ejus*. Leg. Inæ cap. 15.

Felagus is ſaid to be, *quaſi fide cum eo ligatus*.

FELE *homagers*, was antiently uſed for the faithful ſubjects. But it ſeems the word ſhould be written *feal* homagers. See FEAL.

FELIA, a name by which ſome of the chymical writers have called the ſulphurated or ſulphureous waters.

FELIS, the cat, in the Linnæan ſyſtem of zoology, is the title of a diſtinct genus of quadrupeds; but the author does not confine it to the cat alone. Many other of the quadrupeds having the ſame general characters, and being properly of the ſame genus. The characters are theſe. The creatures have eight paps, four on the breaſt, and four on the belly; and their feet are adapted for climbing. Of this genus are the common houſe-cat, which he names the *felis* cauda elongata auribus æqualibus; and the two lynxes, which he diſtinguiſhes by the general title of *feles* auribus penicilli formibus, cats with penciled ears. The firſt of theſe, the lynx cervarius, he calls the *felis cauda colore ruffeſcente maculato*; and the other the *felis cauda colore albo maculato*, the red ſpotted, and black ſpotted ſhort tailed cat.

FELIS *volans*, the *flying-cat*, in natural hiſtory, the name of an animal deſcribed by Scaliger, and ſuppoſed to be what we now call the flying-ſquirrel, a ſpecies of ſquirrel which has a looſe membrane on each ſide, which it can diſtend at pleaſure, and by means of which it takes ſuch long leaps, that it ſeems to fly. See SQUIRREL.

FELIS *zibethicus*, in zoology, a name given by many to the creature which produces the perfume called civet, and which we uſually call the civet-cat, but very improperly, it being rather of the dog kind. See ZIBETHICUM *Animal*.

FELLING *of timber*. Many circumſtances are well known and conſtantly obſerved in the *felling* of timber for building, which though to a haſty obſerver, they might appear trifling, yet prove on experience, to be of the utmoſt conſequence. One thing obſerved by Mr. De Buffon, which very greatly encreaſes the ſolidity and ſtrength of timber, is that the trees intended to be fell'd for ſervice, ſhould firſt be ſtripped round of their bark, and ſuffered to ſtand and die upon the ſpot before the cutting. The ſappy part, or blea of the oak, becomes by this management as hard and firm as the heart, and the real ſtrength and denſity of the wood has been proved by many experiments, to be greatly increaſed by it; nor is this a practice of any detriment to the proprietor, ſince the remaining ſtumps of theſe trees ſend up their young ſhoots as vigorouſly, as if they had been cut down in their natural condition. Memoires de l'Acad. Scienc. Par. 1739.

When any tree is to be cut down for timber, the firſt thing to be taken care of is a skilful disbranching ſuch limbs as may endanger it in its fall. Many trees are utterly ſpoiled for want of a previous care of this kind. In arms of timber that are very great, it is always neceſſary to chop a ſink in them cloſe to the bole, and then meeting it with downright ſtrokes, it will be ſevered from the tree without ſplitting. In *felling* the tree, take care always to cut it as cloſe to the ground as poſſible, unleſs it is intended to be grubbed up; and the doing this is of advantage both to the timber, and to the wood; for timber is never ſo much valued, if it be known to grow out of old ſtocks. When an oak is down, the bark is to be ſtripped off, and ſet ſo that it may dry well. Trees that are nine inches girt about a yard from the ground, are commonly reckoned timber trees, but none under this ſize, becauſe ſuch will be about ſix inches girt in the girting place, when the bark is off: the knowledge of this will ſave the trouble of climbing up to meaſure them. The common method of ſelling timber is as it ſtands, but the ſeller is liable to great cheat and impoſition in this reſpect. It is ſold either by the load or ton, forty foot is reckoned a ton in ſome places, and fifty a load; and in others fifty is the ton, and the load is but forty; ſo that whoever ſells timber ſtanding, ſhould mention how many foot he means in the ton or load. The trees when *fell'd* are meaſured either by girth or ſquare meaſure; it is uſually reckoned, that forty foot of round timber, or fifty foot of hewn or ſquare timber weighs the ſame, that is, twenty hundred. And this is uſually accounted a cart load; and as they ſeldom ſtrip the bark off from elm, the buyer commonly allows an inch for the bark, which is a great deal more than it comes to; and therefore if the owner can ſtrip off the bark in the meaſuring place, which ſhould be about the middle of the tree, it will be much the better.

Some allow four foot out of every load for aſh, and five foot for oak and elm; and as for the computation of the feet, if it is ſquare meaſure, the ſquare is taken by a pair of callipers, or by two rules clap'd to the ſide of the tree, meaſuring the diſtance between them, and if the ſides are unequal, they add them together, and take half the ſum, which they account the true ſide of the ſquare.

If girth meaſure be uſed, they do it by girting the middle of the body of the tree with a line, and taking a quarter part of this girt for the ſquare, meaſuring the length from the butt end ſo far forwards, till the tree comes to be but ſix inches in the girth, that is, twenty-four inches in circumference; and if the trees have any great boughs which are timber, that is, which hold ſix inches girth, they meaſure them by themſelves, and then add them to the whole. For the caſting up the contents of this, they make uſe of Gunter's line, upon which, if a pair of compaſſes be extended from twelve, to the number of inches contained in the ſquare, they place one foot of the compaſſes at the length, and keep the ſame extent with them; if the ſquare is under twelve inches, the compaſſes are to be returned twice toward twelve; if above that, they are to be turned twice from twelve, and it will ſhew the contents. This is the common practice of meaſuring, and therefore the ſeller muſt generally acquieſce in it, but it is a very falſe way, being one fifth part leſs than the whole. *Mortimer's* Husbandry, v. 2. p. 94. See TIMBER.

FEMBLE, the name given by the common people of Lincolnſhire to the female hemp. There is no country where hemp ſucceeds better than in this, and great quantities are anually raiſed there.

FEME *covert* (*Cycl.*) — By the law of England, a *feme covert* committing a bare theft in company with, or by coercion of her husband, is not deemed guilty of felony; neither does ſhe become acceſſary to a felony, by receiving her husband who has been guilty of it, as he does by receiving her. But if ſhe commit a theft by the bare command of her husband; or treaſon, murder, or robbery in his company, or by his coercion, or keep a bawdy-houſe with him, ſhe is puniſhable in the ſame manner, as if ſhe were ſole. And generally if ſhe be guilty of any offence not capital, ſhe may be indicted, &c. without making the husband a party. But if ſhe incur the forfeiture of a penal ſtatute, the husband muſt be made defendant in the action or information. *Hawk.* Pl. of the Crown. B. 1. ch. 1.

FEMOREUS, in anatomy, a name given by ſome of the authors on theſe ſubjects to a muſcle, more generally called the *crureus* or *cruralis*. See CRUREUS.

FEMORIS *quartus*, in anatomy, a name given by Veſalius and others to one of the muſcles of the thigh, called by the later writers from its ſhape *pyriformis*.

FEMORIS *fextus*, in anatomy, a name given by Spigelius and others to a muſcle, now generally called the iliacus internus. See ILIACUS.

FEMORIS *os*. See Os *Femoris*.

FEM-OWL, an Engliſh name uſed in Shropſhire, and ſome other counties for the caprimulgus, a goat-ſucker, called alſo the churn-owl. It is a very beautiful bird, and more reſembles the cuckow than the owl kind. *Ray*'s Ornitholog. p. 70. See CAPRIMULGUS.

FEMUR *moventium fextus*, in anatomy, the name given by Veſalius and ſome others, to the muſcle now called the pſoas magnus. See PSOAS.

FENCES (*Cycl.*) —The incloſures of grounds are in ſome places made by ditches full of water, and in others by walls either of ſtones alone, or of ſtones and earth. Where theſe materials are in plenty, they make very good *fences*, but in other places, the common method is by quick hedges. To raiſe theſe, a ditch is dug and a bank thrown up, and on this the young trees are regularly planted. The white thorn is the beſt of all trees to plant for a *fence*, being a tolerable quick grower, and laſting a long time, and making a very handſome *fence*. It will ſucceed on any ſoil where a ditch and new bank are made, except it be wholly of gravel or ſand, and even in this caſe it will thrive, if there happen a rainy ſeaſon after the planting of it.

Some raiſe it by ſeeds, and others by young plants; the latter is the moſt expeditious way, for the ſeeds lie two years in the ground before they ſhoot, but they grow very faſt after two or three years. Some prepare the haws, or fruit of the white thorn, by tying them up in a hair bag, and ſoaking them all winter; after this if they are ſown in February or March, they will come up the firſt year, and grow better than any other way.

Where ſets are ſcarce, it is a good way when the underwoods are *fell'd*, or rather the year before, to ſow haws and ſloes in them, and they will furniſh a ſupply of young plants for hedges, without doing the woods any harm, becauſe they may be drawn before they come to be too large. The white thorn is alſo of conſiderable value in ſome ſort of works; its root becomes very beautifully vein'd when old, and elegant boxes and combs are made of it. It is uſed by ſome alſo, in the buſineſs of enlaying, and would be more ſo, if its beauty were more known. The crab and the ſloe-tree, or black thorn, come next in value to the white thorn, for quicks for fences. *Mortimer*'s Husbandry, p. 7.

The crabs are to be ſown by kernels, pulp and all, and they will come up the firſt year; and a ſet of young crabs planted thick enough, make an excellent *fence*. The black thorn is not ſo much approved, becauſe it is not ſo ſure of growing, and if it does, its roots ſpread, and it's apt to run in too much upon the land. The buſhes of black thorn are however the beſt of any for dead hedges, and for mending of gaps; and they have another advantage over the white thorn, which is, that cattle are not ſo apt to crop them. The black thorn will grow on any ſoil that the white will, but the richer the mould is, the better it will thrive.

Holly is another excellent ſhrub for a *fence*; it is indeed greatly the beſt of all the *fence* buſhes, but it grows ſo ſlow, and is ſo uncertain, that the farmers are afraid of waiting for it, or of truſting to it; but where it ſucceeds, it makes amends for the delay in its thickneſs, ſtraitneſs and ſtrength. It is to be raiſed like the white thorn, either by ſets or berries, and the berries in the ſame manner lie two years in the ground before they come up. It will grow on any ſoil, even on the drieſt gravel, or among ſtones and rocks. It delights moſt in light grounds. If it be raiſed in plants, they ſhould be about the thickneſs of a man's thumb, and planted in a moiſt ſeaſon, either in ſpring or autumn: they muſt be ſhaded well with ſtraw or halm after they are ſet, and muſt be carefully watered, as ſoon as they begin to ſhoot, otherwiſe they will all periſh.

If any of them ſeem to periſh, they muſt be cut off cloſe at the roots, and they will often ſprout out vigorouſly thence again. The ground muſt be dug up all about them at times, which very greatly promotes their growth; and the farmer muſt keep his ſheep from them, for they are very fond of cropping the young ſprouts.

Field mice are apt to gnaw the roots of the holly in hard winters, and many of theſe trees are ſuppoſed to be killed by the froſt, when the teeth of thoſe little vermin have really done the miſchief.

The beſt way of raiſing a *fence* of theſe trees, is to plant them with the quick or white thorn, four plants of that to one of holly, theſe will thrive very well together, and while the white thorn grows very ſpeedily, the holly will take its time; as this grows large, the white thorn may be pulled up between by degrees, till at length, there is only the holly left; and if this is found not thick enough, the boughs of it which grow neareſt the ground, may be laid down and covered with earth, and they will ſend up innumerable ſuckers, which will fill up all the gaps.

Beſide theſe there are very good *fences* made of furz, of alder, and even of elder, in ſome places on proper ſoils. See INCLOSURE.

FEN-*cricket*, a name given by ſome people to the gryllotalpa. See GRYLLOTALPA.

FENGELD, in our antient writers is uſed for a tax or impoſition raiſed for repelling of enemies. *Blount*.

It comes from the Saxon *feind* an enemy, and *geld*, money.

FENNEL *giant*, in botany. See FERULA.

Hog-FENNEL. See PEUCEDANUM.

Sweet-FENNEL. See FINOCHIA.

FENS (*Cycl.*) —What the farmers call *fens* or *fenny* lands, are of two kinds. Firſt, thoſe which are only drowned by upland floods and great rains, and are very large and lie upon the levels, ſo that the water cannot run off from them, but muſt be there till the hot weather and winds dry it off; and, ſecondly, thoſe that are conſtantly wet, only that in dry times they are ſhallower covered with water than in others. In draining of theſe ſorts of lands, which is the only means of making them uſeful to the world, two things are to be conſidered, firſt the laying them perfectly dry, which can only be effected by the making cuts and drains for the carrying off the water from their loweſt parts, and thence from the whole. Or ſecondly, the taking off from them the great additional wetting they have from land floods, and long continued rains. The firſt method makes a perfect cure, the other is only a temporary relief, and makes the lands more ſerviceable in dry times, and leaves leſs for the ſun to dry up.

Whatever is attempted in regard to the draining of *fens*, the loweſt part of the ground is to be found out firſt, and the overflowing from great rains, and from land floods muſt be provided for, in the carrying off that way; for ſhould this be neglected all the labour and coſt employed on the other principle would be thrown away. If it is found that this can be done, there muſt afterwards be cut a large drain through the middle of the land, and ſeveral ſmaller drains from all parts communicating with this.

The great drain muſt be dug deep enough to drain the whole level, and this and all the others, muſt be made narroweſt at the head, and wider all the way to the mouth, where they muſt be wideſt of all.

Theſe drains muſt be all well cleanſed from mud and weeds every ſpring and autumn, and the water from land floods muſt be kept from coming in upon theſe lands, as much as poſſible, that there may be the leſs to be drained off; the lower edges of the *fen* land muſt be for this purpoſe guarded with banks to turn the water into other channels. In Eſſex they have many lands that lie below the high water mark, and are above the low water mark, and have land floods or fleets running through them, which make a ſort of ſmall creek. Theſe lands they have a very eaſy way of draining, though they are naturally very moiſt when they firſt encloſe them from the ſea; they do it with a bank, which they extend from one ſide of the land they deſign to take in, to the other, excepting a ſpace that they leave, where the creek or land floods, run into the ſea. They then prepare a wooden frame, well planked, and of conſiderable thickneſs, fitted to the head of the creek, and capable of ſhutting it wholly up; in this frame they make ſeveral holes, in which are placed wooden troughs, made each of four boards, and ſuited in ſize and number to the quantity of water that is to be diſcharged through them from the land floods. Each of theſe trunks is open toward the creek, but on the ſea ſide, it has a door or flap, which opens when the land flood preſſes againſt it, and gives it free paſſage out, but when the ſea water is riſen to the height of it and preſſes it, it is ſhut by the force, and no ſea water is let in. When this head is prepared, they let it in, and ſtopping up the whole creek, they continue the banks on each ſide till they meet it: thus all the land floods are let out at low water, and not a drop of ſea water can be admitted, ſo that the lands are kept dry and uſeful, which were before rendered uſeleſs, by being drowned with ſalt water, at every high water mark. The freſh water of the creek is thus kept unmixed with the ſea water, and therefore affords good drink for the cattle, which is commonly very difficult to be had in this ſort of lands, the tides ſpoiling what freſh waters there are, every time they come up. *Mortimer*'s Husbandry.

The wet grounds called *fens* in Lincolnſhire and elſewhere in England, bring many advantages to the inhabitants of thoſe counties. Fowl and fiſh are very plentiful in them. The pike and eels are large and eaſily caught, but they are uſually courſe. The duck, mallard and teal are in ſuch plenty, as is ſcarce to be conceived; they are taken in decoys, by prodigious flocks at a time. They ſend theſe fowl to London from Lincolnſhire, twice a week on horſeback, from Michaelmas to Lady-day, and one decoy will furniſh twenty dozen, or more, twice a week, for the whole ſeaſon in this manner. The decoy-men contract with the people who bring them to London at a certain rate, and they are obliged to take the whole number that is catched off their hands. Two teal are uſually reckoned equal to one duck, and ſix ducks and twelve teal are accounted a dozen of wild fowl; and the uſual market price is about nine ſhillings, for ſuch a dozen. About Mid-

ſummer when the moulting ſeaſon is, a great number are deſtroyed alſo by the people of the neighbourhoods. The poor birds at this time are neither able to ſwim nor to fly well; and the people going in with boats among the reeds, where they lie, beat them down with long poles. A little before Michaelmas, vaſt flights of theſe birds arrive at the decoys from other places; they ſoon grow fat in them, and continue there a prey to the maſters or owners, as long as the decoys are unfrozen, but when they are iced over, they fly away again, and go to the neighbouring ſeas for food. Philoſ. Tranſ. N°. 223.

The *fens* alſo abound in a ſort of herbage that is very nouriſhing to cattle: ſheep and horſes always grow fat upon it. Theſe *fens* are common, and the owners of cattle mark them, that they may be known. It is remarkable, that though all is open, the cattle uſed to one particular ſpot of ground, ſeldom leave it, but the owner may find them always in or near the ſame place. The *fens* have many large and deep drains. In theſe the pike and eels grow to a vaſt ſize; and they are full of geeſe which feed on the graſs, but theſe eat rank and muddy, and may even be ſmelt as ſoon as a perſon comes into a room where they are roaſting. But the people have another very great advantage in theſe, beſide the eating them, that is, their feathers and quills; and the produce of theſe is ſo great, that the cuſtom-houſe books in the town of Boſton ſhew, that there are frequently ſent away in one year, three hundred bags of feathers; each bag containing a hundred and a half weight. Each pound of feathers, brings in the owner two-pence, and it may be thought ſtrange by people unacquainted with theſe things, but it is a certain truth, that the owners pull them five or ſix times a year for the feathers, and three times for their quills. Each pulling comes to about a pound, and many people have a thouſand geeſe at a time, or more. They are kept at no charge, except in deep ſnowy weather, when they are obliged to feed them with corn.

Oats alſo grow very well in many of the *fen* countries, and in good ſeaſons bring great increaſe and advantage to the owner. There is alſo another vegetable of great profit to them. This is the *rapum ſylveſtre*, the ſeed of this, they call cole-ſeed; and they make an oil from it of great uſe in trade. They grind the ſeed between two large ſtones, the one ſtanding perpendicularly on the other. The ſtones are made of a ſort of black marble, and are brought from Germany. They ſometimes turn them by ſails, and ſometimes by the drains which carry off the water from the *fen* lands.

The *fens* lying low and being of a vaſt extent, are very ſubject to be overflowed by waters from the neighbouring high countries, and though great care and expence is uſed to keep them dry, they are often like a ſea, and the ſheep are obliged to be carried off in boats, and the people to live in their upper rooms and be ſupplied with proviſions alſo by boats.

FEODAL, *feodalis* or *feudalis*, of or belonging to a feud, or fee. Hence *feudal* ſervices, &c. See FEUDAL, *Cycl.*

FEODALITY, the fealty paid to the lord by his feudal tenant. See FEALTY, *Cycl.*

FEODATARY, or FEUDATARY. See FEODARY and FEUDATARY, *Cycl.*

FEODITAS, in old writers, is ſometimes uſed for *fidelitas*, or fealty. See FEALTY, *Cycl.*

FERÆ, in the *Linnæan* ſyſtem of zoology, one of the orders of animals; the characters of which are, that they have ſharp teeth, the fore-teeth are ſix in number, and the canine or dog teeth longer than the reſt. Of this order are the bear, the lion, the tyger, the cat, the weaſel, the didelphis or philander, the otter, the ſea-calf, the dog, the badger, the hedgehog, the mole, and the bat, which this author makes not a bird, but a quadruped with its fore-feet expanded into a ſort of wings.

FERALIA, among the Romans, a feſtival kept in honour of the dead. Vid. Mem. Acad. Inſcript. T. 1. p. 43.

FERDELLA *terræ*, was uſed antiently for a quarter or fourth part of a yard land — *decem acræ faciunt* ferdellam, *quatuor ferdellæ faciunt* virgatam, & *quatuor virgatæ faciunt* hidam, & quatuor hidæ faciunt feudum militare. *Spelm.* and Du Cange, in voc.

FERDFARE, in our old writers, is uſed for being diſcharged from going to war — *quietantiam* eundi in exercitum. *Fleta*, Lib. 1. c. 47. *Du Cange.* in voc.

FERETRUM, among the Romans, the bier uſed in carrying out the bodies of the dead; which duty was performed by the neareſt male relations of the deceaſed: thus, ſons carried out their parents, brothers their ſiſters, &c. *Hofm.* Lex. in voc. See BURYING and BURIAL.

FERIJEE, in the dreſs of the Egyptians, is a ſort of skirt worn over another garment, and made either of black woollen, or of other coloured cloth furred, this by the more genteel people is left open before. It ſomething reſembles a night-gown. *Pocock*'s Egypt. p. 189.

FERLING, in our old ſtatutes, is uſed for the fourth part of a penny. Aſſiſ. panis & cerevis. 51 Hen. 3. *Blount.*

FERLINGATA *terræ*, in our old writers, according to Blount, is the ſame as *ferlingus* terræ, which lord Coke on Littleton ſays, was a quarentine, or thirty-two acres of land. But according to the authorities quoted by Du Cange, Gloſſ. Lat. voc. *Quarentena*, it contained but 40 perches.

FERLINGUS *terræ*. See FERLINGATA *terræ*.

FERME *a ferme*, in the manege, ſignifies to exerciſe in the ſame place without ſtirring or parting.

FERMENT, (*Cycl.*) a name given by our writers on brewery, and the like ſubjects, to ſuch matters of whatever kind, as when put to a rightly diſpoſed fermentable liquor, will cauſe it to *ferment* much ſooner, and much faſter than it would of itſelf, and thus ſhorten the operation of making the liquors from them.

Thoſe things are called *ferments* in an alluſive ſenſe, which when added to the liquor, only correct ſome fault therein, and by removing ſome obſtacle to the fermentation, forward it by ſecondary means; as alſo ſuch as being added in time of fermentation, make the liquor yield a larger proportion of ſpirit, and give it a finer flavour; all theſe additions have the name of *ferments* among our diſtillers, but all the laſt improperly. The primary uſe of *ferments* is, to ſave time, and make diſpatch of buſineſs, while they only occaſionally and accidentally give a flavour, or add to the quantity of the ſpirit; and accordingly all fermentable liquors, may without the leaſt addition, only by a due application of heat, be brought to ferment more perfectly, though it will be more ſlowly than with the addition of any *ferment*. The general *ferments* uſed on theſe occaſions are the flowers and fæces of fermentable liquors generated, thrown up or depoſited, during the time of the fermentation in that liquor, or after the end of it. There are two of theſe *ferments*, procurable in large quantities, and at a ſmall price; theſe are beer yeaſt, and wine lees. A prudent and artificial management of theſe, might render the buſineſs of the brewery for diſtillation, as in the buſineſs of the malt-diſtiller, &c. much more eaſy and advantageous. It has always been found a great difficulty to procure theſe *ferments* in proper quantities, and preſerve them always ready for uſe; and this has been a great diſcouragement to the buſineſs, and hence ſome have been reduced to contrive artificial *ferments*, or to form mixtures or compounds of particular fermentable ingredients; but this has been attempted without any great ſucceſs, all theſe mixtures falling ſhort even of the common baker's leaven in their uſe. Whoever has a turn for making experiments, and attempting improvements of this kind, will find it much eaſier and more advantageous to preſerve and raiſe nurſeries of the common ones, than to deviſe mixtures of others. Yeaſt may be preſerved by freeing it from its moiſter parts; this may be done by the ſun's heat, but it will be ſlowly, and imperfectly. The beſt method is by gentle preſſing it in canvas bags; thus the liquid part in which there is ſcarce any virtue, will be thrown off, and the ſolid will remain behind in form of a cake, which may be packed in a barrel or box, and will keep a long time ſweet and fragrant, and fit for the fineſt uſes; and the ſame method may be uſed either with wine-lees, or the flowers of wine.

The former may be brought from abroad in this manner with great eaſe; and the latter may be made with us from the lees, by only diſſolving them in warm water, and ſtirring them about with a ſtick; by this means the lighter and more moveable and active part of the lee will be thrown up to the top, and may be taken off and preſerved in this manner abovemention'd in any quantity that ſhall be deſired. By this means an eaſy method is found of raiſing an inexhauſtible fund, or a perpetual ſupply of the moſt uſeful *ferments* may be readily formed in the way of ſucceſſive generation, ſo as to cut off all future occaſion of complaint for want of them in the buſineſs of diſtillation. It muſt be obſerved, that all ferments abound in eſſential oil much more than the liquors which produce them; whence they very ſtrongly retain the particular ſcent and flavour of the ſubject from which they were made. 'Tis therefore requiſite, before the *ferment* is apply'd, to conſider what flavour ought to be introduced, and accordingly what ſpecies of *ferment* is moſt ſuited to the liquor. The alteration thus cauſed by *ferments* is ſo conſiderable, as to determine or bring over any naturally fermentable liquor of a neutral kind, to be of the ſame nature with that which yielded the *ferment*. This is an obſervation of greater moment than will be preſently conceived, as not only opening a new ſcene in the buſineſs of diſtillery, but alſo in ſome other buſineſs depending on *fermentation*.

The benefit of this however does not extend to malt treated in the common way for the ſpirit, nor to any other matter which does not naturally yield a tolerably pure and taſteleſs ſpirit; as it otherwiſe makes not a ſimple, pure and uniform flavour, but a compound and mixed one. How far the fine diſtiller may apply it, deſerves his conſideration; and whether our crab ſpirit and cyder ſpirit, which have little flavour of their own, may not by this artifice, and ſome other little additions, be brought nearly into the ſtate of ſome foreign ſpirits now very highly eſteemed.

When the proper ſort of *ferment* is thus pitched upon, the operator is next to conſider its quantity, quality, and manner of application. The quantity muſt be proportion'd

tion'd to that of the liquor, to its tenacity, and the degree of flavour it is intended to give, and to the diſpatch required in the operation. From theſe conſiderations he will be able to form a rule to himſelf; but till ſuch a rule is formed, or, in order to the forming of it, proper trial will ſhew how much ſuffices for the purpoſe. The way is to begin with a little, and to add more occaſionally, the weight of the whole being noted beforehand; ſo that on weighing the remainder after the proper quantity is taken away, it will be found how much exactly has been uſed out of it for the buſineſs.

Among the ſeveral ingredients of which *fermentable* liquors are made for the ſervice of the diſtillery, treacle requires more *ferment* than almoſt any other. This is not wonderful on a juſt conſideration of the nature of the ſubject, ſince the manner in which that concrete juice is made, muſt render it greatly unfit for *fermentation* afterwards, though the original product of a vegetable juice very much diſpos'd to it in its own nature. The ſtrength of the fire uſed in the ſugar-making, and its long continuance and almoſt immediate contact, and the lime and other alkalies uſed in refining the ſugar, that is, in making the treacle, do ſo condenſe, indurate, and ſcorch the body of this juice, and abſorb its acid, that it is ſcarce to be expected that it ſhould *ferment* at all, even with the addition of jalap, or other powerful ſaline and acid or acrid ſtimulators, which tend to break the viſcous and aduſt connections of the particles.

The greateſt circumſpection and care are neceſſary in regard to the quality of the *ferment*, if a pure and well flavoured ſpirit be required. It muſt be choſen perfectly ſweet and freſh, for all *ferments* are liable to grow muſty and corrupt; and if in this ſtate they are mixed with the *fermentable* liquor, they will communicate their nauſeous and filthy flavour to the ſpirit, which will ſcarce ever be got off by any ſubſequent refining. If the *ferment* be ſower, it muſt by no means be uſed to any liquor, for it will communicate its flavour to the whole, and even prevent its riſing to a head, and give it an acetous, inſtead of a vinous tendency. When the proper quantity of a ſuitable and well condition'd *ferment* is got ready, it muſt be put to the *fermentable* liquor in a ſtate barely tepid, or ſcarce lukewarm. The beſt manner of putting them together, ſo as to make the *fermentation* ſtrong and quick, is this:

When the *ferment* is ſolid, it muſt be broke to pieces, and gently thinn'd with ſome of the warm liquor: but a compleat or uniform ſolution of it is not to be expected or deſired, as this would weaken its efficacy for the future buſineſs. The whole intended quantity being thus looſely mixed in ſome of the lukewarm liquor, and kept near the fire, or elſewhere, in a tepid ſtate, free from too rude commerce of the external air, more of the inſenſibly warm liquor ought at proper intervals to be brought in, till thus by degrees the whole quantity is ſet at work together.

When the whole is thus ſet at work, and ſecured in a proper degree of warmth, and kept from a too free intercourſe with the external air, it becomes as it were the ſole buſineſs of nature to finiſh the operation, and render the liquor fit for the ſtill. In this eaſy manner the whole end of *fermentation* would be anſwered. But during the whole courſe of the operation, there are ſeveral other things that may be added with ſome particular view, as either to increaſe the quantity of ſpirit, or give it ſome agreeable flavour. Theſe additions may ſometimes require ſome alteration in the general method laid down above, though upon the whole it is right. *Shaw*'s Eſſay on Diſtilling. See ADDITIONS.

FERMENTS *in the Earth.* It is very probable, that the natural *ferments* in the earth may be of more conſequence than is generally ſuppoſed, and tend to elucidate many things, which at preſent appear very myſterious. The different fruitfulneſs of different ſpots of the ſame ſort of land may be owing to this, as alſo the different temperature of the air at the ſame time in places very little diſtant from one another. The effluvia ſent up by ſome of theſe, not only diſſolve ſnow that falls on them, but even melt it in the air as it approaches, and cauſe it to fall in rain, not in ſnow. And often in two places within a mile or two of each other, there ſhall be a diſparity of heat and cold no way elſe to be accounted for, ſince there is often no difference of ſhade or ſhelter.

In Scotland there are large tracts of land, where the ferment is ſo ſtrong, that the earth lets a perſon in up to the ankles as he walks; and generally, at about a foot depth under this, there is found a ſtratum of pebbles, ſo cloſe ramm'd together, that they ſeem an artificial cauſeway. This land, though of no greater depth than a foot, is found very rich for garden plants, and even for fruit-trees. Phil. Tranſ. N° 110.

FERMENTATION (*Cycl.*) is often confounded with *Effervescence*, but a great difference is made between theſe by the chemiſts.

Fermentation is that ſpontaneous inteſtine motion, which, in the degree of heat of the univerſal temperature of ſubterraneous caverns, will, in a few hours, bring on ſuch a change in vegetable juices, or in water charged with a ſtrong tincture of vegetable particles, (for *fermentation* is confined to the vegetable kingdom ſolely) as from a vapid muſt or wort quenching fire, to make it become more or leſs inflammable, as it is impregnated with more or fewer of the vegetable particles, and in the alembic to afford that volatile, ſubtil, inflammable liquor commonly called vinous ſpirit. The heat produced by *fermentation* never exceeds that of the human body. Phil. Tranſ. N° 476. p. 474. ſeq. See EFFERVESCENCE.

The juices of plants are ſtrangely alter'd by *fermentation*, and are ſuſceptible of many, and thoſe very various changes from it. And it is not only the juices of fruits that are thus to be wrought upon, as thoſe of apples, pears, grapes, and the like, in the common way; but there is an artificial change to be made in the ſeeds of plants by what is called malting. And it is not grain alone that is thus to be wrought upon, but any other ſeed whatever may be made to yield its juices and virtues freely to water by this proceſs. The juices of roots alſo, for inſtance, that of liquorice, will be wrought upon in the ſame manner; and the juices of the bodies of trees, as of the birch, and the like. If in the month of March a hole be bored into the body of a birch-tree, and this hole be ſtopped with a cork, through the middle of which there is thruſt a quill open at both ends, the juices of the tree will drop out at the quill at the rate of a large drop every ſecond of a minute, and a great quantity will in fine be obtained in this manner. This liquor is not unpleaſant to the taſte, and looks tolerably clear, reſembling water into which a little milk had been ſpilt. There are many ways of *fermenting* this juice, by all of which it is converted into a ſort of wine. Theſe are well known; but there is another remarkable property in our maples, both the common ſmall kind, and the great one which we call the ſycamore: theſe being tapp'd in the ſame manner, will bleed freely in winter; and their juices, after a hard froſt breaks, will flow out in ſo copious a manner, as is ſcarce to be conceived. The willow, the poplar, and the wallnut-tree will all bleed alſo; and *fermentation*, of which their ſeveral juices are eaſily ſuſceptible, will turn them all into palatable and ſtrong wines.

Some of the proceſſes in chemiſtry ſeem to prove, that *fermentation* is not confined to animal and vegetable ſubſtances, but that minerals are alſo liable to ſomething of it. If an ounce of lead and an ounce of biſmuth be melted together in an iron ladle, and an ounce of quickſilver be heated in another ladle, and all three mixed together, this makes an amalgamation, which appears perfectly homogeneous, and paſſes through leather in a running form, without leaving any thing behind. But this mixture being ſuffer'd to ſtand quiet for ſome hours, a groſs matter will ſeparate from it by degrees, and float upon the reſt, which will now run eaſily through leather, and leave the groſs matter behind. Here appear all the requiſites of *fermentation:* 1. A fluid form. 2. An uniform matter. 3. An inteſtine motion; and, 4. An actual ſeparation of a groſſer matter leaving a thinner behind. *Shaw*'s Lectures, p. 139.

FERMENTED *Liquors.* All *fermented* liquors abound with an over-proportion of water; and if a very conſiderable quantity of it were taken away, they would become not only richer, but more durable, provided that ſo much of the aqueous humidity was retained, as was juſt ſufficient to preſerve the vinous conſiſtence, to keep the ſaline part fluid, and to retain the ſlimy and unctuous parts expanded and mixed among the reſt. But as an actual and truly ſaline matter abounds in wine and in vinegar, and that of an acid, auſtere, and tartarous kind; when the ſpirituous part is drawn away, the wine becomes ſurpriſingly more auſtere; and when a large quantity of the watery part is ſeparated, this ſuperabundant ſaline, tartarous matter coagulates into a cryſtalline form, and either falls to the bottom, or ſticks to the ſides of the cask. For the ſubtile, oily matter, which makes the ſpirituous part in wine, blunts and takes off from a tartarious acidity, in the ſame manner that the addition of ſpirit of wine blunts, ſheathes, and dulcifies the acid, corroſive parts of ſpirit of nitre in making the ſpiritus nitri dulcis. But this tartarious ſalt abounding alſo with an over proportion of ſo groſs and unctuous matter, cannot be diſſolved or diluted without a very large proportion of water, which being taken away, it preſently converts into dry and ſolid cryſtals, as is the known caſe of cream of tartar. Hence proceeds the effect before obſerved, that the auſterity and roughneſs of wine, are the more preſerved, the more the wine is deprived of its ſpirituous parts. This experiment is familiar in our kitchens where wine being burnt or boiled into ſauce, is found to have a much greater degree of auſterity, than the ſauce and wine had before it had undergone the action of the fire, and loſt its ſpirituous part.

When the water is even by diſtillation plentifully drawn off from wine, not of a terreſtrial and chalky, but of a tartareous nature, a beautiful tartar will be found to cryſtalize, among the remaining maſs, in a conſiderable proportion. But tho' this ſuperfluous water, that generally dilutes the wine and weakens its taſte might be advantageouſly ſpared from it, and it would then become much more rich and noble, and at the ſame time more ſmooth and ſoft, through the loſs of ſome conſiderable portion of its tartar; yet this ſeparation cannot be effected by diſtillation, becauſe that carries away other parts

as well as the water, and damages the whole, by taking off what ought to be the moſt carefully preſerved. The ſpirituous part is the life of all fermented liquors, it keeps the whole together, and in a manner embalms and renders them durable and not ſubject to corruption; it alſo in a great meaſure gives them that aromatic refreſhing and reſtorative virtue, and the beſt effects they have on the human body. Nor is this all, but the intimate and ſubtil union of this ſpirituous part with the reſt, is perfectly the ſole and entire cauſe of both the former effects, ſo that it by no means ſuffices to have the ſpirit barely preſent among the other parts, for then it might be drawn off and poured back again, without any damage to the wine; but the eſſential union is here diſſolved by taking it away, and can never be reſtored again by a ſimple reaffuſion. 'Tis therefore deſtructive of the end propoſed, thus to break and diſſolve the texture of the wine, and this entirely ſubverts and deſtroys its nature. This inevitably proves the caſe, whenever wine is evaporated or diſtilled, which conſtantly requires a degree of heat capable of raiſing water into vapour, and hence the ſpirituous part being greatly lighter than the aqueous, flies off together with it, or before it, and the wine is left diſſolved in its texture, and without its ſoul. Upon this, the remaining ſaline unctuous maſs is ſo diſturbed, as no longer to remain connected, but it becomes thick and turbid, and afterwards runs impetuouſly into a kind of corruption, attended with acidity and ropyneſs. All theſe circumſtances ſhew, that tho' the condenſing of wines by taking away their ſuperfluous humidity would be a very deſirable thing, yet it is by no means to be done by evaporation.

FERMENTING. In the *fermenting* of malt for the diſtilling the ſpirit, the meal of unmalted corn is found neceſſary to be mixed with the malt, to prevent its over *fermenting*, and throwing off the matter of the ſpirit; but as diſpatch is required in this caſe, a good quantity of yeaſt is added to quicken the *fermentation*, ſo that it may be finiſhed in two or three days. More yeaſt is to be added if the weather be cold, and leſs if it be hot: the reverſe of this is to be underſtood of meal, more of which, is to be added in hot weather to check, and leſs in cold to haſten the operation, which in the preſent caſe is deſigned to be violent, contrary to what ought to be obſerved in the *fermentation* of wines, where the ſlower the operation is performed, the better the liquor will prove, and this may indeed hold here alſo in a leſs degree, for it is poſſible to ferment the waſh ſo violently, that it ſhall ſoon end in putrefaction. *Shaw*'s Lectures, p. 216.

FERN, *Filix*, in botany. See FILIX.

The ſeeds of the ſeveral ſpecies of *fern* were wholly unknown to the antients. Swammerdam in his *Biblia Naturæ*, claims to himſelf the honour of having firſt diſcovered them; but it appears from Hook's works, that Dr. William Cole ſent an account of the ſeeds of ſeveral of the plants of this kind to that author, in 1669, whereas Swammerdam declares his diſcovery of them, to have been in 1673; ſo that it is plain that Dr. Cole's was prior to his by ſome years. Swammerdam is an author of that ſtrict probity, that there is no room to doubt, but that he ſpoke what he thought to be true; and it is even poſſible, that he might have diſcovered them ſooner than the time he mentions; but however that be, it appears from the later obſervations of the ingenious Dr. Miles, that his accounts are extremely accurate, and juſt. The ſeed-veſſels of the common *fern*, the Engliſh and foreign maiden-hairs, the wall-rue, harts-tongue and the like plants, are all alike in their general form, their only differences being in the ſize, and in their arrangement on the plants. The number or quantity of the ſeeds is very different in different plants, but Mr. Miles obſerves, that the fewer ſeeds there are in any ſpecies, there is always the more in quantity of a ſort of ſpungy or fungous matter, which forms a kind of tubercle, not unaptly reſembling what is called jews-ears, which ſeems a ſubſtance intended for the ſheltering the ſeeds.

In the female *fern* and Engliſh maidenhair, the whole ſurface of the leaf on the under ſide, ſeems covered with a congeries of ſeeds, ſo that they guard one another, and therefore have leſs occaſion for a covering of fungous matter of this kind; yet even on theſe plants when the ſeeds are fallen off, there are found ſmall membranes, a little curled, looking as if they had been raiſed with the edge of a fine penknife, from the ſkin of the leaf, not unlike the pieces of ſkin that are raiſed off from the hand, in the trying a penknife or other ſharp inſtrument. In the common male *fern*, there are found at the proper ſeaſon, ſeveral brown ſpots placed in a regular manner; theſe are of a pale brown colour, and are principally compoſed of this fungous matter, the ſeed-veſſels being ſmall and inſerted round it. Phil. Tranſ. N°. 461. p. 774.

Theſe ſeed-veſſels conſiſt of a ſtalk by which they are inſerted into the leaf; this repreſents an elaſtic cord, and is ſurrounded by a great number of annular ribs, reſembling the cartilages of the aſpera arteria, and indeed nothing in nature ſo exactly reſembles this cord or ſtalk, as the wind-pipe of a ſmall bird. This cord encircles the globular membranous pod wherein the ſeed lies, adhering to it, and dividing it into two hemiſpheres. See Tab. of microſcopical Objects, Claſs 2.

The pod is compoſed of a fine whitiſh membrane, ſomewhat like that which lines the inſide of a pea-ſhell; the ſeeds are irregular in ſhape, and of a reticulated ſurface. The moſt advantageous way of viewing this is to uſe the common microſcope for opake objects, putting on a ſmall magnifier, and laying the ſeeds with their capſules, &c. as taken from the back of the plant, on a piece of poliſhed ivory. The proper time of the year is in the beginning of September, and then if the plant be newly gathered, the ſeed-veſſels often burſt while they are under inſpection, and ſhew a very elegant appearance. The manner of this burſting of the pod, which is the method nature has taken for the ſcattering and diſperſing of the ſeed, is this; the cord becomes extended in ſome one part, and ſoon after breaks aſunder, this by expanding burſts the pod into two parts, and by continuing to expand itſelf as it departs from a curve, and approaches to a right line, it rends itſelf away from the globular pod, till it be at length wholly diſengaged from it; and then, as there can be no farther reſiſtance given to its expanding, it ſuddenly flies off, and with a ſort of jerk, becomes quite ſtrait at once. By this laſt action the capſules are ſhook, and the ſeeds are diſcharged out of them on the plate of ivory, in the ſame manner as the grains of wheat or barley, would be thrown out of a bowl placed on a table, by the ſhaking of the bowl. This is a beautiful phænomenon in the minute ſeed-veſſel of the *fern*, and is frequently ſeen when the ſeeds are freſh gathered, as then the cords and capſules are green and juicy, and the burſting goes on gradually; but when they are dry and criſp, there is nothing of this ſeen, for the burſting is inſtantaneous, and the ſeeds are toſſed ſo far by it, that none of them fall within the area taken in by the lens. When the pod and cord are but juſt ripened, they ſometimes are twenty minutes in burſting, and the whole method of the proceſs, is then diſtinctly and beautifully ſeen. This whole mechaniſm would be ſeen in a much more perfect and beautiful manner, if it were poſſible to get off the ſeed-veſſels from the leaves without injuring them in doing it; for the common way of getting them off, is by rubbing the leaves, and this muſt neceſſarily burſt a great number of them; in this method they are ſeen to fly off from the leaves in form of a fine duſt or powder, and often get into the pores of the skin and become as troubleſome as cow-itch. Philoſoph. Tranſ. N°. 461. p. 782.

FERN, in husbandry. The common *female fern* is a very miſchievous and troubleſome weed to the farmers, being very difficult to deſtroy, where it has any depth of ground to root in. Its root will often penetrate to eight foot deep, and ſpreading a great way, they will riſe again to the ſurface, and ſend up new plants at a conſiderable diſtance. In graſs land the beſt way of deſtroying it, is mowing the graſs, three times a year in Spring, in May, and in Auguſt. Dung and aſhes are very good manure for lands which abound with it, but the beſt of all things for deſtroying it, is urine. *Fern* cut up when the ſap is in it, and laid to rot upon the ground, is a very good manure for land, and will mellow it ſo as to prevent its binding. Trees planted where *fern* grows, are obſerved to thrive very much, even tho' it be upon a hot gravel; the reaſon of this is, that the *fern* ſhades the roots, and keeps them moiſt and cool. *Mortimer*'s Husbandry, p. 316.

The poor people in many parts of the north of England, uſe aſhes of *fern* inſtead of ſoap, for waſhing their clothes; they cut the plant green, and then burn it to aſhes, and make them up into balls with water; they dry theſe in the ſun, and keep them ready for uſe. Scotch ſheep put into a land where there is much *fern* growing among the graſs, generally deſtroy it in a little time, partly by their dung and urine, and partly by treading it down.

FERNS, in medicine. All the ſpecies of *fern*, and other vegetables, which carry their ſeeds on the back of their leaves, as moonwort, and the like plants, poſſeſs the ſame general virtues of drying and ſtrengthening the viſcera, eſpecially the ſpleen.

Dwarf FERN. See FILICULA.

FERN-*aſhes*. The aſhes of the common *female fern* produce a very ſingular phænomenon in the common way of treating them and their ſalt. If a large quantity of theſe aſhes are procured, and the ſalt to the quantity of ſeveral pounds extracted from them in the common way, it will ſucceed better than in ſmaller quantities. The greater part of this ſalt being dried, if the remainder, which is more moiſt, be expoſed to the air to receive ſome of the vapours of it, this will ſoon become fluid, or an oil, as it is very improperly called by deliquium. The reſt of the lixivium, which will be very heavy, and of a deep blood-red, or claret-colour, being ſet by in a glaſs veſſel unſtopped for five or ſix months, there will be found at the bottom of the liquor, a very large quantity of ſalt precipitated to the thickneſs of about two inches of the bottom of the veſſel. The lower part of this will have all the foulneſs, and appear diſcoloured; but the upper part will be extremely pure and white. From the ſurface of this part, there will grow up a number of plants, in appearance ſtanding erect, and at ſmall diſtances from one another. Theſe are only the laſt cryſtallizations of the ſubſiding or ſeparating ſalt, but they have a regularity that is very ſurpriſing, they vary conſiderably in ſize and weight, but are all of the ſame ſhape, exactly reſembling

ſembling ſo many plants of the common unbranched *fern*, ſending out a great number of regular leaves on each ſide the ſtem. Theſe ramifications of the ſalt, will remain many weeks in this perfection if the veſſel be not ſtirred; but they are ſo tender, that the leaſt motion deſtroys them, and they after this, never will form themſelves again. Phil. Tranſ. N°. 105.

FERN-*oil*, in pottery, a name given by our merchants who have been in China, to a ſort of varniſh, which the Chineſe uſe in their porcelain manufactories. It is alſo called lime-oil, and is a thing ſo eaſily made, that it would be worth attempting what might be done with it, in our imitations of the porcelain. They make it in this manner; they take a large quantity of *fern* well dried, and ſpreading a covering of it over a piece of ground ſufficient for the quantity of oil they intend to make, they lay upon this a coat of large lime-ſtones, newly calcined into lime; on theſe they ſprinkle with the hand a ſmall quantity of water juſt to ſlake them. They cover this bed of lime with another of *fern*, and ſo on, till they have raiſed it to eight or ten foot high; they then ſet fire to the *fern*, this burns away in a little time, and leaves a mixture of the lime and its own aſhes. This mixture is laid in the ſame manner between beds of more *fern*, and burnt again. This operation is repeated five or ſix times. Obſerv. ſur les coutom. de l'Aſie.

When the laſt calcination is finiſhed, the mixture of lime and aſhes is carefully gathered up and thrown into large veſſels of water, and with every hundred weight of it, they put in one pound weight of kekio; they ſtir the whole together, and when the coarſer part has ſubſided to the bottom, they take off the finer which ſwims at the top in form of a fine cream, and putting it into another veſſel of water, they let it ſubſide to the bottom by long ſtanding; they then pour off the water and ſave the reſiduum in form of a thick oil.

This they mix with the oil of ſtone, prepared by powdering and waſhing in the ſame manner a particular ſort of ſtones, and with this they cover all the veſſels that they intend to varniſh. The *fern* aſhes have a very great ſhare in the advantage that this oil has over our common varniſhes; and the Chineſe tells us, that they once inſtead of *fern* uſed the wood of a tree, called ſe tki, and they ſuppoſe that the ſuperiority of the old porcelain over the preſent, is owing to the uſe of this tree inſtead of the *fern*; but is now too ſcarce among them. The new manufacture which we have at Briſtol, excels every thing that has been done of the like kind, in the beauty of the varniſhing; and it is ſaid, they have founded their advantage on an imitation of this, and the Chineſe oil of ſtone. Theſe two oils, as they are called, are always mixed together, and they muſt be carefully preſerved of the ſame degree of thickneſs, or elſe all the varniſhing will not be even.

FERN-*root*, was frequently preſcribed by the antients in diet-drinks, for removing obſtructions, and in chronic caſes of all kinds; but it is much diſuſed at preſent. The country people, indeed, eſteem it a ſovereign remedy for the rickets in children; they alſo give it in powder to deſtroy worms.

FEROENSIS *marga*, in natural hiſtory, a name given by ſome authors to a marley earth, found principally in the fiſſures and cavities of ſtone, and called by the generality of later naturaliſts, *agaricus mineralis*, and *lac lunæ*, and by the antients, *terra* or *creta ſeleneuſiaca*. *Hill*'s Hiſt. of Foſſ. p. 48. *Charlton* of Foſſ. p. 48. See LAC *Lunæ*, *Cycl.* and *Suppl.*

FERRA, in zoology, the name of a fiſh, called alſo by ſome *guiniad*, and caught both in the lakes and rivers. It is of the truttaceous kind, and is uſually of a foot or a little more in length, and in the ſhape of its body much reſembles the ſalmon. Its back is brown, its belly white, its ſcales are of a moderate ſize; its upper jaw hangs a little over the under, and its mouth is very like that of the common herring; it has no teeth, the belly is ſomewhat flatted, not running to an edge, the top of the head is of a faint blue, full of dusky ſpots; the eyes are very large, and there is on each ſide a ſtrait line running from the angle of the gills to the tail; the tail is forked. It is a very well taſted fiſh, and uſually is ſeen ſwimming in large ſhoals. Pimble-meer in Merionethſhire, is the place where the greateſt quantities of it are taken, but it is alſo caught in Cumberland, and ſome of the northern counties of England, and called there the ſchelley. *Willoughby*'s Hiſt. Piſc. p. 183.

FERRARIA, in botany, a name uſed by ſome authors for agrimony, and by others, in particular by Lobel, for the ſcrophularia, or fig-wort. *Ger. Emac.* Ind. 2.

FERRET, *viverra*. This creature has but one note in her voice, which is a ſhrill, but ſmall whining cry. The female uſually brings forth ſeven or eight young ones at a time; ſhe carries them in her body forty days; the young ones are blind for a long time after they are littered. When they are tamed they are to be fed with milk, and with barley-bread; they will faſt a long time; when they walk they ſet up their back, which is otherwiſe ſo long, that it would be troubleſome to drag it on; when they are touched they ſmell very diſagreeably; they naturaly ſleep very much. The *ferret* is a bold and audacious animal, and is an enemy to almoſt all others, It does not eat the fleſh of the creatures it kills, but ſucks their blood.

When the warrener has occaſion to uſe the *ferret* to catch rabbets, he firſt makes a noiſe in the warren to frighten them all into their holes, then he pitches his nets, and having muzzled the *ferret* that he may not bite the rabbets, he turns him into their holes to frighten them out, and then the dogs drive them into the nets that are ſet for them. See VIVERRA.

FERRETS, in glaſs making, the irons with which the workman tries the melted metal to ſee if it be fit to work.

It is alſo uſed for thoſe irons which make the ring at the neck of bottles. *Neri*'s Art of Glaſs, Appendix.

FERRETES *d' Eſpagne*, in natural hiſtory, a name given by authors to certain ſtones of a regular figure, found on the ſides of a rock in Spain; and, as has been ſince diſcovered, very plentifully on the bottom and ſides of the Fontaine de Salut, near Bagneres in France, and in other places in the country thereabout. In the firſt bath through which the largeſt of the two branches of this ſpring flows, there are found at different times great numbers of theſe *ferretes*: they are ſmall ſtones of the colour of ruſty iron, and of a regular figure, being either parallelopiped with oblique angles, of which the ſides are unequal, or ſmall ſolid bodies with ſix ſides, only differing from cubes or dice in this, that the ſurfaces are not perfectly perpendicular to one another, but a little inclined; they are alſo commonly longer than they are broad, and broader than they are high. The largeſt of theſe fall ſhort of an inch in meaſure, being about eleven lines in length, nine and a half in breadth, and ſix in heighth, but they are uſually a great deal ſmaller, and are ſometimes found in cluſters, a hundred or more together; and ſome of them have ſhining ſkins ſeeming of a metallic ſubſtance. Theſe ſtones are not only found in the bath, but in the digging a way for a common road, from the town of Bagneres to it, they were found lodged in their proper ſtratum. The workmen here met with a bed of a ſoft kind of ſlate of a bluiſh colour, but lighter than that of the common ſlate. The whole rock they worked through, was compoſed of layers or beds of this, lying almoſt parallel over one another. The ſubſtance of the ſlate ſeemed to be a compoſition of fibres or ſtrings, laid regularly ſide by ſide, by one another, and all equally inclined to their beds or layers. Whence it comes that upon breaking them with a hammer, the pieces ſometimes are pretty like the figure of a regular parallelopiped with oblique angles. Upon a narrower examination of this ſort of ſlate, there are uſually found in it, a great number of parallelopiped ſtones, like thoſe before ſpoken of, only ſmaller; and ſeveral little black ſpots diſcovered in other parts of the ſtone when they are examined with glaſſes, prove alſo to be regularly figured bodies of the ſame kind.

Every one of theſe ſtones ſo long as it remains in the rock, is always found between two bundles or cluſters of tranſparent fibres, of which generally one is placed on the one, and the other on the oppoſite ſide; theſe cluſters of fibres are largeſt in the largeſt ſtones, however they are always found even about the ſmalleſt in ſome quantity.

In ſome of theſe ſtones, the tranſparent fibres of which every cluſter is compoſed, have left a vacancy in the middle of themſelves; this ſort of fiſſure being coloured with a ferrugineous matter, and now and then with metallic and ſhining veins, it is not a very improbable conjecture, that the uſe of the tranſparent fibres is that of ſtrainers, which ſuffer nothing to paſs through them to the little ſtones, but ſuch particles as are proper to advance their growth. In pieces of a harder ſlate near the ſame place, there are alſo frequently found ſmall ſtones of the ſame figure but of a braſſy colour, theſe alſo are attended with the like cluſters of tranſparent fibres. Philoſ. Tranſ. N°. 472. p. 30.

Great quantities of ferrugineous ſtones are alſo found in large maſſes in all the rocks about the fountain de Salut; and it is very probable, that the water of this ſpring, runs through a bed of this ſort of ſoft ſlate before deſcribed, in which theſe regular ſtones are lodged, and from which it may very eaſily looſen and detach them in its paſſage, and ſo bring them along with it. The bundles of tranſparent fibres are faſtened very firmly to the ſlate, but very ſlightly to the ſtone that they ſurround; whence it is very evident, that if theſe ſtones are thus detached by the water, they muſt come alone, not with that matter joined to them.

FERRETTO, in the glaſs trade, a ſubſtance which ſerves to colour glaſs. This is made by a ſimple calcination of copper, but it ſerves for ſeveral colours. There are two ways of making this: the firſt is this, take thin plates of copper, and lay them on a layer of powdered brimſtone, in the bottom of a crucible, over theſe lay more brimſtone, and over that another layer of the plates, and ſo on alternately, till the pot is full. Cover the pot, lute it well, place it in a wind furnace, and make a ſtrong fire about it for two hours. When it is taken out and cooled, the copper will be found ſo calcin'd, that it may be crumbled to pieces between the fingers, like a friable earth; it will be of a reddiſh, and in ſome parts a blackiſh colour. This muſt be powdered and ſifted fine for uſe. *Neri*'s Art of Glaſs, p. 30.

The other way is leſs eaſy, but it makes a more valuable *ferretto*. It is this; make a number of ſtratifications of plates of copper and powdered vitriol alternately in a crucible, which place on the floor of the glaſs furnace near the eye, and let it ſtand there three days, then take it out, and make a new ſtratification with more freſh vitriol, and calcine it again as before, repeat this operation ſix times, and a moſt valuable *ferretto* is produced.

FERRIFIC *cauſe*, a term uſed by ſome writers to expreſs that principle, to which what they call the production or generation of iron in burnt bodies, in which no iron could be diſcovered before burning, is owing. It is the general opinion of the preſent philoſophers, that this iron thus diſcovered in the aſhes of plants, and the like burnt ſubſtances, really exiſted there before, and only needed the diſunion of the concreted body, to the bringing of its parts together. If this be the caſe, there is evidently no production of iron in the caſe, and therefore the term *ferrific* is a word without meaning. Becher however, in his ſupplement to his Phyſica Subterranea, is of a very different opinion, determining, that the iron is really produced in theſe caſes, during the action of the fire; and that by the tranſmutation of ſome other matter into iron; and from this he argues the poſſibility of gold-making among chymiſts by tranſmuting ſomething elſe into gold, as ſome other ſubſtance is in this caſe tranſmuted into iron.

The experiments he has given us accounts of to prove this *ferrific* cauſe or principle, were made with brick-earth, a ſubſtance which he ſuppoſes to contain no iron in its native ſtate, any more than a plant or an animal does. He took common brick-earth, and after drying, powdered and ſifted it, then mixing it with as much linſeed oil as ſerved to make it into paſte, he rolled it up in little balls, and put them into a retort; the retort being filled with theſe balls, the diſtillation was made in an open fire for two hours.

The diſtillation being finiſhed, there was found in the receiver a quantity of oil, of the nature of the oleum philoſophorum, and the balls being poured out of the retort, were found to be black, not red, as would have been the caſe if the clay had been burnt alone in an open fire. Theſe balls were then beaten to powder, and the powder thoroughly wetted with common water, and finally as much water added to this paſte, as made it thin and fluid. The heavy matter was ſuffered to ſettle, and the turbid water poured off, and this repeated with freſh water ſo often till the liquor came off clear. The earthy part being thus waſhed away, there remained at the bottom of the veſſel a heavy blackiſh powder which being dried and laid upon a paper, was found to be in great part attracted by the loadſtone, that is, a conſiderable part of it was real iron.

Having thus produced iron where he ſuppoſed there was none before, and eſteeming from this, that the ſulphureous ſpirits may be fixed by a certain earth as their matrix; he uſed the ſame method with a great number of other minerals, ſulphur's and mercury itſelf, and accordingly melted various minerals with various earths and clays, and as he aſſures us, by theſe experiments diſcovered many real tranſmutations.

The truth of all the reſt, ſeems to depend on the exactneſs of this firſt experiment with the brick clay; and the whole that can be deduced from that falls to the ground, if there be any ferrugineous matter contained in either the oil or the earth: the oil need not be enquired into; but it being the general opinion of the world, that common brick earth, always contains iron, it will be neceſſary to invalidate that received opinion, before any thing can be judged from the experiment, which ſeems only to prove, that fire does to this earth, what it does to an ore.

Many even of the richeſt ores of this metal not at all anſwering to the magnet in their crude native ſtate, and even the pooreſt doing this in part after having paſſed the fire, it may poſſibly be found on experiment, that common brick clay is a poor iron ore; but experiments only muſt be the proof of this.

FERRUGINOUS *waters*. See STEEL *Waters*.

FERRUM *Equinum*, *horſe-ſhoe vetch*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the papilionaceous kind; its piſtil which ariſes from the cup, finally becomes a flat pod, divided into ſeveral lunated articulations, and in ſome degree reſembling a horſe-ſhoe, containing ſeeds of the ſame form.

The ſpecies of *horſe-ſhoe vetch* enumerated by Mr. Tournefort, are theſe: 1. The *horſe-ſhoe vetch*, with ſingle pods. 2. The *horſe-ſhoe vetch*, with many pods on the ſame pedicle. 3. The German *horſe-ſhoe vetch*, with pods growing on the tops of the branches. *Tourn.* Inſt. p. 480.

FERTILITY (*Cycl.*) — Nothing can produce *fertility*, in either ſex, but what promotes perfect health; nothing but good blood, ſpirits and perfect animal functions, that is, high health, can beget perfect fecundity; and therefore according to Dr. Cheyne, all means and medicines, all noſtrums and ſpecifics to procure fertility, different from thoſe which procure good blood, and ſpirits, are errant quackery and cheating. He ſays that water drinking males, are very rarely infertil; and that if any thing in nature can prevent *infertility*, and bring fine children, it is a milk and ſeed diet, perſevered in by both parents. See Nat. Meth. of curing, p. 281, 287.

FERULA, (*Cycl.*) *fennel giant*, in botany, the name of a genus of the umbelliferous plants, the characters of which are theſe:

The flowers are of the roſaceous kind, being compoſed of ſeveral leaves arranged in a circular order on a cup which afterwards becomes a fruit compoſed of two very large flat and thin ſeeds of an oval figure, which often depoſit their covering. To this it is to be added, that the leaves are either like thoſe of fennel, or broader, and then reſembling thoſe of parſley.

The ſpecies of *ferula* enumerated by Mr. Tournefort, are theſe: 1. The female *ferula* of Pliny, with broad and rounded ſeeds. 2. The galbaniferous *ferula*, called alſo *ferulago* by ſome authors. 3. The blueiſh green leav'd *ferula*, with a broad oblong ſeed, called by ſome thapſia ferulacea. 4. The ſmaller *ferula*, with flowers at every joint, called by ſome the fennel leav'd libanotis. 5. The finer leaved *ferula*. 6. The Spaniſh *ferula*, with ſhining leaves. 7. The *ferula* with narrow and ſhining leaves. And 8. The hard and harſh *ferula*, with ſhort and rigid leaves. *Tourn.* Inſt. p. 320.

FERULÆ, a word uſed by the antients to expreſs the horns growing on the deer or ſtag, at the age of two years. Theſe horns are at this early time unbranched, and ſome have ſuppoſed, that Pliny meant by the word ſubulo, the deer in this ſtate; but as he ſays, that nature has given the *ſubulo* ſimple or unbranched horns, he certainly means it of the horns as they always remain on the animal, not as they are for a time, as in this caſe. It is plain, that ſome of the antient Latin writers, have called the young ſtag, ſubulo; but others, and indeed authors in general mean a wholly different creature by this name; and ſome have ſo far miſtaken Pliny's expreſſion of cornua ſimplicia, which he attributes to the ſubulo, as to ſuppoſe he meant, that each of theſe animals had only one ſingle horn, and therefore have made it a name for the unicorn. Pliny ſays, that the ſubulo is of the ſame genus of animals with the ſtag; but he does not mean by this, that it is the ſame ſpecies, for if he had, he would have expreſſed himſelf ſo. No one would call a calf a creature of the ſame genus of animals with the bull, or a colt a creature of the ſame genus with a horſe, but would naturally ſay, they are the young of that animal.

FERULACOLI, in botany, a name by which ſome authors have called the thlaſpi, or treacle muſtard. *Ger. Emac.* Ind. 2.

FERULAGO. See FERULA.

FERZAA, in natural hiſtory, a name given by the Perſians to that gem, which we call the turguoiſe or Turkey ſtone; a blue opake and ſoft gem.

FESSIER, in anatomy, the name given by the French writers to what others call the glutæus, or according to Riolanus, the glautius. There are three muſcles of this name among authors, the glutæus major, medius; and minor, and the French call them the grand, moyen, and petit *feſſier*.

FESTA *in cappis*, in middle age writers, grand holidays, in which the whole choir of cathedrals wore caps.

FESTING *men*. See FASTERMANS, *Cycl.*

FESTING-*penny*, earneſt given to ſervants when hired or retained. It is ſo called in ſome northern parts of England, from the ſaxon *feſtnian*, to faſten or confirm.

FESTUCA, in the Linnæan ſyſtem of botany, the name of a kind of oat graſs, which makes a diſtinct genus of plants; the characters of which are, that the calyx is a many flowered glume, and is bivalve, erect, and contains the flowers ranged together in a ſlender ſpike; the valves are ſtrait, oblong, pointed, without awns or beards, and the lower is the ſmaller. The flower is compoſed of two valves, the lower is the larger, this is of the ſhape of the cup, but it exceeds it in ſize, it is ſomewhat cylindrical and pointed, and is terminated by a ſtrait beard or awn. The ſtamina are three capillary filaments, ſhorter than the flower, the antennæ are oblong; the Germen is of a turbinated form, the ſtyles are two in number, and are ſhort and bent backward, the ſtigmata are ſingle, the flower cloſely ſurrounds the ſeed, which is ſingle, oblong, ſlender, extremely ſharp pointed at each end, and marked with a longitudinal furrow. *Linnæi* Genera Plantor. p. 15.

FEUDAL (*Cycl.*) — As the northern nations brought in the uſe of coats of arms by preſerving down in their families, the armorial bearings of their anceſtors ſhields, &c. as hereditary marks of honour, ſo they alſo brought in the *feudal* law, by means of which, arms grew up to farther perfection, as is evident by many armorial figures of antient families, repreſenting the acknowledgements and ſervices they were obliged to perform to their own lords and ſuperiors.

Thus roſes, cinquefoils, ſpur-rowels, bows and arrows, hunting-horns, ſhips, and the like figures, were expreſſive of the ſervices they were bound to do their lord, and hence theſe figures have become common in arms throughout all Europe.

For

For inſtance, the old barons of Arran and Lorn were obliged to furniſh their lord with a ſhip in time of war; and thence, it is that their arms carry ſhips or lymphods to this time.

FEVE, in natural hiſtory, a name firſt given to the chryſalis of the ſilk-worm, and from thence to all chryſaliſes of the butterfly kind; in which ſenſe it is now received and uſed with the moſt accurate writers, and made a ſynonymous term with the word chryſalis and aurelia. See the article WEB-*caſe*.

The caterpillar putting off its own form to appear in this, and the expanding of this into the butterfly, have been ſuppoſed ſudden changes of one animal into another; but this is a very incorrect way of thinking, for each of theſe is the ſame animal in its different ſtages of growth. We call the creature hatched from the egg of a butterfly, a caterpillar; and it goes under this name till the chryſalis ſtate, but it is eaſy to ſee that this creature is a butterfly all the time under the maſk of a caterpillar. We know that the caterpillar changes its ſkin four or five times during its living in that ſtate, and that all theſe ſkins are at firſt produced with it from the egg, lying cloſely over one another. It parts with or throws off all theſe one by one, as the butterfly, which is the real animal all this time within, grows more and more perfect in the ſeveral firſt changes. When it throws off one, it appears in another ſkin of exactly the ſame form; but at its final change from this appearance, that is, when it throws off the laſt ſkin, as the creature within is now arrived at ſuch a degree of perfection as to need no farther taking of nouriſhment, there is no farther need of teeth, or any other of the parts of a caterpillar. The creature in this laſt change, proceeds in the very ſame manner as in all the former, the ſkin opening at the back, and the animal making its way out in this ſhape. If a caterpillar when about to throw off this laſt ſkin, be thrown into ſpirit of wine, and left there for a few days, the membranes within will harden, and the creature may be afterwards carefully opened, and the chryſalis taken out, in which the form of the tender butterfly may be traced in all its lineaments, and its eyes, legs, &c. evidently ſeen. It is not neceſſary however to ſeize upon this exact time for the proving the exiſtence of the chryſalis or butterfly in the caterpillar, for if one of theſe animals be thrown into ſpirit of wine, or into vinegar, ſome days before that time, and left there for the fleſh to harden, it may afterwards be diſſected, and all the lineaments of the butterfly traced out in it; the wings, legs, antennæ, &c. being as evident here, and as large as in the chryſalis. *Reaumur*'s Hiſt. Inſect. v. 1. p. 2, 28.

It is very plain from this, that the change of the caterpillar into a chryſalis is not the work of a moment, but is carrying on of a long time before, even from the very hatching of the creature from the egg. The parts of the butterfly are not however diſpoſed in exactly the ſame manner while in the body of the caterpillar, as when left naked in the form of the chryſalis; for the wings are proportionably longer and narrower, being wound up into the form of a cord, and the antennæ are rolled up on the head; the trunk alſo is twiſted up, and laid upon the head; but this in a very different manner from what it is in the perfect animal, and very different from that which it lies in within the chryſalis; ſo that the firſt formation of the butterfly in the caterpillar by time arrives at a proper change of the diſpoſition of its parts, in order to its being a chryſalis.

It is plain, that the butterfly is, in all its parts, in the caterpillar, in all its ſtates; but that this becomes more eaſily traced, as it grows nearer to the time of the chryſalis. The very eggs hereafter to be depoſited by the butterfly are alſo to be found not only in the chryſalis, but in the caterpillar itſelf, arranged in their natural, regular order. They are indeed in this ſtate very ſmall and pellucid; but after the change into the chryſalis, they have their proper colour.

As ſoon as the ſeveral parts of the butterfly therefore are arrived at a ſtate proper for being expoſed to the more open air, they are thrown out from the body of the caterpillar, ſurrounded only with thin membranes; and as ſoon as they are arrived after this at a proper degree of ſtrength and ſolidity, they labour to break through theſe thinner coverings, and to appear in their proper and natural form. The time of their duration in this ſtate of chryſalis is very uncertain, ſome remaining in it only a few days, others ſeveral months, and ſome almoſt a year in appearance. But there is a fallacy in this, that many are not aware of. It is natural to think, that as ſoon as the creature has incloſed itſelf in its ſhell, be that of what matter it will, it undergoes the change into the chryſalis ſtate. And this is the caſe with the generality; yet there are ſome which are eight or nine months in the ſhell before they become chryſaliſes, ſo that their duration in the real chryſalis ſtate is much ſhorter than it naturally appears to be. When they arrive at the time of their quitting this ſtate, or throwing off this laſt envelopement, the operation is much leſs different than that of the leaving the caterpillar ſtate to appear in this. The change of the chryſalis into the butterfly is always made within the ſhell that covers it. In many ſpecies therefore, in order to ſee in what manner it is performed, one of theſe muſt be carefully taken out of its ſhell; or elſe one of the angular ones choſen, which have no ſhell at all, but hang themſelves by the tail naked to a beam, or other thing; or, finally, one of thoſe which are only covered with a few looſe hairs inſtead of a ſhell: in this caſe, a little attention will ſhew the whole progreſs of the change. Mr. Reaumur carefully watched the auriculated caterpillar of the oak into its ſeveral changes, and particularly from its chryſalis, which is of this laſt kind, into the fly; and has given an account of the method of this, as an inſtance of the general courſe of nature in theſe operations.

The membranes which envelope the creature in this chryſalis ſtate are at firſt tough and firm, and immediately touch the ſeveral parts of the incloſed animal; but by degrees, as theſe parts harden, they become covered, ſome with hairs, and others with ſcales. Theſe, as they continue to grow, by degrees fall off the ſeveral particular membranes which cover the parts on which they are placed, to a greater diſtance, and by degrees wholly looſen them from the limbs. This is one reaſon of thoſe membranes drying and becoming brittle.

There is alſo another, which is, that the inſide of this whole caſe was at firſt full of a viſcous liquor, which kept it moiſt and ſupple; but in the progreſs of the growth of this animal, the liquor is all received into its veſſels, and the skins are left quite dry. When by theſe means the parts of the butterfly have grown to their due ſtrength, and the membranes have at the ſame time grown extremely weak and thin, it is no difficult matter for the creature, at a proper time, to make its way through them. Every time that it moves, though ever ſo little, any of its limbs, or ſwells out any other part of its body, it occaſions the membranes to burſt and crack at once in ſeveral different places; and the ſame motions continued or repeated, occaſion the aperture to enlarge by degrees, till at length it is big enough for the whole limb; and, finally, for the whole animal to come out at. But it is remarkable, that the places in which the ſhell breaks are always the ſame in the ſame ſpecies; and that they are always formed by a number of cracks begun in the ſame place, and propagated in the ſame direction.

On the back of the chryſalis there is always a part called the corcelet, which is not divided into rings in the manner of the reſt of the body, but is formed of one ſimple flat cruſt. This part is larger in ſome ſpecies, and ſmaller in others: but in all it ariſes from the upper rings of the back, and terminates at a part of the ſummit of the chryſalis, which may be called its front. The firſt of theſe parts is placed over the corcelet of the butterfly, the latter or front over its eyes and antennæ. The corcelet joins itſelf on each ſide to the membrane that covers the wings. It ſeems indeed to be prolong'd to the belly, and folded over it. The belly of the chryſalis is that part of it which is contained between the wings and the forehead, reaching down to the part where the bottoms of the wings croſs over one another, or at leaſt where they meet. This part contains the legs, antennæ, and trunk of the inſect, all extended at full length. See AURELIA. The French call that part of the membrane which covers the belly, the breaſt piece. In order to deſcribe the manner in which the chryſalis is open'd to let out the butterfly, it is neceſſary to know theſe ſeveral parts of it under diſtinct names.

The middle of the upper part of the corcelet is uſually marked with a line, which runs in a longitudinal direction; and this part is always more elevated than the reſt, even in the conic kinds, which are no otherwiſe angular. This line is in ſome very bold and plain, in others it is ſo faint as not to be diſtinguiſhable without glaſſes; but it is always in the midſt of that line that the ſhell begins to open. The motion of the head of the butterfly backwards firſt occaſions this crack, and a few repetitions of the ſame motions open it the whole length of the line.

A very gentle motion ſerves to this purpoſe; and when the corcelet is by this means divided into two pieces, the crack becomes much wider, and ſhews a thin down that covers the body of the butterfly. After this the piece, which makes the front of the chryſalis, ſplits into two pieces in the ſame manner; and after this the corcelet is ſeparated at its edges, and the front at its anterior part from the breaſt piece, and this hangs only by its point. Thus is an opening found for the creature's getting out: this had not been worthy ſo particular a deſcription, but that it is always regularly the ſame in all reſpects.

As theſe cracks between the ſeveral pieces enlarge with thoſe in their midſt, they ſhew more and more of the body of the animal; and as the leaſt force imaginable is ſufficient to ſeparate entirely parts which hang together ſo very ſlightly as theſe ſeveral pieces now do, the creature in moving itſelf ever ſo gently upwards makes its way out.

The clearing itſelf however entirely is a work of more time in this caſe, than is the paſſing of the chryſalis out of the body of the caterpillar. In that caſe there is a crack ſufficiently large in the ſkin of the back, and the whole chryſalis being looſe comes out at once. But in this caſe every particular limb, and part of the body, has its ſeparate caſe; and though theſe are almoſt inconceivably thin and tender, yet it is neceſſary

ceſſary that every part be drawn out of them before it appear naked to the open air. As ſoon as all this is effected, and the animal is at full liberty, it either continues ſome time upon the remains of its covering, or creeps a little way diſtant from it, and there reſts. The wings are what we principally admire in this creature. Theſe are at this time ſo extremely folded up, and placed in ſo narrow a compaſs, that the creature ſeems to have none at all; but they by degrees expand and unfold themſelves, and, finally, in a quarter of an hour, or half an hour at the utmoſt, they appear at their full ſize, and in all their beauty. The manner of this ſudden unfolding of the wings is this: the ſmall figure they make when the creature firſt comes out of its membranes, does not prevent the obſerving that they are at that time conſiderably thick. This is owing to its being a large wing folded up in the niceſt manner, and with folds ſo arranged, as to be by no means ſenſible to the eye, for the wing is never ſeen to unfold; but when obſerved in the moſt accurate manner, ſeems to grow under the eye to this extent. When the creature is firſt produced from the ſhell, it is every-where moiſt and tender, even its wings have no ſtrength or ſtiffneſs till they extend themſelves; but they then dry by degrees, and with the other parts become rigid and firm. But if any accident prevents the wings from expanding at their proper time, that is, as ſoon as the creature is out of its ſhell, they never afterwards are able to extend themſelves, but the creature continues to wear them in their contracted and wholly uſeleſs ſtate; and very often when the wings are in part extended before ſuch an accident happens, it ſtops them in a partial extenſion, and the creature muſt be contented to paſs its whole life with them in that manner.

FEVER (*Cycl.*) — Riverius reckons above thirty different kinds of *fevers*, and Sydenham has increaſed them to double that number; but certainly phyſicians have obſerved ſomething common to all theſe diſeaſes, which made them denominate them *fevers*. A late author thinks, that the conſideration of what conſtitutes a *fever*, which he thinks very ſimple and obvious, with its true cauſes and genuine effects, will give a more juſt and clear notion of the diſeaſe, and lead to a more rational practice, than all that has been ſaid by authors at ſo great length on theſe ſubtile and unneceſſary diſtinctions. He thinks the moſt natural and uſeful diviſion of *fevers* is into continued and interrupted; and he conceives they may all when conſidered ſimply, and not as the effect of another diſeaſe, be reduced to one or other of theſe two ſorts. Medic. Eſſ. Edinb. vol. 1. p. 264, 265.

In every *fever* from an internal cauſe, the three chief obſervables are theſe. Firſt, an univerſal trembling, and then an encreaſed heat, and quick pulſe; a *fever* almoſt always begins with a cold or ſhivering, and ſoon after the pulſe growing quicker, affords the primary diagnoſtic of a *fever*. The health of the patient ſeems to be the primary aim of nature in *fevers*, tho' they often terminate in death.

The general cure of *fevers* is comprehended in conſulting the ſtrength of nature, in correcting and diſcharging the acrimony of the blood, in diſſolving groſs humours, and expelling them, and in mitigating the ſymptoms. If the ſymptoms run too high, and nature grows exorbitant, abſtinence, ſmall liquors, bleeding and cooling clyſters are to be uſed; and if nature be too ſluggiſh, ſhe muſt be excited by cordials and aromatics. *Allen*'s Synopſis, p. 6.

By Dr. Brown Langriſh's ſtatical experiments made on the blood of people in acute continual *fevers*, compared with what he ſays of the blood of three young men in perfect health; it appears that in ſuch *fevers*, the ſerum is in leſs proportion, and the craſſamentum is more viſcid and tenacious, than in health. The indications of cure from which are plain. See his *Modern Theory and Pract. of Phyſ.* p. 68. and 74.

By the chemical analyſis, it is proved, that in acute *fevers* the ſaline and ſulphureous parts abound more than in health; and that the urine is impregnated more and more with theſe ſaline and ſulphureous principles, as the ſymptoms abate upon a criſis by urine. Ibid. p. 80, 94.

Signs of FEVERS. Theſe are an accelerated progreſſive motion of the blood, diſtinguiſhed by the quickneſs of the pulſe; this is ſucceeded by an increaſed heat in the body, and immediately after this, the tonic motion of the parts is either conſtringed or relaxed. This is ſeen in the face; in the firſt caſe it becomes red and bloated, in the latter thin and pale: theſe ſymptoms are ſucceeded by an immoderate thirſt, and a loathing of food of all kinds, an abſence of ſleep, and a peeviſhneſs or uneaſineſs in the temper, with an extreme ſenſibility of every thing, and a neglect of the common buſineſs of life; after this there is a great loſs of ſtrength, and an inaptitude to any motion; a ſenſation of pain in ſome part; a very uneaſy and difficult reſpiration, a ſweating more than uſual, and finally there is a change in the urine, its colour being uſually very high, and its conſiſtence thicker, than that of perſons in health.

Cauſes of FEVERS. Theſe are an overheating the blood by exerciſe, and thus throwing it into violent commotions; violent and ſudden cooling of the body when very hot; the abuſe of ſpirituous liquors, and the eating large quantities of foods hard of digeſtion; a watchfulneſs beyond the uſual cuſtom, ſuch as long ſitting up by the ſick, or the like; and a ſuppreſſion of any accuſtomed evacuation, particularly of habitual hæmorrhages by the noſe or other parts. Beſide theſe the paſſions of the mind very frequently throw people into *fevers*; and it is obſerved alſo, that perſons often accuſtomed to have *fevers*, are much more eaſily thrown into them on ſlight accidents, than any others. To all theſe cauſes, is to be added that of contagion.

Prognoſtics in FEVERS. All *fevers* are in their nature ſalutary, being the means nature uſes to rid herſelf of ſomething that oppreſſes her, yet they are often fatal in the event; but this is rather to be attributed to the fault of the conſtitution, than of the *fever*. The cauſe of the diſeaſe being impeded, and other diſeaſes coming on, the patient often dies under them; ſo that the moſt judicious phyſicians obſerve, that people rather die with a *fever*, than of a *fever* in theſe caſes.

It is to be obſerved in general, that of the great number of perſons who have *fevers*, very few proportionably die of them.

Fevers very often are cured by nature alone, and go off very happily only by the patient's abſtinence, a quiet ſtate, and keeping up the natural evacuations. In this manner great numbers recover without the help of medicines, a number almoſt as great is deſtroyed by medicines, which when adminiſtred by perſons who have not ſufficient judgment, interrupt nature, and prevent the neceſſary excretion. *Fevers* go off according to the language of phyſicians, either by a criſis or lyſis; in the firſt caſe they leave the patient at once after the critical days; in the other, they only wear off gradually, growing ſlowly leſs and leſs violent. The acute *fever* uſually goes off in the firſt way; the intermittents in the other. Critical evacuations of whatever kind, when they happen in ſufficient quantity, bring with them a ſort of inſtantaneous cure; the patient becoming well and eaſy from them, though immediately before, he was in the utmoſt anxiety and uneaſineſs. No *fever* ever goes off without ſweating, and a change in the urine. But in *fevers* in general, the ſweats do not come on at firſt, but afterwards; and in general, the ſweats never come on during the violence of the burning heat, but when that remits a little, the ſweat breaks out. If it appears during the exceſſive heat, the preſage is bad, at leaſt it is of no uſe or good to the patient. Sweats coming on at a proper time, and flowing to a proper degree, bring on recovery; but when they are ſuppreſſed, the diſeaſe becomes worſe, there is a pain and laſſitude in the limbs, and the diſeaſe is protracted in length, and from an acute, becomes a ſlow *fever*. If alſo there be no change perceived in the urine, and the heat do not exceed the ordinary ſtandard, it is a fatal prognoſtic for the patient; and the old phyſical axiom is uſually verified, that while the pulſe and the urine are well in *fevers*, the patient dies.

A dejection of ſpirits in a *fever*, and a melancholy ſtate coming upon a perſon uſually chearful when well, is always a bad omen.

The ſeveral different kinds of *fevers* have their ſtated times in which each attacks the patient. Tertians uſually ſeize people about dinner-time, and are particularly common about the period of the vernal equinox. Quartans uſually make their firſt attack about four or five o'clock in the afternoon, and are more common in autumn than at any other ſeaſon of the year. The ſynocha or continent *fever*, expreſly ſo called, uſually attacks perſons in the morning before day break. Bilious *fevers* uſually make their firſt attack about the time of ſun riſe, and are moſt common in the midſt of ſummer. The catarrhal *fevers* finally, moſt commonly attack perſons in the evening, and they are moſt frequent about the equinoxes. The more any *fever* departs from its uſual courſe, the worſe is the prognoſtic; any *fever* when it has been improperly treated by medicines becomes much more ſtubborn and difficult of cure, than when it has been left to itſelf. The particular medicines which diſturb the courſe of nature in *fevers*, and by that means render them more difficult of cure, are aſtringents, too powerful abſorbents, opiates, &c. And it is obſerved that when *fevers* go off happily and eaſily, eſpecially when they go off of themſelves without medicines, the patient always enjoys a better ſtate of health after, than he had before. *Junker*'s Conſp. Med. p. 257.

Method of cure in FEVERS. The phyſician in all *fevers* is to endeavour to make himſelf the ſervant and aſſiſtant of nature; what nature endeavours in the beginning and increaſe of the diſeaſe is to prepare, diſpoſe and ſearch the noxious matter; and in the ſtate and decline of it, to eliminate and evacuate the matter ſo prepared by the proper paſſages. The whole buſineſs of art is therefore to aſſiſt nature in theſe two efforts of ſecretion and excretion of the matter.

The method of doing this in every particular ſpecies of *fever* is to be ſeen under their ſeveral particular heads; but as we are here treating of *fevers* in general, it may be proper to give the method of treating them as *fevers*, without running into the ſeveral ſub-diſtinctions.

The remedies which we are to give to aſſiſt the ſecretion and

preparation of the morbid matter, are the moiſtening things in general; ſuch are a ſufficient quantity of warm and weak fluids, as the common barly water, and the like; and teas made of the common herbs of ſage, mint, baum, &c. with the milder alexipharmic roots; with theſe alſo are to be given the gentle reſolvents, ſuch as are able to break the thick and tough conſiſtence of the humours. Of this kind are the temperate alexipharmic roots eſpecially, as they are alſo endowed with a diuretic virtue. Such are the roots of elecampane, pimpernel, butterbur, and the like. Scordium is alſo by ſome greatly commended in this intention. Theſe may be conveniently given in decoctions or infuſions; and with theſe powders are to be given compoſed of the abſterſive and digeſtive ſalts, ſuch as tartarum vitriolatum, and the like, mixed with ſuch things, as have a power of obtunding and incraſſating the acrid and thin ſulphurous ſaline humours; ſuch are the the abſorbent powders of oiſter-ſhells, crab's claws, and the like. Theſe ſhould be firſt ſated with lemon juice, and then mixed with a little nitre, and with the beforementioned ſalts, they make an excellent medicine. Theſe may be given, every three, four, or ſix hours, as the urgency of ſymptoms require, and a draught of the decoction before preſcribed, given after them. Emulſions of ſweet almonds, and the cooling ſeeds are alſo very proper between whiles.

The medicines by which the phyſician is to aſſiſt nature in her following buſineſs of excretion, are the gentle diaphoretics, among which, the diaphoretic antimony, when truly prepared, holds a very high place. The alexepharmics, which have alſo a diuretic virtue, ſuch as the mixtura ſimplex, when faithfully prepared and lightly camphorated, are very proper; and the bowels are in the mean time to be kept open by emollient glyſters. Theſe things are proper in all *fevers*, but in ſome alſo vomits, gently laxative medicines and bleeding, are extremely proper: thoſe however are not to be admitted at random in all kinds. All violent medicines are to be dreaded in *fevers*, for nature uſually attempts to do her office placidly and quietly in theſe caſes, and ſuch medicines violently diſturb her motions, and often bring on miſchiefs, which ſhe would have wholly avoided. For this reaſon, vomits tho' they are by ſome given indiſcriminately in all *fevers*, are to be very cautiouſly meddled with; and there are in reality only a few *fevers* in which they can be allowed to be proper: for in acute legitimate *fevers*, the cauſe of the diſeaſe never lies in the primæ viæ, and the violent emotions in vomiting, not only dreadfully diſturb the ſtomach and bowels, but occaſion a fullneſs of the veſſels about the head and neck, with various diſorders of the head in particular. In bilious *fevers* the cauſe is indeed evidently in the primæ viæ, but even in theſe, it is not ſo diſpoſed as to be ſo ſafely thrown up by vomit, nor can the inflammatory ſtate of the patient, at that time properly bear ſuch a violent ſhock. In intermittents, vomits are never proper unleſs in tertians, for the cauſe in the other does not lie in the primæ viæ; and even in tertians it may be diſpoſed to evacuation by gentler means, and without the violent tumult that a vomit occaſions in the body. Acrid purges alſo are in general to be avoided in *fevers*; bleeding though abſolutely neceſſary in ſynochal or continent *fevers*, is not adviſeable in many others, and very often the opening a vein and taking away too little blood, is the occaſion of congeſtions of blood in the head, whence ariſe deliriums and other dreadful ſymptoms. The giving the hot ſudorific medicines before the proper time, greatly diſturbs nature, and brings on many ill conſequences. *Junker*'s Conſp. Med. p. 261.

In all *fevers* the drinking plentifully of warm weak liquors, is attended with many good conſequences; the patient is always refreſhed by it, the febrile heat is mitigated, and reſt is promoted, and the proper and neceſſary ſweats forwarded. The ſymptoms of *fevers* are never to be ſo regarded as to prevent the due attention to the principal point, nor is the phyſician to be alarmed at them. Want of appetite and thirſt with long watchings, are not to be attacked with particular medicines, but looked on as mere ſymptoms, that will hereafter go off of themſelves; and inquietude of mind ſhould have no other medicine, than ſerious advice of the harm it will do. Sudden cooling of the body in all *fevers*, is a very dangerous thing. The patient is to be adviſed to ſwallow his liquids gently not haſtily. Volatile ſalts have been with many of a long time in great uſe in *fevers*, but they are uſually attended with bad conſequences afterwards, many perſons having been thrown into œdematous ſwelling of the legs and feet, and ſome into an abſolute aſcites, only by the uſe of theſe in *fevers*.

Acids in general are by many very much dreaded in *fevers*, but there is no real ground for this; on the contrary, in ſanguineous *fevers* during the time of the violent heat, and immoderate thirſt, they are found of the greateſt uſe and benefit. Spirit of vitriol or of ſulpur, lemon-juice, with that of barberries, are all found very beneficial; only in caſes where there is a cough, the vitriolic acid is to be avoided, becauſe it uſually irritates that ſymptom, and lemon-juice ſweetened with ſugar alone, is to be given. The uſe of aſtringent medicines though too common, yet is extremely improper in all *fevers*; for in all theſe caſes, the ſecretions and excretions all require to find the ways open; but theſe are all obſtructed by aſtringents, and violent ſymptoms are brought on by this means, and often death. But in ſtubborn intermittents, where the peccant matter is diſcharged, and yet theſe ſymptoms remain merely from their having become habitual; theſe aſtringents may be allowed of, and are indeed not only ſafe, but of the greateſt uſe. *Junker*'s Conſp. Med. p. 263.

Nitre is an admirable medicine in *fevers* in general; it agrees with all temperaments, but principally with the hot; when taken in ſolution with warm and weak liquors it always gently opens the bowels, and when given in powders, it more than all other things obtunds the acrimony of the humours.

In feveriſh diſorders accompanied with hæmorrhages, the arnica vera, has been recommended. See ARNICA *vera*.

Benign catarrhal FEVER, in medicine, the name given by authors to a *fever* extremely different from the malignant one of the ſame denomination, which is alſo called by way of diſtinction petechialis. This is the diſeaſe deſcribed in the writings of the antients, under the name of febris quotidiana continua. It is properly a continual ſymptomatic *fever*, in which nature is labouring of herſelf to correct the vitiated lymph, whether its faults be in quality, or only in motion. This is done by increaſing the ſecretory and excretory motions beyond their natural ſtandard, but yet not to any great violence. The difference between this and the malignant kind, though ſo very great, as to make them appear wholly different ſpecies, yet it is only in degree. *Junker*'s Conſp. Med. p. 313.

Signs of it. This *fever* always attacks people in an evening; and is principally frequent in the ſpring and autumnal ſeaſons. A gravedo and coryza either preſage it, or are immediately joined with it, and the patient is afflicted with a hoarſeneſs, and difficulty of ſwallowing, he feels alſo a kind of inflammation, or as it were a St. Anthony's fire within his throat, and a weight in the breaſt; and is attended through the whole courſe of the diſeaſe with a violent cough, which brings up nothing, and with a remarkable univerſal languor of the body. Pains in the back attended with ſhiverings, frequently alſo attend the firſt attacks of this *fever*, and continue half an hour, ſometimes an hour; theſe are ſucceeded immediately by a heat, but that not violent, and this brings on a ſenſe of ſtraitneſs over the breaſt, a difficulty of breathing, and in ſome people, a continual reaching to vomit. This heat endures fewer or more hours, according to the degree of the plethora. The pulſe is frequent and quick, the appetite is weak, the ſtrength fails, and the ſleep becomes unquiet and diſturbed, the head rather feels weak than painful, and ſometimes vomitings, often diarrhæas, ſoon ſucceed theſe complaints. Sweats are frequent and copious, and the urine, which is of an orange colour, as it is in all inflammatory *fevers*, has this peculiar in this caſe, that it depoſits a bluiſh white skin, beſide the roſe coloured ſediment.

Perſons ſubject to it. Theſe are principally thoſe of a ſanguine or phelegmatic habit, and ſuch as have a very faulty ſerum; ſuch as are obliged by their uſual occupations to expoſe their head and neck much to the cold; thoſe who have had the itch, or any other violent cutaneous eruption ſtruck in upon them; and thoſe who are watchful long in the night, and drink too much wine.

Cauſes of it. Theſe are frequently violent and ſudden cooling of the body, as when hot with exerciſe, by drinking large draughts of cold liquors; the acrid matter uſed to be thrown off by a coryza, driven back; and all things which any way impede natural and healthful perſpiration.

Prognoſtics in it. The ſimple catarrhal *fever* often goes off very happily without the aſſiſtance of medicines, only by obſerving a good regimen; but notwithſtanding this natural mildneſs, it often becomes dangerous to particular conſtitutions, and by means of improper treatment; but the more it recedes from its natural mildneſs, and the more intenſe the heat is, the greater fear there is of ſome of the viſcera being injured. The happieſt event of it is, by a daily reſolution and ſucceſſive diſſipation of the morbific matter.

Method of treatment. The fault of the lymph in this diſeaſe uſually conſiſting in its viſcous and mucous texture, this is to be relived by alexipharmics, and the like medicines. The roots of elecampane, pimpernel, and vincetoxicum are famous for doing great ſervice in theſe caſes; and to theſe may very properly be added, the ſaline digeſtives; ſuch as nitre and the tartarum vitriolatum. The mixtura ſimplex is alſo to be given in doſes of twenty-five drops, twice or oftener in a day. The cough is to be moderated by liquorice, emulſions of ſweet almonds, oil of almonds and barley-water, water-gruel or the like. The bowels are alſo to be gently kept open by a laxative diet, a frequent drinking of weak and emollient liquors, and by clyſters at proper times.

Malignant Catarrhal FEVER, in medicine, the name of a *fever* extremely different from the ſimple *catarrhal fever*, and greatly more dangerous. This is alſo called by ſome the *petechial catarrhal fever*. It is a diſeaſe in which nature is endeavouring, by increaſing the ſecretory and excretory motions, to elimi-

eliminate the catarrhal, acrid and active matter. This is unquestionably the same species of *fever* with the simple one of this name, but extremely different in degree, and is often even epidemical. This is called by some the *febris Hungarica*, and *febris castrensis*, or *camp fever*: but the latter appellation is used to express it in its very worst state, and when attended with its most terrible symptoms. The petechiæ or spots in this *fever* are to be carefully distinguished from those in the common scorbutic cases. *Junker*'s Consp. Med. p. 317.

Signs of it. These are the same with those of the simple *catarrhal fever*; but with this only difference, that in this case there are also violent anxieties of the mind, a sudden resolution of the strength, a continual difficulty of breathing, and a loathing of all kinds of food. This last symptom usually continues till the eleventh day. The patients are also subject to frequent faintings, and are usually delirious, and complain of very sharp pains in the back, and at the joints. After these symptoms the petechiæ usually appear; these are little red spots on the breast, *&c.* resembling fleabites. When hot medicines are given, the petechiæ are enlarged. Aphthæ and quinseys are also very frequent attendants on this *fever*; and diarrhæas sedom fail of appearing at some stage of the disease, and are often critical.

This *fever* seldom attacks the patient with a shivering. It is very contagious, in the manner of other malignant fevers, and has this peculiar circumstance, that it is very often complicated with other diseases, and according to the seasons and other accidents frequently appears under their form. In February, March and April, it often wears the appearance of a pleurisy; in May and June, it often affects the symptoms of the cholerica febris; and at this season of the year is often, in the beginning, attended with terrible hæmorrhages. In July and August, a dysentery is frequently joined with it; and, in the winter months, it generally has a bad cough attending on it. Persons of tender habits are much more subject to this disease from infection, than those who are of a hardy and robust make. But, as it is contagious, it at times spares no age, sex, or constitution, that come in the way.

Causes of it. The most frequent causes of this disease are, a fermentaceous and putrid exhalation in the air, and the contagion from the bodies and effluvia of the sick. And in this last case, a natural terror of receiving the infection is often found to make people more subject than ordinary to receive it. And to these are to be added the eating vitiated and fermenting provisions, and the sudden cooling of the body when very hot with labour or exercise, and frequent and violent passions suppressed.

The spots which appear on certain days in this disease are not essential to it, though common; and hence the *fever* is rather called by accurate writers, *febris petechizans*, than *petechialis*: they are a relief to the patient, if they are not violently repelled, or some other way improperly treated. When they appear earlier than the seventh day, they are also observed to be worse presages than when they appear on, or after it. When the spots appear in very great numbers, they usually fly back again, and the patient is much endanger'd by it. And when they are of a bright red, and after three or four days appearance go off again, and leave the patient better than before, they are a sure good prognostic. But if they are of a livid or black colour, they are a very bad omen; and when after the eruption the person does not find himself relieved, the consequence is often a miliary purple fever. Lightheadedness before the seventh day is less dangerous than if it does not happen till after it. Diarrhæas in all other eruptive *fevers* are a very bad symptom, and often presage the death of the patient. But that is not the case in this; they sometimes prove critical, and carry off the disease. But when that is not the case, they are of no bad effect, and are always better for the patient than an obstinate costiveness. But it is to be observed, that though these Diarrhæas, when they come naturally, are of great relief in many cases, and of no harm in others; yet art is not here to be used as nature, and no purging medicines are by any means to be given to bring on a laxity of the bowels.

Method of cure. Gentle evacuations are to be brought on by such medicines as encourage perspiration, and promote urine. Absorbents saturated with acids, as crab's eyes sated with lemon juice, are of service; and to these should be joined a small quantity of nitre. Cooling emulsions are also to be given at times, and spirit of wine camphorated is to be rubbed on the head to mitigate the violent head-achs. And Stahl greatly recommends, in the case of a too violent diarrhæa, the use of powders made of purify'd nitre and mountain crystal. In cases of obstinate costiveness, clysters must be injected as often as is found necessary. And when there is a complaint of soreness in the fauces, and difficulty of swallowing, astringent gargarisms are to be used. *Junker*'s Consp. Med. p. 322.

Choleric FEVER, in medicine, the name of a *fever*, called also by some a bilious *fever*, and by others a causus; though the generality of writers distinguish the cholorica *febris* from the causus. All bilious *fevers* are properly species of acute *fevers*, and owe their origin to distemperatures of the bile, at times when the aliments are in a state of fermentation in the stomach and intestines.

The causus is distinguished from the cholerica *febris*, properly so called, by its being ever much more violent and dangerous, and by the excretions which attend it. For in the choleric *fever*, the vitiated gall and other bilious excretions are always plentifully voided, sometimes upward, sometimes downward, and sometimes both ways. In the causus, the matter is more usually detained in the body, and rarely voided otherwise than by vomiting, and that usually only in small quantities, and in the beginning of the distemper.

Signs of it. The general signs of the cholerica *febris* and causus are a remarkable anxiety, and frequent complaints about the breast, as of a straitness and painful heat. A violent heat on the inside of the mouth, and insatiable and intolerable thirst, trembling and convulsive motions of the joints, and violent deliriums. Dryness of the mouth and tongue are often so terrible in this disease, that the skin cracks with it; and often the whites of the eyes, sometimes the whole body becomes yellowish. The peculiar and appropriated symptoms of a cholerica *febris*, strictly so called, are an universal languor and debility of the limbs.

A severe shivering first seizes the patient, and is soon succeeded by a very violent heat, and raging pain in the head; and, after the two first days, there usually are very terrible strainings and reachings to vomit. The matter brought up at these times is caustic, acrid, and bilious, and inflames and even ulcerates the fauces; and, if voided upon a stone floor, effervesces violently. If this vomiting abates, there immediately comes on a diarrhæa attended with a tenesmus, occasioned by the irritation of this sharp matter in the rectum. Faintings also are very frequent in this disease, especially where the vomitings do not bring up a sufficient quantity of the offending matter. The peculiar and appropriated signs of the causus, strictly so called, are these: a violent and insatiable thirst, greater than that in any other *fever*. The bowels are always bound, and it is but very seldom that there is any tendency to vomit. The urine is reddish and turbid, and after standing some time deposits a red sediment. Often there is a sensible pain and soreness in the præcordia, so that the patient cannot bear the least touch upon the breast; and usually, in the course of the disease, there are faintings and violent convulsions.

Persons most subject to this disease are such as eat largely, and drink heavy and imperfectly fermented liquors after it. The cholerica *febris*, properly so called, is most frequent with those of a cholerico-sanguineous habit, and such as feed on high season'd meats, and drink abundance of wine or other strong liquors; and is often brought on such persons by their falling into violent passions after a full meal. The causus peculiarly attacks the people of melancholic habits, who are much inclined to passion, but suppress it, and who are naturally costive. *Junker*'s Consp. Med. p. 273.

Prognostics in it. The simple choleric *fever* is attended with great danger, if not timely undertaken to be cured. But the causus is yet more fatal than it, and from as old time as Hippocrates's days has been accounted among the *febres lethiferæ*, or fevers that very frequently kill the patient.

In many *fevers* nature is able to help herself, and succeeds best of all when left alone. But these are of that number of distempers in which the assistance of art is absolutely necessary, and out of which nature very seldom brings the patient safely when unassisted. The happiest turn this *fever* can take, is the copious discharge of the peccant matter by vomit; for when it goes downward, the febrile heat always increases, and the symptoms in general usually grow worse. When the reachings are violent, and the matter brought up is but small in quantity, then the patient is usually subjected to painful hiccoughs and dangerous syncopes and convulsions. When much bile is thrown up by vomit, and that not very badly colour'd, and there is no diarrhæa, there is then little danger from the disease; and, in general, costiveness in the state of the disease is more eligible than a tendency to stools. The more violent the delirium is in these diseases, and the longer continued, always the greater is the danger to the patient. And if the pains and burning heat suddenly cease, and a shivering and dejection of the spirits succeed, there is no doubt of a gangrene being coming on within. *Junker*'s Consp. Med. p. 277.

Method of Cure. The cure of these diseases consists in the mitigating the violent sharpness of the humour, and promoting its evacuation. And, finally, in abating the burning heat brought on by it. The utmost endeavours are first to be made to correct and alter the morbific matter. To this purpose, the several preparations of nitre, with the testaceous powders and mucilaginous ptysans, with small mixtures of lemon juice, and frequent draughts of cooling and diluting liquors, are to be given moderately warm. If the costiveness be too violent, clysters of broth must be injected, with the addition of a little oil and salt; and, if necessary, small doses

of rhubarb. To quell the febrile heat and emotion of the blood, the miſtura ſimplex may be given with great ſucceſs; and there is often a ſenſible good effect from the application of rags wetted in camphorated ſpirit of wine, to the pit of the ſtomach. After the morbific matter is evacuated, the reachings to vomit may be allayed by gentle opiates. All hot medicines change the bilious *fevers* into inflammatory ones, and the common ſudorifics drive the morbific matter into the blood, and uſually bring on almoſt immediate diſcolourings of the ſkin, like thoſe of the jaundice. Bleeding, though performed ever ſo early in the diſeaſe, ſeldom does any good, except only in remarkable plethoric habits.

Inflammatory FEVERS. See INFLAMMAMORY.

Hectic FEVER. See HECTIC.

Intermittent FEVER. In intermitting *fevers*, it ſeems from Dr. Langriſh's experiments, that the craſſamentum of the blood is not ſo viſcid and tenacious, neither is the ſerum ſo bilious, ſaline and acrid, as in acute continual *fevers*. The red globules abound more, and the cruor is more viſcid and tough in quotidians than in tertians, and in tertians, than in quartans. Mod. Theor. & Pract. of Phyſ. p. 229.

The cold bath has been preſcribed with ſucceſs, as a ſtrengthner to thoſe who were recovering from obſtinate intermitting *fevers*, to prevent a return of the diſeaſe. See Dr. Huxham's Obſ. de Aere & Morb. Epid.

Miliary or purple FEVER, *purpurea febris*. See PURPUREA *febris*.

Petechial FEVER. See *malignant catarrhal* FEVER.

Scarlatina FEBRIS. See SCARLATINA *febris*.

Quotidian FEVER. See the article QUOTIDIAN.

Slow FEVER, *lenta febris*, in medicine, a term uſed to expreſs an increaſed motion in the blood, by which nature is endeavouring to retrieve herſelf from the congeſtion or ſtaſis of the blood in ſome of the principal viſcera, and preſerve the part from the danger that threatens it from ſuch a ſtaſis.

The *febris lenta* properly and diſtinctly ſo called, differs from the hectic *fever* in its origin; for it is generally produced by the degeneration of diary *fevers*, ſynochæ, or quotidians improperly treated, and by the common intermittents violently and injudiciouſly ſuppreſſed by aſtringents; but the hectic *fever* is connected with the terrible accidents of vomicæ, empyemas and apoſtematous inflammations of the viſcera. Nor do they differ leſs in the continent cauſe; for in the *ſlow fever* there is not yet any actual hurt in the viſcera, but only a tendency toward it, and ſuch a diſpoſition as may naturally bring it on; but in the hectic there is always either an obſtinate ſchirrus or an apoſtem, or a ſimple or fiſtulous ulcer. *Junker*'s Conſp. Med.

The ſymptoms of theſe diſeaſes differ alſo as much as their cauſes; for in the *febris lenta* they are all mild, and in the hectic, all terrible and violent. The *febris lenta* never is ſo violent a diſeaſe, as to confine the patient long to his bed, and uſually grows milder in the continuance, than at firſt; but on the contrary, the hectic ever grows worſe by duration; and finally, the *febris lenta*, in all caſes except where it ariſes from the improper uſe of aſtringents in intermittent caſes, is attended with profuſe ſweats; whereas the hectic unleſs when urged by medicines of a wrong kind, is a dry heat, and never throws out any ſweats till in the laſt ſtages. In ſlow *fevers* of this kind, the ſtools are thin and not frequent, and uſually have a mucous matter mixed with them. In the hectic when compleat, there uſually come on violent diarrhæas, which carry off the patient. The *lenta febris* is ſubject to degenerate into other diſeaſes, and frequently returns into the diſtemper from which it firſt aroſe; but the hectic is ſubject to no tranſmutations. And finally, the *lenta febris* often goes off happily of itſelf, nature making her way through the obſtruction, and compleating the cure. The hectic is uſually fatal.

Signs of the febris lenta. Theſe are a preternatural heat often ſcare ſenſible to others, but very troubleſome to the patient; a dryneſs of the mouth, and continual thirſt; a loſs of appetite, and waſting the ſtrength; a general dulneſs of the face, except for a fluſhing of the cheeks; a waſting of the fleſh; violent ſweats in the night; and a redneſs and foulneſs of the urine when firſt made, but afterwards a precipitation of a pale red ſediment, and the remainder then is clear above.

Perſons ſubject to it. Theſe are principally young men who are of a plethoric habit, and who have had an ephemera or ſynocha, or ſome other *fever* of that kind, improperly treated with too hot medicines; and ſuch as in *fevers* of other kinds where nature produced copious ſweats, have ſuppreſſed them either by medicines, or by an improper regimen; and finally people worn down and exhauſted by violent hæmorrhages.

Prognoſtics in it. This kind of *fever* when it ariſes from an intermittent, and in fine returns into its old ſtate again, is attended with very little danger, but there is much more danger where it continues long in its own appearance, or where it degenerates as it too frequently does in an acute one. The degeneracy of this *fever* into a hectic, is of all other conditions of it, the moſt dangerous, and this is not always readily diſtinguiſhed: this is to be ſuſpected for the caſe, when the patients appetite returns, and yet all the ſymptoms continue; and eſpecially if there be added to them a ſhort cough, and a difficulty of reſpiration; and when there is a ſenſation of a weight in the abdomen, and it is painful to lie otherwiſe than on one ſide or in ſome particular poſture.

Method of cure. The firſt thing to be done is to attempt the reſolving the ſtaſis, as by pimpernel and elecampane roots, by the gentle alexipharmics, and by the neutral ſalts, as the tartarum vitriolatum, and the like. The viſcid foulneſſes left by intermittent *fevers*, are to be carried off by firſt attenuating and inciding them by the gums, as ammoniacum, and the reſt; and the tone of the viſcera is to be finally re-eſtabliſhed by the gentler chalybates and ſtomachics.

When the caſe ariſes from an acute *fever*, powders of tartar of vitriol, crabs-eyes, and diaphoretic antimony, with gentle cathartics in the intermediate days, will often complete a cure: when it ariſes from an intermittent, no happier means can be deviſed for the cure, than the bringing it back to its old ſtate of the intermittent again. Etmuller ſays, that the volatile alkali's, ſuch as ſpirit of ſal armoniac, have a great power this way; and Stahl propoſes to effect it by a habitual drinking an infuſion of elecampane, pimpernel, centaury, orange-peel and ſenna, with a ſmall quantity of rhubarb and black hellebore in wine.

Finally, when this caſe has been brought on by violent hæmorrhages, the analeptics alone are to be depended upon, with the teſtaceous powders to abate the ſweats, and the lighter tinctures of ſteel to reſtore the loſt tone of the ſolids. *Junker*'s Conſp. Med. p. 384.

It is obſerved in the periodical eſſays of Edinburgh, that in the ſlow *fevers* which prevailed in and near that place, November 1731, attended with a violent pain in the head, a ſmall quick pulſe, deliriums and watchfulneſs; ſeveral of the elder ſort died; but of the younger, many voided worms and recovered. See Med. Eſſ. Abridg. vol. 1. p. 66.

FEVERFEW, in botany. See MATRICARIA.

FEVILLEA, in botany, the name of a genus of plants, called by Plumier nhandiroba; the characters of which are theſe. It produces male and female flowers diſtinct on the ſame plant; in the male flower the perianthium is campanulated, it is compoſed of one leaf, and is round at the bottom, but expanded at the mouth, where it is divided into five ſegments. The flower conſiſts of one leaf, and is of the rotated kind. It is lightly divided into five ſegments at the edge; theſe are convex and rounded, and the umbilicus is covered with a double ſtar. The ſtamina are three filaments. In the female flowers the cup is the ſame as in the male, the flower itſelf is alſo the ſame, but that the ſtar which cloſes the baſe is compoſed of five cordated leaves. The fruit is a very large fleſhy berry with a hard bark, and is of an oval obtuſe figure, and ſurrounded with the calyx. The ſeeds are flatted and of an orbicular form. *Linnæi* Gen. Plant. p. 439. *Plumier* 27.

FIARSING, in ichthyology, a name given by the Swedes and Danes to the fiſh generally called the *draco marinus*, and *araneus marinus*; the ſea-dragon, and the ſea-ſpider. It is a ſpecies of the trachinus according to Artedi, and is diſtinguiſhed from the others, by its lower jaw being longer than the upper, and without beards.

FIAT, in law, is uſed for a ſhort order or warrant of ſome judge, for making out and allowing certain proceſſes. Thus if a certiorari be taken out in vacation, and teſted of the precedent term, the *fiat* for it muſt be ſigned by a judge of the court, ſome time before the eſſoin day of the ſubſequent term, otherwiſe it will be irregular. There is no need for the judge to ſign the certiorari itſelf, but only where it is required by ſtatute. 1 *Salk.* 150. 2 *Hawk.* P. C. 289.

FIATOLA, in zoology, a name given by the Italian fiſhermen to the ſtromateus. *Willoughby*'s Hiſt. Piſc. p. 156. See the article STROMATEUS.

FIBER, the *beaver*, a very remarkable creature of which many ſtrange things are recorded by authors. It is uſually about three foot long in body, ſometimes conſiderably more, and its weight from twenty-five to thirty-five pounds. Its head is broad and flatted, its eyes ſmall and black; its ears are ſmall, ſhort and round, and hairy on their outſide; and it has two dentes inciſores, which are very broad and prominent, and have their ends oblique, as if made for cutting; theſe are of a fine yellowiſh red on their outer ſurface, but of a fine ivory white within; the neck is ſhort and thick; the fore feet are divided each into five toes armed with obtuſe claws; theſe ſerve the creature in the place of hands, and it uſes them in the manner of the ſquirrel for lifting up its food to its mouth; the order and diſpoſition of the fingers, and the ſhape of the palm in theſe much reſembles that of the human hand; the hinder feet are extremely different from theſe, and have the toes connected by a ſtrong tough membrane, in the manner of the feet of geeſe, &c. theſe have broad and flat claws like thoſe of the monkey kind.

The hairs which cover the body are of two very different kinds, but are mingled regularly and intimately with one another. Some of theſe hairs are long, the others ſhort and downy; the long ones are about an inch and half in length, and of a ſort of reddiſh black colour, very bright and gloſſy, and

and theſe are very firm and ſolid: the ſhort ones are not of half the length of theſe, and are not indeed regularly of the ſame length one with another, and differ accordingly in fineneſs, the long being ſomewhat harſh, the ſhort perfectly ſoft and fine, and no other than a moſt ſmooth down. Theſe are what make the fur uſed by the hatters; and this diverſity of hair on the animal is no way ſingular, ſeveral creatures having the ſame; a long hair for a ſort of ornament, and a downy fur for warmth and for defence.

The tail has no hairs, but is black and ſcaly, ſomewhat in the manner of the skin of fiſhes; the ſcales are as thin as parchment, and are joined to and by a firm cuticle; the tail is ten or eleven inches long, and four or five broad, ſmall at its inſertion, then ſwelling out toward the middle, and becoming again a little ſmaller juſt at the extremity, ſo that it is of a ſort of oval figure. The anus and paſſage for the urine are contained in one common aperture; the penis in the male lies in the upper part of this aperture, and is boney, and under this aperture is by means of a membrane divided into two parts, each of which terminates in a lateral ſinus. For the ſtructure of the bags which contain the caſtor. See CASTOR.

We have not the beaver now wild with us in England, but there is great room to believe, that it once was ſo, from what our own authors have ſaid of it.

FIBRARIÆ, in natural hiſtory, the name of a claſs of foſſil bodies, the greateſt part of which have been very improperly called by the writers of foſſils, fibroſe talcs, they being of a very different ſubſtance and ſtructure of parts from the talcs, and having none of their diſtinguiſhing characters.

The word is derived from the latin fibra, a fibre, or filament, theſe bodies being all compoſed of arrangements of parallel filaments or fibres. See Tab. of Foſſils, Claſs 1.

The *Fibrariæ* in general are foſſils compoſed of parallel filaments uſually remaining ſo diſtinct as to preſerve in the whole maſſes a thread like texture; but ſometimes uniting ſo as to form plates or flakes, reſembling thoſe of the talcs in external figure. They are bright, and in ſome degree tranſparent; not giving fire with ſteel, nor fermenting with, or ſoluble in acid menſtrua. *Hill*'s Hiſt. of Foſſ. p. 88.

Of this claſs of bodies there are two diſtinct orders, and under thoſe four genera. The firſt order is of thoſe which are compoſed of filaments ranged perpendicularly in the maſs, not flexile nor elaſtic, and readily calcining in the fire. Theſe are the bodies which have been called the fibroſe talcs.

The ſecond order is of thoſe which are compoſed of filaments ranged horrizontally in the maſſes, and are flexile and elaſtic in ſome degree, and not calcining in the fire. The firſt genus of the firſt order, is of thoſe fibroſe bodies which are not elaſtic, and are compoſed of ſtrait and continuous filaments called tricheriæ. The ſecond is of thoſe which are not elaſtic, and are compoſed of ſhort and abrupt filaments, the lachnides. The firſt genus of the ſecond order is of thoſe fibroſe bodies which are flexile and elaſtic, and are compoſed of ſtrait and continous filaments, as the asbeſti. The ſecond is of thoſe fibroſe bodies which are flexile and elaſtic, and are compoſed of ſhort and abrupt filaments, the amianthi.

FIBROSE *roots*, thoſe which conſiſt wholly of ſmall fibres, ſuch as the roots of the meadow-graſs, pinks, and ſeveral other flowers. When a *fibroſe* root penetrates ſtrait into the ground, it is called *perpendicular*; when it creeps under the ſurface, *horizontal*; when ſomewhat thick, it is called *fleſhy*; when very thin, *capillary*; when it runs all the way undivided, *ſimple*; when divided, or when it ſends off ſmaller roots, *branched*; when its ſurface is covered with extremely ſhort and fine fibres, *hairy*. See ROOT.

FIBULA, in natural hiſtory, a name given to a claſs of the echinodermata, which have their mouth in the middle of the baſe, and the aperture of the anus on one edge. Theſe are found principally among the foſſil kinds, and ſeem to have had their ſhells of the aſſulated kind, or compoſed of ſmall plates joined tranſverſely to one another. Of this claſs, there are two genera, the conulus and diſcoides. *Kleine*'s Echinod. See CONULUS and DISCOIDES.

FIBULA, in anatomy (*Cycl.*) — The upper extremity of this bone is a kind of tuberoſity or head, obliquely flatted by a ſmall cartilaginous plane, by which it is articulated with the cartilaginous ſurface, at the lower part of the external condyle of the tibia. It terminates backward by a kind of ſhort blunt point directed upward. The lower extremity is broader, flatter, and more oblong than the upper; it is partly a continuation of the body of the bones, and partly an epiphyſis in children; the marks of which are quite loſt in a more advanced age. It has in a manner three ſides, one rounded like a tuberoſity, one flat, and the third narrow; when it is placed in the lateral cavity of the baſis of the tibia, it makes the outer ankle oppoſite to the inner ankle.

In its natural ſituation, it reaches much lower down than the baſis of the tibia, and ends in a point turned a little backward. The flat ſide is cartilaginous, and turned toward the cartilaginous ſide of the inner ankle, with which, and with the inferior ſide of the baſis of the tibia, it completely forms the cavity by which the leg is articulated with the foot. The narrow ſide is turned backward, and near its lower part is a ſmall, oblong, unequal foſſula, formerly believed to be for the paſſage of a tendon, in which a ſmall mucilaginous gland is lodg'd. The point by which the baſis of the *fibula* ends, has a ſmall ſmooth ſurface immediately below the narrow ſide, for the inſertion of an annular ligament.

The body of this bone is long and ſmall, more or leſs contorted, and irregularly triangular. Near the two extremities it contracts into a kind of neck, and a little below the middle it is often bent inward; but this curvature ſeems chiefly owing to the method of dreſſing children, for we ſometimes meet with the bone very ſtrait. It is diſtinguiſhed in an irregular manner into three ſides, and three angles, principally towards its lower part. The outſide is the moſt conſiderable: the upper part of it is more or leſs hollowed; afterwards it grows round, and altering its direction, becomes almoſt poſterior in the lower half. The poſterior ſide is more or leſs convex toward the upper part, thence it grows flat, and turning in the ſame manner as the former, it becomes nearly internal toward the lower part. The inner ſide has likewiſe a turn near its middle, and becomes anterior from thence downward; and this turn is marked by an oblique line, which runs down on this ſide, from behind, forwards, and divides it into two. Theſe ſides ſerve partly for muſcles to lie upon, and partly for their inſertions. The internal angle of the fibula anſwers to the external poſterior angle of the tibia, and both ſerve for the inſertion of the interoſſeous ligament of the leg; the other two angles are more or leſs acute, eſpecially the anterior, which is ſometimes like a kind of criſta, and terminates below in a ſmall triangular ſurface.

The internal ſtructure of the fibula, though a very ſmall bone, is like that of the other long bones; it is articulated by its upper extremity, with the inferior ſurface of the external condyle of the tibia; this articulation is an arthrodia, with a very ſmall degree of motion. The inferior extremity is articulated by its cartilaginous ſide, partly with the lateral depreſſion in the baſis of the tibia, and partly with the firſt bone of the foot, completing the ginglymus between the leg and that bone. *Winſlow*'s Anatomy, p. 95.

Cartilages of the FIBULA. The *fibula* has two cartilages, one lying on the upper extremity of that bone, for its articulation with the ſmall cartilaginous ſurface in the head of the tibia; the other cartilage covers the inſide of the inferior extremity, or the outer ankle, near the point of which poſteriorly, there is a ſuperficial cartilaginous incruſtation for the paſſage of the tendons of the muſculi peronæi. The cartilage at the upper extremity ſeems thicker, than that at the lower. *Winſlow's* Anatomy, p. 128.

Ligaments of the FIBULA. This bone is joined to the tibia by nine ligaments, four at each end, and one in the middle, called the interoſſeous ligament. The four at the upper extremity are ſhort, very ſtrong, more or leſs oblique and compound; two of them are anterior and two poſterior, and they lie on each other; the ſuperior ligaments ſurrounding the articulation more cloſely then the inferior, which have a ſmall void ſpace, and are weaker than the former; they are all faſtned to the capſular ligament, which runs in between them and the articulation, and they are inſerted round the edges of the cartilaginous ſurfaces in each bone.

The ligaments of the lower extremity of the *fibula* which runs below the tibia, and forms the outer ankle, are much ſtronger, thicker, more complex, broader, longer, and more oblique, than thoſe of the ſuperior extremity; and are like thoſe diſpoſed, two before, and two behind. They are fixed to the anterior and poſterior edge of the lateral depreſſion at the inferior extremity of the tibia, and from thence they run down on the lower end of the *fibula*.

The two inferior ligaments are longeſt, and they are fixed anteriorly and poſteriorly at the lower end of the outer ankle; the two ſuperior are fixed more cloſely, and nearer each other, but there is ſtill a ſmall ſpace between them, which is filled with fat. As the two bones touch each other only by the upper part of the cartilaginous ſurface of the outer ankle, and the ſmall cartilaginous border in the lower edge of the depreſſion of the tibia, the middle ſpace between them is filled by a capſular ligament, which lines each ſide of the bones, and is continued down to the true articulation of the external ankle, with the inferior edge of the baſis of the tibia.

The middle or interoſſeous ligament of the two bones of the leg, ſo called becauſe it fills up all the ſpace left between them, being ſtretched from one to the other, is fixed along the poſterior external angle of the tibia, and the neighbouring angle of the *fibula*. It is made up chiefly of two planes of very oblique ligamentary fibres, which croſs each other, and at different intervals ſeem to be multiplied. It is perforated both above and below, and ſometimes in ſeveral places beſide, for the paſſage of the blood-veſſels and nerves. It is not a ligament intended for the tying theſe two bones together, but is rather a ligamentary ſeptum for the inſertion of muſcles, ſupplying in this reſpect the place of a bone, and ſeeming indeed to be partly a continuation of the perioſteum of the tibia and *fibula*. At the lower part of each ankle, there are common-

ly three ſtrong ligaments for the connection of the bones of the tarſus with thoſe of the leg; one of theſe runs downward, one backward, and one forward. *Winſlow*'s Anat. p. 130.

Luxation of the FIBULA. Sometimes the *fibula* is ſeparated by external violence from the thigh bone, and is then diſtorted either upwards or downwards: this generally happens, when the foot has been luxated outwards. Whenever this happens the bone is to be firſt reſtored to its natural place, and then properly bound up, and left to the aſſiſtance of nature and reſt, till it be grown firm again to the tibia and leg. The patient in this and the like caſes, muſt be always ſtrictly cautioned not to uſe or bear any ſtreſs upon the diſordered leg too ſoon; the conſequence of which may be worſe than the firſt misfortune. *Heiſter*'s Surg. p. 172.

FIBULÆUS, in anatomy, a name given by Spigelius and ſome other authors to a muſcle of the leg, called by Albinus and other writers the *peronæus poſticus*, and *peronæus longus*, in diſtinction from the *peronæus anticus* or *brevis*.

FICARIA, in botany, a name uſed by ſome authors for the ſmall celandine, pilewort or figwort. *Dill.* Cat. Giſs. p. 39.

FICEDULA *cannabina*, in zoology, a name by which ſome authors have called the cannevarola, a leſſer reed ſparrow. *Ray*'s Ornitholog. p. 99. See the article CANNEVAROLA.

FICOIDES, a name uſed by different authors in botany for different plants; many underſtanding by it, the opuntia or Indian fig, as it is vulgarly called; and ſome, as Herman and others, making, it the name of the muſa or plantain tree. *Herm.* Cat. Hort. L. B. p. 256.

FICUS, *the fig-tree*, in botany, the name of a genus of trees, the characters of which are theſe. The flower is produced within the body of the fruit, and is compoſed of a number of ſtamina, proceeding from a ſort of caſe, which incloſes the embryo or ſeed. The ſeed is roundiſh, and the whole fruit is of a turbinated figure, though ſometimes alſo round or oval, and is fleſhy, ſoft, and placed cloſe upon the branches, with either none or a very ſhort ſtalk. The ſpecies of *fig* enumerated by Mr. Tournefort are theſe.

1. The cultivated *fig*, with fruit early ripe, of a greeniſh colour on the outſide, and red within. 2. The cultivated *fig* with a roundiſh early ripe fruit, whitiſh and ſtriated on the outſide, and roſe coloured within. 3. The cultivated *fig* with an oblong white and very ſweet fruit, called by many the uttata *fig*. 4. The cultivated *fig* with a round, white and very ſweet fruit. 5. The cultivated *fig* with an early ripe and ſoon periſhing white fruit. 6. The cultivated *fig* with a ſmall white, late ripe fruit, of a ſweet taſte, and a torn kind, looking of a pale red within; this is called by ſome the Marſeilles *fig*. 7. The cultivated *fig* with an extremely ſmall white round fruit. 8. The cultivated *fig* with a green fruit, ſtanding on a long pedicle. 9. The cultivated *fig* with fruit yellowiſh on the outſide, and red within. 10. The cultivated *fig* with fruit yellow both on the outſide and within. 11. The cultivated *fig* with a ſmall fruit, brown on the outſide, and red within. 12. The cultivated *fig* with a great oblong violet coloured fruit, with a broken skin. 13. The cultivated *fig* with a long ſhaped violet couloured fruit, red within. 14. The cultivated *fig* with a blackiſh red fruit, covered with a bluiſh duſt. 15. The cultivated *fig* with a round blackiſh red fruit, purple within, and covered with a firm tough skin. 16. The late ripening *fig*, with a long and large fruit, black without, and white within. 17. The cultivated *fig* with a large and long fruit, black on the outſide, and purple within. 18. The dwarf *fig*. 19. The wild *fig*. 20. The wild *fig*, with a ſmall round whitiſh fruit. 21. The wild *fig*, with a ſmall oblong bluiſh black fruit. 22. The wild mulberry leaved Portugal *fig*. 23. The Goa *fig*, or Eaſt Indian *fig*, with leaves like the quince-tree. 24. The cheſnut leaved American *fig*, with a round ſpotted fruit. 25. The great American *fig* with roundiſh citron like leaves and umbilicated fruit. 26. The American *fig* with ſharp pointed citron-like leaves, and green fruit. 27. The American *fig* with obtuſe citron-like leaves, and blood-red fruit. 28. The bay leaved American *fig* with very large fruit. 29. The leſſer American *fig*, with leaves of a ſilvery white underneath. *Tourn.* Inſt. p. 662. See FIG.

FICUS, in conchyliology, a name given by authors to a peculiar ſpecies of ſea-ſhell. It is of the genus of the dolium, and has a remarkably depreſſed clavicle.

FIDD, an iron pin uſed at ſea to ſplice or faſten ropes together; it is made tapering and ſharp at one end.

There are alſo *fidds* of wood, which are much larger than the iron ones.

The pin alſo in the heel of the topmaſt, which bears it upon the cheſs-trees, is called a *fidd*.

FIDD-*hammer*, is uſed for a hammer, the handle of which is a *fidd*, or made tapering into that form.

FIDICULÆ, in antiquity, is often uſed to ſignify the ſame with *equuleus*, a kind of puniſhment uſed among the antients. See EQUULEUS, *Cycl.*

FIDICULÆ, in a more proper ſenſe, denotes the cords wherewith the criminals limbs were diſtended on the *equuleus*. *Pitiſc.* Lex. Ant. in voc.

FIDE JUSSORES *aſſidui*. See ASSIDUUS.

FIELD (*Cycl.*) — In order to find the contents of a *field*, it is moſt convenient to meaſure the lines by chains; that of 22 yards for computing the Engliſh acres, and that of 24 Scotch ells for the acres in Scotland. The chain is divided into 100 links, and the ſquare of the chain is 10000 ſquare links; ten ſquares of the chain, or 100000 ſquare links, give an acre. Therefore, if the area be expreſſed by ſquare links, divide by 100000, or cut off five decimal places, and the quotient ſhall give the area in acres and decimals of an acre. Write the entire acres apart, but multiply the decimals of an acre by 4, and the product will give the remainder of the area in roods and decimals of a rood. Let the entire roods be noted apart, after the acres, then multiply the decimals of a rood by 40, and the product will give the remainder of the area in falls or poles. Let the entire falls or poles be then writ after the roods, and multiply the decimals of a fall by 36, if the area is required in the meaſures of Scotland, or by $30\frac{1}{4}$ if in thoſe of England, and the product will give the remainder of the area in ſquare ells in the former caſe, but in ſquare yards in the latter. If in the former caſe you would reduce the decimals of the ſquare ell to ſquare feet, multiply them by 9.50694; but in the latter caſe the decimals of the Engliſh ſquare yard are reduced to ſquare feet, by multiplying them by 9. Treat. Pract. Geom. p. 82.

FIELD-*ale*, or FILCTALE, in our antient cuſtoms, a kind of drinking in the field, by bailiffs of hundreds; for which they gathered money of the inhabitants of the hundred to which they belonged. But this cuſtom has been long ſince prohibited. *Bract.* ap. *Coke*, 4 Inſt. 307.

FIELD-*book*, in ſurveying, a book uſed for ſetting down angles, diſtances and other things remarkable in taking ſurveys.

The pages of the *field-book* may be conveniently divided into five columns. In the middle column the angles at the ſeveral ſtations taken by the theodolite are to be entred, with the diſtances from the ſtations. The diſtances taken by the off-ſet-ſtaff, on either ſide of the ſtation line, are to be entred into the columns on either ſide of the middle column, according to their poſition with reſpect to that line. The names or characters of the objects, with proper remarks, may be enter'd in the columns on either ſide of theſe laſt mentioned. Treat. Pract. Geom. p. 74.

FIELDFARE, in zoology, the Engliſh name of a bird of the thruſh kind, called by authors turdus pilaris. It is larger than the common thruſh, and is of a bluiſh grey colour on the neck; the head is ſpotted with black, and the ſhoulders and back are of a yellowiſh brown, variegated with black; the the throat is variegated with black and yellow, the lower part of the belly is white and but a little ſpotted; and on each ſide of the neck, and near each eye it has a large black ſpot; thoſe on the neck are on its lower part near the inſertions of the wings; its wing feathers are variegated with black, white, and a yellowiſh brown, and the tail is of a bluiſh black, with ſome variegations of black and white.

It is a bird of paſſage, and viſits us in England toward the end of autumn in vaſt flocks, and leave us in ſpring; it is not certainly known where they breed. They feed on berries, particularly thoſe of the holly, and are a well taſted bird. *Ray*'s Ornith. p. 138. This bird is eaſily taken with water-bird-lime in the following manner; take out a gun and kill two or three *fieldfares* with it; by that time the gun has been diſcharged two or three times, the reſt of theſe birds will be ſo ſhy, that there will be no coming near them; then tie one or two of thoſe that were ſhot, to the upper branches of ſome buſhy tree, in ſuch manner, that they may ſeem alive and ſitting there. Then prepare two or three hundred twigs, covering them well with the water-bird-lime, made warm for that purpoſe; take a good birchen bough, and in that place all the twigs; tie this faſt to the tree, juſt underneath where the other *fieldfares* are tied, and let this be in a place where they come in a morning to feed, for they always uſe one haunt for feeding ſo long as there is any food left there. By this means the *fieldfares* will ſettle in whole flocks, near thoſe which they ſee tied to the buſh, and two or three dozen may be in this manner taken at a time. See the articles BIRD and LIME.

FIELD *fort*, in fortification. See FORTIN, *Cycl.*

FIELD-*officers*. See OFFICER, *Cycl.*

FIFE-*rails*, in a ſhip, are thoſe that are placed on baniſters on each ſide of the top of the poop, and ſo along with *hances* or falls; they reach down to the quarter-deck, and to the ſtair of the gangway.

FIFTH (*Cycl.*)--*Diminiſhed* FIFTH, in muſic. See DIMINISHED *fifth*.

FIGS, The Greeks in ſome of the iſlands of the Archipelago, have a peculiar method of ripening the fruit of the domeſtic *fig*-trees, called *caprification*. See CAPRIFICATION.

The common dried *figs* afford two very curious phænomena; the one is, that within thoſe which are ſomewhat decayed, and indeed often in thoſe which appear moſt ſound, there are a peculiar ſort of mites, which live on the pulp of the fruit, and we eat millions of theſe unknowingly in this fruit.

Theſe are different from the common mites, in that they are rounder bodied and more tranſparent, and are a very beautiful little creature when examined.

The other object is the seed in which the plantula seminalis is very elegantly to be seen. To this purpose however, the largest *figs* must be chosen, for the smaller are commonly such as are pulled off from the tree before they are ripe. Out of one of these large and ripe *figs*, a fair seed is to be picked, and on cutting this carefully, the whole pulpy part may be separated from the hard husk, and on examining it, there will be found lodged in it, a very perfect and beautiful little plant consisting of two leaves, and of a part which is to be the root, and another which is to be the stalk, and in fine the trunk of the tree. The pulpy matter of this seed is covered with a delicate thin membrane, and this must be carefully taken off before the plantule can be seen; after this, all the rest is only a sort of pith destined to give place and nourishment to the young shoot, before it is committed loose to the earth.

FIGS, in antiquity, were used in divination. See SYCOMANTIA.

FIG, in the manege, is a sort of wart on the frush, and sometimes all over the body of a horse. The *figs* that appear in the frush or sole, make an evacuation of stinking malignant humours, that are very hard to cure.

FIG *insect*, in natural history, a name given by the English to the creature called by the French after Mr. Reamur, the faux puceron, or false puceron, from its very much resembling the puceron in external appearance, but being extremely different from it when nearly examined. These insects are when at their full growth of the bigness of the head of a pin of the largest size, but there are usually found among them several that are smaller, down to such as are scarce perceivable to the naked eye. They are found in great plenty on the back, or underside of the leaves of the *fig*-tree, but they never are seen in clusters like the pucerons; twenty or thirty being the greatest number usually found on one leaf, and these scattered in different parts of it. These animals tho' of the same general figure with the pucerons, yet are of so very different a nature, that they are all of them to become at length wing'd insects, none remaining naked, as great part of the pucerons do; and they are not in a condition to multiply or bring forth young in this state, but must pass thro' their transformation first into the fly, like that to whose eggs they owed their origin.

The cases under which the wings are placed in this state are very large, and take up a great deal of room on the animal; they extend themselves also as far as the extremity of the head, so that they give the creature a very singular figure, it being much thicker and broader before than behind, and its head looking at the extremity square, as if cut off evenly from some other body.

The body and breast of this insect are green, and the cases of the wings are white and beset with hairs. This creature has two antennæ or horns, which it can exert and shew at pleasure; but they usually are lodg'd under the furrows of the wings, and are not to be seen, unless the animal be turned belly upwards; the head also is bent downwards, and the eyes seem directed to look at objects only placed under them. *Reaumur*'s Hist. Inf. v. 6. p. 98.

It has six legs, and a fine small trunk issuing from the extremity of the head; this is but short, and is of a lively green; it is terminated by a sharp point, and has a fine brown filament like a hair, which it thrusts out of the body of the trunk at pleasure, and which seems a sort of engine or organ destined to convey into the body the juices extravasated by the wound and suction of the trunk. The creature usually remains in perfect quietness on the leaf on which it is found, but has this peculiarity in its position, that it is always found with its head resting upon one of the ribs of the leaf, and its body on the plain part; by this means the anterior part of the head is raised above the surface of the plain part of the leaf, and the creature can by that advantage move his trunk about at pleasure, and fix it into different parts of the leaf, while his body is perfectly still all the time.

These creatures throw off their skins many times in their growth, the furrows marking the places where their wings are, and the protuberances made by their cases, are always seen, however young they are examined. When they are about to throw off the skin, it opens by a slight crack in the middle of the breast, and the creature first enlarges this slit by various motions, and there thrusts out its head at it; this is followed by the anterior pair of legs, and the motions of these parts soon disengage the remainder of the body. The skins which they thus cast off, have usually some cottony matter on their hinder part, as the exuviæ of the pucerons of many kinds have. The resemblance of the puceron kind, is also kept up in the excrements, for this animal voids no other than a clear and limpid fluid like water; this is however very viscous, and by that means often forms itself into a large drop, before it is thrown off from the body of the animal. If the creature be at any time squeezed, it immediately voids such a drop, and the efforts used by it in quiting its exuviæ, seem also to have the same effect, for there is always a drop seen on the old skin. Though the leaves of the *fig*-tree are the usual residence of these animals, they are sometimes found on the young fruit. In some seasons when they are very plentiful, every green *fig* will be found surrounded by twenty or more of them, but it does not appear that they do any harm.

In the months of May and June, these insects all become wing'd, and afford a peculiar species of a four-wing'd fly, which is remarkable for hopping, but as its hinder legs are not greatly larger than the rest, it leaps but a little way at a time. The body of this fly is green, its wings are bordered with yellow, and its legs are white; it has a trunk of the same nature with that of the creature before its wing'd state, and with this it continues to seek the juices of the leaves of the *fig*-tree as it did before.

It continues also in the same manner to void a clear viscous fluid by way of excrements, and this is done in a very singular manner: the end of the body is terminated by a short pipe or tube, which in its common posture runs parallel with the rest of the body, and is placed in an horrizontal direction; but when it is to be used in voiding the excrement, the creature turns it up in a very remarkable manner, so that it stands perpendicularly to the body. The wings are folded up so as scarce to appear distinct when the creature is first delivered from its last exuviæ; but they soon begin to unfold themselves, and by degrees arrive at their full extent, and are placed over the body so as to make an angle, and form a sort of covering or tent for the body. The manner in which these animals propagate their species, is not yet known. The pucerons, to which they more approach in figure than to any other animals, have always young ones found within them; but these if examined in whatever state, never have any such appearance, not even so much as eggs being found in them; it should seem that their eggs are too minute for our inspection, but that they are oviparous, not viviparous animals. *Reaumur*'s Hist. vol. 6. p. 98.

FIG-*tree*. There are some different species of this tree cultivated in the gardens of England, but many more in those of France and Italy, where the fruit is in very high esteem, as it is also with the nicer palates here; though so much out of favour with the vulgar, that it stands safe on trees planted in places so exposed, that every other species of fruit would be stripped by robbers.

One great discouragement to their more frequent propagation in England, is the unskilfulness of the generality of our gardeners in their culture and management. To obviate which, it may not be amiss to say somewhat at large here, of the proper management of all the species of this tree.

The common method has been to propagate these trees by suckers from the roots of the old ones, but they are much more successfully raised from cuttings. The branches may be laid down in February, and by the February of the following year, they will be fit to remove. This is the proper season to transplant them; and the best soil is such as has a gravelly, chalkey, or stony bottom, with a light surface; the tree will seem to flourish indeed more in a better soil, but in this poor one it will produce the finest and most plentiful fruit. They should always be planted in a free open situation, not shaded by trees or buildings, and will never ripen their fruit well unless against a good south, south-east or south-west wall. They should be planted at twenty feet distance, and the height for the wall they stand against, is about fourteen feet; the middle spaces between the trees, may be planted with vines to fill up the vacant part of the wall till the *figs* are grown, and then these should be taken up. In the summer, as the branches shoot, they must be trained horizontally against the walls, and no foreright shoots should be suffered to come, but the buds of such should be rubbed off as fast as they appear. At Michaelmas they should be always prun'd and nailed up. The great care to be had in pruning the old trees, is always to have a supply of young branches, for it is those only which produce fruit. None of the shoots of the former autumn pruning must be shortened, for it is on the two year old wood, that the fruit is produced; the young branches must be always brought very close to the wall, and this will screen them from injuries by frosts, and much forward the early ripening of their fruit. The old branches should never be laid in too thick, which is a great fault among most gardeners; the distance ought to be at least a foot between branch and branch, and as the young ones grow strong, the old ones should be always cut away. In April or the beginning of May, several of the leading shoots, should be stopped, which makes them throw out side branches. In very hard weather the trees should be covered with straw, peas,halm or the like; and that not to be removed till the weather is milder, and then not all at once, but only by a little at a time. The higher the wood runs up the wall, usually so much the better tasted is the fruit; and no trees succeed better in fruiting, than those which are nailed up against chimnies, where beside the height, they have some advantage from the heat. *Miller*'s Gardener's Dict. See FICUS.

FIGWORT *worm*, in natural history, the name of an insect, which feeds on the leaves of the scrophularia or *figwort*, and which is usually esteemed a caterpillar, but is one of those insects called by the French fausse chenilles. Its head is spherical, and it has twenty-two legs, and by these characters and the changing its colour after the parting with its last skin, it may be distinguished from the caterpillars, without waiting for its last

laſt change, on which it produces a four winged fly, not a butterfly.

This beautiful inſect is of the ſize of a middling caterpillar; it is of a fine pearly white, variegated with a great number of round and large ſpots, of a deep blackiſh brown, which run down its back in two regular rows, and form two even ſtreaks or lines; beſide theſe, there are ſeveral other ſmaller ſpots of a deep black, in ſeveral parts of the body, and from every one of theſe, there grows a long black hair.

All theſe dark colours on the pearly ground, make a very beautiful appearance. The creature changes its skin four or five times in the courſe of its life; and in this ſtate, and on the laſt change before its entering on the nymph ſtate, it is ſo altered, that there would be no diſtinguiſhing it for the ſame animal, if the change were not made under the eye of the obſerver; the pearly skin with all its elegant variegations is thrown off, and the creature appears of a plain green colour, without the leaſt ſpot or variegation. In this ſtate it eats for ſeveral days, at the end of which time, it becomes a nymph or chryſalis, and from this iſſues in form of a large fly. *Reaumurs's* Hiſt. Inſ. v. 9. p. 117.

FIGWORT, in botany. See SCROPHULARIA.

FIGHTING-*ſails*, at ſea. See SAILS.

FIGHTS, in a ſhip, are the waſte cloths which hang round about her in a fight, to hinder the men from being ſeen by the enemy.

Cloſe FIGHTS, is uſed for thoſe bulkheads afore or abaft the ſhip, which are put up for men to ſtand ſecure behind, and fire on the enemy, in caſe of boarding.

Running FIGHTS, at ſea, thoſe where the enemy does not ſtand the battle, but are continually chaſed.

FIGHTWITE, *Fihthwita*, in the Saxon times, ſignified a mulct for making a quarrel, to the diſturbance of the peace. — *Mulcta ob commiſſam pugnam in* [a] *perturbationem pacis, quæ in exercitu regis* 10 *ſolidorum erat.* Blount and Jacob in tranſcribing this paſſage, have inſerted 120 ſols. [[a] *Du Cange*, Gloſs. Lat. in voc. *fihtwita.*]

FIGURAL, or FIGURATE *numbers*, ſuch as do or may repreſent ſome geometrical figure, in relation to which they are always conſidered; as triangular, pentagonal, pyramidal, &c. numbers. See NUMBER, *Cycl.*

FIGURATIVE *Deſcant*. See DESCANT, *Cycl.*

FIGURE (*Cycl.*)—*Apparent* FIGURE, in optics. See APPARENT.

Plain FIGURES, in geometry, ſuch as are terminated and bounded by right lines only.

Brimſtone FIGURES. See BRIMSTONE.

FIGURES *on China ware*. There are ſeveral very different ways of making the *figures* we ſee on the China ware, and according to the method uſed, they have a very different appearance; but none of them are difficult. The common *figures* which we ſee, are traced on with a pencil dipp'd in the colours prepared of ſtones and earths, waſhed to fineneſs by water, and afterwards dried, and then blended with gum-water to uſe in the common way. The common blue is our ſmalt, and the finer blue a ſtone they call *leao*; the reddiſh is calcined copperas; and the green, a preparation of the ſcoriæ of copper. Theſe will all mix with gum-water, and ſpread from the pencil, and the only care to be taken in regard to them is, to make the powders very fine. The miniature paintings as they are called, on the blue china, are thus done; the veſſel is plunged all over into the common blue, made into a ſoft paſte or varniſh with water; this gives the whole veſſel a coat of blue, and the workman takes a fine needle fitted into a proper handle, and with the point of this, he pricks out his *figure*, every touch leaving behind it a ſmall white ſpot, which is owing to the taking off the blue where the point touched it; after this is finiſhed, and the whole is dry, the veſſel is varniſhed over, and the *figures* appear painted in miniature under the ſurface.

The elevated or emboſſed *figures* of beaſts and flowers which we ſee on china, are done in a much eaſier manner, than would naturally be imagined. The artiſts carves theſe firſt with a *burin* on the ſurface of the veſſel while yet ſoft, after this he cuts away the ſubſtance about the *figures*, and they appear elevated in any degree that he pleaſes. Theſe are painted by the common hands employed in this work, and when dry are varniſhed over, and the effect is very elegant, while the means are not at all to be diſcovered.

The moſt beautiful of all china in the judgment of many, is that which is all white, but has *figures* within the ſurface; theſe appear very neat and diſtinct, though the ſurface is perfectly ſmooth. They are made of a whiter matter than the reſt, called *hoache* (which ſee); and when theſe are laid on in this white, and covered with the common varniſh, they are ſeen through it, and are of a different white both from the varniſh and the ſubſtance of the china. Obſervations ſur les Coutumes de l'Aſie. p. 325.

FIGURE, *figura*, σχημα, in the antient muſic, is uſed for the different diſpoſitions of the tones and ſemitones in a conſonance.

Caſting of FIGURES — To make a figure that ſhall truly repreſent any face. See PLASTER.

FIGURED (*Cycl.*) — FIGURED *ſtones*, in natural hiſtory, a name given by ſome writers to thoſe foſſil bodies which are found in the ſhape of ſhells and other parts of animals. Diſputes among the learned have never run higher on any ſubject, than on the origin of theſe ſtones; ſome have declared them to be all of marine origin at firſt, and that they were brought to the places where we find them in this foſſil ſtate, at the time of the univerſal deluge, and have been ſince altered into the nature of ſtones, by long lying in the earth in the way of waters impregnated with ſtony particles, which they have depoſited in them, after entering their ſubſtance in their paſſage through the earth.

Others are of opinion, that theſe bodies tho' reſembling ever ſo exactly the ſea fiſhes, yet never were in the ſea at all: but that the firſt ſemina of the ſea ſhells, corals, and other ſubſtances, being carried by the ſea water through the ſubterranean paſſages into all parts of the earth, even into the higheſt mountains, have been there left in vaſt numbers, and growing there among ſtony matter, have arrived at their true bulk and figure, but in a ſtony ſubſtance. Langius in a treatiſe expreſsly written on this ſubject, has accurately enquired into the ſubject, and examined the ſtrength of the arguments on both ſides the queſtion, with great ſagacity and candour.

Thoſe who argue for the origin of theſe foſſil ſhells being from the deluge, he obſerves, aſſert, that in the time of that fatal cataſtrophe, the ſea ſhells, corals, and other marine bodies, in company with the ſands from its ſhores and bottom, were by the violent agitation of the waters, toſſed out of their natural places, and carried far on land, as it was afterwards to be, where they were ſcattered over the whole ſurface, and toſſed into holes and caverns in immenſe quantities together; and in other places that the mud and ſand, together with theſe ſhells, all were heaped up in immenſe piles, where after the going off of the waters, they all hardened by degrees and became ſtones of ſeveral kinds: and that the ſhells among them remained in the places to which they were brought in this manner, and became petrified together with the earth or mud and ſand, and hence they ſay were formed mountains of different ſorts of ſtone, as different earths or ſands concurr'd in the formation of their ſeveral parts; and that hence it is, that the foſſil ſhells are found petrified in them, while the ſcattering them over the ſurface of the yet ſoft earth, into which they penetrated to different depths according to their own gravity and its ſoftneſs, accounts for their being met with in the different ſtrata now hard, and the amaſſing of them in ſubterranean caverns at that time, exiſting together with mud, ſand, &c. with which they became afterwards petrified, gives occaſion to the immenſe heaps of ſhells, which we find in ſome places, with very little ſtony or earthy matter interſperſed among them.

The *figured* ſtones repreſenting ſhells in mountains, &c. are found in two forms; the one exhibiting a ſurface much reſembling the colour and ſubſtance of the ſhell in its natural ſtate, and being filled with abſolute ſtony matter of another kind and colour within this cruſt, which does not exceed the natural thickneſs of the ſhell. The others only repreſenting the ſhape of the ſhell, but all of the ſame ſubſtance, and without any cruſt, and that ſubſtance being in different inſtances, of very different kinds; ſome of theſe being compoſed of abſolute flints, ſome of pure ſpar, ſome of coarſe ſtone, and ſome of the matter of the agate, while others are of the ſubſtance of the common pyritæ. The firſt kind are ſuppoſed to be compoſed of the very ſhell itſelf yet remaining, though altered into the nature of ſtone, and forming a cruſt to the other ſtoney matter petrified in the ſame manner within it, though doubtleſs received into it, in the form of ſoft mud. The others they ſuppoſe only to be the caſts in theſe ſhells, or the mud, or other matter originally received into thoſe ſhells, hardened into ſtone with the loſs of the ſhell, which having been waſhed away and carried wholly off from it, has now left it naked; though that not having happened till after the matter was petrified within it, could not alter or injure that form which the contained ſubſtance had formed itſelf into.

Thoſe who aſcribe the origin of theſe foſſils to the deluge, ſay, 1. That it is wholly impoſſible, that the figured ſtones ſhould be form'd in the other way; ſince the various meanders in the ſubterranean paſſages from the ſea to the places where we find many of theſe bodies, are too intricate for the ſeminia ever to be brought through; and are compoſed of ſo many different ſubſtances, through the pores of which they muſt paſs, that ſuch ſeminia as are ſuppoſed to be carried through them could never paſs, were it poſſible to allow all the reſt, in a condition to grow into their proper ſhape, ſince they muſt have been mutilated by the hard bodies they paſſed through, and impregnated by the ſaline and other penetrating ſubſtances in their way, ſo as not to leave it poſſible that they ſhould afterwards grow, had they all the other requiſites.

2. That even ſuppoſing it poſſible that the ſeminia of ſhells and corals, could be thus conveyed uninjur'd from the ſea to the places where we find them in their foſſil ſtate, even then it is wholly impoſſible for them to grow; becauſe they want

both

both the grand requiſites for the growth of plants and animals, that is a proper matrix, and proper nouriſhment. *Lang.* Hiſt. Lapid. Figurat.

3. That if ſuch a generation of theſe bodies could be allowed, their growth up to the ſtate in which we find them, muſt have been from their ſmall ſeminia, either inſtantaneouſly or ſucceſſively, as in other plants and animals; but it is eaſily proved from their ſtate, and the ſtate of the bodies in which we find them, that neither of theſe can poſſibly have been the caſe. Their growing inſtantaneouſly to their full ſize from a ſmall ſeminium, is neither poſſible from the nature of the place, that being uſually a hard ſtone, which cannot poſſibly give way to ſo quick an expanſion; nor natural, as all other animal and vegetable bodies grow from their ſeminia to their full ſize, by ſlow and regular degrees; and this ſort of growth can never be allowed to theſe bodies, were it only that the ſeminia themſelves would be alſo petrified, and their ſubſtance would then reſiſt any expanſive fall within. If they were then formed from ſeminia brought from the ſea through ſubterranean paſſages, they muſt alſo have been found in all ſorts of places among all ſorts of bodies, and that ſingly; whereas on the contrary, we find them uſually in cluſters together, and that much more frequently in ſome bodies than in others, and in ſome never.

4. Another unanſwerable objection to the ſuppoſition of their ariſing from ſeminia of the animal or vegetable they repreſent is this; that if they did ſo, they muſt needs grow into the whole animal, or the whole plant, and not form a part of it only. Thus why ſhould we ſuppoſe, that the ſeminium of an oiſter being conveyed thro' ſubterranean paſſages to the place where we find the foſſil body, ſhould have grown not into a complete fiſh, but only into a ſingle ſhell; for it is much more common to find both this and the other bivalve foſſils ſingle, than in the pair, even when buried in ſtone, and wholly out of the way of being ſeparated by accidents. And in the other caſe of vegetables, if the foſſils of that claſs are owing to ſeminia of the plants themſelves, why ſhould ſuch a ſeminium produce only the cone of a fir, the catkin of a hazel, or the fragment of a leaf of a fern inſtead of the whole plant or tree? and to what ſort of ſeminia are we to ſuppoſe we owe the bufonitæ and gloſſopetræ, and ſiliquaſtra, with a number of parts of animals beſide? Are we to think, that the ſeminium of a fiſh when in the earth produces only a tooth, or a part of its palate; or that the ſeminium of an echinus marinus, or ſea hedge-hog, produces only one of that creatures ſpines, or the bare impreſſion of them on a flint.

5. It ſeems an inſuperable difficulty, to ſuppoſe that the form of an animal or a plant, or a part of one or the other could any way be delineated in the body of a hard ſtone, or that a part of that ſtone could any way be moulded or faſhioned into the ſhape of ſuch an animal or vegetable, unleſs ſome certain body of that kind and bigneſs, were actually received into the body of the ſtone to determine its particles in that part to aſſume that figure; and it is plain to reaſon, that nothing but the very ſhell or plant itſelf, could have done in this caſe, from the nice traces and delineations that are exhibited, even of its moſt minute parts.

6. The error of thoſe who ſuppoſe all theſe figures of foſſils owing to the ſhooting of various ſalts, is evident from this, that they are always regular in their ſhape in all places where they are found; whereas ſalts of all kinds, though they have a natural determinate figure, yet are liable to ſo many accidents in their concretions, that they are often mutilated, imperfect and conjoined; three or four of their cryſtals often being embodied in one regular one. But this is never the caſe in our foſſil ſhells, or in the parts of animals or plants; they are always perfect, unleſs by accidents of breaking, as ſtones may be broken, always ſingle, always alike, even in the minuteſt ſhapes; and it is evident from a mere inſpection of them, that they owe their formation not to a ſhooting of ſome ſolid body out of a fluid, but to regular organizations of parts and veſſels.

7. If theſe ſtones were form'd from their ſeminia received from the ſea into the beds where we now find them, ſome of them muſt be of long ſtanding, and others newly form'd there; and we ſhould be able to diſtinguiſh theſe by the different appearances their different ages would give them; but this is by no means the caſe, all that we find ſeem to be of the ſame age, and all ſeem evidently to have been placed at one time, where we find them.

That the foſſil ſhells are really the ſame with the marine ſhells ab origine, appears indiſputably, from their being perfectly of the ſame ſhape, even to the moſt minute particular. All the conchitæ of the earth agree with the ſhells they repreſent at ſea not only in their general figure, but even in their number of ſpines, in the figure of their mouth, and even in the number and ſituation of the tubercles. The ſpines of echini, as well as their ſhells, perfectly agree with thoſe now living at ſea; and there is not any one genus of ſea ſhells that is not found alſo in ſome part or other of the world, and that perfectly agreeing with the recent kind, nay even crabs and lobſters are found foſſil, though that but rarely. Thoſe foſſils which repreſent the parts of ſea fiſhes, agree alſo as perfectly with the ſame parts of the living fiſhes, as the foſſil ſhells with the recent ones; and the bufonitæ originally called gems, and the gloſſopetræ called ſerpent's tongues are refered to their proper claſs, by being compared with the teeth of the recent wolf fiſh and the ſhark, with which they perfectly agree; alſo the corals found on the tops of the higheſt mountains, though buried in ſtone, yet in all reſpects perfectly reſemble the corals at this time growing in the ſea.

But if reaſon thus proves to us, that the foſſils, now abſolute ſtones, only repreſenting the figures of ſhells and parts of animals, were once the real thing they repreſent; our ſenſes in other inſtances prove to us, that real ſea ſhells, unqueſtionably ſuch, at this time are found buried at equal depths in the earth. According to the matter ſhells have been depoſited among in the earth, they are found at this time more or leſs altered; when lodged in ſtone they are frequently turned to abſolute ſtone themſelves, but when bedded in earth, they often are found very little altered from their native ſtate. The ſhells of this kind not only repreſent the figure of certain ſea ſhells which we know, but their very ſubſtance is the ſame, and they are form'd of laminæ laid together in the ſame manner; and their whole external and internal make, is found both by the microſcope and by the naked eye, wholly the ſame with that of the ſea ſhells recent on the ſhores. Their ſubſtance and gravity are the ſame, and they anſwer in the ſame manner in the ſeveral chymical trials. An echinites of this ſhelly kind being macerated in water, ſhews all the regular ſtructure of the cortical part of the ſame ſpecies of echinus when recent; and internally all the nice lineaments and traces of the ſhell neceſſary to the living animal within, are perfect and complete in it.

The oiſter ſhells found foſſil are always compoſed of plates or laminæ, laid one on another, as in the recent ſhells; and the pinna marina which when recent is of the ſtrongeſt texture of any ſhell in the world, being formed of tranſverſe ſtriæ, as appears on breaking it, is of the ſame texture when foſſil. The tubuli marini have been found foſſil with the very body of the fiſh in them; and the teeth of ſharks ſo frequent among us, under the name of gloſſopetræ, are ſo far from being native foſſils, that they are often only petrified on the ſurface, their internal part being of the very ſame bony ſtructure as in the recent teeth.

The ſituation of theſe bodies in the earth, is alſo another great argument of their having been brought thither in their perfect ſtate, as they almoſt always lie in a regular horizontal poſition, among the tender kinds particularly, tho' not much altered. The echinitæ, which do not lie thus, are uſually found cruſhed and broken. The foſſil ſhells are alſo uſually found together in great quantities, as it was natural they ſhould be, if brought to the places where they now lie by the waters of the deluge, which would naturally roll great numbers of the ſame ſort of bodies to the ſame place; whereas if they were form'd from ſeminia, they might the more naturally expected to be found ſingly and diſperſed in all places equally; but neither is this the caſe, ſince there are many large tracts of land wholly without them. Upon the whole, the fact ſeems plain, that they are the remains of a deluge, by which every part of the earth was drowned; and by what we ſee of the places where they now lie, it ſhould ſeem that the whole ſurface was at that time diſſolved upon the globe, and that it afterwards ſubſided from the waters in form of a ſoft mud, which petrified again when the waters went off.

As clear as this proof appears on the diluvian ſide of the queſtion, the author, to whom the world is obliged for collecting theſe arguments, is not however influenced by them, in favour of it, but rather approves the other ſyſtem of their ariſing from ſeminia. His giving theſe their full force, is a great proof of his integrity as an author; and as the opinion of all the world is for this ſide of the queſtion now, this may be eſteemed the proper account of theſe things. The Author's reaſons for judging otherwiſe, See under the article SEMINIUM. *Langii* Hiſt. Lapid. figurat.

FILACIUM. See FILE, *Cycl.* and *Suppl.*

FILAGO, *cudweed*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the floſculous kind, and is compoſed of ſeveral floſcules which are divided into many ſegments, and formed like a ſtar at the ends; theſe are placed upon the embryo fruit, and are contained in a general cup, which is of a ſcaly or ſquamoſe ſtructure, but is not at all bright or ſhining.

The ſpecies of *cudweed* enumerated by Mr. Tournefort, are theſe: 1. The common *cudweed*, called herb impious. 2. The larger *cudweed*, with longer and narrower leaves. 3. The ſmall *cudweed*. 4. The alpine ſmall *cudweed*, with foliaceous heads. 5. The ſea *cudweed*, with foliaceous heads. 6. The foliaceous headed ſea *cudweed*, cultivated in gardens, and called the roſe headed *cudweed*. 7. The Portugal *cudweed* with foliaceous heads, and 8. The common, ſmall erect *cudweed*, with very narrow leaves.

FILAMENTS, among botaniſts. See STAMINA.

FILATERIUS, a name given by the writers of the middle ages to a ſtone which they have greatly celebrated for its imagina-

ry

ry virtues; they ſay it diſpelled fear, gave chearfulneſs, and had many other ſuch effects; and deſcribe it as being of the colour of the chryſolite. But neither this nor its virtues can determine what ſtone they meant.

FILAWS, among the modern Ægyptians, villages inhabited by the original natives of the country. *Pocock*'s Egypt. p. 177.

FILE (*Cycl.*) — FILE, *filacium*, in law proceedings, is uſed for a thread, ſtring, or wire, by which writs and other exhibits in courts and offices are faſtened or filed, for the more ſafe keeping and ready turning to the ſame.

A *file* is a record of the court, and the filing of the proceſs of a court makes a record of it. 1 *Lill.* Abr. 112.

FILE-*leaders*, in the military art, the foremoſt men in each file. See FILE, *Cycl.*

Half FILE *leaders*, are the men of the fourth rank; the fourth, fifth and ſixth ranks being called the *rear half files*, as the firſt, ſecond and third are the *front half files*.

FILICULA, *dwarf fern*, in botany, the name of a genus of plants, the characters of which are theſe: the flowers are not diſcovered; the ſeeds grow in cluſters on the backs of the leaves, and the whole plant reſembles the larger or common ferns.

The ſpecies of *filicula* enumerated by Tournefort are theſe: 1. The ſmall water *fern*, called dryopteris, or *fern* leaved white maidenhair. 2. The large water *fern*, called the dryopteris, and *fern* leaved white maidenhair. 3. The obtuſe leaved *filicula*, called the black maidenhair with obtuſe pinnules. 4. The ſharper leaved *filicula*, called the black maidenhair with acute pinnules. 5. The larger Scotch *filicula*, with the appearance of black maidenhair. 6. The mountain *filicula*, with various and finely divided leaves. 7. The polypody rooted Portugal *filicula*. 8. The ſea rock *filicula*, with round ſegments. 9. The Portugal, branched *filicula*, with leaves like the ceterach. 10. The rock *filicula*, with thick ſet ſharp pointed pinnules. 11. The capillaceous *filicula*. 12. The fingered *filicula*. 13. The cup bearing *filicula*. 14. The black *filicula*, with pointed jaggs. 15. The ſmalleſt beautiful ſtone *filicula*. 16. The ſtone horned *filicula*, called *filis ſaxatilis corniculata*. 17. The ſmalleſt African *filicula*, with finely divided pinnules. 18. The great African *filicula*, divided into ſharp ſegments. 19. The Virginian *filicula*, with baſtard hemlock leaves. 20. The larger *filicula*, covered with a ſilvery powder. 21. The American *filicula*, covered with a gold coloured powder. 22. The American *filicula* with obtuſe pinnules. 23. The ſmall American *filicula*, with the appearance of black maidenhair. 24. The Chineſe *filicula*, with obtuſe and uſually bifid pinnules.

FILIPENDULA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals which are arranged in a circular form. The flower cup is one leaved, but divided into many points; from this there ariſes a piſtil, which finally becomes a roundiſh fruit compoſed of ſeeds arranged together in the ſhape of a little barrel.

The ſpecies of *filipendula* enumerated by Mr. Tournefort are theſe: 1. The common *filipendula*, ſuppoſed by many to be the molon of Pliny. 2. The common *filipendula*, with variegated leaves. 3. The ſmaller *filipendula*. *Tournefort* Inſt. p. 293.

FILIX, *fern*, in botany, the name of a genus of plants, the characters of which are theſe. The leaves are compoſed of other leaves affixed on each ſide of their middle rib, and thoſe are ſubdivided almoſt to their rib, into other pinnulæ, or little leaves. The flowers have not been diſcovered, and the ſeeds grow in cluſters on the under part of the leaves. To this it is to be added, that there is alſo a peculiar face in the *ferns*, which diſtinguiſhes them at firſt ſight from the other plants of this kind.

The ſpecies of *fern* enumerated by Mr. Tournefort are theſe: 1. The great branched *fern*, with obtuſe and not dentated leaves, called the female *fern*. 2. The great branched or female *fern*, with undulated leaves. 3. The great branched *fern*, with very acute, not dentated leaves. 4. The ſmaller branched *fern*, with dentated pinnules. 5. The ſmall Pyrenæan branched *fern*, with polypody leaves. 6. The indented, not branched *fern*, commonly called the male *fern*. 7. The broad leaved dentated, not branched *fern*. 8. The unbranched, dentated *fern*, with leaves growing together, into the figure of a birds-neſt. 9. The unbranched *fern*, with very narrow and finely dentated leaves. 10. The ſmooth ſoft *fern*, reſembling the common male *fern*. 11. The finely divided *fern* of mount Ballon. 12. The finely dentated rhætic *fern*. 13. The little marſh unbranched *fern*. 14. The berry-bearing *fern*. 15. The ſpleenwort leaved unbranched Portugal *fern*. 16. The great branched African *fern*, with dentated leaves. 17. The ſpleenwort like dentated African *fern*. 18. The branched African *fern*, with lonchites leaves. 19. The tree *fern*, with dentated leaves. 20. The prickly tree *fern* with pinnules ſerrated at the ends. 21. The broad leaved prickly tree *fern*. 22. The low, prickly-tree *fern*. 23. The climbing *fern*, with elegantly ſerrated pinnules. 24. The great tall lobular *fern*. 25. The broad band prickly *fern*, with ſmooth and black pinnules. 26. The broad jagged leaved *fern*, lightly prickly at the jaggs. 27. The broad leaved branched *fern*, with black and prickly ſtalks. 28. The broad leaved tailed *fern*, with leaves like the lonchitis. 29. The broad leaved dentated *fern*, with pointed pinnules. 30. The hemlock leaved branched *fern*. 31. The dentated *fern*, with bifid tops to the pinnules. 32. The greater yew-leaved *fern*. 33. The leſſer yew-leaved *fern*. 34. The hairy *fern*, with oak like pinnules. 35. The ſmall hairy *fern*, with deeply indented pinnules. 36. The great branched hairy *fern*, with pinnules dented into round crenæ. 37. The hairy *fern*, duſted with yellowiſh powder. 38. The branched golden *fern*, with round crenæ. 39. The duſty *fern*, with very deeply but obtuſely dentated pinnules. 40. The prickly creeping *fern*. 41. The prickly tailed *fern*. 42. The great *fern*, with broad dentated pinnules. 43. The ſmaller *fern*, with broad dentated pinnules. 44. The *fern* with leaves at the alæ. 45. The branched *fern*, with roſtrated pinnules. 46. The *fern* with cruſted pinnules. 47. The polypody rooted broad dented *fern*. 48. The *fern* with pinnules, ſhaped like the lonchitis, not dentated, and duſty at the edges. 49. The ſmall broad dentated unbranched *fern*. 50. The forked *fern* with long, not dentated pinnules. 51. The branched *fern*, with long, and in part auriculated pinnules. 52. The *fern* with undulated pinnules and ſquammoſe pedicles. 53. The greater unbranched *fern*, with round not dentated pinnules. 54. The leſſer unbranched *fern* with round not dentated pinnules. 55. The unbranched *fern* divided into obtuſe pinnules. 56. The great adiantum-like tree *fern*. 57. The ſmall adiantum-like tree *fern*, and 58. The *fern* with oblong pinnules, ſerrated at their tops. *Tourn.* Inſt. p. 137.

The root of the *male-fern* is greatly recommended by medical writers, as a cure for the rickets in children. Some alſo give it in powder, againſt worms; and it has the ſame virtues againſt the ſtone and gravel, with the reſt of the genus of capillary plants, aſcribed to it. *Lemery* Dict. des Droug. See FERN.

FILTER, *or* FILTRE (*Cycl.*) — Beſide the common *filtre*, which is only a piece of ſpungy paper, there is uſed on many occaſions another made of a ſkain of cotton or other the like matter twiſted together; this is only to be conſidered as a compound capillary ſiphon; for the threads or filaments of which it conſiſts, lying very near together, make a number of long and ſlender vacuities or interſtices, which repreſent ſo many capillary ſiphons; theſe attract, raiſe, and decant off the fluid, in a conſiderable quantity, which is proportional to their number or to the largeneſs of the *filtre*.

After the ſame manner, it is, without doubt, that the humidity of the earth is drawn up into the ſubſtance of the roots of vegetables, which we know conſiſts of long and very minute fibres, ſo diſpoſed as to form a great number of tubular interſtices; theſe act in the nature of this ſort of *filter*, and attract the juices and moiſture appointed for the nutriment and increaſe of the plant.

FILTRUM, in natural hiſtory, the name of a ſtone much in uſe in the eaſtern parts of the world, and ſometimes with us, for the filtrating water intended for drinking. The Japoneſe are extremely fond of this ſtone, and impute their uninterrupted health, and particularly their being always free from the ſtone and gravel, to their drinking the water thus cleared of all its heterogeneous, and miſchievous particles. The people of this and many other places thereabout, have a ſettled opinion, that moſt diſeaſes ariſe from impurities of water, and are well aſſured, that theſe impurities are all lodged in the ſtone filtre, and left behind by the water in its paſſage.

The manner of uſing the ſtone is this; they form a ſort of mortars with very thick bottoms, out of the largeſt pieces of it, and the water is poured into theſe, and the ſtone being of a very lax and ſpungy texture, it ſoon make its way through, and is received into a veſſel placed underneath for that purpoſe. Some ſay that the ſtone itſelf is a kind of marine fungus, that it is ſoft while in the water, and grows to the ſides of rocks in ſome part of the gulf of Mexico, at the depth of a hundred ells, from whence it is with the utmoſt difficulty got up, and that it hardens into a ſtone as ſoon as it comes into the air.

This ſeems a fabulous account, however, only propagated to countenance the high price the ſtone bears. Whatever be its origin in Mexico, we are well aſſured that there are other places where it is to be had on much eaſier terms, than by fetching it from the deep bottoms of the ſea. We are at preſent acquainted with two kinds of it: the one black, reſembling the common black ſlate, with which we cover houſes, and the other grey and of a tophous ſtructure. We have alſo ſtones which may be applied to this purpoſe, in many parts of Europe; and in all probality, every ſpecies of thoſe which are porous, and of the tophus kind, will do. The oſteocolla uſed in the ſhops as a medicine, will perfectly well anſwer that purpoſe; and if one of the tubes of this be ſtopped at the bottom and then filled with water, it will be ſeen immediately making its way thro' it on all ſides. The incruſtations on vegetable and other ſubſtances in ſprings, are all form'd of a matter very analogous to the oſteocolla, that is, of a coarſe terrene ſpar. And if a piece of any of theſe be hollowed at the

top, and water put into it, it will be ſeen to fall out at the bottom in form of a little ſhower of rain; this might give ſome countenance to the Mexican ſtory of their filtrum being formed under water. As the ſpar contained in all water, ſo that of the ſea, as well as of rivers and ſprings, may form itſelf into a ſort of fungous maſſes, againſt the ſides and edges of the rocks; but it is not probable that it ſhould be found at ſuch depths. On obſerving the great denſity and firmneſs of the ſparry concretions in ſprings, which yet ſuffer water to pervade their texture ſo very readily, Dr. Vater, to whom we owe this account, was induced to try the common coarſe ſtone uſed in building houſes to this purpoſe; and a mortar being made of this, was found to let the water thro', as well as the Mexican ſtone. The water firſt paſſed thro' this mortar had an earthy taſte from ſome of the looſe matter of the ſtone, which it diſloged in its paſſing thro', but this is alſo the caſe in the Mexican, and all other kinds of filtering ſtones, and it goes off in all, after a few times uſing.

It being found therefore an eaſy thing for us to have our water filtered in the ſame manner that the Japoneſe have, it remains to try, whether it will have all thoſe ſalutary effects, which the people of that part of the world give it; and this ſeems not to be imagined from reaſon and analogy. We very well know that water is frequently impregnated with ſaline particles, and that it alſo frequently diſſolves by this means earthy and other matters, which it otherwiſe could not do. But we alſo know, that ſalts diſſolved in water, are not to be ſeparated by filtration; and it is equally certain, that earthy ſparry or other matter that is ſuſpended in water when clear, will in like manner paſs thro' the filter with it. We daily ſee that the ſolid bodies of metals when perfectly diſſolved in proper menſtruums, paſs through the filter of paper with thoſe menſtruums; and if afterwards ſomething be added to the ſolution to weaken the force of the menſtruum, ſo that it can no longer ſuſpend ſo much of thoſe heavy bodies; then the liquors become turbid, and the diſunited particles of the metal will on a ſecond filtration, be left in the paper. It ſeems evident from this, that it is not the fineneſs of the filtre, but the ſtate in which heterogene ſubſtances are ſuſpended in fluids, which is the occaſion of their paſſing thro' with them, or ſeparating from and remaining behind them. It is in vain to ſay, that filtres of ſtone can ſtop the earthy and ſparry particles of water, though filtres of paper cannot; ſince we every day ſee in caverns in the earth, that the water which oozes through the hardeſt rocks, forms ſtony icicles or ſtalaclitæ, before it falls to the bottom. Upon the whole, we are happy enough to have no occaſion for filtering ſtones, ſince our ſprings and rivers afford us waters already pure enough to our hands; and in places where this is not the caſe, it is always poſſible to ſave rain water, which will keep a long time with proper management, and is much purer than all the art in the world can make ſuch as has once been foul. *Valentini* Muſæum Muſæorum, L. 1. C. 22.

The only inſtance in which a filtering ſtone can be of real uſe is, when there is no water to be had, but that of ſome muddy river; in this caſe the mud being a foreign body not diſſolved in, but only floating among the water, it will be left behind in its paſſing the cloſe ſtructure in the filtre; but this is always to be as well obtained by letting it ſtand a while to ſubſide. Ephem. Germ. Cent. 3. p. 76.

FIN, in ichthyology. See the article PINNA.

FINDERS, in our old ſtatutes, are ſuppoſed to be the ſame with thoſe we now call ſearchers; who are employed for the diſcovery of goods imported or exported, without paying cuſtom. Stat. 18 Ed. 3. 14 Ric. 2. 17 Ric. 2. &c.

FINE (*Cycl.*) — FINE *adnullando levato de tenemento quod fuit de antiquo dominico*, in law, a writ directed to the juſtices for diſannulling a fine levied of lands in antient demeſne, to the prejudice of the lord. Reg. Orig. 15.

FINE *capiendo pro terris*, &c. a writ lying where a perſon upon conviction of any offence by jury, hath his lands and goods taken into the king's hands, and his body is committed to priſon, to be remitted his impriſonment, and have his lands and goods redelivered him, on obtaining favour, for a ſum of money. Reg. Orig. 142.

FINE *levando de tenementis tentis de rege in capite*, &c. a writ directed to the juſtices of the common pleas to admit of a fine for the ſale of land holden of the king in capite. Reg. Orig. 167.

FINE *non capiendo pro pulchre placitando*, a writ to inhibit officers of courts to take fines for fair pleading. Reg. Orig. 179.

FINE *pro rediſſeiſina capienda*, &c. a writ lying for the releaſe of one impriſoned for a rediſſeiſin, on payment of a reaſonable fine. Reg. Orig. 222.

FINES *le roy*, in law, are all *fines* to the king. Under this head are included fines for original writs.

FINE *ſtiller*, in the diſtillery. That branch of the art which is employed on the diſtilling the ſpirit from treacle of other preparations or recrements of ſugar, is called *fine* ſtilling, by way of diſtinction from malt ſtilling; and the perſon who exerciſes this part of the trade is called a *fine* ſtiller.

The operation in procuring the ſpirit from ſugar is the ſame with that uſed in making the malt ſpirit; a waſh of the ſaccharine matter being made with water from treacle, &c. and fermented with yeaſt. It is uſual to add in this caſe, however, a conſiderable portion of malt and ſometimes powdered jalap to the fermentiug backs. The malt accelerates the fermentation, and makes the ſpirit come out the cheaper, and the jalap prevents the riſe of any muſty head on the ſurface of the fermenting liquor, ſo as to leave a greater opportunity, for the free acceſs of the air, and thus to ſhorten the work, by turning the foamy into a hiſſing fermentation. *Shaw*'s Lect. p. 220.

FINERY, in the iron works, is one of the two forges, at which they hammer the ſow iron. In order to make the wrought iron, they firſt hammer a piece of a proper ſize gently at this forge, and by degrees bring it after it has been hammer'd into a ſquare bar or bloom, into what they call an ancory; which is the ſame maſs hammer'd ſmaller in the middle, and there reduced to the ſhape the whole is to be brought to, at the chofery or other forges. *Ray*'s Engliſh Words, p. 127.

FINGART, in the manege, ſignifies a horſe that kicks againſt the ſpurs.

FINGERS (*Cycl.*) — *Bones of the* FINGERS. The phalanges of the bones of the four *fingers* are all of nearly the ſame ſtructure, differing only in ſize. The firſt phalanges are made nearly in the ſame manner with the ſecond of the thumb, only that they are flatter in proportion on their concave ſides, and more rounded at their convex ſides. They are alſo larger in proportion; and the edges of the flat ſides, have the ſame rough line as the ſecond phalanx of the thumb. Their bones are more hollow for their articulations with the metacarpal bones, and their heads are formed like pullies. The ſecond phalanges are ſhorter, narrower and thinner, than the firſt; both phalanges are gently incurvated, and reſemble each other in ſtructure, except that the ſecond contract by degrees from their baſes, to the heads which are very ſmall, and that their bones have a double cavity for their articulation by ginglymus, with the heads of the firſt phalanges. Their flat ſides have all the beforementioned rough lines. The third phalanges are in every thing like that of the thumb (which ſee) but that they are ſmaller, each of them being proportioned to the fingers they belong to. It is to be obſerved of all the phalanges, that their baſes have ſmall tuberoſities, and their heads, except thoſe of the laſt phalanges, have on each ſide a ſort of roundiſh foſſula, bordered with ſmall eminences. *Winſlow*'s anatomy, p. 88.

Mr. Hunauld has given us obſervations on the ſtructure and action of ſome muſcles of the *fingers* in the Mem. Acad. Sciences for 1729.

Superfluous FINGERS. Infants are often born with ſuperfluous, or ſupra numerary *fingers*, which are uſually miſhapen and miſplaced: ſome of theſe are found to have nails and bones like the other *fingers*; others have nothing of this, but are mere maſſes of fleſh.

Theſe ſhould always be amputated in the infancy of the child, but if they are many in number, and the child but weakly, it may be better not to take them all off at one time, but to ſtay ſome time between each amputation, that one may be near well, before another is taken off. They are to be cut off with the ſcalpel, or ſciſſars, and the hæmorrhage ſtopped either with dry lint, or with the ſame dipped in ſpirit of wine, and afterwards healed as common wounds, with vulnerary balſams. *Heiſter*'s Surgery, p. 330.

Carious FINGERS. The *fingers* when carious or affected by a ſpina ventoſa, are to be amputated three ways. 1. By a pair of ſtrong ſciſſars or ſharp edged pincers. 2. By a chizzel ſtruck by a leaden mallet, by which they are ſeparated at one blow, or laſtly by dividing the next ſound joint with a ſcalpel, and drawing back a part of the skin to wrap over the ſtump, that it may heal the ſooner; and this is the beſt method of all, as by this you are in no fear about any ſplinters of the bone being left. *Heiſter*'s Surgery, p. 331.

Fractur'd FINGERS. When one or more of the bones in the *fingers* are broke, the ſurgeon's buſineſs is carefully to replace what has been removed, and to roll up the *finger* a little way with a narrow bandage, and then to bind it firmly to the next ſound *finger*. But it is much more proper, when the *finger* is maſhed, ſo as to give no hope of a good cure, to take it off at once. *Heiſter*'s Surg. p. 129.

Luxated FINGERS. The bones of the *fingers* and thumbs are liable to luxations of each of their articulations, and that in ſeveral directions; but theſe are accidents not only eaſily diſcovered, but very eaſily remedied alſo; for the ligaments being not very robuſt, the fat and muſcles thin, and the ſinuſes of the articulations ſhallow, the extenſion is very eaſy, and the reduction of them into their former places not leſs ſo. The beſt method is to extend ſufficiently the *finger* with one hand, and to replace the luxated bone at the ſame time with the other, and to retain it ſo by a proper bandage. *Heiſt.* Sur. p. 166.

FINGITES, a name given by ſome of the barbarous writers of the middle ages to the phengites, a very tranſparent ſort of marble uſed by the Romans in building.

FINING (*Cycl.*) — FINING of wines. The uſual method of *fining* down wines, ſo as to render them expeditiouſly bright, clear, and fit for uſe, is this. Take an ounce of iſinglaſs, beat it into thin ſhreads with a hammer, and diſſolve it by boiling, in a

pint

pint of water; this when cold becomes a ſtiff jelly. Whisk up ſome of this jelly into a froth with a little of the wine intended to be fined, then ſtir it well among the reſt in the cask, and bung it down tight; by this means the wine will become bright in eight or ten days. *Shaw*'s Lectures, p. 208. This method however is found to be beſt ſuited to the white wines; for the red ones the wine coopers commonly uſe the whites of eggs beat up to a froth, and mixed in the ſame manner with their wines. The method by which theſe viſcous bodies act in the operation is this; they entangle themſelves among the flying lee or light fæculencies, that float in the wine, and thus forming a maſs ſpecifically heavier than the wine, they ſink thro' the body thereof like a net; carrying down all the foulneſs it meets in the way to the bottom; but when the wine is extremely rich, ſo that its ſpecific gravity is greater than that of the maſs formed by the ingredients uſed in fining and the dregs or lee, this maſs then riſes upward, and floats at the ſurface of the wine, which will in this caſe alſo draw off fine.

FINIRE, in law, was uſed to fine, or pay a fine upon compoſition and making ſatisfaction. It is the ſame with *finem facere*, mentioned in Leg. Hen. 1. c. 53.

FINITO, in the Italian muſic, a canon or fugue is ſaid to be *finito*, when 'tis not perpetual; but when at ſome certain places all the parts join or unite, after having followed one another for ſome time. *Broſs.* Muſic. Dict. in voc. See CANON, *Cycl.* and *Suppl.*

FINNIKIN, the name of a particular ſpecies of pigeon called by Moore the *columba in gyrum flectens*. It is of the ſhape and ſize of the common pigeon. The crown of its head has ſomething of the reſemblance of a ſnake's head, and it is gravel eyed, and has a tuft of feathers on the hinder part of its crown, which runs down its neck, not unlike a horſes main. It is not feather leg'd, and is in colour always either a black or blue pied. *Moore*'s Columb. p. 49.

They have their name from their ſingular manner of courting the female, which is always by riſing over her, and making three or four turns, flapping the wings, and then turning as many times round the other way.

Were a gentleman in the country to ſtock a pigeon houſe with this ſpecies alone, their antic geſtures would make people believe he kept an inchanted caſtle. Some people diſapprove theſe pigeons, as apt to ſpoil the hens, by making them ſquat with theſe antic geſtures. But this is a groundleſs fear.

FINOCHIA, in gardening, the name of a plant which has of late years been introduced into the Engliſh gardens, and cultivated as a ſallad herb. It is a ſpecies of fennel, and is called by authors *Fæniculum dulce azoricum*. The ſweet fennel of the Azores iſlands. It is a high delicacy with ſome in England, though in general it is not liked; it ſeems however to be gaining more and more ground among us, and probably will in a little more time be a commonly eſteemed herb. The culture of it is this.

Good ſeeds muſt be firſt procured from Italy, for thoſe of Engliſh ripening are very apt to degenerate. In February ſome of theſe ſhould be ſowed for the firſt crop, on a light dry ſoil, and in a warm ſituation. The manner of ſowing theſe ſeeds is firſt to rake the bed very ſmooth, then draw a ſmall rill along it, and in this ſcatter them pretty thin; for the plants are not to ſtand nearer than ſix inches to one another; cover this with half an inch of earth, and at the diſtance of ſixteen inches, make another rill, and ſo on throughout the bed. In about a month the plants will come up, and they muſt be then cleared of weeds, and cut up to four inches diſtance; a month after this, they muſt be thin'd to ſix or ſeven inches diſtance; the ſtalks will now begin to ſwell to a large bulk juſt above the ground, this part muſt be earthed up in the manner of celeri, about a fortnight before it is uſed, which will make it eat very tender and criſp.

A ſecond crop ſhould be ſown three weeks after the firſt; and in that manner till July; every three weeks or month a new crop ſhould be ſown, to keep a conſtant ſupply for the table. The crops ſown in the hotter weather ſhould be water'd and ſhaded from the great heats. *Miller*'s Gardener's Dict.

FINSCALE, an Engliſh name for the river fiſh, more uſually called the rudd, the *rutilus latior*, or *rubellio fluviatilis* of authors. *Willoughby*'s Hiſt. Piſc. p. 252. See RUBELLIO.

FINTO, in the Italian muſic, ſignifies a feint, or an attempt to do ſomething, and not to do it; as *cadenza finta*, is when having done every thing proper for a true cadence, inſtead of falling on the right final, another note, either higher or lower, is taken, or perhaps a pauſe brought in. *Broſs.* Muſ. Dict. in Voc.

FIR-*tree*, *abies*, in botany the name of a genus of trees, the characters of which are theſe. The flower is of the amentaceous kind, being compoſed of a number of ſtamina; this is only a male or barren flower however, the embryos being ſituated between the leaves of a ſpike, placed in ſome other part of the tree. Theſe finally become foliated ſeeds, which are hid under a ſeries of ſcales affixed to a central axis, which together conſtitute the fruit or cone, as it is called of the *fir*; for this is no other in reality than the ſpike of embrios grown thicker and larger. To this it is to be added, that the leaves grow ſingly, not more than one out of the ſame theca as thoſe of the pine.

The ſpecies of *fir* enumerated by Mr. Tournefort are theſe: 1. The yew-leav'd *fir*, with the fruit pointing upwards. 2. The narrower leaved *fir*, with the fruit pointing downward. 3. The long leaved *fir*, called by ſome the pinaſter like *fir*. 4. The ſmall Virginian *fir*, with pectinated leaves, and ſmall roundiſh fruit. *Tourn.* Inſt. p. 585.

The manner of propagating *fir*, pines, and other trees of that kind from ſeeds is this. The ripe cones of theſe trees are to be either expoſed to a gentle heat, or ſoaked for twelve hours in warm water; after which the ſeveral cells will open, and the ſeeds fall out.

Theſe ſeeds ſhould never be taken out till the time of ſowing them, which is March. The ground they are to be ſown in, muſt be carefully turned ſeveral times to deſtroy the roots of weeds. For a large plantation, this is beſt done by ploughing ſeveral times; after this, the earth is to be levelled with a ſpade in ſmall ſpots at every ſix feet ſquare; in each of which ſpots, ten or twelve ſeeds are to be ſown, and covered with ſome of the ſame mould broken fine but not ſifted; then they are to be covered with a furze buſh or other ſuch covering; and this is to remain for ſome time after the plants are come up, but they muſt not be covered too cloſe by it; when this covering is taken off, a little looſe earth is to be drawn about the ſtems of the plants, and a little furze ſtuck about them, to keep off the too great heat of the ſun. Uſually from twelve ſeeds there are eight plants or thereabout, and theſe may be left ſtanding together, till the third year. In March or April the third year after ſowing, the plants are to be removed to the place where they are to ſtand, and planted at eight foot ſquare diſtance, or greater, if deſired. Two plants ſhould however be left in the plantation in each cluſter, and great care taken not to injure the roots of theſe. The others alſo muſt be taken up with as much earth about their roots as poſſible. When they are ſet in the new plantation, there muſt be ſtakes fixt near them to tie them to, that the wind does not blow them down, and the roots muſt be covered with litter, and they muſt have a gentle watering to ſettle the earth to their roots. If the weather prove very dry, this may be repeated two or three times, but a little at a time; over watering kills all new ſet trees, and the cutting any of the heads or branches of theſe of the reſinous kind is a very dangerous thing.

The Scotch pine delights in a chalky ſoil on the ſide of a hill, but will alſo grow in gravel, and in any ground that is not too wet.

The common *fir* loves a loamy ſtrong ſoil, and is a native of low flat grounds; and moſt of the American *firs* and pines, love a looſe moiſt ſoil. The ſilver *fir*, and the manured pine, love a dry ſituation, but muſt have a deeper ſoil than the Scotch pine, and muſt be ſhelter'd from the north winds. The two trees left in each ſpot of the place where they were ſown, may be left together ſeven years, then the leaſt flouriſhing tree is to be carefully removed. *Miller*'s Gard. Dict.

FIRDFARE. See FERDFARE.

FIRDWITE. See FERD-WIT, *Cycl.*

FIRE (*Cycl.*) — By the general name of *fire*, men ſeem to underſtand a certain ſenſation or complex notion of light, heat, burning, melting, &c. but this notion ſhould be reſolved, to ſee what parts of it are eſſential, what arbitrary. We frequently find the effects of *fire* produced where no *fire* is viſible; thus the fingers may be burnt by an iron much leſs than red hot; therefore the eye is no judge of fire; nor is the touch, for that give us no ſenſation of heat below the natural warmth of the body, nor of any ſo great as to deſtroy the organ. If this method of rejection be purſued to the utmoſt, we ſhall perhaps find no criterion of *fire*, but that of a general motion ſtruggling among the ſmall parts of bodies, and tending to throw them off at the ſurface; and in this caſe motion is the form or eſſence of *fire*. But we have more light into this, by finding that all bodies are expanded by *fire*; that the inflammable matter of ſuch is oil: that no fuel will conſume without the admiſſion of freſh air, and that flame exiſts only in the ſurface of fuel. *Shaw*'s Lectures, p. 26. See the articles EXPANSION, OIL and FUEL.

The chemiſts in all ages have been uſed to talk of the degrees of *fire*, they uſually divided them into four; but very little certainty was to be found on this head, till the way was found of applying the excellent thermometer of Farenheit to meaſure the progreſs of heat by certain and invariable rules. On this baſis Boerhaave has eſtabliſhed the chemiſts doctrine of the power of *fire* of different ſtrength, and divided it into ſix degrees, and theſe are the degrees of *fire* which our chemiſts allude to, when they now mention the force of *fire* in their operations. The firſt degree of heat, is that whereby nature performs the office of vegetation in plants, and by which chemiſtry imitates and does the like. This commences from the higheſt degree of cold, which in Farenheit's thermometer is marked by 1, and ends at eighty degrees; ſince in this

whole

whole interval we find certain plants give indication of life and growth.

Thus in the ſevereſt winters cold, we find the moſſes growing on the barks of trees, and what is more remarkable, they only grow and produce the rudiments of their ſeeds at ſuch times. The fir, juniper, larix, cedar, pine, ſavin, yew, arbor vitæ, and other evergreens, maintain their verdure in ſevere froſts; the like holds true alſo of the corellines, earth moſſes, black hellebore, the winter aconite and many other plants, which will ſhoot, bloſſom, generate, conceive and bring forth their ſeeds under the ſevereſt colds, which are unable to check their conjugal heat; in fine, were we to riſe from the loweſt to the higheſt pitch of theſe degrees of heat, and then recount all the known plants, we ſhould find ſome growing and flouriſhing in the extreameſt limits of it, and in every intermediate point.

Hence it appears probable, that a chemiſt by duly conducting this degree of heat in an artificial ſtove might imitate the various heats of nature, ſo as to cheriſh all plants, not to deſtroy them; and in the offices of chemiſtry for the raiſing this degree of heat a furnace might be made, and on this a veſſel full of water ſet, and to this a thermometer applied, which by its riſing and falling would indicate the degree of heat required. Then placing glaſs veſſels in the water thus tempered, the ſubſtances are to be put into them, which are to undergo this degree of *fire*. This degree of heat ſeems calculated to be the moſt proper for impregnating oils with any excellent precious vegetable ſpirit without waſting. Thus to communicate the fragrant ſcent of roſes to a given oil, the beſt method ſhould ſeem, to take pure inodorous and inſipid oil of olives, and putting it into a tall clean chymical glaſs, digeſt it in a heat of fifty-ſix degrees, with the moſt fragrant roſes gathered juſt as they are opening in a morning; by this means the heat will unite the ſpirit of the flowers with the viſcidity of the oil, in the moſt intimate manner, and exhibit a highly odorous balſam. The application of a ſimilar degree of heat would impregnate alcohol with the pureſt ſpirit of ſaffron; a leſſer heat ſcarce ſerving to extract this ſpirit from the body, while a greater will diſſipate and evaporate it, or at leaſt the more volatile and fine parts of it.

The ſecond degree of heat may be commodiouſly taken from that which obtains in animals, and which may be ſuppoſed to commence at the fortieth degree of the thermometer, and end about the ninety fourth; within this compaſs, animals may live and ſubſiſt, that is, if their juices be of any degree of heat within theſe bounds. Some inſects ſeem to have ſo little heat in their juices, that it is wonderful to conceive how their eggs can ſubſiſt unhurt, during hard winters; as the eggs of caterpillars and the like; but yet they do, and hatch in the ſucceeding ſpring.

Fiſhes as well of the ſea as of rivers, live in a watery medium, which is only thirty-four degrees hot, and conſequently their blood and juices are of the ſame temperature, yet they can bear any heat from thence to the ſixtieth, and live in that and a ſomewhat farther heat: but fiſhes that have lungs, and all breathing animals, conceive a greater degree of heat in their juices, which when healthy, are found to riſe to ninety-two degrees hot; therefore the limits of this degree are fixed at thirty-three and ninety-four; within which compaſs all the vital functions of all animals, the fermentations of all vegetables, and the putrefactions of animals and vegetables, as alſo their generations, geſtations, incubations, births, nutritions, are performed. *Boerh.* Chym. pt. 1. p. 374.

This degree is uſed by the beſt chymiſts for making elixirs, and volatile alkaline ſalts, both ſimple and oily, alſo tinctures, and the digeſtion of the philoſophic mercury for the ſtone.

The third degree of heat, is that which extends from the ninety-fourth degree on the thermometer, to the two hundred and twelfth, at which laſt, water uſually boils; in this whole degree the water and native ſpirits are ſeparated from all vegetables and animals, and the remainder drying, becomes durable and almoſt immutable. The eſſential oils of plants thus become volatile; but the ſalts and oils obtainable from the recent juices of animals, ſcarce riſe within this degree, but rather dry into a thick, hard, brittle, inſipid, inodorous matter, which remains unchanged for many years; by which appears the falſehood of that common opinion, that volatile alkaline and oily ſalts are generated and found in the healthy bodies of men in this degree of heat. All diſtilled oils are prepared, and all the medicated waters of ſimples are diſtilled in this degree; and the ſanguineous and ſerous humours of animals coagulate by boiling water, into ſciſſile maſſes; all their ſolid parts are deſtroyed and turned into a thick tenacious liquid; and conſequently all animals deſtroy'd therein.

The fourth degree of heat may be taken from 212 to 600 degrees on the thermometer, within which compaſs the diſtillation of all oils, ſaline lixiviums, quickſilver and oil of vitriol is performable; within this degree alſo, lead and tin will melt and mix together. Oils, ſalts and ſapos, both of animals and vegetables, become volatile and acrimonious in this degree, tending more or leſs to an alkaline nature; their ſolid parts drying up, and burning into a black coal. In fine, all theſe matters are utterly deſtroyed, and have their nature chang'd, and loſe their powers in this degree of heat; and foſſile ſulphur, and ſal armoniac are ſublimed in the ſame. The fifth degree of heat, is that wherein the other metals melt, and which commences from 600 degrees, and ends at that heat by which iron is kept in fuſion; in this degree moſt bodies are deſtroy'd: glaſs, gold, ſilver, copper and iron remain long unchanged in it, all other fixed bodies grow red hot in this degree; the fixed ſalts of vegetables and foſſils melt, are deprived of moſt of their oils, and are raiſed further and further toward an alkaline acrimony, and thus with ſand or flint turn to glaſs. In this heat limeſtones calcine, and all other bodies, either vitrify or become volatile, and are diſſipated in the air.

The ſixth and higheſt degree of *fire*, is that made either by a lens or a burning ſpeculum; this ſcarce any ſubſtance is able to withſtand, and gold and the diamond are conſiderably altered by it. The almoſt univerſal effect of this degree of fire is the turning all fixed bodies into glaſs, whence it is laid down as a rule, that the utmoſt effect of *fire* is the vitrification of fixed bodies; and this the antient ſages of Aſia ſeem to have been appriſed of, as they ſay in all their predictions, that the whole world ſhall at length periſh by *fire*, and be turned into tranſparent glaſs. Having thus regulated what are the degrees of *fire*, it remains to ſay in what manner a *fire* may be raiſed and maintained in any given degree. *Boerh.* Chem. part 1. p. 376.

Alcohol or ſpirit of wine affords a very feeble but equable heat; and this may be managed and directed to ſeveral regular degrees by lighting up more or fewer wicks at a time, under the veſſel to be heated.

After alcohol follow other light ſpungy and porous fuels, ſuch as hay, ſtraw, ruſhes, dried leaves, hair, feathers, ſawduſt, barks, chaff, bran, &c. After theſe come oils, tallow, wax, camphor, pitch, reſin, ſulphur, and other inflammable ſubſtances prepared from theſe; then follow the thick, hard and heavy woods, not over dry, and the coals made from theſe; and laſtly pit-coal, and red hot metals. And tho' the materials or fuel be the ſame, a different degree of heat may be given by uſing a ſmall or a large quantity at a time. The heat produced differs alſo according to the object to be chang'd and its diſtance from the fuel; as all heat decreaſes in proportion to the diſtance from it, and laſtly the degree of *fire* may be modified by ſhaking, ſtiring, or compreſſing the fuel, or the airy vault ſurrounding it; hence bellows become of prodigious uſe in raiſing the power of *fire* from the ſame fuel or materials; to all this it is to be added, that the degree of *fire* is to be greatly regulated by the figure of the furnace, that being conſtructed with an arch'd top, may be ſo diſpoſed to reflect the *fire* and collect its power to ſome one place; and if all theſe aſſiſtances be applied at once, we have the higheſt poſſible degree of vulgar *fire*.

The dread that wild beaſts have of *fire*, is very ſurpriſing. The natives of the Cape of Good Hope, chaſe away the lions from their cattle by means of *fire*; and the Ceyloneſe drive tigers, &c. from their plantations in the ſame manner. By means of *fire* deer, elks, &c. may be caught in this manner; two men go out into the woods in the night, one of theſe takes an earthen veſſel on his head, with *fire* in it made of ſticks and reſin, and in one hand he carries a ſtaff with eight bells on it, and the other goes cloſe behind with a ſpear in his hand; when the deer, &c. ſee the light and hear the bells, they come up, ſtand, and gaze, while the ſpear man kills them. The men are in no danger from tigers, &c. for they run away from the *fire*. Phil. Tranſ. p. 1094.

FIRE *from cold liquors*. It is poſſible to produce *fire* and flame by the bare mixture of two cold liquors in the following manner; take two drams of ſtrong and freſh ſpirit of nitre prepared with oil of vitriol, and putting it into a clean and dry gallipot, ſet it under a chimney, then pour to it at once of the oil of cloves one dram, there will be immediately produced a loud noiſe, and a conſiderable flame, and when that is gone, a dry reſin is formed in the pot. *Shaw*'s Lect. p. 399.

Lambent FIRES. Among the number of theſe lambent or innocent flames, is the ſhining of meat at certain times. It has been uſually ſuppoſed, that this was owing only to the putrefaction of the meat, and that it never ſhone till ſtinking or nearly ſo, but experience proves the contrary. We have in the Philoſophical Tranſactions an account of a piece of veal which was obſerved to ſhine the night after it was killed, and yet when eaten the day afterwards was perfectly ſweet, and a part of it that was kept by way of experiment continued good many days after. This is not of the nature of common *fire* or flame, and not only differs in not burning, but in this alſo, that it is not extinguiſhable in water. A perſon ſtriking this piece of veal, had the flame covering his whole hand, and that continuing, even when he had put it under water, but the wiping it with a towel, carried it all off and deſtroyed it. It is not uncommon to find the guts of hogs when dreſſed by the good women for the making what they call chitterlings, and put into the pickle, ſhine in this manner. Some of the pieces while under this management uſually ſwim on the water and others ſink in it. Thoſe which ſwim, are the only

only ones that ſhine. The light upon them is as bright as the ſtrongeſt moonſhine, and may be communicated to a perſon's hand, by rubbing the pieces on it; where it will continue to be bright a long time, without any ſenſible heat. The face and hands of a perſon being rubbed over with one of theſe ſhining pieces of the chitterling, not only appear bright and flaming, but are made to look conſiderably larger than they really are; and a perſon who had a mind to raiſe ſtories of ghoſts and apparitions, might eaſily do it by covering the whole body of a man with this flame, and making him appear a fiery giant to all that ſaw him.

Mackrel in pickle will uſually become luminous in ſome degree, a little before they ſtink, but it is rarely, that the light is great; and when it has once happened ſo, it is not eaſy to hit the ſame again on a ſecond trial, tho' all the ingredients of the pickle are kept the ſame in the niceſt manner. Worms are often found luminous on their ſurfaces in oiſter ſhells, yet the ſame worms are not always ſo; and what Pliny reports of the pholas, and Reaumur has ſince found to be true, perhaps may not always hold ſo in future experiments. Philoſoph. Tranſ. N°. 124. See PHOLAS.

One of the moſt ſingular kinds of lambent *fire*, is that diſcovered at certain times on the ſea water, and on other water in which there are fiſh, or other ſea productions kept. We have in the Philoſophical Tranſactions, an account of ſome water in which mackrel were boiled and afterwards kept, which became blackiſh and thick after two or three days, and then would ſparkle on the touch of a finger. The fiſh alſo were luminous, eſpecially about the gills, and the water when ſtirr'd about with the hand, would appear ſo bright over the whole ſurface, that the appearance was like that of water in motion, on which the moon ſhines very ſtrongly.

In the ſame manner, the ſea water in many places will ſparkle and ſhine on the breaking its ſurface. Where a ſhip makes a good way in the night, in many ſeas, the whole breaking of the water will appear behind it, as if on fire, ſparkling and ſhining all the way that it moves from the diſturbance of the paſſages of the ſhip. Phil. Tranſ. N°. 37.

It is in this part as bright and glittering as if the moon ſhone upon it; but as this happens moſt of all, when there is no moon up, it is plainly to be attributed to another cauſe. Some have ſuppoſed the ſtars to brighten the water, or the lanthorns of the ſhip to ſhine upon it as the veſſel moves; but it is always found to be brighteſt and ſtrongeſt when there is no other light any where, when the ſtars are clouded, and there is no light in the lanthorns. This light is not equal at all times; ſome nights, in the ſame places, it is ſcarce perceivable at all; ſometimes it is very vivid and bright, ſometimes it covers only the way that it is juſt in motion behind the ſhip, and ſometimes extends itſelf a great way on each ſide it. Thirty or forty foot is a common extent for it from the ſtern of the ſhip, but it is much more faint at a diſtance than where the water is juſt broken; and it is at the ſtern of the ſhip often ſo bright, that a perſon on the deck may ſee to read by it, tho' ſo high above it. The luminous water that follows the road of the ſhip, is ſometimes very diſtinct from the reſt of the ſurface. Sometimes they are blended with it, and the luminous matter blending itſelf at the ſides with the adjacent water, the appearance is confuſed: in the firſt caſe it is very agreeable to ſee a luminous river follow as it were the road of the ſhip. The luminous matter of the water appears generally compoſed of ſmall ſparkles, but ſometimes theſe form themſelves into the figure of a ſtar, as we ſee it repreſented, and in ſome places it forms globules without any radiations from them. Theſe are of different ſize, from that of a large pin's head, to a foot in diameter; and ſometimes the luminous matter is ſeen in form of oblong ſquares of three or four inches each. Theſe are at times diſtinct, and at times confuſed and ſeen all together. When the ſhip goes very ſwiftly, theſe figures all combine to form a ſort of luminous whirlpools, but when it goes more ſlowly, the ſingle ſquares and globules appear and diſappear momentarily like lightnings. It is not particular to a ſhip to make this appearance on the water by putting it in motion, and breaking its ſurface, but any thing that moves in it does the ſame thing. The large fiſh as they ſwim along near the ſurface, leave the ſame ſort of luminous road behind them, and that ſo bright, that a perſon may often diſtinguiſh by it, what fiſh it is that paſſed along there. A number of fiſh playing thus on, or near the ſurface, as is very common in ſome ſeas, break the water in a great many different directions, and make a ſort of artificial fires, which afford an agreeable ſight.

Sometimes the throwing out a rope or any thing that breaks the ſurface of the water will render it luminous in the ſame manner in that part. If ſea water be taken up and ſet on the the deck in a veſſel of any kind, as ſoon as it is ſtirr'd it will ſparkle and give more or leſs of the like luminous appearance according to the darkneſs of the night and other accidents; and if a piece of linen rag be wetted in the ſea water and hung up to dry, when it is thoroughly dried it will appear luminous on being rubbed in the dark; and when half dry it need only be ſhook to ſhew a great number of ſparkles. When theſe ſparkles of light are once form'd they will laſt a conſiderable time; often many hours, if they chance to fall upon any ſolid body on the ſides of the veſſel, otherwiſe, if they remain on the water, they ſoon go out.

There does not always need the motion of a foreign body in the ſea to occaſion this ſort of phoſphorus, but the waves beating againſt one another, will often occaſion it in great plenty, and ſometimes the waves waſhing againſt the rocks or againſt the ſhore, will yield a long courſe of light the whole night. This is no where ſo remarkable as at the Braſils: the ſhores there are often all on fire to appearance, from the vaſt effuſion of this luminous matter, as the waves waſh and break upon the ſhore.

This flaming and ſparkling of the ſurface of the ſea is wholly owing to the peculiar quality of the water; and in general, the thicker and fouler the ſea is, the more light it affords on being ſtirred in the night. A cloth dipped in the ſea water will ſometimes be ſtickey as if dipt in a ſolution of glue; in this caſe it will afford much brighter, and more luminous ſparks in the drying, and this fat water will give much more *fire* from the motion of the ſhip than any other. In many places the ſurface of the ſea is found covered with fiery matter of a reddiſh or yellowiſh colour, looking like ſaw-duſt, and ſeeming to be the ordure or recrement of ſome ſea animals. This matter always is of a viſcous nature, and the ſea water is viſcous and gluey wherever this is found, and gives more light on the moving, than any other water. In the Northern ſeas there are ſometimes ſeen whole banks as it were of this matter, the ſurface of the ſea appearing wholly covered with it for ſeveral leagues; and this is often luminous all over in the night, tho' not ſtirred by any ſhip, or even by the motion of any fiſh. Many of the ſea fiſh have a viſcous matter about their gills, eſpecially when they have been ſome time dead. Theſe when kept in ſea water, have ſo much of this luminous property, that all that part appears as ſoon as taken up, of the brightneſs of a flaming coal, and gives a light which it is eaſy to read by. A piece of ſtick rubbed on the gills of theſe fiſh, will become luminous wherever it has touched them, and will continue ſo, as long as it retains any of the moiſture, but as that dries, the light will fade and go off; and it may be revived again, on touching the fiſh a ſecond time. Obſerv. ſur l'Aſie, p. 289.

Subterraneous FIRE, that *fire* which manifeſts itſelf upon the earth in fiery eruptions from beneath, in vulcanos or burning mountains, and in other parts of the earth. The effects of this ſeem wholly the ſame with thoſe of the common culinary *fires:* for burnt coals, cinders and melted minerals are thrown out by the burning mountains; and hot ſprings, ſteams, vapours, &c. are found in ſeveral parts of the globe, riſing nearly in the ſame manner, as if they were produced by the heat of a common furnace. Whence there is little room to doubt but that the ſubterranean *fires* are not like the celeſtial or ſolar, but the culinary. *Shaw*'s Lectures, p. 29.

Martin in his Atlas, tells us, that there are pits of natural *fire* in China, which are capable of dreſſing meat, but will not conſume wood; but we have no authentic teſtimony of any eye witneſs to this ſtrange fact.

Extinguiſhing of FIRE. See the article EXTINGUISHING.

FIRE, in the manege. To give the *fire* to a horſe, is to apply the firing iron red hot to ſome preternatural ſwelling, in order to diſcuſs it; which is oftentimes done, by clapping the firing iron upon the skin, without piercing through. We give the *fire* to farcy knots by running a pointed burning-iron into the ulcers. We likewiſe give the *fire* for wrenches of the paſterns. See FIRING-*iron*.

FIRE-*ball*, a compoſition of meal-powder, ſulphur, ſalt-petre, pitch, &c. about the bigneſs of a hand granade, coated over with flax, and primed with the ſlow compoſition of a fuze. This is to be thrown into the enemies works in the night time, to diſcover where they are; or to fire houſes, galleries, or blinds of the beſiegers; but they are then armed with ſpikes or hooks of iron, that they may not roll off, but ſtick or hang where they are deſired to have any effect.

FIRE *Bare*, in our old writers, is uſed for a beacon. *Quod ſine dilatione levari & reparari fac. ſigna* & firebares, *ſuper montes altiores in quolibet hundredo, ita quod tota patria, per illa ſigna, quotieſcunque neceſſe fuerit, præmunire poteſt.* Ordin. Obſervand. Temp. Edw. 2.

Bone-FIRE. M. Mahudel has a diſſertation on the origin of *bone-fires*, wherein he endeavours to make it appear, that they were unknown to the antients, and conſequently muſt be a modern invention.

He does not deny that the antients had rejoicings on occaſion of the concluſion of a peace or alliance, or the news of a victory's being obtained againſt their enemies, on the birth-day, proclamation, or marriage of their prince; as alſo when they recovered from a dangerous ſickneſs; but, according to him, the *fire* on all theſe occaſions ſerved only to burn the victims or the incenſe; and as theſe ſacrifices were moſtly offered in the night time, the illuminations were only intended to give light to perform the ceremonies. Hiſt. Acad. Inſcirp. T. 2. p. 430. ſeqq.

FIRE-*cocks*.—Church-wardens in London, and within the bills of mortality, are to fix *fire-cocks* at proper diſtances in ſtreets, and keep a large engine and hand-engine for extinguiſhing *fire*, under the penalty of 10 l. Stat. 6. An. c. 31.

FIRE-*damp*, in natural hiſtory. See DAMP, *Cycl.*
It is otherwiſe called *fulminating Damp*.

FIRE-*flaire*, in ichthyology, a name given by us to a ſpecies of the raja or ray-fiſh, called by the generality of authors *paſtinacha marina*. It is diſtinguiſhed by Artedi from the other ſpecies of the raja by the name of the ſmooth bodied ray with no fins to the tail, but with a long bony ſpine in it, ſerrated on one ſide. This is the trygum and tragum of the old ichthyologiſts, and is called by the modern Italians, bancho. See PASTINACHA *Marina*.

FIRE-*lock*, or FUSIL, a ſmall gun which fires with a flint. It is diſtinguiſhed from an old muſket or match-lock, which was fir'd with a match. The *firelock* is now in common uſe in the European armies.

FIRE-*pots*, are ſmall earthen pots, into which is put a grenade filled with fine powder till the grenade be covered; and then the pot is covered with a piece of parchment, and two pieces of match laid acroſs and lighted. This pot being thrown where it is deſigned to do execution, breaks and fires the powder, and thereby fires the powder in the grenade, which ought to have no fuze, that its operation may be the quicker.

FIRE-*ſhips*, in the navy, veſſels charged with artificial fire-works; which having the wind of an enemies ſhip, grapples her, and ſets her on *fire*.

FIRE-*water*, a name given to alkaheſt. See IGNIS *Aqua*.

FIRE-*works*. The invention of *fireworks* is by M. Mahudel attributed to the Florentines and people of Siena; who found out likewiſe the method of adding decorations to them of ſtatues, with *fire* iſſuing from their eyes and mouths. Hiſt. Acad. Inſcript. T. 2. p. 435.

FIRING-*iron*, in the manege, is a piece of copper or iron, about a foot long, one end of which is made flat, and forged like a knife; the back of it being half an inch thick, and the fore edge about the fifth or ſixth part of this. When the farrier has made his *firing*-iron red hot in his forge, he applies the thinneſt part to the horſes skin, and ſo gives the *fire* to the hams, or ſuch places as ſtand in need of it.

FIRLOT, a dry meaſure uſed in Scotland. The oat *firlot*, which contains 21 $\frac{1}{4}$ pints of that country, is 19 $\frac{1}{2}$ inches in diameter both at top and bottom, being of a perfect cylindrical form, and in depth 7 $\frac{1}{3}$ inches. The wheat *firlot* contains about 2211 cubical inches, and the barley *firlot* 31 ſtandard pints. Whereby it appears that the Scotch wheat *firlot* exceeds the Engliſh buſhel by 33 cubical inches. Tr. Pract. Geom. p. 115, 117.

FIRM-*ore*, a kind of lead ore. See LEAD-*ore*.

FIRST *mover*, in the antient aſtronomy. See PRIMUM *Mobile*, *Cycl.*

FIRUZINUS *color*, a term that frequently occurs in ſome of the old writers on gems, and has been miſtaken by many to mean a ruſty brown; and by others, black: but theſe are not colours to be ſought after among the gums, and yet it is to thoſe that this epithet is uſually applied. We find it uſed for a blue kind of jaſper by ſome authors, the ſame with the jaſpis boreas of Pliny and Dioſcorides, and by others for the ſapphire, which ſome of the antients, particularly Theophraſtus, having called μελανα, that is, black in its deepeſt colour, authors have been led to ſuppoſe this word ſtood for black; but as there are not, nor ever were any black ſapphires, it is certain from this as well as many other inſtances, that the ancients uſed this word μελας, for a deep blue, and in that ſenſe *firuzinus color* does ſignify the ſame thing. It being the aerinus color of the antients, or what we call sky-colour, or a fine blue; ſuch as the colour of the fineſt ſapphires.

FISANELLE, in zoology, a name given by the Venetians to a water fowl of the colymbus kind, called by authors the colymbus major, or great diver. Its general weight is about a pound, its beak is two fingers breadth long, and all its feathers are downy, ſoft, and very thick ſet together; its head and neck are brown, and its back is blackiſh; its ſides and belly brown, and its breaſt of a ſilver white. It has no tail, and its wing feathers are black and white. Its feet are not webb'd, but the toes are all widened by membranes. It is very common in the markets of Italy. *Ray*'s Ornith. p. 256.

FISCHERLIN, in zoology, a name given by many of the northern nations to a ſmall ſpecies of the larus or gull, called by Mr. Ray, larus piſcator; and in Engliſh, the leſſer ſea ſwallow. It is ſmaller than the common black-bird. Its wings are long and grey, its feet ſhort and yellow, its breaſt and belly are white, the crown of its head black, and its back grey. It is very common on the German coaſts, and feeds on ſmall fiſh. *Ray*'s Ornithology, p. 269.

FISGUM, a name uſed by ſome, for the fiſh commonly called miſgum. *Willoughby*'s Hiſt. piſc. p. 129.

FISHES, (*Cycl.*) in natural hiſtory, make one of the diſtinct claſſes of animals, the characters of which are, that they have either a naked or ſcaly body, that they have no feet, and always have fins. *Linnæi*, Syſt. Nat. p. 33.

It is ſaid, that all *fiſh* regulate their times of eating and abſtinence, by the temperature of the air, and the quarter from whence the wind blows. Hence if thoſe who are lovers of angling, would take the pains to keep a few ſmall fiſh in glaſſes, they might at any time eaſily foretel, from their taking or refuſing food, what ſport is to be expected, and thus ſave themſelves many a weary ſtep. Phil. Tranſ. N°. 482. Sect. 15.

It is reported by many people, who have written accounts of China, that there are certain fiſh of a ſaffron colour in the ſeas thereabout, which in the ſpring caſt off their ſcales and get feathers and wings, and fly to the woods, where they build their neſts, and live all ſummer, but in winter return to their watery habitation with their young ones, and become fiſhes again. This is too abſurd to be believed, tho' very ſeriouſly related by grave authors. If the famous gold fiſh be meant by it, as ſome ſay, the whole is proved to be fabulous, by theſe fiſh being often found with ſpawn or roes in them. *Redi*'s Eſperienze.

The northern countries abound in large and delicate fiſh even to the extremeſt degrees of cold. Scheffer in his hiſtory of Lapland, gives us a wonderful account of the abundance, and large ſize of the fiſh there.

The ſalmons grow to a larger ſize than we ever ſee them of, and are caught in ſuch abundance, that the natives who pickle them, ſometimes export not leſs than thirteen thouſand tuns in a year: pikes are very common, and grow to the length of ſix or ſeven foot, and a proportionable thickneſs.

The carp grow to an ell long and often conſiderably more; and trout, barble, gudgeons and pearch grow to a proportionable ſize and fatneſs. The laſt of theſe fiſh have one very peculiar among them. They ſoak the skins in water, and then ſtripping off the ſcales, they add freſh water and boil the skins down till wholly diſſolved, of this they make a very pure and beautiful ſort of glue, which is not inferior in ſtrength to our coarſe and ſtinking kind. *Scheffer*'s Hiſt. Lapland.

The coming of certain kinds of fiſh in ſhoals and infinite multitudes, to certain coaſts at certain times of the year, is a thing of great advantage to mankind, as it gives opportunities of taking them with great eaſe, and in vaſt quantities; but the reaſon of theſe periodical returns of the ſeveral kinds, does not ſeem much underſtood, tho' a little obſervation would probably clear it up. There is a ſmall inſect common in many ſeas, but peculiary plentiful on the coaſts of Normandy in the months of June, July and Auguſt. This is well deſcribed by Rondeletius, under the name of the ſea caterpillar; and at this time of the year it is ſo frequent in the place before mentioned, that the whole ſurface of the water is covered with it as with a ſcum. This is the ſeaſon of the year when the herrings come alſo in ſuch prodigious ſhoals to thoſe coaſts. The fiſhermen complain much of theſe naſty vermin which diſturb their fiſheries, but they do not conſider that it is to theſe alone, that their fiſheries are owing; for it is evident, that the herrings feed on theſe creatures greedily, by the vaſt quantity found in all their ſtomachs; and it is highly probable, nay ſcarce to be doubted, that the reaſon of thoſe fiſh coming up in ſuch numbers is to feed on them; probably if obſervation was made, the ſame would be found to be the caſe in all the other places where the herrings come in the ſame ſort of plenty. The mackrel come down in the ſame numbers regularly at certain times of the year, and for the ſame ſort of reaſon. This fiſh is an herb eater, and is particularly fond of that ſea-plant called by naturaliſts, the narrow leaved purple palmated ſea wrack; this grows in great abundance on the coaſts of England, and many other places, and is in its greateſt perfection in the beginning of the ſummer, tho' ſometimes later than others according to the ſeverity or mildneſs of the winter.

The whole occaſion of theſe fiſh coming in ſuch quantities is to feed on this plant; and thoſe who would attend to its growing up, would know when to expect the mackrel better than thoſe who liſten for thunder for the ſignal of them. The tunnys come at certain ſeaſons to the coaſts of Provence and Languedoc, in the ſame ſhoals that herrings and mackrel do to other places. This ſeems to be on another occaſion. The fiſh called by the French the emperor, and by the ſame confounded with the ſword-fiſh, is the great enemy of theſe fiſh, and in ſummer is ſo plentyful in thoſe ſeas, that they find no way of ſaving themſelves, but by flying to the ſhallow waters, where the other cannot eaſily follow them, hence they frequent the ſhores. The pilchards caught upon the coaſts of Bretany, and making a conſiderable article of commerce for that province, are yet a ſtronger proof of the natural means that bring *fiſh* in ſhoals to certain places, than any other. Theſe *fiſh* evidently come for food, and that not natural to the place, but prepared for them by the inhabitants.

The people of Bretany purchaſe from Norway, the offal and entrails of all the large *fiſh* caught in the Northern ſeas; this is of late years become a regular and conſiderable article of trade; they cut theſe to pieces, and ſtrew them in vaſt quantities over the whole ſurface of the ſea along their coaſts, at times when the winds do not ſit ſo as to blow it off.

This always brings together the pilchards in as vaſt ſhoals as the herrings or mackrel come in other places; and the fiſher-

men

men catch them in ſuch quantities, as to be able to ſupply all the maritime places in the neighbourhood with them at a ſmall price. The ſalmon, a *fiſh* bred in rivers, yet going at certain times to the ſea, is another of thoſe *fiſh* which come up at times in vaſt ſhoals. The ſeaſon of their coming is as well known as that of other *fiſhes*, and the cauſe of it is, the other great principle of nature, beſide the preſervation of the individual, that is, the propagation of the ſpecies. The ſalmons always depoſit their ſpawn in ſhallow freſh waters. For this purpoſe they go up into rivers at certain proper ſeaſons, the females firſt, the males following; and when they have done this neceſſary office, they go back into the ſea in the ſame order. Theſe are the plain cauſes of the appearance of ſhoals of certain *fiſh* at certain times in theſe places, and in all probability, the ſame ſort of cauſes would appear to influence all the reſt, were they ſufficiently enquired into.

The ſalmons when they are going up a river out of the ſea, are always obſerved to ſwim as deep or as near the bottom as they can; and on the contrary, when they are going down the ſame river into the ſea, they are always ſeen ſwimming near the ſurface. The reaſon of this is, that in going up, they are to ſwim againſt the current, which always runs much ſwifter at the ſurface than deeper; and when they are going down, they get to the ſurface, when the force of the current alone is ſufficient to carry them, and they have little or no trouble in puſhing themſelves on.

Small fiſh may very well be kept in glaſs jars with freſh water; and thoſe of prey are very fit to be tamed by this means.

Some of theſe creatures often have no other ſuſtenance, than the animalcula of the water they are put in. Phil. Tranſ. N°. 478. p. 26. See DAC and RUFF.

Mr. Boyle ſpeaks of a kind of fiſh in the coaſt of Ireland, the hearts of which are found inverted. Works Abridg. vol. 1. p. 27.

In the Philoſophical Tranſactions N°. 463, Sect. 1. we have a method of preparing ſpecimens of fiſh, by drying their ſkins, as practiſed by Dr. Gronovius.

Generation of FISHES. The general opinion of the world as to the generation of *fiſhes*, is, that the female depoſits her ſpawn or eggs, and that the male after this ejects the ſperm or male ſemen upon it in the water. The want of the organs of generation in *fiſhes*, gives an apparent probability to this; but Linnæus is greatly againſt it. He affirms that there can be no poſſibility of the impregnation of the eggs of any animal out of its body.

To confirm this, the general courſe of nature not only in birds, quadrupeds and inſects, but even the vegetable world has been called in to his aſſiſtance, as proving, that all impregnation is performed, whilſt the ova are in the body of the parent; and he ſupplies the want of the organs of generation by a very ſtrange proceſs, affirming that the males eject their ſemen always ſome days before the females depoſit their ova or ſpawn, and that the females ſwallow this, and have their eggs by that means impregnated by it. *Artedi*'s Ichthyogr.

He ſays, that he has often ſeen three or four females at this time frequently gathered about the male, and greedily ſnatching up into their mouths, the ſemen he ejects: he mentions ſome of the eſoces, ſome pearch, and ſome of the cyprini, in which he had ſeen this proceſs. It is worthy farther enquiry.

Hearing of FISHES. When the lapilli or bones in the heads of fiſhes, which are truly their organs of hearing, are examined in the heads of the ſeveral kinds; it appears, that they differ from one another both in their ſtructure and ſubſtance. For in the cetaceous fiſhes whoſe ſkeletons are truly bony, and which in certain reſpects may be compared to truly ligneous trees, both the os petroſum, and the auditory organs are in theſe as in other animals perfectly oſſeous or bony; whereas the cartilaginous fiſh, whoſe ſkeletons are elaſtic, and are cartilaginous rather than bony, may be compared to the keratophyta, or tough horny ſea plants: and theſe fiſh, inſtead of an os petroſum, have ſomething analogous; but it is cartilaginous not bony, and the auditory bones are of a tartareous kind of ſubſtance, being friable and eaſily crumbled to pieces. *Klein*'s Hiſt. Piſc. See EAR.

It has been a diſputed point among the naturaliſts of many ages, whether *fiſhes* hear or not; it is plain that the cetaceous *fiſhes* have all of them auditory paſſages or ear holes, but it has not been found, that any other *fiſhes* have any appearance of them. Many authors have been fond of believing that all *fiſhes* have hearing, but their arguments in general are inconcluſive.

Among the antients, many authors appear to have been poſitive in the opinion, that *fiſhes* had hearing, tho' they were by no means ſatisfied about the ways or paſſages by which they heard. Placentini afterwards diſcovered ſome bones in the head of the pike, which had very much the appearance of being organs of hearing, but he could never diſcover any external paſſages to them. Klein ſeems to be the only author who has improved upon this hint to any purpoſe; and he affirms and proves from experiments and obſervations, that all *fiſhes* have the organs of hearing and have alſo paſſages from without to thoſe organs, tho' in many ſpecies they are difficult to be ſeen, and that even the moſt minute and obſcure of theſe, are capable of communicating a tremulous motion to thoſe organs from ſounds iſſuing from without; nor does the water appear on ſerious conſideration to be any impediment, but rather a proper medium for the conveying the ſounds to ſuch organs; and it appears no way more ſtrange, that they ſhould hear thro' the water, than that a man ſhould hear in one room, the words pronounced in another, tho' there is a partition between them.

The organs of hearing in *fiſhes* are indiſputably theſe little bones commonly called lapilli, and found in the heads of all *fiſh*; theſe are conſtituent and eſſential parts in the heads of *fiſhes*, and are generated with the brain itſelf; not an accidental thing as ſome have believed them to be. They are always found to differ in magnitude, according to the ſize of the *fiſh* they belong to; and they are more eaſily diſtinguiſhed in the heads of the ſpinoſe *fiſhes*, than in any other kind. There are in all kinds of *fiſh* three pair of them; the firſt are the two largeſt bones, and are eaſily enough found; but the greateſt difficulty lies in diſcovering the other two pair, which are ſmall, and lie enveloped in diſtinct little bags compoſed of a fine membrane. Theſe ſeem to be the auditory organs, and to anſwer to the incus, malleus, and ſtapes in other animals; and by a diligent and careful inſpection, the age of a *fiſh* may be determined by the number and thickneſs of the laminæ and fibres of theſe bones, in the ſame manner as the age of a tree is known by the number of circles of the wood. The paſſages by which a tremulous motion is conveyed from without to theſe internal organs are to be diſcovered with care in moſt *fiſhes*, and in particular in the pike; tho' Placentini could not diſcover them there. A cloſe examination of the head of this *fiſh*, will ſhew ſeveral holes into which hog's briſtles may be thruſt, and theſe will be found to go directly into the internal auditory organs; and in diſſecting the head of a ſturgeon, the auditory duct is eaſily traced as far as the membranous body, in which the three pair of little bones are placed. Curious figures of theſe auditory ducts, and of the great variety of theſe officula or lapilli, are exhibited in Klein's hiſtory of *fiſhes*, to which we refer as greatly more expreſſive than any form of words can be. *Klein*'s Hiſt. Piſc.

Iſland FISH. See ISLAND *fiſh*.

Iſinglaſs FISH. See ACCIPENSER.

Shell-FISH. See SHELL.

Melt of FISHES. See MELT.

Teeth of FISH. See TEETH.

Feeding of FISH. See the article FEEDING.

Eyes of FISH. See the article EYE.

Noſtrils of FISH. See NARES *piſcium*.

Swimming of FISHES. See the articles SWIMMING *of Fiſhes* and AIR-*bladder*.

FISHES, aboard a ſhip, are pieces of timber uſed to ſtrengthen the maſts and yards, when they begin to fail in a ſtreſs of weather. They both nail the *fiſhes* on with iron ſpikes, and alſo *would* them, as they call it, that is, wind ropes hard round about them. There is alſo a tackle called the *fiſh*, which hangs at the end of the *davit* by the ſtrap of the block, in which is the runner of the *fiſh*-hook; by which means the fluke of the anchor is haled up to the ſhip's bow or *chainwaile*. Perhaps this tackle was called a *fiſh*, from that which the antients called a *dolphin*, which was a pointed and vaſtly heavy piece of iron, which they uſed to heave up by a tackle to a good height, and then, when they came near enough to the enemies ſhip, let it fall at once, to break or pierce a hole through the bottom of the enemies veſſel, and ſink her.

FISH-*block*, in a ſhip, is the block which is hung in a notch at the end of the davit, and ſerves to hale up the fluke of the anchor to the ſhip's bow.

FISH-*ponds*, are not only a thing of convenience to great families, but may be made a very profitable article with the farmer under due management. Watery and boggy lands are often fit for no other uſe, and theſe are then a great improvement on them. Ponds made in dry grounds in the flat bottoms between hills, will alſo ſerve not only to ſupply the cattle with water, but the profit of the *fiſh* that may be bred in them, is greater than many are aware of, and comes without any labour or expence. The head of a pond muſt be placed at the loweſt part of the ground, and the trench of the flood-gate or ſluice, muſt have a good fall, that it may not be too long in emptying. The beſt way of making the head, is by driving three or four rows of ſtakes about ſix foot long, and at about four foot diſtance from one another, the whole length of the pond-head; the firſt row of theſe is to be driven in four foot deep, that they may be very firm and ſecure, and if the bottom be not good but be of a looſe ſand, ſome lime is to be added, which will harden into a ſort of ſtone. The earth dug out of the pond is to be laid between theſe ſtakes and rammed hard down. Other rows of ſtakes muſt be added behind and over theſe, and the ſpaces filled up till the whole is as high and as thick as is neceſſary. The face of it muſt be made even and ſlanting, and there muſt be a waſh left to carry off the ſuperflous water in floods, &c. *Mortimer*'s Husb. p. 291.

The

The deepeſt part of the pond ſhould be about ſix foot, but the ſides ſhould be ſhallower, that the *fiſh* may have a place to ſun themſelves, and lay their ſpawn.

Carp and tench will live and thrive very well together in the ſame pond. Where pike are kept, there ſhould be roach or ſome other quick breeding fiſh to ſupply them with food.

Some think pike and tench may be kept in the ſame pond. They imagine that pike will not feed upon tench, but they are miſtaken, for the pike is fonder of this, than of almoſt any other *fiſh*. Ponds with clear gravelly and ſandy bottoms are uſually the beſt for breeding of *fiſh*, and foul water with muddy bottoms, are the beſt for them to fatten in. Carp have been known to grow in one year from five to eighteen inches long, in ponds where the water of the common ſewers of any town have run into it.

The ordinary growth of a carp is not above two or three inches in that time, ſo that all the exceſs is to be attributed to the fatneſs of the water of the ſewers.

All *fiſh* ponds ſhould be drawn once in three or four years, and the *fiſh* ſorted; if it be a breeding pond, the ſmaller *fiſh* ſhould be taken out to ſtore other ponds with; and in feeding ponds, all the *fiſh* ſhould be kept as nearly as may be of a ſize, for the larger and ſmaller never all thrive well together.

Flounders will both thrive and breed in any pond, eſpecially in a clay pond, and will be much larger than in rivers.

Bitterns, herons, otters, water-rats and ſea-gulls are all great deſtroyers of *fiſh*, and the ponds ſhould be kept as clear as poſſible of them; but the greateſt of all deſtruction in *fiſh*-ponds is occaſioned by froſts.

To remedy this, ſome propoſe to break the ice and lay in pipes, ſtraw and other things, to give air to the *fiſh*, but all theſe fail when the ponds are foul; but when they are clean, the *fiſh* ſeldom ſuffer any harm, be the froſt ever ſo long, and that tho' no holes be broken in the ice. The ſtench of foul water ſeems to be the occaſion of the death of the *fiſh*, in this caſe of its being lock'd up by froſts, and not the want of air.

The cleaning of ponds frequently is of great uſe as well on this as on many other occaſions; and it is done at no expence, becauſe the mud ſerving as manure to the lands, more than pays the expence of taking it out.

When the ground is boggy and carts cannot come up to take the mud, it is beſt to cut the ponds long and narrow in form of moats, that it may be thrown out at one toſs by the labourers in the clearing them, for if it require two toſſes, the difference will be juſt the double price of labour.

In fiſhing for carp and tench, the morning and evening hours are the only ones for ſucceſs. From four to eight in the morning is the beſt time of all; afterwards from four in the afternoon, till ſun-ſet. In the middle of ſummer, carp will riſe to the ſurface of the water among the reeds, and may be caught with baits of large acorns, which they will readily take on the ſurface.

In March, April and September, the warmeſt days are the beſt for fiſhing, and the bait muſt be deep; for the *fiſh* in theſe cool months lie near the bottom. In fly-fiſhing it is always obſerved, that the *fiſh* will riſe beſt after a ſmall ſhower of rain, that has juſt beat down the flies upon the water without muddying it. March, April, May and June are the beſt months for fly-fiſhing, and the beſt hours are about nine in the morning, and three or four in the afternoon; in a ſtill warm evening, they will bite as long as the day-light laſts, at thoſe ſeaſons when the gnats are ſeen moſt plentyfully about in the air.

In the extremity of heat when the earth is parched with drought there is but little ſport to be expected in fiſhing, in whatſoever water. In cold weather when there is a white hoary froſt in the morning, the *fiſh* will not bite kindly all day except in the evening, if that ſhould prove ſerene and warm.

Too much wind is never convenient for fiſhing, tho' a little is rather advantageous than otherwiſe. It is bad fiſhing about ſheep-ſhearing time, in waters where the ſheep are waſhed, for the *fiſh* glut themſelves in ſuch a manner, with what is waſh'd from theſe creatures, that they will not take any bait till that ſeaſon is over.

North and eaſt winds are enemies to fiſhing, and it is not right to fiſh ſoon after the time of the *fiſhes* ſpawning, for they are then ſick and have no great appetite, ſo that they do not bite readily. All *fiſh* have a natural fore-knowledge of a ſhower of rain, and when clouds are coming on, that will fall in rain, they will not bite: the expert angler who is uſed to this, often eſcapes being wet to the skin by it.

The ſubterranean or underground fiſhing of the lake Ribeskajamnia, has been much talked of by thoſe who have written of the Zirchnitzer ſea, of which it is a part; but on the whole it amounts to no more than this. The waters of this lake emptying themſelves thro' ſubterranean paſſages into another lake below, the whole body of the water, with the *fiſh* in it, is firſt received into a large opening, which conveys it into a ſort of ſubterranean baſon, in the bottom of which there are many holes, and thro' theſe the water is let out, but the *fiſh* left behind. The people of the place who know this, deſcend thro' the large hole into this ſubterranean baſon with torches in their hands, and as the waters run off they ſieze upon the *fiſh* wherever they can catch them. This ſort of fiſhing is attended with one inconvenience, for the people being obliged to ſtand up to the middle more or leſs in the water, the horſe-leeches, which are extremely plentiful there, ſieze upon their legs and other parts, and are only to be got off by ſome perſons making water upon the part; the heat and nauſeous taſte of the urine always making them let go their hold. Phil. Tranſ. N°. 91.

FISSURES, in the hiſtory of the earth, certain interruptions, that horrizontally or parallely divide the ſeveral ſtrata, of which the body of our terreſtrial globe is compoſed.

FISTUCA, in antiquity, an inſtrument of wood uſed in driving piles, and fitted with two handles. It was either raiſed with pullies fixed at the head of large beams, and then let fall again directly on the piles, or was wrought by the hand only. *Pitiſc.* Lex. Ant. in voc.

FISTULA *lachrymalis* (*Cycl.*) — Dr. Hunauld has communicated ſome thoughts on the operation of the *fiſtula lachrymalis*, and propoſes, that no tent ſhould be put into the perforation of the os unguis, becauſe the tears will of themſelves keep it open. Phil. Tranſ. N°. 437. Sect. 5.

Mr. Lamorier propoſes to abridge the operation of the *fiſtula lachrymalis*, and to ſecure a paſſage for the tears into the noſe. The os unguis is to be laid bare at the firſt inciſion, and pierced with a pair of ſtrong, ſharp-pointed and crooked forceps, and then the perforation dilated by opening the forceps. After the inflammation is over, a piece of ſmall wax-candle, ſhaped like a tent, is to be introduced by the wound into the noſe, and ſecured by the other dreſſings. He continues the uſe of this bougie, till the paſſage is made callous, and out of hazard of reuniting. After which he allows the external wound to cure. Medic. Eſſ. Edinb.

Mr. Petit, conſiders the canals for the tears from the *puncta lachrymalia* as a ſyphon, the longer leg of which is the naſal duct, and therefore thinks, that a ſhorter paſſage made thro' the os unguis, would not convey away the tears; for which reaſon he would always have the natural paſſage forced open in the *fiſtula lachrymalis*, and a ſmall bougie kept in it till it heals. Mem. Acad. Sciences, 1734.

FISTULA *pulmonis*, in anatomy, a term uſed by ſome writers for the *aſpera arteria*.

FISTULA *ſacra*, in anatomy, is that part of the back bone which is perforated. *Blancard.*

FISTULA *urinaria*, in anatomy, the ſame with the *urethra*.

FITCHES, a name given by our farmers to a ſort of pulſe which they ſow in their fields. Many ſuppoſe it the ſame with the tare, but erroneouſly: it is the chich or chich pea of authors. There are two principal kinds of this in uſe among us, the winter and the ſummer *fitch*. The one is ſown before winter and abides the extremity of it; the other is ſown in ſpring. They are propagated in the ſame manner as peaſe, and they make a very good and nouriſhing food for cattle, whether given in the ſtraw, or threſh'd out. They are ſometimes ſown only to improve the land. In this caſe, they are to be plow'd in, juſt as they are beginning to bloſſom, and in this manner they finely enrich a tough ſtiff clay. *Mortimer*'s Husbandry.

FITCHET, a name uſed in ſome places for the weaſel; called alſo the fitchel, and the foumart. See MUSTELA.

FITS (*Cycl.*) — Dr. Cheyne is of opinion that *fits* of all kinds, whether epileptic, hyſteric, or apoplectic, may be cured ſolely by a milk diet, of about two quarts of cow-milk a day, without any other food. *Cheyne*, Nat. Meth. of curing, p. 265. See CONVULSIONS.

FIXED *line of defence*, a line drawn along the face of the baſtion, and terminating in the curtain. See DEFENCE. *Cycl.*

FLAG (*Cycl.*) — The *flag* or ſlate ſtone common in Northumberland, and ſome of the neighbouring counties, is called by ſome Carliſle *flag*. It is a white fiſſil ſtone, eaſily ſplitting into thin plates, and is full of ſmall ſpangles of a fine glittering talc. It is alſo common in Yorkſhire and the neighbouring places; it varies a little in colour, being ſometimes grey, ſometimes browniſh, and ſometimes merely whitiſh. Its ſtrata are very thick, but they eaſily ſeparate into lamina of about half an inch thick, and the workmen ſeldom attempt to ſplit it any thinner; the uppermoſt ſtrata however grow gradually thinner, and the bottom ones are ſo thick as not to be uſed for ſlates. Theſe they raiſe however, and uſe for tanners fats, the pavements of floors, and ciſterns for water.

FLAGS, in the military art, are ſmall banners of diſtinction ſtuck in the baggage waggons of the army, to diſtinguiſh the baggage of one brigade from another; and of one battallion from another; that they may be marſhalled by the *waggon maſter general* according to the rank of their brigades, to avoid the confuſion that otherwiſe might ariſe. *Guillet.*

FLAG-*flower*, in botany. See IRIS.

FLAIR, aboard a ſhip. The ſeamen ſay that the work doth *flair-over*, when a ſhip being houſed in near the water, a little above that the work hangs over a little too much, and ſo is let out broader aloft than the due proportion will allow.

FLAIRS, in ichthyology, a name given by ſome to the skaite. See SKAITE and RAJA.

The

The antient Greeks called this batos, when they ſpoke of the male, and when of the female, batis.

FLAKE, in gardening, a name given by the floriſts to a ſort of carnations, which are of two colours only, and have very large ſtripes, all of them going quite thro' the leaves. *Millar*'s Gardener's Dict.

FLAMBO, in natural hiſtory, a name given by ſome to a long anguilliform fiſh, a ſpecies of the tænia, called Cavagiro. *Rondelet*, de Piſc. v. 1. p. 96. See CAVAGIRO.

FLAME *(Cycl.)* — It is evident to every curious obſerver, that *flame* dwells and plays only about the ſurface of fuel, having nothing to do with its interior parts. If a lamp glaſs be filled with ſpirit of wine, another with oil of turpentine, and others with other liquors, and each ſet on fire, it will be eaſily diſtinguiſhable thro' the ſides of the glaſs, that they all burn and *flame* only on their ſurface, the *flame* continually ſinking lower and lower in the glaſſes as the liquors conſume. The ſame obſervation holds good in ſolid as well as liquid fuel, and appears to be univerſal; and hence we are directed to the choice of proper fuel on the different occaſions we want it for. *Shaw*'s Lect. p. 33.

Flames of burning ſubſtances are of different colours, according to the ſubſtances which produce them. Thus the *flame* of burning camphor is white, like the focus of a burning glaſs. The *flames* of ſulphur, and of ſpirit of wine, are blue; the *flame* of white wax, is white, inclining to blue; and that of tallow is white, a little inclining to yellow.

From this difference of the colours of the *flames*, proceeds the difference of the colours of bodies as viewed by day-light, candle-light, or any one of theſe *flames*; and for making curious experiments of this kind, oil may be impregnated with copper, &c. *Shaw*'s Lect. p. 176.

FLAME *from cold liquors*. See the article FIRE.

FLAME *heat*, the ſame with white heat. See IRON, *Cycl.*

FLAMEN *(Cycl.)* — FLAMEN *dialis*, the ſovereign prieſt of Jupiter, among the old Romans. He revived an antient pretenſion to a ſeat in the ſenate, in right of his office; which by the indolence of his predeceſſors, had not been claimed or enjoyed for many generations. The prætor rejected his claim, nor would ſuffer him to ſit in that aſſembly: but upon his appeal to the tribunes of the people, that is, to the people, his right was confirmed, and he was allowed to take his place as a ſenator. *Liv.* 27. 8. *Middlet.* of Rom. Sen. p. 49.

FLAMETTE, in zoology, a name given by the French writers to a ſpecies of chama or ſhell-fiſh of the bivalve kind, with its ſhells always more or leſs open; this ſpecies is as hot as pepper to the taſte.

FLAMINGO, in zoology, the name of a very beautyful and very remarkable bird; it has long legs, and a long neck, yet has webb'd feet, and is remarkable for the fine bright red of its wings. *Ray*'s Ornitholog. p. 240. See the article PHOENICOPTEROS.

FLAMMA *Jovis*, a name given by many writers to a plant of the clematitis or virgin's bower kind, called by the greek writers phlogium or phlogus. See CLEMATITIS.

Pliny very improperly ranks it among the violets, the only reaſon for doing which, ſeems to have been the meeting with this plant and the violets in the ſame part of the writings of Theophraſtus, from whom he has tranſlated the greateſt part of his account of plants. This author however is not to be accuſed of mixing them together, as if of the ſame nature, for they only follow one another in his works, as they both flower in the ſpring ſeaſon of the year. There is alſo another miſtake in Pliny in this place, to which the plant owes its name *flamma* or *flammula jovis*; for the Greek name expreſſes only *flamma*, but Theophraſtus having in the ſame place, named another plant under the name of jovis flos, dioſanthos; Pliny ſeems to have confounded the two plants together in his memory; and to have formed this name for one of them out of the ſeparate names of both, and has wholly dropped the dioſanthos.

FLAMMULA, in botany, a name given by ſome authors to a particular ſpecies of the crowfoot, commonly called the ranunculus flammeus. *Chabræus*, p. 470.

FLAMMULÆ *auri*, in natural hiſtory, a name given by Dr. Woodward, and others to thoſe ſmall pieces of gold found among the ſands of rivers in ſome places. They are ſometimes found in roundiſh pieces, but more uſually in their ſhining flakes, whence the name *flammula* ſeems to have been given them, as being very bright and gloſſy. This ſort of gold is pure and malleable, and loſes ſcarce any part of its weight in fuſion.

The gold duſt as it is called, which is brought from Guinea, is much of this kind; its particles are uſually very ſmall, though ſometimes lumps of the ſize of a pea or horſe-bean are found, and ſometimes maſſes of an irregular figure of three or four ounces weight; but theſe looſe the name of *flammulæ* when they become ſo thick and ſolid, and ſo large, and are called by the merchants rock-gold.

All the *flammulæ* of gold found among the ſands in the beds of rivers, are doubtleſs parts of a rich ore, lodged in ſome neighbouring hills, and waſhed away by the impetuous rains, which carry them down in the currents they form, and afterwards drop them in the places where the waters of the river they mix themſelves with, run more ſlowly. This appears plainly from theſe particles of gold being always found toward the the heads of the rivers; or near the mountainous countries where the torrents cauſed by ſudden rains, diſcharge themſelves into them near their entrances into the ſea; and alſo by this, that the people always find the gold moſt plentifully after great rains. *Woodw.* Cat. Foſſ. v. 2. p. 30.

FLANEL *(Cycl.)* — It has been obſerved that new *flanel*, after ſome time wearing, acquires the property of ſhining in the dark, but loſes it on being waſhed. *Vid.* Phil. Tranſ. N°. 483. Sect. 7.

FLANKED *line of defence*, in fortification. See ANGLE, *Cycl.*

FLANKING *angle*, in fortification. See ANGLE, *Cycl.*

FLASK, in the artillery. See POWDER-*flask*.

FLAT *baſtion*, in fortification. See BASTION, *Cycl.*

FLAT-*bottomed moat*, in fortification. See MOAT, *Cycl.*

FLAT-*crown*, in architecture. See CORONA, *Cycl.*

FLAT *third*, in muſic, the third minor. See INTERVAL.

FLATTING *courſe*, among brick makers. See BRICK.

FLATTING, aboard a ſhip. To hale in the fore-ſail by the ſheet as near to the ſhip's ſides as may be, is called *flatting in the fore-ſail*. This is done when a ſhip will not fall off from a wind without it, though the fore-ſheet was haled aft.

FLATULENCY, a word uſed by medical writers to expreſs a diſtempered ſtate of the body, in which there is an uncommon and unnatural generation of flatuſes or halituous and elaſtic matter of the nature of air, ariſing from the humidity of the abdomen, and attended with ſeveral very bad ſymptoms.

Some authors mention flatuſes of the uterus and of the bladder, but theſe are very rare caſes, tho' they do ſometimes happen; and what is uſually underſtood by the word *flatulency*, are ſuch flatuſes in the ſtomach and bowels. Theſe are either torpid or impetuous. The torpid *flatulencies* of the bowels give the patient very little uneaſineſs; people of phlegmatic habits are much ſubject to them, and generally very little regard them. But the impetuous kind very often occaſion the utmoſt diſorders, on the ſlighteſt accidental occaſions irritating them; people of a ſanguine and melancholic habit, are moſt ſubject to them. *Flatulencies* differ alſo greatly in regard to their cauſes; for ſome are only occaſioned by a ſimple languor, or ſmall loſs of tone in the inteſtines, in which caſe the flatuſes are generally diſcharged upwards in eructations, or downward without trouble. Other *flatulencies* have their origin from a tough viſcid matter, which deſtroys the intent of the periſtaltic motion to this purpoſe; and in this caſe the patient is ſometimes troubled with ſpaſtic conſtrictions of the inteſtines, ſometimes with troubleſome relaxations of them; and finally ſome *flatulencies* take their origin from a turbulent commotion of the blood about the vena portæ, from the ramifications of this veſſel having connections with the inteſtines.

Signs of flatulencies. The moſt obvious of theſe are the rumblings that are felt in the bowels, with noiſes in them; and in the place of theſe rumblings, there are ſometimes plainly perceived fixed diſtenſions of them in particular parts, with tenſion and ſtraitneſs of the abdomen. From the continuance of theſe ſymtoms ariſe pains which ſometimes change place, and ſometimes remain fixed, and ſeem to ſwell the inteſtines in ſuch manner as to endanger burſting: and when commotions of the blood are the cauſe of theſe, there are uſually pains felt attending them on the left ſide, and about the region of the heart, and the patient complains of the uſual ſymptoms of hypocondriacal people.

An obſtinate coſtiveneſs alſo uſually attends this diſtemper, which always makes it more violent; and a ſtraitneſs of the breaſt attended with anxieties and diffiulties of breathing are uſually the attendant ſymptoms on it, when violent. The more the *flatulency* has been owing to crudities in the primæ viæ, the more will the patient be affected with vertiginous complaints, and other diſorders of the head; and when the cauſe is a commotion of blood about the vena portæ, the pains are always very violent, and are often attended with bad conſequences.

Perſons ſubject to it. *Flatulencies* attack perſons of all ages, ſexes and conſtitutions, but eſpecially the phlegmatic, whoſe parts are of a weaker tone, and naturally more ſubject to expanſion; after theſe, perſons of a ſanguine habit are moſt ſubject to them, and thoſe of choleric and melancholy habits, tho' naturally leſs ſubject to them, yet often fall into them after illneſſes.

People who are particularly ſenſible of the changes of the air from warmer to colder, are alſo more ſubject to them, than thoſe of a more robuſt and leſs delicate frame; hence women are more ſubject to them than men, and thoſe eſpecially in the times of the menſes and lochia.

Cauſes of them. Theſe are in general a relaxation of the periſtaltic motion of the guts; but this not extending to the whole canal, but only to ſome one part, the tranſpiration of the halituous matter being chiefly into this flacid part, which it diſtends in a manner that it could not do by a part that had its natural tone and motions. And the defect in one part is always attended with

with an exceſs of the periſtaltic motion in another, in order to the driving off the cauſe; hence proceed alternate conſtrictions and relaxations, to which, in a great meaſure, the pain is owing; and in caſes of the commotions of the blood about the vena portæ, the ſame conſtrictions and relaxations always happen. The material cauſes of *flatulencies*, are thoſe ſubſtances ſwallowed in food, which are of a mucous and tenacious conſiſtence, and by their obſtinately adhering to the bowels are capable of giving great trouble. Of this kind are the herbs in uſe in food, which are of a thick tough juice; or the leguminous tribe, as peas, beans and the like; alſo dried ſea fiſh, and all animal fats, as that of ſheep and calves, eſpecially if the perſon drink immediately after eating heartily of them. The drinking fæculent liquors will alſo occaſion them very violently, as new malt liquors, or the ſame when the veſſels are almoſt out; the ſummer fruits alſo are to be accuſed in this ſenſe, and above all things honey. To all theſe cauſes, the habit of the patient greatly concurs, and a general coolneſs of the body, and dryneſs of the bowels are a frequent occaſion of them.

Prognoſtics in them. *Flatulencies* often prove an extremely troubleſome complaint, and people of an idle ſedentary life, eſpecialy women, owe a great many uneaſy hours to them; and when they grow into a habit, they are always attended with colic pains, cardialgias, anxieties, and ſuffocatory emotions. It is always to be obſerved, that the forcible ſuppreſſion of flatuſes, brings on much worſe complaints, eſpecially in plethoric and ſanguine habits; for ſpaſtic tormina of the bowels, and vibrative convulſions with faintings, are often the conſequences of it; and the phyſician is apt to accuſe foulneſſes or ſcorbutic habits of the blood, for the ſymptoms he ſees, which, in truth, are only owing to ſuch a ſuppreſſion. The free diſcharging of *flatulencies*, on the other hand, is attended with its ill conſequence, it naturally degenerating into a habit.

The ſuppreſſion of habitual *flatulencies*, brings on tumours, indurations of the abdomen, hectics, and a tympanites, and particularly the anterior flatuſes: theſe, which might be avoided by eructations, when ſuppreſſed, bring on cardialgious and vertiginous diſorders of the head.

Method of cure. In this it is firſt to be conſidered, whether the flatuſſes have their origin in the bowels, or whether they affect them only by conſent, as is often the caſe in diſeaſes of the neighbouring parts in hypocondriac and hyſteric patients, and in perſons afflicted with hæmorrhoidal and nephritic complaints, and in caſes where women have been ill managed in lyings-in, or in miſcarriages: in all theſe caſes the original cauſe is to be conſidered and treated with its proper remedies. But in caſes of direct and ſimple *flatulencies*, the following method will be uſually found effectual. The bowels muſt be carefully kept gently open, for in caſes of coſtiveneſs, *flatulencies* will always be increaſed. To this purpoſe, the common clyſters muſt be given at repeated times, and to theſe by way of increaſing the ſtimulus, ſome of the leſſer centaury is to be added, and ſome common ſalt. After theſe the laxative medicines of the gentler kind are to be given, and in the intermediate days, the digeſtive ſalts to attenuate the viſcous matter in the bowels; to theſe nitre and a little cinnabar may be added, and theſe always have a much better effect than all the hot carminatives uſually given. After theſe, thoſe things are to be given which reſtore the tone of the part; ſuch are the bitter and aromatic extracts, with ſpirit of ſalt of tartar, ſpirit of nitre dulcified, and the volatile urinous ſalts aromatiſed. Externally ſtomachic plaiſters may be applied to the pit of the ſtomach, as may alſo the ſtomachic balſams, ſuch as the oils of nutmeg, carui, fennel, and the like.

The general method of treating *flatulencies*, is by the hot aromatics, but theſe are to be given with great caution; for when the commotions of the blood about the vena portæ are in fault, theſe things always irritate, rather than do good; but beyond all things, the too common methods of giving a vomit in theſe caſes is to be avoided, for the diſcharge of the *flatulencies* upwards is inverted by this means, and then uſually follow exquiſite pains and tenſions of the parts, difficulty of breathing and vertiginous complaints in the head, with noiſes in the ears, and many other complaints which are continually increaſing, till they are a little eaſed for the preſent by an eructation. The happy way of getting rid of theſe anterior flatuſes, is by driving the cauſe of them downwards, and the reſtoring the loſt tone of the parts. Continued exerciſe is alſo of the utmoſt ſervice. *Junker*'s Conſp. Med. p. 600.

FLAUTINO, in the Italian muſic, the name of a ſmall flute or flajeolet. *Broſſ.* Dict. Muſ. in voc. See FLAJEOLET, *Cycl.*

FLAUTO, in the Italian muſic, is uſed to denote a flute, or the part to be played by that inſtrument. *Broſſ.* Dict. Muſ.

FLAUTO *traſverſo*, in the Italian muſic, a German flute. *Broſſ.* ibid. See FLUTE, *Cycl.*

FLAW, at ſea, ſignifies a ſudden guſt of wind, otherwiſe called *ſquale.*

FLAX, *linum* (*Cycl.*) —This is a plant that will grow in any kind of good ſound land, but that does beſt for it, which has lain ſometime unplowed. The beſt land yields the beſt *flax*, and makes the greateſt improvement; and upon the whole, it is an excellent commodity, and the tilling and ordering it is ſo good a piece of husbandry, that it well deſerves to be more frequently practiſed among us. It is a plant that exhauſts the land very much, on which account it is beſt to ſow it on very rank ground, and not often on the ſame piece. The time of ſowing is in March; the land ſhould be well prepared and laid even, and the drieſt ſeaſon that can be, ſhould be choſen for the ſowing it. The ſeed procured by our own crops, is not ſo good as that imported from the Levant; this is dearer indeed, but it yields greatly the largeſt crops, and will hold good to the third crop with us, but then it ſhould be renewed. Two buſhels of good ſeed are ſufficient for an acre: it muſt not ſtand till too ripe, but muſt be pulled as ſoon as the ſeed grows brown, and bends down the heads. If the flax is pulled while in flower, the produce will be whiter and ſtronger, but then the ſeed will be loſt.

They have a very good way of beating their hemp and flax in Derbyſhire, which is this; they make the axletree of the main wheel of their corn-mills longer than ordinary, and place pins in it to raiſe large hammers, like thoſe uſed in the paper and fulling mills, and with theſe they beat the ſtalks, and ſave a great deal of labour. *Mortimer*'s Husbandry, p. 154.

Purging FLAX, *Linum catharticum.* See LINUM *catharticum.*

Toad FLAX, in botany. See LINARIA.

FLEA (*Cycl.*) — The *flea* when examined by the microſcope affords a very pleaſing object. It is covered all over with black, hard and ſhelly ſcales or plates, which are curiouſly jointed, and folded over one another in ſuch a manner, as to comply with all the nimble motions of the creature. Theſe ſcales are all curiouſly poliſhed, and are beſet about the edges with ſhort ſpikes in a very beautiful and regular order. Its neck is finely arched, and much reſembles the tail of a lobſter; the head alſo is very extraordinary, for from the ſnout part of it there proceed the two fore legs, and between theſe is placed the piercer or ſucker, with which it penetrates the skin to get its food. *Baker*'s Microſcope, p. 191.

Its eyes are very large and beautiful, and it has two ſhort horns or feelers. It has four other legs joined all at the breaſt. Theſe when it leaps fold ſhort one within another, and then exerting their ſpring all at the ſame inſtant, they carry the creature to a ſurpriſing diſtance. The legs have ſeveral joints, and are very hairy, and terminate in two long and hooked ſharp claws.

The piercer or ſucker of the *flea* is lodged between its fore-legs, and includes a couple of darts or lancets, which after the piercer has made an entrance, are thruſt farther into the fleſh, to make the blood flow from the adjacent parts.

This piercer, its ſheath opening ſideways, the two lancets within it are very difficult to be ſeen, unleſs the two fore-legs, between which they are hid, be cut off cloſe to the head; for the *flea* rarely puts out its piercer, except at the time of feeding, but keeps it folded inwards; and the beſt way of ſeeing it is by cutting off firſt the head, and then the fore-legs, and then it is uſually ſeen thruſt out in convulſions.

By keeping *fleas* in a glaſs tube corked up at both ends, but ſo as to admit freſh air, their ſeveral actions may be obſerved, and particularly their way of coupling, which is performed tail to tail; the female which is much the larger, ſtanding over the male: they may alſo be thus ſeen to lay their eggs, not all at once, but ten or twelve in a day, for ſeveral days ſucceſſively, which eggs will be afterwards found to hatch ſucceſſively in the ſame order. The *flea* may eaſily be diſſected in a drop of water, and by this means the ſtomach and bowels with their periſtaltic motion may be diſcovered very plainly, as alſo their teſtes and penis with the veins and arteries, tho' minute beyond all conception. Mr. Leiwenhoek affirms alſo, that he has ſeen innumerable animalcules ſhaped like ſerpents, in the ſemen maſculinum of a *flea*. *Baker*'s Microſ. p. 192.

FLEA, in the hiſtory of inſects. See PULEX.

FLEA *Bane*, *conyza*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the floſculous kind, being compoſed of a number of ſmall floſcules, divided into many ſegments at their ends, ſtanding each upon an embryo ſeed, and all contained in a ſort of cylindric, foliaceous husk. The embryo finally becomes a ſeed wing'd with down.

The ſpecies of *conyza* enumerated by Mr. Tournefort are theſe. 1. The common great *conyza*, called Plowman's ſpikenard. 2. The *conyza*, with red ſlender ſtalks and naked yellow flowers. 3. The *conyza*, with toad-flax leaves. 4. The broad leaved viſcous *conyza*, with yellow flowers, and a ſweet ſmell. 5. The white flowered, nettle leaved American *conyza*. 6. The American *conyza*, with dead nettle leaves. 7. The white flower'd, ſallow leaved American *conyza*. 8. The ſea purſelain leav'd Virginian *conyza*. 9. The quince leaved ſhrubby American *conyza*. 10. The yellow flowered American tree *conyza*, with trifid leaves. 11. The purple flowered American tree *conyza*, with dentated mullein like leaves. 12. The purple flowered American tree *conyza*, with undulated mullein like leaves. 13. The ſhrubby American *conyza*, with roundiſh nervous leaves, and ſpikated flowers. 14. The dwarf African *conyza*, with roundiſh nervous leaves and umbellated flowers.

ers. 15. The ſhrubby African *conyza*, with ſage like leaves, and the ſmell of camphor. 16. The ſhrubby African *conyza*, with hoary, hooked, rocket like leaves. 17. The Roſemary leaved ſhrubby African *conyza*. 18. The blunt leav'd African *conyza*, with groundſel flowers. 19. The purple flowered figwort leaved Indian *conyza*; and 20. The *conyza*, with ſerrated mullein like leaves. *Tourn.* Inſt. p. 454, ſeq.

The common *fleabane* ſtands recommended by the old authors as a remedy for many cutaneous diſorders. They had an opinion alſo, that the ſmoke of it when burnt in a room deſtroyed fleas, and other inſects.

FLEA *Wort*. See PSYLIUM.

FLEAM (*Cycl.*) — There are many ſurgeons in Germany who bleed, or perform the operation of phlebotomy with this inſtrument, which they uſe in this manner: they hold one finger upon the end of it, which ſerves as a handle, and applying the point to the vein they are to open, ſtrike upon the back over the point with one of the fingers of the other hand, opening the vein much as farriers bleed horſes. Others uſe a ſpring *fleam*, ſomething like a ſingle point of the ſcarifying inſtrument uſed in cupping; and others employ a ſort of inſtrument in form of a dart; but as the poſition and ſize of the veins is different, in different ſubjects, no inſtrument will ever be found ſo uſeful as the common lancet of a proper ſize. *Heiſter*'s Surgery, p. 274.

FLEECE (*Cycl.*)—*Golden* FLEECE. See the article GOLDEN.

FLEMENEFRIT, FLEMENESFRINTHE, or FLYMENAFRYNTHE, in our old writers, ſignifies the receiving or relieving of a fugitive or outlaw. Leg. Inæ, cap. 29. 47. LL. H. 1. c. 10, 12.

FLEMESWITE. *Fleta*, who writes of this word, interprets it *habere catalla fugitivorum*. Flet. Lib. 1. c. 4.

FLESUS, in zoology, a name uſed by ſome authors, for the common flounder; the paſſer fluviatilis of moſt writers. *Bellonius*, p. 113.

FLESHY *roots*. See FIBROSE *roots*.

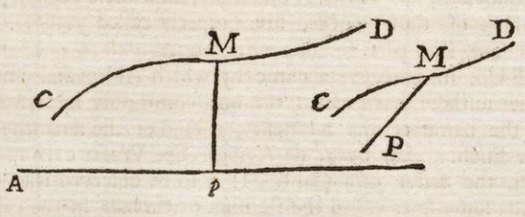
FLEXION, (*Cycl.*) in geometry. See FLEXURE.

FLEXOR (*Cycl.*) — FLEXOR *digitorum pedis acceſſorius*, a flat and pretty long fleſhy muſcle, ſituated obliquely under the ſole of the foot, and from its ſituation and figure, formerly called *caro plantæ pedis quadrata*.

It is fixed poſteriorly by one fleſhy portion, in the lower ſide of the os calcis, and in the anterior tuberoſity on that ſide, and by the other in the ligament which joins this bone to the aſtragalus. From thence the two other portions run obliquely to the middle of the ſole of the foot, and there unite in a flat, long, and irregularly ſquare muſcular maſs, which is fixed to the outer edge of the faſciculus of tendons of the *flexor longus*, to which it ſerves as a frænum in that place. *Winſlow*'s Anatomy, p. 224.

FLEXOR *profundus*, in anatomy, a name given by Cowper and ſome other writers to the muſcle of the foot called alſo the perforans pedis, and the perodactylæus by Riolan, and ſome others. See PERFORANS.

FLEXURE, or FLEXION, in geometry, is uſed to ſignify that a curve is both concave and convex, with reſpect to a given right line, A *p*, or a fixed point, P. Thus the curve



CMD, having the part CM concave towards A*p*, or P, and the part MD convex to the ſame, is ſaid to have a flexure. And the point M, which limits the concavity and convexity, is called the point of contrary *flexure*. See POINT *of contrary flexure*, *Cycl.* and *Suppl.*

This is to be underſtood, when the point ſuppoſed to deſcribe the curve, coming to M, continues its courſe towards the ſame ſide; but if it turn backwards, as in the figures annexed, tho' the curve may either have a continued curvature, as in

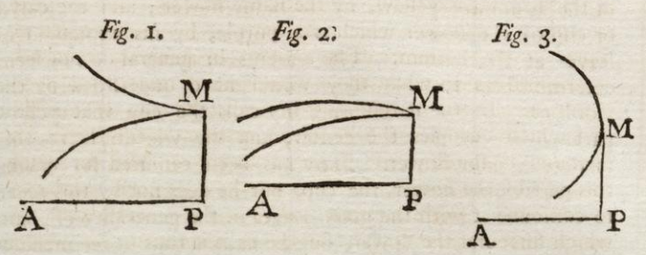


fig. 3. or have a cuſpis point of reflexion, or of retrogradation, as in *fig.* 1. and *fig.* 2.

As to the method of finding the points of contrary *flexure*, ſee *L'Hoſpital*'s Anal. Inf. Petits, Sect. 4. See alſo the head POINT *of contrary flexure*, where ſome neceſſary corrections of L'Hoſpital's rule are given.

FLIDETHRIFT, or more truly SLIDETHRIFT, is the game we now call *ſhovel-board*. It is otherwiſe called *ſhove-groat*, and is mentioned in the ſtatute. 33 H. 8. c. 9.

FLING, in the manege, is the fiery and obſtinate action of an unruly horſe.

To fling like a cow, is to raiſe only one leg, and give a blow with it. See YERK.

To *fling* or kick with the hind legs. See YERKING, *Cycl.*

FLINGING, among bowlers. See BOWLING.

FLINT (*Cycl.*) — The ſparks of fire which are produced by ſtriking *flint* againſt ſteel, are of the number of thoſe things which cuſtom has made familiar to us, but which we might find much matter of inquiry, if we would give way to reaſon on the ſubject.

The ſtriking fire in this manner has probably been as old as the knowledge of ſteel; and ſince the microſcope has been familiar among us, it has been diſcovered, that theſe ſparks are ſo many ſpherical balls of iron detached by the blow from the maſs, and rendered by the heat a ſort of ſcoriæ. Kemp de Kenvyck, a very ingenious chemiſt, propoſed it as a problem worthy the attempts of the curious to ſolve, and propoſed the whole in theſe words; when a flint and ſteel are ſtruck together, if the ſparks are received upon a white paper, they are found to be round maſſes, which examined by the microſcope, are found to be melted and ſcorified or vitrified iron, which will no longer anſwer to the magnet. It is therefore demanded, 1. Which of the two inſtruments contributes moſt to this change in the iron? 2. What ſubſtance it is, that is employed to this purpoſe? 3. In what manner the operation is performed; and 4. Why if iron be uſed inſtead of ſteel, the ſparks are very few or none, when with ſteel they are ſo many? Theſe queſtions have appeared almoſt unanſwerable, becauſe people ſcarce knew how to conceive, that iron which requires ſo long continued, and ſo violent a fire to put it in fuſion, could by means only of a ſlight blow, be not only melted, but deſtroyed as it were. The moſt eminent perſons of the time declined engaging in the attempt, and Mr. Muſchenbrok, from whom a ſolution was expected by many, at length referred the whole to Mr. de Reaumur, who had ſome time before publiſhed a treatiſe on iron and ſteel, and was therefore judged to have moſt conſidered the metal in both thoſe ſtates.

This gentleman accepted the task, and attempted the ſolution of the problem by reſolving theſe queſtion. 1. By what means the iron is in this act converted into ſcoriæ? 2. By what methods it can be ſo deſtroyed? 3. How it comes not only to be reduced to ſcoriæ, but to be in a ſtate of fuſion, and truly rendered liquid, and 4. Why iron gives leſs as well as fewer ſparks on colliſion with flint than ſteel does? The nature of iron is well enough known for us to be aſſured that it contains a large portion of inflammable matter, and that it is never ductile, but while it has a quantity of that inflammable matter in it; and that when that is wholly taken from it, it becomes friable, and is reduced to a ſort of ſcoriæ, analogous to common vitrified matters.

What much conduces to the explication of the given problem, is, that this inflammable matter contained in iron is very eaſily ſeparated when iron is heated in an open fire; which is evidently ſeen, in that it is impoſſible to heat a bar of iron in a ſmith's forge, ſo much as to make it ready for working or joining with another bar, without reducing its whole ſurface to ſcoriæ, or a friable matter which is all thrown off from the bar by the blows of the hammer.

The ſmaller and thinner a piece of iron is, the more eaſily is it reduced to ſcoriæ, and it is eaſy to conceive from hence, that in pieces extremely ſmall, there requires no more than the once thoroughly heating them to reduce the whole to ſcoriæ; and it is eaſily proved by experiment, that the flame of a candle being applied to a fine ſmall piece of filings of ſteel, will ſoon make it red hot, and that if it be then ſuffered to cool and laid on a white paper, it will be found much to reſemble the ſparks thrown off by *flint* and ſteel, and will be reduced to ſcoriæ and be friable under the nail, like a piece of charcoal.

It appears then, that there requires but an inſtant of time to give a red heat to a ſmall particle of iron; and alſo that when that heat has been given, the particle muſt have loſt that inflammable matter which cauſed its ductility, and conſequently muſt be reduced to ſcoriæ; and hence it appears not wonderful, that the very ſmall piece or particle of ſteel which is ſtruck off by the flint, ſhould be diveſted of its inflammable matter, and with it of its ductility, by being kept red hot in the open air, only ſo long as it was in falling from the ſteel to the paper that is placed to receive it. The extreme ſmallneſs of the particle gives power to ſo ſhort a heat to deſtroy its inflammable matter, in which its ductility conſiſts; and therefore to reduce it to a matter no longer ductile, that is, into ſcoriæ; and we find that if a parcel of fine ſteel filings be dropt thro' the flame of a lamp driven into an horizontal direction by the blaſt of a blow-pipe, they will in the inſtant of their

paſſing

paſſing thro' that flame, ſparkle and become ignited, and if they are received on a white paper placed underneath, the ſmaleſt particles will be found round and friable, reduced to ſcoriæ, no way differing from the little globules of ſcorified ſteel, which are ſtruck off from the *flint* and ſteel in giving fire by their colliſion.

When we have occaſion to melt larger parcels of ſteel or iron, we are obliged to have recourſe to ſuch ſubſtances to mix with them as will replace with increaſe that inflammable matter which the fire drives off: the ſubſtances of this kind are common ſulphur, orpiment, arſenic, and the like; and by means of theſe, it is ſoon made to run like lead. Memoires Acad. Scien. Par. 1736.

Mr. Reanmur having given theſe hints for the underſtanding the occaſion of iron's being found ſcorified by the ſhort heat it receives from the colliſion of *flint* and ſteel, proceeds to account for the reaſon why iron yields fewer ſparks with *flint* than it does with ſteel.

On this occaſion he obſerves, that he accidentally had diſcovered a new phoſphorus of iron, in giving the proceſs of which, great light would be thrown into this ſubject: the method of making it was this, having melted ſome antimony in a crucible, he threw in at ſeveral times, twice the quantity of iron reduced into thin ſcales; the whole ſoon melted together, and became one fluid maſs; when this had been caſt into a mould and was become cold, it afforded a long train of ſparks on being filed with a common coarſe file. The ſparks were much larger than thoſe produced by a colliſion of *flint* and ſteel, and the larger of them ſet fire to the paper placed to receive them; but upon examination, theſe were all found to be melted in the manner of the ſparkling particles ſtruck off from ſteel, not only burnt, but melted, and that more perfectly than the others from the common colliſion with *flint*. If after all this, it be ask'd, why ſteel yields greatly more numerous ſparkles than iron? the anſwer is plain, that the difference of hardneſs alone is ſufficient to occaſion it; but granting even that ſteel and iron were of equal hardneſs, ſteel has the ſame advantage of iron in this reſpect, that the before mentioned mixture of iron with antimony has over plain iron, in that it contains greatly more of the inflammable matter than the iron does, and this inflammable matter is alſo more equally diſtributed thro' all its ſurface.

It may alſo be judged, that the *flint* not only contributes by its hardneſs to the ſending off the ſparks, but alſo by its ſulphur; what the blow diſlodges from it of this kind, and puts in violent motion, probably having no ſmall effect both in the fuſion and ſcorification of the metal. That all *flints* contain a large quantity of ſulphur is plain, from the ſulphureous ſmell they afford on being ſtruck together; and the ſparks which are produced by ſtriking iron againſt iron are probably affected in the ſame manner, by the ſulphur of the metal diſlodged from the adjoining parts by the blow.

One great proof of the ſparks being melted and rendered globular by means of the ſulphur of the *flint* is, that ſparks may be ſtruck from ſteel, in the ſame manner by glaſs as by *flint*, but in leſs quantity; theſe having been received on a paper, were examined by Mr. Reaumur, and were found to be ſcoriæ, of an irregular figure, having never been melted, and therefore never reduced to the globular ſhape of the others. In regard to the great change wrought in iron by this operation, or its being according to the words of Kemp deſtroyed, no longer retaining its great character of being attracted by the loadſtone, Mr. Reaumur willing to try the experiment before he reaſoned upon it, found this aſſertion not to be a fact, or at leaſt not a general one.

All the ſeveral kinds of ſparks which he mentions, thoſe produced by the common colliſion of *flint* and ſteel, thoſe by dropping ſteel filings thro' the flame of a lamp, and even thoſe from the filing of the antimoniated iron, all as readily anſwering to the loadſtone as common filings of iron; ſo that if this caſe ſometimes happen, and iron be liable thus to be deſtroyed, it is however no general fact, but a very rare and extraordinary one. Memoris Acad. Par. 1736.

FLINTS, *in the glaſs trade.* The way of preparing *flints* for the niceſt operations in the glaſs trade is this. Chuſe the hardeſt *flints*, ſuch as are black and will reſiſt the file, and will grow white when calcined in the fire. Cleanſe theſe of the white cruſt that adheres to them, then calcine them in a ſtrong fire, and throw them while red hot into cold water; waſh off the aſhes that may adhere to them, and powder them in an iron mortar, and ſift them through a very fine ſieve; pour upon this powder ſome weak aqua fortis, or the phlegm of aqua fortis, to diſſolve and take up any particles of iron it may have got from the mortar; ſtir this mixture ſeveral times, then let it reſt, and in the morning pour off the liquor, and waſh the powder ſeveral times with hot water, and afterwards dry it for uſe. You will thus have a powder for making the pureſt glaſs as perfectly fine and faultleſs, as if you had uſed rock cryſtal itſelf. *Cramer*'s Art of aſſaying metals, p. 438.

The waſhing off the ferrugineous particles with aqua fortis is not neceſſary, when the glaſs intended to be made is to be tinged with iron afterwards; but when meant to be a pure white, this is the method to be ſure of ſucceeding.

Breaking of FLINT. — The art of cutting or rather breaking *flint* ſtones into uniform figures, was by ſome ſuppoſed to be one of the arts now loſt. That it was known formerly appears from the antient Bridewell at Norwich, from the gate of the Auſtin-friars at Canterbury, that of St. John's abbey at Colcheſter, and the gate near Whitehall Weſtminſter. But that the art is not loſt, and that the French know it, appears from the platform on the top of the royal obſervatory at Paris, which inſtead of being leaded, is paved with *flint*, in the manner here mentioned. But we know not that this art is any where deſcribed. Phil. Tranſ. N°. 477. p. 521, and Note ibid.

Oil of FLINTS, a name given by ſome to a preparation made of four ounces of *flints* calcined and powdered and mixed with twelve ounces of ſalt of tartar; theſe being melted together by a ſtrong fire, run into a glaſs, which being afterwards powdered and ſet in a cellar, runs into an oil per deliquium; with this and the calx of any metal is prepared, one of the metallic vegetations. See VEGETATIONS *metallic.*

FLOATING (*Cycl.*)—FLOATING-*bridge*, a bridge conſiſting of ſeveral boats covered with planks; which ought to be ſo ſolidly framed, as to bear both horſes and cannon. See BRIDGE, *Cycl.* and *Suppl.*

FLOATING *iſlands.* See ISLANDS.

FLOOD (*Cycl.*) — FLOOD-*mark*, the mark which the ſea makes on the ſhoar, at flowing water, and the higheſt tide: it is alſo call'd *high-water mark.*

Sand FLOOD. See SAND.

FLOOKING, a term uſed in mining to expreſs a peculiarity in the load of a mine. The load or quantity of ore is frequently intercepted in its courſe, by the croſſing of a vein of earth or ſtone, or ſome different metallic ſubſtance; in which caſe the load is moved to one ſide, and this tranſient part of the land is called a *flooking*. See MINE.

FLOOR (*Cycl.*) — FLOOR-*timber*, in a ſhip. See TIMBER.

FLORAL *leaf*, among botaniſts. See LEAF.

FLORES *argenti*, in natural Hiſtory, a name given by ſome to the earth, called by the generality of authors, lac lunæ. It has both theſe names from its being ſuppoſed to partake of the nature of ſilver. See the article LAC *lunæ*, *Cycl.* and *Suppl.*

FLORES *Martiales*, a name given to a preparation of the nature of what was formerly called ens veneris. Theſe flowers are thus prepared; take of waſhed colcothar or green vitriol, or of iron filings one pound; of ſal armoniac, two pounds; mix them, and ſublime them in a retort, and mixing again the bottom with the flowers, renew the ſublimation till the flowers acquire a beautiful yellow colour. To the reſidue may be added half a pound of freſh ſal armoniac, and the ſublimation repeated, and the ſame proceſs may be continued as long as the flowers ariſe duly coloured. *Pemberton*'s Lond. Diſp. p. 215.

FLORIST, *Floriſta*, in botany, an author who writes what is called the flora of any particular place, that is, a catalogue of the plants and trees which are found ſpontaneouſly growing there. The flora laponica of Linnæus, and flora virginiea of Gronovious, are works of this kind; and theſe authors, as the authors of thoſe works, are properly called *floriſtæ*. *Linn.* Fundam. Bot. p. 1.

FLORUS, in zoology, a name by which Aldrovand and ſome other authors have called the bird commonly known with us by the name of the whinchat, a kind of the ænanthe or fallow-finch. *Aldrovand*, de Avibus. See WHINCHAT.

FLOS, the *flower* of a plant. It is to be obſerved that the antients ſometimes called the ſtamina or threads in the center of flowers, the *flos*, and not the petals which we uſually call ſo. Without underſtanding this, it is not poſſible to underſtand many paſſages in their writings. We find in Aurelian, the roſe called a yellow flower ſtanding in a purple husk; it is plain by this, that he meant the threads in the middle of that flower, which are of a fine yellow, and are very numerous, by the word flower; and calls the fine purple petals which we eſteem the flower, only the husk of the flower; in this ſenſe Virgil is explained to mean the common baum by the name amello; he ſays it has a yellow flower and purple leaves at the bottom, and they ſuppoſe that he meant the ſtamina or threads which in the baum are yellow, by the name flower; and the calyx or cup of the flower which is a purple, by his expreſſion of leaves at the bottom. The antients in general do not ſeem determined as to what they would have underſtood by the word *flos*. In the narciſſus, Pliny calls the cup that yellow part which occupies the center, and the whitiſh leaves that ſurround it the flower. Pliny has been cenſured for calling this part of the flower the cup, but he does not by this mean to confound it with the green leaves in the generality of plants which ſurround the flower, but he calls it thus in reſemblance to the cups out of which they drank, in their feſtivals.

FLOS *æris.* See the article ÆS.

FLOS *ambarvalis*, in botany, a name given by ſome to the polygala or milkwort. *Herm.* Cat. p. 450.

FLOS *Asiæ*, in natural hiſtory, a name given by Swenkfield and ſome other writers to that ſalt which is found on the ſurface of the earth in ſome parts of Aſia in form of an efflorescence, and is called the *Smyrna ſoap earth*.

This ſalt is evidently the ſame with the nitre of the antients. It will ferment with any acid, in the manner of our potaſh or other fixed ſalts made by fire; and with oil or any fatty ſubſtance, boils into a ſoap. Euclius gives us a great many different places for its production, from which he diſtinguiſhes it into ſeveral kinds: all theſe lie in the eaſtern parts of the world, but to theſe Wormius adds, that it is found in New Spain. It is always eaſy to be known, however, in whatſoever place it is found, being a native alcali ſalt, perforated like a ſpunge, and of a lixivial taſte. Pliny, Mathiolus, and Agricola agree in the deſcribing it in this manner, and all that is found native of it confirms their being in the right. Its principles ſeem to be two, a marine ſalt, and an urinous ſalt. That it contains a marine ſalt ſeems manifeſt from this, that it has the ſame taſte in ſolution, or nearly ſo, with marine ſalt; that the particles of it when coagulating in the evaporated water in which they were diſſolved, firſt riſe to the top or ſurface, as thoſe of common ſalt do, and that it is always of a ſpungy texture, or full of holes, which is always the caſe with thoſe things in which the common ſalt makes a part. Its natural concretions being hollow pyramids. Its containing an urinous ſalt is plain from its producing with ſalt of tartar, the ſame ſort of ſpirit that ſal armoniac does, when mixed with that fixed ſalt.

FLOS *cæli*, the *flower* of the heavens, a name given by the alchemiſts to the noſtoch, which often appearing after rain, was ſuppoſed to fall from heaven. See FLOS *terræ* and NOSTOCH.

FLOS *terræ*, *flower* of the earth, a name given by ſome of the chemical authors to the noſtoch, a remarkable plant which reſembles the common green oiſter weed, but that it is thicker and more like a jelly. It ſuddenly appears on gravel walks in gardens after rain; and the alchemiſts who knew not what to think of its origin, ſuppoſed it to contain an univerſal ſpirit, capable of turning metals into gold. It is a very ſingular plant, being no way fixed to the ground, nor having any roots, but imbibing its nutritious juices from the humidity of the air, as the ſea plants do theirs from the ſea water. See NOSTOCH.

FLOS *tinctorius*, in botany, a name given by Fuchſius and many others, to the geniſtella tinctoria, or dyer's weed, called alſo lutea herba, and lutum by the Latins, and alcomenium, cymene and thapſos by the Greeks.

FLOS *argenti*. See FLORES *argenti*.

FLOS *martialis*. See FLORES *martiales*.

FLOSCULOUS, in botany, a term uſed by Mr. Tourneſort, and others, to expreſs ſuch flowers of plants as are compoſed each of a great number of other ſmaller flowers placed cloſe to one another, and encloſed in the ſame common cup; each of theſe ſmaller flowers, conſiſts of one petal, which is ſlender and hollow and wider than the bottom, and uſually divided into many ſegments, which ſometimes are diſpoſed in the form of a ſtar. Each of theſe flowers ſtand upon an embryo, or young fruit, from which there grows a capillament which reaches beyond the flowers. Theſe embryos are lodged in the bottom of the cup, which is called by authors the thalamus of the flower, and finally become ſeeds winged with down, or ſometimes without that, and ſometimes are armed with prickles. Of this ſort are the flowers of thiſtles, kapweed, &c. See Tab. 1. of Botany, Claſs 1. *Tourn.* Inſt. p. 438.

FLOUNDER, in icthyology, the Engliſh name of the fiſh called by the generality of authors paſſer fluviatilis, and fleſus. According to the new ſyſtem of Artedi, this is a ſpecies of the pleuronectes. See the articles PASSER and PLEURONECTES.

FLOUR. The grain itſelf is not only ſubject to be eaten by inſects in that ſtate, but when ground into *flour*, it gives birth to another race of deſtroyers, who eat it unmercifully, and increaſe ſo faſt in it, that it is not long before they wholly deſtroy the ſubſtance. The fineſt *flour* is moſt liable to breed theſe, eſpecially when ſtale or ill prepared; in this caſe if it be examined in a good light it will be perceived to be in a continual motion, and on a nicer inſpection, there will be found in it a great number of little animals of the colour of the *flour*, and very nimble. If a little of this *flour* be laid on the plate of the double microſcope, the inſects are very diſtinctly ſeen in great numbers, very brisk and lively, continually crawling over one another's backs, and playing a thouſand antic tricks together; whether for diverſion or ſearch of food, is not to be eaſily determined. Theſe animals are of an oblong and ſlender form, their heads are furniſhed with a kind of trunk or oblong hollow tube, by means of which they take in their food, and their body is compoſed of ſeveral rings. They do vaſt miſchief among the magazines of *flour* laid up for armies and other public uſes; when they have once taken poſſeſſion of a parcel of this valuable commodity, it is impoſſible to drive them out; and they increaſe ſo faſt, that the only method of preventing the total loſs of the parcel, is to make it up into bread as ſoon as can be. The way to prevent their breeding in the *flour* is to preſerve it from damp; nothing gets more injury by being put up damp than *flour*, and yet nothing is ſo often put up ſo. It ſhould be always carefully and thoroughly dried before it is put up, and the barrels alſo dried into which it is to be put; then if they are kept in a room tolerably warm and dry, they will keep it well. Too dry a place never does *flour* any hurt, tho' one too moiſt always ſpoils it. See MEAL.

FLOWER (*Cycl.*) — Tho' no part of plants are more known than their *flowers*, yet the diſtinction given by different authors of the word are extremely various, and are very neceſſary to be explained, in order to the underſtanding their works. Jungius defines it to be the moſt tender part of a plant, remarkable for its colour or form, or for both, and cohering with the fruit. Yet this author himſelf, acknowledges his definition to be too confined, as he very well knew there were ſeveral plants, whoſe *flowers* were produced remote from the fruit.

Mr. Ray ſays the *flowers* coheres for the moſt part with the rudiments of the fruit, but ſuch phraſeology is by no means to be admitted into definitions. Tourneſort defines it to be a part of a plant very often remarkable for its peculiar colours, for the moſt part adhering to the young fruit, to which it ſeems to afford the firſt nouriſhment, in order to explicate its moſt tender parts; but this is a more indeterminate definition, than the former, from its looſe mode of expreſſion.

Pontedera defines it to be a part of a plant unlike the reſt in form and nature. If the *flower* has a tube, it adheres to, or is fixed very near to the embryo, to the uſe of which it is ſubſervient; but if the *flower* has no tube, then its baſe does not adhere to the embryo. This is ſcarce intelligible, except to the expert botaniſt, and may be made to take in ſome parts of plants by no means to be underſtood by the name *flowers*.

Juſſieu defines it to be compoſed of chives and a piſtillum, and to be of uſe in the generation of the plant; but this is too imperfect, as there are very many plants in which the piſtillum is found at a great diſtance from the chives, and many *flowers* which have no piſtillum, and many others which have no chives.

Valliant however, has been happier in his definition; he ſays, that *flowers* are the organs which conſtitute the different ſexes of plants, which are ſometimes found naked and without any covering; and that the petals which moſt of them have are no way eſſential to their uſe, but ſerve and are intended merely as covers for them; but yet as theſe coats or coverings are the moſt conſpicuous, and moſt beautiful part of the *flower*, theſe are to be called *flowers*, be they of what ever form or ſtructure, or colour; and whether they contain only the organs of both ſexes in each individual, or only of one, or even but of ſome part of one, provided that they are not of the ſame figure and colour with the leaves of the plant. The ſhorteſt and moſt expreſs definition however, ſeems to be Martyn's; which is, that *flowers* are the organs of generation of both ſexes, adhering to a common placenta, together with their common covering; or of either ſex ſeparately with its proper coverings, if it have any.

The parts of *flowers* are, 1. The ovary which is the rudiment of the fruit, and is therefore properly the female organ of generation. 2. The ſtyle which is a body accompanying the ovary, either ariſing from the middle of it, or ſtanding as an axis in the middle, with the embryos of the ſeeds round it. 3. The ſummits, called alſo apices and antheræ, which are thoſe bodies that contain the prolific powder, analogous to the male ſperm in animals, and generally hung upon ſlender threads which are called the chives. 4. The petals, commonly called the *flower* leaves, which are thoſe tender fine colour'd leaves which are generally the moſt conſpicuous parts of a *flower*. 5. The impalement or calyx, which is formed of thoſe tender leaves which cover the outer parts of the *flower*. Theſe *flowers* according to the number of their leaves or petals are called monopetalous, or one leaved, dipetalous or two leaved, and ſo on.

The ſtructure of the different *flowers* is very various; but Dr. Grew has obſerved, that the far greater number of them have the empalement, the foliation, and the attire or chives, &c. Mr. Ray accounts that every perfect *flower* has the petals, ſtamina or chives, apices or ſummits, and the ſtyle or piſtil, and ſuch as want any of theſe parts he calls imperfect *flowers*. The greater number of plants have a *flower* cup which is of a firmer ſtructure than their leaves, and ſerves for their ſupport.

Flowers are diſtinguiſhed into three kinds, the male, the female, and the hermaphrodite. The male *flowers* are thoſe which have the ſtamina and apices, but bear no fruit; the female are ſuch as contain the piſtillum, and not the apices and ſtamina; this piſtil is ſucceeded by the fruit, and theſe are therefore called the fruitful or kniting *flowers*; and the hermophrodite are ſuch as have in them the organs of both ſexes in each individual, and of this ſort are the generality of *flowers*, particularly the lilly, tulip, daffodil, roſemary, ſage, &c. *Miller*'s Gardiner's Dict.

Colours of FLOWERS. It is generally agreed among the chemiſts, that all colours ariſe from ſulphurs, and that they differ according to the different admixture of ſalts, with theſe ſulphurs. Perhaps on theſe principles, it may be poſſible to form ſome rational conjectures in regard to the origin of co-

lours in the *flowers* of plants. We know very well that the *flowers* of all plants abound in an eſſential oil or ſulphur, to which according to this doctrine their colours may be rationally ſuppoſed to be owing; and tho' this oil ſhould be prov'd to be the very ſame ſubſtance in all, yet their variety of colours may be accounted for from it, ſince we find that one and the ſame oil, the eſſential oil of thyme, according to Mr. Geoffroy's experiments, may be turned to all the colours that we find in the different *flowers* of plants, from white to deep black, with all the ſhades of red, yellow, purple, blue and green, by mixing it with different ſubſtances; and by the ſame laws, the eſſential oils of plants while contained in their *flowers* may by the different mixtures they meet with give them all their beautiful variety of colours. See the article *Eſſential* OILS.

We know that the infuſions of *flowers*, and of other parts of plants become red on being mixed with acids, and green on being mixt with alkalis; and there is no reaſon to doubt, but that it is the ſulphureous part of the vegetable in theſe infuſions which thus changes colour on theſe mixtures. This however, ought to be proved poſſible, before it is allowed in argument.

This proof is given in the change of colours before mentioned, which are produced in oils merely by the admixture of different ſalts; and as all the colours in theſe, are the regular reſult of certain combinations, there is great reaſon to believe, that in thoſe plants whoſe *flowers* give the ſame colours, there may be the ſame combinations. The principal colours of plants, and their ſeveral parts are green, yellow, red, purple, blue, white, black, and tranſparent whitiſhneſs; all the others are produced by different combinations of theſe. The green which is the common colour of the leaves of plants is probably the effect of an oil rarified in that part of the plant, and there mixed with the fixed and volatile ſalts of the ſap, which remain intangled by the earthy particles after moſt of the aqueous humidity is evaporated, and by that means become in a ſtate to act upon the oil. A clear proof of this is, that if the leaves are covered up in ſuch a manner, that the aqueous humidity of the ſap cannot evaporate itſelf, the oil and ſalts cannot act upon one another as they naturally would, but becoming diffuſed among ſo great a quantity of water, loſe the colour they would otherwiſe have obtained together, and become whitiſh or tranſparent. This is ſeen in the obvious inſtance of ſuccory and celeri, the leaves of both which plants, tho' naturally green, become white by being covered up with earth by the gardiner. Mem. Acad. Par. 1707.

The leaves both of plants and trees uſually turn red in autumn, or on the attack of the firſt froſts; the reaſon of which is, that the ſeveral canals of the ſap being conſtringed by the cold, the juices are detained in the veſſels of the leaves, or at leaſt its circulation is greatly interrupted, and being detained there, it naturally grows ſour, the acidity of this alter'd juice deſtroying the green colour produced by the alkaline ſalts. The ſap brings on a red colour, in the very ſame manner that an eſſential oil made green by a mixture of oil of tartar, is again changed to red, by adding to it a proper quantity of diſtilled vinegar. Where we find in our common experiments the acids of the mineral kingdom turning the infuſions of *flowers* red; it ſeems by the analogy of theſe experiments, to be only owing to their deſtroying the blue, brown, or other colour, which the alkaline ſalts of the plant had made with its eſſential oil.

All the ſhades and degrees of yellow and ſaffron colour in the *flowers* of plants, ſeem wholly owing to a mixture of an acid in their juices, with their eſſential oil; as the oil of thyme, which itſelf has very little colour, is made to paſs thro' all theſe ſhades of colours, only by digeſting it with diſtilled vinegar. From the digeſting the volatile alkalis, ſuch as ſpirit of ſal armoniac and urine, with the ſame oil, it appears that all the ſhades of red, from the paleſt fleſh colour, to purple, and even to the violet blue, are only owing to the different admixtures of an alkaline volatile ſalt of the urinous kind, mixed in different manners with their eſſential oil.

Black, which is a very uncommon colour in *flowers*, and which in them ought to be regarded only as a very deep violet, ſeems the effect of an addition of an acid juice to their oil, already turned purple or violet colour by a volatile alkali.

All the ſhades of blue and purple ſeem alſo, by the analogy of the ſame experiments, to be only the effects of mixtures of alkalis of the fixed and volatile kind, with the oils of plants; ſince theſe colours are all produced in thoſe experiments, by mixing the ſpirit of ſal armoniac, and the oil of tartar with oil of thyme.

The bright green of ſome *flowers* ſeems alſo to be produced by the ſame ſalts, only acting on oils more rarified. For the oil of thyme, of a purple violet colour, diluted with rectified ſpirit of wine, being united with oil of tartar, becomes green. Mem. Acad. Par. 1707.

Boccone is of opinion, that in many plants the colour of the *flower* is wholly owing to the colour of the juices of the root. This he inſtances in the greater celandine, whoſe roots and *flowers* are of the ſame yellow colour. The barberry in like manner he obſerves, has both its roots and its *flowers* yellow. The dentillaria has its roots and *flowers* both of a pale red, and the acacia indica Aldini, and many other plants, he ſays are inſtances of this.

The reaſon that he aſſigns for this is, that the more fixed parts wherein this colour conſiſts, preſerve the ſame tincture, without being at all alter'd by ſo long a circulation as that from the root to the *flower*; and he adds another very remarkable obſervation, which is, that in all theſe plants and trees, whoſe roots and *flowers* are of the ſame colour, the juices are more fixed; and therefore, that theſe are more fit for dying than any other coloured woods or plants. Vid. *Boccone* Muſ. de Piant.

Preſervation of FLOWERS. The method of preſerving *flowers* in their beauty thro' the whole year, has been diligently ſought after by many people; ſome have attempted it, by gathering them when dry, and not too much opened, and burying them in dry ſand; but this tho' it preſerves their figure well, yet takes off from the livelineſs of their colour. Muntingius gives a method which he ſays is preferable to all others; this is as follows: gather roſes or other *flowers* when they are not yet thoroughly open, in the middle of a dry day; put them into a good earthen veſſel glazed within; fill the veſſel up to the top with them; and when full, ſprinkle them over with ſome good French wine with a little ſalt in it; then ſet them by in a cellar, tying the mouth of the pot carefully down. After this, they may be taken out at pleaſure, and on ſetting them in the ſun, or within the reach of the fire, they will open as if on the tree, and not only the colour, but the ſmell will be preſerved.

The *flowers* of plants are by much the moſt difficult part of them to preſerve in any tolerable degree of perfection; of this we have inſtances in all the collections of dried plants or *horti ſicci*. In theſe the leaves and ſtalks and the roots and ſeeds of the plants appear very well preſerved, the ſtrong texture of theſe parts making them always retain their natural form, and the colours in many ſpecies naturally remaining; but where thoſe fade, the plant is little the worſe for uſe, as to the knowing the ſpecies by it. But it is very much otherwiſe in regard to *flowers*: theſe are naturally by much the moſt beautiful part of the plant to which they belong; but they are ſo injured in the common way of drying, that they not only loſe, but change their colours one into another, by which means they give a handle to many errors; and they uſually alſo wither up, ſo as to looſe their very form and natural ſhape. The primroſe and cowſlip kind are very eminent inſtances of the change of colours in the *flowers* of dried ſpecimens; for thoſe of this claſs of plants eaſily dry in their natural ſhape, but they not only loſe their yellow, which might be expected naturally enough, but they acquire a fine deep green, much ſuperior to that of the leaves in their moſt perfect ſtate. The *flowers* of all the violet kind, loſe their noble blue, and become of a dead white, ſo that in dried ſpecimens, there is no difference between the blue flowered violet and the white flowered kinds.

Sir Robert Southwell has communicated to the world a method of doing the buſineſs of drying plants, by which this inconvenience is propoſed to be in a great meaſure remedied, and all *flowers* to be preſerved in their natural ſhape, and many in their proper colours. To this purpoſe two plates of iron are to be prepared of the ſize of a large half ſheet of paper or larger for particular occaſions; theſe plates muſt be made ſo thick as not to have any power of bending, and there muſt be a hole made near every corner for the receiving a ſcrew to faſten them cloſe together.

When theſe plates are prepared, lay in readineſs ſeveral ſheets of paper, and then gather the plants with their *flowers*, when they are quite perfect; let this always be done in the middle of a dry day, and then lay the plant and its *flower* on one of the ſheets of paper doubled in half, ſpreading out all the leaves and petals as nicely as can be. If the ſtalk be thick, it muſt be pared or cut in half, ſo that it may lie flat, and if it be woody, it may be peel'd and only the bark left; when the plant is thus expanded, lay round about it, ſome looſe leaves and petals of the *flower*, which may ſerve to compleat any part that may prove deficient; when all is thus prepared lay ſeveral ſheets of paper over the plant, and as many under it; then put the whole into the iron plates, laying the papers ſmoothly on one, and laying the other evenly over them; then ſcrew them cloſe and put them into an oven after the bread is drawn, and let them lie there two hours; after this make a mixture of equal parts of aqua fortis and common brandy; ſhake theſe well together, and when the *flowers* are taken out of the preſſure of the plates, rub them lightly over with a camel's hair pencil dipped in this liquor; then lay them upon freſh brown paper, and covering them with ſome other ſheets, preſs them between this and other papers with a handkerchief, till the wet of theſe liquors is dried wholly away. When the plant is thus far prepared, take the quantity of a nutmeg of gum dragon, put this into a pint of fair water cold, and let it ſtand four and twenty-hours; it will in this time be wholly diſſolved;

diſſolved; then dip a fine hair pencil in this liquor, and with it daub over the backſides of the leaves, and lay them carefully down on a half ſheet of white paper fairly expanded, and preſs them with ſome more papers over theſe. When the gum water is fixed, let the preſſure and papers be removed, and the whole work is finiſhed. The leaves retain their verdure in this caſe, and the *flowers* uſually keep their natural colours. Some care muſt be taken, that the heat of the oven be not too great. When the *flowers* are thick and bulky, ſome art may be uſed to pare off their backs and diſpoſe the petals in a due order; and after this, if any of them are wanting, their places may be ſupplied with ſome of the ſupra numerary ones dried on purpoſe; and if any of them are only faded, it will be prudent to take them away, and lay down others in their ſtead: the leaves may be alſo diſpoſed and mended in the ſame manner. Another way of keeping both *flowers* and fruit the whole year without ſpoiling, is delivered by the ſame author in the following manner: take ſalt petre, one pound; bole armeniac, two pounds; clean common ſand three pounds; mix all well together, then gather fruit of any kind, that is not fully ripe, with the ſtalk to each; put theſe in one by one into a wide mouth'd glaſs, laying them in good order; tie over the top with an oil cloth, and carry the glaſs into a dry cellar, and ſet the whole upon a bed of this prepared matter of four inches thick in a box; fill up the remainder of the box, with the ſame preparation, and let it be four inches thick over the top of the glaſs and round all its ſides. *Flowers* are to be preſerved in the ſame ſort of glaſſes in the ſame manner, and they may be taken up after a whole year as plump and as fair as when buried.

FLOWERS, in antiquity. We find *flowers* in great requeſt at the entertainments of the antients, being provided by the maſter of the feaſt, and brought in before the ſecond courſe; or as ſome are of opinion, at the beginning of the entertainment. They not only adorned their heads, necks, and breaſts with *flowers*, but often beſtrewed the beds whereon they lay, and all parts of the room with them. But the head was chiefly regarded. *Potter*, Archæol. Græc. T. 2. p. 383. See GARLAND, *Cycl.* *Flowers* were likewiſe uſed in the bedecking of tombs. *Potter* Archæol. Græc. l. 4. c. 7. T. 2. p. 232. ſeqq. See BURIAL and BURYING.

Labiated FLOWERS. See LABIATED *Flowers.*

FLOWER *de luce*, in botany. See IRIS.

Trumpet FLOWER. See TRUMPET.

Wind FLOWER. See WIND *Flower.*

FLOWER *of oſteocolla*, a name given by the people employed in finding the oſteocolla to a ſort of white marley matter, which they uſually find on the ſurface of the ground in the places where the oſteocolla lies underneath. It ſeems very nearly allied to the nature of the oſteocolla itſelf, and uſually has under it ſome of that blackiſh matter reſembling rotten wood, which the oſteocolla itſelf is formed upon, and which fills up thoſe hollows we find in moſt of the pieces, while the whole is in the ground. This rotten vegetable matter has much the reſemblance of the roots or branches of trees, and is called by the common people the root of the oſteocolla or hammoſtei radix. Phil. Tranſ. N°. 39.

FLOWER-*root worm*, in natural hiſtory, a peculiar ſpecies of fly-worm, which makes its habitation only in the bulbous roots of *flowers*. The roots of the narciſſus at the time they are taken up out of the earth toward the end of autumn, very frequently are found to contain each a ſingle worm, which eats and deſtroys them. Sometimes one root is found to contain two of them; but this is but rarely the caſe. The roots which have them may eaſily be known, by having each a round hole in ſome part, at which the deſtroyer has entered while it was ſmall, and which probably ſerves it now in its larger ſtate for reſpiration of the freer air. The interior part of theſe bulbs is always found rotted and deſtroyed, and the worm is found in theſe, lying in a brown ſort of dirt made by its own liquid excrements, mixed among the fragments of the coats of the root which it has deſtroyed. *Reaumur*'s Hiſt. Inſect. vol. 4. p. 499.

When theſe worms are firſt taken out of the roots, it is not eaſy to know which end is the head, which the tail; for both appear almoſt equally pointed. The intermediate ſpace is cylindric, and made up of vaſt number of circular or annular fibres. It is not long, however, before the worm begins to change place, and one may then ſee him extend his head, and diſcover, that it is furniſhed, as in the reſt of theſe kind of inſects, with two hooks. The way to ſee theſe hooks diſtinctly is to preſs the worm between the fingers, it then throws them out as far as poſſible, and one ſees that they are thick, and whitiſh at their baſes, and pointed and brown at their extremities, and are hook'd inward toward the belly. At a little diſtance above each of theſe hooks, the creature has a pair of fleſhy horns which are forked at the ends; and a little below the inſertion of the horns, it has two brown ſpots which are probably its anterior ſtigmata. In order to ſee the poſterior ſtigmata of this worm, it is neceſſary to preſs a little the hinder part of the body, and it will then throw out a ſort of ſmall tube of a blackiſh brown, which is uſually hid among the commiſſures of the poſterior rings. On the upper part of this little tube are two apertures, which are the two poſterior ſtigmata. Theſe are of a round circumference, and in the center of each there is a ſmall black eminence, which ſeems the half of a little round ball. This is the place where the poſterior ſtigmata are ſituated, and this larger ſingle protuberance, anſwers all the purpoſes of the two tubes placed cloſe together, which are ſo common in the other fly-worms of this ſort.

A little below this there are two fleſhy appendages, between which, is the anus of the worm. When viewed with the microſcope, the whole body of the creature appears ſomewhat rough and wrinkled, and has a few ſhort hairs thinly ſcattered about it. *Reaumur*'s Hiſt. Inſ. v. 4. p. 502.

Theſe worms undergo all their changes in a ſhell made of their own skin, which is of the ſame egg faſhioned ſhape with that of the blue fleſh fly, but conſiderably larger, and of a greyiſh colour. But this is not all its difference from thoſe ſhells; for on its anterior and ſuperior part, it has two horns of the ſame kind with the four of the ſhells of the rat tailed worms, and ſeeming to ſerve to the ſame purpoſes, and ſerve to convey the air neceſſary for the life of the creature, into its corcelet; the old ſtigmata which ſerved the creature in its worm ſtate being now obliterated, and ſomething neceſſarily wanted in their place. After having undergone all the neceſſary changes, the ſhells are burſt open, in the month of April, and let out the fly they contained.

This has ſo much the appearance of an humble bee, that at firſt ſight, it is ſcarce to be diſtinguiſhed from it. It is covered with black, yellow, and reddiſh hairs, as the ſmaller kinds of the common humble bees are; but its antennæ, which are of the battledoor faſhion, prove plain enough, that it is really no bee, even before one can determine with certainty, that it has only two wings.

FLOWERING *of bulbous plants.* Theſe plants will grow and *flower* in water alone without any earth, and make a very elegant appearance. We daily ſee this practiſed in ſingle roots, but there is a method of doing it with ſeveral together, as follows: take a common ſmall garden pot, ſtop the hole at the bottom with a cork, and lute in the cork with putty that no water can get through; then fit a board to the top of the pot, and bore ſix or ſeven holes in it, at equal diſtances, to place the bulbs in, and as many ſmaller holes near them to receive ſticks, which will ſerve to tie up the *flowers*. Then fill up the pot with water to the board, and place tulips, jonquiles, narciſſus's and the like plants in the root upon the holes, ſo that the bottom of the roots may touch the water; thus will they all *flower* early in the ſeaſon, and be much more beautiful than any pot of gathered *flowers*, and will laſt many weeks in their full perfection. After the ſeaſon of *flowering* is over, the roots will gradually ſhrink thro' the holes of the board, and get looſe into the water, but inſtead of becoming ſpoiled there, they will ſoon increaſe in ſize, ſo as not to be capable of coming back, and will produce ſeveral off-ſets. It is natural to try from this, the conſequence of keeping the roots under water during the whole time of their blowing, and in this manner they have been found to ſucceed very well, and *flower* even ſtronger and more beautifully, then when in the ground. They may thus alſo with proper care in the degree of heat in the room, be kept *flowering* from before Chriſtmas, till March or April. It is not eaſy in this laſt manner to manage the keeping the boards under water, for which reaſon it is better to procure ſome ſheet lead of about four pounds to the foot, and cut this to the ſize of the mouth of the pot; in this there ſhould be bored holes for the bulbs, and other holes for the ſticks; and in order to keep the ſticks quite firm, it is proper to have another plate of lead ſhaped to the bottom of the pot, with holes in it, anſwering thoſe in the upper plate made for the ſticks. The ſticks will by this means be kept always perfectly ſteady, and the roots being kept under water by the upper plate of lead, will *flower* in the moſt vigorous and beautiful manner imaginable.

Some have thought of adding to the virtues of the water by putting in nitre in ſmall quantities, and others have added earth and ſand at the bottom, but it has been always found to ſucceed better without any addition.

It may be more agreeable to ſome to uſe glaſs jarrs, in this laſt method with the leads, inſtead of earthen pots. The bulbs ſucceed full as well in theſe; and there is this advantage, that the progreſs of the roots is ſeen all the while, and they are managed better as to the ſupply of water.

By repeated experiments in this way on dried bulbs, and on thoſe taken freſh out of the ground, the former have been found to ſucceed the beſt; for thoſe taken freſh out of the ground being full of moiſture, will not ſo ſoon upon changing their element be nouriſhed fully by a new one; and the fibres which they had ſtruck in the ground always rot when put into the water, and new ones muſt be formed in their places, ſo that it requires more time for them to come to *flowering*. The bulbs themſelves will not rot in this manner, but they will never be ſo ſtrong as thoſe which were put into the water dry, which gradually fill themſelves with moiſture from it, and regularly plump up. The beſt method of managing

the whole proceſs is this: place the bulbs at firſt only on the ſurface of the water; for thus they will ſtrike out their fibres moſt ſtrongly. When they have ſtood thus ſix weeks, pour in the water ſo high as to cover them intirely, and keep them at this ſtandard till they have done *flowering*.

Sometimes the roots will become mouldy in ſeveral parts while they ſtand above the water, and the cleaning them of it is to no purpoſe, for it will eat and ſpread the farther, and frequently eat thro' two or three of their coats. In this caſe, they muſt be immediately covered with water, and the mould will be ſtopp'd and they will become ſound, and *flower* as well as thoſe which never had any ſuch diſtemperature. If the roots are ſuffered to remain in water all the year, they will not decay, but will *flower* again at their proper ſeaſon, and that as vigorouſly as thoſe which are taken out and dried. The old fibres of theſe roots never rot till they are ready to puſh out new ones. It is found by experience, that the hyacinth, and many other plants, grow to a greater perfection thus in water, than when in the ground. There is a peculiar ſpecies of hyacinth, called Keyſer's jewel; this never, or however very rarely, produces ſeed veſſels in the common way of *flowering* in the ground, but it often will produce ſome pods when blown in water.

Mr. Miller has intimated in the Philoſophical Tranſactions, that bulbs ſet in glaſſes, grow weaker, and ſhould be renewed with freſh ones every other year, but it is found that when they are managed in this manner, and kept under water, at the time of taking them up, they are as large, and ſome of them larger and ſtronger than when planted, and if theſe be dried at a proper ſeaſon, they will *flower* year after year as well as freſh ones.

Ranunculus and anemone roots have been found to ſhoot up their ſtalks very well in this way, but the flowers are uſually blaſted, which ſeems to ariſe from want of free air. Pinks will *flower* very well in this manner, and auriculas thrive very well, and may with care be brought to *flower*, but not ſtrongly. Roſes, jeſſamines and honey-ſuckles, may alſo be made to *flower*, this way, and will thrive and ſend out ſuckers; the beſt pieces to plant are ſuckers cut off about three inches under ground, without any fibres.

The ſucculent plants may alſo be raiſed this way, for inſtance, an opuntia or Indian fig. If a fragment of a leaf of this plant be cut and laid by to dry for a month, till it is an abſolute skin, as ſoon as it is put in this manner into water, it begins to plump up, and ſoon ſends out fibrous roots, and produces new leaves, at leaſt as quickly as it would do in the ground. Philoſ. Tranſ. N°. 432. p. 274.

This is the more ſingular in theſe ſort of plants, becauſe in their natural ſtate in the ground, they cannot bear much water. This method of growing of plants is not particular to the bulbous rooted ones, but others may even be raiſed from ſeed by it; a bean or pea ſet in this manner, will grow up to its proper ſtandard, and will *flower* and produce pods, which will ripen their ſeed.

The ſmaller ſeeds may alſo be raiſed in this manner, by the help of wool to ſupport them. See the article SEEDS.

No plant tranſplanted out of earth into water, will thrive kindly; but any plant, whether raiſed from the root or ſeed in water, may be tranſplanted to the earth, and will ſucceed very well. It may be poſſible therefore, from this method of raiſing plants in water, to come at a better way than is uſualy practis'd of raiſing ſome roots in the earth which are ſubject to rot there; ſuch as anemonies, ranunculus's and hyancinths. A bulb dropped by chance upon the ground, will ſtrike out both ſtronger and more numerous fibres, than thoſe which are planted in the uſual way in the ground. On this principle it may be proper to take out the earth of the bed where the bulbs are to ſtand at the time of planting them, to ſuch a depth as they are to be placed under it, when ſet for *flowering*. The bulbs are then to be ſet in their places on the ſurface of this low ground, and to ſtand there till they have ſhot out their fibres and their head, then the earth is to be added over them by degrees, till they are covered as high above the head as they are in the uſual way of planting them; thus they would be preſerved from the danger of rotting, and their fibres would be much ſtronger, and conſequently they would draw more nouriſhment, and *flower* better than in the common way. The common way of planting theſe roots, renders them liable to be deſtroyed by either extreme of a wet or a dry ſeaſon; in the firſt caſe they immediately rot by the abundant moiſture they receive; and in the other, they become dry as a ſtick, and mouldy, ſo that they are infallibly rotted the firſt rain that falls afterwards.

The directions neceſſary to the ſucceſs of the bulbs planted in water are theſe; when the leaden falſe bottoms are fixed down tight within two or three inches of the bottom of the veſſel, (which is only deſigned to hold the ſticks ſteady which are to ſupport the leaves and ſtalks) then lay on the lead which is to ſupport the bulbs, placing the notched part oppoſite to that in the falſe bottom, as near as the ſticks when placed, will ſuffer it; then place the bulbs one in each hole, and fill up with water to the upper lead. The bottom of the bulb will then touch the water; and as the water diminiſhes in quantity, keep it ſupplied with more up to the ſame height for a month or ſix weeks, in which time the bulbs will have ſhot ſtrong fibres; then fill up water about half an inch above the ſurface of the lead, and by degrees as the fibres ſtrengthen, and the plume ſhoots from the head, keep the water higher and higher, till at length the whole bulb be covered. And the water is to be kept at this ſtandard till the ſeaſon for drying them returns.

At the time of planting the bulbs, they muſt be carefully cleaned from any foulneſs at the bottom, by ſcraping them clean with the point of a knife, till the ſound part of the bulb appears; clear them likewiſe from any looſe skins, and even take off their brown skin, till they appear white; otherwiſe this brown skin will tinge the water, and the growth will not ſucceed ſo well.

The notches in the ſide of each lead, are intended to give eaſy paſſage to the water, that if there ſhould be any foulneſs or ſediment in it, on ſhaking it a little, it may all run thro', and freſh water be put in its place; but this ſhifting the water need not be done more than once or twice in a winter, as there may be occaſion from the foulneſs; and when this is done, the ſides of the veſſel ſhould be cleaned with a painter's bruſh, and rinſed out again, and the bulbs themſelves waſhed, by pouring water on them at a little diſtance.

At any time when the outer skins of the bulbs dry, they are to be peeled off, that they may not occaſion foulneſs in the water, and if any duſt or foul matter be at any time obſerved ſwiming on the ſurface, the method is to fill up the pot or veſſel to the rim, and let it run over: this will carry off that light foulneſs, and the water may afterwards be poured away to the proper ſtandard.

Bulbs of equal bigneſs ſhould be planted together in the ſame pot, that they may all have the ſame benefit of the water. Narciſſus's and hyancinths do well together; as alſo tulips and jonquils, and crocus's and ſnow-drops. Phil. Tranſ. N°. 431. p. 278.

The method of cauſing *flower* roots of the bulbous kind to ſend forth their *flowers* early, by placing them over or in veſſels of water, has been already delivered; but there is yet another way of cauſing them to blow early in pots of earth in this manner. Diſſolve crude ſal armoniac in water, in ſuch proportion, as that a piece of the bigneſs of a walnut may be diſſolved in every quart; then prepare ſome pots of a proper ſize filled with good garden mould. Sow the annual *flowers*, and ſet the roots of the perennial ones, ſuch as tulips, &c. in theſe pots at Michaelmaſs; continue the enſuing ſeaſon to water them with this ſolution of the ſalt, and keep them in a warm room; by this means they will be in full *flower* about Chriſtmas, and will continue thro' January and February.

FLOWN *ſheets*, at ſea. The ſeamen ſay a ſhip ſails with *flown ſheets*, when her ſheets are not *haled home*, or cloſe to the blocks: they ſay alſo, *let fly the ſheet!* when in a great guſt of wind, for fear the ſhip ſhould overſet, or *ſpend* her top-maſts, they would have the ſheet go *amain*, or as far as it will run, becauſe then the ſail will hold no wind; and when the ſheets are thus let go, they ſay her ſheets are *flown*.

FLOX, in the colour trade, a very well cleaned wool uſed to abſorb the colours of cochineal, &c. It is prepared in this manner; infuſe a pound of the fineſt ſheerings of woollen cloth in cold water for one day, then take them up, and preſs them well together to waſh off the unctuoſity the wool naturally has. This is the ſimple *flox*, which when impregnated with a ſolution of alum, is called alumed *flox*; this is done in the following manner. Take four ounces of roach alum, and two ounces of crude tartar, both in fine powder; put them into an earthen veſſel with three quarts of water, ſet it over the fire, and when it begins to boil, then put in the *flox*; let the liquor now boil half an hour over a gentle fire, then take it off, and when all is perfectly cooled, waſh the *flox* with fair water, leting them ſtand in it two hours, then preſs them in the hand and let them dry. *Neri*'s Art of Glaſs. p. 172.

FLUDER, or *Sea* FLUDDER, in zoology, the name of a water fowl of the colymbus or diver kind, deſcribed by Geſner, and ſome other authors, under the name of the colymbus maximus, or largeſt diver. It is nearly of the ſize of a gooſe, and moves but very ſlowly on the water, and much worſe either on land, or in the air, being but little able, either to walk or fly. Its beak is long, and its legs very ſhort; it makes a very ſhrill noiſe, and is remarkable for diving to vaſt depths. Its feet are webbed, its back is of a greyiſh colour, and its belly white. It ſeems much to approach to the northern colymbus, called the lumme, and perhaps differs only in colour, which may be an accidental variety, as is common in birds. *Ray*'s Ornithol. p. 260.

FLUELLIN, *elatine*, in medicine. See ELATINE.

FLUENT, or *flowing quantity*, in the doctrine of fluxions, that quantity (whether line, ſurface, ſolid, &c.) which is continually increaſing, or decreaſing. See the article FLUXION, *Cycl.* and *Suppl.*

Mr. Maclaurin, in his treatiſe of fluxions, has made ſeveral inquiries into *fluents*, reducible to the rectification of the ellip-

ſis, and hyperbola. Mr. D'Alembert has purſued the ſame ſubject and carried it farther, in Mem. de L'Acad. de Berlin. Tom. 2. p. 200. ſeqq.

FLUIDS (*Cycl.*) — Animalcules obſerved in *fluids* are of divers kinds; ſome are flat, others eel like, but the greater part of an oval figure. Leewenhoeck gives a deſcription of a very unuſual ſhaped creature, fixed in a little ſcabbard or ſheath; which was faſtned to ſome of the ſmall green weeds found in ditches full of water. Phil. Tranſ. N°. 337. p. 160.

Waters of all kinds that have ſtood a while expoſed to the air, till they have grown a little putrid, or where putrefaction has been promoted by the admixture of other matters, abound in variety of animalcules, having each their peculiar characters, ſizes, figures, œconomy, and method of life, not to ſay uſes. In a ſmall drop of the diſcoloured ſurface of rain water, which had ſtood two months in a window, Dr. Harris obſerved four ſorts of animalcules: the clear part of the drop preſented two kinds, both very ſmall; the firſt of the figure of ants eggs: theſe were in a continual briſk motion. The ſecond more oblong, three times as long as broad, were exceedingly numerous, but their motion ſlow.

In the thick part of the drop there were alſo two ſorts of animalcules. The firſt of the eel kind, reſembling thoſe in vinegar, but much ſmaller, and with their extremes more ſharp. Theſe would wriggle out into the clear part, and then ſuddenly betake themſelves back again, and hide in the thick and muddy part of the drop, much like common eels in the water. The ſecond ſort reſembled a large maggot, which would contract themſelves into a ſpherical figure, and then ſtretch out again. The end of the tail appeared with a forceps, like that of an ear-wig. They might be plainly perceived to open and ſhut their mouths, from whence air bubbles were frequently diſcharged. The number of theſe was not above four or five. The ſame four kinds of animalcules he alſo found in many other drops of the ſame corrupted water.

Animalcules in *Fluids*, are generally found at the top. In the lower parts of the water, Mr. Harris aſſures us he could never find any, unleſs when the liquor had been diſturbed, and the ſurface ſhaken down, and mingled with the lower parts. Mr. Harris examined ſome rain water that had ſtood uncovered a pretty while, but had not contracted any thick or diſcoloured ſcum.

And here where the water was clear, he could not find any animals at all; but a little thin white ſcum, that like greaſe began to appear in its ſurface, he found to be a congeries of exceeding ſmall animals of different ſhapes and ſizes, much like thoſe produced by ſteeping barley in water.

Viewing a ſmall drop of the green ſurface of ſome puddle water, he found it altogether compoſed of animalcules of ſeveral ſhapes and magnitudes; the moſt remarkable, were thoſe which gave the water that green colour, and were oval creatures, whoſe middle parts were of a graſs green, but each end clear and tranſparent. They would contract and dilate themſelves, tumble over and over many times together, and then ſhoot away like fiſhes. Phil. Tranſ. N°. 220. p. 255.

Mr. Harris looked on the ſurface of ſome mineral chalybeate water, which had ſtood in a vial unſtopt for about three weeks. In it he ſaw two kinds of animals. One exceeding ſmall, and the other very large, which latter ſort had on the tail, ſomething that look'd like fins. There were but very few of either ſort. Phil. Tranſ. N°. 220. p. 257. ſeqq.

Animalcules in *Fluids* are eaſily deſtroyed by only ſeparating them a while from their element. Naturaliſts have even found ſhorter ways. A needle point dipped in ſpirit of vitriol and then immerſed into a drop of pepper water, readily kills all the animalcules, which tho' before friſking about with great livelineſs and activity, no ſooner come within the influence of the acid particles, then they ſpread themſelves and tumble down to all appearance dead. The like may be done by a ſolution of ſalt, only with this difference; that by the application of this latter, they ſeem to grow vertiginous, turning round and round, till they fall down. Tincture of ſalt of tartar uſed in the ſame manner kills them ſtill more readily; yet not ſo, but there will be apparent marks of their being ſick firſt and convulſed. Inks deſtroy them as faſt as ſpirit of vitriol, and human blood by virtue of the ſalt contained in it, produces the ſame effect. Urine, ſack, and ſugar, do all deſtroy them, tho' not ſo faſt; beſides, that there is ſome diverſity in their figures and appearances, as they receive their deaths from this poiſon, or that [a]; the point of a pin dipped in ſpittle preſently killed all the kinds of animalcules in puddle water, as Mr. Harris ſuppoſes it will other animalcules of this kind [b]. [[a] Phil. Tranſ. N°. 203. p. 863. ſeq. [b] Phil. Tranſ. N°. 220. p. 256.]

We find in the waters of our ditches many ſpecies of ſmall animalcules, both of the cruſtaceous and teſtaceous kinds. The legs of the creatures are ſhort, they reſemble thoſe of crabs and lobſters, but are of a much more curious ſtructure; they are leſs than a ſmall flea, but they ſeem all breeders, carrying ſpawn at their tails, or in two ſmall bags, one hanging from each ſide. Theſe bags are often ſeen broken, and the ſpawn is then found to conſiſt of globules very large in proportion to the ſize of the creature. There is another ſort beſide theſe as beautiful but much ſmaller than they; this in ſhape more reſembles the ſhrimp, and carries its ſpawn as the ſhrimp does. Theſe kinds both ſeem to have only one eye and that placed exactly in the middle of their forehead, without the leaſt trace of a dividing line; and they are often ſo tranſparent that the motion of their bowels, and pulſation of their heart may be ſeen. *Baker's* Microſcope, p. 93.

All who are acquainted with the microſcope, know very well, that in water, in which the beſt glaſſes can diſcover no animated particle of matter, after a few grains of pepper, or a ſmall fragment of a plant of almoſt any kind has been ſome time in it; animals full of life and motion are produced, and thoſe ſo numerous as to equal the fluid itſelf in quantity.

When we ſee a numerous brood of young fiſhes in a pond, we make no doubt of their having owed their origin to the ſpawn that is, the eggs of their parents of the ſame ſpecies. What are we then to think of theſe? if we will conſider the progreſs of nature in the inſect tribes in general, and eſpecially in ſuch of them as are moſt of all analogous to theſe, we ſhall find it leſs difficult to give an account of their origin, than might have been imagined.

A ſmall quantity of water taken from any ditch in the ſummer months, is found to be full of little worms, ſeeming in nothing ſo much as ſize, to differ from theſe microſcopic animalcules. Nay water without theſe expoſed in open veſſels in the ſummer months will be always found after a few days to abound with multitudes of them, viſible to the naked eye, and full of life and motion.

Theſe we know by their future changes are the fly worms of the different ſpecies of gnats, tipulæ, and multitudes of the other fly-ſpecies; and we can eaſily determine, that they have owed their origin only to the eggs of the parent fly there depoſited. Nay a cloſer obſervation will at any time give ocular proof of this; as the flies may be ſeen laying their eggs there, and thoſe eggs may be followed in all their changes to the fly again. Why then are we to doubt but that the air abounds with other flies and animalcules, as minute as the worms in theſe *fluids?* and that theſe laſt are only the fly-worms of the former, which after a proper time ſpent in that ſtate will ſuffer changes like thoſe of the larger kinds, and become flies like thoſe to whoſe eggs they owed their origin? Vid. *Reaumur*, Hiſt. Inſect. vol. 4. p. 431.

The differently medicated liquors made by the infuſions of different plants, afford a proper matter for the worms of different ſpecies of theſe ſmall flies; and there is no reaſon to doubt but that among theſe ſome are viviparous, others oviparous, and to this may be in a great meaſure owing the different time taken up for the production of the inſects in different *fluids*. Thoſe which are a proper matter for the worms of the viviparous fly, may be ſooneſt found full of them, as probably the liquor is no ſooner in a ſtate to afford them a proper nouriſhment, than their parents place them there: whereas thoſe produced from the eggs of the little oviparous flies muſt after the liquor is in a proper ſtate, and they are depoſited in it in form of eggs, have a proper time to be hatched before they can appear alive.

It is eaſy to prove that the animals we find in theſe vegetable infuſions were brought thither from elſewhere. It is not leſs eaſy to prove that they could not be in the matter infuſed, any more than in the *Fluid* it is infuſed in.

Notwithſtanding the fabulous accounts of ſalamanders, it is now well known, that no animal large or ſmall, can bear the force of fire for any conſiderable time; and by parity of reaſon we are not to believe, that any inſect or embryo inſect, in any ſtate can bear the heat of boiling water for many minutes. To proceed to inquiries on this foundation, if ſeveral tubes filled with water with a ſmall quantity of vegetable matter, ſuch as pepper, oak bark, truffles, &c. in which after a time, inſects will be diſcovered by the microſcope; and other like tubes be filled with ſimple water boiled, with water and pepper, boiled together, and with water with the two other ingredients, all ſeparately boiled in it; when all theſe liquors come to a proper time for the obſervation of the microſcope, all, as well thoſe which have been boiled, as thoſe which have not, will be found equally to abound with inſects, and thoſe of the ſame kind in the infuſions of the ſame kind, whether boiled or not boiled.

Thoſe in the infuſions which had ſuſtained a heat capable of deſtroying animal life, muſt therefore not have ſubſiſted either in the water, or in the matters put into it, but muſt have been brought thither, after the boiling, and it ſeems by no way ſo probably, as by means of ſome little winged inhabitants of the air depoſiting their eggs or worms in thoſe *Fluids*.

It is a natural queſtion on this to ask, why it is, that while we ſee myriads of the progeny of theſe winged inſects, in water we never ſee themſelves. The anſwer is equally eaſy, viz. becauſe we can always place a drop of this water immediately before the focus of the microſcope, and keep it there while we at leiſure examine its contents; but that is not the caſe with regard to the air inhabited by the parent flies of theſe our worms, which is of immenſe extent in proportion to the water proper

to nouriſh theſe worms, and conſequently, while the latter are cluſtered together in heaps, the former may be diſperſed and ſcattered. Nor do we want inſtances of this even in the inſects of a larger kind. In many of our gardens we frequently find veſſels of water filled with the gnat worms, as plentifully in proportion to their ſize, as theſe our *Fluids* with animalcules. Every cubic inch of water in theſe veſſels contains many hundreds of theſe animals; yet we ſee many cubic inches of the air in the garden not affording any one of the parent flies. Id. ibid.

But neither are we to declare poſitively that the parent flies of theſe our animalcules are in all ſtates wholly inviſible to us, if not ſingly to be ſeen; there are ſome ſtrong reaſons to imagine, that they may in great cluſters. Every one has ſeen in a clear day, when looking ſtedfaſtly at the ſky, that the air is in many places diſturbed by motions and convolutions in certain determinate ſpots. Theſe cannot be the effect of imagination, or of faults in our eyes, becauſe they appear the ſame to all; and if we conſider, what would be the caſe to an eye, formed ſo as to ſee nothing ſmaller than an ox, on viewing the air on a marſh fully peopled with gnats, we muſt be ſenſible that the clouds of theſe inſects, tho' to us diſtinctly enough viſible, would appear to ſuch an eye, merely as the moving parcels of air in the former inſtance, do to us; and ſurely it is thence no raſh concluſion to infer, that the caſe may be the ſame, and that the myriads of flying inſects too ſmall to be ſingly the objects of our view, yet are to us, what the clouds of gnats would be in the former caſe. See the articles EEL, VINEGAR and PEPPER *water*.

Cauſtic FLUID. See CAUSTIC *Fluid*.

Senſitive FLUID. See SENSITIVE *Fluid*.

FLUKE, in ichthyology, a word uſed in ſome parts of England as a name for the flounder.

FLUKE *of an anchor*, that part of it which faſtens in the ground. See ANCHOR, *Cycl.* and *Suppl.*

FLUKEN, in natural hiſtory, a name given by the miners in Cornwall, and ſome other places, to a ſort of greyiſh ſoft earth, in which there are a great number of ſmall white ſtones of a ſparry nature. They uſually find this mixt ſubſtance near the places where the loads or veins of ore lie, and it ſeems evidently to have been waſhed from among the broken parts of the ſtrata near where the metals lie. It is itſelf a coarſe and often foul earth, and the white ſtones which it contains, are ſometimes ſmall cryſtalline, but opake pebbles, of the nature of thoſe which we find in various ſizes in our ſand and gravel pits; but more uſually they are ſmall fragments of common ſpar, and are of a plated figure when broken, and ſeem only rounded by the motion of the water, like many ſmall ſtones which are found in the beds of rivers, and on the ſea-ſhores. The ſoft nature of the ſubſtance of which theſe are compoſed makes them eaſily liable to be thus rubbed into roundneſs.

FLUOR *albus* (*Cycl.*) — Authors diſtinguiſh this diſeaſe in two kinds, the benign and the malignant; the firſt is ſimple, the other complicated with the venereal diſeaſe. The ſimple *Fluor albus*, tho' called benign in compariſon of the other, is yet very difficult to cure, and is always the more ſo, the longer it has continued upon the perſon; and very often the common methods by medicine fail, unleſs the cauſe and manner of life be changed. But tho' it is thus difficult of cure, it is of leſs danger than many other diſeaſes, for many women have had it many years, nay a great part of their lives even to old age, and that without any great hurt. Indeed it very rarely grows to that height as to injure the ſtrength or health, farther than by a paleneſs of the face, and a tumid look, and a laſſitude of the limbs: but if this diſcharge when it has been many years habitual to a perſon, be ſtopped by any improper methods, it often brings on very terrible complaints. The worſt effect of the *Fluor albus*, is that when of long ſtanding it uſually renders women barren; and its principal difficulty of cure is this, that it will often ſeem to give way to medicines, but return afterwards with all its former violence; nay when people ſeem ever ſo perfectly cured of it, it often returns, and the whole method is to be gone thro' again. The *Fluor albus* while it only attends the flowing of the menſtrual diſcharges, is a thing of no great moment, but when thoſe diſcharges ſtop, and this matter becomes more acrid, and is voided in larger quantities, it then becomes a diſeaſe that calls for all the art of the phyſician to remedy it; for in ſome perſons it brings on finally hectics and waſting of the fleſh, and in others cachexies, œdemas and dropſies.

Method of cure. When this diſeaſe happens to a perſon of a plethoric habit, the firſt ſtep toward a cure is bleeding in the foot to diſcharge part of the load of blood, leſt nature ſhould make that an occaſion of converting a great part of it into ſerum, and throwing it upon the uterus for its diſcharge. After bleeding, an abſterſion of the matter of the diſeaſe, and a ſucceſſive evaucation of it are to be attempted, by the more temperate uterine medicines, the gentle emmenagogues and cleanſers; ſuch are amber, myrrh and turpentine. The ſecond of theſe is to be given, but in moderate doſes, and the laſt ſucceeds beſt after boiling, or when mixt with maſtic. The digeſtive ſalts are alſo to be given, and nitre in this caſe often proves a very beneficial medicine. The aperient roots, ſuch as lovage, pimpernel, and the like, are to be given in decoction, and the leaves of baum and ſouthernwood are no idle remedies; and finally the gums are to be added, ſuch as galbanum, ammoniacum and ſagapenum. After theſe abſtergents and preparatory medicines, gentle purges are to be given, and finally ſuch medicines as reſtore the due tone of the parts; of this nature are the milder chalybeates, and decoctions of the nervous and aromatic herbs, ſuch as roſemary, origanum, ſerpyllum and the like. *Junker's* Conſp. Med. p. 472.

Dr. Morgan thinks the *Fluor albus* is the lymph corrupted, and aſſures us, that the tincture of cantharides, given in a pretty ſtrong decoction of guaicum, has good effects when the diſtemper is recent, but when it is of long ſtanding and inveterate, recourſe muſt be had to mercurials. Vid. *Morg.* Mechan. Pract. Phyſ.

FLUSH-*deck*, one that lies even in a right line, fore and aft, from ſtem to ſtern.

FLUSHER, in zoology, the common name of the leſſer butcher-bird called by authors the lanius minor, and the lanius tertius of Aldrovand. It is of the hawk kind, but very ſmall, not exceeding the common lark in ſize. Its beak is black, long, very ſtrong, and a little hooked at the end, but ſtrait all the way to that. The mouth is yellow within, and the tongue is jagged. It has ſeveral ſhort briſtles at the top of the beak. The middle of its back and the ſmaller feathers of its wings, are of a reddiſh brown; its head and rump grey; it has a broad black line on each ſide of the head, running from the angle of the beak: its belly is white, its throat and breaſt whitiſh with a caſt of red. Its wing feathers are brown and black, and its legs and feet of a deep bluiſh black. It builds in holly buſhes and the like places, its neſt is made of graſs and feathers, and it lays ſix eggs which are oblong, white at the ſmaller end and ornamented with a circle and reddiſh ſpots at the other. It is common in Germany and in the northern parts of England. *Ray's* Ornith. p. 54.

FLUTA, in ichthyology, a name given by Gaza and ſome authors to the common ſparus, diſtinguiſhed by Artedi, by the name of the plain yellowiſh ſparus, with a large annular black ſpot near the tail. See the article SPARUS.

FLUTA is alſo a name given by Columella to the muræna of Ariſtotle and the antient authors in general, as well Greek as Roman. It makes only one ſpecies of the muræna, according to Artedi; but being with him a generical name which comprehends all the eel kind, the ſerpens marinus and the like, among theſe. This which was antiently called ſimply the muræna, is diſtinguiſhed by that author under the name of the muræna having no pectoral fins. This as it is peculiar to this ſpecies, evidently and obviouſly diſtinguiſhes it at firſt ſight from all the reſt.

FLUTINGS—*Cabled* FLUTINGS. See CABLING.

FLUVIALIS, in botany, the name given by Vaillant and Micheli to a genus of plants called by Linnæus najos. *Vaillant*, A. G. 1719. See NAIOS.

FLUVIATILES *cochleæ*, freſh water *ſhell-fiſh*, a term uſed by naturaliſts, to expreſs thoſe kinds of ſhell-fiſh which never inhabit the ſea, but are found in our ponds, rivers and ditches. Theſe tho' greatly leſs numerous than the ſpecies of ſea ſhells, are yet of greater variety and beauty, than is uſually ſuppoſed. What are known at preſent, may be arranged under their proper heads in the following manner.

Of the univalve kinds we have two ſpecies of patellæ: the one having a beak at the ſummit of the ſhell; the other wanting it, and being ſmooth as the common patellæ or limpets of the ſea.

Of the *limaces* or ſnails we have five ſpecies, 1. The white water ſnail. 2. The umbilicated water ſnail. 3. The water ſnail, commonly called St. Hubert's horn. 4. The yellow water ſnail, and 5. The high and faſciated water ſnail.

Of the freſh water *neritæ*, we have three kinds. 1. The variegated grey nerita. 2. The notched nerita, and 3. The variegated reddiſh nerita.

We have alſo one ſpecies of *trochus*, commonly called and known by the name of trochilus aquæ dulcis, or the little freſh water trochus.

Of the *turbo* we have three ſpecies. 1. The depreſſed vittated turbo. 2. The prominent turbo, and 3. The ſimple turbo, or ſcrew-ſhell.

Of the freſh water *buccina*, we have ſeven ſpecies. 1. The greeniſh buccinum, with four ſpires. 2. The reddiſh buccinum. 3. The ſlightly furrowed buccinum. 4. The white buccinum with five ſpires. 5. The brown buccinum, with an operculum. 6. The contabulated and tuberous buccinum, and 7. The freſh water buccinum with its mouth turned the contrary way to that of other ſhells. Hiſt. Nat. Eclairc. p. 367.

Of the dolia or conchæ globoſæ, we have the following ſpecies. 1. The grey dolium. 2. The yellowiſh dolium. 3. The blunt pointed dolium. 4. The milk-white dolium.

Of the freſh water *cornu ammonis*, we have four ſpecies. 1. The brown common cornu ammonis. 2. The metalline cornu ammonis. 3. The grey cornu ammonis, and 4. The agate coloured cornu ammonis.

Of

Of the bivalve freſh water ſhells, we have the following ſpecies. Of the *chama* kind we have five. 1. The white chama. 2. The red ſpotted chama. 3. The blackiſh brown chama. 4. The grey chama, and 5. The common dwarf chama.

Of the *muſcle* kind we have ſix ſpecies. 1. The brown ſpotted muſcle. 2. The blackiſh brown muſcle. 3. The oblong muſcle. 4. The large light muſcle. 5. The long prickly muſcle, and 6. The white muſcle.

Of the *pecten* kind we have only one ſpecies, that is, the white pecten.

Of the multivalve claſs, there is not one known ſpecies.

The reducing the ſeveral ſpecies to their proper genera is eaſy from a remembrance of the characters of each genus of the marine ſhells. The limpet is a flat ſhell elevated into a ſort of cone at the ſummit. Of the ſnail kind, if the mouth be round, the ſhell is a true limax; when it is ſemicircular, the ſhell is a nerita; and when it is oval or depreſſed, and the clavicle is long, it is then a trochus. The turbo or ſcrew-ſhell, is known by its long and ſlender figure. The buccina are long ſhaped, and have a tail, and their mouth is narrow; and the dolia are of a ſomewhat globoſe figure. The cornu ammonis, and the umbilicated ſnail are often confounded together by thoſe who obſerve their external reſemblance among the freſh water ſhells; but they are in reality ſufficiently different, the cornu ammonis being marked on the outſide with circular ridges, and divided on the inſide into ſeveral ſeparate cells like the common foſſil kinds; whereas the umbilicated ſnail is of an even external ſurface, and has only one cavity within. The ſnail alſo has its mouth placed toward one ſide, the cornu ammonis in the middle: there are other differences, but theſe are ſufficient for the diſtinction. The chamæ are known by their roundiſh figure; the muſcles by being oblong; and the pecten is known by its ears and its ſtriæ. Hiſt. Nat. Eclair. p. 372.

FLUX, (*Cycl.*) in medicine. The Biſhop of Cloyne in his reflections on tar-water, ſays he has known a *bloody-Flux* of long continuance, after divers medicines had been tried in vain, cured by tar-water. But what he takes to be the moſt ſpeedy and effectual remedy in a *bloody-Flux*, is a clyſter of an ounce of common brown roſin, diſſolved over a fire in two ounces of oil, and added to a pint of broth, which not long ſince he had frequent occaſion of trying, when that diſtemper was epidemical. Nor can he ſay, that any to whom he adviſed it, miſcarried. See TAR *water*, &c.

FLUXES, in metallurgy, are whatever can cauſe a body otherwiſe not at all, or hardly fuſible by fire, to melt.

The moſt powerful of theſe, are glaſs of lead, and the alkaline and neutral ſalts. Theſe are principally uſed by aſſayers, when they would work minerals in a ſmall quantity; but when large quantities of minerals are to be wrought on, it is ſeldom poſſible to uſe *Fluxes* of this kind to any advantage, becauſe of their prices. In theſe caſes, inſtead of theſe expenſive *Fluxes*, they uſe ſuch ſtones as are vitrified by a gentle fire, or the ſcoriæ made of the ſame ſtones when melted, which always ſerves their purpoſes much better; for the oftner theſe ſtones have been expoſed to the fire, the more eaſily are they put in fuſion: the reaſon of which ſeems to be, that the alkaline ſalt proceeding from the fuel of the fire, adheres to the ſcoriæ; and theſe added in large quantities to the reſt of the metals in great operations, cauſe the ſaid ores to melt, which are otherwiſe made refractory by the calcarious and incombuſtible ſtones and earths mixed with them.

The melting of gold and ſilver, and of their calxes is greatly promoted by glaſs of lead, alkaline ſalts, &c. but when gold and ſilver in the fuſion itſelf, are to be purged from other metals and ſemimetals, it is proper to uſe nitre only; or if not ſo, nitre muſt be always mixed with the other ſalts; for the ſemimetals and the four leſs perfect metals are deſtroyed by nitre.

In this operation, nitre by its detonation with their ſulphurs is in part alkaliſed, and by the help of a gentle fire, turns their calxes into a vitrious and much attenuated ſcoriæ.

From hence, the reaſon is plain, why gold and ſilver, when made brittle, are readily reſtored to their malleability by nitre: for the ſemimetals, and among the metals, lead, and tin, moſt of all communicate this fault to gold and ſilver; but theſe being changed as before obſerved by nitre, are then rejected by gold, and ſilver in a ſimple fuſion, ſo that they can no longer mix with theſe metals, unleſs they are themſelves firſt again reduced to their metallic ſtate; and there is beſide theſe, no other body that can be mixed with ſilver and gold to render them brittle, unleſs crude charcoal happening to fall into the veſſel, wherein thoſe metals are melted, ſhould impregnate them with ſomething arſenical, there being ſome arſenic contained in coals of this kind; as has been demonſtrated by Stahl and Hoffman.

The leſs perfect metals, and the ſemimetals melt more eaſily by adding ſalts to them, than of themſelves; they always however, loſe a great deal of their ſubſtance by this means, and this is more particularly the caſe, in regard to copper and iron. To amend this, it is neceſſary to add ſome kind of fat body, which prevents the deſtruction, and even reduces the metals already deſtroyed; and this is the more neceſſary, when the calxes prepared either by burning, or by a detonation with nitre, are to be reduced.

The moſt proper *Flux* on theſe occaſions is, that uſually known among metallurgiſts, under the name of the *black Flux powder*, and is thus prepared.

Take of common nitre one part, of crude tartar thoroughly dried, two or three parts; make them ſeparately into very fine powder, then grind them well together, and afterwards put them into an earthen pot, narrow at the orifice, not glazed within, and of capacity three times larger than the powder will take up; put this into a gentle fire, and as ſoon as the maſs begins to flame with ſome noiſe, ſhut the orifice of the veſſel with a tile; after the detonation is over, you will find in the veſſel a black oily alkaline ſalt, which is very eaſily fuſible in the fire, and is called the *black flux*; keep it in a dry warm place, and in a veſſel cloſely ſhut, to prevent its growing moiſt.

Tartar being burnt either alone in veſſels cloſely ſhut, or detonated with nitre, is very readily alkalized; and thus retains a conſiderable quantity of the oil which it contains in great abundance, and which is fixed enough to remain with it, after this operation; and for this reaſon it very eaſily becomes a reducing *Flux*, which on account of its alkaline ſalts, diſſolves earths and ſtones, and changes them into an imperfect kind of glaſs by a moderate melting fire; but the oil being of a more fixed nature, ſtill remains concealed therein, and is of great uſe both to preſerve metals from being deſtroyed, and to reduce ſuch as have been deſtroyed already.

If the pot in which this *Flux* powder is made be glaz'd within, and part of the glazing comes off, and mixes with the *Flux*, and melts with it, it is again reduced to lead, and may thus diſappoint the artificer; for this cruſt of glazing is given to earthen veſſels by lead or litharge.

Another caution is alſo neceſſary; which is, that all *Fluxes* muſt be kept and uſed very dry, for moiſt ſalts foam very much; and when the operations are made in cloſe veſſels, if the fire is quickly increaſed, not being able to get rid of the moiſture, the veſſels will ſplit and break.

Beſide the black, aſſayers are alſo very fond of a white *Flux* powder, which is prepared only of equal parts of nitre and tartar detonated in the ſame manner. For in this caſe the oil of the tartar is almoſt entirely conſumed by the abundance of the nitre, and the remaining maſs becomes a whitiſh or aſh coloured ſalt; which is alſo more powerfully alkaline, and ſharp than the foregoing. This *Flux* is very efficacious in the diſſolving of ſtones, and earths; but for want of its oil is of a leſs reductive virtue, and deſtroys the metal, when the fire is continued a little longer than is required.

Flux powders are of great ſervice alſo to reduce metals out of their reſpective calxes, and to free them from the ſtones in which they are embodied; but when the refractory calx of iron is to be reduced by a great and long laſting fire, theſe *Fluxes* being greatly attenuated, tho' confined in cloſe veſſels, part from their oily principle, and their alkaline ſalt remaining, begin to corrode and conſume the veſſels of what matter ſoever they are made, and finally make their way thro' them and get out. The firſt of theſe accidents is prevented by adding coal duſt, which will never part with its oil, without the help of a free air; and the others by an admixture of common glaſs, made of a due mixture of flints and fixed alkali. For this is ſufficiently fuſible, and readily melts with the *fluxes*, and by its viſcidity, in ſome ſort coagulates, and holds the ſalt of the *Flux* together, and prevents it from ſo eaſily corroding the veſſels.

Many artificers affect to compoſe a great variety of *Fluxes* with the different proportions and combinations of the alkaline and neutral ſalts; nay ſome are for having as many *Fluxes*, as there are ores of metals; but theſe ſimples ores will be found on trial more uſeful, as well as more eaſily prepared, than many of the laboured compoſitions, which increaſe the number, not the virtue of the things employed. The ſkilful will eaſily make from theſe the ſlight neceſſary variations. *Cramer*, Art. Aſſ. p. 48, 52.

The great ſecret in making and improving *Fluxes* for the ores of metals, is not only to find ſuch ingredients as will be of efficacy to ſeparate the metal already ripened in the ore, but even to mature and ripen the yet immature part of it in the fire; and ſomething of this kind we apprehend might be effected, as there is great reaſon to believe, that certain *Fluxes* will obtain a much larger yield of metals from certain ores than other *Fluxes* in common uſe, tho' eſteemed of the beſt, and perhaps of the deareſt kind: thus clean iron filings will often do more than borax; but as the ſcales and ruſt of iron have commonly been uſed under the name of iron in *Fluxes*, few operators know the value of pure iron in that intention, and many advantages are now obtained by mixing one ore with another of the ſame denomination, and with the ſlags or recrements of metals in the way of a *Flux*.

The *Fluxes* for the ores of metals ſeem in general reducible to

two kinds, the vitreous and the ſaline. The vitreous are thoſe which either naturally have a gloſſy form, or readily aſſume one in the fire; the principal of theſe are glaſs of lead, glaſs of antimony and borax.

By the ſaline *fluxes*, authors generally mean thoſe which are compoſed of ſalts, whether tartar, nitre, fixed alkali or the like, as the black *flux*, ſandiver, pot aſhes, and the like. The vitreous *fluxes* ſeem deſtined more immediately to act upon the ſtony or vitreſcible matter, wherewith the ſtubborn ores are frequently mixed, and the ſaline kind to act more immediately upon the matter of the ore itſelf, for the due excluſion or ſeparation of the metal.

The more kindly ores require no *Fluxes* at all, and often they contain in themſelves, the neceſſary matter for that *flux*; thus there are copper ores, which being only ground to powder, and put into a common wind furnace, will yield as much pure metal at the firſt operation, as can be procured from them, by all the *fluxes*. *Shaw*'s Lectures, p. 256.

FLUXION (*Cycl.*)—The elements of the doctrine of *fluxions*, have been delivered by its great author, in ſo conciſe a manner, as to give occaſion to one of the moſt ingenious writers of this age, to repreſent it, as founded on inconceivable principles, and full of falſe reaſonings. This author in a letter, under the title of *the Analyſt*, publiſhed in the year 1734, has been at great pains to convince his readers, that the object, principles, and inferences of the modern analyſis by *fluxions*, are not more diſtinctly conceived, or more evidently deduced, than religious myſteries and points of faith. He ſays he does not controvert the truth of the concluſions, but only the logic and method of mathematicians. He asks how they demonſtrate, what objects they are converſant with, and whether they conceive them clearly; what principles they proceed upon, how ſound they may be, and how they apply them; declaring himſelf not concerned about the truth of the theorems, but only about the way of coming at them, whether it be legitimate or illegitimate, clear or obſcure, ſcientific or tentative. He conſiders the concluſions not in themſelves, but in their premiſes; not as true or falſe, uſeful or inſignificant, but as derived from ſuch principles, and by ſuch inferences. And for as much as it may ſeem an unaccountable paradox, that mathematicians ſhould deduce true propoſitions from falſe principles, be right in the concluſion, and yet err in the premiſes, he endeavours particularly to explain, how this may come to paſs, and ſhew how error may bring forth truth, tho' it cannot bring forth ſcience. His ſolution of the paradox is, that in the application of the method of infiniteſimals and *Fluxions*, two errors are committed which being equal and contrary, deſtroy each other. We cannot enter into a detail of all he ſays on theſe and many other heads, nor of all that has been ſaid on the other ſide, in defence of the method of *Fluxions*, and of its inventor Sir Iſaac Newton. An Anſwer to the Analyſt, appeared very early under the name of *Philalethes Cantabrigienſis*, ſuppoſed to be Dr. Jurin; a ſecond by the ſame hand, in defence of the firſt; a diſcourſe of *Fluxions* by Mr. Robins; a treatiſe of Sir Iſaac Newton's, with a commentary by Mr. Colſon; and ſeveral other pieces were publiſhed on this ſubject; particularly a very full and excellent treatiſe of *Fluxions*, by Mr. Maclaurin, late profeſſor of mathematics in the univerſity of Edinburgh, containing not only a moſt diſtinct account of the principles of *Fluxions*, but alſo of the chief diſcoveries in geometry, and mathematical philoſophy of this age. The curious may find an elegant account of this treatiſe in the Philoſophical Tranſactions, N°. 468, 469.

We preſume that Mr. Maclaurin's demonſtrations are ſufficient to ſatisfy the moſt ſcrupulous; it would exceed the bounds of our deſign to inſert them at length here; but we cannot omit mentioning what ſeems neceſſary to explain and illuſtrate the notion of *Fluxions*; and the principles on which this method of computation is founded.

In the doctrine of *Fluxions*, magnitudes are conceived to be generated by motion, and the velocity of the generating motion is the *Fluxion* of the magnitude. Lines are ſuppoſed to be generated by the motion of points. The velocity of the point that deſcribes the line, is its *Fluxion*, and meaſures the rate of its increaſe or decreaſe. When the motion of a point is uniform, its velocity is conſtant, and is meaſured by the ſpace deſcribed by it in a given time. When the motion varies, the velocity at any term of the time is meaſured by the ſpace which would be deſcribed in a given time, if the motion was to be continued uniformly, from that term, without any variation. And this is analogous to the general doctrine of powers, or may be conſidered as a particular application of it. As a power which acts continually and uniformly is meaſured by the effect that is produced by it in a given time, ſo the velocity of an uniform motion, is meaſured by the ſpace that is deſcribed in a given time. If the action of the power vary, then its exertion at any term of the time is not meaſured by the effect that is produced after that term in a given time, but by the effect that would have been produced if its action had continued uniform from that term; and in the ſame manner, the velocity of a variable motion at any given term of time, is not to be meaſured by the ſpace that is actually deſcribed after that term in a given time, but by the ſpace that would have been deſcribed, if the motion had continued uniformly from that term. If the action of a variable power, or the velocity of a variable motion, may not be meaſured in this manner, they muſt not be ſuſceptible of any menſuration at all. When it is ſuppoſed that a body has ſome velocity or other at any term of the time, during which it moves; it is not therefore ſuppoſed, that there can be any motion in a term, limit or moment of time, or in an indiviſible point of ſpace; and as velocity is always meaſured by the ſpace that would be deſcribed by it, continued uniformly for ſome given finite time, it cannot ſurely be ſaid, that geometers pretend to conceive motion or velocity without regard to ſpace or time, as the author of the Analyſt often ſuggeſts. This is a ſhort view of the nature and tendency of the doctrine of *Fluxions*, which we ſhall now proceed to explain more particularly.

We have already ſaid that lines may be conceived as generated by the motion of points; in like manner ſurfaces may be conceived as generated by the motion of lines; ſolids by the motion of ſurfaces; angles, by the rotation of their ſides; the *flux* of time being ſuppoſed to be always uniform. The velocity with which a line flows, is the ſame as that of the point which is ſuppoſed to deſcribe or generate it. The velocity with which a ſurface flows, is the ſame as the velocity of a given right line; that, by moving parallel to itſelf, is ſuppoſed to generate a rectangle which is always equal to the ſurface. The velocity with which a ſolid flows, is the ſame as the velocity of a given plain ſurface, that, by moving parallel to itſelf, is ſuppoſed to generate an erect priſm or cylinder that is always equal to the ſolid. The velocity with which an angle flows, is meaſured by the velocity of a point, that is ſuppoſed to deſcribe the arch of a given circle, which always ſubtends the angle, and meaſures it. In general, all quantities of the ſame kind (when we conſider their magnitude only, and abſtract from their poſition, figure, and other affections) may be repreſented by right lines, that are ſuppoſed to be always in the ſame proportion to each other as theſe quantities. They are repreſented by right lines in this manner in Euclid's Elements, in the general doctrine of proportion, and by right lines and figures in the data of that accurate geometer. In this method likewiſe, quantities of the ſame kind may be repreſented by right lines, and the velocities of the motions by which they are ſuppoſed to be generated, by the velocities of points moving in right lines. All the velocities we have mentioned are meaſured, at any term of the time of the motion, by the ſpaces which would be deſcribed in a given time, by theſe points, lines or ſurfaces, with their motions continued uniformly from that term.

A *Fluxion* being the velocity with which a quantity flows, at any term of the time while it is ſuppoſed to be generated, is therefore always meaſured by the increment or decrement that would be generated in a given time by this motion, if it was continued uniformly from that term without any acceleration or retardation: or it may be meaſured by the quantity that is generated in a given time by an uniform motion, which is equal to the generating motion at that term.

Time is repreſented by a right line that flows uniformly, or is deſcribed by an uniform motion; and a moment or termination of time repreſented by a point or termination of that line. A given velocity is repreſented by a given line, the ſame which would be deſcribed by it in a given time. A velocity that is accelerated or retarded, is repreſented by a line that increaſes or decreaſes in the ſame proportion. The time of any motion being repreſented by the baſe of a figure, and any part of the time by the correſponding part of the baſe; if the ordinate at any point of the baſe be equal to the ſpace that would be deſcribed, in a given time, by the velocity at the correſponding term of the time continued uniformly, then any velocity will be repreſented by the correſponding ordinate. The *Fluxions* of quantities are repreſented by the increments or decrements, deſcribed in the foregoing paragraph, which meaſure them; and inſtead of the proportion of the *Fluxions* themſelves, we may always ſubſtitute the proportion of their meaſures.

When a motion is uniform, the ſpaces that are deſcribed by it in any equal times are always equal. When a motion is perpetually accelerated, the ſpaces aſcribed by it in any equal times that ſucceed after one another, perpetually increaſe. When a motion is perpetually retarded, the ſpaces that are deſcribed by it in any equal times that ſucceed after one another, perpetually decreaſe.

It is manifeſt, converſely, that if the ſpaces deſcribed in any equal times are always equal, then the motion is uniform. If the ſpaces deſcribed in any equal times that ſucceed after one another perpetually increaſe, the motion is perpetually accelerated: For it is plain, that if the motion was uniform for any time, the ſpaces deſcribed in any equal parts of this time would be equal; and if it was retarded for any time, the ſpaces deſcribed in equal parts of this time that ſucceed after one another would decreaſe: both of which are againſt the ſuppoſition. In like manner it is evident, that a motion is perpetually retarded, when the ſpaces that are deſcribed in any equal times that ſucceed after one another perpetually decreaſe. The

following

following axioms are as evident, as that a greater or leſs ſpace is deſcribed in a given time, according as the velocity of the motion is greater or leſs.

Axiom 1. The ſpace deſcribed by an accelerated motion is greater than the ſpace which would have been deſcribed in the ſame time, if the motion had not been accelerated, but had continued uniform from the beginning of the time.

Axiom 2. The ſpace deſcribed by a motion while it is accelerated, is leſs than the ſpace which is deſcribed in an equal time by the motion that is acquired by that acceleration continued uniformly.

Axiom 3. The ſpace deſcribed by a retarded motion is leſs than the ſpace which would have been deſcribed in the ſame time, if the motion had not been retarded, but had continued uniform from the beginning of the time.

Axiom 4. The ſpace deſcribed by a motion while it is retarded, is greater than the ſpace which is deſcribed in an equal time by the motion that remains after that retardation, continued uniformly.

From theſe axioms general theorems concerning motion, of uſe in the doctrine of *Fluxions*, may be demonſtrated. Thus when the ſpaces deſcribed by two variable motions are always equal, or in a given ratio, the velocities are always equal, or in the ſame given ratio; and converſely, when the velocities of two motions are always equal to each other, or in a given ratio, the ſpaces deſcribed by thoſe motions in the ſame time are always equal, or in that given ratio: that when a ſpace is always equal to the ſum or difference of the ſpaces deſcribed by two other motions, the velocity of the firſt motion is always equal to the ſum or difference of the velocities of the other motions; and converſely, that when a velocity is always equal to the ſum or difference of two other velocities, the ſpace deſcribed by the firſt motion is always equal to the ſum or difference of the ſpaces deſcribed by theſe two other motions. See Mr. *Maclaurin*'s Treatiſe of Fluxions, Book I. chap. 1.

The main point in the method of *Fluxions*, is to obtain the *Fluxion* of the rectangle, or product of two indeterminate quantities, ſince from thence may be derived rules of all other products and powers be the coefficients, or the indices what they will, integers or fractions, rational or ſurd; according to the manner of Sir Iſaac Newton in the ſecond lemma of his ſecond book of principles.

Mr. Maclaurin has therefore been very full in eſtabliſhing this point; and after what he has ſaid, we preſume that no reaſonable objection can lie either againſt the clearneſs and diſtinctneſs of the notion of *Fluxions*, or againſt the truth of the principles, or accuracy of the demonſtrations by which their meaſures are determined. We cannot here inſert his demonſtrations at length; but as many readers may, perhaps, be deſirous of ſeeing the argument contracted into a narrow compaſs, we ſhall here give a ſummary of it, from the Philoſ. Tranſ. N°. 468. p. 331.

A triangle that has two of its ſides given in poſition, is ſuppoſed to be generated by an ordinate moving parallel to itſelf along the baſe. When the baſe increaſes uniformly, the triangle increaſes with an accelerated motion, becauſe its ſucceſſive increments are *trapezia*, that continually increaſe; therefore if the motion with which the triangle flows, was continued uniformly from any term for a given time, a leſs ſpace would be deſcribed by it, than the increment of the triangle, which is actually generated in that time by axiom 1; but a greater ſpace than the increment which was actually generated in an equal time preceeding that term, by axiom 2. And hence it is demonſtrated, that the *Fluxion* of the triangle is accurately meaſured by the rectangle contained by the correſponding ordinate of the triangle, and the right line which meaſures the *Fluxion* of the baſe. The increment which the triangle acquires in any time, is reſolved into two parts; that which is generated in conſequence of the motion with which the triangle flows at the beginning of the time, and that which is generated in conſequence of the acceleration of this motion for the ſame time. The latter is juſtly neglected in meaſuring that motion (or the *Fluxion* of the triangle at that term) but may ſerve for meaſuring its acceleration, or the ſecond *Fluxion* of the triangle. The motion with which the triangle flows, is ſimilar to that of a body deſcending in free ſpaces by an uniform gravity, the velocity of which, at any term of the time, is not to be meaſured by the ſpace deſcribed by the body in a given time, either before or after that term, becauſe the motion continually increaſes, but by a mean between theſe ſpaces.

When the ſides of a rectangle increaſe or decreaſe with uniform motions, it may be always conſidered as the ſum or difference of a triangle, and trapezium; and its *Fluxion* is derived from the laſt propoſition. If the ſides increaſe with uniform motions, the rectangle increaſes with an accelerated motion; and in meaſuring this motion at any term of the time, a part of the increment of the rectangle that may be determined [a], is rejected, as generated in conſequence of the acceleration of that motion. [[a] See *Maclaur.* l. c. art. 102.]

Thoſe who have well underſtood what precedes, will not be at a loſs to conceive, that the *Fluxions* of a curvilineal area, whether generated by an ordinate moving parallel to itſelf, or by a radius revolving round a given center, may be determined by demonſtrations of the ſame kind. When the ordinates of the figure increaſe, the increment of the area may be reſolved in like manner into two parts, one of which only is to be retained in meaſuring the *Fluxion* of the area, the other being rejected as generated in conſequence of the acceleration of the motion with which the figure flows.

What has been hitherto ſaid will ſet the difference between the notions of *Fluxions* and that of infiniteſimals, in a clear light. *Fluxions* may always be repreſented by finite quantities. The ſuppoſition of an infinitely little magnitude is too bold a poſtulatum for ſuch a ſcience as geometry. Nor have authors accounted explicitely for the truth and perfect accuracy of the concluſions derived from this conſideration. When they determine what is called the *difference*, but more accurately the *Fluxion* of a quantity, they tell us, they reject certain parts of the element, becauſe they become infinitely leſs than the other parts. But this is no proper reaſon, not only becauſe a proof of this nature may leave ſome doubt as to the accuracy of the concluſion; but becauſe it may be demonſtrated that theſe parts ought to be neglected by them at any rate, or that it would be an error to retain them. If an accountant, that pretends to a ſcrupulous exactneſs, ſhould tell us, he had neglected certain articles, becauſe he found them to be of ſmall importance; and it ſhould appear that they ought not to have been taken into conſideration by him on that occaſion, but belong to a different account, we ſhould approve his concluſions as accurate, but not his reaſons. See *Maclaurin*'s Treatiſe of *Fluxions* in the Preface, and book I. ch. 12. where the method of infiniteſimals is expreſsly treated of. See alſo the article INFINITESIMAL.

Mr. Maclaurin in the firſt part of his treatiſe conſiders *Fluxions* in a merely geometrical form, and has demonſtrated the rules of the method with all poſſible accuracy and rigour; but as the great improvements made by this doctrine are chiefly to be aſcribed to the facility, conciſeneſs, and great extent of the methods of computation, or the algebraic part, it is neceſſary to add ſome account of theſe methods alſo.

Any quantities produced from each other by an algebraic operation, or whoſe relation is expreſſed by any algebraic form, being ſuppoſed to increaſe or decreaſe together, ſome will be found to increaſe or decreaſe by greater differences, or at a greater rate, others by leſs differences or at a leſs rate; and while ſome are ſuppoſed to increaſe or decreaſe at one conſtant rate by equal ſucceſſive differences, others increaſe or decreaſe by differences that are always varying. Theſe rates of increaſe or decreaſe may be determined by comparing the velocities of points that always deſcribe lines proportional to the quantities as before mentioned, but they may alſo be determined without having recourſe to ſuch ſuppoſitions, by a juſt reaſoning from the ſimultaneous increments or decrements themſelves.

When a quantity A increaſes by differences equal to a, 2A increaſes by differences equal to $2a$, and manifeſtly increaſes or decreaſes at a greater rate than A in the proportion of $2a$ to a or 2 to 1; and if m and n be invariable $\frac{m\,A}{n}$ increaſes or decreaſes by differences equal to $\frac{m\,a}{n}$, and therefore at a greater or leſs rate than A in proportion as $\frac{m\,a}{n}$ is greater or leſs than a, or m is greater or leſs than n. This ſeems to be eaſily conceived, without having recourſe to any other conſiderations, than the relation of the differences by which the quantities increaſe or decreaſe. In order therefore to avoid figurative expreſſions in the algebraic part, it will be proper to ſubſtitute in the place of the definition and axioms before mentioned, others that are rather of a more general import, but are perfectly conſiſtent with them. Thus,

Fluxions *of quantities are any meaſures of their reſpective rates of increaſe, or decreaſe, while they vary or flow together.*

There can be no difficulty in determining thoſe meaſures when the quantities increaſe or decreaſe by ſucceſſive differences that are always in the ſame invariable proportion to each other, while A by increaſing becomes equal to $A + a$, or by decreaſing equal to $A - a$, 2 A becomes equal to $2A + 2a$, or to $2A - 2a$; and as 2 A increaſes or decreaſes at a greater rate than A in the proportion of $2a$ to a; ſo the *Fluxion* of A being ſuppoſed equal to a, the *Fluxion* of 2A muſt be equal to $2a$. In the ſame manner the *Fluxion* of $\frac{m}{n} \times A$ (or of $\frac{m}{n} \times A \mp e$ ſuppoſing m, n and e to be invariable) is $\frac{m}{n} \times a$; and ſince m may be to n in any aſſignable ratio, a quantity may be always aſſigned that ſhall increaſe or decreaſe, at a greater or leſs rate than A in any proportion, or that ſhall have its *Fluxion* greater or leſs than the *Fluxion* of A in any ratio. In ſuch caſes the ratio of the *Fluxions* and that of the differences by which the quantities increaſe or decreaſe are the ſame.

But while A is ſuppoſed to increaſe at a conſtant rate by any equal ſucceſſive differences, if B increaſe or decreaſe by diffe-

rences that are always varying, B cannot be said to increase or decrease at any one constant rate; and it is not so obvious how the *Fluxion* of A being supposed equal to its increment a, the variable *Fluxion* of B is to be determined. It cannot be supposed that the *Fluxions* and differences are always in the same proportion in this case; but it is evident, that if B increase by differences that are always greater than the equal successive differences by which $\frac{m}{n} \times A$ increases, it cannot increase at a less rate than $\frac{m}{n} \times A$; and it cannot increase at a greater rate than $\frac{m}{n} \times A$, while its successive differences are always less than those of $\frac{m}{n} \times A$. The *Fluxion* of A, being still represented by a, the *Fluxion* of B therefore cannot be less than $\frac{m}{n} \times a$ in the former case, or greater then $\frac{m}{n} \times a$ in the latter.

The following propositions are consequences of this, and will enable us to determine at what rate B increases, when its relation to A is known.

The successive values of the root A being represented by $A - a$, A, $A + a$ &c. which increase by any constant difference a, let the corresponding values of any quantity produced from A, by any algebraic operation (or that has a dependance upon it so as to vary with it) be $B - b$, B, $B + b$, &c. Then if the successive differences b, b &c. of the latter quantity always increase, how small soever a may be, then B cannot be said to increase at so great a rate as a quantity that increases uniformly by equal successive differences greater than b, or at so small a rate as any quantity that increases uniformly by equal successive differences less than b. In like manner, if the relation of the quantities is such, that the successive differences b, b &c. continually decrease; then B cannot be said to increase at the same rate as a quantity that increases uniformly by equal successive differences greater than b, or less than b.

Therefore the *Fluxion* of A being supposed equal to the increment a, the *Fluxion* of B cannot be greater than b or less than b, when the successive differences b, b &c. continully increase; and cannot be greater than b or less than b, when these successive differences always decrease.

In the same manner, if the latter quantity decrease while the former increases, and its successive values be $B + b$, B, $B - b$, &c. then if the decrements b, b &c. continually increase, B cannot be said to decrease at so great a rate as a quantity that decreases uniformly by equal successive differences greater than b, or at so small a rate as a quantity that decreases uniformly by equal successive differences less than b. Therefore in this case the *Fluxion* of A being supposed equal to a, the *Fluxion* of B cannot be greater than b or less than b. And in the same manner if the successive decrements b, b &c. always decrease, the *Fluxion* of B, cannot be greater than b, or less than b. Vid. *Maclaurin*'s Flux. B. 2. c. 1. T. 2. p. 579, seq.

As the *Fluxions* of quantities are any measures of the respective rates, according to which they increase or decrease; so it is of no importance how great or small those measures are, if they be in the just proportion or relation to each other. Therefore if the *Fluxions* of A and B may be supposed equal to a and b respectively, they may be likewise supposed equal to $\frac{1}{2} a$ and $\frac{1}{2} b$, or to $\frac{m a}{n}$ and $\frac{m b}{n}$.

The Fluxion of the root A being supposed equal to a, the Fluxion of the square A A will be equal to $2 A \times a$.

To demonstrate this, let the successive values of the root be $A - u$, A, $A + u$, and the corresponding values of the square will be $A A - 2 A u + u u$, A A, $A A + 2 A u + u u$, which increase by the differences $2 A u - u u$, $2 A u + u u$, &c. and because those differences increase, it follows from what has been said, that if the *Fluxion* of A be represented by u, the *Fluxion* of A A cannot be represented by a quantity that is greater than $2 A u + u u$, or less than $2 A u - u u$. This being premised, suppose, as in the proposition, that the *Fluxion* of A is equal to a; and if the *Fluxion* of A A be not equal to $2 A a$, let it first be greater than $2 A a$ in any ratio, as that of $2 A + o$ to 2 A, and consequently equal to $2 A a + o a$. Suppose now that u is any increment of A less than o; and because a is to u as $2 A a + o a$ is to $2 A u + o u$, it follows, that if the *Fluxion* of A should be represented by u, the *Fluxion* of A A would be represented by $2 A u + o u$, which is greater than $2 A u + u u$. But it has been shewn, that if the *Fluxion* of A be represented by u, the *Fluxion* of A A cannot be represented by a quantity greater than $2 A u + u u$. And these being contradictory, it follows that the *Fluxion* of A being equal to a, the *Fluxion* of A A cannot be greater than $2 A a$. If the *Fluxion* of A A can be less than $2 A a$, when the *Fluxion* of A is supposed equal to a, let it be less in any ratio of $2 A - o$ to 2 A, and therefore equal to $2 A a - o a$. Then because a is to u as $2 A a - o a$ is to $2 A u - o u$, which is less than $2 A u - u u$, (u being supposed less than o, as before) it follows, that if the *Fluxion* of A was represented by u, the *Fluxion* of A A would be represented by a quantity less than $2 A u - u u$, against what has been shewn. Therefore the *Fluxion* of A being supposed equal to a, the *Fluxion* of A A must be equal to $2 A a$.

The *Fluxions* of A and B being supposed equal to a and b, respectively, the *Fluxion* of $A + B$ will be $a + b$, the *Fluxion* of $\overline{A + B}^2$, or of $A A + 2 A B + B B$, will be $2 \times \overline{A + B} \times \overline{a + b}$, or $2 A a + 2 B b + 2 B a + 2 A b$, by the last article. The *Fluxion* of $A A + B B$ is $2 A a + 2 B b$, by the same; consequently the *Fluxion* of $2 A B$ is $2 B a + 2 A b$; and the *Fluxion* of $A B$ is $B a + A b$. Hence if P be equal to A B, and the *Fluxion* of P be p, then p will be equal to $B a + A b$, and dividing by P, or A B, we find $\frac{p}{P} = \frac{a}{A} + \frac{b}{B}$. If $Q = \frac{A}{B}$, and q be the *Fluxion* of Q, then $Q B = A$, $\frac{q}{Q} + \frac{b}{B} = \frac{a}{A}$, or $\frac{q}{Q} = \frac{a}{A} - \frac{b}{B}$, and consequently $q = \frac{Q a}{A} - \frac{Q b}{B} = \frac{a}{B} - \frac{A b}{B B}$ or $\frac{a B - A b}{B B}$.

When any of the quantities decrease, its *Fluxion* is to be considered as a negative.

The rule for finding the *Fluxion* of a power is usually deduced from the binomial theorem of Sir Isaac Newton. But as this theorem, though easily found by induction, is not so easy to demonstrate; it is proper to proceed upon a principle, the truth of which may be shewn from the first algebraic elements, with more facility and perspicuity.

This principle is, that if n be any integer number, and the sum of the terms E^{n-1}, $E^{n-2} F$, $E^{n-3} F^2$, $E^{n-4} F^3$, &c. continued till their number be equal to n, be multiplied by $E - F$, the product will be $E^n - F^n$. For the terms being formed by subducting continually unity from the index of E, and adding it to the index of F, the last term will be F^{n-1}. The product of the sum of the terms multiplied by E will be $E^n + E^{n-1} F + E^{n-2} F^2 \ldots\ldots + E F^{n-1}$; their sum multiplied by $-F$ gives $-E^{n-1} F - E^{n-2} F^2 \ldots\ldots - E F^{n-1} - F^n$; and the sum of these two products is $E^n - F^n$. Supposing E to be greater than F, $E^n - F^n$ will be less than $n E^{n-1} \times \overline{E - F}$, but greater than $n F^{n-1} \times \overline{E - F}$. For each of the terms E^{n-1}, $E^{n-2} F$, $E^{n-3} F^2$, &c. is greater than the subsequent term in the same ratio that E is greater than F, and E^{n-1} is the greatest term; consequently the number of terms being equal to n, $n E^{n-1}$ is greater than their sum; and $n E^{n-1} \times \overline{E - F}$ is greater than their sum multiplied by $\overline{E - F}$, or (by the last paragraph) greater than $E^n - F^n$. Because the last term F^{n-1} is less than any preceding term, $n F^{n-1} \times \overline{E - F}$ is less than the sum of the terms multiplied by $\overline{E - F}$, or less than $E^n - F^n$.

When n is any integer positive number, the root A being supposed to increase by any equal successive differences, the successive differences of the power A^n will continually increase. For let $A - a$, A, $A + a$ be any successive values of the root, and $\overline{A - a}^n$, A^n, $\overline{A + a}^n$ will be the corresponding values of the power. But $\overline{A + a}^n - A^n$ is greater than $n A^{n-1} a$; as appears by substituting in the last paragraph $A + a$ for E, A for F, and a for $E - F$. In like manner $n A^{n-1} a$ is greater than $A^n - \overline{A - a}^n$. Therefore $\overline{A + a}^n - A^n$ is greater than $A^n - \overline{A - a}^n$, and the successive differences of the power continually increase.

The Fluxion of the root A being supposed equal to a, the Fluxion of the power A^n *will be* $n a A^{n-1}$.

For if the *Fluxion* of A^n can be greater than $n a A^{n-1}$, let the excess be equal to any quantity r; suppose o equal to the excess of $\sqrt[n-1]{A^{n-1} + \frac{r}{n a}}$ above A, and consequently $\overline{A + o}^{n-1} = A^{n-1} + \frac{r}{n a}$. Then $n a \times \overline{A + o}^{n-1}$ will be equal to $n a A^{n-1} + r$, the *Fluxion* of A^n. Let u be any increment of A less than o; and because a is to u as $n a \times \overline{A + o}^{n-1}$ to $n u \times \overline{A + o}^{n-1}$, it follows (from what has been said) that if the *Fluxion* of A be now represented by the increment u, the *Fluxion* of A^n will be represented by $n u \times \overline{A + o}^{n-1}$, which is greater than $n u \times \overline{A + u}^{n-1}$, and this last is itself greater than $\overline{A + u}^n - A^n$. But when the successive values of the root are $A - u$, A, $A + u$, those of the power are $\overline{A - u}^n$, A^n, $\overline{A + u}^n$, the successive differences of which continually increase; consequently if the *Fluxion* of A be represented by u, the *Fluxion* of A^n cannot be represented by a quantity greater than $\overline{A + u}^n - A^n$, or less than $A^n - \overline{A - u}^n$. And these being contradictory, it follows that when the *Fluxion* of A is supposed equal to a, the *Fluxion* of A^n cannot be greater than $n a A^{n-1}$. If it can be less than $n a A^{n-1}$, let it be equal to $n a A^n - r$, or (by supposing $o = A - \sqrt[n-1]{A^{n-1} - \frac{r}{n a}}$) to $n a \times \overline{A - o}^{n-1}$. Then u being supposed less than o, if the

the *Fluxion* of A was repreſented by u, the *Fluxion* of A^n would be repreſented by $n u \times \overline{A - o}^{n-1}$, which is leſs than $n u \times \overline{A - u}^{n-1}$ (becauſe we ſuppoſe u to be leſs than o) and therefore leſs than $A^n - \overline{A - u}^n$. But this is repugnant to what has been demonſtrated. Therefore the *Fluxion* of A being ſuppoſed equal to a, the *Fluxion* of A^n muſt be equal to $n a A^{n-1}$.

The Fluxion *of A being ſuppoſed equal to a, the* Fluxion *of* $\dot{A}^{\frac{m}{n}}$ *will be* $\frac{m}{n} \times \dot{A}^{\frac{m}{n}-1}$.

Firſt, let the exponent $\frac{m}{n}$ be any poſitive fraction whatſoever, ſuppoſe $A^{\frac{m}{n}} = K$; conſequently $A^m = K^n$; and the *Fluxion* of K being ſuppoſed equal to k, $m a A^{m-1} = n k K^{n-1}$, and k or the *Fluxion* of $A^{\frac{m}{n}}$ will be equal to $\frac{m a A^{m-1}}{n K^{n-1}} = \frac{m a K}{n A} = \frac{m}{n} \times a A^{\frac{m}{n}-1}$. When $\frac{m}{n}$ is negative, let it be equal to $-r$; and ſuppoſe $A^{-r} = K$, or $1 = A^r K$, then taking the *fluxions*, $r A^{r-1} a K + k A^r = o$, and $k = \frac{r A^{r-1} a K}{A^r} = -r A^{-r-1} a = \frac{m}{n} \times a A^{\frac{m}{n}-1}$.

Suppoſing P to be the product of any factors A, B, C, D, E, &c. *and the* Fluxions *of P, A, B, C,* &c. *reſpectively equal to p, a, b, c,* &c. *then will* $\frac{p}{P} = \frac{a}{A} + \frac{b}{B} + \frac{c}{C} + \frac{d}{D}$, &c.

Let Q be equal to the product of all the Factors of P, the firſt A excepted, that is, ſuppoſe $P = A Q$. Suppoſe R equal to the product of all the factors, the firſt two, A and B, excepted; that is, let $P = A B R$, or $Q = B R$. In the ſame manner let $R = C S$, $S = D T$, and ſo on. Then the *fluxions* of Q, R, S, T, *&c.* being ſuppoſed reſpectively equal to q, r, s, t, *&c.* it follows that $\frac{p}{P} = \frac{a}{A} + \frac{q}{Q} =$ (becauſe $\frac{q}{Q} = \frac{b}{B} + \frac{r}{R}$) $\frac{a}{A} + \frac{b}{B} + \frac{r}{R} =$ (becauſe $\frac{r}{R} = \frac{c}{C} + \frac{s}{S}$) $\frac{a}{A} + \frac{b}{B} + \frac{c}{C} + \frac{s}{S} =$ (becauſe $\frac{s}{S} = \frac{d}{D} + \frac{t}{T}$) $\frac{a}{A} + \frac{b}{B} + \frac{c}{C} + \frac{d}{D} + \frac{t}{T}$, and ſo on. Therefore $\frac{p}{P}$ is equal to the ſum of the quotients, when the *fluxion* of each factor is divided by the factor itſelf.

If the factors be ſuppoſed equal to each other, and their number be equal to n, then $P = A^n$, and by the laſt propoſition $\frac{p}{P} = \frac{n a}{A}$; conſequently $p = \frac{n P a}{A} = n a A^{n-1}$ as was before demonſtrated.

If $P = \frac{A B C,}{K L M,}$ &c. *and the* Fluxions *of the reſpective quantities be expreſſed by the ſmall letters p, a, b, c,* &c. *as before, then* $\frac{p}{P} = \frac{a}{A} + \frac{b}{B} + \frac{c}{C} - \frac{k}{K} - \frac{l}{L} - \frac{m}{M}$, &c.

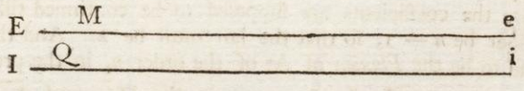
For P K L M, &c. $= A B C,$ *&c.* and $\frac{p}{P} + \frac{k}{K} + \frac{l}{L} + \frac{m}{M}$, *&c.* $= \frac{a}{A} + \frac{b}{B} + \frac{c}{C}$, *&c.* whence by tranſpoſition $\frac{p}{P} = \frac{a}{A} + \frac{b}{B} + \frac{c}{C} - \frac{k}{K} - \frac{l}{L}$, *&c. Maclaurin,* ibid.

The notation we have hitherto uſed is the ſame as Sir Iſaac Newton's in the 2d lemma of the 2d book of his principles. But it is generally more convenient to diſtinguiſh *Fluxions* from other algebraic expreſſions, and in ſuch manner, that the ſecond and higher *Fluxions* may be repreſented ſo as to preſerve the original fluent in view. Hence Sir Iſaac in his laſt method, repreſented variable or flowing quantities by the final letters of the alphabet as x, y, z, their firſt, ſecond, &c. *Fluxions*, reſpectively by $\dot{x}$, $\dot{y}$, $\dot{z}$, and $\ddot{x}$, $\ddot{y}$, $\ddot{z}$, &c. as is mentioned in the Cyclopædia, under the head FLUXION, where the rules of the algorithm are alſo delivered; but as this doctrine has been conteſted and repreſented by the author of the analyſt, as inconceivable and ſophiſtical, we thought it proper more fully to explain and demonſtrate the principles thereof, from Mr. Maclaurin's excellent treatiſe on this ſubject.

It is to be obſerved, that the *Fluxions* of powers are commonly delivered in an algebraic form; but this is not neceſſary. The ſame may be done geometrically by ſuppoſing a ſeries of lines in geometric progreſſion, the firſt term of which is invariable. Then if the ſecond term be ſuppoſed to increaſe uniformly all the ſubſequent terms will increaſe with an accelerated motion. The velocities of the points that deſcribe thoſe lines being compared, it may be demonſtrated from common geometry, that the *Fluxions* of any two terms, are in a ratio compounded of the ratio of thoſe terms, and of the ratio of the numbers that expreſs how many terms precede them reſpectively, in the progreſſion. Thus if A, B, C, D, E, &c. repreſent any lines in geometric progreſſion, the firſt term (A) of which is invariable, then will the *Fluxion*, for inſtance, of E be to the *Fluxion* of D as 4 E is to 3 D, and the *Fluxion* of E will be to the *Fluxion* of B, as 4 E to B. The analogy between powers in algebra and lines in geometric progreſſion, is ſufficiently known. Thus A being invariable may be called unity or 1; let $B = x$, then will $C = x x$, $D = x^3$, $E = x^4$, &c. and conſequently, the *Fluxion* of E or x^4, will be to the *Fluxion* of B or x, as $4 x^4$ is to x, or as $4 x^3$, is to 1. Therefore if the *Fluxion* of x be expreſſed by $\dot{x}$, the *Fluxion* of x^4 will be expreſſed by $4 x^3 \dot{x}$, agreeably to the common algebraic method of expreſſion. Vid. Mr. *Maclaurin*'s Flux. B. 1. Ch. 6. See alſo the Preſent State of the Rep. of Let. Oct. 1735, pag. 248, 249, &c.

If the *Fluxion* of B or the ſecond term of the progreſſion be invariable, every term of the progreſſion will have *Fluxions* of as many degrees, as there are terms that precede it in the progreſſion. And the increment of any term generated in a given time may be reſolved into as many parts, as it has *Fluxions* of different orders; and each part may be conceived to be generated, in conſequence of its reſpective *Fluxion*. Hence *Fluxions* of all orders may be illuſtrated and meaſured. See Mr. *Maclaurin*'s Treat. of Flux. B. 1. c. 5, and 6.

As to the higher orders of *Fluxions*, it is to be obſerved, that when a motion is accelerated or retarded continually, the velocity may itſelf be conſidered as a variable or flowing quantity, and may be repreſented by a line that increaſes or decreaſes continually. When a velocity increaſes uniformly ſo as to acquire equal increments in equal times, its *Fluxion* is meaſured by the increment which is generated in any given time. In this caſe, the velocity is repreſented by a line that is deſcribed by an uniform motion; and its *Fluxions*, by the conſtant velocity of the point that deſcribes the line, or by the ſpace which this point deſcribes in a given time. When a velocity is not accelerated uniformly, but acquires increments in equal times, that continually increaſe or decreaſe, then its *Fluxion* at any term of the time is not meaſured by the increment, which it actually acquires, but by that which it would have acquired, if its acceleration had been continued uniformly, from that term for a given time. And in the ſame manner, when a motion is retarded continually, the quantity by which it would be diminiſhed in a given time, if its retardation was continued uniformly from any term, meaſures its *Fluxion* at that term. While the point M deſcribes the line E *e*, let the point Q deſcribe the line I *i*, ſo that I Q may be always equal to the ſpace that would be deſcribed by the motion of M, if it was continued uniformly for a given time. Then I Q ſhall always repreſent the velocity of M, and the velocity of the



point Q ſhall repreſent the *Fluxion* of the velocity of M; which therefore is meaſured, at any term of the time, by the ſpace which would be deſcribed by Q, with its motion at that term continued uniformly for a given time. The velocity of M is the *Fluxion* of E M; and therefore the velocity of Q repreſents the *Fluxion* of the *Fluxion* of E M. Thus, when a *Fluxion* of a quantity is variable, it may be conſidered itſelf as a fluent, and may have its *Fluxion*, which is called the *ſecond Fluxion* of that quantity. This may alſo have its *Fluxion*, which is called the *third Fluxion* of the firſt fluent: and motions may be eaſily conceived to vary in ſuch a manner, as to give ground for admitting ſecond *Fluxions*, and thoſe of any higher order. And as the firſt *Fluxion* of a variable quantity, at any term of the time, is meaſured by the increment, or decrement, which would be produced, if the generating motion was continued uniformly from that term, for a given time; ſo its ſecond *Fluxion* may be meaſured by twice the difference betwixt this increment, or decrement, and that which would be produced, if the acceleration, or retardation of the generating motion was continued uniformly from that term for the ſame time. *Maclaurin*, lib. cit. Sect. 70. Ibid. Sect. 75. in fin.

See a farther illuſtration of ſecond and third *Fluxions*, in the ſame author, (Chap. 3. and 4.) deduced from the conſideration of the *Fluxions* of ſolids.

The author of the analyſt has repreſented the notions of ſecond and third *Fluxions*, as inextricable myſteries; and indeed, when ſome ſpeak of the velocities of velocities, &c. it is not eaſy to ſay what they mean. But it is to be obſerved, that the firſt *Fluxion* of any fluent, is not the velocity of that fluent, but the velocity of the motion by which the fluent

is conceived to be generated. And in like manner, the ſecond *Fluxion* of that fluent is not the velocity of the velocity of this fluent, but the velocity of the motion by which the quantity is generated that always repreſents its firſt *Fluxion*, and ſo of the reſt. See *Maclaurin*, Lib. cit. Sect. 164.

When the *Fluxion* of a quantity is variable it may be conſidered as a fluent; and its *Fluxion* which is the ſecond *Fluxion* of the propoſed quantity may be determined by the preceeding propoſitions. Thus the *Fluxion* of A being ſuppoſed equal to *a* the *Fluxion* of A A is $2\,A\,a$; and if A be ſuppoſed to increaſe at an uniform rate, or its *Fluxion* *a* to be invariable, $2\,A\,a$ will increaſe by equal ſucceſſive differences; conſequently its *Fluxion*, or the ſecond *Fluxion* of A A, will be equal to any of theſe differences, as to $2a \times \overline{A + a} - 2\,A\,a$, or $2\,a\,a$. If *a* be variable, let its *Fluxion* be equal to *z*, and the *Fluxion* of $2\,A\,a$ (or ſecond *Fluxion* of A A) will be $2\,a\,a + 2\,A\,z$. In the ſame manner the *Fluxion* of A being conſtant, the *Fluxion* of $n\,A^{n-1}\,a$, or the ſecond *Fluxion* of A^n is $na \times \overline{n-1} \times A^{n-2}\,a$, or $n \times \overline{n-1} \times a\,a\,A^{n-2}$; the *Fluxion* of this, or third *Fluxion* of A^n, is $n \times n-1 \times \overline{n-2} \times a^3 A^{n-3}$. And the *Fluxion* of A^n of any order denoted by *m*, is $n \times \overline{n-1} \times \overline{n-2} \times \overline{n-3}$, &c. $\times a^m\,A^{n-m}$, where the factors in the coefficient are to be continued till their number be equal to *m*. When *n* is any integer poſitive number, the *Fluxion* A^n, of the order *n*, is invariable and equal to $n \times \overline{n-1} \times \overline{n-2} \times \overline{n-3}$, &c. $\times a^n$. The quantities that repreſent thoſe *Fluxions* of A^n depend on *a*, which repreſents the *Fluxion* of A. When A remains of the ſame value, the firſt *Fluxion* of A^n is greater or leſs in the ſame proportion, as *a* is ſuppoſed to be greater or leſs; the ſecond *Fluxion* of A^n, is in the duplicate ratio of *a*; and its *Fluxion* of the order *m*, is as a^m. If *a* be variable, but *z* the *Fluxion* of *a*, or the ſecond *Fluxion* of A, be conſtant, then the fourth *Fluxion* of A A will be conſtant and equal to $6\,z\,z$; for we found, that the ſecond *Fluxion* of A A was $2\,a\,a + 2\,A\,z$; the *Fluxion* of which is $4\,a\,z + 2\,a\,z$, or $6\,a\,z$; and the *Fluxion* of this is $6\,z\,z$. In like manner the ſixth *Fluxion* of A^3 will be conſtant in this caſe and equal to $9\,0\,z^3$.

The ſecond differences of any quantity B are the ſucceſſive differences of its firſt differences; and as the *Fluxion* of B increaſes when its ſucceſſive differences increaſe; ſo its ſecond *Fluxion*, or its *Fluxions* of any higher order increaſe when its ſecond or higher differences increaſe. If we arrive at differences of any order that are conſtant, the *Fluxion* of the ſame order is conſtant and is expreſſed by that difference. Thus when A is ſuppoſed to increaſe by conſtant differences equal to *a*, and its *Fluxion* is ſuppoſed equal to *a*, the ſecond difference of A A (or $\overline{A + a}^2 - 2\,A\,A + \overline{A - a}^2$) is $2\,a\,a$, which is likewiſe its ſecond *Fluxion*; and the third difference of A^3 is $6\,a^3$, which is its third *Fluxion*. When *n* is any integer and poſitive number, the *Fluxion* of A_n of the order *n* is equal to the *Fluxion* of any of its firſt differences of the order $n-2$, and ſo on. For the *Fluxion* of $\overline{A + a}^n - A^n$ (one of the firſt differences of A^n) of the order $n-1$ is $n \times \overline{n-1} \times \overline{n-2}$, &c. $\times \overline{A + a}^{n-n+1} - A \times a^{n-1} = n \times \overline{n-1} \times \overline{n-2}$, &c. $\times a^n$ where the coefficients are ſuppoſed to be continned till their number be $n-1$, ſo that the laſt muſt be 2. And this we found to be the *Fluxion* of A^n of the order *n*, in the preceeding paragraph. In the ſame manner the *Fluxion* of $\overline{A + a}^n - 2\,A^n + \overline{A - a}^n$ (the ſecond difference of A^n) of the order $n-2$, is equal to the *Fluxion* of $\overline{A + a}^n - A$ of the order $n-1$; and conſequently equal to the *Fluxion* of A^n of the order *n*. Theſe *Fluxions* are invariable and equal to the laſt or invariable differences. But in other caſes the *Fluxions* of A^n of any order are leſs than its ſubſequent differences of the ſame order, but greater than the preceeding differences, as before mentioned. *Maclaurin*'s Flux. art. 720, ſeq.

By ſuppoſing one of the variable quantities to flow uniformly it will have no ſecond or higher *Fluxions*, and the higher *Fluxions* depending on it will be expreſſed in a more ſimple manner. Thus the *Fluxion* of *x* being ſuppoſed conſtant, the firſt *Fluxion* of x^n being $n\,x^{n-1}\,\dot{x}$, its ſecond *Fluxion* will be $n \times \overline{n-1} \times \dot{x}^2\,x^{n-2}$, and its *Fluxion* of any order m will be $n \times \overline{n-1} \times \overline{n-2} \times \overline{n-3}$, &c. $\times \dot{x}^m\,x^{n-m}$, where the factors in the coefficient are to be continued till their number be equal to *m*.

The ſecond or higher *Fluxions* of quantities may be found by particular theorems (without computing thoſe of the preceeding orders) as may be ſeen by the laſt example. See farther in *Maclaurin*'s Fluxions, Art. 734.

Inverſe method of FLUXIONS. By this method the fluent is found when the *Fluxion* is given; and the rules are derived from thoſe of the direct method; as the rules in diviſion and evolution in algebra are deduced from thoſe of multiplication and involution. As when a fluent conſiſts of a variable, and invariable part, the latter does not appear in the *Fluxion*; ſo when any *Fluxion* is propoſed, it is only the variable part of the fluent that can be derived from it. If $\dot{x}$ repreſent any *Fluxion* that may be propoſed, the variable part of the fluent will be equal to x: for ſuppoſing y to be any variable quantity, if $x + y$ could repreſent the fluent of $\dot{x}$, then $\dot{x} + \dot{y}$ would be equal to $\dot{x}$, and $\dot{y} = o$, or y would be invariable, againſt the ſuppoſition. But ſuppoſing K, to repreſent any invariable quantity, than $x + K$ may generally repreſent the fluent of $\dot{x}$. If it be required to find ſuch a fluent of $\dot{x}$ as ſhall vaniſh when x is ſuppoſed to vaniſh, it can be no other than x; and if it be required that the fluent ſhould vaniſh when x is equal to any given quantity *a*, then by ſuppoſing $x + K$ to vaniſh when x becomes equal to *a*; we ſhall have $a + K = o$, or $K = -a$; whence the fluent is $x - a$. In the ſame manner, the fluent of $-\dot{x}$ may be generally repreſented by $K - x$.

When a *Fluxion* that is propoſed, coincides with any of thoſe which were deduced from their fluents in the preceeding articles, the variable part of the fluent required, muſt coincide with that which was there propoſed. As diviſion in algebra leads us to fractions, and evolution to ſurds; ſo the inverſe method of *Fluxions* leads us often to quantities, that are not known in common algebra, and that cannot be expreſſed by common algebraic ſymbols. *Maclaurin*'s Flux. art. 735.

We cannot here pretend to enter into a detail of the rules of the inverſe method of *Fluxions*. We ſhall only obſerve in general, that a *Fluxion* being propoſed, its fluent may ſometimes be found accurately in algebraic terms; but this is far from being always poſſible; and recourſe muſt ſometimes be had to a converging ſeries. Thus, if $nx^{n-1}\dot{x}$ were propoſed, the variable part of the fluent is found by adding unity to the exponent of the power, dividing by the exponent thus increaſed, and by the *Fluxion* of the root. That is, the variable part of the fluent of $n\,x^{n-1}\,\dot{x}$ will be $\frac{n\,x^{n-1}\,\dot{x}}{\overline{n-1+1} \times \dot{x}} = x^n$. But if the propoſed *Fluxion* were $\frac{a\,\dot{x}}{a-x}$, we cannot find its fluent by this rule, but we may throw the *Fluxion* into an infinite ſeries by dividing *a* by $a - x$ in the uſual method, and we ſhall find the quotient or $\frac{a}{a-x} = 1 + \frac{x}{a} + \frac{x^2}{a^2} + \frac{x^3}{a^3} +$ &c. Hence $\frac{a\,\dot{x}}{a-x} = \dot{x} + \frac{x\,\dot{x}}{a} + \frac{x^2\,\dot{x}}{a^2} + \frac{x^3\,\dot{x}}{a^3} +$ &c. Now the fluent of each term of this ſeries may be found by the foregoing rule; and therefore the fluent of $\frac{a\,\dot{x}}{a-x}$ will be expreſſed by the ſeries $x + \frac{x^2}{2\,a} + \frac{x^3}{3\,a\,a} + \frac{x^4}{4\,a^3} +$ &c. which may be of uſe for determining the fluent when x is very ſmall in reſpect of *a*; becauſe in that caſe, a few terms at the beginning of the ſeries will be nearly equal to the value of the whole. But it often happens that the ſeries deduced in this method converges ſo ſlowly, as to be of little or no uſe. See *Maclaurin*'s Treat. of Flux. Art. 737, 744, 827. *Stirling*, de Summat. Serier. p. 28.

Mathematicians therefore do not always immediatly recur to infinite ſeries, when it does not appear that a fluent can be aſſigned in a finite number of algebraic terms. The arches of a circle, and hyperbolic areas or logarithms, cannot be aſſigned in algebraic terms, but have been computed with great exactneſs by ſeveral methods. By theſe with algebraic quantities, any ſegments of conic ſections, and the arches of a parabola are eaſily meaſured; and when a fluent can be aſſigned by them, this is conſidered as the ſecond degree of reſolution. When it does not appear that a fluent can be meaſured by the areas of conic ſections, it may however be meaſured in ſome caſes by their arcs; and this may be conſidered as the third degree of reſolution. If it does not appear that a fluent can be aſſigned by the arcs of any conic ſections (the circle included) it may however be of ſome uſe to aſſign the fluent by an area, or arc of ſome other figure, that is eaſily conſtructed or deſcribed; and it is often important, that the propoſed *Fluxion* be reduced to a proper form, in order that the ſeries for the fluent may not be too complex, and that it may not converge at too ſlow a rate. See *Maclaurin*'s Treatiſe of Fluxions, Book II. ch. 3.

We may therefore conſtitute three orders or claſſes of fluents. Firſt, ſuch as can be accurately aſſigned in finite terms by common algebraic expreſſions. Secondly, thoſe which can be reduced to the areas of conic ſections, or to circular arcs and logarithms. Thirdly, ſuch as can be aſſigned by hyperbolic or elliptic arcs. The firſt two claſſes (conſidering triangles and circles as conic ſections) may therefore be meaſured by the areas of conic ſections; and the third claſs by their perimeters, or lines that bound them. *Maclaurin*, ibid. art. 798.

The fluent of $\frac{\dot{x}}{\sqrt{1 \pm x}}$ is of the firſt claſs; that of $\frac{\dot{x}}{\sqrt{x} \times \sqrt{1 \pm x}}$ or of $\frac{\dot{x}}{\sqrt{1 \pm x\,x}}$ is of the ſecond; but the fluents of $\frac{\dot{x}\sqrt{x}}{\sqrt{1 \pm x\,x}}$, $\frac{\dot{x}}{\sqrt{x} \times \sqrt{1 \pm x\,x}}$, $\frac{\dot{x}}{1 \pm x\,x}^{\frac{1}{4}}$ and

$\frac{\dot{x}}{\overline{1 \pm xx}^{\frac{3}{4}}}$ are of the third claſs, and as far as has appeared hitherto, cannot be reduced to the former. See *Maclaurin*, Flux. B. II. Ch. 3. Art. 798, &c.

It is to be obſerved, as to the fluent of $\frac{\dot{x}}{\sqrt{x} \times \sqrt{1 \pm xx}}$, or of $\frac{\dot{x}}{\overline{1 \pm xx}^{\frac{3}{4}}}$ that it does not appear poſſible to repreſent them by any hyperbolic arc and algebraic quantities. But by aſſuming an elliptic arc likewiſe, they may be conſtructed. See *Maclaurin*, Lib. cit. Art. 802.

So likewiſe to repreſent the fluent of $\frac{\dot{z}}{\sqrt{z} \times \sqrt{b^2 \pm 2ez - zz}}$ or of $\frac{\dot{p}}{\sqrt{a^2 b^2 \pm 2aep^2 - p^4}}$, we muſt have recourſe to both the hyperbolic and elliptic arcs. *Maclaurin*, L. c. Art. 805.

The fluent of $\frac{z^{\frac{rn}{4} - 1} \dot{z}}{\sqrt{e + fz^n}}$ is aſſignable by the arcs of conic ſections, when r is an integer number; that is, by right lines, when r is equal to 4 or to any multiple of 4; by circular and parabolic arcs (reducible to logarithms) with right lines, when r is any other even number; by arcs of an equilateral hyperbola with right lines, when r is any number of the ſeries 3, 7, 11, 15, &c. and by arcs of the ſame hyperbola and right lines, with arcs of an ellipſis, that has its excentricity equal to the ſecond axis, when r is any of the numbers 1, 5, 9, 13, &c. See *Maclaurin*, ibid. Art. 809.

We preſume, upon the whole, that few will be ſo ſcrupulous as to deny the Newtonian doctrine of *Fluxions* to be intelligible, and accurately demonſtrated. But on the other hand it muſt be confeſſed, that the introduction of the notions of motion and velocity, which are mechanical, ſeems not to have thrown any light on this part of geometry. The conſideration of the limiting ratios of variable quantities, and that of the limiting polygons of curves, as it requires no other knowledge but what depends on the common properties of number and magnitude, ſo it ſeems, in all reſpects, the moſt clear and unexceptionable manner of conſidering the ſubjects treated of in the higher geometry. An eminent mathematician ſeems to declare himſelf of this opinion, when he ſays, that quadratures by limiting polygons is one of that kind which requires no other knowledge but what depends on the common properties of number and magnitude; and ſo may ſerve as an inſtance to ſhew, that no other is requiſite for the eſtabliſhment of principles for arithmetic and geometry. A truth, which, though certain in itſelf, may perhaps ſeem doubtful from the nature and tendency of the preſent inquiries in mathematics. For among the moderns ſome have thought it neceſſary, for the inveſtigation of the relations of quantities, to have recourſe to very hard hypotheſes; ſuch as that of number infinite, and indeterminate; and that of magnitudes in *ſtatu fieri*, exiſting in a potential manner, which are actually of no bigneſs. And others, whoſe names are truly to be reverenced on account of their great and ſingular inventions, have thought it requiſite to have recourſe even to principles foreign to mathematics, and have introduced the conſideration of efficient cauſes and phyſical powers, for the production of mathematical quantities; and have ſpoken of them, and uſed them, as if they were a ſpecies of quantities by themſelves. Vide *Machin*, in Phil. Tranſ. N°. 447.

FLY. The account of the ſeveral ſpecies, genera and claſſes of *flies*, is no ſmall part of the natural hiſtory of inſects. The number of the ſpecies of *flies* exceeds perhaps even that of the butterfly; but the *flies* are in general ſmall, tho' there are ſome, as the libellæ, whoſe bodies are longer and larger, than thoſe of the largeſt butterflies. The cicadæ alſo belong to the *fly* claſs, and there are ſome of thoſe, whoſe ſize exceeds that of the largeſt butterflies in the thickneſs of their bodies. The generality of *flies* however are much ſmaller than the butterfly claſs, and many of them are indeed ſo very ſmall, as not eaſily to be diſtinguiſhed.

Many of the *flies* are in their prior ſtate hid from us, or detained among very diſpleaſing matters; it is in their winged ſtate, that they become an agreeable object of our reſearches, and it may be moſt proper therefore, to begin their hiſtory in that ſtate, occaſionally deſcending to the others. *Reaumur*'s Hiſt. Inſ. Vol. 4. p. 124.

It is a common error to imagine, that the ſmall *flies* one ſees in the ſpring, will become larger in ſummer. This is wholly without foundation, ſince all the *flies*, like other inſects which undergo a metamorphoſis, become of their full bigneſs, as ſoon as they arrive at the *fly* ſtate, and never grow afterwards.

The general and obvious character of *flies*, by which they are diſtinguiſhed from other winged inſects, is their having tranſparent wings, made as it were of gawze, and never having on them any of that powder which duſts the fingers in touching the wings of butterflies, and having no caſes or covers for them. They are by this plain character of their tranſparent and naked wings, diſtinguiſhed from the butterfly, the beetle, the graſshopper, and other claſſes of winged inſects.

The parts of *flies* are the head, the corcelet, and the body. The corcelet many authors have called the breaſt, becauſe it is placed as the breaſt in us; but as that name might naturally lead us to believe, that the lungs and tracheæ had their place there, it is very neceſſary to change the term, when ſpeaking of animals whoſe tracheæ are diſtributed all over their bodies.

To the corcelet the wings are affixed, and in the body are contained the ſtomach, inteſtines, the parts of generation, and a great many of the tracheæ. The head in *flies* is uſually joined to the corcelet by a very ſhort neck, and can often turn on it as on a pivot. Some *flies* there are which have as it were two corcelets, one ſeparated from the other; the firſt in this caſe is uſually very ſmall, and the wings are affixed to the ſecond. The corcelet is the moſt prominent and rounded part of the inſect, it is always the ſtrongeſt part, and is frequently the thickeſt. The formica leo and ſome water inſects, are transformed into *flies* which have double corcelets, or corcelets divided into two.

The moſt obvious diſtinctions for the arrangement of *flies* into claſſes, is the number of their wings; ſome having only two, others four. And this is ſo plain and obvious a diviſion, that it is wonderful, that the writers of natural hiſtory have not long ſince fallen into it, nay, many of them have often omitted to tell us the number of wings of the ſpecies they deſcribe.

The firſt general diviſion of *flies* is therefore into that of the two winged, and four winged kinds. A very ſlight obſervation is generally ſufficient to determine to which of theſe diviſions, a *fly* belongs; but if we afterwards examine a *fly* with more attention, and take into conſideration, the organs by which it takes its nouriſhment; one may obſerve, that ſome of them are able to thruſt out that organ to a conſiderable diſtance from their head; and that this organ, which while in a ſtate of reſt is folded up or ſhortened, or turned about, or laid cloſely down, when the creature wants to uſe it, is unfolded, lengthened, extended or raiſed. This organ, is what naturaliſts call the trunk of an inſect, but there are many other *flies* which have no trunk; theſe have no other than an opening, ſerving for a mouth, ſurrounded with lips and with ſome other parts. This ſort of opening from its ſituation and figure, may very properly be called a mouth.

Some of theſe mouths have nothing analogous to teeth about them; but there are others which have teeth, ſaws, or grinders, placed on the outſide of the mouth, and moveable as in the caterpillars, with which the *flies* tear and deſtroy leaves, fruits and fleſh; finally there are alſo ſome *flies* to which nature has allotted both a trunk, and theſe organs.

Theſe characters give us very naturally the diſtinctions of four ſubordinate claſſes under the two former general ones.

The firſt contains thoſe *flies* which have a trunk and no teeth or ſaws. The ſecond contains thoſe which have a mouth without any ſenſible teeth. The third, thoſe which have a mouth furniſhed with teeth; and the fourth, thoſe which have both trunks and teeth. Among the *flies* which have mouths furniſhed with teeth, ſome have them not only without, but within their mouths alſo.

All the two winged *flies* belong to the firſt or ſecond of theſe claſſes; the great blue fleſh *fly*, the ſmall *flies* that are ſo troubleſome about our houſes, and the gnats are all of the firſt claſs, and have trunks and no teeth. The ſpring *fly* ſo common in gardens, and a ſort of *fly* reſembling the gnat kind, but much larger, are of the ſecond claſs, and have mouths, but no ſenſible teeth.

The four winged *flies* furniſh us with great numbers to fill up the other two claſſes, left vacant by the former. All the bee kind have a trunk and two teeth; all the waſp kind have a mouth furniſhed with two teeth; and there are beſide theſe ſeveral of the four winged *flies* which belong to the ſecond claſs; all the papilionaceous *flies* produced of water tæniæ, are of this ſort, as having a mouth without teeth. Several ſmall four winged *flies* are alſo of the firſt claſs; as the flying pucerons, and falſe pucerons, which have all trunks and no teeth: neither are the ſmaller ſpecies only of this claſs, ſince the cicadæ alſo belong to it.

A fifth claſs may however be alſo eſtabliſhed, tho' the ſpecies of it are only few, there being only two kinds of *flies* of it, this is of thoſe which have their head ſerving the office, or made in the form of a trunk. The *flies* of this kind have very long heads, which like thoſe of birds terminate in a ſort of beak: this however in the *fly* kind is never opened except at the end, or in other words, theſe *flies* have heads, which are lengthned out into the reſemblance of a bill, or figure of a trunk, but which is ſtiff and cannot change its figure, nor alter its poſition otherwiſe than by the altering that of the whole head. At the end of this ſort of trunk are placed the

teeth or other organs, by which the creature gets its food. The firſt example of theſe heads is in the ſcorpion *fly*; and a very beautiful *fly* that is frequently ſeen skipping and leaping about flowers is the other.

Under theſe general claſſes, ſubordinate ones are to be formed, from whatever beſides is the moſt obvious and eſſential diſtinction among theſe little animals. The form of the body may very well afford us theſe.

Some *flies* have bodies ſhort and of an oval figure, reſembling an ellipſoide or a truncated ellipſoide figure, more or leſs flatted. Of this figure is the body of the common great blue fleſh *fly*, ſuch is alſo the form of the body of the bee kind, and of multitudes of other *flies* both of the two and four winged kinds, whoſe bodies are as broad as thick.

Among the ellipſoide bodied *flies*, ſome have a rounder, others a more oblong body, others a thicker, and others again a thinner or flatter, and others have the hinder part of it bent underneath like a hook. Of this kind are the *flies* common about excrements, and a little grey *fly* common about the bloſſoms of the pear-tree.

Some *flies* there are however, which are longer and rounder than theſe, and deſerve to have a peculiar claſs alloted for them. Of this kind are the libellæ, commonly called with us dragon-*flies* and demoiſelles by the French. Others have their bodies ſhorter but cylindric, as the gnats; and others have them conic, as the common corn-*fly*, which reſembles the ſcorpion-*fly*, and is found in the harveſt-time among the corn. Others finally have bodies in the form of a ſpindle; that is, long, and thicker in ſome part between the ends, than at the ends. Theſe might be arranged in a peculiar claſs, and called the large bodied *flies*, that is to ſay, *flies* whoſe bodies are long in proportion to their thickneſs.

The *flies* whoſe bodies are of this ſpindle ſhape, may very properly be taken from the other claſſes, and made to eſtabliſh a new one, for this reaſon, that as the whole anterior part of the body is in other *flies* joined to the corcelet, in ſuch manner, that they ſeem united in their whole ſurfaces; theſe on the contrary are not joined body and corcelets together, neither indeed do theſe parts touch, but are united by means of a ſlender filament, as may be obſerved in the hornets, and others of the waſp claſs. In ſome *flies* this filament is very long, and in others, as remarkably ſhort; and in ſome, after it has been extended to ſome length, from the corcelet, very thin and fine, thickens by degrees as it approaches the body of the *fly*, as in the greater part of the ichneumon *flies*. There is great difference among the different ſpecies of the ichneumons, ſome inſtead of the common long body have a ſhort and thick one faſtened to the corcelet by a very ſlender thread; ſuch are the ichneumons of the oak galls.

Under the five former claſſes we have therefore three other ſubordinate ones; the firſt of thoſe *flies* whoſe bodies are ſhort and broader than they are thick; the ſecond of thoſe with long bodies; and the third of bodies faſtened to the corcelet only by a fine filament. And under all theſe, the ſeveral genera are to be eſtabliſhed from other leſſer but conſtant and invariable differences; ſuch as the differences of the manner of their carrying their wings, the figures of their antennæ, the poſition of their trunks, and other the like differences. *Reaumur*'s Hiſt, Inſ. tom. 4. p. 124. ſeq. See Tab. of Inſects, and the articles WINGS, TRUNKS, &c.

Bodies of FLIES. The bodies of theſe inſects are extremely different one from another, and even thoſe whoſe general form makes them properly ranged in the ſame claſs, are not without their diſtinctions, by which they alone may be made to eſtabliſh ſubordinate genera.

Among the *flies* which have ſhort or ellipſoide bodies, ſome have the body extremely flat and thin; ſuch are thoſe of the *flies* produced from the worms which devour the pucerons; and others have the hinder part of the body bent downward in form of a hook.

The extremity of the body in theſe animals is uſually ſmaller than the adjoining parts. Yet there is a *fly* found in the neſts of ſwallows, the extremity of whoſe body is larger than any other part of it; and not only the form of the body, but the differences of the filament, by which in many genera, it is connected to the corcelet, may furniſh great matter for the diſtinction of the ſubordinate genera.

The hinder part or extremity of the body alone may alſo afford great matter of diſtinction. Thoſe *flies* which carry ſtings in their tails, have in that alone a ſufficient diſtinction. *Reaumur*'s Hiſt. Inſ. tom. 4. p. 144.

Others there are which have organs placed there, which tho' we need not fear them, offer ſubject enough for our admiration; 'tis indeed the females alone, who have occaſion for theſe, and therefore the females alone are furniſhed with them.

Several of theſe inſtruments are a kind of auger or borer, carried in a caſe or ſheath. This ſometimes has the form of a long tail to the inſect, and its uſe is to pierce and bore the body, in which the creature is to depoſit its eggs. Several of the female ichneumons have this ſort of long tail; and there are other inſects which have a long and ſtrong piercer, which however does not make a tail to their body, but is partly lodg'd either under their belly, or in their body; of this kind are the cicadæ and others.

Other inſects of this kind have a ſingular inſtrument lodged in this part of their body, which may properly be called a ſaw. They never ſhew this on examination unleſs their bodies be preſſed, and then we cannot but greatly admire the inſtrument itſelf, and the powers by which the creature moves it.

Other inſects of this claſs carry behind one or more long ſlender filaments, which in their form and ſtructure, have ſome ſort of reſemblance to the antennæ; and the uſes of which, are as little known to us, as thoſe of the antennæ. The genera of *flies* may very properly be diſtinguiſhed by means of theſe: among the four winged *flies*, the ephemerons, and many other ſpecies, have them; and among the two winged kinds, the ſmall *fly*, which is the male gall-inſect, furniſhes us with an inſtance of them. See Tab. of Inſects.

FLIES *of water worms*. Theſe according to their ſeveral ſpecies, have ſome varities in their manner of egreſs from their ſhell at their leaving the nymph ſtate, for that of the perfect *fly*.

The long water worms compoſed of many rings, and with funnel faſhioned tails made with an aperture for the admiſſion of the air, ſurrounded with a multitude of hairs, retain, in their ſhell ſtate, ſo much of the ſame form they were of while living, that the one is not eaſy to be diſtinguiſhed from the other. The nymph in each of theſe fills up only a ſmall part of the cavity, and the *fly* in many of them is produced perfect in five or ſix days. At this time the parts of the nymph being thorougly ſtrengthened, it begins to ſhew the firſt ſigns of life in its attempt to open its priſon.

To effect this, nature has ſo provided for the incloſed *fly*, that the head is but ſlightly joined to the ſecond ring of the body; but the creature in this ſtate, not being lodged in that part of the worm, can make no efforts againſt it; all its endeavours are bent to force a ſlit or opening in the ſecond ring, like that in the back of the skin of a caterpillar, that is going to change its skin, or like that of the butterfly cryſalis's. The means the incloſed *fly* uſes to this purpoſe, are the inflating and ſwelling its head, and then thruſting out the bladder from its anterior part, with which theſe *flies* are provided by nature in this ſtage of their lives, and for this only purpoſe.

When this ſlit or crack is effected, the head of the worm is in ſome meaſure ſeparated from the body, and the efforts of the *fly* to puſh itſelf forward, finiſh that ſeparation, and leave an aperture of a proper ſize, for the egreſs of the *fly*.

But the water, on the ſurface of which this change is effected, is a thing much to be dreaded, and indeed is often of fatal conſequences to the new born *fly*, ſince the *flies* produced of water worms, are as much afraid of this element, and are as eaſily drowned as thoſe produced from worms who ſpend their lives on dry land.

The *flies* produced from this long water worm, are however in leſs danger and leſs afraid of the water than many others; they advance ſlowly out of their ſhells in an horizontal direction, and as ſoon as their fore-feet are at liberty, they boldly place them upon the water, as if upon dry land, and it ſerves as well for their ſupport; and as their other parts get at liberty, they are gradually ſet upon the water too, and the creature there reſts till his wings are unfolded, and all its parts have their proper form, and then takes its flight into its new element.

The *fly* produced from this long worm is of the ſhort bodied kind, and much of kin to the common great blue fleſh *fly*. It has a fleſhy trunk furniſhed with lips, and has no teeth; but tho' this *fly* is ſo far of the ſame claſs with that common ſpecies, it has enough to amply diſtinguiſh it in theſe ſeparate characters. The firſt is, that this has its antennæ formed of granulated filaments, whereas the other has them of the battledore kind: the wings of the fleſh *fly* are not croſſed upon the body, whereas, thoſe of this water *fly* are; but what more than theſe diſtinguiſhes it from this, and indeed from all the other ſpecies of *flies* is, that it has two oblong and ſlender bodies formed like pins, and pointed as thoſe, which are a little crooked, of a cruſtaceous ſtructure, and are inſerted in the upper part of the corcelet of the *fly*, and directed toward its hinder part. See Tab. of Inſects, N° 40, ſeq.

Theſe prickles are hard, rigid and immoveable.

St. Mark FLY, in natural hiſtory, the name of a ſpecies of *fly*, which makes its firſt appearance every year, about St. Mark's day, and is then ſeen in vaſt numbers; it is ſomewhat ſmaller than the large blue fleſh *fly*, and has no trunk, but a mouth without teeth: notwithſtanding this ſeemingly innocent organization, the creature does great miſchief, and every gardiner knows the effects of it at one time or other. Theſe *flies* are found about fruit trees, and are always ſeen ſitting upon the buttons of the leaves, and the flower buds; and they do great miſchief to many kinds of trees, by ſucking the juices of thoſe tender parts, and either deſtroying them before they open, or at leaſt rendering them very weak. Some tell us that theſe *flies* had originally a ſting, but that the miſchief they did, being very great, St. Mark deprived them of that

that offenſive weapon for all generations: this is a ſtory much believed by the country people, in many of the Roman catholic kingdoms. The mouth is of the ſame figure with that of the tipula, or long-legs, being compoſed of two membranous lateral lips, like the two valves of a ſhell-fiſh, which defend and cover two other fleſhy lips within.

The aperture of the mouth is occaſionally covered in the ſame manner with that of the tipula, by two beards which ſtand near it; and the antennæ are ſhort, of the granulated kind, but have nothing ſingular in them.

The male is eaſily diſtinguiſhed from the female, by having a much larger head, and his reticular eyes much larger than hers; they in a manner cover the whole head, and fall over it behind, ſo that the creature ſees every way at once.

Beſide theſe, it has alſo a cluſter of three bright ſingle eyes placed in a triangle on the upper part of the head, and reſembling the eyes of ſpiders.

The wings of this *fly* are a little longer than its body, and in their uſual poſition. They are croſſed in ſuch a manner, that one of them intirely covers the other, and even the body. When the wings are opened and the body examined, the male and female are found to be very different in figure; the male would naturally be called one of the long bodied kind, his body being ſlender and compoſed of ſeveral rings; the thickeſt of which adheres to the breaſt, and the reſt grow gradually ſmaller all the way; the ſurface is rough and uneven, and the whole of no great beauty. The body of the female is uſually diſtended with eggs, and thence appears very thick, and much ſhorter than the other, and is of a ſmooth and poliſhed ſurface. Both the male and female fly in a very ſingular and awkard manner; they ſeem as if hanging in the air, their legs always hanging ſtrait down from their body, and theſe being very long appear very oddly. The common *flies* of this kind are of two ſpecies, there is a black one, and one whoſe breaſt is of a dusky red; but according to this deſcription of their ſeveral parts, there are ſeveral other ſpecies of them, which are ſo ſmall as not to appear diſtinctly without the aſſiſtance of a microſcope.

All the ſpecies of the St. Mark *fly*, are produced from worms which are hatched from the eggs of the parent *fly*, depoſited under the ſurface of the earth. Theſe worms are ſmall and have ſcaly heads and no legs; they ſomewhat reſemble caterpillars in ſhape, and are hairy, as many of the ſpecies of caterpillars are. It is a very common thing to find thouſands of theſe worms in the dung of cows lying on the paſtures, where they feed. There is vaſt plenty of them thus found in the months of September and October; and as this is a ſeaſon when their parent *flies* have been long dead, and the dung they are found in but freſh or a few days old, it is very evident that the eggs of of which they were hatched were not originally depoſited there, but that they have crawled up out of the earth, into a ſubſtance which is more agreeable to them by way of food, than any thing they find under ground.

This is not ſingular in this inſect, for the ſeveral worms of the beetle kind, ſo frequently found in dung, are not produced there, but under the ſurface of the earth, and only crawl up into the dung for the ſake of food and moiſture, when it happens to fall upon the place where they are.

If a piece of cow-dung in which the worms of this St. Mark *fly* are, be preſerved in a box, it will keep them alive the whole winter, and they will be found in the beginning of March, to be grown much larger than before, and to be leſs hairy, their hairs being longer, and ſtanding about nine on every ring. In order to ſee the transformation of theſe into the *Fly* ſtate, the dung muſt be at this time laid on ſome common earth; the worms ſoon quit the dung, and crawl into the ground, where they transform themſelves almoſt immediately into the nymph ſtate, and from thence they iſſue out in the form of *Flies* a few days after the middle of April. They do not all quit the ſhell of the nymph at the ſame time, but the young *Flies* may be ſeen crawling up out of the ground at times, during ſix or ſeven days, from the appearance of the firſt.

The manner of theſe *Flies* leaving their worm ſtate to enter into that of the chryſalis or nymph, is worthy obſervation. The worm ſeems in great diſorder, and twiſts itſelf about ſeveral ways, till at length the skin cracks on the ſurface of the back, immediately upon this there appears the anterior part of the nymph at the aperture, and this forces its way out by degrees, the head becomes of no farther uſe, and is left with the skin; and the nymph by diſtending and contracting itſelf, at length makes its way wholly out of it, and then remains at reſt till the *Fly* iſſues out of it. The laſt transformation of this inſect, or the appearance of the *Fly* from the nymph, has nothing ſingular in it, but is performed in the ſame manner, with the ſame change in other animals of this kind As ſoon as the *Flies* are produced they take wing, and ſettle upon the fruit trees, or other plants. The male and female ſoon meet and engage in the work of propagating the ſpecies; in this the male remains fixed to the female for an hour or longer, and the female often in this ſtate flies away with him, and carries him to a great diſtance. If they are ſeen ſitting in this condition, they may be caught and even killed without their parting from one another. The male on this occaſion does not ſit upon the back of the female, but they are joined tail to tail, and the wings of the female cover ſo large a part of the body of the male, that the two animals look like one, with a head at each end of the body. After the buſineſs of the impregnation of the eggs in this manner is once over, the creatures have no buſineſs for any long life. The male has done his part, and the female has no farther buſineſs in the world, than the depoſiting her eggs in the earth, or in the dung of cows and horſes; which as ſoon as ſhe has done, ſhe dies. The male being uſually dead before her. The miſchief theſe creatures do to the fruit trees therefore tho' very great is not very laſting, for their duration in the winged ſtate is but ſhort, they only appear about the middle of April, and they are all gone before May is over. The eggs they depoſite ſoon hatch into worms, which live till the ſeaſon of their appearing in the *fly* ſtate again.

Flower FLY, in natural hiſtory, the name of a ſmall but very beautiful *fly*, deſcribed by Cluſius. It is black, and has two ſilvery wings, two white eyes, ſeven yellow ſpots on the back, and a black one in the middle.

Eyes of FLIES. See the article EYE.

Legs of FLIES. See LEG.

Rings of FLIES. See RINGS.

Harveſt FLY. See HARVEST.

Lanthorn FLY. See LANTHORN *fly*.

Roſe FLY. See ROSE.

FLY *catcher*, in zoology. See MUSCICAPA.

FLY *tree*, in natural hiſtory, a name given by the common people of America to a tree, whoſe leaves they ſay, at a certain time of the year, produce *Flies*. On examining theſe leaves about the middle of ſummer, the time at which the *Flies* uſe to be produced, there are found on them a ſort of bags of a tough matter, of about the ſize of a filbert, and of a dusky greeniſh colour; on opening one of theſe bags with a knife, there is uſually found a ſingle full grown *fly* of the gnat kind, and a number of ſmall worms, which in a day or two more have wings and fly away in the form of their parent. The tree is of the mulberry kind, and its leaves are uſually very largely ſtocked with theſe inſect bags, and the generality of them are found to contain the inſects in the worm ſtate; when they become winged, they ſoon make their way out. The bags begin to appear when the leaves are young, and afterwards grow with them, but they never rumple the leaf, or injure its ſhape. They are of the kind of leaf galls, and partake in all reſpects, except ſize, of a ſpecies we have frequent on the large maple, or, as it is called, the ſycamore. Philoſ. Tranſ. N°. 431.

The *Fly* tree is found in many parts of France, where it grows in great abundance, and is there ſaid to bear fruit, which give origin to vaſt numbers of *Flies*. The truth of the matter is this; the tree is a ſpecies of turpentine tree, and frequently produces or gives origin to certain tubercles, which in the common turpentine tree are called its horns. Theſe are a ſort of long bladders of the length and thickneſs of a finger, which ariſe not from the ſtalks as fruits do, but from the ſurface of the leaves, and are only a kind of leaf galls formed of an elongation of its outer membranes, occaſioned by the punctures of a number of inſects contained within it, which occaſions a derivation of freſh juices to the part. Theſe inſects are not *Flies* of the common kind, but are the pucerons ſo well known for feeding on the leaves and tender ſtalks of trees, and ſome few of theſe only are winged, the others being deſtitute of them. The origin of theſe tubercles or bladders is this, the female puceron as ſoon as produced from the parent, makes a way under the membrane that covers the leaf by means of a hole bored in it with her trunk. This hole ſoon heals up after ſhe is in, and the young ones which ſhe afterwards produces, by their wounding and ſucking the ſides of the lodgment in which they find themſelves placed, occaſion all the ſwelling and growth of the tubercle. *Reaumur*'s Hiſt. v. 6. p. 34. See the article PUCERON.

FLY, in the ſea language, that part of the mariner's compaſs on which the 32 winds are drawn, and to which the needle is faſtened underneath. See COMPASS, *Cycl.* and *Suppl.*

Let FLY *the ſheets*, at ſea, a word of command, in caſe of a guſt of wind, leſt the ſhip ſhould overſet, or ſpend her top-ſails and maſts, to have the ſheet go a-main, and then the ſail will hold no wind.

FLY *the heels*, in the manege. A horſe is ſad to *fly* the heels, when he obeys the ſpurs. See SPUR and HEEL, *Cycl.*

FLYING *fiſh*, a name given by the Engliſh writers to ſeveral ſpecies of fiſh, which by means of their long fins have a method of keeping themſelves out of water for ſome time. The *flying* fiſh moſt properly ſo called is the exocætus of the antient authors, and of Artedi. See Tab. of Fiſhes, N° 41. It is called alſo the *adonis*, *hirundo*, and *mugil alatus* or winged mullet, by authors; but they uſe theſe words indeterminately for this, and the other kinds. See the articles MUGIL *Alatus*, and EXOCÆTUS.

FLYING *fiſh* is alſo the name of a fiſh of the cuculus or gurnard kind

kind, with very large gill fins, called by the writers on theſe ſubjects, *milvus*. It ſometimes uſes theſe fins inſtead of wings for flying. *Ray*'s Ichthyol. p. 283. See MILVUS.

FODDER, (*Cycl.*) in mining, is a meaſure containing twenty-two hundred and an half weight, though in London but twenty hundred weight. *Houghton*'s compl. Miner, in the explan. of the terms.

FOECIALES, among the Romans, a college of prieſts, firſt inſtituted by Numa, whoſe office it was to declare war, and proclaim peace. No war could be undertaken till they had examined and found the cauſes for it juſt, and neceſſary, and till ſatisfaction had been refuſed. *Hofm.* Lex. in voc. See CLARIGATIO and WAR.

FOENICULUM, *fennel*, in botany, the name of a genus of umbelliferous plants, the characters of which are theſe; the flower is of the roſaceous kind, or compoſed of ſeveral petals arranged in a circular form; theſe ſtand on a cup, which afterwards becomes a fruit compoſed of two long and thick ſeeds which are gibboſe and ſtriated on one ſide, and flat and plain on the other. To this it is to be added, that the leaves are very finely divided, and ſtand on complex ſtalks.

The ſpecies of *fennel* enumerated by Mr. Tournefort are theſe. 1. The common *fennel* with blackiſh acrid ſeeds. 2. The common German *fennel*. 3. The blackiſh leaved *fennel*. 4. The ſweet *fennel* with large pale coloured ſeeds. 5. The ſweet fennel of the azores iſlands. 6. The white flowered *fennel* with ſmall roundiſh ſeeds. 7. The crooked *fennel*, called by authors ſeſeli of Marſeilles. 8. The perennial wild *fennel*, with ſhort leaves, called by ſome the broad leaved ſpignel. 9. The tall wild *fennel*, with longer leaves. 10. The dwarf wild *fennel*, with peucedanum leaves. 11. The wild *fennel*, with bluiſh green leaves. 12. The annual *fennel*, with long and narrow umbels, called by authors gingidium, and viſnaga. 13. The tall globular headed *fennel*, called by authors, the hippomarathrum. 14. The oriental *fennel*, called by authors cummin. 15. The oriental *fennel*, called cummin with hairy ſeeds. 16. The annual *fennel*, with the ſmell of origanum, called by authors, the leſſer ammi. 17. The little annual Portugal *fennel*, with the ſmell of dill, called by ſome wild dill. 18. The little acrid Portugal *fennel*, called the dwarf ammi. 19. The ſmall *fennel* with wide umbels, called mountain daucus, and ſelinum, by ſome authors. 20. The ſmalleſt water *fennel*, called by authors the leaſt water *ſium*. *Tourn* Inſt. p. 311.

FOENUM *græcum*, *fœnugreek*, in botany, the name of a genus of plants, the characters of which are theſe; the flower is of the papilionaceus kind, and its piſtil which ariſes from the cup, finally becomes a flat and hornlike pod, containing a number of ſeeds approaching to a rhomboidal or reniform ſhape. The leaves ſtand three on every ſtalk.

The ſpecies of *fœnugreek*, enumerated by Mr. Tournefort, are theſe; 1. The common cultivated *fœnugreek*. 2. The common wild *fœnugreek*. 3. The ſmaller Arabian wild *fœnugreek*. 4. The many podded wild *fœnugreek*. 5. The wild *fœnugreek* with numerous long pods. 6. The Sicilian *fœnugreek*, with birdsfoot pods. *Tourn.* Inſt. p. 409.

FOETOR (*Cycl.*) — FOETOR *oris*, a term uſed by medical writers to expreſs that ill ſmell in the mouth, uſually, tho' often improperly, called by us a ſtinking breath. This is a malady ariſing in different caſes from very different cauſes; as from the ſcurvy, and particularly that ſpecies of it which affects the mouth, and is therefore called *ſtomacace*; from the french pox; from an ulceration whether ſimple or fiſtulous in the lungs, which is the caſe in conſumptions; from ulcers in the mouth; from caries or rottenneſs of the teeth, or from any other impurity of them; from crudities in the ſtomach ariſing from a bad digeſtion, and in particular, from a weakneſs about the left orifice of the ſtomach, from which part the fœtid vapours will often ariſe in very great abundance. *Juncker*'s Conſp. Med. p. 607.

Method of cure. According to the different cauſes of this diſorder, it requires a very different method of cure in caſes where it depends on the ſcurvy, pox, or other diſeaſes. Thoſe diſeaſes are to be attacked by the proper medicines, in order to its cure; when it ariſes from a carious tooth, there is no cure for it, but the drawing the tooth; when the impurities of the teeth occaſion it, the cleaning them proves a cure. *Juncker*'s Conſp. Med. p. 607.

FOETUS (*Cycl.*) — The formation of the bones in a *fœtus* is very gradual and regularly performed. In the firſt two months there is nothing of a bony nature in the whole; after this, the hardneſs of the parts where the principal bones are to be ſituated becomes by degrees perceptible. Dr. Kerkring deſcribes the progreſs of the oſſification from ſceletons which he had prepared from *fœtus*'s of two months, and thence up to nine. In the firſt two months, or till the end of that time, there appears not any thing bony; after this in the third and fourth months, and ſo on, the ſeveral parts one after another, acquire their bony nature. In the firſt ſtages every thing is membranous, where the bones are to be; theſe by degrees tranſmigrate into cartilages; and from theſe by the ſame ſort of change continued, the bones themſelves are by degrees formed. All this is done by nature, by ſuch ſlow, tho' ſuch certain progreſſions, that the niceſt eye can never ſee it doing, tho' it eaſily ſees it when done.

While *fœtus*'s continue in the womb, their muſcles commonly act only by their natural contraction, or the *fœtus* is ſaid to be in a ſleeping ſtate; but ſometimes, when its eaſe or preſervation requires a change of ſituation, it ſeems to perform ſome voluntary motions, which are called its *ſtirrings*. The poſture of the child in the womb, is owing to the muſcles being left to their natural contractions, the ſtronger always prevailing, till their antagoniſts exert ſuch a reſiſtance by being ſtretched, as brings them to an equilibrium. See *Monro*, in Medic. Eſſ. Edinb. vol. 1. p. 152.

Fœtuſes increaſe proportionally leſs, the longer they continue in the womb. Mauriceau pretends, that the increaſe of a child, is ſixty-four times its own weight in triple the time. Thus he ſays, that at the birth, a child weighs twelve pounds, of ſixteen ounces each; at the three months, it weighs three ounces; at one month $\frac{3}{4}$ of a drachm; and at ten days, leſs than half a grain. *Monro*, ibid. p. 153.

Nutrition of the FOETUS. How the nutrition of the *fœtus* is performed, is diſputed among the learned. Mr. Monro is of opinion, that the *fœtus* in viviparous animals is nouriſhed by the navel alone. He has given a curious diſſertation on this ſubject in the Medical Eſſays [a]. Where he obſerves, 1. That the *fœtus* is capable of receiving its whole nouriſhment by the umbilical vein alone, whereas no *fœtus* can ſubſiſt without the umbilical veſſels. 2. That the liquor of the amnios is ill calculated, in its natural ſtate, for the food of a *fœtus*; and becomes altogether unfit food in morbid caſes. 3. That it is highly improbable that a creature ſhould furniſh its ſubſiſtence out of its own body, which muſt be the caſe, if the *fœtus* feeds on the liquor of the amnios. 4. That it cannot be inferred from any reſemblance of the liquor of the ſtomach and amnios, nor from any other appearances, that the liquor of the amnios is ever ſent down into the ſtomach. 5. That no direct proof can be had of the liquor of the amnios, being preſſed or ſwallowed down; but on the contrary, all circumſtances make it probable, that it does not go down. 6. That all the phænomena of a *fœtus*, can moſt reaſonably be accounted for, without ſuppoſing the liquor of the amnios to be any part of its food; hence he thinks it reaſonable to exclude the mouth from the office of conveying the aliment of the *fœtuſes* of viviparous animals, and to believe that all their nouriſhment is conveyed by the umbilical veſſels. [[a] Ib. Vol. 2. Art. 9.] Hippocrates among the antients was of opinion, that the *fœtus* was nouriſhed both by the mouth, and by the umbilical veſſels. He maintains, that the child in the womb with its lips compreſſed together attracts nouriſhment; for which he aſſigns this reaſon; that unleſs the child had ſucked in utero, it neither could depoſit excrement, nor know how to ſuck ſo ſoon as it is born. Mr. Gibſon, in the Medical Eſſays of Edinburgh [a], has lately adopted this opinion; that the *fœtus* is nouriſhed by the mouth and by the navel alſo, as moſt probable. Mr. Monro, has anſwered him loc. cit. [[a] Vol. 1. Art. 13.]

Mr. Monro has given us ſeveral curious obſervations relating to the queſtion about the nutrition of the *fœtuſes* of oviparous animals. See Med. Eſſ. Edinb. Art. 10. or its Abridgment, vol. 1. p. 323, ſeqq.

He has alſo there conſidered the nouriſhment of plants in a *fœtus* ſtate. And he ſhews the analogy there is between theſe and animal *fœtuſes*. To fix the analogy between animals and plants, he obſerves, that the former may be ſaid to remain in the ſtate of a *fœtus*, ſo long as the young creature is ſolely nouriſhed by liquors furniſhed by the uterus of the parent; and plants are to be conſidered as *fœtuſes* only, while the ſeed is ripening, and before the earth, water, moiſture of the air, &c. have communicated immediately any matter for its increaſe.

The ſame author has given us ſome practical corollaries, from his eſſay on the nutrition of *fœtuſes* of viviparous animals, where he makes ſeveral very juſt obſervations relating to abortion, its cauſes, and the method of preventing it in many caſes. See Medic. Eſſ. Edinb. Vol. 2. Art. 11.

The liquors ſent into the *fœtus* by the umbilical vein, not having their propelling force communicated from the mother, the ſtate of the mother's pulſe cannot affect the child otherwiſe than by occaſioning abortion, or vitiating the fluids. Hence the impreſſions ſaid to be made on children by the imaginations of the mother, cannot be accounted for phyſically. Hence alſo children may be infected with the diſeaſed juices of the mother; but it is poſſible for them to eſcape catching their mother's diſeaſes, if either theſe be only topical, without affecting the whole maſs of the fluids; or even when the mother's blood is ſpoiled, the child may be free of her diſeaſe, if the morbid particles be ſuch as the placentary veſſels cannot abſorb. See Medic. Eſſ. Edinb. Vol. 2. p. 238.

The mother ſupplies liquors to the *fœtus*, which returns others to the mother, by means of the uterine and umbilical veſſels. This ſeems proved from obſervations; *fœtuſes* whoſe placenta were not in the leaſt ſeparated from the uterus, having been

been quite exhauſted of blood by the mother's dying of an hæmorrhage; and Mr. Monro acquaints us, that he has ſeen children pale and weak by violent floodings in the time of labour. See Medic. Eſſ. Edinb. vol. 2. art. 9.

The liquors are not carried from the mother to the *fœtus*, or from the *fœtus* to the mother by continued canals. That is, The uterine arteries and veins do not anaſtomoſe with the veins and arteries of the ſecundines; but the extremities of the umbilical vein take up the liquors by abſorption, in the ſame way as the lacteal veſſels do in the guts; and the umbilical arteries pour their liquors into the large cavities of the ſinuſes, or other cavities analogous to them. Vid. *Monro*, in Med. Eſſ. Edinb. vol. 2. p. 133, ſeq.

It is a queſtion, whence the *fœtus* has its red blood. Mr. Monro anſwers, that *fœtuſes* in viviparous animals have their red blood, from the ſame ſource that chickens in ovo have theirs; which can be no other than the action of their heart and of the veſſels in their body and ſecundines. See Medic. Eſſ. Edinb. vol. 2. p. 144.

A liquor is found in the thorax of *fœtuſes*, which Mr. Petit inclines to believe is furniſhed by the thymus. See Mem. de l'Acad. des Sciences, 1733.

Reſpiration ſeems to be the great act by which the change is made in animals, from the ſtate of *fœtus*, to that of motion, ſenſation, and the other qualities of animal life in their larger degree. Mr. Duverney obſerved this in the *fœtus* of a common ſnake: he broke the egg of one of theſe animals, at a time when it was juſt ready for hatching, and the young ſnake fell out rolled in a ſpiral, at firſt quite ſtiff and motionleſs; but it had no ſooner breathed three or four times, than it began to perform all the motions of animal life, in the moſt nimble and active manner.

We have a very ſurpriſing account in the Philoſophical Tranſactions of an extraneous body lodged in the bladder of an infant, which was born with many imperfections, and could not be expected to live any long time; on the opening the body after the death, there was found in the bladder a tough ſubſtance of the bigneſs of a ſmall fig, in the center of which was a pin with the head on, and grown very black. The child was opened in preſence of ſeveral perſons, who all ſaw this; but the moſt probable account of its coming there ſeems however not to have been in the *fœtus* ſtate, but by ſome accident after the birth. Philoſ. Tranſ. N°. 479, p. 365.

The *fœtus* often dies in the womb. This is diſcovered to be the caſe by the following ſymptoms. The mother becomes languid and weak, and is ſubject to frequent faintings. She complains alſo of flying heats and chilneſſes, ſucceding one another at ſhort intervals, and of ſtraitneſs of the præcordia, anxieties of mind, and vertiginous dizzineſs of the head. The breaſts tho' before diſtended and hard, grow flaccid on this, and have an abundance of a thin watery ſerum in them. The *fœtus* is not perceived to move, and the belly hangs upon the thighs with an uncommon dead weight; and is affected with a remarkable coldneſs. *Junker*' Conſp. Med. p. 710.

The death of the *fœtus* is often owing to a remarkably plethoric ſtate of the mother; and yet more frequently to her violent paſſions, whether of grief, anger, fear, or any other kind. The morbid conſtitution of the mother may alſo occaſion it, be it almoſt of any kind whatever, as will habitual diarrhœas. But the death of the *fœtus* is moſt frequently of all occaſioned by the bad ſucceſs of labour pains, or bad aſſiſtance in them, and by its being left conſtricted by the womb.

The expulſion of the dead child is to be attempted by all the forcing medicines, ſuch as borax, and the like; and the ſpirits and ſtrength are to be kept up during the attempt, by giving analeptics in the intermediate time; but if theſe medicines have not the deſired effect, the manual operation of the man-midwife, muſt be called in; and when the *fœtus* is taken out, the woman is to be treated with the utmoſt care in the common way of lying in women. *Junker*'s Conſp. Med. p. 711.

The accidents which attend a dead *fœtus* of conſiderable growth are well known, but the conſequence of its dying, while very young, is leſs underſtood. There is an account in the memoirs of the Paris academy, of a caſe of this kind, where all the circumſtances are very accurately delivered. A lady of Genoa, who found that ſhe was breeding, accidentally got a fall, but without perceiving that ſhe had received any great hurt. After the fall, her belly continued to grow big till the end of the fifth month, but after that time, it began to decreaſe inſtead of enlarging in ſize, and ſhe began to entertain ſome doubt, whether ſhe had been really with child or not; no motion of the *fœtus* had ever been perceived, nor had the lady ever the leaſt appearance of milk in her breaſts; about a month after this, that is, in her ſixth month of pregnancy, ſhe was delivered of a ſhapeleſs maſs of the bigneſs of a man's fiſt.

Mr. Anell who attended her, found that this was a kind of bag, formed by the chorion and amnios, and faſtened to a placenta of about two finger's thick, and filled with a fluid much reſembling milk, both in colour and conſiſtence. Near the middle of the placenta, there was an appendage of about two fingers long, which was the remainder of the umbilical cord, but there appeared no *fœtus*; and indeed a leſs curious obſerver than Mr. Anell might very eaſily have concluded, that there was none. This gentleman, however perſiſting in his ſearch, at length diſcovered it. It was very well formed, but not longer than a kidney bean, yet the head was very perfect, and there were rudiments of arms and legs, and the navel was cloſed. The principal things to be remarked in this extraordinary caſe are; 1. That the *fœtus* and the placenta had a very different age, the firſt being not above a month old, and the placenta and its membranes being of ſix months growth, and being of the ſize that thoſe parts uſually are, ſix months after pregnancy. 2. That the *fœtus* was entirely ſeparated from the navel ſtring; and 3. That it had been ſo well preſerved for ſo many months after its death, it not being at all corrupted. The *fœtus* naturally died by the injury received in the fall, the navel ſtring no longer conveying nouriſhment to it. After this the umbilical cord being unhurt, might continue to receive by the vein the blood drived to it from the placenta, and from the mother; but the dead *fœtus* could no more return that blood by the umbilical arteries; and this impoſſibility of any farther circulation, muſt make the cord ceaſe to grow any larger. On the other hand, the continual tranſpiration decreaſing its ſubſtance, it could not but diminiſh; and this is the more probable, as the *fœtus* when taken out of the bag, and put into ſpirits, diminiſhed in a little time to half its original ſize; which proves that the ſofter and leſs conſiſtent parts of theſe bodies eaſily evaporate. There muſt however have been a circulation in the placenta, as it grew larger to the time of the delivery.

The fall of the mother was plainly the cauſe of the breaking of the umbilical cord, and from hence followed all the other circumſtances; but it is not eaſy to explain how the *fœtus* became preſerved ſo long a time in a peculiar liquor furniſhed to the ſack. See DELIVERY.

FOAL, or *Colt*, the young of the horſe kind. The word *Colt* ſimply ſpoken, is among the dealers underſtood to mean the male kind; the female or mare *colt* being called a *Filly*.

Colts are uſually foaled in the beginning of ſummer, and it is the cuſtom to let them run with the mare till Michaelmas; when they are to be weaned. This is to be done ſooner or later according as the cold whether comes in. Some are for not having them weaned till the middle of November, and that three days before the full of the moon, if it happen near that time. And ſome of the beſt writers on this ſubject, are of opinion, that we do not let the *foals* ſuck long enough, and that this is the reaſon, why they are ſo very long before they are fit for uſe. Theſe authors are of opinion, that a *colt* ought always to ſuck the whole winter, and that this would make them fit for ſervice a great deal ſooner than they are at preſent.

When firſt weaned, they muſt be kept in a convenient houſe with a low rack and manger for hay and oats, that they may eat freely and eaſily, and the hay muſt be very ſweet and fine, eſpecially at firſt; a little wheat bran ſhould be mixed with the oats in order to keep their bodies open, and make them eat freely and drink freely.

It has been obſerved, that the eating too much oats has rendered *colts* blind; but the cauſe has been wrongly attributed to the heating quality of the oats. If the oats are bruiſed in a mill before they are given them, tho' they eat ever ſo much of them, there never happens any miſchief of this kind; but endeavouring with their teeth to break and chew them when whole, they are apt to ſtretch and ſwell the veſſels of the head, and occaſion a fullneſs of blood about the eyes, which often terminates in inflammations, and in blindneſs.

The difficulty of chewing oats, and not their heating nature, is therefore the true reaſon of this miſchief; and if this be obviated by the firſt bruiſing the grain, the *colt* always grows the better for eating it. His legs do not grow thick, but he becomes broader and better knit, and as he grows up, will beat fatigue much better than if he had been fed only with bran and hay. Above all things, theſe creatures are to be kept from wet and cold while they are young, for nothing is more tender than a *colt*, and the miſchiefs he gets at this time are not ſo eaſily got over. Experience ſhews the great advantage of houſing and taking care of *colts:* for if the ſame ſtallion cover two mares, both alike in age, beauty and all other particulars, and theſe bring both *foals* of the ſame ſex, ſo that there is no room to expect the leaſt difference between them; let one of theſe *colts* be houſed every winter, and let the other always run abroad, it will be found as they grow up, that the *colt* which has been kept abroad, ſhall have large fleſhy ſhoulders, flabby and gouty legs, weak paſterns, and bad hoofs, and ſhall be a dull heavy creature; and that the other which has been houſed and taken care of, ſhall have a fine forehand, be well ſhaped, have good legs and good hoofs, and be of good ſtrength and ſpirit. From this it may be learned, that it is of no conſequence to have a good ſtallion, and a good mare, if the *colts* are ſpoiled in the breeding up.

It is obſerved that ſome *colts* under the age of ſix months, tho' the mare yields plenty of good milk, yet decay and waſte daily. They are in this caſe always troubled with a cough. The breeders

breeders have a great many fantaſtic remedies in ſuch caſes, as the bag wherein the creature was foaled, the lungs of a fox and the like; but a little liquorice and elecampane powder mixed with honey and milk, is a remedy greatly to be preferred to all theſe.

When the *colts* are kept up in the winter, they are not to be continually immured in the ſtable, but in the middle of the day when the ſun ſhines warm, they ſhould always be let out to play about for an hour or two; and when the winter is ſpent, they ſhould be turned into ſome dry ground, where the graſs is ſweet and ſhort, and where there is good water, that they may drink at pleaſure. The winter after this, they may be kept in the ſtable without any farther care than that which is taken of other horſes; but after the firſt year the mare *colts* and the horſe *colts* are not to be kept together.

This may be the method every ſummer and winter till they are broke for uſe; which may be when they are three years old, and they will take the breaking much more eaſily, after this ſort of breeding, than if they had been all the time running about wild: for ordering them the ſecond year as the other horſes are ordered, they will be tame and gentle like them, and will not flounce and plunge about on the firſt mounting, as they otherwiſe would, but will take the ſaddle quietly. The common way of breaking a *colt* by beating him and tiring him by trotting over plowed fields, however neceſſary it may be to a *colt* that has always run wild, is not to be choſen when it can be avoided; for it is breaking and ſpoiling the creature's ſpirit. Uſing him to other horſes, and winning him by gentleneſs is a vaſtly preferable way. It is proper to wear no ſpurs for ſome time with a newly backed horſe.

In order to make him endure the ſaddle well, the way is to make it familiar to him, by clapping it with the hands as it lies on his back; then ſwaying upon it, and dangling the ſtirrups by his ſides, rubbing his ſides with them, and bringing him thus to be uſed to every thing about him. Then the crupper ſhould be often ſtrained, the girths looſened and tightened, and the ſtirrups taken up and let down at times, all the while making much of him. This will make every thing eaſy to him, and will make him gentle without breaking his ſpirit.

As ſoon as he will trot with the ſaddle obediently, the mouthing of him is to be conſidered. In order to this, put a trench of a full mouth into his mouth, and throw the reins over the fore part of the ſaddle, ſo that he may have a full feeling of it, then put on a martingale, buckled at ſuch a length that he may juſtly feel it when he jerks up his head. A broad piece of leather is then to be put round his neck, and the ends made faſt by plating it, or ſome other way at the withers, or before the wind-pipe, about two handfuls below the throppple, betwixt the leather and his neck; let the martingale paſs ſo that at any time when he offers to duck or throw down his head, the caveſſon being placed upon the tender griſtle of his noſe, may correct and puniſh him. This will make him bring his head to, and form him to the rein.

FOLDING *of ſheep*, a term uſed by our farmers to expreſs the keeping theſe creatures on their arable lands, within folds made of hurdles, which they remove about, ſo that when the ſheep have dunged one place they are ſet upon another.

This is a very great advantage to the land; the dung of theſe creatures being a very rich manure. It ought only to be done in ſummer time and in good weather, for the *folding* them in bad weather is apt to give them the rot. Care muſt be taken that they are only driven into theſe folds over night, and let out again in the morning, half an hour after ſun-riſe, into places where there is good food; for being hungry at this time they will eat whatever comes next them. Many ſheep are ruined by this practice in moiſt ground, and ſome farmers who think all *folding* very bad for ſheep, only ſtick up ſloping ſtakes in ſuch parts of the lands, as they would have dunged and never fold the ſheep at all, but truſt to their coming to theſe ſtakes to rub themſelves for the dunging the ground, as they conſtantly void their dung and urine at that time. *Mortimer*'s Husbandry.

FOLC-*lands*. See FOLK-*lands*, *Cycl.*

FOLD-*foca*, in law. See FALDAGE, *Cycl.*

FOLDAGE and FOLD-COURSE. See FALDAGE, *Cycl.*

FOLIATE, in the higher geometry, a name given by ſome to a curve of the ſecond order expreſſed by the equation $x^3 + y^3 = axy$, being one ſpecies of defective hyperbolas, with one aſymptote, and conſiſting of two infinite legs croſſing one another, and forming a ſort of leaf.

FOLIATING (*Cycl.*) — The method of *foliating* globular looking glaſſes, delivered by Mr. Boyle, is ſomewhat different from that given by Sir Robert Southwell, in the Philoſophical Tranſactions and tranſcribed in the Cyclopædia.

Mr. Boyle's method, which he prefers to any he ever met with in print, is this: take tin and lead, of each one part, melt them together, and immediately add of good tin glaſs, or biſmuth, two parts; carefully skim off the droſs; then take the crucible from the fire, and, before the mixture grows cold, add thereto ten parts of clean quickſilver, and having ſtirred them well all together, keep the fluid in a new clean glaſs. When you go to uſe it, firſt purge it, by ſtraining it thro' linnen, and gently pour ſome ounces into the glaſs to be *foliated*, thro' a narrow paper funnel, reaching almoſt to the glaſs to prevent the liquor from flying to the ſides. After this, by dextrouſly inclining the glaſs every way, endeavour to faſten it to the internal ſurface; which done, let it reſt for ſome hours; then repeat the ſame operation, and ſo continue, at times, till the liquor is ſlowly paſſed over, and equally fixed to the whole ſuperficies; which may be diſcerned by expoſing the glaſs to the eye between that and the light. *Boyle*'s Works Abr. Vol. 1. p. 129.

FOLIS or FOLLIS, a ſmall coin in uſe among the Greeks and Romans; it was firſt made of braſs, and afterwards of ſilver. Authors are not agreed as to the value of this coin. Vid. *Pitiſc.* Lex. Ant. in voc.

FOLIUM *branchiarum*, *the leaf of the gills*, a term uſed by ſome of the ichthyologiſts, to expreſs that part of the *gills* which looks red and fringed. The *gills* of fiſh are compoſed of certain bony circles which are formed on the convex ſide with a great number of laminæ; theſe ſerve to receive the ramifications of the arteries, and are called the *folium* or leaf of the gills. The aorta or great artery reaches no farther than this part in fiſh. It has no deſcending trunk, but every part of the body is ſupplied by a large venal trunk, formed by the joining of the ſeveral ſmaller trunks of the ſeveral circles of the gills. *Artedi*, Ichthyol.

FONCEAU, in the manege, is the bottom or end of a canon-bitt-mouth; that is, the part of the bitt that joins it to the banquet. See CHAPERON.

FONGITES, a name given by the writers of the middle ages to a ſtone famous for its imaginary virtues. Authors are very vague in their deſcriptions of it; ſome deſcribing it as pellucid and colourleſs, like cryſtal; others, as opake and of a flame colour; and ſome ſay, that it was partly of the one and partly of the other of theſe colours. It is ſaid to mitigate pain, on being held for ſome time in the hand.

FONTINALIS, in botany, the name of a genus of moſſes the characters of which are theſe. The capſules are ſeſſile, or have either no pedicles, or extremely ſhort ones; they are not naked as in the ſphagna, but are covered with calyptræ, and are included beſides in a membranous huſk, by which laſt particular, they are diſtinguiſhed from the hypnums, bryums and other moſſes which produce capſules. See Tab. of Moſſes, N° 9. There are only five known ſpecies of this genus. 1. The common large triangular *fontinalis*: this floats in the water and is compoſed of ſtalks of five, ſix, or even twelve inches long; the the ſtalks are ſlender and black, and the leaves pellucid and of a fine green. The heads in this ſpecies are uſually produced in the lower part of the plant. 2. The leſſer triangular *fontinalis*. The ſtalks in this ſpecies are ſhorter and leſs branched, and the capſules are produced from the tops of the branches. 3. The fine leaved ſhining black *fontinalis*, the leaves of this are pellucid, very thin and blackiſh: it is found in rivers in mountainous countries. 4. The ſmall lancet leaved *fontinalis*. This is produced in Patagonia. 5. The fine leaved *fontinalis*, with pointed ſheaths, this is found in Penſylvania. *Dillen.* Hiſt. moſc. p. 256.

FOOD (*Cycl.*) — Phyſicians have attempted to determine the healthful quantity of *food* for a human body. Some ſay, that in winter, where the perſpiration of an unexerciſed perſon is only equal to the urine, the diet for twenty-fours, ought not to exceed four pounds, or four pounds and an half. In ſummer the diet may be ſix pounds and an half, which may be carrid off without the help of exerciſe, when the air is hot and dry.

Dr. Bryan Robinſon [a], thinks, that if the quantity of *food* be ſuch as to make the perſpiration and urine of a natural day always nearly equal, and the morning weight of the body always nearly the ſame, that quantity is the truly healthful quantity of *food* for grown bodies, who uſe but little exerciſe. [a Of the food and diſcharge of human bodies, p. 93.]

The quantity of *food* neceſſary to keep a grown body in health, will be better and more eaſily digeſted, when it is ſo divided, as to make the meals equal, than when they are very unequal. The diſtance between one meal and another, ſhould bear ſome proportion to the largeneſs of the preceeding meal. *Robinſon*, ibid. p. 94.

The ſame author thinks, that good and conſtant health, conſiſts in a juſt quantity of *food*, and a juſt proportion of the meat to the drink; and that to be freed from chronical diſorders contracted by intemperance, the quantity of *food* ought to be leſſened, and the proportion of the meat to the drink increaſed more or leſs, according to the greatneſs of the diſorders; and that both the quantity of *food*, and the proportion of meat to drink ought to be ſuch as ſhall make perſpiration and urine nearly equal at all ſeaſons of the year. See his Diſſer. on the food and diſcharge of human bodies, p. 6.

FOOD *of plants*. — What is generally underſtood by this term, is ſuch matter of whatever kind, as being added and united to the firſt ſtamina of plants or plantulæ, at their ſowing, or to their roots, and thence to their trunks and other parts afterwards, gives them their increaſe, or in other words, is itſelf the matter of that increaſe. The great art of the husbandman is the giving this *food* to plants, in the beſt manner, and to the

the greateſt advantage. But before he can expect to arrive at any true knowledge in this article, it is neceſſary that he ſhould know what this *food* or matter of nouriſhment is. There are five things generally allowed to contribute to the growth and increaſe of plants; theſe are nitre, water, air, fire and earth; but it has been much diſputed which of all theſe it is that increaſes, or is properly the *food* of the plant. Many people ſay much of the acid ſpirit reſiding in the air, but as this is ſharp enough to corrode iron bars it is too ſharp to be fit for nouriſhing tender plants. As to nitre, it is ſaid to nouriſh them; but its true office is not actualy nouriſhing, but preparing other things to nouriſh them. Nitre applied to the root of a plant will kill it; but at a diſtance, ſo attenuates, cuts and divides the viſcous matters found in the earth, that after this they are fit to nouriſh plants, tho' they were not ſo before. Water has been thought by ſome the only *food* of plants, but Van Helmont's famous experiment, uſually brought to prove this is nothing, for the water contains earth, and therefore is never given to a plant as water alone.

Air becauſe of its elaſticity, is neceſſary to the increaſe of plants, but it is not that increaſe, tho' Bradley and others have taken great pains to prove, that it is ſo. As to fire, we are very well aſſured indeed, that no plant can live without heat; but tho' different degrees of it, are neceſſary to different plants, yet none can live in actual fire, nor has fire ever been thought the food of plants except by Mr. Lawrence, and ſome of the metaphyſicians. This author indeed, ſays, plants are true fire-eaters, and others explain away the meaning of the phraſe, by defining that fire to be only the minuteſt particles of earth put in motion; if this be the caſe, probably enough the doctrine may be true. But in plain fact, earth alone is the true food and matter of increaſe of plants. Every plant is earth, and the growth and increaſe of that plant, is only the addition of more earth to it, in the ſame form. Nitre and other ſalts, as thoſe of dung, &c. prepare, attenuate, and divide the earth, deſtined for the increaſe of vegetables; water and air move it by conveying, and fermenting it in the juices; but earth itſelf ſtill is the *food*. When the additional earth is once aſſimilated to the plant, it becomes a part of it, and remains for ever with it; but let water, air and heat, be taken away, and the plant remains a plant ſtill, tho' a dead one. *Tull*'s Horſehoeing Husbandry, p. 13.

The exceſs of the other things, proves, that they are not the proper *food* of the plant, by deſtroying not nouriſhing it. Too much nitre or other ſalts corrode and kill the plant, too much water drowns it, too much air dries the roots of it, too much heat burns it: but too much earth a plant never can have, unleſs wholly buried under it, ſo as to exclude the neceſſary action of the reſt of the aſſiſtant articles. Too much or too fine earth can never be given to the roots of a plant, for they never take up ſo much of it, as to ſurfeit the plant, unleſs it be deprived of leaves which ſhould purify it. Nay earth is ſo ſurely and ſo eſſentially the *food* of all plants, that with the proper ſhare of the other acceſſary elements, any earth, no matter of what kind, will ſerve for the nouriſhment of any plant.

FOOT (*Cycl.*) — *Bleeding in the* FOOT. Bleeding in the *foot*, is an operation of very old ſtanding, and has been uſed by the oldeſt phyſicians, for diſorders of the head and breaſt, and for obſtructions of the menſtrual, and habitual diſcharges by the hæmorrhoidal veins. It has been of old ſuppoſed, that the bleeding from the ſaphæna was more particularly ſerviceable in ſome caſes, and from the cephalica in others; but this is now known to be highly erroneous, and the ſurgeon is always to take that which lies faireſt and moſt conſpicuous. If the veins on the metatarſus or inſtep, do not appear ſo fairly as might be wiſhed, it is common to take one of thoſe about the ankle, or the calf of the leg or ham.

The patient to be blooded in the *foot*, muſt firſt keep both *feet* ſome time in warm water, that the veins may become turgid, and the ſurgeon have his choice, which he will take. Having fixed upon the proper *foot*, the ligature muſt be made about two fingers breadth above the ankle, and the patient muſt then return the *foot* into water. The ſurgeon is to kneel on one knee, and having wiped the *foot* dry, to put it either againſt his other knee, or upon a board placed over the veſſel of hot water, and the vein muſt be held ſecure from ſlipping away, with the left hand, while the orifice is made with the other. If the blood does not flow freely, the *foot* muſt be returned into the warm water, till by the colour of the water, ſtrength of the patient, &c. it is found to have bled enough. *Heiſter*'s Surgery, p. 280.

Cartilages of the FOOT. The aſtragalus is covered by three cartilages; the firſt covers the ſurfaces which make the convex part and ſides of the pully; the ſecond the concave ſurface of its inferior part, and the third the convex ſurface of its anterior part, being continued over the inferior part, ſo far as to form three other ſmall ſurfaces; one of which is not articular in a ſtrict ſenſe. The firſt of theſe cartilages is for the articulation of this bone with the tibia and fibula, the ſecond for the os calcis, and the third for the os ſcaphoides; two of the inferior ſurfaces formed by the continuation of the third cartilage, are for the articulation of this bone with the os calcis; and the third contributes to the formation of a channel for the paſſage of a tendon.

The os calcis has four cartilages, of which three are ſuperior, one large and two ſmall for its triple articulation with the aſtragalus; the fourth is anterior for the os cuboides. And to theſe muſt be added a ſmall thin cartilage of a kind of ligamentary ſubſtance, under the tubercle on the outſide of this bone. The os ſcaphoides has two cartilages; one poſterior for its articulation with the aſtragalus, and one anterior, divided into three parts, for the three oſſa cuneiformia.

The os cuboides has two remarkable cartilages, one poſterior for its articulation with the os calcis, the other anterior lying in two planes, for its articulation with the two laſt metatarſal bones, it has likewiſe a cartilage on the inſide for the os cuneiforme which is next to it, and one on the lower part, covering an oblique eminence ſituated there.

The three oſſa cuneiformia have each of them a poſterior cartilage for their articulation with the os ſcaphoides, and one anterior for the three firſt metatarſal bones; they have likewiſe ſmall cartilaginous ſurfaces on their lateral ſides for their articulations with each other; and beſide, the firſt and third bones are joined thereby, to the lateral parts of the baſis of the ſecond metatarſal bone, and the third to the os cuboides. The baſes and heads of the metatarſal bones are covered with cartilages. The phalanges alſo have, in the ſame manner, cartilages at their baſes and heads, except at the heads or extremities of the laſt. The ſeſamoide bones are covered with cartilages on that ſide, by which they ſlide on other bones; but great caution is required not to confound the remains of tendons, ligaments, and aponeuroſes with the true cartilages, particularly on the poſterior part of the os calcis. *Winſlow*'s Anatomy, p. 132.

Ligaments of the FOOT. The *foot* being made up of many bones, muſt neceſſarily beſide thoſe ligaments, by which it is tied to the bones of the leg, have ſeveral others to connect not only the three parts of which it is compoſed, but alſo the particular bones of each part to one another. In each ankle there are three ligaments for their articulations with the *foot*. One anterior, one middle, and one poſterior. The ligaments of the inner ankle are all fixed with the inſide of the aſtragalus; the anterior and middle ligaments of the outer ankle, are more or leſs broad and are fixed in the outſide of the aſtragalus, the poſterior which is the narroweſt and pretty thick is chiefly fixed in the outſide of the great portion of the os calcis. All theſe ligaments lie on the outſide of the capſula, which ſurrounds the articulation of the aſtragalus with the bones of the leg. The ligaments by which the bones of the tarſus are connected to one another, are ſhort, flat, of different breadths, and run from one bone to another, in different directions. Some of theſe are common to ſeveral bones, and others belong only to two. The aſtragalus is tied to the other bones of the tarſus by ſeveral true ligaments; to the inſide of the os calcis, by one which comes from the lateral apophyſis of the os calcis, in an inequality on its hinder part, and is fixed again to the poſterior internal tuberoſity of the body of the aſtragalus, to the outſide of the ſame bone, by two ligaments which come from the edge of the oblique inferior depreſſion of the aſtragalus, and afterwards ſeparating a little, are fixed in the outſide of the great apophyſis of the os calcis, one forward which ſeems to ſend off a ſmall portion to the os cuboides, and the other backward of different breadths; to the os ſcaphoides ſuperiorly by a ligament, which goes from the neck of the aſtragalus, to the upper part of that bone, and from thence is extended to the middle of the os cuneiforme, to the ſame bone internally by two ligaments, one of which is a continuation of that which goes from the lateral apophyſis of the os calcis to the cartilaginous production of the aſtragalus; the other is near the ſame production, being partly covered by the former, and fixed in the tuberoſity of the os ſcaphoides, to the os calcis, by a ligament which comes from the oblique inferior depreſſion of the aſtragalus, and is fixed in the oblique ſuperior depreſſion of the os calcis; and to theſe the principal ligaments of the aſtragalus, ſeveral ſmaller may be added which are uſually ſeen and increaſe the number very greatly.

The capſular ligaments go very little farther than the edges of the articulations of this bone with the reſt; they adhere very cloſely to the true ligaments, and are covered and hid by them.

The os calcis is connected to the os ſcaphoides, by a continuation of the ligament that goes from its lateral internal apophyſis to the cartilaginous production of the aſtragalus, by a ligamentary plane, which goes from its great apophyſis, to the inferior part of the ſcaphoides, and by a narrower ligament which goes from the ſuperior internal part of its great apophyſis, and ends in the neareſt part of the circumference of the ſcaphoides. It is connected to the os cuboides, by ſeveral ligamentary faſciculi, which go from its extremity in its ſuperior oblique depreſſion, to the contiguous angle of the os cuboides, by one from near the lateral external tuberoſity of the os calcis, to a part of the cuboides near the former; by one fixed to the exterior and inferior part of the great tuberoſity of the os calcis, to the contiguous part of the cuboides; by a pretty broad plane, which covers the inferior part of the os calcis, and ends in the oblique eminence of the cuboides; and by a broader plane which

filling

filling the lower part of the lateral concavity in the os calcis, is chiefly inſerted in the contiguous angle of the os cuboides. The capſular ligaments agree with thoſe of the aſtragalus.

The os ſcaphoides is tied to the os cuboides on its outſide by one ligament, which connects it to the contiguous angle of that bone: on its upper part two go from it to the ſecond and third oſſa cuneiformia; on its anterior ſide it is joined to the convex ſide of the great os cuneiforme by two ligaments, and on its lower, it has four; the firſt appears double, and goes from the tuberoſity of this bone to the baſis of the firſt os cuneiforme, the ſecond and third go obliquely to the ſecond and third os cuneiforme, and the fourth is a little tranſverſe, being fixed in the inferior internal angle of the os cuboides.

The os cuboides, beſide thoſe already deſcribed, has ligaments which tie it above, below, and on the outſide with the third os cuneiforme, and the two laſt bones of the metatarſus; the ſuperior ligaments are almoſt equally flat, the inferior irregularly thick and ſtronger than the ſuperior. The three oſſa cuneiformia are connected together on their upper part by particular ligamentary planes, which go more or leſs tranſverſely, from one bone to another, being all joined to one common ligamentary plane which covers theſe three bones; and alſo to the os cuboides, they are alſo connected by ligaments to the three firſt bones of the metatarſus.

The bones of the metatarſus are connected together by their baſes, and heads, the ligaments which go between the baſes are ſuperior and inferior. The ſuperior ſmall and flat, the inferior, ſtrong and thick; thoſe between their heads have nearly the ſame diſpoſition, but the inferior have this peculiar to them, that by filling up the ſpaces between the heads, they keep them at ſome diſtance from one another; the inferior portions are fixed in the angles at the lower part of each head, and are ſtrengthned by their union and intexture with the aponeuroſis plantaris. *Winſlow*'s Anatomy, p. 134.

Bathing of the FEET. See PEDILUVIUM.

Fractures of the FEET. The bones of the *foot* which compoſe the tarſus, the metatarſus and toes, are equally liable to fractures with the other bones, but by reaſon of the great complication of nerves, tendons, ligaments and membranes, fractures in this part are uſually attended with very bad ſymptoms. The bones are carefully to be replaced and ſecured by bandage; but fractures of the *feet*, like thoſe of the hands can ſeldom be ſo perfectly cured, as not to leave a ſtiffneſs or want of motion behind; if the patient ſhould be ſo happy as to eſcape ulcers, caries, or incurable fiſtulæ. Theſe bad ſymptoms when they appear in the courſe of the cure, are no way to be remedied, but by the amputation of the limb, nor will that indeed always ſecure the patient from death. *Heiſter*, p. 138.

Dr. Waltherus has given a minute deſcription of the muſcles and ligaments of the ſole of the foot, in the Nova Act. Erudit. Lipſ. April 1732.

FOOT, in meaſuring — In Scotland, this meaſure of length, tho' conſiſting of twelve inches, exceeds the Engliſh *foot*, ſo that 185 of the former is equal to 186 of the latter. Treat. Pract. Geom. p. 4. See MEASURE, *Cycl.*

FOOT, in the manege, is the extremity of a horſe's leg, from the cronet to the lower part of the hoof. The four *feet* are diſtinguiſhed by four different names: the two fore *feet* are by ſome called the hands of a horſe; but that term is in diſuſe, the common expreſſion being the *far fore foot*, to denote the right *foot* before; and the *near fore foot*, the *ſtirrup foot*, and the *bridle-hand foot*, to denote the left foot before.

Of the two hinder *feet*, the right is called the *far hinder foot*; and when ſpears were uſe, 'twas called the *ſpear foot*, becauſe in reſting the ſpear, the ſocket of it anſwered the right hinder *foot*. The left-hind-*foot*, is called the *near foot behind*.

FOOT-*derobé*, in the manege. A horſe's *foot* has this appellation when it is worn and waſted by going without ſhoes, ſo that for want of hoof, it is a hard matter to ſhoe him.

A horſe's *foot* is ſaid to be worn and waſted, called in French *uſé*, when he has but little hoof, and not enough for ſhoeing.

To gallop upon a good FOOT, or put a horſe upon a good *foot*, called in French *ſur le bon pied*. See *falſe* GALLOP.

Fat FOOT, in the manege. A horſe is ſaid to have a *fat foot*, when the hoof is ſo thin and weak, that unleſs the nails be driven very ſhort, he runs the riſque of being pricked in ſhoeing. The Engliſh horſes are very ſubject to this diſorder.

FOOT is alſo uſed for the *foot* ſoldiers, or the infantry of an army. See BATTLE.

FOOT-*hooks*, in a ſhip, ſee FUTTOCKS.

FORAMEN (*Cycl.*) — FORAMEN *auditorium internum*, in anatomy, is ſituate in the backſide of the apophyſis petroſa, in ſome meaſure behind the veſtibulum and baſis of the cochlea. It is a kind of blind hole divided into two foſſulæ, one large, the other ſmall; the large one lies loweſt, and ſerves for the portio mollis of the auditory nerve, or ſeventh pair; the ſmall one is uppermoſt, and is the opening of a ſmall duct, thro' which the portio dura of the ſame nerve paſſes. The inferior foſſula is full of little holes, which in the natural ſtate are filled with nervous filaments of the portio mollis, which go to the ſpindle, to the ſemicircular canals, and to thoſe of the cochlea. It is this foſſula which forms that ſhallow cavity at the baſis of the ſpindle of the cochlea. The paſſage of the portio dura of the auditory nerve runs behind the tympanum, and its orifice is the ſtylomaſtoide hole. Fallopius gave this duct the name of the aqueduct, from its reſemblance to the aqueducts in Italy. It begins by the ſmall foſſula, and pierces from within outwards, the upper part of the apophyſis petroſa, making there an angle or curvature; from thence it is inclined backward behind the ſmall pyramid of the tympanum, and runs down to the ſtylomaſtoide hole, thro' which it goes out. It communicates likewiſe by a ſmall hole with the ſinus of the pyramid, and lower down by another hole with the barrel of the ear. In ſome ſculls this aqueduct of Fallopius is open on the upper part of the apophyſis petroſa, a kind of break appearing in it, formed by a double hole. It is at this place that it makes the angle already mentioned, but it is commonly covered with a bony lamina. *Winſlow*'s Anat. p. 52.

FORAMEN *ovale*. — The anatomical diſcoveries of the ſeveral parts and their conſtructions, does not always bring with them the certain knowledge of the uſes of thoſe parts. The heart, the arteries, and the veins of the human body, have been known for many ages; yet the uſes of theſe ſeveral parts for the circulation of the blood was reſerved for a later diſcovery. The circulation of the blood in the fœtus is a thing yet not perfectly underſtood, nor are we well aſſured, whether it paſſes in the heart from right to left, or from left to right, or whether by means of the *foramen ovale*, it may not paſs at once in both thoſe directions.

The different method of the circulation of the blood in adults, and in the fœtus in the uterus, is owing to the different conſtruction of certain parts. We very well know that in adults, the blood going out from the right ventricle of the heart, is carried by the great artery and the two pulmonary branches, throughout the whole extent of the lungs, and thence by the pulmonary veins is returned into the auricles, and left ventricle of the heart, from whence it is diſtributed throughout every part of the body, thro' other arteries, and is returned thence to the heart again by other veins, into the right ventricle, to continue this certain courſe, during the life of the animal.

The courſe of the blood thro' the heart ſuppoſes therefore two circulations, the one a ſmaller and ſhorter courſe of all the maſs of blood from the heart to the lungs, and thence to the heart back again. The other a much greater, and by a much longer courſe, by which the whole maſs of blood parting out of the left ventricle of the heart is diſtributed by numbers of veſſels into every part of the body for the nouriſhment and increaſe of the parts, without excepting any part of the human frame, and returns thence into the right ventricle, to be thence ſent into the lungs again. Memoirs Acad. Scien. Par. 1739. See CIRCULATION.

Tho' this is however the caſe in adults, it is far otherwiſe in regard to the circulation in the fœtus; for beſide the placenta, the umbilical veſſels and the venal canal, which are peculiar to the animal in that ſtate, the ſeptum which divides the two auricles of the heart, is at this time perforated by an aperture which is called the *foramen ovale*; and the trunk of the pulmonary artery a little after it has paſſed out of the heart, gives riſe to a canal called the arterial canal, or canal of communication, which terminates in and diſcharges the blood which paſſes into it into the deſcendant aorta.

As ſoon as the fœtus is born, the *foramen* begins to ſhut, and by degrees becomes wholly cloſed, and the arterial canal dries up and degenerates into a mere ligament.

Anatomy informs us, that in adults, the blood which paſſes thro' the pulmonary artery, in order to its being diſtributed thro' the lungs, does not make that circuit on account of the lungs, but merely on its own account, that is to ſay, to be itſelf altered by the change the air we reſpire is capable of making in it; for the lungs themſelves are in reality nouriſhed by that blood which is derived into them by means of the bronchial artery.

As the fœtus therefore while it remains in the womb does not reſpire, it would be a wholly uſeleſs circuit for the blood in that ſtate of the body, to make this ſhorter paſſage of the whole maſs thro' the lungs, as it does in adults, before it arrives at the left ventricle, and is thence diſtributed throughout the whole body; and as the blood would in this ſtate of the the animal, make a needleſs and a uſeleſs paſſage thro' the lungs, ſo would it alſo, while making that circuit, be wanted in thoſe parts, to whoſe nouriſhment and growth it is extremely wanted; and what afterwards determines the blood to take the circuit of theſe parts and to drive itſelf into them with all poſſible ſpeed, is a ſeries of neceſſary conſequences which happen at that time.

When we conſider what it is that happens to a fœtus at its coming forth from the womb, and that it at that time firſt reſpires, it is eaſy to conceive that this new action of reſpiration, cannot but neceſſarily hurry the blood toward the lungs, and that the extenſion which the inſpired aerial particles make in the lungs, gives place to a much larger quantity of blood than before, to fill the veſſels there; and conſequently in that inactive ſtate in which the lungs in the fœtus are continually placed, before it has ever yet reſpired, we may conclude, that the

the blood passes thro' their substance with difficulty, and in but very small quantity, since the lowness of the sides of the lungs, the largeness of the thymus, and the arch formed by the diaphragm cannot but keep them in a continual state of compression. This compression of the lungs does that to the pulmonary arteries, that a ligature would do, which should prevent a part of the blood passing thro' those arteries at every systole of the heart, and cannot suffer them to become depressed, or to part at every such systole in the time required for it, with more than perhaps, a fourth, a third, or the half of that blood, which they use to receive at every pulsation. It is easy to conceive, that the blood thus left behind in the vessels of the lungs from one pulsation to another, and mixed with the new blood of still succeeding pulsations, must, in thus accumulating itself by degrees, more and more separate and distend the sides of the vessels, and more augment their diameters, than would have been the case, if from the beginning the ramifications of the arterial vessels of the lungs had been more perfectly empty: for tho' at every pulsation, there passes certainly from the trunk of the artery, but a small quantity of blood into the ramifications of the vessels of the lungs, yet this small quantity added to the excess of the former pulsations, and mixed with them, must in process of time, form a little mass, and produce an extension and considerable bulk in the vessels.

It is not difficult to conceive that the compression of the pulmonary vessels will make its effects sensible at greater distances than barely the extent of those vessels, and that indeed not only to the *foramen ovale*, but also to the left ventricle of the heart and to the aorta; that the blood which is carried back by the reflux toward the *foramen ovale*, must naturally become less and less, as the new born infant enjoys the benefit of respiration, and the blood of the two pulmonary arteries, finds its access as easy as it was before difficult; and finally, that of all the blood which arrives every instant at the heart, there will be only a small part that will make its way thro' the lungs; the greater quantity, while the *foramen ovale* remains yet open, finding itself a much shorter passage, by means of that aperture, and of the yet open arterial canal.

It is evident therefore, from all that has been observed, that the *foramen ovale*, and the canal of communication in the fœtus are in reality, no other than a sort of subsidiary parts to the lungs, formed only for a certain time, and to become useless, and disappear when the act of respiration has given the turn to the circulation of the blood, which it is to retain thro' the whole life of the animal. Memoirs Acad. Scien. Par. 1739.

Dr. Trew does not agree with Monsieur Mery's hypothesis, which he has minutely examined, and affirms, that the membrane of the *foramen ovale* is so placed as to permit the blood to pass freely from the right auricle to the left, during the diastole of the auricles, but never from the left auricle to the right. Phil. Trans. N°. 457. Sect. 7.

The *foramen ovale* has sometimes been found open in adults. See Phil. Trans. N°. 460. Sect. 5.

FORCE, in mechanics. See the *Appendix*.

FORCEPS (*Cycl.*) — Mr. Monro describes and gives a figure of a *forceps*, the mouth of which has on each side two small sharp teeth, which apply close to one another, when it is shut. This *forceps* when shut may be safely introduced into a gun-shot wound, and the blades being immediately opened behind the bullet, the teeth will pierce into the lead, and hold it fast enough to bring it out, tho' they are not advanced so far as the largest part of it. Med. Ess. Edinb. vol. 5. art. 41.

FORCING, in the wine trade, a term used by the wine-coopers for the fining down wines, and rendering them fit for immediate draught. See FINING.

The principal inconvenience of the common way of fining down the white wines by isinglass, and the red by whites of eggs, is the slowness of the operation; these ingredients not performing their office in less than a week, or sometimes a fortnight, according as the weather proves favourable, cloudy, or clear, windy or calm: this appears to be matter of constant observation. But the wine merchant frequently requires a method that shall, with certainty, make the wines fit for tasting in a few hours. A method of this kind there is, but it is kept in few hands a valuable secret. Perhaps it depends upon a prudent use of a tartarized spirit of wine, and the common *forcing*, as occasion is, along with gypsum, as the principal; all which are to be well stirred about in the wine, for half an hour before it is suffered to rest. *Shaw*'s Lectures, p. 208.

FORCING, among gardiners, is used for producing ripe fruits from trees before their natural season. The method of doing it is this; a wall should be erected ten foot high; a border must be marked out on the south side of it, of about four foot wide, and some stakes must be fastened into the ground all along the edge of the border; these should be four inches thick. They are intended to rest the glass lights upon, which are to slope backwards to the wall, to shelter the fruit as there shall be occasion; and there must be at each end a door to open either way according as the wind blows. The frame should be made moveable along the wall, that when a tree has been *forced* one year the frame may be removed to another, and so on, that the trees may be each of them *forced* only once in three years, at which rate they will last a long time. They must be always well grown trees that are chosen for *forcing*, for young ones are soon destroyed, and the fruit that is produced from them, is never so well tasted. The fruits most proper for this management are the avant, or small white nutmeg, the albermarle, the early Newington, and the brown nutmeg peaches; Mr. Fairchild's early, and the elrugo and Newington nectarins; the masculine apricot, and the may-duke and may-cherry. For grapes, the white and black sweet-water, are the propereſt; and of gooseberries, the Dutch-white, the Dutch early-green, and the walnut-gooseberry; and the large large Dutch white, and large Dutch red currants.

The dung before it is laid to the wall should be laid together on a heap for five or six days, that it may heat uniformly thro', and when thus prepared, it must be laid four foot thick at the base of the wall, and go sloping up, till it is two foot thick at the top. It must be laid at least within three or four inches of the top of the wall, and when it sinks, as it will sink two or three feet, fresh dung must be laid; for the first heat will do little more, than just swell the blossom buds. The covering the trees with glasses is of great service, but they should be taken off to admit the benefit of gentle showers to the trees, and the doors at the ends should be either left intirely open, or one or both of them opened, and a mat hung before them, at once to let the air circulate and to keep out the frosts.

The dung is never to be applied till toward the end of November, and three changes of it will be sufficient to ripen the cherries, which will be very fine in February. As to the apricots, grapes, nectarines, peaches and plumbs, if the weather be milder, the glasses are to be opened to let in sunshine or gentle showers.

If a row or two of scarlet strawberries be planted at the back of the frame, they will ripen in February, or the beginning of March; the vines will blossom in April, and the grapes will be ripe in June.

It should be carefully observed not to place early and late ripening fruits together, because the heat necessary to force the late ones will be of great injury to the early ones, after they have fruited.

The masculine apricot will be ripe in the beginning of April, the early nectarines will be ripe about the same time, and the forward sort of plumbs by the latter end of that month. Gooseberries will have fruits fit for tarts in January or February, and will ripen in March, and currants will have ripe fruit in April.

The trees need not be planted so distant at these walls as at others, for they do not shoot so freely as in the open air: nine feet asunder is sufficient. They should be pruned about three weeks before the heat is applied. *Miller*'s Gard. Dict.

FOREFANG, or FOREFENG, in our old writers, is the taking of provision from any one in fairs or markets, before the king's purveyors are served with necessaries for him.

The word is Saxon, compounded of *fore*, ante, and *fangen*, prendere.

FOREGAVEL, *forgabulum*, in our old writers, is used for a small reserved rent in money, or quit-rent.

FOREGOERS, in our old writers. The king's surveyors were thus called from their *going before*, to provide for his household. 36 Ed. III. 5.

FOREHEAD. *Wounds of the* FOREHEAD. After a wound in this part is cleansed from grumous blood and extraneous bodies, if any were left there, it should be dressed with balsam of Peru, or some other vulnerary balsam; the lips of the wound are then to be kept together by long slips of sticking plaister, and over this a vulnerary plaister is to be laid. Where the wound is large, these plaisters will not be sufficient to bring on an even cicatrix; therefore to forward this end, the wound should be sprinkled with a compound powder of comfrey root and gum tragacanth and arabic, and with gum sarcocolla in powder; and then the plaisters, compresses, and proper bandages are to be applied. The bloody suture is never to be used in any wound of the face if it can be avoided, because the stitches increase the number of the scars. If a wound of the *forehead* is made in a strait line, the uniting bandage will be of great service in forming a fine cicatrix: but if the *forehead* is wounded transversely, and the fibres of the frontal muscle are divided, it occasions a great deformity; for the power of lifting up the eye-brows, and of contracting the skin of the *forehead* ceases. In this case after cleaning the wound, it is best to unite it with a stitch or two, dressing it with a vulnerary balsam and laying on sticking plaisters, securing all with a proper bandage, and enjoining the patient to keep himself still. In young and healthy persons, the fibres of the muscles join and unite when this method is used, without coming to a suppuration. *Heister*'s Surg. 78.

FORE-JEER-*bits*, in a ſhip. See BITS.

FOREIGN (*Cycl.*) — *Foreign* ſeamen ſerving two years on board Britiſh ſhips, whether of war, trade, or privateers, during the time of war, ſhall be deemed natural born ſubjects [a]. But the perſons ſo naturalized are not capable of being of the privy council, or members of parliament, or of taking any place of truſt, civil, or military, or to have any grant from the crown of lands [b]. [[a] Stat. 13 Geo. 2. c. 3. Sect. 2. [b] Ibid Sect. 3.]

Foreigners reſiding ſeven years in the Britiſh plantations without any longer abſence than two months at one time, and taking the oaths, are to be deemed natural born ſubjects [a]. But excepting Quakers and Jews, all other perſons muſt receive the ſacrament in ſome proteſtant or reformed congregation in Great Britain, or the colonies; a certificate whereof muſt be produced at the time of taking the oaths [b]. [[a] 13 Geo. 2. c. 7. Sect. 2. [b] Ibid. Sect. 3.] See NATURALIZATION.

FORELLA, in ichthyology, a name given by Figulus and others to the trout.

FORE-MAST-MEN, in a man of war, thoſe on board that take in the top-ſails, ſling the yards, furl the ſails, browſe, triſe, and take their turn at the helm, &c.

FORE-REACH, at ſea. The ſeamen ſay one ſhip *fore-reaches* upon another, when both ſailing together, ſhe ſails better, or outgoes the other.

FOREST (*Cycl.*) — FOREST *trees*. Many are wholly averſe to pruning *foreſt trees*; but tho' it is to be done with care, and under proper regulations; (See LOPPING.) yet it is by no means to be wholly omitted. It may be obſerved in *foreſts* and large woods, that for one tree which thrives well, there are twenty that grow faulty, and all this is owing to the want of pruning or lopping in a proper manner; for this when wiſely executed, is a renewal of their age, and of their growth too; the want of it being what occaſions trees to run out into ſuckers, and to load themſelves with uſeleſs boughs, which draw away the ſap from the upper part, and make it grow knotty and diſtempered, and uſually covered with moſs.

If a tree grow crooked, the buſineſs of the owner is to cut it off ſloping at the crooked place, and nurſe up ſome young bough that grows upright from that part, and it will make it a ſtrait body. This is not to be done when trees are very large, but the careful owner will not ſuffer them to grow very large without doing it. *Mortimer*'s Husbandry, vol. 2.p. 84. There is alſo another caution, which is, that ſoft woods do not bear this heading ſo well as the harder, and the beech in particular is leſs able to bear it, than any other. If young trees grow but a little crooked, they may be cured by only ſhreding up the branches while young, all the way up the body, till paſt the crooked part. When cattle have cropped any of the ſhoots of young trees, they ſhould be cut off cloſe to the body, for they not only never grow well after it, but the cattle uſually leave a drivel where they have bitten, which ſometimes begins a rot of the branch, and endangers the whole tree. The beſt time for pruning young *foreſt* trees is in February; and it ſhould be done where there is occaſion every year, or at the utmoſt every ſecond year, ſo that the tree may be able to overgrow the knot, and the place not liable to put out ſuckers becauſe the ſap has had no great recourſe to it. When it is neceſſary to cut off a bough of any bigneſs, there muſt always be given a chop or two underneath, oppoſite to the part where it is cut above, otherwiſe the weight of the bough in its fall, is apt to ſtrip off the bark from the remaining ſtump, to the great detriment of the tree. When trees are kept for pollards, they muſt be regularly lopped every two years; for if the branches are ſuffered to grow longer than that, they are apt to be faulty at the wound when cut off, and to let in water, the conſequence of which will be the decay of the tree, and it can no more bear any great quantity of branches or lop. *Mortimer*'s Huſ. v. 2. p. 85.

The general growth of trees in thickneſs of the body, is from one inch to two inches a year. The large and ſmall, increaſe much in the ſame proportion in this reſpect, if they are in a like thriving condition. The goodneſs of ſoil will make a great difference in this growth,as has been experienced by Mortimer, who obſerved, that the common increaſe of the oak is about an inch and a quarter in thickneſs in the body in a year; but a large oak that grew in one of his own plowed fields, where the earth was tilled and manured every year, and that often had cattle lying under it, and dunging about its roots, grew annually no leſs than four inches in thickneſs. This ſhews the great advantage of digging about the roots of trees, and dunging them, and may ſerve as a hint for a very practicable method of increaſing the growth of trees on occaſion. The killing of weeds that grow about the roots of trees is one great method of haſtening their growth, but there is an error which ſome have run into on this principle, that is to be careſully avoided. Theſe people obſerving the great damage that weeds do the trees, have ſuppoſed that ſhrubs and underwood in hedges and coppices do the ſame; but this is a miſtake. Experience ſhews, that *foreſt* trees thrive better and grow faſter in coppices, than when they ſtand ſingle, and it is certain that next to digging and dunging about the roots, the growth of underwood about the tree is the beſt method of promoting its increaſe; theſe ſhrubs keeping the earth moiſt about the roots of the tree, and manuring all the earth about, with their falling leaves and rotten branches, which break off at times, and which are the richeſt of all manure. A little rotten wood blended among even a bad ſoil converting it into the nature of garden mould. *Mortimer*'s Husbandry, v. 2. p. 86.

FORESTID *ore*, in mining, is ore got out of earth and dirt that has been waſhed, and ore taken from it before. *Houghton*'s Compl. Miner in the Explan. of the Terms.

FORFICULA *marina*, the *ſea earwig*, a name given by authors to an inſect frequently found about the ſea-ſhores, and having ſome ſort of external reſemblance to the common *earwig*. It is of the ſize of the common *earwig*, and is of a mixed colour, of a deep black and a ſilvery white. The ſhoulders are ſomewhat gibboſe, the eyes ſtand cloſe to one another on the ſummit of the head, the antennæ are long and very ſlender. It has eight pair of legs on the anterior part of the body, and eight pair more at the hinder part, and there are three or four briſtles at the tail. It moves about very ſwiftly and lives on rocks and among ſtones.

FORFIELD, in mining, is the fartheſt place that a man has wrought in his ground; or the end of a meer above ground. *Houghton*'s Compl. Miner in the Explan. of the terms.

FORKTAIL, among the fiſhermen of England, a name given to the ſalmon, while in the fourth years growth, and not yet come to be what they call a ſalmon. *Willughby*'s Hiſt. Piſc. p. 189. See SALMON.

FORLANA, in the Italian muſic, a ſort of dance much in uſe among the Venetians. *Broſſ.* Dict. Muſ. in voc. See SALTARELLA.

FORLORN, or FORLORN-*hope*. See ENFANS *perdus*, *Cycl.*

FORMATION *of ſtones*. See the article STONE.

FORMELLA, a certain weight of about ſeventy pounds, mentioned in the ſtatute of weights and meaſures. 51 H. 3.

FORMER, in gunnery, a round piece of wood fitted to the diameter of the bore of a gun, on which the paper, parchment or cotton which is to make the cartridge, is rolled before it be ſewed.

FORMICA, the *ant*, an inſect famous in natural hiſtory, of which we have five ſpecies common in England. 1. A ſmall blackiſh *ant*. 2. A ſmall reddiſh brown *ant*. 3. A middle ſized black *ant*. 4. A middle ſized reddiſh *ant*, and 5. The common great hippomyrmex, or horſe-*ant*.

The *ant* lays eggs in the manner of the common flies, and from theſe eggs are hatched a ſort of ſmall maggots or worms without legs; theſe are ſharp at one end and blunt at the other; and are white, but ſo tranſparent, that the inteſtines are ſeen thro' the skin. Theſe after a ſhort time, change into large white aureliæ, which are what are uſually called *ant*'s eggs, thoſe who call them by that name, not conſidering that they are larger than the body of the creature ſuppoſed to have laid them in this aurelia ſtate. That end which is to be the tail, is the largeſt, and that which is the head, is ſomewhat tranſparent.

The *ants* move theſe about at pleaſure with their forceps. It is well known that when a neſt of theſe creatures is diſturbed and the aureliæ ſcattered about, the *ants* are at infinite pains to get together all that are unhurt, and make a neſt for them again: nay any *ants* will do this, and thoſe of one neſt will often take care of the aureliæ of another.

Swammerdam obſerves, that the affection of the *ant* for its offſpring is amazing. He ſays, that they carry the young worms about in thir mouths, that nothing may injure them; and when the earth of the neſt is dry, they carry them down to a greater depth, but when wet they bring them to the ſurface, that they may not be injured by the damps.

Thoſe which are called horſe-*ants*, are much larger, ſtronger, and ſwifter in their motion than the common *ants*, and the middle part of their body is yellow. This is not connected to the hinder part by ſo thin a filament as in the common *ant*; and the belly is yellowiſh and leſs gloſſy than in that ſpecies. Theſe make their neſts of large quantities of ſticks, ſtraws, and fragments of leaves of trees, and uſually build in woods, and on the ſurface of the earth. *Swammerd.* Bibl. Natur.

The common *ant* builds only with ſmall pieces of dry earth, and there is always found a vaſt quantity either of eggs, worms, or aureliæ at the bottom of the neſt. The aureliæ are covered only with a thin skin, and when carefully opened, they ſhew the worm perfect, and in its ſeveral ſtages of perfection. *Ray*'s Hiſt. Inſect. p. 70.

Swammerdam ſays, that in every neſt of *ants*, as in every hive of bees, there are three kinds of the inſect. Theſe he diſtinguiſhes as in the bees, by the names of males, females, and working *ants* or labourers. Theſe laſt are neither male nor female, nor have any other buſineſs, than the taking care of the young brood.

The male *ant* has four wings, and its eyes are larger than thoſe of the labourers or females, and there are three lucid

points

points on its head, which this author thinks to be wanting in the labouring *ant*. Theſe males are not found in the neſts in all ſeaſons, but only at particular times, and it ſeems as if their fate was the ſame with that of the male bees, which are always killed as ſoon as the ſeaſon of their impregnating the females is over.

The female *ant* is larger than the male, and working *ants*, and her body is much fuller and thicker. This creature alſo has the three lucid ſpots on her head as the male has, and her body may very eaſily be opened, and then ſhews a great number of eggs in regular lines.

The labouring *ants* are very eaſily diſtinguiſhed by their not having thoſe lucid ſpecks on the head, that the male and female have. *Ray*'s Hiſt. Inſect. p. 70.

Theſe lucid ſpecks deſcribed by Swammerdam, ſeem to be three eyes of the ſame ſtructure with thoſe of the ſpider. It is not peculiar to the *ant* to have theſe beſide the reticulated kind; all the common flies have beſide their large reticulated eyes, three of theſe ſmall and ſhining ones, which uſually ſtand in a triangle on the back part of the head. What ſeems moſt remarkable, is, that they ſhould not be common to all the kinds of *ants*, but that the labourers ſhould be without them.

Naturaliſts relate wonders of the policy and œconomy of *ants*, the contrivance of their houſes, their granaries, &c.

We are told of cities, ſocieties of *ants*, commerce between *ants*, &c.

Dr. Hook gives us the figure of an *ant* as repreſented by a microſcope. Microſ. Obſ. 49. *Power*, Exper. Phil. Obſ. 22.

Some writers on the materia medica, pretend to find extraordinary medicinal virtues in *ants*.

Mercury is a mortal poiſon to them, and the moſt effectual way of deſtroying theſe inſects. Vid. Mem. of Liter. T. 3. p. 215.

The chemiſts draw a ſpirit of *ants*. Act. Phyſ. Med. Acad. N. C. Vol. 2. Obſ. 136.

Mr. Newman has alſo procured an ætherial oil from *ants*.

Ants make the principal food of young patridges and pheaſants; beſides ſeveral other kinds of creatures, which prey on this inſect. Phil. Tranſ. N°. 28. p. 428.

Zoographers ſpeak of an *ant* bear, called *tamandua*, in Braſil; which feeds wholly on *ants* [a]. It has a long ſharp ſnout, a ſlender tongue, extenſible to a great length. It catches *ants* by ſcratching open their ſubterraneous hives, and then thruſting its tongue into them, after a while it draws it back into its mouth loaden with prey. [a *Grew*, Muſ. Reg. Societ. p. 1. Sect. 2. c. 1.]

The antients had an opinion that *ants* were a ſpecific or antidote made uſe of by bears, which they had always recourſe to, when poiſoned with *mandragoras*, &c. *Buxtorf.* Not. in Anatolii Fragm. ap. Fabric. Bibl. Græc. l. 4. c. 29. p. 317. v. 8. *Plin.* viii. 27. and *Solin.* c. 26.

The tarantula or malmignatto of Corſica, by ſome called a poiſonous ſpider, is really of the *ant* kind. Phil. Tranſ. N°. 249. p. 57.

It is alſo a ſort of winged *ants* that compoſe the gum lacca. *Lemeri*, Tr. des Drog.

The French academy ſpeaks of a ſort of *ants* in Surinam, which come viſiting in troops once in two or three years, enter the houſes, and are readily admitted into all their cheſts, &c. [a]. They exterminate rats, mice and other vermin. But this account is contradicted by M. de Robaix, who, however, relates wonders of the military diſcipline, the marches, guards, ſentinels, fortifications, roads, ſlaves, priſoners, &c. of theſe *ants* of viſitation [b]. [a Hiſt. Acad. Scien. 1701, p. 19. b Jour. Liter. T. 6. p. 185. ſeqq.]

Ants are in poſſeſſion of certain ſecrets for the preſervation of their proviſions, preventing their corn either from ſprouting, or from rotting under ground, which they practiſe with great dexterity, and are not unworthy the attention of the greateſt philoſophers. The activity is no leſs remarkable, with which they ranſack the neighbourhood around; than the labour and toil they undergo to bring home the proviſion, they have found.

Some ſuggeſt, that to prevent the ſprouting of the corn, the *ants* cut off all the buds before they lay it up. So that the corn which has lain in their neſts will produce nothing. 'Tis eaſy to make the experiment, and plainly diſcover, that there is no germ or principle of germination in their corn. Yet tho' the bud were cut off, there remains another difficulty, for the corn under ground would ſwell and rot, and thus become unfit for their nouriſhment. To prevent this, they have a peculiar expedient, by which corn is kept as dry in their neſts as in our granaries. This is done by ſunning it every day. They bring it out of their magazines towards the middle of the day, and ſpread it in little heaps on a kind of dry earth provided for that purpoſe, about the mouth of their neſt. At night they carry it back again to the magazine. It is obſervable they never venture their corn out, unleſs in a day that promiſes fair weather; in the prognoſtics of which, they ſhew great ſagacity. In ſome occaſions, where it has been dangerous for them to expoſe their riches in the day time, on account of the birds, particularly in the neighbourhood of ſome pidgeon-houſe, they have been found to vary their rule, and bring it forth in the night, ſpread it in the moon ſhine, and lock it carefully up in the morning. Vid. Mem. of Liter. T. 3. p. 206, and 208.

They ſcout round the country in queſt of corn; ſometimes they are diſappointed, and find none after long and painful rambles, at other times they do not like the corn they meet with; but notwithſtanding none of them come home without ſomething: one brings a grain of wheat, another a grain of rye or oats, a third, if it can meet with nothing elſe, a particle of dry earth, for beds to lay the corn on. Id. Ib. p. 209.

The forecaſt of *ants* in providing againſt the winter is a miſtake. Leewenhoeck is of opinion they do not eat in the winter, but ſpend that ſeaſon like dormice, and many other ſorts of animals, in a ſtate of ſleep. What confirms this is, that they have been obſerved as the cold draws on in autumn, to move very heavily, and in the vintage time, they can hardly ſtir at all; ſo that the proviſion they make, ſeems intended not for themſelves, but for their young.

Ants frame their habitations differently; ſome have their neſts in banks, or hillocks, called *ant-hills*, others build in houſes, others higher in trees, &c. Some curious obſervers diſtinguiſh divers apartments for different uſes, in the neſts of *ants*. They take ſpecial care to guard their neſts againſt the wet. Whatever community of goods there be between the *ants* of the ſame neſt, they exclude all foreigners belonging to other colonies from any intercourſe.

In ſome parts of Siam, which lie open to great inundations, the *ants* make their ſettlements in trees. No neſts are to be ſeen any where elſe. Id. Ib. p. 212.

Ligon mentions a large ſort of *ants* in Barbados, which build their neſts with clay and loam againſt a wall or tree, as big as bee-hives, and divided into ſeveral cells. Hiſt. of Barbados, p. 64.

The white *ants* in Maduras, called by the Indians *carreian*, being the ordinary prey of ſquirrels, lizards, and ſeveral other creatures, raiſe their houſe the height of a man from the ground, which they form of a durable ſort of ſtuff, or mortar, put ſo well together, that it is almoſt impenetrable. The fields are full of theſe banks; which the countrymen do not demoliſh, partly on account of their extreme hardneſs, and partly becauſe they would be repaired again in a few days. Lett. Edif. T. 12. p. 102.

There is a ſtrait hole in every *ant*'s neſt, about half an inch deep, after which it goes down ſloping into a place where they have their magazine, which ſeems to be a different place from that where they reſt and eat, they being too neat to lie among their proviſions. Mem. of Liter. T. 3. p. 206. Guard. N°. 156.

Over the hole of their neſt they lay ſome flat ſtone, tile, piece of plaiſter, or the like, to cover it from the rain, &c. which is their great enemy. In a fair day the hole is open; but when they foreſee it will rain, and almoſt every night, the cover is drawn over the entrance, with great ingenuity as well as labour, Fifty of theſe little animals, eſpecially thoſe of the ſtronger ſort, ſurround the ſtone, and draw and ſhove in concert: the like operation is renewed in the morning, to thruſt it back again. Mem. Liter. p. 211.

An *ant* never goes into any other neſt but her own; and if ſhe ſhould venture to do it, ſhe would be turned out, and ſeverely puniſhed; if ſhe proved refractory, and returned again after this warning, the other *ants* would tear her to pieces. Even when purſued, they will never fly into another hole for ſhelter, except in the laſt extremity; and will even ſometimes rather ſuffer themſelves to be taken.—They ſeem not to know what hoſpitality is. Mem. of Liter. l. c. p. 213. ſeqq.

Each kind of *ant*, Dr. King aſſures us, inhabit by themſelves in their ſeveral banks, or hillocks: if a red *ant*, ex. gr. be put into a black *ant*'s bank, war immediately ariſes, the black ſeize their gueſts, and never leave pinching him on the head with their forceps, or claws, till they have killed him on the ſpot. After which they drag his dead body out of the verge of the bank. If a black *ant* be put into a red *ant*'s bank, he ſeems ſtartled at the ſtrangeneſs of the thing, and preſently ſeeks for ſafety by flight. Phil. Tranſ. N°. 23. p. 425. ſeqq.

It has been a vulgar error, that *ants*, bite; they have not ſtrength enough in their jaws and teeth to penetrate the cuticula. But the red ſort have a ſting in the poſterior part of their bodies, which they thruſt out, and plunge into any thing that offends them, by a kind of vibratory motion, which expreſſes an acrid, corroſive ſort of liquor, which paſſing thro' the canal of the ſting raiſes an inflammation. The black *ants* have no ſting. Bibl. Univ. T. 11. p. 156.

It is ſaid that there is a white ſort frequent in India, which when they have taken poſſeſſion of a houſe, or a room, there is no getting rid of them, but by means of a black kind, which hunt them out. They eat their way thro' every thing, will even gnaw iron, ſilver, &c. unleſs the ruſt they raiſe be rather the effect of their ſaliva, which is of a diſſolving nature, and acts almoſt like aqua fortis. Vid. *Lemer.* des Drog.

On opening the *ant*-hills a great quantity of their eggs are uſually found. Theſe are extremely ſmall and white, and look like the ſcatterings of fine ſalt or ſugar. They may be taken up in cluſters, but are too minute ſingly, to be diſtinctly ſeen by the eye. Examined by the microſcope, they have very much the appearance of the eggs of ſmall birds, and are as clear as the air-bladders of fiſhes.

The ſame eggs are found in the bodies of the female *ants* on opening them at a proper ſeaſon. Theſe lie in cluſters together under cover of ſome light earth or other looſe matter, and when this is removed and they are uncovered, the *ants* are very induſtrious, and cover them again as quick as poſſible. The *ants* themſelves ſeem to brood over this ſpawn, and in a little time every granule of it is hatched into a ſmall worm or maggot not larger than a mite. Theſe can ſcarce be perceived to move at firſt, but afterwards they begin to twiſt their bodies about. They then grow yellowiſh and hairy, and in this ſtate arrive very nearly at the ſize of the *ants*; each of theſe has a black ſpot on its head. When they are arrived at this ſize, they get a film over them of a whitiſh colour, and in this caſe, wrapt up into an oval form, are called *ant*'s eggs, tho' very improperly. If theſe ſuppoſed eggs be opened, there will always be found in them, either the maggot as at firſt it went in, or nearer and nearer its change into the *ant* ſtate. In ſome, the lineaments of the *ant* may be compleatly traced, tho' the whole is tranſparent, except the eyes, which are two dark ſpecks. A little time after this, the *ant* is perfectly found and obtains its natural colour. If the egg be then opened, it is found ready for the light and crawls about, and ſoon gets the uſe of its limbs and ſtrength for all its motions.

The care theſe creatures take of their offſpring is amazing. When ever a hill is diſturbed, all the *ants* are found buſied in conſulting the ſafety, not of themſelves, but of the eggs or theſe larger bodies encloſing the maggot or young *ant*; they carry theſe down any way ſo as to get them out of ſight, and will do this over and over as often as they are diſturbed.

They carry away the eggs and verrmicles together in their confuſion, but as ſoon as the danger is over, they carefully ſeparate them, and place each ſort in parcels by themſelves under ſhelter of different kinds, and at various depths, according to the different degree of warmth and coverture the different ſtates require.

In the warm ſeaſon of the year, they every morning bring up the eggs, as they are uſually called, to the ſurface or nearly ſo; and from ten in the forenoon to five in the afternoon or thereabouts, all theſe will be found juſt under the ſurface; and if the hills be examined toward eight in the evening they will be found to have carried them all down; and if rainy weather be coming on, it will be neceſſary to dig a foot deep or more, in order to find them.

Theſe little inſects are the great food of young pheaſants and partidges in their wild ſtate, and the reaſon why people ſeldom ſucceed well in the bringing up thoſe birds, is their not giving them a proper ſupply of that ſort of food, as often as they require it. Theſe birds in their wild ſtate run to the *ant*-hills as ſoon as the day breaks in the morning, and feed heartily. We give them not only improper food, but at improper times; for a repaſt of *ants* at ſuch a time of day, when the birds are faint with faſting, will not recover them, unleſs they are very hardy. Phil. Tranſ. No. 23.

The *ant* examined by the microſcope, appears a very beautiful creature. Its head is large, and adorned with two very pretty horns, each having twelve joints. Its eyes are protuberant, and pearled; its jaws are ſerrated or indented with ſeven little teeth, which exactly tally; they open ſideways, and are able to gape very far aſunder, and by this means the *ant* is often ſeen graſping and carrying away bodies of three times its own bulk and weight. It is naturally divided into the head, the breaſt, and the belly or tail, each of theſe parts being joined to the other by a very ſlender ligament. From the breaſt, three legs come forth on each ſide, and the tail is armed with a ſting; but this the creature only uſes, when provoked; but a poiſonous liquor is then convey'd by it, into the wound it makes, occaſioning much pain and ſwelling.

The whole body is caſed over with a ſort of armour, ſo hard as ſcarce to be penetrated by a lancet, and is thick ſet with ſhining whitiſh briſtles. The legs alſo are covered with hairs, but they are ſhort, and of a darker colour. *Baker*'s Microſ. p. 271.

Theſe little creatures are very troubleſome in gardens, and in paſture lands,; as well by feeding on the fruit, as by making up hills for their habitation. In the hotter countries, as Italy, Spain, and the Weſt-Indies, *ants* are the great peſt of the fields. Trees may be preſerved from them by incompaſſing the ſtem for four fingers breadth, with a roll of wool, newly pulled from the ſheep's belly; or by laying ſaw-duſt all round the ſtump of it. Some anoint the tree with tar, which has the ſame effect; but then the tar is prejudicial to the tree.

We have an account of Engliſh *ants* by Mr. Gould, in 12mo. London, 1747.

The five ſpecies of this inſect, which have occurred to the author, are, 1. The hill-*ant*, or horſe-*ant*. 2. The jet-*ant*. 3. The red-*ant*. 4. The common yellow-*ant*. 5. The ſmall black-*ant*.

He obſerves, that there is in the body of *ants*, a bag of corroding liquor, which they can throw out to ſome diſtance. The red *ants* have a ſting like bees; others bite, and make a ſmall inciſion with their ſaws, ejecting ſome of their corroding liquor.

As to the cells, government, propagation, &c. of *ants*, we refer to the book itſelf; or to Phil. Tranſ. N°. 482. Sect. 4. where there is an abſtract of his book. We muſt not omit, that Mr. Gould contradicts the vulgar notion of the foreſight of *ants*, and their laying up proviſions for winter; in which he agrees with Swammerdam as, before mentioned.

FORMICA, or ANT, in medicine, denotes a ſpecies of warts, called alſo *myrmecia*.

The name *ant*, *formica*, is alſo given to thoſe minute varicous intumeceſences of the ſmalleſt blood-veſſels, obſerved either in the anus, or the glans of the penis *Caſt.* in voc. *formica*.

Some alſo give the appellation *ant* or *formica* to the milliary *herpes*.

FORMICA *leo*, the *ant-eater*, in natural hiſtory, the name given by authors to a very remarkable ſpecies of inſect, which is in its perfect ſtate, a winged creature, approaching to the nature of the libellæ; but in its prior ſtate of a creeping animal, has a wonderful art and addreſs in the catching its prey. It is in this ſtate, that it is known by the name of *formica leo*, as it chiefly feeds upon *ants*.

It is ſomewhat of the nature of the ſpider in its way of taking its prey, its manner of ſpinning, and in the figure and ſoftneſs of its body; and has in its general figure, ſomewhat of the appearance of the millepes, or wood-louſe; ſo that ſome have miſtaken it at firſt ſight for that animal. It is of a dirty greyiſh colour marked with ſome black ſpots, and theſe are alſo many points, which when it is viewed with the microſcope, make it reſemble a hedge-hog or porcupine. Its body is compoſed of ſeveral rings, and has thence a wrinkled look. It has ſix legs, four are joined to the breaſt, and the other two to a long part which may be taken for its neck; its head is ſmall and flat, and it has two remarkable horns; theſe are about a ſixth of an inch long, and as thick as a hair, and are hard, hollow, and hooked at the end, like the claws of a cat; at the origin of each of theſe horns, it has a clear and bright black eye, which ſees very diſtinctly, and gives the creature notice to eſcape on ſight of the ſmalleſt object. Mem. Acad. Par. 1704.

Of all food the *ant* affords the propereſt to this animal; it is not able to hunt after prey, nor to deſtroy large inſects, it can only draw into its ſnares, ſuch as come by its habitation, and of theſe very few are ſuch as he can manage; all the winged tribe are able to eſcape by flight, and the beetle kinds, and others that have hard ſhells upon their bodies, are of no uſe to him, as his horns cannot pierce them. The ſmallneſs of the *ant*, and its want of wings, make it the deſtined prey of this devourer. The manner in which he catches his prey is this.

He uſually encamps under an old wall, that he may be ſheltered from the injuries of the weather, and he always chooſes a place where the ſoil is compoſed of a fine dry ſand; in this he makes a pit of the ſhape of a funnel, or an inverted hollow cone; he executes this in the following manner.

If he intends the pit to be but ſmall, he thruſts down his hinder part into the ſand, and by degrees plunges himſelf backward into it, and when he has got to a certain depth, he toſſes out the looſe ſand which has run down with his head, artfully throwing it off beyond the edges of his pit; thus he lies at the bottom of a ſmall hollow, which is wideſt at the top, and comes ſloping down to his body.

But if he is to make a larger pit, more pains is required to bring it to perfection. He firſt traces in the ſurface of the ſand, a large circle, which is the erected baſe or mouth of the pit he is to make in form of an inverted cone; he then buries himſelf in the ſand near the edge of this circle, and carefully throws up the ſand above him, with his head toſſing it out beyond the circumference of the circle. Thus he continues his work running down backwards in a ſpiral line all the way, and carefully throwing off the ſand from above him, till he is come to the place of his reſt, which is the point or reverted apex of the hollow cone, he has formed by his paſſage. The length of his neck and the flatneſs of his head, gives him a power of uſing the whole as a ſpade, and throwing off the ſand with great eaſe, and his ſtrength in this part is ſo great that he is able to throw off a quantity of it, to ſix inches diſtance. This is a power he oftener exerts however, in the throwing away the remains of the animals he has fed upon, that his den may not become frightful to other creatures of the ſame ſpecies, the ſeeing their fellow carcaſſes about it.

When he has finiſhed his pit, he buries himſelf at the bottom of it in the ſand, leaving no part above ground, but the tips of his two horns, which he expands to the two ſides of the pit. In this condition he lies and waits for his prey, and never comes up after it. When an *ant* or any other ſuch creature chances to walk over the edges of his pit, his ſteps throw

throw down a little of the ſand, which naturally running down to the bottom of the pit, gives the enemy notice of his prey; he then toſſes up the ſand which covers his head, to bury the *ant*, and bring him down with its returning force to the bottom; and as one ſuch attempt cannot be ſufficient to prevent the *ant*'s eſcape, he throws more and more ſand upon him, till he by degrees brings him down to the bottom. All the endeavours of the *ant* to eſcape when once it is within the verge of the pit are in vain, for as it attempts to climb, the ſand runs away from under its feet, and it ſinks the lower for every attempt. This motion of the ſand alſo informs the enemy where it is, and directs him to throw up more ſand in the right place, which it does till the poor *ant* falls to the bottom between its horns. It then plunges their points deep into the *ant*'s body; and having ſucked out all the juices of the prey, it throws out the empty skin, as far from the hole as it can. This done it mounts up the edges of its pit, and if they have ſuffered any injury, repairs them with great care, and immediately buries itſelf again in the center to wait for an other meal.

The horns of this creature are its only organs for receiving nouriſhment; it never brings any animal that it has ſeized near to its head, but always holds it at the tip of the horns, they therefore plainly ſerve as ſyringes to draw into its ſtomach the juices of the bodies of the inſects it feeds on, neither is there any mouth or trunk, or any other organ to be diſcovered about its head, which could ſerve to the purpoſe of eating; the head ſeeming only intended to throw away the ſand in forming the pit. The horns of this animal being ſo neceſſary to its life, nature has provided for the reſtoring them in caſe of accidents, and if cut off they are found to grow again.

The food this creatures procures by its pit, can be but little; and as it has no power of catching its prey any other way, its motion being only backwards, and that ſlowly, and by ſmall ſpaces at a time, ſome people have believed this catching now and then an *ant*, by this means was rather for diverſion than hunger; but tho' the *formica leo* will live a long time without food, and even paſs thro' all its changes when ſhut up in a box, yet it is always ready to eat if food is offered it; it always appears ſtarved and ſmall when kept thus, and if a fly be given it in this hungry ſtate, it will ſo ſuck out all its juices that the ſhell remaining may be rubbed to powder between the fingers, while the body of the creature that has ſucked it, appears remarkably ſwelled and diſtended, ſo that it is plain that the juices of the prey are conveyed into the body of the creature, tho' it is not eaſy to ſee by what means, the horns not appearing to have any perforation.

When the *formica leo* has lived a proper time in this ſtate, it leaves its pit, and is only ſeen drawing lines and traces on the ſurface of the ſand; after this it buries itſelf under the ſurface, and there incloſes itſelf in a fine web to paſs its transformation into the wing'd ſtate in. This caſe is made of a ſort of ſilk which the creature ſpins in the manner of the ſpider, and of a quantity of the grains of ſand cemented together by a glutinous humour which flows from its pores. This caſe however would be too harſh and coarſe for the body of the creature, and therefore it ſerves only for the outer covering to defend it from injuries; the creature ſpinning one of pure and incomparably fine ſilk, of a beautiful pearl colour within it, which covers its whole body.

When the creature has lain ſome time in this caſe, it throws off its outer skin, with the eyes, the horns, and every other part neceſſary to its life before, and becomes an oblong nymph, in which a careful eye may trace the form of the fly it is to become. There may be ſeen thro' its tranſparent covering, new eyes, new horns, wings, and all the other parts of the animal in its perfect ſtate. This nymph makes its way about half out of the ſhell and remains in this condition, but without farther life or motion, till the perfect fly makes its way out at a ſlit in the back; in this ſtate it much reſembles the libellæ or dragon-flies, common about our waters. The male couples with the female in this ſtate only, and Mr. Poupart, to whom the world is indebted for this curious deſcription, is of opinion that the females lay only one egg; but this is very different from the courſe of nature, in the other animals of the ſame claſs. Mem. Acad. Par. 1704.

When this inſect forms its pit in a bed of pure ſand, it is made and repaired with great eaſe, but where it meets with other ſubſtances among the ſand, the labour becomes greatly the more embaraſſing. If for inſtance, when the creature has half formed its pit, and then comes to a ſtone of ſome moderate ſize, it does not deſert the work for this, but goes on, intending to remove that impediment at laſt. When the pit is finiſhed, the creature crawls backward up the ſide of the place where the ſtone is, and getting its backſide under it takes great pains and time to get it on a true poiſe, and then begins to crawl backward with it up the edge, to the top of the pit, to get it out of the way.

It is a very common thing to ſee a *formica leo* in this manner labouring at a ſtone four times as big as its own body; and as it can only move backward, and the poiſe is hard to keep, eſpecially up a ſlope of ſuch crumbly matter as ſand which moulders away from under its feet, and neceſſarily alters the poſition of its body, the ſtone very frequently falls down when near the verge, and then it is ſure to roll to the bottom; in this caſe, the creature attacks it again in the ſame way, and often is not diſcouraged by five or ſix miſcarriages of this kind, but after all, attempts again, and at length gets it over the verge of the place. When it has done this, it does not leave it there leſt it ſhould roll in again, but is always at the pains of puſhing it farther on till it has removed it to a neceſſary diſtance from the edge of the pit.

The common *formica leo* moves only backward, but Mr. Rouet, has obſerved a ſpecies which moves forward in the common way of other animals, and makes no pit of this kind to intrap its prey, but ſeizes other inſects by force. Philoſ. Tranſ. N°. 469. p. 466.

FORNA, in ichthyology, a name given by Hildegard, and others, to the trout.

FORNAGE, *Fornagium*, in our old writers, ſignifies the fee taken by a lord from his tenants, bound to bake in the lord's oven, or for a permiſſion to uſe their own; this was uſual in the Northern parts of England. Plac. Parl. 18 Ed. 1. The word comes from the French *fournage*, which ſignifies the ſame.

FORRAGE (*Cycl.*) — FORRAGE-*guard*, in military affairs, a detachment ſent out to ſecure the *forragers*. The *forrage* guard is poſted at all places, where the enemies parties may come to diſturb the *forragers*. This guard is likewiſe called the *covering party*, and marches generally the night before the *forraging*, that they may be poſted in the morning before the *forragers* come. The guard conſiſts both of horſe and foot, and muſt ſtay at their poſt till the *forragers* be all come off the ground.

FORSES, *catadupæ*, a term uſed in Weſtmoreland, for waterfalls. *Camb.* Britan.

FORTAMENTE, in the Italian muſic, the ſame with *forte*. See FORTE.

FORTE, in the Italian muſic, directs to play ſtrong and loud.

FORTE FORTE, or F. F. ſignifies a degree louder or ſtronger than *forte*. *Broſſ.* Dict. Muſ. in voc.

PIU FORTE, the ſame as *forte forte*. Id. Ibid.

FORTIS *aqua*. See the article AQUA *fortis*.

FORTISSIMO, in the Italian muſic, is uſed to ſignify *very ſtrong*. It is ſometimes denoted by F F F, or *fff*, and intimates that the performers are to play or ſing very loud or ſtrong, to expreſs ſome paſſion, &c. *Broſſ.* Dict. Muſ. voc. See FORTE.

FORTUNE-*tellers* — Pretenders to tell *fortunes*, and to any crafty ſcience for the diſcovery of ſtolen goods, are puniſhable by impriſonment, pillory, and binding to the good behaviour [a], and ſhall be deemed vagabonds [b]. [[a] Stat. 9 Geo. 2. c. 5. Sect. 4. [b] Stat. 17 Geo. 2. c. 5. Sect. 2.]

FORTY *Shilling-land*, is uſed in *Scotland*, for a certain portion of arable land. The *forty ſhilling-land* of old extent contains eight oxgang, or 104 acres. Tr. Pract. Geom. p. 89. See OXGANG.

FOSSIL (*Cycl.*) —FOSSILS are defined to be native ſubſtances, found either buried in the earth, or lying on its ſurface, of a plain ſimple ſtructure, and ſhewing no ſigns of containing veſſels, or circulating juices. *Hill*'s Hiſtory of Foſſils, p. 1.

Foſſils are the ſeveral natural ſubſtances, of what is uſually called the mineral kingdom, as plants are of the vegetable, and living creatures of the animal.

FOSSIL *plant*. See the article PLANT.

Marine FOSSILS. See MARINE.

FOSSILE *Ivory*. See IVORY.

FOSSORES, in natural hiſtory, a name given to a ſpecies of ſmall worms hatched from the eggs of a fly, which feeds on the parenchymatous ſubſtance of the leaves of plants, burying themſelves between the two membranes. Theſe animals in general are called by Reaumur, *aſcarides*; but as they greatly differ in their ſize, and in their manner of eating and deſtroying leaves, the ſmall ones which eat but ſlowly, and gnaw their way in crooked furrows, are called by him *foſſores parvi*; and on the contrary, thoſe which eat away all that lies before them, and are of a ſomewhat larger ſize, are called *foſſores magni*. See ASCARIDES.

FOSTER-*land*, in our old writers, is land given or allotted for the finding of food or victuals; as for monks in monaſteries, &c.

FOTHER or FODDER, is a weight of lead, containing eight pigs, and every pig one and twenty-ſtone and a half; ſo that it is about a tun or common cart-load. Among the plumbers in London, it is ninteen hundred and an half; and at the mines it is two and twenty hundred and an half. *Skene*.

The word is of Teutonic origin from *fuder*.

FOUL, (*Cycl.*) a ſea term, importing the runnnig of one ſhip againſt another. This happens ſometimes by the ungovernable violence of the wind, and ſometimes by the careleſſneſs of the people on board; and ſometimes happens to ſhips of the ſame convoy; ſometimes to ſuch as meet accidentally; and ſometimes to ſuch as are in port by means of others coming in.

The damages occaſioned by running *foul*, are of the nature of thoſe in which both parties muſt bear a part; they are uſually made half to fall upon the ſufferer, and half upon the veſſel which did the injury: but in caſes where it is evidently the fault of the maſter of the veſſel, he alone is to bear the damage. *Savary*, Dict. Comm.

FOULNESS *in wounds*. When what the ſurgeons call uncleanneſs or *foulneſs* is perceived in a wound, that is, when the fleſh in it, looks fungous, black, putrid or livid, it muſt be well cleanſed before any attempts are made to heal it. Different methods of effecting this, have been in uſe at different times among the ſurgeons: the antients uſed honey, but the moſt uſual practice now is, to apply a digeſtive ointment made of turpentine diſſolved in the yolk of an egg, and afterwards mixed with honey of roſes; but where this is not found ſtrong enough for the purpoſe, the Egyptian ointment is to be uſed, mixed either with ſpirit of wine, or with the common digeſtive. To theſe digeſtive ointments, a ſmall quantity of aloes and myrrh may alſo very properly be added, and where more ſtrength is required in them a ſmall quantity of red precipitate is to be added. The uſe of lime water as a detergent is alſo very great, and yet more ſo, if there be added to every pint of it twenty or thirty grains of ſublimate; this makes what is called the *phagedenic* water. Applications of this kind, are to be continued till the wound is entirely clean, and then it is to be healed with the common digeſtives, &c. *Heiſter*'s Surg. p. 42.

FOUMART, a name uſed in ſome parts of England for the weaſel, called alſo in ſome places, the *fitchett*. See MUSTELA.

FOUNDAY, in metallurgy, a term uſed by the workers at the iron mines, in many counties of England, for the ſpace of ſix days, in which time, they contrive to make a determinate quantity of iron, ſo that they count their work by theſe *foundays* or weeks. *Ray*'s Engliſh Words, p. 126.

FOUNDER, (*Cycl.*) in glaſs-making, is a term appropriated to the green-glaſs-houſes, and is the perſon there, who in the ſame office in the white-glaſs-making is called the *conciator*. He weighs and proportions the ſeveral ingredients for glaſs, and calcines them into fire, from which ſtate they are to be run into glaſs. *Neri* of Glaſs, p. 240.

FOUR-*corners*, in the manege, or to work upon the *four-corners*, is to divide in imagination the volt or round into four quarters; ſo that upon each of theſe quarters, the horſe makes a round or two at trot or gallop; and when he has done ſo upon each quarter, he has made the *four corners*.

FOURTH (*Cycl.*) — Some modern muſicians have doubted whether the *fourth* ſhould be received among the number of concords, or not[a]. The antients expreſsly admitted it as ſuch; and Andreas Papius wrote a treatiſe againſt thoſe moderns who reject it[b]. [[a] *Merſen.* Harm. l. 4. prop. 8. [b] *Wallis* Append. Ptolem. Harm. p. 182.]

Diminiſhed FOURTH, in muſic. See DIMINISHED *fourth*.

FOWL (*Cycl.*) — The ſea *fowls* which come on ſhore in immenſe numbers to rooſt, in the north iſlands of Scotland, ſet their watches and centinels at diſtant poſts, to give them notice of any danger; on the leaſt alarm from theſe, the whole body riſes, but without ſuch notice they are not to be alarmed by almoſt any thing. The people of the country know this, and when they go out to take them, they employ all their art to take the centinels without noiſe; this they ſometimes ſucceed in, and when they do, they often afterwards catch three hundred of the others, or more, in one night. Philoſ. Tranſ. N°. 233.

The laying of theſe ſea birds is leſs certain as to time than might be imagined. They can occaſionally defer it; and as they uſually lay in a rainy ſeaſon, if the rain does not come on at the uſual time, they will defer it ſome weeks; and if the April moon goes far in May, that alſo has been obſerved to hinder them from laying ten or twelve days longer than ordinary. See BIRD.

The belly of a living *fowl* being ript up, the creature is thus applied to a part bit by a rattle-ſnake, to draw out ſome of the poiſon. It ſeems to have ſome effect this way. We find an inſtance in the Philoſophical Tranſactions [a], where a *fowl* thus applied to a hand bit by that moſt venomous ſnake, immediately ſwelled, grew black and ſtunk. [[a] N°. 479. p. 144.]

Water FOWL. The Ceiloneſe have great plenty of water *fowl* wild on their iſland, and have a very remarkable way of catching them, which is this; the fowler enters a lake or other water which has a good bottom, and is not very deep, he puts an earthen pot upon his head, in which there are bored holes, thro' which he can ſee; he keeps himſelf ſo bent down in the water, that only the pot is above the ſurface; in this manner he enters the place where the wild *fowl* are in cluſters, and they think it is only ſome floating block. He then takes ſome one by the legs and gently draws it under water, and wrings its neck till he has killed it; then putting it into his bag which is faſtened about his middle, he takes hold of another in the ſame manner, and ſo on, till he has got as many as he can carry off, and then he goes back in the ſame manner in which he came, not diſturbing the reſt of the birds who never miſs their companions, but only ſuppoſe that they dive down for their diverſion, when the fowler pulls them under. In places where this has been practiſed ſo long or ſo careleſsly that the birds are ſhy, the fowler uſes a gun; but this he does in the following manner. He makes a ſcreen of about five foot high, and three foot wide, which he carries in one hand ſtrait between himſelf and his game, and in the other hand his gun. The birds are not alarmed at what appears only a buſh; for this ſcreen is always covered with branches of trees freſh cut down, and full of leaves, ſo that the ſportſman behind advances as near as he pleaſes, and then putting the gun thro' ſome crevice of the ſcreen he fires. See WATER *Fowl*.

FOXGLOVE, *Digitalis*, in botany. See DIGITALIS.

There are ſeveral ſpecies of this flower propagated in gardens, to which they are a very great ornament. They are to be ſown in March in a freſh ſoil, that is not too ſtiff, and when the plants come up, they ſhould be tranſplanted into beds at ſix inches diſtance, where they may remain till the Michaelmas following, obſerving to keep them clear from weeds; they are then to be tranſplanted into large borders, and in the May following they will produce their flowers. Theſe will continue a month or more in their beauty, and the ſeeds will ripen in Auguſt, which if let alone, will ſow themſelves, and ſufficiently ſtock a garden; but ſome of the ſpecies, as the iron coloured one, if the ſtalks be cut down as ſoon as it has flowered, will ſhoot again from the root and continue; theſe may be afterwards propagated by parting the roots. *Millar*'s Gard. Dict.

FOXGLOVE, in medicine, is eſteemed deterſive and laxative, but ſeldom preſcribed inwardly. It is alſo a noted vulnerary, the ungentum digitale, taking its name from it. Vid. *Lemery* and *James*, in voc. *Digitalis*.

FOYNA, in zoology, a name given by many to the martin or martes, an animal of the weaſel kind, common with us. See the article MARTES.

FRACHES, in the glaſs trade, are the flat iron pans into which the glaſs veſſels already formed are put, when in the tower over the working furnace, and by means of which, they are drawn out thro' the leers, that they may be taken gradually from the fire, and cool by degrees. *Neri* of Glaſs, p. 244.

FRACTURES (*Cycl.*)—Theſe may be diſtinguiſhed into ſeveral claſſes or ſpecies. Firſt every *fracture* is either *ſimple*, that is, when no other parts beſide the bone are injured; or *compound*, that is, when you have at the ſame time a wound, a diſlocation, hæmorrhage, inflammation, fever, caries or contuſion of the bone; or where the bone is fractured in ſeveral places at the ſame time. Other differences ariſe with regard to the ſituation of the *fracture*, and from its poſition: ſome are tranſverſe, others oblique; in which caſe it frequently happens, that the points of the bones wound or puſh themſelves thro' the neighbouring parts. Violent contuſions alſo may be claſſed under the head of *fractures*; for in theſe the bones are frequently broken into ſplinters, by the falling of any heavy body upon the part, or other ſuch accidents. When the ſituation of the bone is not altered by a *fracture*, or the broken parts ſtart very little from their proper ſituation, they are much eaſier replaced than when they are entirely ſeparated from one another, and a great ſpace intervenes between them. Tranſverſe *fractures* admit of an eaſier cure than oblique ones. When two bones of the ſame limb are fractured, the cure is uſually much more difficult, than when only one is. When the bone is broken into ſeveral pieces, the patient ſeldom eſcapes a gangrene, at leaſt the cure in theſe caſes requires a longer time, and the limb ſeldom recovers its true ſhape.

When the broken bones are inſtantly reduced, the cure will be much ſooner performed, than when they have been ſome time ſeparated. *Fractures* in the neighbourhood of parts of great conſequence to the animal œconomy, are always attended with great danger; ſuch are *fractures* of the cranium from the vicinity of the brain; of the vertebræ, from the medulla ſpinalis; and of the ribs, or ſternum, or the oſſa ilei and pubis, from the ſituation of the viſcera of the thorax and abdomen. *Fractures* of the bones to which the larger arteries are connected, are alſo very dangerous; more particularly, when one ſplinter or point of the bone vellicates or wounds large veſſels, or when the bone is broken into ſeveral fragments, the conſequences are generally inflammations, ſuppurations, or fiſtulæ, which will admit of no remedy, till the ſplinter of the bone is removed. *Fractures* proceeding from internal diſorders or caries of the bones, as ſuch ſometimes happen, are cured with much more difficulty, than thoſe ariſing from external injuries; nay this indeed, is frequently an incurable caſe, unleſs the internal cauſe be firſt removed. This is uſually either a ſcorbutic habit of body, or a venereal taint. When a large piece of the bone is driven away by a piſtol or muſket ball, the limb muſt be taken off, for the two ends of the bone are never likely to unite, unleſs it be a very ſmall piece that is thus taken away, for in that caſe the bone will ſometimes join, but then the limb always becomes ſomething ſhorter than it was before. When the blood inſinuates itſelf by a

fiſſure

fiſſure into the internal part of the bone, by corrupting there it produces a caries, a ſpina ventoſa, or elſe incurable fiſtulæ, tabes and a ſphacelus, which always require amputation of the limb, and frequently deſtroy the patient. The ſame accidents will happen in *fractures* of any kind, when the extravaſated blood mixes with the marrow and corrodes it. *Heiſter*'s Surg. p. 103.

Inſtances have been known of the *fracture* of the patella in perſons thoroughly ſound, where the part itſelf has received no hurt. The cauſe of this is aſcribed to the action of the muſcles only. And many inſtances might be given of *fractures* in the neck of the os femoris, in the middle of the humerus, tibia and perone, by the power of the muſcles only, or ſuch power at leaſt as ſhewed they have as great a ſhare in ſeveral *fractures* aſcribed to outward cauſes, as they are frequently known to have in the *fracture* of the tendo Achillis. We have an obſervation of a *fracture* of the os humerus, by the power of the muſcles only, in the Philoſophical Tranſactions, N°. 475. Sect. 15.

FRACTURE *of the thigh*. See THIGH.

FRACTURED, in a general ſenſe, denotes ſomething broken. See FRACTURE.

Extenſion of FRACTURED *limbs*. See EXTENSION.

FRÆNA, a word uſed by ſome anatomical writers, as a name for the ſockets of the teeth.

FRAGA, *ſtrawberries*. The antient Greeks uſed the word *comari* indifferently for the ſtrawberries produced on the common creeping plant, and for thoſe which are the fruit of the arbutus or ſtrawberry tree; they alſo evidently called the tree, and the plant which produced them both, by the ſame name. For Theophraſtus ſpeaks of the wood of the comarus, and Theocritus tells us, of the oxen eating the comarus, and the goats lying all day in it. The Latin writers have copied this from the Greeks; and they alſo call indiſcriminately the fruit of the arbutus, and that of the common ſtrawberry plant, by the name *fraga*. All the Roman authors have called the common garden ſtrawberries *fraga*; and Juvenal in his ninth ſatire, where he is deſcribing the antient ruſtics gathering their food from the wild trees of the wood, calls the fruit of the arbutus, *fraga*; and Varro in the deſcription of the manner of life of the ſame people, has in the very manner of this poet, coupled acorns, and the fruit of the arbutus.

Pliny has run into an error, in ſuppoſing, that the common cinquefoil was the plant which produced the ſtrawberries in their native wild ſtate; whereas, it is a peculiar plant that produces them in the woods, and this not a cinquefoil or five leaved, but a three leaved one. Errors ſeldom fail to be propagated, and accordingly we find Marcellus Empiricus to the beſt of his pains, continuing the error of Pliny to poſterity; he tells his reader, to gather the leaves of the common cinquefoil, on which the ſtrawberries grow, and ſteep them in ſea-water for the preparing ſome medicines.

FRAGARIA, *ſtrawberry*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals arranged in a circular form. The piſtil ariſes from the cup of the flower, and finally becomes a roundiſh or oval fruit, to the placenta of which, which is in ſome ſpecies ſoft and fleſhy, in others hard and dry, there adhere a great number of ſeeds. To this it may be added, that the leaves always ſtand three on a ſtalk.

The ſpecies of *ſtrawberry*, enumerated by Mr. Tournefort, are theſe: 1. The common *ſtrawberry*. 2. The *ſtrawberry* with variegated leaves. 3. The white fruited *ſtrawberry*. 4. The *ſtrawberry*, with fruit of the ſize of a plumb. 5. The rough leaved *ſtrawberry*. 6. The *ſtrawberry*, which produces fruit twice in the year. 7. The little yellow flowered *ſtrawberry*. 8. The *ſtrawberry* with double white flowers, and a ſmall round and very ſweet fruit. 9. The hairy *ſtrawberry*, with red ſweet ſcented fruit. 10. The ſcarlet Virginian *ſtrawberry*. 11. The green flowered ſhrubby *ſtrawberry*. 12. The wild barren *ſtrawberry*. 13. The double flowered wild barren *ſtrawberry*. 14. The barren *ſtrawberry* with double botryoide flowers. 15. The hoary and ſilky leaved wild barren *ſtrawberry*. 16. The hoary barren *ſtrawbery*. 17. The large upright alpine barren *ſtrawberry*. 18. The narrow leaved and alpine barren *ſtrawberry*. 19. The great alpine *ſtrawberry* with ſilky ſharp pointed leaves, and roſe coloured flowers. 20. The great alpine *ſtrawberry* with ſilky obtuſe leaves, and roſe coloured flowers. 21. The leſſer alpine *ſtrawberry*, with obtuſe ſilvery leaves, and roſe coloured flowers. *Tourn.* Inſt. p. 295. See STRAWBERRY.

FRANCA, in botany, the name given by Micheli to a genus of plants, ſince called by Linnæus *Frankenia*. *Micheli*, Nov. Gen. 22. See FRANKENIA.

FRANCOLINO, in zoology, the name given by the Italians, and from them by others to the attagen of Aldrovand, a bird of the gallinaceous kind, in ſize and ſhape much reſembling the pheaſant. It is a very beautifully variegated bird. Its Head is ornamented with a very elegant creſt of feathers of a yellowiſh hue, variegated with black and white ſpots. Its eyelids are ſmooth, and of a fine ſcarlet, it has a ſort of beard of fine ſlender feathers hanging down from its chin; its neck is long and ſlender, and is of a greyiſh colour, variegated with black and white ſpots; the breaſt is of the ſame colours, but has alſo ſome ſtreaks of a ruſty brown among them. Its belly and tail are of a lead colour, as are alſo its legs.

It is called *francolino* by the Italians, becauſe it is forbidden to the common people to deſtroy it. It extremely reſembles our red-game or lagopus. It is eſteemed a very delicate fowl and ſells at a large price. It is common in the mountains of Italy, Germany, and many other countries. Authors ſeem to diſagree a little in their deſcriptions of it, ſome figuring it without its creſt. *Ray*'s Ornitholog. p. 128.

FRANGULA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of a number of leaves arranged in a circular form between the ſegments of a one leaved cup. From the bottom of this cup there ariſes a piſtil, which finally becomes a round ſoft fruit, a berry uſually containing two flatted and roundiſh ſeeds.

The ſpecies of *frangula* enumerated by Mr. Tournefort, are theſe. 1. The common *frangula*, called the black alder, or berry-bearing alder. 2. The *frangula*, with larger and rougher leaves. 3. The roundiſh leaved dwarf rock or mountain *frangula*, and 4. The dwarf rock or mountain *frangula*, with oblong leaves, called the long leaved berry-bearing alder. *Tourn.* Inſt. p. 612.

FRANKENIA, in botany, the name given by Linnæus to a genus of plants, called by Micheli, *Franca*. The characters are theſe. The perianthium is permanent and is compoſed of one leaf of an oblong tubular form, divided into five ſegments at the edge. The flower conſiſts of five petals, the ungues of which are narrow and of the length of the cup, and the tops roundiſh and expanded. The ſtamina are ten filaments longer than the tube, the apices are ſimple. The germen of the piſtil is roundiſh, the ſtyle is capillary, and of the length of the ſtamina; the ſtigma is divided into three parts; the fruit is an oval capſule covered with the cup, and formed of three valves, but containing only one cell, in which are a great number of ſmall ſeeds of an oval figure. *Linnæi* Gen. Plant. p. 187. *Micheli*, Nov. Gen. 22.

FRASSETUM, in our old writers, is taken for a wood, or woody ground, where aſh grows. 1 Inſt. 4.

The word is a corruption of the Latin *fraxinetum*, which ſignifies the ſame.

FRATERCULA, in zoology, a name by which Geſner and Aldrovand have called the *anas arctica cluſii*. See the article DUCK.

FRATRES *gaudentes*, a deſignation given to the knights of the order of the *virgin Mary*, inſtituted about the year 1261. *Hofm.* Lex. in voc.

FRAXINELLA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the polypetalous anomalous kind, uſually conſiſting of five petals. From the cup of the flower, there ariſe a vaſt number of crooked ſtamina ſurrounding a piſtil, which afterwards becomes a fruit compoſed of ſeveral capſules of an elaſtic nature, and ſplitting when ripe into two parts, and bending into the ſhape of a rams horn; theſe capſules uſually contain many turbinated ſeeds. *Tourn.* Inſt. p. 430.

The ſpecies of *fraxinella* enumerated by Mr. Tournefort are theſe: 1. The common *fraxinella*. 2. The large purple many flowered *fraxinella*. 3. The leſſer purple *fraxinella*. 4. The *fraxinella*, with ſnow white flowers.

The *fraxinella* or white dittany of authors, is cultivated in gardens with us, and grows wild in France and Italy. It generally grows about two foot high. The leaves much reſemble thoſe of the common aſh-tree, whence it has its name; the flowers are produced in long ſpikes, and are of a whitiſh red, mixed with purple. The fruit is compoſed of five capſules, in which are contained black ſhining oval ſeeds, pointed at the ends. *Pomet*'s Hiſt. of Druggs, p. 45.

This root ſhould be choſen plump and full, white within and without, little burdened with ſmall fibres, and clean. It is alexipharmic, diuretic and uterine, and is ſaid to deſtroy worms. *Hill*'s Hiſt. Mat. Med. p. 588.

FRAXINUS, the *aſh*, in botany, the name of a genus of trees; the characters of which are theſe: the flower is of the apetalous kind, and its ſtamina have uſually double heads. The piſtil finally becomes a fruit of the figure of a tongue, flatted and membranaceous, and containing a ſeed of the ſame figure. There is alſo a ſpecies of *aſh*, which has a petaloide flower; but as this flower is always barren, Mr. Tournefort did not judge it proper to ſeparate it from the reſt. *Tourn.* Inſt. p. 577.

The ſpecies of the *aſh*, enumerated by Mr. Tournefort, are theſe. 1. The common tall *aſh*. 2. The lower *aſh*, with ſmaller and narrower leaves. 3. The round leaved *aſh*. 4. The botryoide flowering *aſh*.

The ſpecies of *aſh* when not in flower or fruit are known by their leaves being of the pinnated kind, and the ſmall ones growing on pairs on the ribs. *Tourn.* Inſt. p. 577.

FREE (*Cycl.*)—FREE, aboard a ſhip. The ſeamen ſay the pump *frees* the ſhip, when it throws out more water than leaks into her; but, on the contrary, when it cannot throw out the water as faſt as it leaks in, they ſay the pump cannot *free* her: alſo bailing or lading out water out of a boat, is called *freeing* the boat.

FREE-*hord*, *Franchordus*, is ground claimed in ſome places, more or leſs, beyond, or without the fence: it is ſaid to contain two foot and a half. Mon. Angl. Tom. 2. p. 241.

FREE-*ſtone*. The qualities of the ſeveral kinds of *free-ſtone* in common uſe in the ſeveral parts of Europe are very different. They all agree in this general property indeed, that they are ſofter while in the quarry, than when they have been ſome time expoſed to the air: but even this general property differs greatly in degree. They have a ſort of grey *free-ſtone* in uſe at Paris, of which we do not ſeem yet to have met with any quarries in England, though probably enough there are ſuch, which has this property in ſo eminent a degree, that the expence of working it is in a great meaſure ſaved.

This ſtone lies every-where on the ſouth ſide of the river Seine, and is of a coarſe and large grit. It is ſo ſoft when newly taken out of the ſtrata, that they cut it very conveniently with a ſort of broad axe, and faſhion as many ſtones for building in this manner in an hour, as an equal number of our people do in a day or two. Though this ſtone is as ſoft as dry clay when firſt taken up, it is found to harden ſo conſiderably in the air, that it becomes more than equal to our ordinary *free-ſtone*.

Our Portland ſtone of the fineſt kind, which is white, and of a cloſe grit, is very fit for hewing or carving; but it will neither reſiſt water nor fire, which is a very ſingular circumſtance in ſo denſe a ſtone; while the *free-ſtone* of Kent, which is leſs beautiful to the eye, and is of a greyiſh colour, and conſiderably cloſe, tho' of a larger grain, reſiſts the air and water very well.

The *free-ſtone* of Derbyſhire, on the other hand, is ſo brittle as to be unfit for any fine working, and ſo coarſe and open in its texture that it lets water through; yet it bears the fire extremely well, and is fit for ovens, hearths, &c. Phil. Tranſ. N° 93.

FREEZING (*Cycl.*) — A degree of cold ſufficient for this may be procured in all climates, and at all ſeaſons of the year, by this means. Let a quantity of dry powder'd ſal armoniac be ſeparately included in one glaſs, and a proper quantity of common water in another. Let both theſe glaſſes be placed in a ſolution of other ſal armoniac in water while the ſalt is diſſolving; both the confined ſalt and the water will by this means be brought to the ſame ſtate of cold with the ſolution; and being then mixed together, they will form a ſecond ſolution much colder than the firſt. And this may be made the liquor for another quantity of ſal armoniac and of water to be placed in, which being afterwards mixed, and the ſame proceſs repeated, the cold may be brought to a degree proper for *freezing* in any climate or ſeaſon. *Shaw*'s Lectures, p. 78.

Nothing is more commonly known than the method of congealing liquors into ice by an artificial froſt even in the warmeſt ſeaſon; but it does not ſeem to be yet known what are the ſalts moſt efficacious of all on this occaſion, or, in other words, what ſalt is capable of producing the greateſt degree of artificial cold, or in what manner it may be beſt uſed, and what proportion it ought to bear with the powder'd ice or ſnow that is uſed on the occaſion. The common proceſſes are known, but few have enquired ſo curiouſly into the whole as ſo nice a ſubject ſeems to deſerve.

Mr. Reaumur at length took the whole into conſideration, and examined the various degrees of cold by a nice thermometer, which being placed in the liquor to be *frozen*, ſhewed very exactly the degree of cold by the deſcent of the ſpirit.

Salt petre uſually paſſes for a ſalt that may be very ſerviceable in theſe artificial congelations; but the experiments of this gentleman prove, that this is an erroneous opinion. The moſt perfectly refined ſalt petre employed in the operation ſunk the ſpirit in the thermometer but three degrees and a half below the fixed point.

Of the ſalt petre he uſed, the unrefined makes the ſpirit ſink conſiderably lower; the cauſe of which is, that the rough ſalt petre contains a large quantity of common, or ſea ſalt; and this being able to cauſe a greater degree of cold than the ſalt it is mixed with, exerts itſelf with it, and carries it to a greater degree of coldneſs: whereas in the refining ſalt petre, this ſea ſalt is thrown out, and conſequently the nitre becoming purer, acts only on its own principle, and cauſes a leſs degree of cold, ſuch as is its appropriated one.

Two parts of common ſalt being mixed with three parts of powder'd ice in very hot weather, the ſpirit in the thermometer immediately deſcended fifteen degrees, which is half a degree lower than it would have deſcended in the ſevereſt cold of the year 1709. Mr. Reaumur after this experimented the ſalts all round, and tried with great regularity and exactneſs, what was the degree of cold occaſioned by each in a given doſe. Among the neutral ſalts, none produced a greater degree of cold than the common ſea ſalt. Among the alkalies, ſal armoniac, though generally eſteemed ſo very powerful a one on theſe occaſions, ſunk the thermometer only to thirteen degrees. Pot aſhes ſunk it juſt as low as well refined ſalt petre. Thus by trials of the ſeveral ſalts, the proper degree of cold producible from each is eaſily aſcertained, and tables may be made of the numbers. After which, in the deſcribing any degree of cold in a particular ſeaſon, it will be a much better way of expreſſing it, to ſay it was equal to that produced by ſuch or ſuch a ſalt, than to name it by the degrees of a thermometer.

For the common uſes of the table, the ice required is not expected to be very hard, or ſuch as is produced by long continuance of violent cold: it is rather deſired to be like ſnow. Salt petre, which is no very powerful *freezer*, is therefore more fit for the purpoſe than a more potent ſalt. It is not required that the congelations ſhould be very ſuddenly made; but its retaining its form as long as may be when made, is a thing of great importance to the dealer in theſe things; nor is the price of the ſalts, which are to be uſed for this purpoſe, a matter of indifference.

If it be deſired to have ices very hard and firm, and very ſuddenly prepared, then ſea ſalt is of all others moſt to be choſen for the operation. The ices thus made will be very hard, but they will keep only a very little time without running. Pot aſhes afford an ice of about the hardneſs that is uſually required. This forms indeed very ſlowly, but then it will preſerve itſelf a long time. And there is another ſubſtance which performs the buſineſs very nearly in the ſame manner with the pot aſhes, and that on the ſame principle: this is a very cheap and ſimple one, being no other than common wood aſhes; but for this purpoſe the wood, which is burnt, ought to be freſh.

The ſtrong acid ſpirits of the neutral ſalts act much more powerfully in theſe congelations than the ſalts themſelves, or indeed than any ſimple ſalt can do. Thus ſpirit of nitre mixed with twice its quantity of powder'd ice, immediately ſinks the ſpirit in the thermometer to nineteen degrees; that is, it produced a cold of four degrees greater than that obtained by means of ſea ſalt, the moſt powerful of all the ſalts in making artificial cold. A much greater degree of cold may be given to this mixture by piling it round with more ice mixed with ſea ſalt. This gives a redoubled cold, and on the trial the thermometer was found to ſink to twenty-four degrees; that is, a degree of cold was thus artificially produced, which was to the greateſt known natural cold, that of the ſevere winter in 1709, as twelve to ſeven, or thereabouts. If this whole matter be covered with a freſh mixture of ſpirit of nitre and ice, a yet greater degree of cold is produced, and ſo on; the cold being by this method of freſh additions to be increaſed almoſt without bounds: but every addition, it is obſerved, gives a ſmaller increaſe than the former.

It is very remarkable in the acid ſpirits, that though ſea ſalt is ſo greatly more powerful than nitre in ſubſtance in creating cold, yet the ſpirit of nitre is greatly ſtronger than that of ſea ſalt; and another not leſs wonderful phænomenon is that of ſpirit of wine, a liquor which is little other than a liquid fire, has as powerful an effect in congelations, or very nearly ſo, as the ſpirit of nitre itſelf. What but experiment could have brought people to imagine, that theſe two ſo very different liquors could have this property as it were in common.

The mixture of any other matter with powder'd ice does not create a new cold by any other means than that of melting the ice it is mixed with. The moment of that melting is therefore the points of time in which the cold is ſtrongeſt of all, as after that the warmth of the external air cannot but be continually taking off from the new engender'd cold. It is plain from hence, that the quicker this melting is performed, the harder the ice muſt be, or the greater the degree of cold. It were much to be wiſhed therefore, that the melting could be inſtantaneous, as in that caſe the particles of ice would all act at one and the ſame time on the matter to be congealed: and in order to this, it is neceſſary that every particle of ice ſhould have a particle of ſalt ready to act upon it. This requires that the ice and the ſalt ſhould be both powder'd to a certain fineneſs. Hence may be deduced a rule, which though not quite preciſe, yet may be ſufficiently ſo for the determining the proper proportion of the ſalt to be mixed with any determinate quantity of ice. We well know from experiment, how large a quantity of water is neceſſary to melt a certain quantity of ſalt of any kind, and repeated experiments might bring the knowledge of the other ſolution to nearly as great a certainty. It would be well to try the whole carefully with ſea ſalt; and when the proportions of this were known, it would be no difficult matter from theſe to deduce the proper quantities of other ſalts, according to their known differences, in regard to the quantities of water neceſſary to diſſolve them.

The ſeveral liquid ſubſtances which create a cold, in the ſame manner as the dry ſalts on being mixed with ice, are much more ſpeedy in their action than the ſalts; becauſe they immediately and much more intimately come into contact with the particles of the ice, than the ſalts can. Of this nature are ſpirit of nitre, ſpirit of wine, &c. to produce the expected

pected degree of cold, it is always neceſſary that the ice and the added matter, whatever it be, ſhould both run together and intimately uniting form one clear fluid; 'tis hence that no new cold is produced with oil, which tho' it melts the ice, yet cannot mix itſelf into a homogene liquor with it, but muſt always remain floating on the ſurface of the water, produced by the melting of the ice. Mem. Acad. Scienc. Par. 1734.

In the *freezing* of wines and the like liquors, the aqueous parts *freeze* firſt, and are by this means ſeparated from the truly vinous; an obſervation which may be made of great uſe, in the wine trade. The experiment may be made by art, at any time: take a quart of common red port, put it into a Florence wine flask, and bury it in a mixture of one part common ſalt, and two parts ſnow or beaten ice, the conſequence will be, that the aqueous part of the wine ſoon turns to ice, and the rich thick remainder of the true vinous parts, may be poured off by inclination. Natural cold, however, in *freezing* wines, performs this experiment much better. By this means, wines, vinegars and malt liquors, may be all reduced to a fourth part of their quantity for exportation, without any conſiderable loſs of their eſſential parts, little more then the mere water *freezing*, and the eſſential part of the wine remaining thus admirably cured, and capable of keeping ſeveral years.

It is eaſy to ſee, that a great uſe may be made of this in the wine trade, as large quantities of the pooreſt wines might thus be converted into rich ones, and the quinteſſence of the richer wines might be procured for the amending the poor ones; and vaſt advantages might be reaped from this in wine countries.

Wines and vinegars concentrated by *freezing*, tho' they keep unaltered for ſeveral years, yet are liable to ſome accidents in proceſs of time.

Thus wines on being concentrated ſeem to acquire a more auſtere taſte than they had originally; and this is not wonderful, as the condenſation brings the ſaline and rough matter into a third or a fourth part of the compaſs that it originally lay in; ſo that this is properly no addition or increaſe of the rough taſte, but probably on the contrary, ſome mitigation of it in regard to the cloſeneſs to which this rough matter is brought, which of itſelf ought rather to multiply the effect in a greater proportion.

The change may be conceived owing to this, that all wines are obſerved to grow mild and ſoft by lying long, which effect is greatly promoted in them by a ſucceſſive ſeparation of their tartar, and a gentle evaporation of ſome part of their water occaſioning that neceſſity which is frequently found in the ſummer months of filling up the casks; but in our concentrated wine, tho' the ſame tartar be ſucceſſively ſeparated, yet there is found no concurrent ſlow evaporation, for the concentrated wine grows ſoft and mellow in a well ſtopped glaſs, where no diminution of the quantity is perceived; the effect in this caſe proceeds principally from a cloſer and more intimate combination of the ſpirituous, with the groſſer and more terreſtial part. *Stahl*, de Concentrat.

Beſide this, there ſeems another remarkable change incident to the concentrated wine, not only in the taſte, but more abundantly in the ſmell. For if an auſtere and rough wine, and of the uſual ſmell of ſuch wines, be put up in bottles, its taſte after two or three years not only becomes more mellow and ſmooth, but its ſmell at this time, perfectly reſembles that of ſack or canary. This is a high degree of melioration, and will give a poor auſtere German wine, for ſuch were thoſe on which Stahl made the experiments, the flavour of ſo rich a wine as canary, and that ſo perfectly, that very good judges may not find out the difference by their ſmell, tho' the taſte is abundantly different. Whatever advantage the dealer in wines may foreſee from the ſucceſs of theſe experiments, there is this farther inducement to his bringing them into practice in the large way, that every thing will anſwer better, and not worſe, than the experiments in the ſmaller quantities. All theſe experiments have been made with little portions, which are very well known not to keep ſo well as larger; and it is evident both from reaſon and experience, that great bulks of liquor are much leſs ſubject to changes and alterations from the external effects of air and heat, which are the two great incentives to fermentative motions; and that if ſuch ſmall parcels ſuffered no change for the worſe, much leſs need it be apprehended, that any larger would. *Shaw*'s Chem. Eſſay.

FREEZING *rains*. Our own annals give us many accounts of the damage done to our trees by rains *freezing* as they fall, and conſequently forming cakes of ice about all the branches, which by degrees increaſe to a weight that the branch is unable to ſupport. In the year 1672, there fell ſuch a rain as this at Briſtol, and over all the country thereabouts. Moſt of the orchards expoſed to the north-eaſt, were deſtroyed by it, and had it continued longer, and been attended with guſts of wind, ſcarce any thing could have ſtood before it. A piece of an aſh tree of juſt three quarters of a pound weight was weighed, with its coat of ice upon it occaſioned by this rain; the ice weighed ſixteen pounds, beſide what was melted off by the perſons hands who brought it. The ſtalks of graſs were ſurrounded with coats of ice, ſome of which were five inches round by meaſure. All the time that the orchards and hedges were thus breaking under the loads of the ice, the waters were all free, and not ſo much as a puddle frozen over. The roads were rendered impaſſable by the parts of trees every where fallen acroſs them, and the noiſe of the icy boughs rattling againſt one another, as ſhook by the wind, was very terrible. Where this rain fell upon the ſnow, it immediately became ice as on the trees.

It is remarkable, that men who were out on the road, complained of the moſt exceſſive colds, and were in agonies on coming into a warm room; though all the while in ſome places, there only fell a kind of ſleet, which was wet under the feet, and gave no appearance of froſt upon the ground.

This ſort of temper in the air preceeded alſo the *freezing* rains, in the very places where they happened. Tho' this ſevere weather happened in December, as ſoon as it was over, which was in a few days, there was a ſudden change, into not only a mild, but a hot ſeaſon. People complained of exceſſive ſweating, both by night and day, and the trees and hedge-buſhes put forth their buds for leaves and bloſſoms, as if it had been April; ſome of the apple-trees flowered before Chriſtmas, and had the young fruit before New-years day. Dr. *Beal* in Phil. Tranſ. N° 90.

FREGAROLA, in zoology, a name given by many, to a ſmall river fiſh, well known in England by the name of the *minow*. *Willughby*'s Hiſt. piſc. p. 268. See the article PHOXINUS.

FREGGIA, in zoology, the name of a long anguilliform fiſh of the tænia kind, more commonly called *cavagiro*. *Willughby*'s Hiſt. piſc. p. 117. See the article CAVAGIRO.

FREISER, a name uſed by ſome for the ſtrawberry plant. *Ger.* Emac. Ind. 4.

FRENCH *bole*. See the article BOLUS.

FRENCH *graſs*, a name given by our farmers to a plant raiſed for the food of cattle, and more properly called ſaint foin. It had its name *French graſs*, from its coming originally to us from France, and from its uſe in ſerving both freſh and dried for the food of cattle; the common clover is called graſs alſo by the farmers, tho' neither this nor the other, are properly graſſes. Some of our farmers alſo call it everlaſting graſs, from its long continuance, a ſtrong crop often yielding a plentiful annual produce for forty years without any renewing. See the article SAINT *Foin*.

FRESH (*Cycl.*) — FRESH *the hawſe*, on board a ſhip. See HAWSE, *Cycl.*

FRESH-*water ſhell-fiſh*, See FLUVIATILES *cochleæ*.

FRETTS, in mineralogy, a term uſed by our miners to expreſs the worn ſide of the banks of the rivers in mine countries, where they ſearch for the ſhoad ſtones, or grewts, waſhed down from the hills in order from them to trace out the running of the ſhoad up to the mine. Philoſ. Tranſact. N° 69. See SHOAD.

FRETUM, *ſtraight*, or *ſtreight*, in geography. See the article STRAIGHT, *Cycl.*

There are three kinds of *ſtreights*: 1. Such as join one ocean to another. Of this kind are the *ſtreights* of Magellan and Le Maire. 2. Thoſe which join the ocean to a gulph. The *ſtreights* of Gibraltar and Babelmandel are of this kind, the Mediterranean and Red ſea being only large gulphs. 3. Thoſe which join one gulph to another; as the *ſtreight* of Caffa, which joins the Palus Mæotis to the Euxine or Black ſea.

The paſſage of *ſtreights* is commonly dangerous, on account of the rapidity and oppoſite motion of currents.

FRICIUM, in pharmacy, a name given to ſuch medicines as are intended to be rubbed into the ſeveral parts of the body. The antients had three kinds of *fricia*, the dry, the ſoft, and the liquid, the firſt was uſed in the way of fumigation, the ſecond was bound on the part with cloths, and the laſt was uſed by way of embrocation.

FRIESLAND *horſe*. See CHEVAL *de friſe*, *Cycl.*

FRIGAT, in ſea affairs, a ſhip of war, uſually of two decks, light built, and deſigned for ſwift ſailing. When it hath but one deck, and conſequently is of a ſmaller ſize, they call her a light *frigat*.

FRIGHT. This paſſion has been known not only to cauſe, but to cure diſeaſes. Mr. Boyle mentions agues, gout and ſciatica, cured by this means. See Works abr. p. 82, &c.

It is a commonly known cure for the hiccough, to put the patient in a ſudden *fright*.

FRINGILLA, in the Linnæan ſyſtem of zoology, the name of a large genus of birds of the general order of the paſſeres. The diſtinguiſhing characters of this genus are theſe: the tongue is whole and even, the beak is of a conic ſhape, and one mandible receives the other into the ſinus of its baſis. Of this genus are the ſparrow, linnet, greenfinch, and the like. *Linnæi* Syſtema Naturæ, p. 48.

FRINGILLAGO, in zoology, a name by which ſome have called

called the whole genus of the titmouſes; but others have reſtrained it only to one ſpecies of them, which is the common larger kind. called by us the ox-eye. This is much larger than any of the other titmouſes, weighing near an ounce, whereas they ſeldom exceed three drams. Its head and the upper part of its throat are black, and from the angle of the mouth there runs a broad white ſtreak. Its back, ſhoulders and neck are of a greeniſh yellow; its breaſt, belly and thighs yellow, but the farther part of the belly toward the tail, is white. The tail is moderately long, and variegated with blue, black and grey. *Ray*'s Ornithol. p. 174.

FRINGILLAGO *Americana cærulea*, in zoology, a name given by Mr. Ray to the American titmouſe, otherwiſe known by its Braſilian name *guiracenoia*.

FRINGILLARIUS *accipiter*, in zoology, the name of a ſpecies of hawk, of the ſhort-winged kind, called by ſome *niſus*, and in Engliſh the ſparrow hawk. It is nearly of the ſize of the common pigeon. Its beak is ſhort and crooked, blue at the end, and blackiſh at the point; near the head it is covered with a greeniſh yellow membrane. Its tongue is thick and black, and is a little bifid. Its head is of a browniſh colour, but over the eyes and behind, variegated with white feathers. The neck, back and wings are all of the ſame brown, but ſome few of the wing-feathers which are near the back, are ſpotted with white; its breaſt and belly are variegated with brown and white; its chin and thighs are white; its wings are ſo ſhort, that when folded they do not reach more than to the middle of the tail; its legs are long, ſlender and yellow. It lays five eggs, which are white, but have at their larger end a circle of red ſpots. It is a very bold and lively bird, and will not, as many other ſpecies do, eat beetles, worms, &c. but feeds only on birds. *Ray*'s Ornithol. p. 51.

FRISONE, in zoology, a name by which many call the coccothrauſtes or groſs beak, called alſo in Engliſh, the hawfinch. *Ray*'s Ornithol. p. 178. See COCCOTHRAUSTES.

FRIST, a term among merchants for ſelling goods upon credit.

FRIT, in glaſs making, the calcined matter to be run into glaſs. To make this for cryſtal glaſs, take of the fineſt tarſo, powdered fine and ſifted, two hundred pound, of the ſalt of polvorine an hundred and thirty pound, mix them well together, and put them into the calcar, or calcining furnace, which muſt be thoroughly heated firſt, otherwiſe the operation will be very difficult; a moderate fire is to be kept up for an hour, and the matter continually ſtirred together with a rake, and then the fire muſt be made very violent, and kept up for five hours. After this, take it out and cover it from duſt, it will be white as ſnow. It muſt be kept in this ſtate, three or four months, and is then ready to make the fineſt cryſtal glaſs. *Neri*'s Art of glaſs, p. 8.

FRITH. See FRYTH, *Cycl.*

FRITILLARIA, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the liliaceous kind, and is bell faſhioned and pendulous. It is compoſed of ſix leaves, and has in the middle a piſtil, which finally becomes a fruit divided into three cells, and containing many flat ſeeds, lying in double rows on one another. To this it is to be added, that the root is compoſed of two bulbs, the one of which lies by the ſide of the other, theſe are uſually of a globular form, and the ſtalk ariſes from between them.

The ſpecies of *fritillary*, enumerated by Mr. Tournefort, are theſe. 1. The early purple variegated *fritillary*. 2. The great purple Italian *fritillary*. 3. The great yellow Italian *fritillary*. 4. The purple branched *fritillary*. 5. The greeniſh yellow many flowered *fritillary*. 6. The umbelliferous *fritillary*. 7. The great *fritillary*, with dusky purple flowers. 8. The branched *fritillary*, called the leſſer Perſian lilly. 9. The white many flowered *fritillary*. 10. The bright yellow flowered *fritillary*. 11. The late double *fritillary*, with greeniſh yellow flowers. 12. The tall Spaniſh *fritillary*, with pale red flowers. 13. The black flowered *fritillary*, 14. The Iſabella *fritillary*, with greeniſh red flowers. 15. The *fritillary*, with a dusky purple ſulcated angular flower. 16. The *fritillary*, with very large double flowers. 17. The white variegated teſſellated *fritillary*. 18. The early white *fritillary*. 19. The late *fritillary*, with blackiſh purple flowers. 20. The late *fritillary*, with yellowiſh green flowers. 21. The yellow *fritillary*, with red ſpots. 22. The narrow leaved yellow variegated *fritillary*, with large flowers. 23. The narrow leaved yellow variegated *fritillary*, with ſmall flowers. 24. The Pyrenean ſmall flowered *fritillary*, and 25. The ſmalleſt many leaved *fritillary*. *Tourn.* Inſt. p. 377.

Beſides the many diſtinct ſpecies of this beautiful plant; there are vaſt varieties in the colours of the flower, in the plants carefully propagated from ſeeds. They are by ſome propagated by roots, but the method by ſeeds is greatly preferable, as it produces much the greater number of roots, as well as the better flowers.

The ſeeds for this ſhould be ſaved from the fineſt flowers, and ſown on ſome light freſh earth in flat ſhallow pans, or boxes with holes at the bottom, kept open by tile-ſhreds to let out the moiſture. The ſeeds muſt be ſown pretty thick, and covered with a quarter of an inch of earth: this is to be done in the beginning of Auguſt. The pans or boxes are then to be ſet in a place where they may have the morning's ſun, till about eleven o'clock, and if the ſeaſon proves dry, they muſt be watered, and always carefully kept clear of weeds. *Miller*'s Gard. Dict.

Toward the latter end of September the boxes muſt be removed into a warmer ſituation, and placed under ſhelter of a hedge or under a ſouth wall, and they are here to remain till the middle of March, by which time the plants will be come up an inch high. They are now to be removed into a ſhady ſituation, and are to remain there the whole ſummer. About the beginning of Auguſt, a bed of freſh earth is to be prepared, on which the earth of the pans and boxes containing the roots of the plants is to be ſtrewed, after their leaves are all dead: this is to be covered half an inch thick with fine freſh earth evenly ſifted on, and in this ſtate they are to remain till they flower, which is generally the third year from the ſowing. When they are in flower, the fineſt kinds ſhould be marked with ſticks, and their roots planted out into ſeparate beds. *Millar*'s Gard. Dict.

As ſoon as the leaves are decayed they ſhould be carefully weeded, and thin offsets taken up and tranſplanted.

FROG, in zoology. See RANA.

Generation of FROGS. This was very nicely inquired into, by the ſagacious Lewenhoek. He found by repeated obſervations, that the male in copulation only ſits upon the female, not being joined to her, nor having any apparent penis. At the time that the female *frog* drops her ſpawn, the male alſo throws out his ſemen, which is to be placed under the eggs, as the ſemen of fiſhes that want the penis is caſt under the eggs or ſpawn of their females, that the animalcules in it, may impregnate the eggs. The animalcule in the male ſeed, has its way to make into a certain point of the egg of the female, elſe that egg is unfruitful; and this is the reaſon why the animalcules in the male ſemen are ſo prodigiouſly more numerous, than the eggs in the female, becauſe vaſt multitudes of them muſt neceſſarily be loſt. The teſticles and vaſa deferentia of *frogs*, are very evident to any one uſed to anatomical inquiries on opening the creature; and theſe contain vaſt numbers of very vigorous animalcules at the time when the creature is to produce its young, which is in April, but at other times, they are not ſo numerous or lively.

This creature bears the experiments of the air pump, better than moſt other animals. It will breathe ſome time after the extraction of the air, but at length the viſible motion of the throat will ceaſe, and the body ſwell a little. After three hours lying in this condition, when no farther ſign of life appears, if the animal be placed in the open air, a few hours will recover it to its former life and vigour. The ſame animal put into a receiver exhauſted of the air, but nearly filled with water, will live many hours under the water, and ſeem to reſpire, but in five or ſix hours it will die. The larger and luſtier *frogs* live longer than the young ones in the receiver. Phil. Tranſ. N°. 62.

FROG *microſcopically examined.* — The *frog* affords the curious in microſcopic obſervations, a very beautiful view of the circulation of the blood; but the method of examining it to advantage was never hit upon, till the contrivance of the late ingenious Dr. Stuart for that purpoſe. This he did by the ſolar microſcope in the following manner. The looking glaſs, tube, and convex lens are the ſame in this, as in the common ſolar microſcope, but inſtead of the little pocket microſcope of Wilſon, he uſed the belly part of the common large reflecting one, fixed horizontally on a pedeſtal, juſt at an equal height with the tube. This ſtands on a little ſhelf made to ſupport it; and to its ſnout, which lies on a level with the tube, the magnifiers are ſcrewed; the object being extended and faſtend with ſtrings and pins on a frame contrived for that purpoſe, is applied between the tube and the magnifier, whereby the ſun's rays reflected from the looking glaſs, thro' the tube, upon the object, paſs on thro' the magnifier, and exhibit upon the ſcreen an image of the object moſt prodigiouſly enlarged. *Baker*'s Microſ. p. 132.

To view a *frog* with this apparatus, the skin of the belly is to be opened from near the anus to the throat, and then giving it a little ſnip ſide ways both at the top and bottom, and ſticking a fiſh-hook into each corner of the skin, it was eaſily extended before the microſcope, and ſhewed on the ſcreen the moſt beautiful view imaginable of the veins and arteries of the skin, with the blood circulating thro' them. In the arteries thus viewed, the blood is ſeen to ſtop, and recede a little at every pulſation by the dilatation, and ruſh forcibly on again, by the contraction of the heart; while in the veins it ever kept the ſame equable and uniform current, with a ſurpriſing rapidity; and when the ſcreen was removed farther back, and the object by that means more enlarged; the alternate expanſion and contraction of the ſides of the arteries was very viſible. After this, the abdomen of the *frog* being opened, and the

muſcles

muſcles of it extended before the microſcope in the ſame manner as the skin was, the ſtructure of theſe muſcles is beautifully ſeen, they being all made up of bundles of tranſparent ſtrings or fibres, all lying parallel to one another, and are joined by a common membrane.

Theſe ſtrings or fibres appeared alſo thro' their whole length made up of roundiſh veſicles, and reſembled ruſhes divided longitudinally; but there is no certainty of any circulation being ſeen in theſe.

When this has been ſufficiently examined, a part of the creature's gut being pulled out and extended with the meſentery, there is ſeen the fineſt of all views of the circulation of the blood. Words are not able to deſcribe this wonderful ſcene. The blood is ſeen paſſing through numberleſs veſſels at one and the ſame inſtant, in ſome one way, and in others directly the contrary. Several of the veſſels are thus magnified to more than an inch in diameter, and the globules of the blood rolling through them appear near as large as pepper-corns; while in many of the minuteſt veſſels only ſingle globules were able to find their paſſage, and that too by changing their ſhape into an oblong ſpheroide. The pulſation and acceleration of the blood in the arteries is thus alſo very beautifully ſeen. As the animal under examination grows languid and near expiring, the blood in the arteries will often ſtop on a ſudden, and ſeem as if it were coagulating, and will then run back for ſome time; after which it will again recover its natural courſe with a great deal of rapidity. A due conſideration of theſe particulars may poſſibly account for the intermiſſions, ſtarts and irregularities in the pulſe of perſons near death. *Baker*'s Microſcope, p. 136.

FROG *fiſh*, in ichthyology, an Engliſh name for the rana piſcatrix or lophius. See RANA *Piſcatrix*.

FRONDES, among botaniſts. See LEAF.

FRONT *half files*, in the military art. See FILE *Leaders*.

FRONTATED, in botany, a term uſed to expreſs the leaf of a flower, which grows broader and broader, and uſually terminates in a right line. It is uſed in oppoſition to cuſpidated or ſpear-pointed, the common term for the petals of flowers which end in a point. *Miller*'s Gard. Dict. See LEAF.

FRONTIS *Os*. See Os *frontis*.

FROST (*Cycl.*)—In very cold countries meat may be preſerved by the *froſt* for ſix or ſeven months, and prove tolerable good eating. See Captain *Middleton*'s Obſervations made in Hudſon's Bay, in the Phil. Tranſ. N° 465. Sect. 2.

In that climate the *froſt* ſeems never out of the ground, it having been found hard frozen in the two ſummer months.

Brandy and ſpirits of wine, ſet out in the open air, freeze to ſolid ice in three or four hours. Lakes and ſtanding waters, not above ten or twelve feet deep, are frozen to the ground in winter, and all the fiſh therein periſh.

But in rivers, where the current of the tide is ſtrong, the ice does not reach ſo deep, and the fiſh are preſerved.

Springs have never yet been found free from freezing, though lying ever ſo deep; ſo that the water uſed is melted ſnow and ice. Id. ibid. See FREEZING.

FROST, in gardening, husbandry, *&c.* —Our old authors have given many idle admonitions about preſerving the fruit-trees from the injuries of *froſts*, ſome of which are religiouſly believed and practiſed by ſome to this day. One is the placing a veſſel of water on ſome part of the tree, that the *froſt* may ſeize upon that, and ſo let the tree eſcape. Others uſe a pernicious method inſtead of this idle one, which is the digging a trench about the roots of their trees, and keeping it ſupplied with water during the whole ſeaſon of the ſpring *froſts*. This has hurt many good trees.

The great power of *froſt* on vegetables is a thing ſufficiently known; but the differences between the *froſts* of a ſevere winter, and thoſe which happen in the ſpring mornings, in their effects on plants and trees, were never perfectly explained, till by Meſſ. Du Hamel and De Buffon, in the Memoirs of the Paris Academy.

The accurate knowledge of vegetables, which is ſo material a part of agriculture, as to deſerve the attention of all who wiſh well to their country, is however a thing only to be arrived at in length of time, and by a great number of experiments, ſuch as no one man's life can give him opportunities of making; and even thoſe which have been made ſeemingly with the greateſt care and caution in one place, and have ſerved for the eſtabliſhment of rules with one author, have been found to ſucceed very differently, and to give very different ideas in another place, and to another perſon.

The *froſts* of ſome winters have been ſo ſevere, as to deſtroy almoſt all the tender vegetables; and that ſevere one of 1709, gave the world proofs of more than was before ſuppoſed could be done by them. The corn that was ſown, and moſt other ſeeds in the ground, periſhed entirely. The hazels and filbert trees periſhed almoſt without exception; and many of the more hardy fruit trees periſhed to the ground, but ſhot out afterwards new branches from the root or ſtock, while ſome of the larger trees, which were very vigorous and ſtrong, threw out leaves in the ſpring on almoſt all their branches, and ſeemed to have ſuffered very little; though in reality they had ſuſtained many irreparable injuries, which did not then appear.

The *froſts* of ſevere winters are thus able to injure all the vegetable world. Thoſe of the ſpring however are much leſs terrible. Theſe ſometimes injure the young ſeedling plants; but they never are able to affect the ſolid parts of trees, or hurt their trunks or larger branches, tho' they too often deſtroy their buds, and take off the embryo fruits of the growing year; and are not much leſs detrimental to the foreſt than to the fruit trees, as they ſtop the growth of thoſe buds which would grow into branches.

The *froſts* of ſevere winters are greatly more terrible than thoſe of the ſpring, as they bring on a privation of all the products of the tenderer part of the vegetable world; but then they are not frequent, ſuch winters happening but once perhaps in an age, and the *froſts* of the ſpring are in reality greater injuries to us than theſe, as they do us great injuries, though not ſo terrible as the others, and theſe are every year repeated.

In regard to trees the great difference is this, that the *froſts* of ſevere winters affect even their wood, their trunks and large branches; whereas thoſe of the ſpring are only of power to hurt the buds. Theſe two ſeaſons of *froſts* act in very different circumſtances, and thoſe ſituations and expoſures where the vegetables have ſuffered moſt in the winter's *froſts*, are often found to be leaſt affected by thoſe of the ſpring. This is a truth that can only be found out by frequent obſervations, which however are not to be regarded as mere matter of ſpeculation, but may have their uſe in the teaching us to guard againſt the miſchiefs they warn us of. The winter *froſts* happening at a time when moſt of the trees in our woods and gardens have neither leaves, flowers, nor fruits upon them, and have their buds ſo hard as to be proof againſt ſlight injuries of weather, eſpecially if the preceding ſummer has not been too wet; in this ſtate, if there are no unlucky circumſtances attending, the generality of trees bear moderate winters very well; but hard *froſts*, which happen late in the winter, cauſe very great injuries even to thoſe trees which they do not utterly deſtroy. Theſe are, 1. Long cracks following the direction of the fibres. 2. Parcels of dead wood incloſed round with wood yet in a living ſtate. And, 3. That diſtemperature which the foreſters call the double blea, which is a perfect circle of blea, or ſoft white wood, which, when the tree is afterwards felled, is found covered by a circle of hard and ſolid wood. The blea is in its natural ſtate an outer circle of white and imperfect wood ſurrounding the hard and more perfect wood of the tree, and ſurrounded by the bark, and is eaſily diſtinguiſhed in moſt ſpecies from the hard wood or heart of the tree by its different colour and want of hardneſs.

The ſound or perfect wood in trees, in their natural ſtate, is all of one colour and hardneſs from its circumference to its center; but in theſe injured trees the blea ſurrounds the heart, and more of the heart ſurrounds the blea, which appears again in an outer circle round that, and covered by the bark. This is the ſtate of a tree before and after being injured by *froſt*; and in this ſtate are trees found on the felling in different degrees, according to the different ſoils and ſituations in which they ſtand. In ſtrong ſoils, and in the covert of foreſts, where the trees are well rooted, and well ſhelter'd and defended, this diſtemperature is found leſs frequent, and in leſs degree, than in thoſe trees which ſtand expoſed, and are rooted in a laxer earth. The ſole inſpection of theſe circles of falſe blea, as the inner circle of white wood may very properly be called, ſhews them to be very poor and weak; and experiment abundantly proves the truth of the opinion. Beams cut of the ſame ſize out of the true blea and this falſe blea, by the weights required to break them, ſhewed the difference very plainly; the natural blea bearing twice the weight, or being of double the ſtrength of this in its unnatural ſtate. Though the blea at beſt is of no great ſtrength, compared with that of the perfect wood of the tree.

The ſpecific gravity of the true blea is alſo much greater than that of this falſe kind; but the outer circle of ſound wood ſurrounding this falſe blea is found to be of equal weight and hardneſs with the heart or central wood; ſo that whatever perfect wood is found in the tree, appears to be all of the ſame quality. Notwithſtanding that, there is this great difference between the two bleas, the inner being ever lighter and weaker, even though it have been formed twenty or thirty years before, as may be known by the annual circles which appear on the outſide of it.

The number of obſervations which Mr. Reaumur made of this blea in trees of different parts of France, all ſhewed him the falſe blea under the ſame number of annual circles of the after-growth of the tree; and theſe being counted, proved juſt as many as the number of years ſince 1709; whence he very juſtly concluded, that all the falſe blea he found throughout the kingdom was the effect of the ſeverity of this one hard winter. And it is very evident, that this falſe blea is that part of the tree, which in the year 1709 was the true and natural blea, and which the ſeverity of the *froſts* of that winter prevented from ever becoming the ſound and ſolid wood,

but

but left it to become more weak and defective for a ſucceſſion of years; during which the ſeveral annual circles of ſupervening blea all became ſound and perfect wood in their natural courſe.

It appears very plain, that the blea muſt be that part of the wood which ſuffers moſt, becauſe it is the outer wood of all, and itſelf makes a covering for the inner part: and add to this, that it is of itſelf of a much leſs compact texture, and contains more juices for the *froſt* to act upon. It was obſerved in France the year after this ſevere *froſt*, that the young trees had ſuffered much leſs by it than the old ones. But it it is not improbable, that the reaſon of this might be, that the ſap-veſſels being very tender and flexile in theſe, and hard and rigid in the old trees, the ſame force which only dilated them in the young ones, might burſt them to pieces in the old ones. It was ſuppoſed by ſome, that the blea of all the old trees was abſolutely killed in this ſevere winter. But that ſeems not to have been the caſe. Experiments made it appear, that it ſtill maintained a courſe of ſap for the ſervice of the remaining part of the tree, though it had ſuffered ſuch a rupture in its veſſels, as not to be convertible, according to the due courſe of nature, into ſolid wood; and, in fine, that it got an incurable diſeaſe, though not abſolute death.

In the accurate examinations made after the year 1709, the falſe blea was not found in the ſame ſtate in all the trees that were examined, but appeared to have ſuffered by the *froſt* in very different degrees. Some trees afforded much thicker on one ſide than on the other, which is a ſtate wholly unnatural to it; and others had it ſo thin all round, as plainly to prove that the whole blea had not ſuffered, but that the inner part of it had eſcaped, and had abſolutely been ſince turned into wood according to the due courſe of nature, while only the outer parts had ſuffered the diſtemperature, and remained, though much damaged, yet not at all changed into wood.

The falſe bleas of the ſeveral trees were not at all alike in colour, nor had ſuffered the diſtemperature in an equal degree; and in thoſe which had ſuffered it in ever ſo great a degree, on digging down towards their roots, that part of the blea which was under ground was found to have eſcaped unhurt, and to have been ſince regularly converted into hard wood; the cover of earth having proved an abſolute defence againſt the *froſt*.

The injuries done by ſevere *froſts* to old trees are therefore very great, and it is not one or two particular ſpecies that are ſubject to them; but it is hard to name any one that is exempt from them. Timber may always be diſcovered to have this defect by the eye, when viewed in the whole tree; and where there is ſeen a bed of falſe blea in it, its ſtrength is accordingly to be accounted the leſs, in proportion to the thickneſs and unſoundneſs of this blea.

Another defect occaſioned in trees by the ſevere *froſts* of that year, and probably in a greater or leſſer degree by thoſe of many others, is, that the blea, and with it the bark, has in part periſhed, and the reſt has remained either wholly unhurt, or, at the worſt, in a much better condition than that. This is diſcovered when a number of years afterwards the trees are felled for timber. In ſawing theſe horizontally through the body, there is found a piece of dead blea covered with a dry and decayed bark, which is buried as it were in the wood of the tree, being covered by ſeveral circles of living wood. This decayed matter generally occupies about a fourth part of the circumference of the body of the tree, and is ſometimes much browner, and ſometimes much whiter than the reſt of the wood; and it is a general obſervation, that theſe decayed parts are uſually found on that ſide of the tree which has faced the ſouth. The great number of trees that were examined after felling in the different parts of France, were found to have this dead blea and bark all covered under an equal number of annual circles of ſound wood, which being counted were found to be the ſame number with the years that had paſſed ſince the year 1709; and conſequently all muſt have been the effect of the terrible *froſts* of that winter. A part of the bark and blea of the trees having periſhed by the *froſt*, and the reſt remaining alive, that part had finally been grown over and covered by the ſucceeding increaſe of the other parts of the tree. The reaſon of its being uſually found to the ſouth ſeems to be, that the frozen juices being then thawed every day by the ſun, ſuffered the violence of a new freezing every night. This defect was ſeldom found to run the whole length of the trunk, but uſually left part quite free, and ſeemingly ſound.

Finally, another accident attending trees from very ſevere *froſts* is, that they are ſometimes ſplit by them according to the direction of their fibres, and this often with a very loud crack.

It is not uncommon in large foreſts to meet with trees that have been thus ſplit, and which having outlived the winter that occaſioned it, are found to have a long rib marking the place where the crack was, and forming a ſort of cicatrix or ſcar over the wound. This cicatrix or rib is however only ſuperficial; and where-ever it is, the crack is ſtill found remaining under it in the tree; for though the bark and blea can in this manner conſolidate and form a covering for a wound, the fibres of the ſolid wood when once broken or ſeparated never cloſe again. It is the general opinion of the workmen that all theſe cracks in timber are the effects of *froſts*; and it is very eaſy to conceive, that it may be natural for *froſt* to effect it, as it is well known that all frozen liquors take up more room, then they did while in a fluid ſtate. It is not certain however, that all the cracks in timber are from this cauſe, many of them may have been occaſioned merely by a redundance of ſap.

On examining the trees felled in France in the year 1736, great numbers of them were found to be thus cracked, and that not in any particular part, as is the caſe in the other diſtemperatures occaſioned by *froſt*, which are uſually to the South, but in all expoſitions, and in trees growing in all ſoils. They were found to bemoſt frequent, however, in the trees that had grown on moiſt ſoils, and in the North and Weſt expoſitions. This ſeems to have happened from the *froſts* having acted more violently at north and weſt; and becauſe the texture of the fibres of wood is much more lax and rare in thoſe trees which ſtand on marſhy ground than in others, and their ſap being more plentiful and watery, the effects of the *froſt* will be the greater, as the quantity of juices for it to act upon is greater, and as the fibres are capable of leſs reſiſtance. That the watery nature of the juices of trees is what expoſes them to theſe injuries from *froſts* appears very probable from hence, that the pine and fir, and other trees whoſe juices are of a reſinous nature, are not found to be ſubject to theſe injuries. We well know that oils and reſinous juices are not ſo ſubject to congeal by *froſts* as water, and that when they do, they contract, not increaſe in their bulk by the congelation; and therefore the injuries from *froſt* which depend on the ſwelling of the ſap from freezing, can by no means affect theſe.

In the trees which have been ſplit by *froſt*, there is always found in the crack under the cicatrix a remainder of decayed wood or of ſap; and the appearance is no way different from thoſe defects which ariſe from a decay of the woody fibres by mere redundance or diſtemperature of the ſap, only that theſe laſt are never covered with any cicatrix.

It is poſſible that the *froſts* in ſevere winters may do many other damages to trees beſide theſe; but theſe are very certainly known to be wholly owing to it. Nor are the *froſts* of the ſpring ſeaſon, tho' leſs violent, to be ſuppoſed to do us any leſs injury; for they attack vegetables, at a time they can leſs bear them, and what they want in violence, they have in frequency.

The opinions of authors about the expoſitions of trees to the different quarters, have been very different, and moſt of them grounded on no rational foundation. Many are of opinion that the effects of *froſt* are moſt violently felt on thoſe trees which are expoſed to the north; and others think, the ſouth or the weſt the moſt ſtrongly affected by them. There is no doubt, but the north expoſure is ſubject to the greateſt cold. It is denied the benefit of the ſun, whoſe heat alone can attemperate the rigour of ſevere *froſts*; and beſide this, it is expoſed to the north, north-eaſt and north-weſt winds, which are ever the coldeſt of all others, as is proved abundantly, not only by our own ſenſations, but by the thermometer; and the earth on the north ſide of a hedge is often found perfectly frozen, while that on the ſouth is ſoft enough to bear working. The ſnow found on the north ſide of mountains, when there is none elſewhere, is another proof; and from the whole, it is certain, that the north expoſure is of all others the coldeſt, and the *froſt* there the ſtrongeſt. It does not however follow from this, that the injury muſt be always greateſt on the trees expoſed to the north in *froſts*; on the contrary, there are abundant proofs among the preceeding obſervations, that it is on the ſouth ſide that trees are generally more injured by *froſt*; and it is plain from repeated experiments, that there are particular accidents, under which a more moderate *froſt* may do more injury to vegetables, than the moſt ſevere one which happens to them under more favourable circumſtances.

It is plain from the preceeding accounts of the injuries trees received by the *froſts* in 1709, that the greateſt of all were owing to repeated falſe thaws, ſucceeded by repeated new *froſts*. But the *froſts* of the ſpring ſeaſon furniſh abundantly more numerous examples of this truth; and ſome experiments made by Mr. de Buffon, at large in his own words, prove inconteſtably, that it is not the ſevereſt cold or moſt fixed *froſt*, that is the greateſt injury to vegetables.

This gentleman cauſed ſeven or eight acres of coppice wood which ſtood in an open plain, and in a dry ſoil, ſurrounded every way with cultivated land, to be cut down in the courſe of the winter, in the year 1734. He ordered ſeveral ſquare cluſters of trees to be left in the place; theſe were left ſquare, and were ſo contrived, that their four faces directly pointed to the four expoſures, north, ſouth, eaſt and weſt; the reſt of the wood being all cut clean down, he obſerved in the ſpring what would be the manner of ſhooting of the old ſtocks, and of the trees of theſe cluſters. On the twentieth of April he found that there were ſtrong ſhoots on the ſouth ſide of every cluſter,

cluſter, where the whole body of the trees in the cluſter kept off the north winds, and where the ſouth ſun had moſt power. It was in theſe places that the young ſhoots made their firſt appearance, and were the moſt ſtrong and vigorous; the eaſt ſides of the cluſters next ſhot out; after theſe the weſt, and finally the north. A week afterwards there came on a very ſevere *froſt* with a clear air, and examining the ſhoots on the ſouth ſides of the cluſters, they were found all decayed and withered, and looked black, while thoſe which were expoſed to the north wind, which at that time blew very ſharply, were found very little hurt. The eaſt and weſt ſides were about equally damaged; aud the ſtate of the ſhoots on the ſame ſides of all the cluſters or thickets was the ſame. On the fourteenth, fifteenth and twenty-ſecond of May, there were ſevere *froſty* mornings; and inquiring into the ſtate of the ſhoots again, the caſe was juſt the ſame as before, all the ſhoots on thoſe ſides of the thickets which were defended from the north and north-weſt winds, which then blew, were greatly damaged, while every thing that was expoſed to the wind was ſcarce found to have ſuffered at all.

Theſe obſervations indiſputably prove, that tho' the *froſt* is moſt violent at the north, yet the injury done to vegetables by *froſt* is leaſt of all in that expoſure.

This is an obſervation directly oppoſite to the common opinion, yet it is not the leſs true, nor is it any way diſcordant to reaſon. We find by a number of experiments, that humidity is the thing that makes *froſt* fatal to vegetables, and therefore every thing that can occaſion humidity in them, expoſes them to theſe injuries, and every thing that can prevent or take off an over proportion of humidity in them, every thing that can dry them, tho' with ever ſo increaſed a cold, muſt prevent or preſerve them from thoſe injuries. Numerous experiments and obſervations tend to prove this. It is well known that vegetables always feel the *froſt* very deſperately in low places where there are fogs. The plants which ſtand by a river ſide, are frequently found deſtroyed by the ſpring and autumnal *froſts*, while thoſe of the ſame ſpecies, which ſtand in a drier place, ſuffer little, or perhaps not at all by them; and the low and wet parts of foreſts are well known to produce worſe wood than the high and drier; and the coppice wood in wet and low parts of common woods, tho' it puſh out more vigorouſly at firſt than that of other places, yet never comes to ſo good a growth; for the *froſts* of the ſpring killing theſe early top ſhoots, obliges the lower part of the trees, to throw out lateral branches: and the ſame thing happens in a greater or leſſer degree to the coppice wood that grows under cover of larger trees in great foreſts; for here the vapours not being carried off, either by the ſun or wind, ſtagnate and freeze, and in the ſame manner deſtroy the young ſhoots, as the fogs of marſhy places. It is a general obſervation alſo, that the *froſt* is never hurtful to the late ſhoots of the vine, or to the flower-buds of trees, except when it follows heavy dews, or a long rainy ſeaſon, and then it never fails to do great miſchief, tho' it be ever ſo ſlight.

The *froſt* is always obſerved to be more miſchievous in its conſequences on newly cultivated ground than in other places; and this is becauſe the vapours which continually ariſe from the earth, find an eaſier paſſage from thoſe places, than from others; trees alſo which have been newly cut, ſuffer more than others by the ſpring *froſts*, which is owing to their ſhooting out more vigorouſly.

Froſts alſo do more damage on light and ſandy grounds, than on the tougher and firmer ſoils, ſuppoſing both equally dry; and this ſeems partly owing to their being more early in their productions, and partly to their lax texture, ſuffering a greater quantity of vapours to tranſpire.

It alſo has been frequently obſerved, that the ſide ſhoots of trees are more ſubject to periſh by the ſpring *froſts*, than thoſe from the top; and Mr. Buffon, who examined into this with great accuracy, always found the effects of the ſpring *froſts* much greater near the ground than elſewhere. The ſhoots within a foot of the ground quickly periſhed by them: thoſe which ſtood at two or three foot high, bore them much better; and thoſe at four foot and upwards frequently remained wholly unhurt, while the lower ones were wholly deſtroyed.

Theſe are a ſeries of obſervations, which have proved beyond all doubt, that it is not the hard *froſts* which ſo much hurt plants, as thoſe *froſts*, tho' leſs ſevere, which happen when they are full of moiſture; and this clearly explains the account of all the great damages done by the ſevere *froſts* being on the ſouth ſide of the trees which are affected by them, tho' that ſide has been plainly all the while leſs cold than the north. Great damage is alſo done to the weſtern ſides of trees and plantations, when after a rain with a weſt wind, the wind turns about to the north at ſun ſet, as is frequently the caſe in ſpring, or when an eaſt-wind blows upon a thick fog before ſun riſing. Memoirs, Acad. Scien. Par. 1737.

FROST *ſplit*, a phraſe uſed by our farmers to expreſs ſuch trees as have large cracks in their trunks and branches, rendering them unfit for the uſes they would otherwiſe have ſold for, and by that means greatly debaſing their value. It has been pretended by ſome, that theſe rents and cracks in trees, were owing to other cauſes; but we have had innumerable inſtances and thoſe well recorded of the immediate effect of hard *froſts* on the ſtrongeſt trees ſpoiling them in this manner; and it appears very rational, to ſuppoſe all theſe injuries do really come by the ſame means, and are properly called by this term. Vid. ſupra, and the Phil. Tranſ. N°. 165.

FROTH, in the manege, is a moiſt white matter that oozes from a horſe's mouth, otherwiſe called foam. A horſe that by champing on his bridle, throws out a great deal of *froth*, is judged to be a horſe of mettle and health, and to have a cold freſh mouth.

FROTH *ſpit*, or *cuckow ſpit*, a name given to a ſort of white *froth* or ſpume very common in the ſpring, and firſt months of the ſummer, on the leaves of certain plants, particularly on thoſe of the common white field lychnis, or catch-fly, thence called by ſome *ſpatling poppy*. All writers on vegetables have taken notice of this *froth*, tho' few have underſtood the cauſe or origin of it, till of late. Many imagined it an exhalation from the earth, ſome have eſteemed it as its name expreſſes the ſaliva of the cuckow, others the extravaſated juices of the plant, and ſome a hardened dew. But all theſe are erroneous opinions, and the true account of it is that it owes its origin to a ſmall inſect.

There are very frequently to be ſeen in the ſummer months a ſort of ſmall leaping animals, called by ſome the flea-graſs-hoppers, becauſe they are very ſmall, and leap like a flea; theſe little creatures have each a pointed proboſcis, by means of which they ſuck the juices of the plants, they are found upon. Theſe animals lay their eggs in autumn, from which in the ſpring following the young ones are hatched, and theſe are at firſt tenderly ſhelter'd from injuries by a delicate and thin membrane, which makes a ſort of nymph, having the lineaments of all the parts of the animal, which is to iſſue from it. When it is firſt hatched from the egg, it is a ſmall white point on the leaf, not larger than the point of a needle; a few days after, it is greeniſh, its colour changing with the juices of the plant on which it feeds: in this ſtate it not unaptly reſembles that ſmall ſpecies of frog, called the tree-frog, which is common on the branches of trees in many places; it moves about very ſwiftly in this ſtate, tho' ſtill covered with its membrane, but till it gets rid of that, it can neither leap nor fly.

The manner in which this little creature forms this *froth* upon the plant is this; it applies its anus cloſe to the leaf, and diſcharges upon it a ſmall drop of a white viſcous fluid, which containing ſome air in it, is ſoon elevated into a ſmall bubble; before this is well formed, it depoſits ſuch another drop, and ſo on till it is every way overwhelmed with a quantity of theſe bubbles, which form the white *froth* which we ſee. It adds to this upon occaſion, but never moves from under it, till it has got rid of its enveloping membrane, or arrived from the nymph ſtate to that of the perfect animal. It throws out theſe globules of viſcous humor, by a ſort of dilatation, and contraction of its belly; and as they ſucced one another, it diſpoſes them every way round it with its feet. A proof, that while theſe animals are in this imperfect ſtate, and covered with *froth*, they yet feed on the juices of the plant, is, that if one of them be placed on a leaf of mint, or any other ſuch plant, the leaf on which they live will never grow beyond the ſize it was of, when the animal was placed upon it, while the oppoſite leaf will acquire its full dimenſions. When the animal has quitted its nymph ſtate, it makes no more *froth*, but leaves that under which it had lived, and takes its courſe freely about the plant.

FROWER, an edged tool uſed in cleaving wood into laths. *Ray*'s Engl. Words, p. 37.

FRUCTIFEROUS properly denotes any thing that produces fruit; but in a more large or figurative ſenſe, is uſed by lord Bacon, and others, for ſuch experiments in natural philoſophy, as prove advantageous to the experimenter in point of gain or profit.

FRUCTIFICATION *of plants*. See GENERATION, PLANT, *&c.*

FRUCTISTÆ, in botany, that ſet of authors who have attempted the eſtabliſhing the claſſes and diſtinctions of plants upon the fruit, ſeed, or receptacle of theſe in plants. Of this liſt are Cæſalpinus, Moriſon, Ray, Herman, and Boerhaave. *Linnæi* Fund. Bot. p. 2.

FRUIT, (*Cycl.*) the production of a tree or plant for the propagation or multiplication of its kind. In this ſenſe the word takes in all kinds of ſeeds with their furniture. But botaniſts uſually underſtand by it that part of a plant wherein the ſeeds are contained.

The *fruit* in all plants is the product or reſult of the flower, or that for the production and nutrition of which the flower was intended. The ſtructure and parts of different *fruits* are different in ſome things; but in all the ſpecies, the eſſential parts of the *fruit* appear to be only continuations or expanſions of thoſe which are ſeen in the other parts of the tree; and the ſame fibres are continued to them from the root. An apple

cut in two tranſverſely is ſeen to be principally compoſed of four parts. 1. A skin or rind, which is only a continuation and expanſion of the outer bark of the tree. 2. A parenchyma or pulp, which is an expanſion and intumeſcence of the blea, or the inner bark of the tree. 3. The fibres, which are ramifications of the woody part of the tree. 4. The core, which is the produce of the pith of the wood, indurated or ſtrengthened by twigs of the woody fibres intermixed with it. This ſerves to furniſh a proper lodging for the ſeeds, and filtrates the juices of the parenchyma or pulp, and conveys them to the ſeeds.

Of the fibres there are generally reckoned fifteen branches, of which ten penetrate the parenchyma, and incline to the baſis of the flower; and the other five aſcend more particularly from the pedicle or ſtalk, and meet with the former at the baſe of the flower; and to theſe branches the capſulæ, or coats of the kernels, are faſten'd. Theſe branches being firſt extended through the parenchyma to the flower, furniſh the neceſſary matter for the vegetation of it; but as the *fruit* increaſes, it intercepts the aliment, and by this means the flower is ſtarved, and falls off.

In a pear there are five parts to be diſtinguiſhed; the skin, parenchyma, ramification, ſtone, and acetarium. The firſt three parts are common to the apple; the ſtone, obſerved chiefly in choak pears, is a congeries of ſtrong corpuſcles, which are diſperſed throughout the whole parenchyma, but in the greateſt plenty, and amaſſed cloſeſt together, about the center of the acetarium. This ſeems formed of the ſtony or calculous part of the nutritious juice. The acetarium is a ſubſtance of a tart, acid taſte, and of a globular figure, incloſed in an aſſemblage of ſeveral of the ſtony parts before-mentioned.

In plums, cherries, *&c.* there are four parts, the coat, parenchyma, ramification, and ſtone. The outer part or ſhell of the ſtone ſeems formed of the calculous part of the nutritious juice of the plant, and the inner part or kernel of the pith of the tree, derived thither by ſeminal branches, which penetrate the baſe of the ſtone. The acorn conſiſts of a ſhell, cortex, and medulla. The ſhell conſiſts of a coat and parenchyma derived from the bark and wood of the tree. The cortex conſiſts of an inner and outer part; the firſt of which is a duplicature of the inner trunk of the ſhell; the ſecond is a ſofter ſubſtance derived from the ſame ſource as the parenchyma of the ſhell. But authors are not agreed whether the medulla or pulp of the kernel does ariſe from the pith of the tree, or from the cortical part thereof.

Berries, grapes, *&c.* contain, beſide three general parts, *viz.* coat, parenchyma and ramification, grains of a ſtony nature, which are the ſeeds. *Miller*'s Gard. Dict.

The uſe of *fruits* with us might, under proper regulations, be render'd much more extenſive than it is. Many *fruits* which do hurt when eaten raw, would make wines equal in flavour to many of thoſe now obtained at great prices from abroad; and lands which will not bear corn, yet would bear trees and ſhrubs producing ſuch *fruits*; and the conſequence of our falling heartily into it would be, that much ground, at preſent lying waſte, would be occupied, and great employment found for the numerous poor of ſome of our counties, where the quantities of waſte land are proportionably ſo great, that there is not employment for the people of one half of the county. Cherries properly managed make an excellent wine, and that in very large quantities; and plums alſo make a very agreeable kind, but that it has an auſtereneſs, which muſt be taken off by mixing a little ſugar with it when in the glaſs, not before it is drawn off.

A coarſe plum, ſomewhat larger than a damſon, is the beſt kind for this wine. This is a ſort of plum that grows wild in ſome of our hedges. It will ſucceed on any ground, the pooreſt that can be imagined, and it produces a great abundance of *fruit*. The wine that is made from it is of a very conſiderable ſtrength, and affords a pleaſant brandy by diſtillation in conſiderable quantities. Our common garden currants afford a very agreeable wine, and our gooſeberries are not ſecond to any thing. All theſe produce *fruit* in great abundance; and the planting and taking care of them is very cheap, and the operation very eaſy. The common way of making theſe wines yields very good ones; but when the art of the experienced Vigneron is employed in it, the liquors will prove greatly better. Phil. Tranſ. N° 124.

We have a very remarkable account of the production of flowers and *fruit*, given in a treatiſe of Franc. de Lanis, with ſuch an air of aſſurance and demonſtration, that many would be apt to ſuppoſe it indubitable. He ſays, that he took a quantity of orange flowers, and put them into half a pound of oil of ſweet almonds, with a little roach alum, this was expoſed together to the ſun, and he added freſh flowers every week as the others putrified. The oil after this being poured off into ſeveral vials, and ſet by till the next ſpring, he tells us that there were then ſeen flowers ſwiming in the oil, wholly reſembling the orange flowers firſt put in; and that as the ſeaſon advanced, theſe flowers ripened into *fruit* as thoſe growing on the tree; and the *fruit* in the vials he ſays, was no way deficient from the oranges growing on the tree, but in ſize. The author is not content with declaring this, on his own poſitive knowledge, but brings in as a witneſs of the truth of it, a nobleman of the ſame place, who he ſays, had one of the vials of oil, which annually produced flowers, and *fruits*, at the time that the orange trees did ſo.

This author is very free in his cenſures of the Engliſh philoſophers, particularly of our lord Bacon, and gives this as an inſtance of his own improvements in that ſtudy; but the thing is in itſelf ſo abſurd, that probably no body will pay reſpect enough to this author, to think it worth a trial.

The Petersbourg academy furniſhes us with two very ſingular inſtances of *fruits* growing in an unnatural manner; the one of theſe in the fig-tree, the other in the apple-tree. In both thoſe caſes, the *fruit* inſtead of its common ſituation, was placed upon the trunk of the tree with no branch or leaf near it, but only a ſhort pedicle for its ſupport. The inſtance of the fig-tree afforded three figs in a cluſter, the middle one of which withered, but the other two grew to their proper ſize, and were like the reſt of the figs on the ſame tree. The other inſtance of the apple tree afforded only one ſingle *fruit*, but there was in it ſomething very ſtrange, or that appeared ſo however at firſt ſight, for the apples produced on the branches of the tree were of one kind, and this of another. The tree had been grafted, and all the *fruit* of the branches grew from the graft; this ſingle one which ſtood upon the trunk of the tree below the graft, was of the ſpecies produced by the ſtock. This had doubtleſs been preceeded by a flower, tho' unobſerved, and it could only be as it appeared of the nature of the genuine *fruit* of the ſtock. All gardeners know that the ſtock ſuffers no change from the graft; in both theſe caſes there was probably the rudiment of a branch where the ſingle *fruit* appeared, and every other part of it except the bud of the *fruit* alone had periſhed, while that arrived at its deſtined ſize and maturity. We have alſo an account in the Philoſophical Tranſactions [a], of an apple-tree bearing a conſiderable quantity of *fruit* for many years together, without bloſſoming. [a N°. 385.]

FRUIT-*flies*, a name given by gardeners, and others, to a ſort of ſmall black *flies*, found in vaſt numbers among *fruit* trees, in the ſpring ſeaſon, and ſuppoſed to do great injury to them.

Theſe are a ſpecies of ſmall black fly. Mr. Lewenhoek preſerved ſome of them for his microſcopical obſervations.

He found that they did not live longer than a day or two, but that the females in this time uſually laid a great number of longiſh eggs. The gardeners who ſuppoſe that theſe flies wound the leaves of the trees, are miſtaken: it is true that they feed on their juices, but they have no weapons, with which to extract this themſelves; they feed on ſuch as is naturally extravaſated, and when there is not enough of this for their purpoſe, they haunt thoſe places where the pucerons reſort, and feed on the juices which theſe little creatures extravaſate by means of the holes they bore in the leaves with their trunks. Theſe pucerons are a ſmall ſort of inſect very common on our *fruit* trees, and other plants and trees; they are of a greeniſh colour, and are commonly called tree lice. Philoſ. Tranſ. N°. 262. See PUCERON.

FRUIT *ſtones*. The miſchiefs ariſing from the bad cuſtom of many people ſwallowing the ſtones of plumbs and other *fruit* are very great. The Philoſophical Tranſactions give us an account of a woman who ſuffered violent pains in her bowels for thirty years, returning once in a month or leſs. At length a ſtrong purge being given her, the occaſion of all theſe complaints was driven down from her bowels to the anus, where it gave a ſenſation of ſtoppage, and diſtenſion, and produced a continual deſire of going to ſtool, but without voiding any thing. On the aſſiſtance of a careful hand in this caſe, there was taken out with a forceps, an oblong ball of an oval figure, of about ten drams weight, and meaſuring five inches in circumference; this had cauſed all the violent fits of pain ſhe had been ſo many years afflicted with, and after the taking it out, ſhe became perfectly well. The ball extracted looked like a ſtone, and felt very hard, but it ſwam in water; on cutting it thro' with a knife, there was found in the center of it a plum-ſtone, round which, ſeveral coats of this tough and hard matter reſembling a ſtone, had gathered. Another inſtance given in the ſame papers is of a man who dying of an incurable colic, which had tormented him many years, and baffled the effects of medicines, was opened after death; and in his bowels was found the cauſe of his diſtemper, which was a ball of the like nature with that juſt mentioned, but ſomething larger, being ſix inches in circumference when meaſured, and weighing an ounce and half; in the center of this, as of the other, there was found the ſtone of a common plum, and the coats were of the ſame matter with thoſe of the former. Theſe and ſeveral others inſtances mentioned in the ſame place, ſufficiently ſhew the folly of that common opinion, that the ſtones of *fruits* are wholeſome.

For tho' by nature the guts are ſo defended with their proper mucus, that people very ſeldom ſuffer by things of this kind, yet if we conſider the various circumvolutions of the guts, their

their valves and cells, and at the ſame time conſider the hair of the skins of animals we feed on, the wool or down on herbs and fruit, and the fibres, veſſels and nerves of plants which are not altered by the ſtomach; it will appear a wonder that inſtances of this ſort of miſchief, are not much more frequent. Cherry-ſtones ſwallowed in great quantities have occaſioned the death of many people, and there have been inſtances even of the ſeeds of ſtrawberries, collecting into a lump in the guts, and cauſing violent diſorders, which could never be cured till they were carried off. Philoſ. Tranſ. N°. 282. p. 1282.

FRUIT-*trees*. There is in the Philoſophical Tranſactions, a method of making *fruits* and flowers grow in winter inſtead of ſummer without the common way of doing it by heat. This method is to take up the trees with their roots in the ſpring-ſeaſon, juſt as they begin to ſhoot out their buds; let them be placed upright in a cellar, and ſtand there till the end of September following, then fit veſſels to them, and place the roots in them, covering them in a proper manner with earth, and bring them up into a common ſtove, water them at times with a ſolution of the bigneſs of a wallnut of crude ſal armoniac in a quart of rain water, and they will make their natural progreſs as in ſummer; and in the months of February or March following, the *fruit* will be full ripe, and as well taſted as if it had grown on them in the common way, and ripened at its natural ſeaſon. Philoſ. Tranſ. N°. 282, p. 44.

The ſuperfluous ſhoots from theſe trees muſt be pruned off at ſuch times of the year, when the trees are full of juice, and furniſhed for a farther ſupply; and by this means, there will be no marks of the wounds, they will cloſe up ſo perfectly. The manner of producing pyramidal trees by ingrafting, is not only applicable to *fruit* trees, but has been tried on oaks, limes and roſes, with the ſame ſucceſs. Vid. infra.

Laurembergius tells us of a peculiar way of managing *fruit* trees for ready ſervice and beauty, by means of which they will bear *fruit* the firſt year. The method is this: draw a branch of a *fruit*-tree thro' a pot of earth, and prick it full of holes with a knife, ſo far as it is to ſtand in the pot; let it be well watered for the firſt ſeven or eight days, to make it ſhoot out a great quantity of roots; in the March following cut off the branch from the tree, and let it depend wholly on itſelf for nouriſhment; break the pot away, and place the clump of earth with the young tree in it in the place where it is intended to ſtand. The author aſſures us it will partake ſo much of the nature of the ſtock, as to bear *fruit* the firſt year. Phil. Tranſ. N°. 3.

An anonymous author has given us in a treatiſe publiſhed at Hamburgh, under the title *Amænitates Hortenſes Novæ*, a new method of grafting trees, ſo as to have very beautiful pyramids of *fruit* on them, which will exceed both in quantity, beauty and flavour, all that can be otherwiſe produced. This he ſays he had long experienced, and the method he gives of doing it, is this. The trees are to be tranſplanted in autumn and all their branches cut off; early in the following ſummer, the young ſhoots are to be pulled off, and the buds are then to be ingrafted into them, in an inverted direction; this he ſays, adds not only to the beauty of the pyramid but makes the branches alſo more fruitful. Theſe are to be cloſely connected to the trunk, and to be faſtened in with the common ligature; they are to be placed circularly round the tree, three buds in each circle, and theſe circles at ſix inches diſtance from one another. The old trees may be ingrafted in this manner, the ſucceſs having been found very good in thoſe of twenty years ſtanding; but the moſt eligible trees are thoſe which are young, vigorous and full of juice, and have not more thickneſs, than a finger or two. When theſe young trees are tranſplanted, they muſt be fenced round with pales to defend them from the violence of the winds, and there muſt be no dung put to them till they are thoroughly rooted, for fear of rotting them before the fibres ſtrike. The buds ingrafted muſt be ſmall, that the wounds made in the bark to receive them, not being over large, may heal the ſooner, and if any of the buds do not ſucceed, which will be found in a fortnight, there muſt be others put in their place. The wound made to receive theſe buds muſt be a ſtrait cut parallel to the horizon, and the piece of bark taken out muſt be downward, that the rain may not get in at the wound. In the autumn of the ſame year, this will be a green and flouriſhing pyramid, and the next ſummer it will flower, and ripen its *fruit* in autumn. Act. Erud. Ann. 1710.

FRUMENTUM *ſaracenicum*, in botany, a name by which ſome authors expreſs the fagopyrum, or buck-wheat. *Herm.* Hort. Lugd. Bat. p. 263.

FRUMENTUM *indicum*, *Indian corn*, a name given by our American planters to maiz. See MAIZ.

FRUMENTATION, *frumentatio*, among the Romans, a largeſs of corn beſtowed on the people. This practice of giving corn to the people, was a very antient cuſtom among the Romans, and frequently uſed to ſooth the turbulent humour of the populace.

At firſt the number of thoſe to whom this largeſs was given, was indeterminate, till Auguſtus fixed it at two hundred thouſand. *Pitiſc.* Lex. ant. in voc.

FRUMGYLD, in our old writers, is the firſt payment made to the kindred of a perſon ſlain, towards the recompence of his murder.—*Prima capitis æſtimationis penſio vel ſolutio.* L. L. Edmund.

FRUMSTOL, in our old writers, the chief ſeat or manſion houſe; which is called by ſome the *homeſtal*. Leg. Inæ, cap. 38.

FRUSO, in zoology, a name given by ſome to the *coccothrauſtes criſtata Indica*, commonly called the Virginia nightingale. See NIGHTINGALE.

FRUSSURA, in our old writers, a breaking down; alſo a ploughing or breaking up. *Fruſſura domorum*, is houſe-breaking; and *fruſſura terræ*, new broke land. Mon. Angl. Tom. 2. p. 394.

The word comes from the French *froiſſure*, a bruiſe; and that from the verb *froiſſer*, to bruiſe or break.

FRUSH or FRUG, in the manege, is a ſort of tender horn which ariſes in the middle of the ſole, and at ſome diſtance from the toe of a horſe; it divides into two branches running towards the heel, in the form of a fork.

FRUTEX *Æthiopicus*, in botany, A name given to the ſilver-pine-tree. See PINE-*tree*.

FRUTEX *Africanus*, in botany, a name given to a ſpecies of trees brought from the Cape of Good Hope; a deſcription of which ſee under the article *ſpurge-leaved* PINE.

FUCA, in ichthyology, a name given by Gaza, and ſome other writers to the fiſh called phycis, by Ariſtotle, Ælian and the other writers; and *tinca marina*, by Salvian and Rondeletius. It is a fiſh nearly allied to the genus of the blenni.

FUCHSIA, in botany, the name of a genus of plants ſo called by Plumier, in memory of the famous botaniſt Fuchſius; the characters of which according to Linnæus are theſe: the cup has an undivided edge, and ſtands upon the germen of the piſtil; the flower conſiſts of one petal, which is a clavated tube, divided at the edge into eight ſegments, which ſtand nearly even one with another, and are pointed, the alternate ones being placed a little lower than the others. The ſtamina are four filaments of the length of the tube, the antheræ are didymus, and of a roundiſh figure; the germen of the piſtil is roundiſh, and is placed under the flower-cup; the ſtyle is ſimple and of the length of the ſtamina, and the ſtigma is obtuſe. The fruit is a roundiſh berry, furrowed with four ſtrong lines, and containing four cells. The ſeeds are numerous and placed in double rows, and are of an oval figure. It is to be obſerved, that Plumier has figured only four ſtamina in his genera plantarum, but in his hiſtory, he has drawn eight, and this is a point, that can only be determined by ſome perſon who ſees the recent flower. *Linnæi* Gen. Plant. p. 522. *Plumier*, p. 9.

FUCUS, in botany, the name of a genus of plants; the characters of which are, that they are of a tough ſtructure, and grow under the water without affording any diſtinguiſhable flowers or ſeeds. See Tab. 1. of Botany, Claſs 17.

The ſpecies of *fucus* enumerated by Mr. Tournefort are theſe. 1. The common ſea *fucus* with bladders. 2. The greater, broad-leav'd dentated *fucus*. 3. The narrower-leav'd ſea *fucus* with few bladders. 4. The *fucus* with tumid extremities to the leaves, called by ſome the ſea oak with acorns. 5. The knotted ſea *fucus*. 6. The broad-leav'd ſea *fucus* with very few bladders. 7. The low, broad-leav'd ſea *fucus* without bladders. 8. The ſmall narrow-leav'd ſea *fucus*. 9. The ſmall broad-leav'd curled ſea *fucus*. 10. The ſmall Italian fimbriated and curled ſea *fucus*. 11. The bullated, ſhrubby ſea *fucus* with naked ſtalks and compreſſed bifid leaves. 12. The narrow-leav'd *fucus* with broad veſicles in the form of pods. 13. The podded *fucus* with very finely divided leaves. 14. The dwarf ſhrubby bladder *fucus*. 15. The hand-like ſea *fucus* with broad bifid leaves and long ſwoln pods joined one to another. 16. The narrow-leav'd palmated ſea *fucus* with verrucoſe bladders at the extremity of the leaves. 17. The low foliaceous *fucus* reſembling a hand. 18. The low membranaceous palmated *fucus* with fimbriated and curled edges. 19. The ſea *fucus* with roundiſh fimbriated leaves bifid at the extremities. 20. The great membranaceous many-leav'd *fucus*. 21. The red membranaceous narrow-leav'd *fucus* with fringed edges. 22. The red membranaceous ſea *fucus* with broad leaves dentated at the ends. 23. The white membranaceous *fucus* with very jagged ſegments. 24. The yellowiſh green ſea *fucus* making roundiſh angles. 25. The low bifid-leav'd *fucus* with broad membranaceous leaves, uſually verrucoſe. 26. The ſmall purple ſea *fucus*. 27. The ſea *fucus* with veſicles marginated with membranaceous edges. 28. The ſea *fucus* with tumid barbated leaves. 29. The long and broad belt-like ſea *fucus*, called the ſea girdle. 30. The ſea *fucus* with leaves like the bloody dock. 31. The arboreſcent many-leav'd eatable ſea girdles. 32. The broad-leav'd coriaceous *fucus*. 33. The ſhrub *fucus* with leaves narrow at the bottom, and growing broader toward the ends. 34. The erect unbranched ſea *fucus* with thick fleſhy leaves divided at the ends.

35. The

35. The long, narrow and thick-leav'd *fucus*. 36. The narrow-leav'd ligulated *fucus*. 37. The ſea *fucus* with a very long and broad and tender leaf. 38. The five-leav'd dentated *fucus*. 39. The ſmall *fucus* with long cylindric and pointed branches. 40. The *fucus* with a ſingle, long, and very broad leaf, rugoſe in the middle. 41. The ſea *fucus* with a long, broad, and very thick leaf. 42. The long, leafy, black *fucus*. 43. The ſmall purple ſea *fucus* with cylindric branches and leaves. 44. The green upright branched, cylindric, ſpongy *fucus*. 45. The tall, not branched, green, ſpungy, cylindric *fucus*. 46. The ſmall *fucus* with cylindric and fiſtulous leaves. 47. The ſtag's horn ſea *fucus* with globules at the ends of the branches. 48. The fine orbicularly ſpreading *fucus* with ſhort bifid or trifid cylindric ſegments. 49. The *fucus* reſembling ſilk or cloth in its texture. 50. The white narrow-leav'd, compreſſed, ſcrupoſe *fucus* with the extremities of the branches ſeemingly cut off. 51. The ramoſe ſea *fucus*. 52. The folliculated *fucus* with ſerrated leaves, called the cut-leav'd ſea lentils. 53. The folliculated *fucus* with toad flax leaves. 54. The American *fucus* with broad, ſhort, and ſerrated leaves. 55. The American *fucus* with very ſhort broad leaves. 56. The ſmall denticulated triangular *fucus*. 57. The ſmall white cylyndric, fungous, coralloide *fucus* with few ſegments. 58. The lettuce-leav'd *fucus*, or lactuca marina, called oyſter-green. 59. The endive-leav'd ſea *fucus*. 60. The tubular *fucus* of the ſhape of guts, commonly called the ſea chitterling. 61. The coronopus-leav'd *fucus*. 62. The ſea *fucus*, called *rocella*, and ſea dyer's-weed, or alga tinctoria. 63. The verrucoſe rocella. 64. The great ſpiral-leav'd ſea *fucus*. 65. The ſmaller ſpiral-leav'd ſea *fucus*. 66. The turkey-feather ſea *fucus*. 67. The round-leav'd ſea *fucus*. 68. The ſmall American opuntia-like *fucus*. 69. The hand-ſhap'd *fucus*. 70. The feather *fucus*. 71. The great horned ſea *fucus*. 72. The broad-leav'd dentated purple ſea *fucus*. 73. The elegant finely divided purple *fucus*. 74. The purple ſerrated ſea *fucus*. 75. The ſpongy ſelinoide ſea *fucus*. 76. The prickly, undulated, river *fucus*; and, 77. The low fimbriated and curled Italian *fucus*. *Tourn.* Inſt. p. 566.

Mr. Reaumur has diſcovered, that all the *fucus's* produce regular flowers and ſeeds, and that in the ſame regular manner. The flowers ſtand all over the leaves from the origin of them at the root to their utmoſt extremities, only the ribs in the middle are free from them. Every flower is compoſed of a cluſter of ſmall and extremely ſlender threads. Theſe are uſually all of the ſame length in the ſame flower, but they are ſo numerous as not to be eaſily counted; the longeſt of theſe threads are not above one twelfth of an inch in length, and the reſt are not half ſo long. They all iſſue out of a ſmall hole in the leaf, which ſerves as a ſort of cup to them. The threads are too feeble to ſupport their own weight in the air. When the ſea has left the plants, they are all found lying flat upon the leaves; though while the water covers them, they ſtand ſomewhat erect. They are not terminated at the top by apices containing a farina; but they may very eaſily contain that powder in their whole ſubſtance, and throw it off as ſoon as they expand themſelves. They are diſpoſed with no ſort of regularity on the leaves; for in ſome places they ſtand very cloſe together, in others they are placed at much greater diſtances. They grow equally on both ſides of the leaves; but the ſame flower never perforates the leaf, but all its parts appear on the ſame ſide. The flowers are much more eaſily diſcerned on the plant when it is dry, than while it is moiſt; for when dry, the filaments that compoſe them are white; whereas when moiſt, they are of a deep brown, like the leaves on which they ſtand. Of all the flowers which cover theſe plants, there are none that produce ſeeds but thoſe which are placed near the extremities of the leaves, and not all of theſe. In thoſe places where the ſeed is beginning to form itſelf, the extremity of the leaf ſwells, and forms a ſort of capſule, which contains the fruit, while the reſt of the leaf retains its former thinneſs. When the flowers are fallen, the holes in the leaf, which ſerv'd them for cups, become eaſily viſible in the places where the thickneſs happens, and where the ſeeds are to be lodg'd; and the margin of each hole is ſurrounded with a little circular protuberance, which ſtands out beyond the reſt of the ſurface. The ſwelled ends of the leaves often grow to half an inch in thickneſs, and uſually terminate in two horns, which form an acute angle; and the rib of the leaf is not viſible in theſe ſwoln parts. When theſe are cut open, whether it be tranſverſely or horizontally, they are found filled with a thick viſcous liquor, and in this are ſeen ſeveral roundiſh bodies of about a twenieth part of an inch in length; they are of a reddiſh colour, and are eaſily diſtinguiſhed, and are all found to be fixed to the ſides of the leaf. Theſe are what Dr. Robinſon, who ſeems to have been the firſt perſon who diſcover'd them, took for the ſeeds; and they have really much the appearance of naked ſeeds; but, when cloſely examined, they are found to be in reality capſules containing each a great number of minute round ſeeds, which are faſten'd to their ſides, as they were to the ſides of the tumor in the leaf: and theſe ſmaller capſules are in the ſame manner with thoſe full of a tranſparent viſcous liquor.

Though theſe capſules appear at firſt ſight plain roundiſh bodies; yet when more nearly examin'd, they are found to be rather ſhaped like glaſs bottles with ſhort necks, the neck being fixed into the ſubſtance of the leaf, and its extremity forming the protuberant circular rim that ſurrounds the little hole in the leaf, which had ſerved as a cup to the flowers. See Mem. Acad. Par. 1711, where we have figures of the *fucus*.

The antients uſed a purple ſea plant to dye woollen and linnen things to that colour, and called it *fucus*. The dye was very beautiful, but not laſting; for it ſoon began to change, and in time went wholly off. This is the account Theophraſtus gives of it.

The women of thoſe times uſed alſo a thing called *fucus* to ſtain their cheeks red; and many have ſuppoſed, from the ſame word expreſſing both, that the ſame ſubſtance was uſed on both occaſions. But this, on a ſtricter enquiry, proves not to be the caſe. The Greeks called every thing *fucus* that would ſtain or paint the fleſh. But this peculiar ſubſtance us'd by the women to paint their cheeks, was diſtinguiſhed from the others by the name *rizion* among the more correct writers, and was indeed a root brought from Syria into Greece on that occaſion. The Latins, in imitation of the Greek name, called this plant *radicula*; and, as Pliny has mention'd it, it is not improper to obſerve, that he has very erroneouſly confounded it with the *radix lanaria* or *ſtruthion* of the Greeks.

The word *fucus* was in theſe times become ſo univerſal a name for paint, that the Greeks and Romans had a *fucus metallicus*, which was the ceruſs or white lead uſed for painting the neck and arms white; after which they uſed the purpuriſſum, or red *fucus* of the rizium, to give the colour to the cheeks. They alſo in after-times uſed a peculiar *fucus* or paint for this purpoſe prepared of the creta argentaria, or ſilver chalk, and ſome of the rich purple dyes that were in uſe in that time; and this ſeems to have been very little different from our roſe pink, a colour commonly ſold at the colour ſhops, and uſed on like occaſions.

FUCUS *Palmatus*, *handed Fucus*. The name given to a ſpecies of ſea *fucus*, diſtinguiſhed from the reſt by its having no ſtalk, its leaves being divided in the manner of a hand, and its extremities divided into many curl'd ſegments. It is common on almoſt all the ſea coaſts of Europe, and is one of the ſeveral ſpecies of ſea plants in which Mr. Reaumur has diſcover'd regular flowers and ſeeds. They are in this ſpecies however ſo ſmall, as to require the aſſiſtance of a microſcope to diſcover them; though after they have been once ſeen in that manner, as is the caſe in many microſcopic objects, they may then be eaſily diſtinguiſhed by the naked eye. This plant is faſten'd to ſome ſtone by a round root, from which there ariſe four or five leaves, which at about an inch diſtance from the root divide into a number of branchings which conſtitute the whole plant. This ſpecies carries its ſeeds at the extremities of the leaves, where they are incloſed in the interior ſubſtance of the plant; and nothing is to be diſcover'd on the ſurface without the aſſiſtance of glaſſes, unleſs it be that the leaves are of a ſomewhat more dusky hue there than elſewhere. With the help of glaſſes this obſcurity is found to be cauſed by a number of ſmall opake bodies; and to diſtinguiſh theſe well, the part muſt be examined by holding it againſt the light, and even in this examination the ſurface of that part of the plant does not appear different from the reſt, nor can there be diſtinguiſhed any mark of the filamentous flowers of the common ſpecies, nor any ſign of the protuberances made by the necks of the capſules, as is the common caſe. When this obſcure part of the plant is opened, there appears a number of ſmall round and hard reddiſh ſeeds; there are uſually about twenty of theſe in every extremity of a leaf, and as the leaves are tender, they may be cruſhed under one's nail, and by this means the ſeeds may be diſtinguiſhed from the fragments of the bruiſed plant by their colour. Notwithſtanding the ſmallneſs of theſe bodies however, it is much to be doubted whether they are not capſules, or ſeed veſſels, rather than ſingle ſeeds; ſince in all the larger *fucus's* the ſeeds are found of an extreme ſmallneſs incloſ'd in capſules. An inſtance of this may be ſeen in the *fucus polyſchides*. Mem. Acad. Par. 1712. See POLYSCHIDES.

FUCUS *polyſchides*. See POLYSCHIDES.

FUCUS *thermalis*, in botany, the name of a remarkable ſpecies of plant, found only in the hot water ſprings. It was firſt diſcovered by Monſ. de Monteſquieu, in the great baſon, at the boiling ſpring in Gaſcony; he was not able to diſcover that it produced either flowers or ſeeds. Its ſubſtance is intirely compoſed of ſmall bladders full of air, the ſurfaces of which are reticular, as worked in the manner of a coarſe canvas. It is obſerved to grow only in the hotteſt waters.

FUDDER, among the miners, a load of lead, which is eight pigs, or ſixteen hundred weight. *Ray*'s Engliſh Words, p. 19.

FUEL, (*Cycl.*) in chemical operations. — A great deal of nicety is required in chooſing the proper *fuel* to raiſe and continue the ſeveral degrees of fire. The natural heat of the ſummer ſun is ſufficient for inſolations. A ſpirit lamp may be made to give the next degree of heat to this, which may be much augmented

mented or decreaſed according to the number of wicks kept burning at a time.

The next degree of fire to this, is made of the lighter *fuel*, ſuch as dry ſtraw, leaves, twigs and the like: the next in order, is that from oils, wax, reſin, pitch, &c. And laſtly ſolid wood, coals, and turf may be employed for the ſtrongeſt. Theſe by means of proper furnaces made to contain different quantities, may be made to give a greater or leſs degree of a ſtrong fire. To excite the greateſt degree of heat in a furnace, the rule is to uſe the denſeſt *fuel*, and in the largeſt quantity, and to have bellows placed all round the furnace: theſe are to be inceſſantly blown, and directed to the central part of the fire, in which the matter to be worked upon is lodged. Thus the greateſt degree of heat from culinary fires, is to be given, and this is ſufficient for the known operations on metals, glaſs, &c. *Shaw*'s Lectures, p. 38.

It is a known truth, that *fuel* cannot conſume by means of heat alone, without the admiſſion of freſh air, and this is no way more clearly proved, than by this eaſy experiment. Let a ſtrong cylinder of iron, hollow within, be fitted with a firm skrew at each end, in the cavity of this cylinder, incloſe a long piece of charcoal, and then skrew up both the ends faſt, and place the whole in a ſtrong fire, let it continue there for ſeveral hours, and when it is taken out and cooled, open it, and the piece of charcoal will be found ſtill black, in its own form, and no way apparently altered or diminiſhed.

It is plain from this, that the conſumption of *fuel* depends upon the rarefaction, diſlodgement, brisk agitation, and diſcharge of its oil, by means of freſh air; and hence we have the reaſon of the known rule of extinguiſhing fires by ſmothering them.

FUGA *demonum*, in botany, a name uſed by ſome authors for the hypericum, or St. John's-wort. *Ger.* Emac. Ind. 2.

FUGAM *fecit*, in law, a term uſed where it is found by inquiſition, that a perſon fled for felony, &c. And if flight and felony be found on an indictment for felony, or before the coroner, where a murder is committed, the offender ſhall forfeit all his goods, and the iſſues of his lands, till he is acquitted or pardoned: and it is held, that when one indicted of any capital crime, before juſtices of oyer, &c. is acquitted at his trial, but found to have fled, he ſhall, notwithſtanding his acquittal, forfeit his goods; but not the iſſues of his lands, becauſe by the acquittal, the land is diſcharged, and conſequently the iſſues. 3 Inſt. 218. H. P. C. 27. 2 Hawk. P. C. 450. The party may in all caſes, except that of the coroner's inqueſt, traverſe the finding of a *fugam fecit*; and the particulars of the goods found to be forfeited, may be always traverſed: alſo whenever the indictment againſt a man is inſufficient, the finding of a *fugam fecit*, will not hurt him. 2 Hawk. 451. making default in appearance on indictment, &c. whereby outlawry is awarded, is a flight in law.

FULGURATING *phoſphorus*, a term uſed by ſome Engliſh writers to expreſs a ſubſtance of the phoſphorus kind, the preparation of which, does not ſeem to have been well known to any, but the inventor of it. It was prepared both in a liquid and a dry form; and not only ſhone in the dark in both ſtates, but communicated its light to the things it was rubbed on. If incloſed in a glaſs veſſel well ſtopped, it ſometimes would *fugurate*, or throw out little flaſhes of light, and ſometimes fill the whole vial with waves of flame. It does not need recruiting its light at the fire, or in the ſunſhine, like the phoſphorus of the Bolonian ſtone, but of itſelf continues in a ſtate of ſhining for ſeveral years together, and is ſeen as ſoon as expoſed in the dark; the ſolid or dry matter always reſembling a burning coal of fire, though not conſuming itſelf. Phil. Tranſ. N°. 134.

FULICA, in the Linnæan ſyſtem of zoology, the name of a diſtinct genus of birds of the order of the anſeres, the diſtinguiſhing character of which is, that the beak is pointed, the thighs are half naked, and the forehead wholly naked. *Linnæi* Syſtem. Nat. p. 46.

The *Fulica* is a water fowl diſtinguiſhed from the moor-hen kind, by having its toes widened by a membrane, tho' not joined together by it, or webb'd like the ducks. Of this there are two ſpecies, the common *coot*, and a larger kind called *macroule*, or *diable de mer*, the ſea devil.

The common *coot* is a conſiderably large bird, weighing uſually a pound and half, its beak is of a bluiſh white, and is a finger's breadth and half long, ſomewhat flatted and ſharp at the point; its legs are bluiſh or greeniſh, it has ſemicircular membranes at the joints of its toes: but what is its moſt obvious diſtinction is, that it has from the beak to the crown of the head, a fleſhy excreſcence, which is roundiſh, ſoft and ſmooth, and is always naked or deſtitute of feathers, and hence the bird is commonly called with us, the bald *coot*. It is all over black above, but of a deeper black about the head, than in any other part, and its breaſt and belly are of a ſort of lead colour; its wing-feathers have a browneſs, mixed among the black, and ſome of them are tipped with white.

The other ſpecies or *macroule*, called by Bellonius, the *fulica major*, is larger and of a finer black than this, and has a larger white excreſcence on its head.

The common *coot* is ſo plentiful about Peterbourough in Northamptonſhire, that in the ſeaſon of its laying, whole hampers full of its eggs, are there brought to market and ſold at an inconſiderable price; the people boil them, and the ſhell is ſo thin, that they often eat them without taking it off. *Ray*'s Ornith. p. 239.

FULIGO *metallorum*, a term uſed by the chemiſts, ſometimes to expreſs arſenic, and ſometimes crude mercury.

FULIGULA, in zoology, a name given by Geſner to a ſpecies of duck, ſeeming to be the ſame with a kind common on the Yorkſhire ſhores. The ſame author alſo deſcribes another ſpecies under the name of *anas fuligula prima*, which ſeems the ſame with the *capo negro*, or tufted duck. See CAPO *Negro*.

FULLER'S *earth* (*Cycl.*) —The greateſt quantity and the fineſt earth of this kind in the world, is dug in the pits at Wavedon, near Woburn in Bedfordſhire. The ſtrata in theſe pits lie thus; from the ſurface to the depth of ſix foot, there are ſeveral layers or beds of ſand, all reddiſh, but ſome lighter coloured than others. Under theſe there is a thin ſtratum of a ſandſtone, which they break through, and then there is the *fuller*'s earth. The upper ſtratum of this, is about a foot thick, and they call it *cledge*; this is thrown aſide as uſeleſs, being commonly foul'd with the ſand, which originally covered it, and uſually inſinuates itſelf conſiderably into it. After this, they come at the fine *fuller*'s earth for ſale, which lies to the depth of eight foot more. The matter of this is divided into ſeveral layers; there being commonly about a foot and half between one horizontal fiſſure and another. Of theſe ſeveral layers, the upper half where the earth breaks itſelf, is tinged red; this ſeems to be owing to the running of the water on it, from among the ſands above, ſome of which are probably of a ferrugineous nature, or have ferrugineous matter among them. This reddiſh *fuller*'s earth, the workmen call *crop*; and between the cledge and this, there is a thin ſtratum of matter of leſs than an inch, which in taſte, colour and external appearance, reſembles the terra Japonica of the ſhops. This may probably alſo, have a ſhare in the tinging of the earth, as the water may be coloured in running thro it. Philoſ. Tranſ. N°. 379. p. 419.

The lower half of the ſtrata of *fuller*'s earth, they call wall-earth; this is untinged with the red colour of the other, and ſeems the moſt proper for fulling. Under the *fuller*'s earth, there is a ſtratum of a rough and coarſe white ſtone, about two foot thick; they ſeldom dig thro' this, but if they do, they find more ſtrata of ſand.

The ſtratum of *fuller*'s earth ſeems all the way to lie very level, not to riſe and fall with the upper ſtrata, for when the ſurface is higher, they always find they have farther to dig for it. There are a great number of perpendicular fiſſures in the ſtratum of *fuller*'s earth, and beſide this, it forms itſelf in every interval into a multitude of pieces of different ſhapes and ſizes by cracking. The place where it is dug, is that ridge of ſand hills, which runs to Shotover in Oxfordſhire; and as the ſtrata of the earth are uſually found to continue much the ſame, for long tracts of ground; it is probable, that the *fuller*'s earth ſtratum runs the whole length of theſe hills, and that ſomebody will at one time or other, be enriched by finding it in ſome other part of their courſe.

FULLONICA *terra alba*, white *fuller*'s earth, in natural hiſtory, a name given by ſome authors to the common white tobacco-pipe clay. *Kentman*'s Nomenclat. Foſſ. p. 11.

FULLO, in ichthyology, a name given by Theodore, Gaza, and others to the tench, or black cyprinus, called by the Greeks pſylon. See the article TENCH.

FULLONIANI, in church hiſtory, heretics who anathematized all who did not acknowledge, that Chriſt ſuffered in his divine nature; or who diſtinguiſhed his human and paſſible nature from his divine and impaſſible. See *Hoſm.* Lex. in voc.

FULMINATING *damp*. See the article DAMP, *Cycl.*

FULUSCULUM, in botany, a name given by the antient Romans to a peculiar ſpecies of mullein or *verbaſcum*, of which they uſed to make the wicks of the torches with which they kindled their funeral piles. The Greeks for the ſame reaſon called this ſpecies *necuia*. Dioſcorides indeed calls it *lychnies*, λυχνῖτις, and Nicander, *thryallis* θρύαλλις. The way they uſed it was this: they beat out the ſtalk of the plant, as we do hemp, and when it was ſeparated into looſe fibres, they plunged it into melted reſin; this gave it a conſiſtence again, and when cold, it was a kind of flambeau.

FUMADOES, in commerce, a name given to pilchards garbaged and ſalted, then hung in the ſmoak and preſſed; ſo called in Spain and Italy, whither they are exported in great abundance. Vid. Stat. 14 Car. 2. cap. 31.

FUMARIA, *fumitory*, in botany the name of a genus of plants, the characters of which are theſe. The flower is of the polypetalous anomalous kind, approaching ſomewhat to papilionaceous ones, but conſiſting only of two leaves, and as it were bilabiated, the upper lip running out into a tail behind, and with the under one joined to the ſtalk. Between theſe

lips as it were in the palate of a mouth, whoſe opening is occupied by a ſmall ligula, the piſtil ſtands, covered with a membrane; this finally becomes a membranaceous fruit, ſometimes ſhorter, ſometimes longer, which contains a roundiſh ſeed. *Tourn.* Inſt. p. 21.

The Species of *Fumitory* enumerated by Mr. Tournefort, are theſe. 1. The common purple flowered *Fumitory*. 2. The common *Fumitory* with white flowers. 3. The fine leaved Montpelier *Furmitory*, with white flowers. 4. The great *Fumitory*, with pale purple flowers. 5. The climbing *Fumitory*, with tendrils to lay hold on other things, with yellow flowers, black at the top. 6. The little fine leaved *Fumitory*, with bright purpliſh red flowers. 7. The little fine leaved *Fumitory*, with variegated flowers. 8. The ſmall procumbent fine leaved *Fumitory*. 9. The ſmall *Fumitory*, with leaves like crooked fennel, and white flowers, each variegated with a ſingle red ſpot. 10. The ſmall Roman *Fumitory*, with flixweed leaves. 11. The broad leaved climbing *Fumitory*. 12. The climbing *Fumitory*, with narrower leaves. 13. The Spaniſh rock *Fumitory*, with large heart faſhioned leaves, and compreſſed ſeeds. 14. The greater hollow rooted *Fumitory*, with pale purple flowers. 15. The great hollow rooted *Fumitory*, with bright red flowers. 16. The great hollow rooted *Fumitory*, with white flowers. 17. The great hollow rooted *Fumitory*, with yellow flowers. 18. The great hollow rooted *Fumitory*, with greeniſh flowers. 19. The great bulbous rooted *Fumitory*, with ſolid roots, and 20. The ſmaller bulbous *Fumitory*, with ſolid roots.

The common *Fumitory*, which is frequent in our gardens and cornfields, and flowers in June, is eſteemed a very great medicine in obſtructions of the liver and ſpleen; it attenuates ſerous, bilious and aduſt humours, and carries them gently off by ſtool and urine. It is famous for the ſcurvy, and is alſo given in infuſion in the jaundice, and in the itch and all other cutaneous diſorders.

FUMIGATION (*Cycl.*)—*Fumigations* with cinnabar have often been recommended as very efficacious in ſome of the worſt circumſtances of the venereal diſeaſe. From a caſe related in the Medic. Eſſ. Edinb. Vol. 4. Art. 8. it appears, that this practice may be attended with very violent effects. Half a dram of factitious cinnabar burnt under the noſe and mouth of the patient, is there mentioned as having raiſed a ſpitting in three hours.

FUMITORY, in botany, &c. See FUMARIA.

FUMING, in metallurgy, the firſt calcination of the ores of metals, intended to diveſt them of their ſulphurs. *Boerhaave*'s Chem. p. 76. See ROASTING.

FUNDAMENTO, in the Italian muſic, is in general every part that plays or ſings the baſs; but the thorough baſs is more particularly ſo called, becauſe it is the baſis or foundation of all harmony. *Broſſ.* Dict. Muſ. in voc.

FUNDUCLÆ, an Ægyptian coin, a ſort of ſequin of the value of a hundred and forty ſix medines. *Pocock*'s Egypt. p. 175.

FUNDULUS, in zoology, a name uſed by many for the ſmall fiſh, called by others cobitis, and by the generality of people in England, the loche. *Willughby*'s Hiſt. Piſc. p. 265. See COBITIS.

FUNDULUS is uſed alſo by Schoneveldt, and ſome others to expreſs the common gudgeon. The confuſion of calling two fiſh by the ſame name which is peculiarly appropriated to neither, is very evident in this and numerous other inſtances; but it is always to be avoided by uſing expreſſive and genuine names. Thus even the word gobio the common name of the gudgeon confounds that fiſh with another very different genus; and Artedi is greatly to be applauded, who has found that our common gudgeon is no peculiar genus of fiſh at all, but is a ſpecies of the cyprinus. As ſuch he has given it the proper ſpecific name of the five inch ſpotted cyprinus, with the lower jaw ſhorter than the upper, and with two cirri or beards at the mouth; under this name the ſpecies is always to be known at ſight, and can never be confounded with any other genus. *Artedi*, Gen Piſc.

FUNERAL. See BURYING and BURIAL.

FUNGIFER *lapis*, the *muſhroom bearing ſtone*, a name given by authors to a coarſe ſtone found in Italy and many other places lying near the ſurface of the earth, which they ſay will at any time produce *muſhrooms*, on being moiſtened with warm water.

FUNGITÆ, in natural hiſtory, a name given by authors to a ſpecies of ſea coral, often found adhering to ſea ſhells, or to the larger corals in its recent ſtate, and very often found alſo foſſil or buried at great depths in the earth; they are uſually immerged in ſtone, and ſometimes in clay. The more frequent of theſe are of a conic ſhape, ſometimes they are flatted and diſcoide, and uſually ſtriated longitudinally; they ſometims are found in their foſſil ſtate adhering to ſhells or corals, but more uſually ſeparate. To theſe and ſome other bodies of this kind, Mr. Lloyd has given the name *columella*; to one of them that of *branchiale*, from its reſembling the gills of a fiſh; and to another, that of *undulago*, from its undulated figure. *Hill*'s Hiſt. of Foſſ. p. 641.

FUNGOIDES, *baſtard muſhroom*, in botany, the name of a genus of plants, the characters of which are the ſame with thoſe of the fungus, from which it differs only in being of a hollowed form, reſembling a cup, or empty open box.

The ſpecies of *Fungoides*, enumerated by Mr. Tournefort are theſe. 1. The ſmall cup *Fungoides*, containing large ſeeds. 2. The ſaucer ſhaped angular *Fungoides*. 3. The grey funnel ſhaped Canada *Fungoides*. 4. The curled ſaucer ſhaped *Fungoides*. 5. The coriaceous orange coloured *Fungoides*. 6. The ſcarlet ſaucer ſhaped *Fungoides*, with hairy edges. 7. The ſcarlet, ſaucer ſhaped *Fungoides*. 8. The brown *Fungoides*, with hairy edges, of the ſhape of a drinking glaſs. 9. The orange coloured ſcutellate *Fungoides*. 10. The black ſpotted ſcutellate *Fungoides*, and 11. The tree *Fungoides*, of a ferrugineous colour within. *Tourn.* Inſt. p. 560.

FUNGOUS *tumours*. See the article TUMOUR.

FUNGUS, *muſhroom*, in botany. See MUSHROOM.

FUNGUS *of the brain*.—Mr. Queſney aſſures us, that ſpirits are not ſo proper for preventing the growth of *Funguſes* from the brain, as balſam fiorivanti, or oleum terebinth. Mem. de l'Acad. de Chirurg. tom. 1.

FUNGUS, in mineralogy, a name given by Dr. Liſter, to a blackiſh bituminous ſubſtance, found in ſome of the mines of Derbyſhire. It adheres to the ſides of the fiſſures of rocks and lies in ſeams of the ſtrata. It is of a blackiſh colour and fatty ſubſtance, which never dries in the air, but always remains as moiſt, as when taken out of the mine. Some maſſes of it are ſoft and like a jelly, others are hard and firm, and in theſe there are ſeveral lumps of pure bitumen in many parts. This is inflammable like reſin. It is light, but breaks finer, and ſhines like good aloes when freſh broken, but that it is a little darker coloured, and has ſome tinge of purple in it. In ſome pieces the purple is wanting, and there is a green in the place of it. On being diſtilled, it yields firſt a limpid and inſipid water, then a whitiſh water of a ſharp taſte, and finally a yellow and clear oil, much reſembling oil of amber, but the proceſs affords no volatile ſalt in the neck of the reciever, in which it differs from amber when treated in the ſame manner. Phil. Tranſ. N°. 6. See SUCCINUM.

FUNGUS *oculi*, a name given by ſome of the writers on the diſeaſes of horſes, to a diſtemper of the eye, to which that animal alone is ſubject. The firſt author who has communicated an obſervation of this diſorder to the world is Dr. Lower, in the Philoſophical Tranſactions. He obſerves, that horſes alone are ſubject to it, and calls it a ſpungy excreſcence of the uvea; it is commonly of a dark musk colour, and grows out of the edge of the uvea, and though of little conſequence in its firſt ſtages, yet if it grows very large, or if the number of theſe *funguſes* increaſe, it weakens and obſtructs the creature's ſight, and ſometimes wholly takes it away. The uvea is a muſcular part, and its chief uſe is to dilate or contract itſelf in a proper manner for the admiſſion of objects with as much light as the eye can bear, ſo that the brighter the light is, to which the eye is expoſed, the more this membrane is contracted into a narrow compaſs, and the more dark the place is, the more the opening is dilated. This ſudden change, and the office of this part, may be more conveniently ſeen in the eye of a cat, than in that of any other animal, but it is the ſame in all, in a greater or leſſer degree. If the edges of this coat be loaded with a very large excreſcence of this kind, or if ſeveral tho' ſmaller grow all round it, it muſt neceſſarily happen, that the pupil, or ſight, is very much if not totally obſtructed, and the creature ſees very little, or not at all. The horſes of this kind are very ill furniſhed for ſeeing in the ſunſhine, but do very well in dark days, or in the dusk of the morning or evening, when the diſeaſe is not too violent.

A horſe moderately afflicted with this, uſually ſtumbles in the middle of the day, but goes very well in the dusk, and if brought out of the ſtable into the clear ſunſhine will ſuffer any one to put their finger up to the ſight of his eye without flinching; whereas when taken back into the ſtable, he will not ſuffer it to come within ſeveral inches without winking, and toſſing his head about. The dealers in horſes ſometimes perceive this, and attribute it to over running or drawing, or to ſtraining by any other means; but this is not the caſe, for it is found to affect colts that have never been backed or rid, as well as thoſe which have been worked. It is obſervable, that when theſe *Funguſes* grow in the eyes of young horſes, they become much ſmaller, when the creature is taken to a dry meat in the ſtable, and increaſe again when they are turned out again to graſs. Whether this be owing to the difference of dry and moiſt food, is not eaſy to determine, but it is moſt probably owing to the difference of paſture; the horſe at graſs, being obliged to carry its head much lower, than thoſe which feed in the ſtable. The more in number, or the greater in bulk, theſe excreſcences are, the more danger there is of the horſes wholly loſing its ſight, and the degree of the diſtemper is beſt judged of, by turning the eye to the light, and obſerving how much of the pupil is obſtructed by it, and how much is free. Thoſe *Funguſes* that are fixed on the upper part of the uvea, are apt to grow the largeſt, and to hinder the ſight moſt; and thoſe which

grow

grow in the middle of the uvea, hinder the ſight more by diſtracting the object, than thoſe which grow in either corner or angle of it. The cure is not eaſy; all that can be attempted muſt be by dry diet, and attenuating medicines; and a palliative remedy may be the hanging ſomething over to ſhade the eye, and keeping it from being expoſed nakedly to the ſun, the conſequence of which will be, that the pupil will not be ſo cloſely contracted, and conſequently, the light not ſo much obſtructed. Phil. Tranſ. N°. 32.

FUNNEL *faſhioned flowers*. See INFUNDIBULIFORM.

FUNNEL *polype*. See POLYPE.

FURIA, in the Italian muſic, is uſed for a very quick and ſtrong manner of ſinging or playing.

FURIGELDUM, in our old writers, a mulct paid for theft.

FURLONG (*Cycl.*) — In Scotland the *furlong* is equal to forty falls. Tr. Pract. Geom. p. 3. See FALL.

FURNACE (*Cycl.*) —*Metallurgic* FURNACES. Swedenborg has laid down from his own experience, certain rules for the general conſtruction of theſe *metallurgic furnaces*, by which they will always be made more advantageous to the proprietor, cæteris paribus, than any other kind. Theſe rules are, that the chimney be always placed as nearly as may be, behind the center of the *furnace*; that the ſmaller the depth of the fire place, provided it be ſufficient to hold the coals, the better; that all *furnaces* muſt be the better, the wider they are forwards, and the higher they are, ſo as not to loſe the benefit of reverberation.

Iron FURNACES. See IRON.

FURNAGE. See the article FORNAGE.

FURO, in zoology, a name given by ſome authors to the ferret, called by others alſo *furunculus* and *ictis*. See VIVERRA.

FURRING *of a ſhip*, is laying on double planks on her ſides. This is done after the ſhip is built, and is by the ſailors called *plank upon plank*. But there is another way of *furring*, which is more properly ſo called; and that is, when a ſhip's planks are ripped, and new timbers are put on the former timbers, and on them other planks; which is done ſometimes to make a ſhip bear the ſails the better.

FURUNCLE, or BOIL, is a ſmall reſiſting tumor, with inflammation, redneſs, and great pain ariſing in the membrana adipoſa under the skin. As there is no part of the body free from being the ſubject of this tumor, ſo the whole body is ſometimes ſo miſerably infeſted with them, that the patient knows not how to ſtir, or on what part to lie. Young infants, and adults, are equally liable to this diſorder; and tho' in adults there is ſeldom any great danger in it, yet it ſometimes happens when they are very numerous in tender infants, that they not only excite violent pains, reſtleſſneſs and toſſings, with great weakneſs, convulſions and epilepſies, but death itſelf ſometimes follows them.

The principal cauſe of *boils*, is a too glutinous and inſpiſſated ſtate of the blood, and the cure of them principally depends upon the reſtoring the blood to its due conſiſtence and proper circulation. People who are very ſubject to theſe tumors ſhould bleed and take purging medicines at proper intervals, and drink plentifully of warm and weak liquors, abſtaining from wine, ſtrong ſpirituous liquors, aud from the uſe of tobacco.

When the diſorder is recent or not habitual, external remedies alone are ſufficient for the cure: honey mixed to a proper ſharpneſs with ſpirit of vitriol is a very good external application. The touching the *boils* with ſpirit of vitriol alone, is often alſo of great ſervice; and ſometimes the diſcutient plaiſters are to be applied, as the diachylon, ſperma ceti, and ſoap plaiſter. If theſe applications however, do not prove ſucceſsful in the diſperſing a *boil*, the only method to be taken, is that of bringing it to ſuppuration. This however is in ſome caſes no eaſy task, but the tumor remains ſometimes very hard and troubleſome; even after a proper treatment of many weeks and ſometimes the humour that occaſions it, becomes ſo acrimonious by its long detenſion, and great inſpiſſation, that it produces ulcers, which grow gradually worſe and worſe, till at length they end in incurable fiſtulæ. To promote and quicken the ſuppuration, it is generally found of great ſervice to apply plaiſters of diachylon with the gums, and of honey and flower mixed, and made to a proper conſiſtence; and where theſe prove inſufficient, maturating cataplaſms are to be applied, and very frequently repeated. When the *boil* is ſufficiently maturated by one or other means, which will be known from the ſoftneſs and yellowneſs of its head; it muſt be opened by inciſion, and when the matter it contained is diſcharged, the ulcer muſt be daily cleanſed, till perfectly freed from all malignity, and then healed with the vulnerary balſams.

When infants which ſuck are afflicted with *boils*, the proper method is to give cooling medicines and purges to the nurſe, and enjoin her a due regimen in diet; and the infant ſhould at the ſame time be got to take ſome gentle laxative, and the abſorbent powders, as thoſe of crabs-eyes and the like, to allay the acrimony of its juices. *Heiſter*'s Surgery, p. 195.

FURUNCULUS, in zoology, the name given by many authors to the ferret, called alſo the *furo* and *ictis*. See VIVERRA.

FURZE. We ſometimes uſe this prickly ſhrub for fences, but the French uſe it much more, and that in a peculiar manner. They make hedges of it ten or twelve foot thick, or ſometimes twice or three times that thickneſs. This makes an excellent ſhelter for game, and is done in this manner: they dig the ground where they intend to plant this hedge, in winter, to kill the groſs weeds; when the ſpring comes on they dig it over a ſecond time to make the earth fine; in the latter end of March, or beginning of April, they ſow this cultivated ground thick with the *furze* ſeeds, and when they come up, they cut the young plants when grown up a little; this makes them grow the more vigorouſly, and in a few years they make a hedge of the utmoſt uſe and value to the owners on ſeveral accounts.

It is ſaid that the common Engliſh *furze* will grow upon the dry ſands that are in the neighbourhood of the ſea, tho' ſubject to be waſhed ſometimes by the water; this is a thing extremely worth the trying, as it would then be of the greateſt advantage to thoſe who have walls or banks next the ſea, to plant it on them to preſerve them.

This being a very unprofitable plant in reſpect of many others, it is often neceſſary to deſtroy it. This may be done by plowing and burning the buſhes upon the land. Marling the land well in countries where marle is plentiful, is alſo a very good way; and there is yet another much better, which is to make wood land, not arable, of the place; to this purpoſe it is only neceſſary to ſow or plant acorns at proper diſtances. The *furze* will ſhelter the acorns till the time of their growing up to two or three foot high, and then they will ſoon ſtarve and deſtroy all the *furze* and every other weed. *Mortimer*'s Huſbandry, p. 308.

FUSA, in the Italian muſic, the name of one of the muſical notes, frequently alſo called *chroma*, and by us *quaver*. See CHROMA and QUAVER, *Cycl.* and *Suppl.*

FUSANUS, in botany, a name given by many authors to the ſhrub, more uſually called *euonymus*. This was ſometimes called *attractylis* by the Greeks, and had both this and its Roman name *fuſanus*, from its being of uſe for making the diſtaff, uſed by the women in ſpinning. Some have ſuppoſed that this was the ſame with the *euonymus*, ευωνυμος of Theophraſtus and the Greek writers, but very erroneouſly. Our *euonymus* has a ſhort fruit divided into four lobes, each containing a ſingle bud divided from the reſt by a partition; and theſe when the fruit is ripe, and ſplits open, ſhew themſelves between the fiſſures, and finally fall out one after another. The *euonymus* of the Greeks bore, according to the expreſs words of Theophraſtus, a long pod like that of the ſeſamum; this is in no ſort like our *euonymus* fruit, but is long, ſlender and terminated in a point, having four ribs running along it, which divide it into a ſort of ſquares. Theophraſtus adds, that within this pod there were contained very hard ſeeds diſpoſed in four orders or ſeries, each ſeries containing ſeveral ſeeds. The author who has given occaſion for this miſunderſtanding of the words of Theophraſtus is Pliny. He has tranſlated the paſſage in which that author deſcribes the *euonymus* very ill; he ſays indeed that the fruit is like that of the ſeſanum, but that it contains within a dry hard ſeed, of a quadrangular figure. This ſeems to be meant as expreſſing only one ſeed to be placed in each cell; but Theophraſtus neither ſays this, nor that the ſeeds are ſquare, but that they are diſpoſed in three orders; he has expreſſed this, by the word *tetraſtæchon*, which Pliny has ſuppoſed to be the ſame with *tetragonon*, but without reaſon. See TETRASTÆCON.

Theophraſtus ſays alſo, that the leaves and fruit of the *euonymus* were poiſonous to cattle; therefore it cannot be the *euonymns* or *fuſanus* of theſe times, which is innocent, and which cattle eat without injury, every time they can come at it. The manner of its operation alſo was as an aſtringent; the cattle that eat of it, were rendered coſtive, and unleſs a purging was brought on by art or nature to their aſſiſtance, they died of it. This alſo is greatly contradictory to the nature of our *fuſanus* or *euonymus*; for three or four of its ſeeds taken internally, ſerve as a purge, and often work briskly both upwards and downwards. The deſcription the antients give of the other parts of the tree, do not agree with our *euonymus*: they ſay its leaves were ſomewhat like thoſe of the chamædaphne, or of a middle ſize between that and the pomegranate-tree, and were very ſoft to the touch. Pliny tranſlates the word chamædaphne, by laurus, or the bay-tree, by this means doubling the confuſion in this paſſage. Our *fuſanus* has leaves tolerably anſwering indeed in ſhape and ſize to thoſe of the *euonymus* of the Greeks, but then they are not ſoft to the touch. They ſay alſo that the flowers of their *euonymus* ſmelt like corrupted fleſh, or ſtinking blood; this does not at all agree with our *fuſanus*, whoſe flowers have no ill ſmell. The *euonymus* of the Greeks was finally a very rare ſhrub, growing only in the iſland of Lesbos and two or three other peculiar places; the Romans had never ſeen it, nor had any name for it in their language, but borrowed the Greek name and account of it. Our *euonymus* or *fuſanus* is a ſhrub common all over Europe, and in many other parts of the world.

FUSILE *marble*, a very common but very improper term uſed for the green or greeniſh grey marble full of ſmall ſea ſhells, of which the ſlender pillars of our Gothic buildings are made. The two kinds of marble called by this general name are diſtinguiſhed by Dr. Hill, by the names of, 1. *marmor viresſcens conchyliis frequenter aſperſum*, green marble, thick ſet with ſea ſhells; and 2. *marmor cinereovirens conchyliis pauciоribus refertum*, greyiſh green marble, more thinly interſperſed with ſea-ſhells. The firſt is moſt frequent in Italy, and is the *fuſile marble* of that part of the world; and the ſecond is dug in Derbyſhire, Dorſetſhire, Suſſex, and many other parts of England, and is what the pillars in our cathedrals are made of, and is conſequently the ſpecies called *fuſile marble* in England. *Hill*'s Hiſt. of Foſſ. p. 470.

From the length and ſlenderneſs of thoſe columns it has been vulgarly ſuppoſed, that they were caſt in moulds, but reaſon and a knowledge of nature, ſufficiently explode the conjecture, ſince we well know that marble will burn to lime inſtead of melting in the fire, and that the ſhells it contains muſt have been calcined to powder alſo, not have been found as they now are, if it were poſſible that the marble could have been run.

We have in England in many places vaſt quarries of marble all full of ſea-ſhells, and theſe pillars have been all cut out of the marble of ſuch quarries. The ſhells it contains are of different kinds, ſome turbinated, and others bivalve, and of the tellina and pectunculus kind; and theſe being filled with a pure and white ſpar, give a fine variety to the whole marble when wrought.

FUSILUS, in botany, a name given by ſome to the *fuſanus*, a more common name for the *euonymus*. See FUSANUS.

FUSTIGATIO, in the Roman cuſtoms, a puniſhment inflicted by beating with a cudgel. This puniſhment was peculiar to freemen; for the ſlaves were ſcourged or laſhed with whips. *Pitiſc.* Lex Ant. in voc.

FUSTIGATION, *Fuſtigatio*, is alſo a penance enjoined by the Roman inquiſition. *Hofm.* Lex.

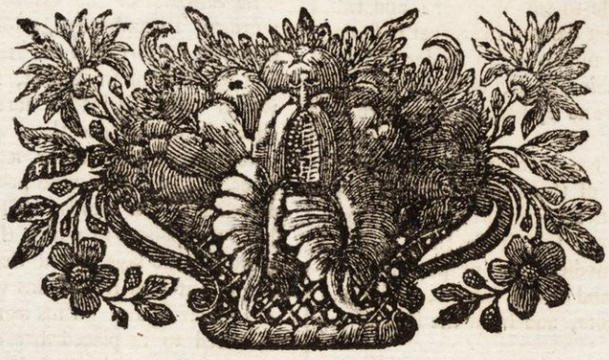
FUSTUARIUM, in antiquity, a Roman puniſhment, the ſame with *fuſtigatio*. See FUSTIGATIO.

FUSTUC, in botany, a name given by ſome of the old writers to the tree which produces the piſtachia nuts. The word ſounds ſo like the name of a wood uſed in dying, and called at this time *fuſtick*, that it might be ſuppoſed to expreſs ſome tree of the ſame kind; but it is of a very different origin. The Jews and Arabians, have called the piſtachia tree *fiſtic* and *fuſtack*, and from thence ſome have written the name *fuſtuck* or *fuſtuc*. The Greeks have written it φυστικ, and the barbarous Latin writers *fiſticio*, which ſounds very like the name *piſtachio*. See PISTACHIO.

FUTTOCKS, in a ſhip, the timbers raiſed over the keel, or the compaſſing timbers which make her breadth. Thoſe next the keel are called *ground futtocks*, and the reſt *upper futtocks*.

FUZEE, (*Cycl.*) in the manege, two dangerous ſplents, joining from above downwards: commonly a *fuzee* riſes to the knee and lames the horſe.

Fuzees differ from ſcrews or thorough ſplents, in this, that the latter are placed on the two oppoſite ſides of the leg.



G.

GABIREA, in the materia medica, a name given by ſome of the old writers to ſuch myrrh as was remarkably fatty.

GAD, in mining, an inſtrument uſed to dig out the ore. It is a ſmall punch of iron with a long handle of wood. One of the miners holds this in his hand, directing the point to a proper place, while the others ſtriking it with a large ſledge hammer drive it into the vein.

The working by this inſtrument is thence called *gading*. *Ray*'s Engl. words, p. 118.

GAD-*bee*, in natural hiſtory, the common name for a winged inſect, called alſo the dun fly or ox fly; a creature very troubleſome to cows, horſes, *&c.* This creature examined by the microſcope has ſeveral peculiarities worthy obſervation. It has, like the gnat, a long proboſcis, with a ſharp dart, or two darts, ſheathed within it; the uſe of theſe darts is to penetrate the fleſh of animals for the ſucking their blood, whereas the proboſcis can only ſerve to ſuck the dews from flowers, *&c.*

The eggs of this fly are laid in the waters, and there produce a very remarkable ſort of maggot. It is a brown one of a long flatted figure, with a pencil of fine downy hairs at its tail, which it ſpreads into a circular form on the ſurface of the water, while its head is ſunk down in ſearch of food. When the creature would deſcend toward the bottom, theſe hairs are made to approach one another in an oval form, and in this ſtate they incloſe a bubble of air, by means of which it is able to riſe again; and if this bubble by any accident eſcapes, the creature immediately ſqueezes out of its own body another to ſupply its place. The ſnout of this maggot has three diviſions, whence are thruſt out three little pointed bodies like ſerpents tongues. Theſe maggots are very common on the ſurface of ditch water, and the motion of their inteſtines is very ſingular and obſervable. *Baker*'s Microſcope, p. 206.

GADING, among miners. See GAD.

GADUS, in ichthyology, the name of a genus of the malacopterigious, or ſoft fined fiſhes, the characters of which are theſe. The bronchioſtege membrane on each ſide contains ſeven bones of a ſomewhat cylindric form; the back in ſome ſpecies has three fins, and in others only two; the head in moſt ſpecies is compreſſed, but in ſome it is depreſſed. Of thoſe which have three fins on the back, the following ſpecies are enumerated by Artedi.

1. Of thoſe which have no cirri there are theſe. 1. The *gadus* with three back fins, with a white body, with no cirri at the mouth, and with the upper jaw longeſt. This is our common whiting. 2. The beardleſs *gadus* with three back fins, with the lateral line ſtrait, and the lower jaw longeſt. This is the fiſh we call the raw pollock, or cole fiſh. 3. The beardleſs *gadus* with three fins on the back, with the lower jaw longeſt, and with the lateral lines crooked. This is the whiting pollock.

2. Of the *gadi* with three back fins, and with cirri or beards, there are the following ſpecies. 1. The variegated bearded *gadus* with an even tail, and the upper jaw longeſt. This is the cod fiſh. 2. The white bodied forked tail'd *gadus*, with a bearded mouth, and three back fins. This is our haddock. 3. The bearded *gadus* with three back fins, with thirty rays in the firſt pinna ani. This is our pouting, or whiting pout. The ſide lines in this fiſh are black, and very crooked. 4. The ſmall two inch *gadus*, with beards at the mouth, and with three back fins, and the anus in the middle of the body. This is the mollo of the Venetians; in Cornwall we call it the poor, or the power.

3. Of thoſe *gadi* which have only two fins on the back, the following are the ſpecies. 1. The *gadus* with two back fins, and with the lower jaw longeſt. This is the fiſh we call the hake. The head of this fiſh is broad, the body oblong, and ſomewhat cylindric. 2. The bearded *gadus* with two back fins, and the upper jaw the longer. This is the fiſh we call the ling. Its body is very long, and roundiſh; its head flat and depreſſed; its mouth very wide, and its tail rounded at the end. 3. The bearded *gadus* with two back fins, and both jaws even. This is the *muſtela fluviatilis* of authors, the eelpout of the Engliſh. The head is of a depreſs'd figure, the body long and rounded, variouſly coloured, and lubricous to the touch; the tail nearly oval, and the linea lateralis ſtrait.

4. The bearded *gadus* with two back fins, and with a furrow at the firſt back fin. This is the kind named by the people of Cornwall the whiſtle fiſh. *Artedi* Gen. Piſc. 15.

GADWALL, in zoology, the name of a ſpecies of duck which frequents freſh waters, and is called, in ſome parts of England, *the gray*. It is called *anas ſtrepera* by authors. It is of the ſize of the widgeon, or ſomething larger; its body is of a longiſh ſhape, and its rump black; its back is brown, but the edges of the feathers are edged with white; the front of the head, and upper part of the throat, are white, ſpotted with ſmall brown ſpecks; the head is of a blueiſh black, the throat of a greyiſh white, and toward the breaſt ſomewhat rediſh; the upper part of the breaſt, and the ſhoulders are beautifully variegated with brown, white, and black; the breaſt is white, and the belly browniſh, with ſmall tranſverſe ſtreaks of black; the beak is blackiſh and yellow, and the legs are whitiſh. The female is different from the male in many reſpects, particularly it wants the blackneſs of the rump; but both the male and female are diſtinguiſhed at ſight from the other ſpecies, by having marks of three different colours one above another on their wings; theſe are white, black, and a rediſh brown. *Ray*'s Ornitholog. p. 287.

GÆELÆUM, *earth oil*, in natural hiſtory, a name given by ſome of the old writers to the petroleum, or as we uſually call it, oil of Petre. See PETROLEUM.

GAFET, in the materia medica of the Arabians, a name given by Aviſenna and others to the ſarcocolla of the Greeks. So the word is tranſlated; but it is to be obſerved, that the ſarcocolla of the Greeks expreſſes two very different things; the one a gum, now known among us by that name; the other a plant, called alſo argemone, and agrimonia, for they have ſometimes called the one of theſe plants, and ſometimes the other by that name. The agrimony ſeems however to have been generally meant by this name, and this is the gafet of the Arabians, for they call the other or right ſarcocolla, both the gum, and the tree which produces it, arizarut.

GAFOLD-*land*, or GAFUL-*land*, *terra ſenſualis*, in our old writers, land liable to taxes, and rented, or letten for rent. Sax. Dict.

GAGATES, *jet*, in natural hiſtory, the name of a foſſile ſubſtance, the characters of which are theſe. It is a ſolid, dry, opake, inflammable body, found in large detached maſſes of a fine and regular ſtructure, having a grain like that of wood, ſpliting more eaſily horizontally than in any other direction, very light, and moderately hard, not fuſible, but readily inflammable, and burning a long time with a fine greeniſh white flame.

This is a ſubſtance about which there have been many errors, and which has been very little underſtood even in our own kingdom, where the fineſt in the world is produced, having been uſually confounded with a thing greatly inferior to it in value, the common cannel coal, ſo that many believe that there is no other *jet* than that ſubſtance; and of the few who ſuppoſe them different, none ſeem to have had any clear idea of their diſtinguiſhing characters, but they are eaſily known aſunder when theſe are properly conſidered.

Jet is always found in detach'd maſſes lodged in other ſtrata; cannel coal conſtitutes of itſelf whole ſtrata. *Jet* has the grain of wood, and ſplits horizontally much more eaſily than in any other direction; cannel coal has no peculiar grain, and ſplits with equal eaſe any way. *Jet* is but moderately hard, cannel coal not leſs ſo than many ſtones, and jet when ſet on fire flames a long time; cannel coal but a little while. *Jet* is found in Italy, Germany, and the Eaſt Indies, but no where ſo plentifully as in England; it is very common in Yorkſhire, and other of the northern counties, and is found in many of our clay pits about London. *Hill*'s Hiſt. of Foſſ. p. 413.

Jet, in medicine, is highly praiſed by the antients, but the modern practice has never enquired whether juſtly or not. Dioſcorides tells us, that it is an excellent emollient and diſcutient; he recommends a fumigation of it for diſeaſes of the womb, and ſays that water, in which burnt *jet* has been quenched, is a cordial. Aëtius orders it to be extinguiſhed in wine for the ſame purpoſe. *Hill*'s Hiſt. Mat. Med. p. 170.

GAGATRONICA, a word uſed by the writers of the middle ages, as the name of a diſtinct ſtone, but ſeeming only a falſe ſpelling of the word garatronium. See GARATRONIUM.

GAGNOLA, in ichthyology, a name given by the Spaniards to a ſpecies of the acus, or ſyngnathus of Artedi. The particular ſpecies meant by it, is that called by Artedi, the hexagonal bodied ſyngnathus with the pinnated tail; others call it the acus Ariſtotelis, or acus ſecunda, and the French the trompette; we call it ſometimes the needle fiſh, ſometimes the trumpet fiſh, and ſometimes the tobaccopipe fiſh.

GAHALA, in botany, a name given by ſome writers to the colocaſia.

GAIDEROPSARUS, in ichthyography, a name given by ſome to a fiſh of the truttaceous kind caught in the Mediterranean, and more uſually called *callarias*. *Bellonius* de Piſc. See CALLARIAS.

GALACHIDES, or GARATIDES, in natural hiſtory, the name of a ſtone to which the writers of the middle ages have attributed many ridiculous virtues. They have left us no farther deſcription of it, than that it was of a blackiſh colour; but they tell us, that to try whether it was the right ſtone, a man was to be daubed over with honey, and ſet in the open air in a ſummer's day, and that holding this ſtone in his hand, provided it was a right one, no fly nor other inſect would dare to approach him: after this trial they held it ſacred, and pretended that it would diſcover the thoughts of people if only held in the mouth.

GALACTITES, in the hiſtory of foſſils, a ſubſtance much reſembling the morochthus, or French chalk, in many reſpects, but different from it in colour. The antients found it in the Nile, and ſome rivers of Greece, and uſed it in medicine as an aſtringent, and for defluxions and ulcers of the eyes. At preſent it is common in Germany, Italy, and ſome parts of France, and is wholly overlooked, being eſteemed only a worſe kind of the morochthus. See MOROCHTHUS.

It is a very hard, and dry ſubſtance, an indurated clay, of a cloſe compact texture, very heavy, and in colour of a pale grey, without the leaſt admixture of any other tinge. It is of a leſs even ſurface than the morochthus, and is leſs hard. It melts but ſlowly in the mouth, and leaves ſomething of a luſcious ſweetneſs on the tongue. It does not adhere to the lips or tongue, and if rubbed down on a marble with water it diſſolves into a ſubſtance of a pure white, reſembling milk. It does not ferment with acids, and in burning becomes of a pure white. *Hill*'s Hiſt. of Foſſ. p. 23.

GALACTODES, *milky*, a word uſed by the antients in two or three different ſenſes. Some uſed it to expreſs tepid, or a little warm, with ſuch a heat as that of milk juſt drawn from the cow: others expreſſed by it a white, ſomewhat opake, or milky colour: others expreſſed by it only a want of tranſparence in fluids. Galen frequently uſes it in the ſecond of theſe ſenſes, when treating of urines.

GALACTOPSIA, a method of curing diſeaſes by drinking milk only. The gout, conſumption, and many other chronical diſeaſes, are by many affirm'd to be curable by this means. See *Cheyne*'s Nat. Meth. of curing Diſeaſes.

GALACTOSPONDA, γαλακτοσπονδα, in antiquity, a libation made with milk. *Pott.* Archæol. Græc. l. 2. c. 4. T. 1. p. 213. See LIBATION, *Cycl.*

GALADES, in natural hiſtory, an epithet given by Rondeletius to a ſpecies of chama, remarkable for its milky whiteneſs. It is derived from the Greek γαλη, *milk*. This chama is a very elegant ſhell. See CHAMA.

GALANGA, *galangals*, in the materia medica. There are two roots kept in the ſhops under this name, a greater and a ſmaller; of theſe however the ſmaller is by far the moſt in eſteem, and is almoſt the only kind ever heard of in preſcription.

The *galanga minor*, or leſſer *galangal*, is a ſmall ſhort root, of an irregular figure, of the thickneſs of a man's little finger, and is ſeldom met with in pieces of more than an inch or two long. It has ſeveral protuberances at its ends, and on its ſurface, and is ſurrounded with many circular rings, that ſtand out a little beyond the reſt of the ſurface. It is of an extremely firm and compact texture, yet not heavy; it cuts difficultly with a knife, and leaves a poliſhed ſurface. Its colour is a browniſh red on the outſide, and a ſomewhat brighter red within, though ſtill with a conſiderable admixture of brown.

The ſmall *galangals* are to be choſen full and plump, and of a bright colour, very firm and ſound, and of an acrid and inſupportably hot taſte.

The larger *galangal* anſwers pretty much to the above deſcription, only that it is larger in bulk, and leſs unequal and tuberous than the leſſer kind.

The *galangals* are both brought us from the Eaſt Indies, and are the roots of the ſame plant which is of the number of the *herbæ bulboſis affines* of Mr. Ray. Herman calls that which produces the larger, *bauchale Indorum*; and that which produces the leſſer, *lagoudi Indorum*.

The people of the Eaſt Indies uſe theſe roots by way of ſpice. With us the leſſer is eſteemed an excellent ſtomachic, and as ſuch is an ingredient in almoſt all bitter infuſions and tinctures. The great one poſſeſſes the ſame virtues, only in a more remiſs degree. Vid. *Hill*'s Hiſt. Mat. Med. p. 573, ſeq.

GALARCIDES, or GALARICTIS, in natural hiſtory, a name uſed by the writers of the middle ages for a ſtone, to which they attribute great virtues. It is evidently only a corrupt way of ſpelling the word *galactites*. See the article GALACTITES.

GALAXIUS, in natural hiſtory, a name by which many of the antients have called the morochthus, or French chalk. *Hill*'s Hiſt. of Foſſ. p. 22. See the article MOROCHTHUS.

GALBULA, in zoology, the name of a bird of the thruſh kind, common in Italy and Germany, very remarkable for the elegant ſtructure and hanging of its neſt; and thence called by ſome *picus nidum ſuſpendens*, and by others *oriolus*, *chloreus*, and *icterus*, being ſuppoſed to be the icterus of Pliny, and the old writers.

It is ſomewhat larger than the common thruſh; its beak is of a finger's breadth long and red; its wing feathers are black, but ſome of them are tipped, and others edged with white; others of the ſmaller feathers have alſo a variegation of yellow, and the reſt are wholly black; the bird is in all other parts of an extreamly bright and beautiful yellow, ſo elegant, as very much to approach to the luſtre of ſome of the American birds. The female is leſs beautiful, and has a blackiſhneſs and browniſhneſs mixed with the yellow. It feeds on inſects, and is a very delicate taſted bird; it is in moſt places very much eſteemed at the table, but is no where to be had at all ſeaſons, being a bird of paſſage. *Aldrovand* de Avibus.

GALEA, in natural hiſtory, the name of a genus of the echinodermata, or ſea hedgehogs, whoſe ſhape is that of a large elevated helmet, compoſed of ſeveral tranſverſely joined plates, or aſſulæ, and covered with very ſmall and rough tubercles, in the ſhape of little granulæ. This genus, when foſſile, is called in Engliſh the helmet ſtone, and is marked with ten rows of double lines, either crenated, or punctated, and running from the top to the baſe; the anterior ones being much longer than the reſt.

Of this genus there are three known ſpecies. 1. The ſcutated headed one, which has on its ſummit an oblong pentagonal plate like a ſhield. 2. The naked headed one, diſtinguiſhed by its wanting this ſhield. 3. That with the tæniæ lacerated and torn, and ſhewing plainly that they have been once of the variolated kind. *Klein*'s Echinod.

GALEA *Piſcis*, in ichthyology, a name given by Geſner, and ſome other writers, to the fiſh called by other writers muſtela alia, and by Artedi reduced to the genus of the blenni. It is the blennus with four bifid beards under the throat. See BLENNUS.

GALEA *Venetorum*, in zoology, a name given by ſome authors to the common muſtela. *Willoughby*, Hiſt. Piſc. p. 121. See the article MUSTELA.

GALEANTHROPIA, in the writings of the antient phyſicians, a term uſed to expreſs a ſpecies of madneſs, in which the patient fancied himſelf a cat, and endeavoured to perform all the motions of that animal.

GALEETTO, in zoology, the name of a fiſh of the alauda kind, called by Rondeletius, *alauda non criſtata*, and in Engliſh the mulgranoc and the bullcard. It is a ſmall fiſh of a greeniſh yellow, or olive colour, without any variegation in ſome, but in others a number of faint blue tranſverſe lines are diſpoſed on the back, the ſides, and the fins; the intermediate ſpaces between theſe lines on the back are of a rediſh brown, and in ſome two olive coloured and browniſh lines run longitudinally down the back. The colours, in ſhort, vary extremely in this fiſh.

The contour of the head is roundiſh, but it is compreſſed, and ſwells out over the gills, and its top riſes into a ſort of ridge, and is flatted at the back part, as if the creature had a kind of neck; the upper jaw ſtands out beyond the lower; it has no ſcales, and reſembles in many things the gutterugine, but that it wants the eye fins; it is very full of life, and lives, like the eel, many hours without water. It is caught among rocks and ſtones about the ſhores in the Mediterranean, and alſo in our own ſeas. *Willoughby*, Hiſt. Piſc. p. 133.

Artedi reduces this fiſh to the genus of the blenni, and diſtinguiſhes it by the name of the *blennus*, having the upper jaw longer than the under, and the top of the head acuminated.

GALEGA, *goats rue*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the papilionaceous kind, and the piſtil ariſes from the cup, and finally becomes an oblong cylindric pod, containing uſually oblong and ſomewhat kidney-ſhaped ſeeds: to this it is to be added, that the leaves ſtand in pairs on pinnated ribs, to the end of which there grows a ſingle or odd leaf.

The ſpecies of *galega* enumerated by Mr. Tournefort are theſe. 1. The common *galega* with blue flowers. 2. The common *galega* with blueiſh purple flowers. 3. The common *galega* with white flowers. 4. The African *galega* with larger flowers, and thicker pods: and 5. The American ſhrubby *galega*, with purple flowers, and ſilky pods.

GALEGA, in medicine, is eſteemed a great alexipharmic and ſudorific. It is much uſed in Italy, but amongſt us only as an ingredient in ſome compoſitions.

GALENA, a name given by mineraliſts to a ſpecies of poor lead ore. It was alſo the original name given by Andromachus to the theriaca, from its effect in bringing on a pleaſing calm over the blood and ſpirits on taking it.

GALENA *inanis*, in mineralogy, a name given by authors to a glittering ſubſtance, very much reſembling ſome of the plated ores of lead, but really containing none of that metal. It is more uſually called mock lead and blende.

GALENIA, in botany, a name given by Linnæus to a genus of plants, called by Pontedera, *Sherardia*. The characters are theſe: The perianthium is very ſmall, and is compoſed of one leaf divided into four oblong and hollowed ſegments. There are no petals. The ſtamina are eight in number,

they are very ſlender, and of the length of the cup; the antheræ are double; the germen of the piſtil is roundiſh; the ſtyles are two, they are ſimple and reflex, and the ſtigmata are ſimple; the fruit is a roundiſh capſula, containing two cells, in which are two oblong angular ſeeds. *Linnæi* Gen. Pl. p. 169. Ponteder. Epiſt. 14.

GALENION, the name of an anodyne cataplaſm, preſcribed by Ægineta.

GALEOBDOLON, in botany, the name of a genus of plants deſcribed by Dillenius in his Hortus Elthamenſis, and ranked by Linnæus, together with the cardiaca, under one genus, by the name leonurus. *Dillen.* Hort. Elth. p. 84.

GALEOLA, in natural hiſtory, the name of a genus of the echinodermata, or ſea hedgehogs of the galeated or helmet kind.

They have their name from the Latin *galeola*, a diminutive of the word galea, and which ſignified with the ancient Romans a drinking veſſel, made in the ſhape of a ſmall helmet. Of this genus, there are three known ſpecies. 1. A papilloſe kind, covered with ſmall eminences. 2. An undulated or waved kind, ſo called from its ſtriæ repreſenting waves. They are finely dotted at the top, but the granulæ become larger as they go toward the baſe. 3. The ſmooth kind. *Klein*'s Echinod.

GALEOPSIS, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind; the lower lip is divided into three ſegments, the middle one being larger than the reſt, and either ſharp pointed or obtuſe, and the upper lip is hollowed like a ſpoon. The piſtil ariſes from the cup, and is fixed in the manner of a nail into the hinder part of the flower, and ſurrounded with four embryos, which ripen into four oblong ſeeds contained in a tubular capſule divided into five ſegments at the end, which was the cup of the flower.

The ſpecies of *galeopſis* enumerated by Mr. Tournefort, are theſe.

1. The tall ſpiked ſtinking *galeopſis*. 2. The taller purple flowered *galeopſis*, with prickly flower cups. 3. The taller white flower'd *galeopſis*, with prickly flower cups. 4. The taller yellow flowered *galeopſis*, with prickly flower cups. 5. The narrow leaved *galeopſis* with variegated flowers. 6. The purple open flowered common *galeopſis*. 7. The white open flowered common *galeopſis*. 8. The betony leaved alpine *galeopſis*, with variegated flowers. 9. The betony leaved marſh *galeopſis* with variegated flowers. 10. The yellow flowered *galeopſis*, or dead nettle. 11. The yellow flowered *galeopſis*, with large ſpotted leaves. 12. The round leaved annual Spaniſh *galeopſis*: and 13. The teucrium leaved Spaniſh ſhrubby *galeopſis*. *Tournefort*, p. 185.

GALEUS *glaucus*, the *blue ſhark*, a very fierce and voracious fiſh of prey. It is of a fine deep blue colour on the back, and of a bright ſilver white on the belly. The ſkin is ſmoother than that of the white ſhark, and the noſe long pointed, and ſomewhat flatted. The noſtrils are long, and placed tranſverſely to the length of the noſe. The ſockets of the eyes are of an elliptic figure; but the eyes themſelves are exactly round, and have a membrane which at times the fiſh draws over them, and there are no cavities behind the eyes. The teeth are not ſo numerous as in the white ſhark, there being only two rows of them, but theſe are very large and triangular, exactly of the ſhape of the gloſſopetræ. The tail is bifid, and one portion of it is much larger than the other. It is very voracious of human fleſh, and will follow cloſe under the ſhore if there is depth enough, and a man is walking there. It is ſometimes found on the Engliſh ſhores, and has been caught on the Cornwall coaſt. See Tab. of Fiſhes, N° 4. and *Willoughby*, Hiſt. Piſc. p. 49.

GALEUS *lævis*, the *ſmooth hound fiſh*, in zoology, the name of a fiſh of the ſame genus with the *galeus ſpinax*; but differing in ſize and many other particulars. It is called the ſmooth hound fiſh, not from any peculiar ſmoothneſs of the ſkin, for all the *galei* are rough in that particular, but by way of diſtinction from the *galeus ſpinax*, as it has no prickles. Its back and ſides are aſh coloured; its belly white; its body long and round, the end of its ſnout is obtuſe, and runs out a great way beyond the mouth and eyes. It has two fins on the back, and two pair of fins on the belly. It has properly ſpeaking no teeth, but the jaws are both rough and ſharp like a file. *Geſner*. de Piſc. p. 717.

GALEUS *rhodius*, in ichthyology, a name given by Albenæus and ſome other of the old writers, to a very large and delicate fiſh. Schoneveldt is of opinion, that they meant by it the ſturgeon, and brings many good reaſons for his opinion.

GALEUS *ſpinax*, in zoology, the name of a fiſh of the ſhark kind, called in Engliſh the hound fiſh. It has a long and round body, and has no ſcales, but is covered with a rough ſkin, us'd by ſeveral artiſts for poliſhing their works. Its back is of a browniſh aſh colour. Its belly white and leſs rough, its noſe conſiderably long, ſomewhat flatted, and rounded at the end. The pupil of the eye is black, of an elliptic form, and ſtands tranſverſely. The mouth is placed about the middle of the ſnout, and in its lower part; and it has two rows of ſmall teeth. It is common in the Mediterranean and Engliſh ſeas. *Geſner* de Aquat. p. 716.

GALEUS *ſtellatus*, the *ſtar'd hound fiſh*, in zoology, a kind of hound fiſh, remarkably ſpeckled with white ſpots in from of ſtars. *Salvian* de Aq. p. 29.

GALEXIA, in ichthyology, a name given by Galen and ſome of the other antient writers, to the common lamprey. See LAMPETRA and PETROMYZON.

GALGULUS, in zoology, a name by which many have called a bird of the thruſh kind, of a find gold yellow, with black wings, more commonly known by the name of Galbula, and ſuppoſed to be the chloreus of Ariſtotle, and the icterus, or jaundice bird of Pliny. *Ray*'s Ornitholog. p. 147. See the article GALBULA.

GALI, in the materia medica, a name given by ſome to the indigo, or fæculæ of the plant anil uſed in dying, *&c.* Garcias gives us this name, and ſays, that the plant is like the mangirique; but Cluſius tranſlating this word by ocymum or baſil, has ſtrangely perplexed the caſe. The anil or indigo plant not having any reſemblance of that herb.

GALL, or BILE (*Cycl.*)—After all that has been ſaid about the *bile* by ancient and modern writers, there ſeems yet a doubt as to its true origin, and where it is generated. The commonly eſtabliſhed opinion is, that the *bile* contained in the *gall* bladder has been ſiltrated into it by certain glands which are found on its inner cavity. Theſe glands however, have been rather ſuppoſed than demonſtrated, and if writers mean by them, thoſe little protuberances found ſometimes within the cyſt, there is no certainty of their ſeparating the *bile*, ſince theſe glands, as they are called, are wanting in many, nay in the greater part of perfectly ſound bodies, where the viſcera are in a good ſtate, and not affected by any obſtructions. When the world was beginning to believe that there were in reality no ſuch glands as theſe, it was ſaid that there were certain veſſels and canals which collecting the *bile* from the ſubſtance of the liver, carry'd it to the inner ſurface of the *gall* bladder, where they opened and emptied their contents into its cavity; but theſe veſſels have in reality been no more demonſtrated to exiſt than the beforementioned glands, and there have ſometimes appeared caſes, where demonſtration has in a manner appeared on the contrary ſide, to prove, that the *bile* is not ſeparated in the *gall* bladder, but is brought into it from elſewhere: of this kind there is one very remarkable one mentioned in the memoirs of the academy of ſciences of Paris.

Mr. Lieutaud, on diſſecting a morbid body, found the *gall* bladder ſo extremely ſhrunk up in ſize, that he could ſcarce at firſt believe that it was the *gall* bladder; its neck was wholly filled, and as it were plugged up with a blackiſh matter, formed into a body of a ſpherical ſhape, and compoſed of ſeveral beds, or layers, in the manner of thoſe ſtones which are not unfrequently found in the *gall* bladders of different animals; and the other part of this body of it, which was alſo much the largeſt, was contained in a bag made by the ſeparation of the two membranes of which the *gall* bladder is naturally compoſed; this contained no fluid matter, except a few drops of a very clear water; and its inner ſurface, which was perfectly white, did not appear ever to have contained any *bile*; the cyſtick canal, and the biliary pore, were very much dilated, and the canal as full of *bile* as it could hold, and the whole ſubſtance of the liver was very ſound, and in a ſtate of perfect health. Now if either the glands in the inner membrane of the *gall* bladder ſeparated the bile, or if any veſſels ſeparated it from the liver, and convey'd it immediately into that reſervoir by apertures in its inner ſurface; in either of theſe caſes all this might have been done in the bladder, though its neck were thus ſtopped up, but on the contrary there was no *bile* found there, and it ſhould appear very plainly from this, that the *bile* muſt have ſome other origin, ſince it ſeems to be conveyed into the *gall* bladder no other way than through its neck. Mem. Acad. Scienc. Par. 1735.

The human *bile* taken out of the bodies of thoſe who died of the plague at Marſeilles, was always found to be of a blackiſh, or deep green colour. On the mixing ſpirit of vitriol with it, it always became of a fine green, which colour never changed in it: and when ſalt, or oil of tartar were mixed in it, it always became yellow. Spirit of nitre added to it turned it black, but the colour ſoon faded. This *bile* poured into a wound made in the leg of a dog, would always render him drowſy, dull, and not caring to eat, and all the dogs on which the experiment was tried, died within about four days, with all the circumſtances of a genuine plague upon them.

A dram of the ſame *bile*, diluted with three ounces of water, and injected into the jugular vein of a dog, killed him in two or three hours; and when opened, the heart was found ſtuffed full of black blood, the liver ſwelled, and the *gall* bladder full of green *bile*. The ſame quantity of diſeaſed *bile* injected in the ſame manner into the crural vein of a dog, has made him drowzy in an hour afterwards, he would then refuſe his food; and in three days peſtilential buboes would appear, and the creature die. A dog which belonged to one of the ſurgeons of the hoſpital of Mail, uſed to attend at all the dreſſings of the plague ſores, and eat up the glands, blood, pus, *&c.* which was thrown

out

but from thoſe ulcers, yet he lived and continued briſk after doing this every day for three months. But on injecting the ſolution of the *bile* in the ſame manner into the crural vein, he died on the fourth day with a large bubo on the wounded thigh, on which alſo there were two carbuncles and a gangreen'd part.

The *bile* being collected after this from one of the dogs dead of the plague, and in the ſame manner diluted with water, and injected into the crural vein of another dog, the creature was immediately convulſed, a carbuncle appeared on the breaſt the ſecond day, and the day afterwards the dog died with a bubo under his ſhoulder. The *bile* taken from this dog, was in the ſame manner injected into a third dog, and he died in the ſame manner. Philoſ. Tranſ. N°. 170.

If half an ounce of alum in powder be added to a pound of ox *gall*, and the whole ſtirred a little together, there riſes immediately an ebullition with a conſiderable effervescence, and the whole becomes thick and turbid like dung, and of a greeniſh yellow colour; but after a while, the *gall* will be precipitated, and its thicker parts ſeparating themſelves and falling to the bottom, the remainder will become of a clear hue and a rediſh colour.

After this has ſtood five or ſix days, ſeparate the clear liquor from the fæces at bottom, and from what foulneſs ſwims at the top, and ſet it in the ſun for three or four months in a vial well ſtopped; there will at the end of this time be found another precipitate at the bottom of the vial, and on the ſurface of the liquor, there will gradually gather together a white and hard fatty matter, and the red colour of the liquor finally will change into its primitive yellow again; and what is very remarkable, the whole will have the ſmell of boiled crayfiſh.

The obſervation that there is contained in this red liquor of the *gall*, though ſeemingly perfectly clear, a white fatty matter like ſuet, and that on the ſeparating of this white matter, the red liquor loſes its colour, and regains its primitive yellow together, prove that the ſubſtance naturally contained in the *gall* bladder, is a kind of liquid ſoap. We very well know that the ſoap we uſe is no other than oil, or other fatty ſubſtances united by boiling to the alkaline ſalt called pot aſhes. In the colder countries where theſe ingredients are more ſcarce, they ſubſtitute the fat of animals for oil, and common aſhes for the alkali; and the ſoap is as good for all the purpoſes as the other. In the conſtituting the *gall*, nature has uſed a ſolid animal fat, and inſtead of a fixed alkali, ſhe has employed that common volatile one with which all the parts of animal bodies abound: in this operation this fat has been ſeen to ſeparate its ſelf by little and little, and as it amaſſed itſelf together, to appear in its native form white and hard like the fat of animals; and the cauſe of this ſeparation has been the deſtroying the alkali by means of the acid of alum, the fat having ſeparated itſelf on that admixture in the ſame manner, as the fatty part of our common ſoap does on the mixing any acid with it.

The liquor of the *gall* appears red after its firſt precipitation, and loſes this colour again by degrees as the fat becomes ſeparated from it; the reaſon of this is, that almoſt all ſolutions of oily or fatty bodies are red, be the menſtruum what it will, and this being one of thoſe ſolutions muſt be red ſo long, as it continues ſuch, that is, ſo long as the fat remains ſuſpended in it; but as ſoon as that fat is ſeparated, the cauſe of the red colour ceaſes, and the liquor becomes yellow.

This depurated liquor of *gall*, is one of the greateſt of all remedies for freckles in the face: the manner of uſing it is this, mix together equal parts of it, and of oil of tartar per deliquium, to a dram and a half of each of theſe, add an ounce of river water, mix them well by ſhaking, and keep them in a viol well ſtopped: the end of the finger being wetted with this, is to be touched upon the freckled part, and this repeated three or four times a day letting it dry on, at length the part will look red, and there will be a ſort of tickling ſenſation felt in it; and after that, the ſkin will become ſcurfy and both that and the freckles will fall off. If this does not ſucceed the firſt time, it is to be repeated, and it will clear the face for ſix or eight months, at the end of which time it is to be uſed again. Mem. Acad. Par. 1709.

GALL *bladder*. Mr. Petit, gives us the marks by which a diſtention of the *gall bladder* from the bile, making an external tumor with fluctuation, may be known and diſtinguiſhed from an abſceſs in the liver. See Mem. de l'Acad. de Chirurg. Tom. 1. & Med. Eſſ. Edinb. Abr. Vol. 2. p. 491.

GALL is alſo uſed by naturaliſts to expreſs any protuberance, or diſtortion of a part of a leaf, or ſtalk on a tree, or plant, occaſioned by an inſect living and growing within it. Theſe are all monſtrous and unnatural productions of the vegetables that bear them; but they often are ſo regular in their formation, that they have the appearance of fruits and flowers. On examination however it will always appear, that they are fruits containing no ſeed, and flowers the product of which is animals. Among the ſmaller inſects, there are many which either in their whole ſtate of the worm, or in a part of it, are of ſo tender and delicate a ſtructure, that they cannot bear the contact of the air; and others that are continually expoſed to the ravage of a number of deſtroyers; ſo that by one or other of theſe means they could never live to arrive at maturity, or to propagate their ſeveral ſpecies. Provident nature has therefore allotted for the habitation of theſe, the *galls* of trees and plants; they never however find excreſcences ready formed, but by their own action make them for themſelves. Some of theſe inſects are produced from eggs laid by the parent animal on the ſtalks of leaves or plants, and as ſoon as ever they are hatched from theſe, make their way into the leaf, or ſtalk, and find a ſafe lodging in this receſs, and neceſſary food in its juices; others are lodged even in the egg ſtate within the ſubſtance of the leaves and branches, and have no occaſion for eating their own way in. The parents of theſe are a peculiar race of flies, which have at their tail an inſtrument prepared for this purpoſe; with this they pierce the ſurfaces of vegetables, and lay their eggs in the holes they have made; ſo that the worms hatched from theſe have nothing to do, but to gnaw the tender fibres of the vegetable, and feed on the juices extravaſated from the apertures they make in them. *Reaumur*, Hiſt. Inſ. Vol. 6. p. 176.

The puccrons make their way into the leaves and tender parts of the branches of trees, and form a ſort of *galls*, depoſiting their young in the place where they are. Theſe are tender *galls*, by ſome called bladders, which often grow to a very conſiderable ſize on the leaves of trees; and were never well known or underſtood, till Mr. Reaumur explained their nature. The worms of ſome flies, and ſome ſpecies of ſmall caterpillars, live alſo within the ſubſtance of leaves, and feed in great ſafety and comfort to themſelves; but theſe are continually changing place, and deſtroy the part they feed in; on the contrary, the worms which inhabit the common *galls*, never move out of the place where their parent depoſited the egg, but there eat and ſuck their nouriſhment. This is ſo far from deſtroying, or injuring the part of the plant, that their feeding occaſions a new derivation of juices to it, and it always grows larger and ſtronger in proportion, as the creature eats within.

The *galls* cauſed by different inſects have a very different internal ſtructure, ſome of them have only one large cavity within, in which a number of the animals live in community, others have ſeveral ſmall cavities with communications between each, and others have different numbers of little cellules each ſeparate, and having no communication with the others: there are ſometimes a hundred of theſe cellules in one *gall*, ſometimes only two or three; and finally, there are others in which there is only one cavity inhabited by one inſect. The creatures of theſe two laſt kinds, live in perfect ſolitude during the worm ſtate, and can have no knowledge of any other living creature beſides themſelves, till they have paſſed through the intermediate ſtate of chryſalis, and become winged animals like thoſe to which they owed their origin, and are ready to lay eggs themſelves. The general diviſion of *galls* into theſe claſſes, admits of a vaſt number of ſubdiſtinctions under each, from the different figure and conſiſtence of the ſeveral ſpecies. Some of them are ſo hard, that they equal, or exceed the hardneſs of the wood of the tree they grow upon; and when cut, appear compoſed of fibres, much more denſely and cloſely arranged: Others are ſoft and ſpongy, and reſemble ſome of the tender fruits in appearance. The firſt kind are uſually called *gall* nuts, and the latter apple *galls*, or berry *galls*. The common *galls* uſed in dying, are of the firſt kind, and what are called oak apples, and oak grapes are of the latter. The oak produces ſeveral of this laſt ſpecies of *galls*, ſome of which are oblong, and others round reſembling grapes, gooſeberries, and other fruits; theſe are alſo uſually beautifully coloured, ſome being of a bright red, others of a bright yellow. Theſe *galls* of the oak, are of the auſtere taſte of the juices of that tree; but thoſe of other plants, are often well taſted. There is a ſpecies of ſage, well known by the name of apple ſage, the leaves of which afford a lodging to the worm of a peculiar ſpecies of fly, and this *gall* grows to a very conſiderable ſize, ſo as to have obtained the name of an apple from its reſemblance to this fruit; theſe are eaten by the people of the eaſtern nations, and are commonly ſold in the markets of Conſtantinople, and other places. A plant very common with us, the ground ivy, has the ſame property: its leaves are often loaded with *galls* on their underſide, which are very green and juicy, and of no diſagreeable taſte. Mr. Reaumur gives us an account of their being one year ſo plentiful in the neighbourhood of Paris, that the poor people eat them both raw and boiled as food. See Tab. of Inſects, N° 25, ſeq. *Reaumur*, Hiſt. Inſ. Vol. 6. p. 182.

The round *galls* are by far the moſt numerous claſs of all others; but theſe have great differences in their appearance: ſome are perfectly ſmooth on the ſurface; others are very rough and knobby; ſome adhere immediately to the leaf or ſtalk of the vegatable; and finally others are placed on a longer or ſhorter pedicle.

There are however, other very ſingular figures among the *galls*, and of theſe ſome are ſo ſtrangely irregular, that it is very difficult to conceive to what mechaniſm they owed them.

Among the ſeveral ſpecies, there are ſome which ſeem to be only the part tumified on which they are placed: theſe reſemble varixes of the veins in animals, and are therefore by authors called varicous *galls*. The leaves of the willow, and ſome other trees afford us a vaſt number of the *galls* of this kind;

kind; others appear to be extremely ſingular productions of the trees on which they are produced and could not at firſt ſight be ſuppoſed to be *galls*: of this kind is the hairy or filamentous *gall* of the briar, or wild roſe, called by the French cheveleau, and by the medical writers bedeguar. The oak affords a *gall* of a very ſingular ſtructure, reſembling the ſquammoſe cup of a flower of ſome of the headed plants, as the jacea or the like; or to expreſs it by a more known thing, the common artichoke, the French from this call it the artichoke *gall*; other ſpecies are covered with longer or ſhorter ſpines or protuberances, ending in a more or leſs ſharp point; theſe are called the prickly *galls*; and the common *galls* of the oak brought from the Levant, and uſed in dying, are diſtinguiſhed by the workmen, by the name of rough or prickly *galls*, from the European ones, particularly thoſe of France; which are uſually very round, and of a perfectly ſmooth and even ſurface, and gloſſy on the outſide. Beſide theſe there is a very beautiful ſpecies of *galls* that always grow in the figure of the common muſhroom.

The leſſer diſtinctions are too minute to be entered into here; but the curious will find them accurately treated of in the excellent treatiſe of Malpighi on this ſubject, to which the accounts given by Reaumur are a ſort of commentary and ſupplement.

Obſervations ſhew that there is no part of a plant on which *galls* are not ſometimes formed; the young ſtalks ſeem the moſt natural parts, and are the moſt commonly of all others affected by them; but they are alſo found on the leaves, the pedicles of the leaves, the eyes or buds of young leaves, the buds of flowers, and the petals of full blown flowers, and finally on the roots. Every *gall* ſerves for the nidus of ſome one or more inſects, and there are vaſt variety of theſe ſmall animals which inhabit them, even thoſe of different claſſes at times forming them; and it ſeems equally certain, that the ſhape and ſtructure of the *gall*, depend on the inſects which form it. This appears very evident from this, that the leaves of the ſame tree will ſometimes afford *galls* inhabited by different inſects, and ſome of theſe will be hard and woody, while others are ſoft and ſpungy. We may always ſee from the outer ſurface of a *gall*, what is its ſtate within: If it is whole throughout, and there appear no perforations or apertures, it is a certain proof that the animal which occaſioned it is yet within it; but if there are found one or more holes in the ſurface, penetrating into the ſubſtance, theſe are the apertures through which the inſect or inſects have eſcaped, and the *gall* will be found empty. It is often neceſſary to uſe a magnifying glaſs on this occaſion, in order to determine with any degree of certainty; becauſe many of the inſects which inhabit *galls* are ſo ſmall that the apertures through which they have eſcaped are not viſible to the naked eye. When, however, the glaſs does not ſhew any ſuch perforations, on opening the *gall* with a knife, we always find the inſect or inſects within, either in their worm ſtate, or in that of the chryſalis; for the generality of the inhabitants of *galls* are to undergo a metamorphoſis, being worms, maggots, or caterpillars in their firſt ſtate, and becoming finally either four winged or two winged flies, of the firſt ſort of which there are very numerous varieties; or elſe butterflies of peculiar kinds, or finally beetles. *Reaumur* Hiſt. Inſ. Vol. 6. p. 186.

As the origin of theſe creatures is from the eggs of the parent inſect in this form, we find accordingly all the varieties of worms and maggots within them; ſome having legs, ſome not, ſome having hard and ſcaly heads, others only ſoft and membranaceous ones; and finally, we often find creatures different from all theſe in them; theſe have been deſtroyers and murderers, having killed and eaten the proper inhabitants and ſeized on their habitations.

It was an opinion of Malpighi, that all the *galls* on the various parts of vegetables had but one origin, which was from the puncture of an ichneumon fly, who depoſited her egg there for her future progeny. It is pretty certain indeed, that all theſe unnatural productions of vegetables are owing to injuries done by inſects; but various other creatures beſide this fly are capable of doing them, and Mr. Reaumur has obſerved that a viviparous creature, the pulex arboreus, or puceron, is frequently the occaſion of them. Theſe excreſcences of trees are of ſuch a diverſity of figures, that they can never be the ſubject of a regular deſcription; ſome are wholly irregular in ſhape, while others repreſent fruits or flowers. They may in general be divided, however, into three claſſes. Thoſe of the firſt claſs have only one cavity, which contains one inſect and never more. Thoſe of the ſecond contain many inſects all living together in the ſame cavity. And finally, thoſe of the third claſs are divided within into ſeveral cellular cavities; in each of which their lives one worm or other inſect, which has no ſociety with, nor entrance into the dwellings of the reſt. Some *galls* are found reſembling apples, others cherries hanging on long ſtalks, others cluſters of grapes, others pine cones, and others the rough fruit of the cheſnut tree, containing the cheſnuts; they are found principally on trees, though not unfrequently on plants. It is eaſy to ſee by the outſide of theſe *galls*, whether they actually contain an inſect at the time of inſpection, or whether they only have contained one which is ſince eſcaped. If they are whole on the ſurface, it is a proof that the creature is yet within them, waiting the time of its change; but if they have a hole in any part, they ſhew that the creature has paſſed into its perfect ſtate, and has eſcaped out at that aperture. Thoſe *galls* which have only one internal cavity, have only one aperture on the ſurface, whether it be only one or more of the animals that is to eſcape at it; but if there are ſeveral cells, each inhabited by a ſeparate inſect, then there are on the ſurface ſo many apertures, one correſponding to every cell. All the inhabitants of theſe *galls*, do not however wait the time of their change within them; but ſome ſpecies crawl out when their change is approaching, and paſs their previous ſtate of reſt in the form of nymphs elſewhere. It is not unfrequent alſo to find a two winged fly, and a four winged one, both coming out of the ſame *gall*. It is eaſy to ſee that theſe could not be produced of worms hatched by the eggs of the ſame parent. One of them only is the proper inhabitant of the excreſcence, whoſe origin is from the puncture of its parent fly: the other is an interloper, and an enemy, who often eats up the proper inhabitant, and then comes out alone as if the whole *gall* had been made for him; but if the proper inhabitant has by any accident eſcaped, they both come out, either together, or ſucceſſively according to the time allotted by nature for their remaining in their ſeveral ſtates. *Reaumur*. Hiſt. Inſt. Tom. 1.

The *galls* which have only one cavity, are uſually inhabited by a pſeudo eruca, or baſtard caterpillar; but it often happens that the carnivorous worm of ſome other fly, makes its way into the *gall*, and the proper inhabitant is not known from the ſtranger on opening the excreſcence. This is a miſchief that often happens in the ſweet ſcented hairy *gall* of the wild roſe, called bedeguar in the ſhops. From theſe, though produced only by the puncture of one ſpecies of fly, and meant for the reception of its young, it is common to ſee ſeveral different ſpecies produced from the worms of other invaders, fly out at the time of their hatching, from the chryſalis ſtate. It is not eaſy to find out among theſe, which is the proprietary of the *gall*, and which are the invaders of his territory; but the gold colour'd fly, admired by many for its beauty, which often is ſeen to come out from theſe galls, is not the proper inhabitant; but is produced from a worm, which is a general tyrant and devourer of whatever it meets with leſs or weaker than itſelf in this ſtate.

Mr. Reneaume in the year 1711, communicated a diſcovery of the common oak *galls*, being a febrifuge not inferior in many caſes to the Peruvian bark, and greatly preferable in many, as wanting ſome of its ill qualities. He found it a certain remedy in all intermittent fevers, and that it required to be given in much ſmaller doſes than the bark, and its uſe to be continued a much ſhorter time; he is not ſo fond of his diſcovery however, as to deny the ſuperior merit of the bark in ſome caſes, but allots to each its peculiar ſphere in the following manner. He ſuppoſes that fevers in general are cauſed either by the ſharpneſs of an indigeſted chyle, occaſioned by the fibres of the ſtomach not having done their office; whether through over tenſion, or too great a relaxation, or by there not being a due quantity of bile, mixed with that chyle to attemperate, and take off its acrimony. In caſes where the miſchief is originally owing to a relaxation of the fibres of the ſtomach, the *galls* by their aſtringency work on the fibres, and reſtore them to their due tone; therefore in theſe caſes the *galls* are to be preferred to the bark. But in thoſe which proceed from a want of a due quality of the bile in the admixture of the juices, the bark he acknowledges is to be preferred, its bitterneſs producing the ſame good effect in the chyle that the bile itſelf would. Some of the French academicians tried this with all the ſucceſs the diſcoverer aſcribes to it, and ſome with leſs, the fever having been found to return afterwards and then to yield only to the bark. Theſe gentlemen however are of opinion, that the galls very well deſerve to be continued in practice, as there is often much good done by them, and they have the advantage of not being attended with any ill conſequences.

In general, galls are found to be very aſtringent, and good under proper management in diarrhœas, dyſenteries, and hæmorrhages of all kinds. They have alſo a great virtue as a febrifuge, and are often found to cure an intermittent. In fevers half a dram or more of the powder of Aleppo *galls* may be given for a doſe. They are alſo uſed externally as a ſtrengthner, and aſtringent: a decoction of them is applied with ſucceſs by way of fomentation in *procidentiæ of the anus*, and has been injected in the fluor albus with great ſucceſs.

Galls may be made a very uſeful teſt for iron in the ſeveral ſpecies of vitriols, for it is certain that an infuſion of galls will become black with a ſolution of any vitriol that contains iron, and not at all ſo with ſuch as contain only copper, as the common blue vitriol and the like.

Box GALLS, in natural hiſtory, the name given by authors to a very ſingular kind of *galls*, of a conic figure, with a conic top, or cover reſembling a wooden box, and encloſing a white worm in the manner of the other vegetable lodgments of the ſame kind; this ſort of *gall* is found only on the leaves of the lime tree. It is common to obſerve the leaves of this tree in the month of July, to be pierced through with ſeveral round holes of about a tenth of an inch in diameter, and

as exactly circular, as if a round piece of the leaf had been taken out in each place by an inſtrument. Mr. Reaumur, to whom the world owes the diſcovery of this ſingular ſpecies of *gall*, was led to the obſerving it by meeting with leaves thus pierced, and then examining others, till he found ſome which had on them the *box galls*, which give origin to theſe holes.

Theſe are very frequently found in conſiderable numbers, twenty or thirty being not uncommon on a ſingle leaf. There are obſerved in theſe places round ſpecks, or parts of the leaf, of the ſame ſize with the holes in the others, which are of a browniſh colour, looking very different from the reſt of the leaf, and are ſurrounded by an edge, or border, ſome what thicker than the leaf, and of the ſame browniſh colour; in the midſt of theſe little brown ſpots there always ſtands a ſmall protuberance, which riſes above the ſurface of the leaf, as well on the under as on the upper ſide; this is the *gall*; it is of the figure of a conic box, with a conic cover, and is of the hardneſs of wood.

The place where this box is largeſt, is where the lid joins on to the body, and this is always in that part where it touches the leaf. If this *gall*, or box, be opened, there is always found in it a ſmall white worm, produced from the egg of a fly. The manner in which this gall detaches itſelf from the leaf, is this: when the creature has ſucked its nouriſhment from the leaf for a conſiderable time, the little brown ſpot, in the midſt of which the *gall* is placed, grows dry, and ſhrinks, ſo as to loſen itſelf in a great meaſure from the ring, or border, which is fixed to the reſt of the leaf, and every way ſurrounds it. While it is in this ſtate, the creature makes ſome violent motions toward the eſcaping out of it, in order to getting under ground, to paſs into the chryſalis ſtate; the conſequence of theſe motions is the looſening the *gall* wholly from the leaf, ſo that it falls out with the circular dry'd piece of the leaf, and the animal finds itſelf on the earth, into which it immediately creeps, as ſoon as it has diſengaged itſelf from its cover.

As this is the caſe, it is no wonder that the worm is always found in its own form, not in that of the chryſalis, when the *gall* is fixed in the leaf; and the conſequence of the falling out of ſeveral of theſe circular pieces from the leaf is, that there are left ſo many circular holes in it, each ſurrounded with a brown and thick ring, which connected the leaf to the ſmall piece which held the *gall*, while that remained freſh and ſucculent. *Reaumur*, Hiſt. Inſ. Vol. 6. p. 207.

Bramble GALLS, a ſpecies of *galls* found on the branches of the common wild bramble. Theſe are often no other than tumefactions of the ſtalk, for the ſpace of an inch, or thereabout, which ſometimes form only ſo many thick cylindric pieces; at other times they are of the ſhape of an olive, and ſometimes they affect only one ſide of the branch: in all caſes, however, the tumid part, or *gall*, is much harder than the other parts of the branch, which are in their natural ſtate. Theſe *galls* are very common in June and July, and in the other ſummer months, and when cut, either longitudinally or tranſverſly, they are found to be inhabited by a great number of worms of an oblong figure, and yellow colour; theſe live in the interſtices, which they make between the woody fibres, and theſe interſtices they alſo make themſelves, by eating away the ſubſtance of the wood; for if the *galls* are opened when old, they are found to have a large cavity filled with the fragments of the woody fibres, which the worms have eat to pieces; and there are uſually twenty or thirty worms in every *gall*.

Theſe differ extremely from the worms of the common oak *galls*, not only in colour, but in ſtructure and parts. The common ones have all two little hooks at the head, in the manner of many of the maggots of the common flies; but theſe, on the contrary, have a ſharp point of a brown colour, and of the hardneſs of horn, coming from the extremity of the head, with this they tear and break the woody fibres, and there is near its end a ſlit, which is evidently the mouth of the creature, and which ſerves for the receiving and conveying into the ſtomach the fragments of wood, which it breaks off with the point.

In ſome of theſe *galls* there are frequently found another ſort of inſect, which is a white worm, ſomewhat different from the former, and is not the proper inhabitant of the *gall*, nor intended to feed on the wood, but has hooks and teeth, in the manner of many of the common fleſh eating maggots. This is a deſtroyer, that gets by accident into the lodging of the other worms, and feeds on them. Mr. Reaumur is of opinion, that the yellow worms, which are the proper inhabitants of the *gall*, turn into two winged flies, and the devourers of them into ſome of the four winged kind; but this is only a conjecture founded on analogy, as he acknowledges that he never actually ſaw the changes of either. The proper inhabitants of this *gall* are evidently the progeny of a fly, which has a power of lodging her eggs in the ſubſtance of the wood, by means of the borer in her tail. *Reaumur*, Hiſt. Inſect. Vol. 6. p. 194.

Broom GALLS. See the article BROOM.

Lime GALLS. See the article LIME.

Muſhroom GALLS. See MUSHROOM.

Germander GALLS. See GERMANDER *galls*.

Gooſeberry GALLS. See GOOSEBERRY.

Grape GALLS. See GRAPE.

Oak leaf GALLS. See OAK *leaf galls*.

Roſe GALLS. See ROSE.

Willow GALLS. See WILLOW.

Wind GALL. See WIND.

GALL-*inſect*, in natural hiſtory, the name of a claſs of inſects, ſo called, from their reſemblance to ſmall *galls*, or vegetable protuberances of a like kind upon trees. They are indeed ſo like theſe ſubſtances, as to have been by many miſtaken for them, and thought not of the animal, but of the vegetable kingdom. Theſe inſects paſs a very great part of their life, even many months together, faſtened againſt the leaves or ſtalks of plants, without any appearance of life or motion, and this is the time in which they acquire their ſtated growth. They are in this ſtate as immoveable as the branch they are fixed on, and ſeem to make a part of it. Their exterior form is remarkably plain, and ſimple, and the more the creature increaſes in growth, the leſs appearance of life it ſhews; and even when it has acquired its maturity, and is in a condition to depoſit its eggs for the propagation of its ſpecies, it then appears leaſt of all of an animal form, and more, than in any other ſtate, reſembles a *gall*, or ſuch vegetable protuberance. Not only the vulgar and incurious have been deceived by this appearance, but the accurate count Marſigli, among others, after very attentively examining the *gall-inſects* of one ſpecies, remained ſeemingly convinced that they were real vegetable excreſcences.

The *gall-inſects* are uſually found on the ſtalks and branches of trees, ſhrubs, and perennial plants. There are ſo far from being particular trees or plants allotted for their production, that very few are without them, and even the ſame ſpecies are found on very different ſpecies of vegetables. The figures and colours of theſe animals enable us to diſtinguiſh ſeveral diſtinct kinds of them; they are all very ſmall, even at their full growth, and ſome of them, in their perfect ſtate, reſemble little round balls, faſtened to the branches of trees, *&c.* by a very ſmall part of their ſurface. Of theſe round ones ſome ſpecies never arrive at a ſize beyond that of a pepper corn; others acquire that of a large pea; other ſpecies of them are of the figure of a ſphere, part of which has been cut off, and theſe are fixed on the trees by the part ſeemingly cut; others are of the figure of elongated ſpheres, the greater axis of which is raiſed above the branch; others are ſomewhat flatted, and more pointed at one end than at the other; others are of the figure of a kidney, and theſe are fixed by the part where the cavity is; others reſemble in figure, the half of an oblong ſpheroide, and theſe alone furniſh a large number; theſe are divided, as it were, along their larger axis, and have ſome ſort of reſemblance to a boat turned upſide down.

There is nothing ſingular or ſtriking in their colour; frequently they are of a paler, or deeper cheſnut brown; ſome of them are rediſh; and others have ſomething of a violet tinge; ſome alſo are of a good black, and others of a yellow ground, undulated and ſtreaked with brown; ſome are alſo brown, veined with white.

Theſe creatures have ſo little to attract the obſervation even of the curious, that they might probably have remained much longer unregarded, were it not that they multiply ſo exceſſively faſt on ſome fruit trees. The peach trees, in particular, are ſometimes in a manner covered with them, and theſe of more than one ſpecies; ſome of the globular kind, and others of the boat figure. The branches thus covered look rough and ſcabby, and the gardeners, ſenſible that whatever the things were, they muſt be nouriſhed at the expence of the juices of the tree, have attempted to deſtroy them. The leaves and fruit of theſe trees is often blackened by the wet that has run off from theſe inſects; and our orange trees, which are frequently full of them, firſt ſtirred up the attention of the more careful obſervers of them to clear them away: theſe are principally of that kind, whoſe form is that of the inverted boat. Meſſrs. de la Hire and Sedileau, were at the pains of making a ſet of obſervations, of a very curious kind, concerning them: theſe gentlemen call this ſpecies the *orange tree bug*, a name by which the gardeners alſo call them, tho' they have nothing in common with any known ſpecies of that animal. See the Memoirs of the Academy of Paris, 1692.

If many of the ſpecies of theſe little animals, however, do miſchief to our fruit trees, there are ſome other kinds of them, the value and uſe of which may very well make us amends; ſince it is from one ſpecies of theſe little creatures, that the inhabitants of many places make ſuch great gains, gathering a harveſt of them without the trouble or expence of ſowing or cultivating. The kermes, ſo well known by name, though ſo little truly underſtood, is of this kind, to which both the phyſician and the dyer are ſo greatly obliged.

The greater part of the animals of this claſs acquire their full growth about the middle of May, or beginning of June at the utmoſt; at which time of the year the branches of peach trees, eſpecially ſuch as are but ill taken care of, are found to abound with two kinds of them, the one round like a pepper corn, the other of the boat ſhape. They are ſometimes brown,

brown, ſometimes rediſh, and ſometimes black and ſhining. *Reaumur*, Hiſt. des Inſ. Vol. 4. p. 1.

Dr. Liſter, who was very curious in his obſervations of inſects, was perhaps beforehand with any of the authors, celebrated as the firſt diſcoverers of the *gall-inſect*, and *progall-inſect* claſſes; he found theſe animals on the plum, cherry, vine, lawrel, and many other trees, and calls them patellæ of theſe trees. He was well informed of their animal origin; and in the Year 1671, diſcovered that they would ſome of them ſtrike a carnation red colour with ley of aſhes, which was not only a good, but a permanent tinge. The principal kind on which he made the experiment was the ſemiglobular ſort, which he deſcribes as being round every where, except where they are applied to the tree. They were of the ſize of half a large pea of a cheſnut colour, and of a ſhining ſurface, faſtning themſelves to the bark of the tree, as the limpetts do to the rocks, and generally were ſought after by ants, and other vermin.

Peach GALL-*inſect*. See the article PEACH.

Shell GALL-*inſect*. See SHELL.

Vine GALL-*inſect*. See VINE.

GALL-*inſect fly*, the male of the *gall-inſect* ſpecies. It is a two winged fly of a very particular kind. There ſeems a great reſemblance between theſe flies in all the *gall-inſect* claſs, and that of the *peach gall-inſect* may give a proper idea of all the reſt. This little creature, examined with the help even of the beſt glaſſes, ſhews, on the under part of its head, nothing analogous to the organs of other flies, deſtined to convey their nouriſhment; nothing that at all reſembles the trunks of the other two winged flies, nor any thing that can be compared to teeth. Where the teeth, if any, ought to be placed, nothing is to be ſeen but two hemiſpheric, or more than hemiſpheric bodies, black and ſhining, and in all reſpects reſembling eyes. If theſe are eyes, they are very remarkably ſituated; and juſt over againſt them, on the other ſide of the head, and near the baſes of the antennæ, there are two other ſimilar bodies, which indeed cannot be taken for any thing but eyes. It ſhould ſeem that this fly has therefore no organs to receive aliments, but has two eyes in the place of ſuch. The want of theſe organs is nothing ſingular in the inſect world, ſince the moths and butterflies afford us inſtances of it. Many of theſe may be ſeen, as ſoon as produced from their cryſalis, in a ſtate to propagate their ſpecies, and depoſit their eggs; and this great end atchieved, they have no farther occaſion for life, nor any means for its ſupport; and probably the caſe is the ſame with theſe flies, which, as ſoon as looſe from their ſhell, ſeek out and fecundate the females, and have after this no farther uſe for life. It is another ſingularity in this ſpecies, that they are produced from their ſhell by their hinder part firſt, whereas all other ſpecies of the two winged flies are produced with the forepart of their body firſt; and if we cannot ſay what may be the reaſons for this ſingularity in the production of this fly, we can however eaſily perceive that every thing is prepared and deſtined accordingly for it. In the nymphs of other flies, all the legs are conſtantly apply'd cloſe to the body, whereas, on the contrary, in the nymph of the *gall-inſect fly*, the legs placed next the head, or the firſt pair, are conſtantly ranged upwards, and each of them embraces one ſide of the head; the conſtant poſition of theſe legs in this direction, is a proof that it is the order and courſe of nature in the production of the animal; nor is it without reaſon that they are thus placed in a ſpecies which, contrary to all the others, is to force itſelf backward out of its ſhell, ſince they ſerve very properly for the creature to puſh himſelf backward by: and as the anterior part of the caſes of other flies naturally and eaſily opens, to give paſſage to the animal, ſo the poſterior part of this does. They ſeem alſo to be more than ordinarily ſlow in their getting out, ſome of them having been obſerved to be ten or twelve hours, from the time of the firſt appearance of a piece of each wing, to their perfect enlargements. *Reaumur*, Hiſt. Inſect. Vol. 4. p. 40.

GALLANTES, among the Romans, a ſurname given to the prieſts of Cybele; whence the modern terms of *gallant*, and *gallantry*, have been formed. See Mem. Acad. Inſcript. Vol. 5. p. 427.

GALLERICA *Lapis*, a name given by the writers of the middle ages to a ſpecies of emerald, which was larger than the finer gems of that kind, and of a pleaſant green, but debaſed by an admixture of white.

GALLERIES *(Cycl.)* in gardening, are to be made in the following manner. A line is firſt to be drawn to the length the *gallery* is to be, and this is to be planted with hornbeam, which is to be the foundation of the *gallery*. Theſe require no farther care than to be ſheared a little, and ſometimes digged about, as there may be occaſion. But the chief curioſity is in the ordering the fore part of the *gallery*, and forming the arches. The pillars of the porticoes, or arches, muſt be placed at four foot diſtance from one another, and the *gallery* muſt be twelve feet high, and ten feet wide, that there may be room for three perſons to walk abreaſt in it. When the hornbeams are grown to the height of three feet, the diſtance of the pillars well regulated, and the ground work of the *gallery* finiſhed, the next thing is to form the frontiſpiece. To perform which, the hornbeam muſt be ſtopt between two pillars at the height, and a trellis, made for that purpoſe, muſt be run up, which forms the arch. As it grows up, thoſe branches which out top the others muſt be levelled with the ſhears; and in time they will grow very ſtrong, and may be kept in regularity by the ſhears. Portico *galleries* may be covered with lime trees.

Galleries in general have been always but lightly eſteemed in England; they were once very much in repute in the gardens of Italy, and other hot countries, but now they are got out of credit even there. *Miller*'s Gardner's Dict.

GALLERY *Ladder*, in a ſhip. See LADDER.

GALLIANA, in natural hiſtory, a name given by ſome authors to the turquoiſe ſtone. It is only a corruption of the word *callaina gemma*, a name of this ſtone common among the Roman authors. Pliny has deſcribed the callais, and the callaina, or callaica gemma, in two different parts of his work, but it ſeems too haſty a concluſion to infer from this, that the callais and callaica gemma were two things. Pliny ſays nothing that ſeems to prove them different; and as he collected his accounts from different authors, there is no great wonder that the ſame ſubject, with the name a little varied, ſhould come in his way twice, in the different parts of his great work. We find, in the ſame manner, the ſame ſtone, *lapis arabicus*, deſcribed in two parts of his book, once under the former name, and once under that of *arabica gemma*; and many other inſtances of the ſame kind of inaccuracy in this author might be produced to prove that only the turquoiſe may be meant by both theſe names. Solinus tells us that this ſtone is found in Germany; but no turquoiſes being ever heard of there, ſome doubts have ariſen from this of its being the turquoiſe that the ancients meant by this word. Theſe all ariſe only from the not knowing that Solinus is the moſt inaccurate writer in the world, and that he takes his accounts of things from Pliny. This author tells us, that the callais was found in Caramania, as it ſtill is, but Solinus read this Germania, and thence gives us a country for the torquoiſe, that does not, nor ever did produce it.

GALLIARDA, in the Italian muſic, the name of a tune that belongs to a dance called a galliard. *Broſs. Dict.* Muſ. in voc. See GALLIARD, *Cycl.*

GALLIGASKINS, in our old writers, denoted wide hoſe or breeches, having their name from their being uſed by the Gaſcoigns.

GALLIHALPENCE, a kind of coin, which with *Suſkins* and *Doitkins*, were forbidden by the ſtatute 3 Hen. V. 1.

It is ſaid they were brought into this kingdom by the Genoeſe merchants, who trading hither in galleys, lived commonly in a lane near Towerſtreet, and were called *galley-men*; landing their goods at *Galley-key*, and trading with their own ſmall ſilver coin, termed *galley-half-pence*. *Stow*'s Survey of Lond. p. 137.

GALLINÆ, in the Linnæan ſyſtem of zoology, the name of a large order of birds, the general character of which is, that their beak is conic and bent. The oſtrich, caſſowary, peacock, *&c.* are of this order. *Linnæi*, Syſtem. Naturæ, p. 47.

GALLINA *Guinea*, the *Guinea hen*, in zoology, the name of a ſpecies of gallinaceous fowl, of the ſize of the common hen, but with a longer neck. Its body is ſloped like that of a partridge, and its colour is all over a dark grey, very beautifully ſpotted with ſmall white ſpecks; there is a black ring round the neck; its head is rediſh, and has on its top a hard horney protuberance of a brown colour; it is blue under the eyes, and has a red fleſhy appendage hanging down from thence. They naturally herd together in large numbers, and breed up their young in common; the females taking care of the broods of others, as well as of their own. They breed very well with us. *Ray*'s Ornitholog. p. 115.

GALLINA *Mozambicana*, in zoology, a name under which Nieremberg has deſcribed a ſort of hen, which he ſays has not only black feathers, but black fleſh and black bones; a hiſtory Mr. Ray ſufficiently explodes. *Ray*'s Ornithol. p. 299.

GALLINA *Piſcis*, in zoology, the name of a fiſh of the cuculus kind, more uſually known by the name of the *corax piſcis*. *Willoughby*, Hiſt. Piſc. p. 280. See the article CORAX.

GALLINACEUS, in zoology, the name of a genus of birds of the cock and hen kind, the characters of which are theſe. The beak is ſhort, ſtrong, and a little crooked, proper for the picking up of corn, which is the food of the whole genus; the body is large, thick, and fleſhy; the wings are ſhort and hollowed, and not calculated for much flying; they all breed a numerous progeny; they build on the ground; the young are not fed by the parent, but immediately ſhift for themſelves; and ſome have long ſpurs behind their legs. *Ray*'s Ornitholog. p. 112.

GALLLINAGO, a general name for heath fowls, as the wood cock, ſnipe, *&c.* See WOOD *Cock*.

GALLINAGO *minor*, in zoology, the name uſed by authors for the ſnipe, a bird well known among the ſportſmen, and which, though in general a bird of paſſage, yet ſometimes remains with us the whole year, and builds and breeds here. It lives in marſhy places, and builds among reeds; it lays four or five eggs at a time.

Its

its breaſt and belly are white; its back covered with long feathers, which are variegated with black and a rediſh brown; its tail is ſhort, and hid by the wings when folded; it has a line of a rediſh white running along the middle of the head; its beak is about three fingers breadth long, and is black at the end, and has ſeveral rough tubercles on it. *Ray*'s Ornitholog. p. 214.

GALLINE, in ichthyology, a name given by the Maſſilians to the flying fiſh called by authors, milvus and lucerna. It is a ſpecies of trigla, and is diſtinguiſhed by Artedi, by the name of the trigla, with the ſnout ſomewhat bifid at the end, and the lateral lines forked towards the tail. See the article TRIGLA.

GALLING *(Cycl.)* Good horſes are often ſubject to *gall* upon their backs, and the utmoſt care ought to be taken to prevent or cure it. The beſt methods of prevention is to take a hind's ſkin, well furniſhed with hair, and fit it neatly beneath the pannel of the ſaddle, ſo that the hairy ſide may be next the horſe; this does not harden by ſweat, but keeps the horſe from *galling*. This is alſo a method that ſhould never be omitted with horſes that are newly cured of ſuch a hurt, as it will prevent their falling into it again. In long journeys, and in horſes that are ſubject to *gall*, it is always proper to take off the ſaddle, as ſoon as the horſe is brought in, and examine whether the back be at all preſſed, or pinched in any part: it will be well to re-examine it after an hour or two, to ſee what effect the ſtanding has had, for often the part hurt will not ſhew it at firſt, but will ſwell very violently afterwards. In this caſe, where the ſkin is not fretted, but a ſwelling comes on, a bag of coarſe cloth ſhould be filled with warm dung, and ty'd upon the ſwelling, which will not only prevent it from growing worſe, but will take it often quite down; or the ſwelling may be well rubbed with good brandy, laying on a paper ſoaked in it. If the ſkin be broken, a mixture of red wine and ſallad oil is a good remedy.

GALLINULA, in zoology, the name of a genus of birds which ſwim on the water, and yet have not webbed feet, nor any membranes joined to their toes, to augment their breadth. The common moorhen, and a great number of other birds, both Engliſh and exotic, are of this genus, as the water rail, the grinetta, the ochropus, and ſeveral Braſilian birds.

GALLINULA *ærythropus*, in zoology, a name given by many authors to the bird commonly called in Engliſh the red-ſhank. *Aldrovand* de Avib. l. 28. c. 96. See RED-SHANK.

GALLINULA *hypoleucos*, in zoology, a name given by ſome authors to the becaſſine, or, as we call it in Engliſh, the ſandpiper. *Geſner* de Avib. See SANDPIPER.

GALLINULA *melampus*, in zoology, a name given by Geſner, and ſome others, to the bird more uſually known by its German name, rotknuſſel. *Aldrovand* de Avib. l. 20. c. 45. See ROTKNUSSEL.

GALLINULA *rhodopus*, *phœnicopus*, and *ochropus*, names by which Geſner, and ſome others, have called the common tringa; a bird in which the legs are, at different ages, and in the different ſexes, greeniſh, yellowiſh, or rediſh. *Geſner* de Avib. See TRINGA.

GALLINULA *ſerica*, in zoology, a name given indiſcriminately by many authors to the grinetta, and the water rail; both birds of the moorhen kind, but ſmaller than the common moorhen. *Geſner* de Avib. *Aldrovand* de Avib. See RALLUS *Aquaticus*, and GRINETTA.

GALLITRICHUM, in botany, a name by which ſeveral authors call the *horminum ſativum*, or garden clarey. *J. Bauhin*, Vol. 3. p. 309.

GALLIUM, *ladies bedſtraw*, in the Linnæan ſyſtem of botany, a genus of plants taking in the *gallium*, or ladies bedſtraw, and the *cruciata*, or croſswort of other authors. The characters of it are theſe. The calyx is an extremely ſmall perianthum, divided into four ſegments, and ſituated on the germen; the flower is compoſed of one petal, which forms no tube, but is placed flatwiſe, and is divided into four ſegments at its edge; the ſtamina are four pointed filaments, ſhorter than the flower; the antheræ are ſimple; the germen of the piſtillum is doubled, and is placed below the receptacle of the flower; the ſtyle is ſlender, ſomewhat bifid, and of the ſame length with the ſtamina; the ſtigmata are globoſe; the fruit is compoſed of two dry, globoſe bodies, growing together, which do not adhere to things, as thoſe of the aparine; the ſeeds are ſingle, large, and kidney faſhioned. *Linnæi* Gen. Plant. p. 24.

The characters of *gallium*, according to Tournefort, are theſe. The flower conſiſts of one leaf, ſhaped like a bell, open at the mouth, and divided into ſeveral ſegments; the cup changes into a dry fruit, conſiſting of two ſeeds, uſually of a lunated figure; the leaves are neither rough, nor ſo much as hairy, and are placed in form of ſtars round the ſtalks, at certain intervals, fewer or more of them, at each joint.

The ſpecies of *gallium* enumerated by Mr. Tournefort are theſe. 1. The broad leaved branched mountain *gallium*. 2. The common white flowered *gallium*. 3. The common yellow *gallium*. 4. The pale yellow flowered *gallium*. 5. The narrow leaved mountain *gallium*, with blackiſh purple flowers. 6. The blue flowered upright field *gallium*. 7. The yellow annual Portugal *gallium*. 8. The Portugal *gallium*, with ſmall verticillate yellow flowers. 9. The blueiſh green leaved rock *gallium*. 10. The ſmalleſt, low, or dwarf rock *gallium*. 11. The leaſt moſslike *gallium* of the Pyrenean mountains. 12. The white fine leaved French *gallium*. 13. The narrow leaved French *gallium*, with blackiſh purple flowers. *Tournef.* Inſt. p. 115.

The common *gallium*, or *yellow ladies bedſtraw*, which grows common every where with us under hedges, is an excellent aſtringent.

GALLOPADE, in the manege. See GALLOP, *Cycl.*

GALLOWS *(Cycl.)*—GALLOWS *of a plow*, a name given by our farmers to a part of the common plow, from its reſembling a *gallows* made for the execution of malefactors, in its form; being compoſed of three pieces of timber, one placed tranſverſely over the heads of the other two. The *gallows* are a part of the plow head; they are fixed into the box of the plow, or that part through which the axis of the wheels paſſes. They make an angle with the box inclining upwards. The upper, or tranſverſe piece is notched in ſeveral places, and ſerves to ſuſtain the wilds, a pair of irons to which a ring and hooks are faſtened, and to theſe the chains of the harneſs, by which the whole plow is drawn along.

In ſome other parts of England they call this whole part of the plow the three pieces, being iron inſtead of timber, by the name of the wilds; and the *gallows* of the plow is then the tranſverſe piece at the top of the crowſtaves. *Tull*'s Huſbandry. See the articles CROWSTAVES and PLOUGH.

GALLUS, the *cock*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of birds of the general order of the gallina; the diſtinguiſhing characters of which are, that the feet have each four toes, the front of the head has a comb, and the wattles are two, and are naked and flat. *Linnæi* Syſtem. Nat. p. 48.

GALLUS *Grunniens*, in zoology, the name of an Eaſt Indian fiſh, approaching to the nature of the *ſcorpius marinus*, and called by the Dutch *knone haen*. Its body is thick, and rounded; its ſkin is free from ſcales, but is very uneven, full of tubercles, ſpotted, and variegated with ſhort ſtreaks of a blackiſh hue; its head is large and thick, and very full of tubercles; its noſe large, its eyes red, and its tail obtuſe; its belly fins are red. It is a very well taſted fiſh, and much valued there. When firſt taken out of the water, it makes a very remarkable grunting noiſe. *Ray*'s Ichthyog. p. 3.

GALLUS *marinus*, in zoology, a name given by many writers to the fiſh called in Engliſh the *doree*, and more commonly known in Latin by the name *faber*. *Geſner* de Aquat. p. 439. See the article FABER.

GALLUS *marinus* is alſo a name by which ſome have called the fiſh, more frequently known by the name of the *orbis piſcis*. See the article ORBIS.

GALLY *Worm*, in zoology, an inſect known by moſt writers under the name *julus*. It is a land inſect with a long body, compoſed of a great number of rings, and furniſhed with a great number of feet. It is found very frequently in gardens, and when touched, has the power of rolling itſelf up into a ball. *Ray*'s Hiſt. Inſ. p. 46.

It is eſteemed a valuable medicine in the jaundice, and in ſuppreſſion of urine. *Charlt.* Exer. p. 51.

This animal is very common with us among rubbiſh, and is by ſome referred to the ſcolopendræ, but improperly; for tho' they agree in the great number of legs, ours is a harmleſs animal, and the ſcolopendræ are miſchievous creatures, armed with dangerous forceps. It is ſuppoſed by Liſter, that this creature, common with us, would on diſtillation yield the ſame ſort of animal acid, that is procured from the ant. The reaſon of the conjecture is, that the ant and this creature both agree in emitting a ſharp and pungent ſmell on being bruiſed; but theſe are not eaſily procured in plenty enough to make the experiment, as they are not a gregarious inſect like the ant. Poſſibly ſome more of the inſects may be found, on trial, to have the ſame acid. Philoſ. Tranſact. N° 68.

GAMBETTA, in zoology, the name of a bird ſomewhat reſembling the common redſhank. Its head, neck and breaſt are grey, full of brown ſpots: theſe are larger on the back, and ſmaller on the breaſt and belly, and ſmalleſt of all on the head. Its whole back is of a grey, a little inclining to a rediſh brown on the lower part of the back, and on the wings; its belly is white, and its beak black. It is common in Italy, and ſome other places, but is not known in England. *Aldrovand* de Avib. l. 20, and 26.

GAMBOGE. This gum, as it is uſually called, appears to be wholly reſinous, or ſulphureous; ſince ſpirit of wine diſſolves it almoſt entirely, and water, though it ſeparates its parts, and keeps them ſuſpended, yet does not diſſolve them at all, nor is by any means a ſolvent for it: it is alſo inflammable, and eaſily melts with a very gentle heat. If mixed with an equal quantity of ſalt of tartar, it readily diſſolves in common water, in a few hours digeſtion; this ſolution, if kept over the fire, ſoon becomes a ſort of ſmooth glue, or jelly; and this, by adding a large quantity of water is eaſily reduced into a red clear liquor in a warm digeſtion; this liquor evapo-

evaporated over a gentle fire, yields a greyiſh ſalt, which eaſily imbibes moiſture from the air, if not kept in a glaſs well ſtopped; and this extract purges in a ſmaller doſe, than the gum itſelf, and yet with leſs irritation; its taſte, however, is extremely acrimonious and fiery, and it muſt therefore be well diſguiſed before it is given. There is, however, another method of giving it, yet more to be recommended than this for general uſe; this preparation is as follows. Tye up the gum in a piece of linen cloth, and put it into a loaf juſt drawn from the oven; the loaf muſt be cut open for this purpoſe, and afterwards ty'd cloſe together, and ſet in ſome place where it will remain warm four and twenty hours; after this the gum is to be taken out and reduced to powder, and this powder ty'd up again, and put into another loaf, and ſo on to the fourth or fifth time; after which it is to be powdered and kept for uſe. By this eaſy preparation this medicine loſes its violent operation, both as a purgative and emetick, and may be given with great ſafety, and the crumb of the firſt loaf, if eaten, proves purgative. Mem. Acad. 1701.

GAME *(Cycl.)*—GAME *Cock.* In the choice of the *game*, or *fighting cock*, four things are principally to be conſidered; theſe are, the ſhape, colour, courage, and ſharpneſs of the heel. As to the ſhape, ſuch a one ſhould be choſen, as is neither too ſmall nor too large; the very large ones are always clumſy and unwieldly, and the ſmall ones are ſlow and tedious in fighting, and are generally too weak to ſtand a very tight battle: another diſadvantage in theſe extremes is, that both are very difficult to be matched; the middle ſized one ought therefore ever to be preferred, as he is generally the moſt nimble and active with his ſtrength, and the matching him is eaſy. The head ought to be ſmall, the eyes large and briſk, and the beak ſtrong, and hooked at the ſetting on; its colour ought alſo to anſwer to that of the principal or general colour of the feathers, whether that be yellow, rediſh, or grey. The beam of his leg ought to be very ſtrong, and according to his plumage, either blue, grey, or yellow; and the ſpurs ought to be rough, long, and ſharp, a little bending, and pointing inward. The three colours eſteemed in the *game cock* are grey, yellow, and red, with a black breaſt. The perfection of a cock is not, however, ty'd down abſolutely to theſe colours, experience has ſhewn, that there are cocks of other colours which have proved excellent ones, but theſe are in general the beſt; the pied cock ſometimes turns out good, but the white and dun are ſeldom of any value.

If the neck of a cock be inveſted with a circle of a ſcarlet complexion, it is a ſign that he is ſtrong, vigorous, and has great courage; but, on the contrary, if it be pale and wan, it denotes him to be defective in theſe material particulars. The courage of the cock may be in ſome meaſure gueſſed at by his proud ſtately manner of walking, and it is a token of great ſpirit to crow frequently in the pen. What the gameſters in this way call a narrow or ſharp heel, is only to be known by obſervation of the bird while fighting; the cock that has this, at every riſing ſtrikes his adverſary in the proper place, he always draws blood, and at every ſtroke threatens immediate death.

It is generally allowed, that a ſharp heeled cock, though he be ſomewhat falſe, is yet to be preferred to a good cock with a dull heel; the one fights a long time, but ſeldom wounds, while the other gives expectation, every moment, of the end of the battle; and though he will not ſtand all the hewing that the firſt will, yet it is ſeldom found neceſſary, he bringing the battle to a ſhorter concluſion: if therefore a cock be found which is middle ſized, hardy, and ſharp heeled, he is the beſt that can be.

In order to prepare a cock for fighting, his mane is to be clipped off with a pair of ſhears cloſe to the fleſh, all the way down the neck, from the head to the ſhoulders; the feathers are alſo all to be clipped off cloſe to the rump, and the reder that appears, the better condition the cock is in. The wings are to be ſpread by the length of the firſt riſing feather, and all the others are to be cut ſloping with ſharp points, that in riſing he may endanger the eyes of his adverſary; there muſt be no feathers left on the crown of the head, that the opponent can take hold of, and his head ſhould be moiſtened with ſpittle; then the ſpurs being put on, and he is to be turned into the pit to try his fortune.

For the well breeding of *game cocks*, the *game hen* ſhould be of the right and ſtaunch breed; her colour ſhould be black, brown, ſpeckled, grey, or grizzled, or ſhe may be yellowiſh, this laſt colour being by many preferred to all the reſt: if ſhe be tufted on the crown ſhe is the more to be eſteemed, for this is a promiſe of courage and reſolution in the chickens; if ſhe have ſpurs, it is alſo a very good ſign. Her body ſhould be large, and particularly behind, that ſhe may be able to lay large eggs; her behaviour among the other hens is alſo to be noted, for if ſhe be found of a tame ſpirit, receiving abuſes from them without revenge, or ſhewing any token of courage, it may be depended on that her chickens will be good for nothing.

A right *game hen* from a dunghill cock will bring good chickens, but the beſt *game cock*, in the world, with a dunghill hen, will never bring a chicken worth a farthing; but the cocker who would have a breed of the very beſt chickens, is to find a match of the beſt cock and beſt hen he can any where meet with, few from theſe will prove bad.

The beſt ſeaſon for the breeding the *game cocks* is from the beginning of February to the middle or latter end of March; the neſt for the hen is to be made of ſweet and clean ſtraw, and ſhould be placed in ſome warm corner, out of the way of diſturbance from other fowl, for this ſort of interruption provokes this quarrelſome bird in ſuch a manner, as to endanger the eggs. That ſhe may never have occaſion to leave the neſt, and cool her eggs, it will be proper to lay all ſorts of food, that ſhe is likely to approve of, before her, and to put clean water every day, not only for her to drink, but to waſh and trim herſelf in; ſome aſhes, ſand, and gravel ſhould alſo be ſifted on about the neſt. The chickens are hatched in about three weeks, and the neſt is to be carefully watched about this time, for there are always ſome of the chickens hatched before the others; theſe ſhould be taken away as ſoon as out of the ſhell, and laid before the fire, or in ſome warm place in wool, and as ſoon as the reſt are hatched, theſe ſhould be given back to the hen. They are not to be ſuffered to go abroad for the firſt fortnight, and the room they are kept in muſt be boarded, all other floors being too cold and too moiſt. At about a month old the chickens may be turned out into a walk of ſome freſh graſs, that they may feed at liberty, and eat worms and other inſects; but there muſt be no puddle of water near the place, for they are apt to get into ſuch, and it occaſions them a number of diſeaſes. As ſoon as the comb and wattles appear on the cocks, they muſt be cut away, and the ſore place anointed with freſh butter till it is well. The chickens may all be ſuffered to run together till they begin to peck one another, then the cocks are to be ſeparated; each muſt have his particular walk, and the more free from diſturbance this is, the better. The place of feeding them muſt either be a boarded floor, or a very ſoft and dry piece of ground. If the place be hard, as a ſtony pavement, or a plaiſtered floor, the taking up their food will injure and blunt their beaks, ſo that they will never be able to hold faſt afterwards. Any white corn is good for the young *game cock* in his walks, and ſo is a white bread toaſt ſteeped in ale; at times this may be given him ſteeped in urine, which will ſerve to ſcour and cool him very well. There never ſhould be more than three hens allowed to one cock in his walk, for if there are more, he will conſume his ſtrength in the treading; and though his courage may *not* fail, yet he will never have the ability to go through a battle. Care is to be taken alſo as to his rooſting place, that the perch be not too ſmall in the gripe, and be ſo placed, that he may ſit on it without ſtradling; if the perch be crooked it is alſo very diſadvantageous, for it will accuſtom the cock to ſuch an uneven diſpoſition of his feet, that he will be no good ſtriker in the battle. The beſt method of contriving the rooſting place is to have a row of ſhort perches, about eight inches long, and the loweſt ten inches from the ground, that he may aſcend with the more eaſe, and when he is come to the rooſting perch, be conſtrained to ſit with his legs cloſe together. A cock bred in this manner may be fought young, but the beſt method is not to hazard a battle till he is ſomewhat more than two years old.

Game cocks are commonly brought to the ſtate of their greateſt ſtrength and activity in about ten days, which Dr. Robinſon calls their athletic weight; but they will ſcarce remain twenty four hours in this condition; nay, ſome have been known to change for the worſe in twelve hours. See *athletic* WEIGHT.

GAMELION, Γαμηλιων, in antient chronology, the eighth month of the Athenian year. It contained twenty nine days, and anſwered to the latter part of our January, and the beginning of February.

This month had its name from being ſacred to Juno Γαμηλιος, the goddeſs of marriage.

GAMITES *Lapis*, the *marriage ſtone*, a ſtone of a very ſingular kind deſcribed by Pliny, and ſome other of the antients; he ſays it was of a white colour, and that it had in it the figure of two hands mutually infolding one another, which made it a ſymbol of that ſtate. We know nothing of any ſuch ſtone at preſent in the world; and it is eaſy to conjecture, that in Pliny's time either the ſtone muſt have been factitious, or elſe fancy muſt have been very far ſtretched to make the reſemblance.

GAMMADIUM, a triangular veſtment uſed in the primitive church. *Hoffm.* Lex. in voc.

GANACHES, in the manege, are the two bones, one on each ſide of the hinder part of the head, oppoſite to the neck, or onſet of the head, which form the lower jaw, and give it motion. It is in this place that the glands, or kernels of the ſtrangles, and the glanders, are placed.

GANG *(Cycl.)* GANG *fiſh*, a name given by ſome authors to a ſmall fiſh caught in the German lakes, and ſent in pickle into many parts of the world. The more uſual name of this fiſh among writers is *lavaretus*. *Willoughby*, Hiſt. Piſc. p. 183.

The *gang fiſh* is a ſpecies of the coregonus, diſtinguiſhed by Artedi by the name of the coregonus, with the upper jaw longeſt

longeſt and flat, and with fourteen rays in the back fin. See COREGONUS and LAVARETUS.

Ox GANG. See OX.

GANGILES, or GANGALES, a name given by ſome to the *lapis aetites*, or eagle ſtone. *Hoffm.* Lex. in voc. See AETITES.

GANGLIO, or GANGLION *(Cycl.)*—Authors in general who have treated of the *ganglion*, have referred it to the claſs of encyſted tumors, ſuppoſing it to be encloſed in a membranous ſack, in the manner of the atheromatous, and ſteatomatous encyſted tumors. Mr. Eller, in the memoirs of the Berlin academy, gives a very different account of this tumor; he obſerved, that very bad ſymptoms often ſucceeded the extirpating the *ganglion*, in the way of the common encyſted tumors by the knife, and thence concluded, that they muſt be of a different nature, and origin from thoſe tumors. The matter contained in the *ganglion* is uſually found to be of a gelatinous texture, like the jelly of hartſhorn, and of no bad ſmell, or ſharp taſte, and the membrane which contains it always contracts itſelf at the baſe into a kind of neck, and is there intimately joined to, and united with the tendon on which it is placed. The appearance of the tendon however, in the place where the *ganglion* adheres, never appears vitiated, nor any way different from other parts of it. Memoirs de Berlin Ann. 1748. p. 109.

In order to underſtand rightly the origin of the *ganglion*, we are to conſider, that every fibre of the muſcle to which the tendon is affixed, and of whoſe fibres it indeed is only an elongation in a more ſtraitened form, is, while in the muſcle, covered with a delicate fine membrane, which leaves it as ſoon as it leaves the muſcle to enter the compoſition of the tendon; and that all theſe membranes together form the general covering of the tendon, which loſes itſelf in the joining of that part to the bone. This membrane would be rather an incumbrance than a uſeful covering to the tendons, if it did not ſeparate a limpid and viſcous juice, which coats over the whole ſurface of the tendon, and facilitates its common motions. Anatomiſts in general have neglected to enquire into the nature and uſe of this membrane which covers the tendons, and therefore they have miſtaken the origin of the *ganglion*, which is not to be underſtood without this previous knowledge of the part to which it is wholly owing.

When this membrane ſuffers with the tendon, any external violence from blows, or violent extenſions, it often burſts in ſome part; and it neceſſarily follows, that the liquor it before contained, muſt eſcape through the aperture, and it after this naturally lodges itſelf in the tunica adipoſa of the ſkin; and as the liquor by degrees encreaſes in quantity, this tunic, or membrane, forms a part of a ſack for the reception of it. As the viſcous liquor continues to be voided through the aperture, the more ſubtil parts of it by degrees eſcape, and the remainder forms the viſcous and tough matter, which is found in opening the *ganglion*. In ſome caſes, where the rupture of the membrane has been incomplete, the ſurface of it riſes and forms the covering of the ſwelling; and in this caſe repreſents the aneuriſm in an artery.

GANGRENE *(Cycl.)*—Wherever this ſeizes a part, the great care to be taken is to prevent, if poſſible, its terminating in a ſphacelus. In ſtrong habits it is always proper in this caſe firſt to bleed largely, and repeat it as occaſion ſhall require; and it is a moſt neceſſary ſtep in theſe caſes, to be very careful in the beginning, to remove all violent external cauſes of inflammation; as too ſtrict a bandage in wounds and fractures, all foreign bodies, which are accidentally lodged in the parts, as thorns, ſplinters, needles, and the like; and all improper external applications, ſuch as oils and plaſters, with cooling and aſtringent things; and eſpecially in old or weak people, to keep up the failing ſtrength by ſuch diet, as afford good and ſuitable juices for nouriſhment. If the patient is weak, and in years, and naturally of a cold habit; eſpecially if he has loſt much blood, and abounds in crudities, the moſt ſuitable diet for him will be ſoops and brooths, made of chicken, or meat, with mace and other ſpices boiled in them; alſo draughts of cordial liquors, with yolks of eggs, cinnamon and ſugar; eggs themſelves poached, and eaten ſoft; ſtrong jellies of calves feet, hartſhorn, and ivory ſhavings, and old and rich wines; or where the patient's circumſtances will not afford theſe, and nothing particular forbids the uſe of malt liquors, fine ales not too ſtale may ſerve very properly. With reſpect to medicines, the proper ones are the cordial tinctures, waters and electuaries, as the confection of alkermes with ſpices, and other cordial ingredients mixed in it; and teas, made of ſage, ſcordium, and the like herbs, with the ſpices, or a few ſhavings of ſaſſafras, or yellow ſanders; for by theſe means, the ſtagnating blood will be greatly reſolved and attenuated, and its ſound and healthy parts will be retained in a due circulation, and its noxious ones diſcharged and diſſipated. It is alſo of ſome ſervice in theſe caſes frequently to apply a ſpunge dipt in hungary water to the noſe, or to bind it to the wriſts, or temporal arteries: the crumbs of rye bread, mix'd with powdered cloves, and ſteeped in ſtrong vinegar, and afterwards made up into a ball, and held frequently to the noſe, is alſo a thing of no little ſervice. For patients who are of a more warm, ſanguine, and bilious habit, ſoops and decoctions mixed with the acid juices of lemons, or other vegetable acids, are very proper ſtrengtheners; as alſo barley gruel, mixed with ſyrrup of lemons, or mulberries, or with jelly of currants, to be taken daily for the common drink. But in theſe caſes, when the heat is ſmall, and the patient weak, or before accuſtomed to wine, it may be allowable to mix a little wine with the gruel: rheniſh is of all wines the moſt proper on this occaſion, and a glaſs of that, or if neceſſary of a richer wine, may be given at proper intervals.

The temperate, or cooling medicines, commonly given in fevers, may alſo be adminiſtered very properly in theſe caſes; but above all others, the bark is generally eſteemed the great internal remedy in this diſorder. To theſe muſt be added, the ſurgeon's utmoſt attention in the diſcharging the ſtagnating and corrupted blood from the parts, as ſoon as poſſible, and to prevent the neighbouring parts from being affected thereby; the principal methods of doing this are, while the proper internal medicines are given, to make ſcarifications as occaſion ſhall direct upon the parts affected with the ſcalpell; theſe inciſions are to be made all lengthwiſe, and very numerous on the part, and are to be opened to a ſufficient depth; that not only the ſtagnating blood may be by that means diſcharged; but free way may be made by thoſe openings, for the ingreſs of the medicinal applications. And laſtly, diſcutient, balſamic, and ſtimulating fomentations and cataplaſms are to be with great care applied to the affected parts, and frequently renewed. A very excellent fomentation on theſe occaſions is made by mixing with a pint of lime water, three ounces of camphorated ſpirit of wine, with half an ounce of ſpirit of ſal armoniac, or of ſpirit of wine, with myrrh, aloes, and ſaffron infuſed in it, or ſpirit of wine camphorated, with a ſmall quantity of venice treacle, and elixir proprietatis. A decoction of rue, wormwood, ſouthernwood, and camomil flowers alſo, with an admixture of four ounces of venice treacle, and two ounces of caſtile ſoap, and half an ounce of ſal gem to the quart makes a very valuable fomentation; this ſhould be applied hot ſeveral times in a day, by means of doubled linen, or woollen cloths dipped in it, and a laſting warmth may often be ſerviceably kept, by means of a brick made hot, by boiling water, and applied afterwards wrapped up in a linen cloth.

The poor may find a cheap domeſtic remedy in the pickle of cabbages, or in horſe or cow dung, boiled in vinegar, or wine if that can be had; theſe ſhould be applied warm, on linen or woollen cloths, and it is much better to ſteep them hot, by means of a hot brick or tile, than to be frequently opening and expoſing the part to the air to renew them.

The more deſperate a *gangrene* is, and the nearer it approaches to a ſphacelus, the longer and deeper the ſcarifications muſt be made; they may now alſo if on the legs, arms, *&c.* be made tranſverſely, as well as longitudinally, down to the quick; and afterwards the injured parts are to be well rubbed and wetted with warm and ſtimulating medicines; and afterwards a penetrating and diſcutient cataplaſm is to be applied, that the blood in the vitiated parts may be reſtored as much as poſſible to its free and proper motion. A proper cataplaſm for this purpoſe may be made of a few handfuls of ſcordium, wormwood, feverfew, mallows, mint, and ſouthernwood, boiled in oxycrate to the conſiſtence of a cataplaſm and pultice, with half an ounce of ſal armoniac, and two ounces of linſeed meal, with half an ounce of the infuſed oils of rue and camomil added afterwards to it; before this cataplaſm is applied to the part, it is always proper to mix with it a little venice treacle, or elſe of ſpirit of wine comphorated to encreaſe its virtue.

Theſe applications are beſt renewed about three times a day, if they are oftner, it expoſes the parts too much to the injuries from the external air by ſo frequent uncovering them; if more ſeldom, it is poſſible changes may happen between, with which the ſurgeon ought to have been timely acquainted. Care however muſt be taken, either by hot bricks, or ſome like means, to keep the applications warm all the time they are on, for when ſuffered to cool upon the part, they are not only uſeleſs but very hurtful. *Heiſt.* Surgery, p. 215.

GANGRINOS, in the materia medica of the antients, a word uſed for foſſile ſalt; Myrepſius plainly uſes it in this ſenſe, and Fuchſius explains it by foſſile ſalt, called by the barbarous authors ſal gemmæ.

GANGYA, in the materia medica, a name by which ſome authors call the ſeſamum, or oily purging grain. *Marcgr.* p. 21.

GANIMEDES, in chemiſtry, a name given by ſome to white ſulphurs, raiſed by frequent ſublimation; theſe affected writers gave it this name from its being elevated by fire in the proceſs, as Ganimede is ſaid by the poets among the antients to have been taken up from the earth, and raiſed to heaven. *Johnſon.*

GANNANAPERIDE, in botany, a name by which ſome authors have called the tree, which produces the famous Jeſuits bark. *Ray's* Hiſt. Pl. Vol. II. p. 796.

GANNETT, in zoology, the name uſed in Cornwall, and ſome other parts of England, for a large ſpecies of larus, or ſcalpell, called by authors *cataractes*. It is one of the largeſt birds of the larus kind, being larger than the common duck. Its beak is ſhorter, ſtronger, and more crooked than that of any other bird of this kind; it is web-footed, but has the ſtrongeſt,

ſtrongeſt and ſharpeſt claws of all the birds of that kind. Its back is of a duſky, browniſh, or ferrugineous gray, like that of the buzzard; its belly and breaſt are paler, but of the ſame dye, and its long wing feathers are black; its tail alſo is all black. It is a very bold and voracious bird; it follows the ſhoals of pilchards and other fiſh, and picks up vaſt numbers of them. It is very common in the weſtern coaſts of England. *Ray*'s Ornitholog. p. 26.

GAONS, a certain order of jewiſh doctors, who appeared in the eaſt, after the cloſing of the talmud. The word *gaons* ſignifies excellent, ſublime, as in the divinity ſchools, we formerly had irrefragable, ſublime, reſolute, angelic, and ſubtle doctors. The *gaons* ſucceeded the Seburæans, or Opiners, about the beginning of the ſixth century. Chanan Meiſchtia was the head, and firſt of the excellents; he reſtored the academy of Pandebita, which had been ſhut up for the ſpace of thirty years. *Calm.* Dict. Bibl. *Baſnag.* Hiſt. des Juifs. Tom. 6. l. 9. c. 5. Art. 3.

GARAB, and ALGARAB, names given by Avicenna to the ægilops, or wild oat.

GARAGAY, in zoology, the name of a rapacious bird of Mexico, of the ſize of our kite; its head and the tips of its wings are white, it makes but ſhort flights, it is very fond of the eggs of tortoiſes and crocodiles, and hunts the places where they have buried them in the ſands. *Ray*'s Ornitholog. p. 252.

GARANHA, in zoology, a name by which ſome have called a large Braſilian fiſh, of the ſhape of our carp, more uſually known among authors, by its Braſilian name acaraaya. See the article ACARAAYA. *Willoughby*, Hiſt. p. 329.

GARATRONIUM, in natural hiſtory, the name of a foſſile body, commonly ſuppoſed the ſame with the bufonites, but very improperly; the only juſt account of it is that of Ferrante Imperato, who tells us, that it is a purple ſtone with variegations of a gold yellow, diſpoſed in the manner of the veins of many ſorts of marble; and that the Perſians, and many other of the eaſtern people, cut it into the handles of their ſabres. It appears by this deſcription to be a kind of jaſper; and is very improperly confounded with the bufonites, a ſmall ſtone fit only to be worn in rings.

GARB, a name given by the Moors, to an African ſpecies of willow. *Ray.*

GARBOARD-*ſtrake*, in a ſhip, is the firſt ſeam next to the keel.

GARBOARD-*plank*, in a ſhip, the firſt plank faſtened on the keel.

GARCINIA, in botany, the name of a genus of plants, called by Garcias *Magoſtans*; the characters of which are theſe. The perianthium is compoſed of four roundiſh, hollow, obtuſe leaves, which remain after the flower is fallen. The flower conſiſts of four roundiſh and hollow petals, which ſtand expanded, and are twice as large as the leaves of the cup. The ſtamina are ſixteen erect and ſimple filaments, placed together in form of a cylinder, and longer than the cup. The antheræ are roundiſh, the germen of the piſtill is of an oval figure; there is ſcarce any ſtyle, the ſtigma is flat and peltated, and divided into eight obtuſe ſegments; the fruit is a large coriaceous globoſe berry, having only one cell, in which are eight hairy and fleſhy ſeeds, convex on one ſide, and angular on the other. *Linnæi*, Gen. Pl. p. 212. *Garc.* AA. 431. t. 1.

GARDEN (*Cycl.*)—The principal things to be conſidered in the forming a *garden*, are the ſituation, form, ſoil, aſpect, and expoſure; as to the form, a ſquare, or rather an oblong, is the moſt eligible; if the ground be irregular, it may be made uniform by art. A triangle is a beautiful figure, as well as a ſquare, and the moſt irregular ſpots of ground may, by borders and walks, be brought to one or other of thoſe figures.

The ſituation ought to be neither too high nor too low, for the winds in one of theſe extremes, and the damps in the other are equally to be avoided. The ſides of a hill are always the moſt eligible, and if the declivity be eaſy, and there are ſprings of water, the ſituation is as happy as any thing can be. *Gardens* on level ground have their advantages, and are leſs expenſive; but they want proſpect, and ſeveral other very agreeable things in thoſe on the ſides of hills not too ſteep. The ſoil is greatly to be regarded, as it is not poſſible to make a good *garden* when this is bad. Great expences may be incurred in meliorating the ground, and when that is done, the advantages of it will be loſt in a little time; nay, where three feet of good earth have been laid over the whole ſurface of a *garden*, when the trees have been rooted enough to ſtrike into the natural bottom, the whole plantation has been known to dwindle away. Places naturally producing heath and thiſtles are to be rejected, and where the trees are ſeen to be ſtubbed, and ſtunted, it is an ill omen. When the graſs grows well, and there is not leſs than three feet earth, *gardens* are ſure to ſucceed. The ground muſt not be too ſtoney, nor of all things, a hard ſtiff clay, which is moſt to be avoided of all ſoils for *gardening*. A third requiſite is water, without which a *garden* muſt ſuffer extremely in droughts. And to theſe may be added, a very advantageous and pleaſing, though not abſolutely neceſſary thing, the proſpect of a pleaſant country. The area of a handſome garden may take up thirty or forty acres, not more, and the following rules ſhould be obſerved in the diſpoſition of it. There ſhould always be a deſcent from the houſe to the *garden* of not fewer than three ſteps; this will render the houſe more dry and wholeſome, and the proſpect on entering the *garden* more extenſive. *Miller*'s Gard. Dict.

The firſt thing preſenting itſelf to view in a *garden*, ſhould be a fine level piece of graſs, full as broad as the front of the building, and this ſhould be ſurrounded with a gravel walk, for the convenience of walking in damp weather. On the outſide of theſe gravel walks ſhould be borders of three or four feet wide for flowers. And from the back of theſe a ſlope of ever-green ſhrubs will terminate the proſpect very agreeably: but whenever there are good proſpects, or agreeable buildings to terminate the view, there then ſhould be left open viſtas.

Groves make the moſt agreeable part of a *garden*, ſo that there cannot be too many of them; only they muſt not be too near the houſe, nor be ſuffered to block up agreeable proſpects. To accompany parterres, groves opened in compartments, quincunxes, and arbour work with fountains, *&c.* are very agreeable. Some groves, all of evergreens, ſhould be planted in proper places, and ſome ſquares of trees of this kind among the other wood.

The head of the parterre ſhould be adorned with baſons and waterworks; and behind them ſhould be a circular line of paliſades, or woodwork, cut into a gooſe foot, and leading into the principal walks. The principal walk muſt be in front of the houſe, and ſhould extend from the graſs plat next the houſe, to the end of the garden, and at the end terminated by a foſſe to continue the view.

The ſeveral parts of every piece in the *garden* ſhould alſo be diverſified; if a baſon be round, the walk ought to be octangular; and the ſame is to be obſerved in graſs plats, and bowling greens, which are the midſt of groves. In places where the eye takes in the whole at once, the two ſides ſhould be always the ſame; in all others they ſhould be varied, and above all things, ſmall baſons, narrow walks, and other littleneſſes in contrivance, are to be avoided.

Before a *garden* is plan'd out, it ought alſo ever to be conſidered, what it will be when the trees have had twenty years growth. The corners and angles of every part of a *garden* ought to be ſloped, or cut hollow.

The ſeveral ſorts of *gardens* may be properly enough ranged under three general heads. 1. *Gardens* on a perfect level. 2 *Gardens* on an eaſy aſcent. 3. *Gardens*, whoſe ground and level are interrupted by falls and terraces, banks, ſlopes, or flights of ſteps. *Gardens* on a perfect level have the advantages of leſs expence, and an eaſy walking. Thoſe on an aſcent fatigue people in walking, but they entertain the eye with an agreeable proſpect. Thoſe with frequent terraces have the advantage of preſenting, in different places, ſo many different views of the compartments, as to give the pleaſure of ſeveral gardens. *Miller*'s Gard. Dict.

Kitchin GARDEN. See KITCHIN.

Pendant GARDENS. See PENSILES *horti*.

GARDECAUT, or GARD DU CORD, in a watch, that which ſtops the fuſee, when wound up, and for that end is driven up by the ſtring; ſome call it *guard-cock*; others *guard du gut*.

GARDON, in zoology, the name of a fiſh of the roach kind, ſuppoſed by many not to differ in any thing eſſential from the common Roach of the Engliſh rivers; ſome authors call it the *gardon* ſargus, and cephalus; others leuciſcus. *Willughby*'s Hiſt. Piſ. p. 260. See LEUCISCUS and SARGUS.

GARDUS, in ichthyology, a name given by ſome writers on fiſhes, to that kind of cyprinus, called by Geſner and others, the ſargus. See GARDON and CYPRINUS.

GARE, in our old writers, a coarſe wool, full of ſtaring hairs, ſuch as grows about the ſhanks of ſheep. 31 Edw. 3. c. 8. *Ruſt.* Dict. in voc.

GARGANEY, in zoology, the name of a freſh water fowl of the duck kind; it is ſomewhat larger than the teal, but very like it in ſhape. Its beak is black, and its legs and feet livid with a faint mixture of green; the upper part of the head is almoſt wholly black, but it has on each a white ſtreak drawn from the eyes to the back part of the head, the throat and lower part of the neck are variegated with white and a rediſh brown; juſt under the beak it has a black ſpot, the breaſt is beautifully variegated with tranſverſe undulated lines of black, and a duſty brown; the belly is white, or yellowiſh. The female is ſmaller than the male, and has not the bright colours about the head, which are ſo beautiful in that.

GARICON, in the materia medica, a name given by the Arabian writers to the drug called agaric by the antients. The Arabians have ſaid nothing of this drug, but what they have tranſcribed from the Greek of Dioſcorides and others; it is certain however from the concurrent teſtimony of all the antients, as to the form, nature, and virtues of agaric, that theirs was not the ſame ſubſtance which we call by this name. See AGARIC.

The antients knew two kinds of what they called agaric; they diſtinguiſhed theſe by the common terms of male and female.

female; the male was a root reſembling the ſilphium of a cubit long, and of an inch or two in diameter; the female was the corrupted *wood* of certain trees, particularly of the cedar, and other odoriferous woods.

Pliny makes it indeed the decayed wood of the oak, which ſhines like fire in the dark, and calls it a fungus, but this was not the agaric of the Greeks.

The female agaric, or the decayed wood of the cedar, was what they gave as an antidote and cordial; the male, or as others called it, the black agaric, was poiſonous. Dioſcorides places it among the poiſonous roots, and Aviſenna condemns it, as hard and unfit for internal uſe; the other, or female agaric, being ſoft, friable and tender. When it was thus in a great degree however, it was condemned by the more accurate writers; and Dioſcorides, in particular, condemns the agarics of Cilicia and Galatia as too friable, and of no value: ſo that they ſeemed to fix upon a proper ſtage in the decay, as the neceſſary qualification of good agaric.

GARIDELLA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of a number of arched leaves, each bifid at the end, and all diſpoſed in a circular form; the cup is divided into ſeveral ſegments, and from it ariſes a piſtil, which finally becomes a ſort of head compoſed of ſeveral oblong bivalve capſules, which contain roundiſh ſeeds.

There is only one known ſpecies of this plant, which is the *garidella* with finely divided leaves, commonly called the fennel leaved cretic nigella. *Tournefort*, p. 625.

GARLICK, *Allium*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the liliaceous kind, and conſiſts of ſix leaves, with a piſtil in the center, which finally becomes a roundiſh fruit, divided into three cells, and containing roundiſh ſeeds. To this it is to be added, that the flowers are always collected into round heads, and the roots are tunicated, and uſually made up of ſeveral ſmall nuclei; and finally, that the leaves are not tubular. The ſpecies of *garlick* enumerated by Mr. Tournefort are theſe. 1. The common cultivated *garlick*. 2. The cultivated *garlick*, with the twiſted top of the ſtalk, called by many alliopraſum, ophioſcordon, and Rocambole. 3. The broad leaved round headed *garlick*. 4. The leek leaved wild *garlick*, with red flowers and red roots. 5. The narrower leaved globular headed *garlick*. 6. The broad leaved wild *garlick*, called *bears garlick*, and ramſons. 7. The broad leaved ſpotted mountain *garlick*. 8. The leſſer broad leaved mountain *garlick*. 9. The narrow leaved ſpotted mountain *garlick*. 10. The greeniſh yellow flowered *garlick*, called moly with green flowers. 11. The two horned purple proliferous mountain *garlick*. 12. The two horned wild *garlick*, with a greeniſh white flower, with three purple ſtreaks in each petal. 13. The two horned mountain *garlick*, with a duſky coloured flower. 14. The two horned mountain *garlick*, with pale yellow flowers. 15. The two horned ruſh leaved yellow flowered mountain *garlick*. 16. The round headed mountain *garlick*. 17. The purple flowered Pyrenean *garlick*, called by ſome the purple moly. 18. The great narciſſus leaved mountain *garlick*. 19. The narciſſus leaved mountain *garlick*, with ſoft leaves and pale coloured flowers. 20. The leſſer narciſſus leaved mountain *garlick*. 21. The narciſſus leaved mountain *garlick*, with narrow leaves and pale flowers. 22. The long rooted mountain *garlick*. 23. The purple flowered rock *garlick*, with roots like acorns. 24. The little mountain *garlick*. 25. The broad leaved lily flowered mountain *garlick*. 26. The broad leaved *garlick*, with red lily like flowers. 27. The broad leaved Spaniſh *garlick*. 28. The broad leaved yellow flowered *garlick*. 29. The broad leaved ſtrong ſcented yellow flowered *garlick*. 30. The purple flowered African *garlick*. 31. The whitiſh green flowered *garlick*. 32. The leſſer mountain *garlick*, or moly with a large roſe coloured flower. 33. The narrow leaved *garlick*, with pale red umbellated flowers. 34. The low *garlick*, with groſſy leaves. 35. The triangular ſtalked *garlick*. 36. The large flowered narrow leaved *garlick*. 37. The narrow leaved *garlick*, with twiſted leaves: and 38. The little ruſh leaved, ſweet ſcented wild *garlick*. *Tourn.* Inſt. p. 383.

Garlick is an extremely active and penetrating medicine. It is of the number of thoſe roots which ought always to be uſed freſh and full of juice, not dried; ſome eſteem it the greateſt of all alexipharmics. The German phyſicians frequently carry a clove of *garlick* in their mouths, when they viſit patients in malignant fevers: with us it is more in uſe among country people, than in the ſhops. They give a decoction of *garlick* in milk, as a remedy for worms, and alſo in the cholic, and in ſuppreſſions of urine. Its moſt conſtant uſe, however, is in aſthma's, and catarrhous diſorders of the breaſt, in which it promotes expectoration.

Whatever may be the virtues of *garlick*, it ought to be uſed in ſmall doſes, and that not too frequently, becauſe, if long continued, it is apt to heat and inflame the viſcera. Vid. *Hill*'s Hiſt. Mat. Med. p. 660, ſeq.

GARNET, in natural hiſtory. See GRANATUS.

GARNET, aboard a ſhip, is a tackle having a pendant coming from the head of the main maſt, with a block ſtrongly ſeized to the main ſtay juſt over the hatch way; in which block is reeved the runner, which hath an hook at one end, in which is hitched the ſlings; and at the other end is a double block, in which the fall of the runner is reeved; ſo that by its means any goods, or caſks, that are not over heavy, may be haled and hoiſed into, or out of the ſhip; when this *garnet* is not uſed, it is faſtened along by the ſtay at the bottom of it.

GARNET *colour*. To give this colour to glaſs the workmen take the following method. They take equal quantities of cryſtal and rochetta frit, and to every hundred weight of this mixture they add a pound of manganeſe, and an ounce of prepared zaffer; theſe are to be powdered ſeparately, then mixed and added by degrees to the frit while in the furnace: great care is to be taken to mix the manganeſe and zaffer very perfectly, and when the matter has ſtood twenty four hours in fuſion, it may be worked. *Neri*'s Art of Glaſs, p. 91.

GARNET *paſte*. The making the counterfeit *garnet* in paſte is done in three different proportions of the ingredients, which are theſe.

Take prepared cryſtal two ounces, common red lead ſix ounces, manganeſe ſixteen grains, zaffer three grains; mix all well together, and put them into a crucible, cover it with a lute, and ſet it in a potter's kiln for twenty four hours.

Or take cryſtal two ounces, minium five ounces and a half, manganeſe fifteen grains, zaffer four grains; mix them well together, and leave room for their ſwelling in the pot; bake them twenty four hours in a potter's kiln.

The laſt method is this: Take cryſtal prepared two ounces, minium five ounces, mix them, and add manganeſe fifty two grains, zaffer ſix grains; mix them well together, and let all be baked, in a pot well luted, in a potter's kiln for twenty four hours.

The firſt of theſe makes a very handſome *garnet* of the common tinge, the ſecond a deep one with ſomething of a violet tinge, as many of the natural garnets have, but the third makes infinitely the fineſt and brighteſt. *Neri*'s Art of Glaſs, p. 134.

Clew-GARNET, on board a ſhip. See CLEW-*Garnet*.

GAROSMUS, in botany, a name uſed by ſome authors for the atriplex olida, or ſtinking orach, a very ſtinking low plant common on dunghills. *Ger.* Emac. Ind. 2.

GARRULUS *Bohemicus*, the *Bohemian magpie*, a name given by ſome to the bird more uſually called *ampelis*, from its love of grapes. See AMPELIS.

GARRULUS *Argentoratenſis*, in zoology, the name given by authors to the ſpecies of magpie commonly called the roller, a very beautifully variegated bird, brought to market in Italy, and ſome other places. *Ray*'s Ornitholog. p. 89.

GARTH (*Cycl.*) is uſed in ſome parts of England for a little backſide or cloſe. It is an antient Britiſh word. *Gard*, in that language, ſignifies garden, and is pronounced and written *garth*.

This word is alſo uſed for a dam, or wear, *&c.*

GARTH-*men*, is uſed in our ſtatutes for thoſe who catch fiſh by means of fiſh-garths, or wears.

By ſtatute it is ordained, that no fiſher, nor *garth-man*, ſhall uſe any nets or engines to deſtroy the fry of fiſh, *&c.* 17 Rich. II. c. 9. The word is ſuppoſed by ſome to be derived from the Scotch word *gart*, which ſignifies forced or compelled; becauſe fiſh are forced by the wear to paſs in a loop, where they are taken.

GARUM, a word in very common uſe among the old writers on medicine; they expreſſed by it a pickle, in which fiſh had been preſerved. The principal kind of fiſh they preſerved in this manner was the mackarel.

The *garum* principally conſiſted of the juices of the fiſh and ſalt; but we find the old writers ſpeaking of ſeveral kinds of it: one they called Spaniſh *garum*, from the place whence they had it; another kind, from its colour, was termed the black *garum*; this laſt kind ſeems to have been that called *fæcoſum* by the Latin poets, as if the fæces and remains of the fiſh were left among it: and by others *garum ſanguineum*, from its being ſometimes tinged with their blood to a rediſh colour. The Romans ſometimes called the Spaniſh kind, which was eſteemed the beſt, *garum ſociorum*; and Galen ſays, that the black *garum* was called oxyporum, but he only means by this, that it was uſed in the preparations called oxypora. It ſerved to dilute them, and thence took the name of them to itſelf, by way of diſtinction from the Spaniſh, and other kinds, not uſed to this purpoſe. Pliny tells us, that *garum* was compoſed of all the offals of fiſh, of every kind, macerated in ſalt; it had its name, he ſays, from its being originally made of a fiſh called by the Greeks *garos*, but in his time the beſt ſeems to have been made with the mackarel; but that there were ſeveral other kinds uſed, both in food and medicine, ſome of which muſt have been made from ſcarce fiſh, for they were of great price. They were uſed in glyſters, and externally applied in ſeveral kinds of cutaneous eruptions: the antients had a great opinion of them in glyſters, for removing the pain in the ſciatica, and other like caſes; and the coarſer ſorts were their common medicine for curing cattle of the ſcab, by making inciſions in the ſkin, and laying over the part cloaths wetted with it.

The true way in which the antients prepared their *garum*, which they ſo much valued as a delicacy at their tables, is unknown to us; but it appears that ſome kinds of *garum* had no fiſhy matter in them, from Aëtius, who gives the following preſcription of a liquor, which he calls by this name. Take of common water thirty one pints, of ſea ſalt two pints, and of dried figs fifty; let theſe all macerate together, and afterwards be ſtrained clear for uſe. All the *garums* were eſteemed hot and drying by the antients, and were ſometimes given as laxatives before food. The modern writers underſtand the word *garum* in a much more limited ſenſe, meaning no more by it than the brine or pickle in which herrings or anchovies are preſerved.

GARYOPHYLLUS, or CARYOPHYLLUS, the *clove ſpice*. There is great room to doubt whether the *caryophyllus* of the antient Greeks and Romans was the ſame with the ſpice we now know by that name. Pliny's account of it is, againſt the general opinion, that it was. He ſays it was of the ſhape of a pepper corn, but larger, and more brittle, and that it was brought over for the ſake of its ſmell. This deſcription of the *caryophyllus* of the antients does not at all agree with our clove ſpice, but much better with the pimento, or, as we call it, Jamaica pepper. Pliny adds, that it was ſaid to grow in ſome part of the Indies. The copies differ in theſe words, ſome have it in *indico luce*, others in *indicato*, and the moſt correct in *indica Tynde*. Tyndis was a famous market of the Eaſt Indies in old times, and, according to Peutinger's tables, it was the very utmoſt limits of the Roman traffick in this part of the world: and the author of the Periplus of the Red Sea mentions Tyndis and Muziris, as two of the moſt remarkable and flouriſhing marts of the Indies, where merchants of all nations reſorted to purchaſe the products of the Eaſt. The cloves, or *caryophylli* of our times, grow in the Molucca iſlands, and in Ceylon, which was the Taprobatane of the antients.

The *caryophyllus* of Pliny muſt be allowed to be different from our clove, but Paulus Ægineta ſeems plainly to have known our clove by this name; he ſays, that it was a ſpice brought from the Indies, and ſeemed a ſort of flower, but compoſed of a woody ſubſtance, and bore its fruit on the top. The flower itſelf he alſo, in another place, compares to a nail, a compariſon adopted by many who have written ſince his time, and very appoſite to the cloves now in uſe, but by no means to the cloves of the antients, which, as deſcribed by Pliny, muſt have been round, and in ſize between a pepper corn and a pea, its ſize and ſhape very well agreeing with our pimento. Paulus Ægineta finds fault with the name *caryophyllus*, which ſignifies having leaves like the nut tree. It is very certain that the clove july flower, with which we make a ſyrup in the ſhops, is by no means entitled, by the ſhape of its leaves, to this name, and has only obtained it from its flower, ſomewhat reſembling, in ſmell, the clove ſpice. Some ſay that it is applicable to the clove tree, but this will ſcarce hold, for the clove tree is, by all modern writers, agreed to have leaves like the bay, and the bay leaf has no great reſemblance to any thing of the nut kind. Theophraſtus indeed compares the citron leaf to the leaf of the bay, the nut, and the andrachne; but though we allow that the andrachne had leaves very like the bay, we can ſcarce come into the opinion, that the nut leaf is like the bay. Upon the whole, the quarrel that Ægineta makes to the name, and the name being received as a proper one among all the Greek writers, ſeems a farther proof that their clove was not the ſame with ours: the tree that produced their clove, if different from ours, might perhaps have leaves like a nut tree, though the leaves of our clove tree are like the bay.

GAS *(Cycl.)*—GAS *ſylveſtre*, a term uſed by Van Helmont to expreſs a ſubtile and floating ſpirit, which is ſcarce abſent from any place, but impregnates the air; and though it is of no harm when in an open place, yet when ſhut up, and cloſe confined in a cavern, has power to extinguiſh a candle, and even in a more potent ſtate will ſuffocate animals. Neuman obſerves that this *gas* always remains, in ſome portion, in fermented liquors, though it is not to be ſeparated from them, any more than from any other body which it impregnates in a ſenſible form. Ale is obſerved by this author always to retain a conſiderable portion of it, to which it owes its inebriating and narcotic quality, more than to the common ſpirit which it contains.

GAST *hound*, a term uſed in the north of England for a ſort of hound, called alſo, more expreſſively, the gaze hound. This dog is more beholden to the ſharpneſs of his ſight in hunting, than to his ſmell. He will ſeldom loſe ſight of the fox, when once he has found him, and makes very good ſport with the hare. As to the buck, he will always ſingle out a plump and good one from the herd, and if after a time he joins them again, and they ſuffer it, this dog will ſoon pick him out again by his eye, and never leave him till he is worried. Theſe ſort of hounds do better in champaign even ground, than where there are buſhes and briars; and they are better for people who follow them on horſeback, than for thoſe who hunt on foot. If this ſort of dog takes a wrong way, he is not obſtinate in it, but begins the chace afreſh from a ſignal made him by the maſter, and follows with as much courage and nimbleneſs as at firſt.

GASTEROSTEUS, in ichthyology, the name of a genus of the acanthopterygious fiſhes, the characters of which, according to Artedi, are theſe. The brancheoſtege membrane on each ſide contains three ſmall and ſlender bones; the belly is almoſt all over covered with bony ſcales; the belly fins have only two rays, the one of which is much larger than the other, and is prickly. The ſpecies of this fiſh are theſe. 1. The *gaſteroſteus*, with three prickles on the back; this is the common piſciculus aculeatus, or common ſtittleback. 2. The *gaſteroſteus*, with ten prickles on the back; this is the pugnitius minor of authors. 3. The *gaſteroſteus*, with fifteen prickles on the back; this is the ſteinbicher of the Germans. The body is ſquare, and the fiſh is five or ſix inches long.

The name is of Greek origin, and is derived from the words γαστηρ, *the belly*, and οστεον, *a bone*; the greater part of the belly of this fiſh being fortified by bony plates. *Artedi* Gen. Piſc. p. 37. See alſo *Linnæi* Syſt. Nat. p. 53.

GASTRIC *(Cycl.)*—GASTRIC *juice*, a name given by ſome authors to the proper juices of the ſtomach. This is a thin, pellucid, ſpumous, and ſaltiſh liquor, which continually diſtils from the glandulous kernels of the ſtomach for the diſſolution, mixture, and dilution of our food, and is of great ſervice in digeſtion.

GASTROCNEMII, *(Cycl.)* in anatomy, two thick pretty broad and oblong muſcles, ſituated laterally with reſpect to each other, in the ſame plane, under the *poples*, and forming a great part of what is called the calf of the leg. That which lies next the tibia is called internus, and that next the fibula, externus. Each muſcle is fixed above, by a flat tendon to the poſterior part of the lower extremity of the os femoris, behind the lateral tuberoſity of each condyle, adhering cloſely to the poſterior ligaments of the point of the knee: from thence they run down, each forming a large and pretty broad fleſhy body, irregularly oval. The externus covers the poplitæus, being larger and broader, ſpreading more laterally, and running lower down than the internus; the fleſhy body of which begins higher up than the other. About the middle of the leg they end in a ſtrong, broad, common tendon, which contracts a little in breadth as it deſcends, and is inſerted in the poſterior extremity of the os calcis, together with the tendon of the ſolæus. The ſuperior tendons of theſe muſcles become gradually cartilaginous in aged perſons; and at length oſſify near the condyles, the bony portions looking like ſeſamoide bones. It is ſometimes very late before they are hardened in this manner, and often one of them is hardened before the other. *Winſlow*'s Anat. p. 218.

GASTRORAPHY, in ſurgery, expreſſes the operation of the ſuture, or ſowing up wounds in the abdomen.

The word is derived from γαστηρ the belly, or abdomen, and ῥαφη, a ſuture.

This operation is generally much dreaded by the patient, and is unneceſſary in ſeveral caſes where the wound is only in the muſcular part, and 2. where it is not very large, eſpecially if it be made lengthwiſe: for if the wound ſhould penetrate into the cavity of the abdomen, and even let out a part of the omentum, or inteſtines; yet in caſes where it is very ſmall, as wounds generally are, which are made by puncture, or have happened lengthways; in theſe caſes, upon returning the parts which are puſhed out, ſtopping the wound with a ſoft tent, and ſecuring all with a proper bandage, it may be healed without the help of the needle. Beſides in fat perſons, this operation is very difficult: and it would be an act of great cruelty in a ſurgeon, to perform this operation upon a man, when he might be cured after an eaſier method.

But there are two caſes in which this operation is abſolutely neceſſary; the firſt is, where the wound is ſo large, that there is no poſſibility of retaining the inteſtines by any other method; for as the inteſtines are continually puſhed forward in the act of inſpiration, by the action of the diaphragm and the abdomen, the falling down of the inteſtines in this caſe is unavoidable, and therefore the operation is neceſſary; the other is in large tranſverſe wounds of the abdomen, where the muſcles are divided, but the peritonæum is not concerned.

In wounds of the abdomen the chief inquiry is, whether the omentum or inteſtines are let out; if none of theſe have burſt through the wound, the lips of the wound muſt be kept as cloſe together as poſſible with the hands, and the patient kept with his head lying downwards, till the wound is ſufficiently ſecured from letting out the contents of the abdomen: but when the inteſtines are already fallen out, they muſt be returned with the greateſt expedition, leſt they ſhould receive any injuries from the external air. It is firſt to be examined however, whether they have received any wound, or not; and whether they preſerve their natural warmth and colour: for where they are cold, livid, or dry, or wounded, they are not to be returned ſuddenly, but fomented with warm milk and water, or wrapped up for ſome time in the cawl of ſome animal newly killed, till they have in ſome degree recovered their native warmth and condition.

You will eaſily perceive, that there is ſome hurt in the in-

teſtines, though the wound does not immediately appear, if there is a more than ordinary flaccidity in them; and when this is the caſe, the reſt of the inteſtines muſt be pulled gently forward till you find the wound. If nothing of this ſort is the caſe, but the inteſtines are in their natural ſtate and condition, they muſt be returned in the following manner. The patient muſt be placed in a ſupine poſture, and laid on that ſide that is oppoſite to the wound, and the inteſtine muſt be returned by the aperture of the wound, with the two fore fingers, taking care never to take off one finger, till the other is on the gut; the patient is to be adviſed all the while to hold his breath, and the lips of the wound muſt be then brought together.

If the inteſtines have been forced through a ſmall wound, and are afterwards ſo diſtended with wind, that they cannot eaſily be returned; it is neceſſary to pull the inteſtine gently forward, that more of it may come out, and the wind take up by that means leſs room in any one part; an aſſiſtant muſt then gently dilate the wound as far as may be, either with his hand, or with two hooks fixed in the internal membrane, while the ſurgeon returns the inteſtines; when this is done, the wound muſt be ſecured firſt with the hand, and then with the proper dreſſings, and in this caſe the ſurgeon may avoid the uſe of this painful operation.

When it is found neceſſary to perform the operation, it muſt be done in the following manner; firſt paſs a ſtrong double, or quadruple thread well waxed through two crooked needles, and with theſe ſtitch up both ends of the wound, beginning at one end with the upper lip of the wound, paſſing the needle through the peritoneum, muſcles of the abdomen, and the common integuments, from within outwards, leaving only the breadth of a thumb between the ſtitches, and the mouth of the wound, obſerving the ſame method in paſſing the other needle through the lower lip; while you are paſſing the needle with one hand, it will be proper to ſupport the lips of the wound with the other, to prevent the inteſtines from being wounded. In a wound of two fingers breadth, one ſtitch in the middle will be ſufficient; but in larger wounds the ſtitches muſt be repeated in proportion to their ſize, leaving a thumb's breadth between each of the ſutures, the extremities of the thread are to be left hanging down on each ſide; and when the ſuture is finiſhed, while an aſſiſtant holds the lips of the wound together, theſe ends are to be tied in knots, in the following manner. Both ends of the threads are to be taken up, and to be tied in a double knot, paſſing a ſmall boulſter between the two knots to prevent the ſkin from being hurt. Where there are more ſutures than one, you muſt begin at the upper part of the wound, tying them down in order; that before the laſt is tied, a ſoft tent of the ſize of a finger, with a thread faſtened to the end of it, may be introduced into the lower part of the wound. This tent will keep a paſſage open for the evacuation of grumous blood, or matter, which may be collected in the cavity of the abdomen. The wound, when all this is done, muſt be anointed with ſome vulnerary balſam, and covered with pledgits of lint, a ſticking plaiſter, and boulſters, ſecuring all with the ſcapulary bandage. Large wounds alſo extending to the peritoneum, but not penetrating it, require this operation to prevent bad ſymptoms, and dangerous herniæ from a diſtenſion of that membrane; but in this caſe the needle muſt paſs only through the muſcles, and common integuments.

GASULON, in the materia medica, a word uſed by Aviſenna and Serapion, to expreſs ſometimes the plant hyſſop, and ſometimes nitre. Theſe are two very different things to be known under the ſame name, but the proper interpretation of the word being the cleaning of clothes, it was uſed probably at ſome time to ſignify every thing of an abſterſive quality; but among the many things of this kind once called by it, the two above mentioned are all that we find recorded. And when they are named, it is always eaſy to ſee which is meant, ſince the ſalt and the plant are ſo very different, that there can be no miſtaking the one for the other in the context.

GATE (*Cycl.*)—Gate, in the manege, called in French *train*, is uſed for the going, or pace of a horſe.

Gate *of the ſea*, or a *ſea gate*, is uſed when two ſhips lie a board one another in a wave or billow, and by that means, ſometimes become *rib-broken*.

GATHER, in the ſea language. A ſhip is ſaid to *gather* on another, when ſhe gets the wind of her.

GATVISCH, in zoology, a name given by ſome to an American fiſh, a ſpecies of the turdus or wraſſe, of a yellow colour, and beautifully variegated with red, called by moſt authors by its Baſilian name, pira pixanga. *Willoughby*, Hiſt. Piſc. p. 321. See Pira.

GAVALI, in the materia medica, a name given by ſome of the old writers to Bdellium, particularly to the Arabian kind, which was the pureſt, and was uſually in form of ſmall tears, and of a pale yelloviſh colour.

GAVELET, in London, a writ uſed in the huſtings of London,—*Breve de* Gaveleto *in London*, pro *reditu ibidem quia Tenementa fuerunt indiſtringibilia*. And the ſtatute of *Gavelet*, 10 Edward II. gives this writ to lords of rents in the city of London, as well as in Kent. Here the parties, tenant and demandant, appear by *ſcire facias*, to ſhew cauſe why the one ſhould not have his tenement again, on payment of his rent, or the other recover the lands, on default thereof. Practiſ. Solic. 419.

GAVELMED, the duty or work of mowing graſs, or cutting of meadow land, required by the lord from his cuſtomary tenants. *Conſuetudo falcandi quæ vocatur* Gavelmed. *Somner*.

GAVELRIP, bedreap, or duty of reaping, at the command of the lord—*de conſuetudine metendi* 40 *acras & dimid. de* Gavelrip *in autumno* 40 ſol. & ſex denar.

GAVELSESTER, *ſextarius vectigalis*, a certain meaſure of rent ale. Among the articles to be charged on the ſtewards and bailiffs of the manors belonging to the church of Canterbury in Kent, according to which they were to be accountable, this of old was one: *de* Gavelſeſter *cujuſlibet bracini braciati infra libertatem maneriorum, viz. Unam lagenam & dimidiam vereviſiæ*. This duty elſewhere occurs under the name of *Tolſeſter*, in lieu whereof, the Abbot of Abingdon was wont of cuſtom to receive the penny mentioned by Selden, in his diſſertation annexed to *Fleta*, c. 8. Nor doth it differ from what is called *oakgavel* in the gloſſary at the end of the *Laws* of Henry I. Sax. Dict.

GAVELWERK, was either *manu-opera*, by the hands and perſon of the tenant, or *carropera*, by his carts or carriages.

GAUGING (*Cycl.*)—For the ready computation of the contents of veſſels, or of any ſolids in the meaſures in uſe in Great Britain, we ſhall here inſert the following rules, taken from a treatiſe of practical geometry, publiſhed at Edinburgh in 1745. 8°. Vid. pag. 137. ſeq.

1°. To find the content of a cylindric veſſel in Engliſh wine gallons, the diameter of the baſe and altitude of the veſſel being given in inches and decimals of an inch: ſquare the number of inches in the diameter of the veſſel; multiply this ſquare by the number of inches in the height, then multiply this product by the decimal fraction 0.0034, and you'll have the contents of the veſſel in gallons, and decimals of a gallon. For example, let the diameter be $=D=$ 51.2 inches, the height $=H=$ 62.3 inches, then will the content be $DDH \times 0.0034 = 51.2 \times 51.2 \times 62.3 \times 0.0034 = 555.27342$ wine gallons.

2°. Suppoſing the Engliſh ale gallon to contain 282 cubical inches, the content of a cylindric veſſel is computed in ſuch gallons, by multiplying the ſquare of the diameter of the veſſel by its height as before, and their product by the decimal fraction 0.0027851. that is, the ſolid content in the gallons will be $DDH \times 0.0027851$.

3°. If the Scotch pint contains 103.4 cubical inches, the content of ſuch a veſſel in Scotch pints, will be $DDH \times 0.0076$.

4°. Suppoſing the Wincheſter buſhel to contain 2178 cubic inches, the content of a cylindric veſſel is computed in thoſe buſhels, by multiplying the ſquare of the diameter of the veſſel by the height, and the product by the decimal fraction 0.0003606. But the legal Wincheſter buſhel containing only 2150.42 ſolid inches, the content of a cylindric veſſel is computed in ſuch buſhels, by multiplying the ſquare of the diameter by the height, and their product by the decimal 0.0003652. Or the content will be $DDH \times 0.0003652$. See Bushel.

5°. Suppoſing the Scotch wheat firlot to contain $21\frac{1}{4}$ Scotch pints, or about 2197 cubical inches, the contents of a cylindric veſſel in ſuch firlots will be $DDH \times 000358$.—And if the bear firlot contain 31 Scotch pints, the contents of ſuch a veſſel in bear firlots will be $DDH \times 0.000245$. See Firlot.

6°. It is to be obſerved, that when the ſection of the veſſel is not a circle, but an ellipſis, the product of the greateſt diameter by the leaſt is to be ſubſtituted in theſe rules, for the ſquare of the diameter.

7°. To compute the content of a veſſel, which may be conſidered as the fruſtum of a cone in any of thoſe meaſures. Let A repreſent the number of inches in the diameter of the greater baſe, B the number of inches in the diameter of the leſſer baſe. Compute the ſquare of A, the product of A by B, and the ſquare of B. Take the third part of the ſum of all theſe, and ſubſtitute it in the preceding rules for the ſquare of the diameter, and then proceed in all reſpects as before. Thus for example, the content in wine gallons will be $\overline{AA + AB + BB} \times \frac{1}{3} H \times 0.0036$. Or thus, to the ſquare of half the ſum of A and B add one third of the ſquare of half their difference; and ſubſtitute this ſum in the preceding rules for the ſquare of the diameter of the baſe of the veſſel. For the ſquare of $\frac{1}{2} A + \frac{1}{2} B$ added to $\frac{1}{3}$ of the ſquare of $\frac{1}{2} A - \frac{1}{2} B$ gives $\frac{1}{4} AA + \frac{1}{2} AB + \frac{1}{4} BB + \frac{1}{12} AA - \frac{1}{6} AB + \frac{1}{12} BB = \frac{1}{3} AA + \frac{1}{3} AB + \frac{1}{3} BB$.

8°. When the veſſel is a fruſtum of a parabolic conoid, meaſure the Diameter of the ſection at the middle of the height of the fruſtrum; and the content will be the ſame as of a cylinder of this diameter, of the ſame height with the veſſel.

9°. When a veſſel is a fruſtum of a ſphere, if you meaſure the diameter of the ſection at the middle of the height of the

the fruſtum, then compute the content of a cylinder of this diameter, and of the ſame height with the veſſel, and from this ſubſtract $\frac{1}{3}$ of the content of a cylinder of the ſame height, on a baſe, the diameter of which is equal to that height; the remainder will give the content of the veſſel. That is, if D repreſent the diameter of the middle ſection, and H the height of the fruſtum, you are to ſubſtitute $DD - \frac{1}{3}HH$ for the ſquare of the diameter of the cylindric veſſel in the firſt ſix rules.

10° When the veſſel is a fruſtum of a ſpheroid, if the baſes are equal, the content is readily found by the rule given in the cyclopædia from Oughtred. In other caſes, let the axis of the ſolid be to conjugate axis, as n to 1; let D be the Diameter of the middle ſection of the fruſtum, H the height or length of the fruſtum, and ſubſtitute in the firſt ſix rules $DD - \frac{HH}{3nn}$ for the ſquare of the diameter of the veſſel.

11°. When the veſſel is an hyperbolic conoid, let the axes of the ſolid be to the conjugate axis, as n to 1, D the diameter of the ſection at the middle of the fruſtum, H the height or length, compute $DD + \frac{HH}{3nn}$ and ſubſtitute this ſum for the ſquare of the diameter of the cylindric veſſel in the firſt ſix rules.

12°. In general, it is uſual to meaſure any round veſſel, by diſtinguiſhing it into ſeveral fruſtums, and taking the diameter of the ſection at the middle of each fruſtum; thence to compute the content of each, as if it was a cylinder of the mean diameter; and to give their ſum as the content of the veſſel. From the total content computed in this manner they ſubſtract ſucceſſively the numbers which expreſs the circular areas that correſpond to thoſe mean diameters, each as often as there are inches in the altitude of the fruſtum to which it belongs, beginning with the uppermoſt; and in this manner calculate a table for the veſſel, by which it readily appears how much liquor is at any time contained in it, by taking either the dry, or the wet inches; having regard to the inclination, or drip of the veſſel, if it has any.

This method of computing the content of a fruſtum from the diameter of the ſection at the middle of its height, is exact in that caſe only when it is a portion of a parabolic conoid; but in ſuch veſſels as are in common uſe the error is not conſiderable. When the veſſel is a portion of a cone or hyperbolic conoid, the content by this method is found leſs than the truth; but when it is a portion of ſphere or ſpheroid, the content computed in this manner exceeds the truth. The difference or error is always the ſame in the different parts of the ſame, or of ſimilar veſſels, when the altitude of the *fruſtum* is given. And when the altitudes are different, the error is in the triplicate ratio of the altitude. If exactneſs be required, the error in meaſuring the *fruſtum* of a conical veſſel, in this manner, is $\frac{1}{5}$ of the content of a cone, ſimilar to the veſſel, of an altitude equal to the height of the *fruſtum*. In a ſphere it is $\frac{1}{5}$ of a cylinder of a diameter, and height equal to the *fruſtum*. In the ſpheroid and hyperbolic conoid, it is the ſame as in a cone, generated by the right angled triangle contained by the two ſemiaxes of the figure revolving about that ſide which is the ſemiaxis of the *fruſtum*. Theſe are demonſtrated in a treatiſe of fluxions by Mr. Mac Laurin [d], where thoſe theorems are extended to *fruſtums* that are bounded by planes oblique to the axis in all the ſolids, that are generated by any conic ſection revolving about either axis. [Vid. pag. 25. and 715.]

In the uſual method of computing a table for a veſſel, by ſubducting from the whole content the number that expreſſes the uppermoſt area, as often as there are inches in the uppermoſt *fruſtum*, and afterwards the numbers for the other areas ſucceſſively, it is obvious that the contents aſſigned by the table, when a few of the uppermoſt inches are dry, are ſtated a little too high, if the veſſel ſtands on its leſſer baſe, but too low when it ſtands on its greater baſe; becauſe, when one inch is dry, for example, it is not the area at the middle of the uppermoſt *fruſtum*, but rather the area at the middle of the uppermoſt inch, that ought to be ſubducted from the total content, in order to find the content in this caſe.

GAVIAON, in zoology, the name by which the Portugueze called the caracara, a ſpecies of Brazilian hawk, of the bigneſs of our kite. *Ray*'s Ornitholog. p. 42. See CARACARA.

GAVILAN, in natural hiſtory, a name given by the Spaniards to a ſpecies of hawk, common in the Philippine iſlands; it is ſomewhat larger than our ſparrow hawk, and is of a yellowiſh colour on the back and wings, and whitiſh under the belly; it is the moſt common of all the birds of prey in that part of the world, and is very voracious, and miſchievous.

GAVIOTA, in zoology, the name given by the Portugueze to a water fowl of the gull kind, common in Braſil, and called by the natives *Guaca guacu*. It is of the ſize of a common hen, its beak is long, ſtrait, and yellow, its head is black on the top, as is alſo the farther half of the wings and tail: the throat, breaſt and belly are white, it lays in the ſand, and its eggs are of the ſize of thoſe of the hen, and are accounted very good, but the fleſh is not valued.

GAULONITÆ, among the Jews, the name of a faction rather than a religious ſect, the ſame with the *Galilæans*, *Hoffm.* Lex. in voc. See GALILÆANS, *Cycl.*

GAULUS, in antiquity, a ſhip of a roundiſh form, moſtly uſed by the people of Phœnicia.

GAULUS, alſo ſignified a kind of cup. *Pitiſc.* Lex. Ant. in voc.

GAVOTTA, or GAVOTTE, in the Italian muſic, is a kind of dance, the air whereof has two ſtrains, briſk and lively, and in common time; each of its ſtrains are played twice over, the firſt has uſually four or eight bars, and the ſecond contains eight, twelve, or more. The time begins with a minim, or two crochets, or notes of equal value, and the hand riſing; and ends with the fall of the hand upon the dominant, or mediant of the mode, never upon the final, unleſs it be a rondeau. And the laſt begins with the riſe of the hand, and ends with the fall upon the final of the mode. *Broſſ.* Dict. Muſ. in voc.

Tempo di GAVOTTA, in the Italian muſic, is when only the time or movement of a *gavotte* is imitated, without any regard had to the meaſure or number of bars, or ſtrains. We often find parts of ſonnatas, which have this phraſe to regulate their motions. *Broſſ.* Muſ. Dict. in voc.

GAYTICPUA, in zoology, the name of an American ſpecies of ſerpent, found as it is ſaid only in the kingdom of Razim. It grows to a vaſt ſize, and ſtinks ſo intolerably, that no creature can bear to be near it. *Ray*'s Syn. anim. p. 329.

GAZA *giovane*, in zoology, the name of a ſmall ſpecies of *heron*, of a fine white colour, called by other authors *ardea alba minor*, or the *ſmall white heron*. It is ſo ſmall as not to weigh a pound. Its whole body is of a pure and perfect ſnow white, and it has a ſhort creſt on the hinder part of its head, and a naked ſpace which is greeniſh about its eyes. Its feet alſo are green, but are ſometimes covered with blackiſh ſcales. The feathers of the creſt are very ſoft and white, and are much valued. It is eaten in Venice and Italy, and is common enough in the markets there. The creſt feathers however are uſually pulled off before it is offered to ſale. *Ray*'s Ornithol. p. 205.

GAZAR, a name uſed by ſome authors for the bay tree. *Johnſon.*

GAZELLA, the *antelope*, in zoology, the name of an animal of the goat kind of which there are three known ſpecies.

1. The *Gazella Africana Strepſicheros Plinii*. This is the ſpecies we uſually ſee under the name of the *antelope*; it is called the *addace* in Africa, and is the *dorcas lybica* of Ælian. Its horns are ſlender and erect, they are black, tranſverſely radiated, and twiſted into the appearance of ſpiral lines; though theſe are in reality ſo many annular circles, they are toward the middle bent a little outwards, and thence they turn in again, ſo that they in ſome meaſure repreſent the antient lyre.

2. The *Gazella Indica*, or Indian antelope, with very long ſtrait horns, which are annulated only in that part near the head. The horns of this creature are ſometimes three feet long, and are perfectly ſmooth and gloſſy, except near the head, and black. The creature is of the ſize of our common deer, and is of a greyiſh colour; its tail is a foot long, and has longer hairs on it than thoſe of the reſt of the body. The horns of this ſpecies are very common in the muſæums of the curious. This creature ſeems to be the animal which produces the bezoar ſtone ſo much valued in medicine.

3. The African kind, which has flat horns annulated to the very top, and crooked near the middle; this has been ſeen alive ſometimes in England. It was much ſmaller than our deer, and of a ſandy colour; its belly white, and its ſides where the white and ſand colour met, of a duſky appearance. Its tail is black and longer than that of the deer, black covered with a ſmaller number of hairs than thoſe of our deer, and white on that part next the body. Its horns grew out of the middle of the forehead near the eyes and are very long, ſharpening at the ends, and all the way marked with tranverſe ſtriæ of furrows, and a little bent upwards. Its ears are large, and its legs very ſlender.

GAZOPHYLACIUM, in the Jewiſh antiquities: this word, according to the Greek etymology, ſignifies the treaſury-chamber. There were ſeveral places in the temple of *Jeruſalem*, where the rich preſents conſecrated to God by kings, princes, or private perſons were kept. But the ſignification of this word *Gazophylacium*, has been farther inlarged, ſo as to comprehend the rooms where the proviſions of the temple were laid up, both for ſacrifices, and for the ſupport and ſuſtenance of the prieſts, and in general this word is uſed for all the apartments of the temple. In the goſpel, by *Gazophylacium* is meant the cheſt into which people caſt their offerings at the entrance of the temple. It has been alſo uſed by naturaliſts for a collection of figures of curious ſubjects. *Mark.* c. xii. ỳ 41, 43. *Luk.* c. xxi. ỳ 2. *Calm.* Dict. Bibl.

GAZOPHYLAX, Γαζοφυλαξ, in antiquity, an officer who had the care and management of the treaſure belonging to the kings of Perſia. *Hoffm.* Lex. in voc.

GAZZA, in zoology, the name of a ſpecies of *heron* common in Italy, and called by many authors *ardea alba major*, the *greater white heron*. Its whole body is of a ſnow white, its beek yellow, and the membranes about its eyes green, though called large in compariſon of the leſſer white one;

it is ſmaller than the common grey heron. Its tail alſo is much longer, and it has no creſt. It is ſometimes ſeen in England, and has been miſtaken for a common heron become accidentally white, as ſparrows and other birds ſometimes are. *Ray*'s Ornithol. p. 205.

GAZZETTA, in zoology, a name given by Geſner and others to a ſpecies of ſmall white heron, ſold in the markets of Italy, and ſeeming to be the ardea alba minor of authors, or gaza giovane of the Venetians. *Geſner*, de Avib. See GAZA *Giovane*.

GAZZETTO, in ichthyology, a name of a fiſh of the turdus, or wraſſe kind, caught in the Mediterranean, and ſold in the markets of Italy. It is of a fine green colour, and is conſiderably thick, though broad; its fins are ſpotted, and it has a large purple tubercle near the anus. It has only one back fin which has twenty four ribs or nerves, the firſt fifteen of which are rigid and prickly, the reſt ſmooth and flexile. *Ray*'s Ichthyolog. p. 320. See the article TURDUS.

GEANNIDES, in natural hiſtory, a name given by ſome authors to the ſtone called by others encymonites. It ſeems to have been the ſame with our ſparry incruſtations on the tops of caverns, *&c.* but the word has been generally underſtood to mean the eagle ſtone. It was ſuppoſed to poſſeſs great virtues in helping delivery, and was given to women in their labours.

GEAR, or *about your gear*, at ſea, a command to work on all hands.

GEASTER, in botany, the name of a genus of fungus's: or according to Linnæus, of ſome ſpecies of the genus of the Lycoperdon. Theſe fungus's have a radiated bottom like a ſtar, and in the center of this there grows a round ball which opens at the top when ripe, and is found to be full of impalpable ſeeds in form of powder. See LYCOPERDON.

GECCO, in natural hiſtory, a name given by the Indians to their terrible poiſon, which kills in ever ſo ſmall a quantity when mixed with the blood. They ſay that this *gecco* is a venomous froth or humor, vomited out of the mouths of their moſt poiſonous ſerpents, which they procure in this fatal ſtrength, by hanging up the creatures by the tails, and whipping them to enrage them: they collect this in proper veſſels as it falls, and when they would uſe it, they either poiſon a weapon with it, or wounding any part of the fleſh, introduce the ſmalleſt quantity imaginable of it, and this is ſaid to be immediate death. *Sympſon*'s Zymol. Chym.

GECHYTON, a name given by ſome authors to the external covering of the earth, commonly called garden mould, which is ſoft and not ſtony. *Ruland.*

GECOLITHUS, a corrupt way of ſpelling the word *tecolithus*, the name of the lapis judaicus among the Romans. The writers of the middle ages often write it *gecolithus*.

GED, in zoology, an Engliſh name for the ſmall ſpecies of ſnipe, uſually called the juddock, and by authors gallinago minima. See JUDDOCK.

GEGENES, Γηγενεις, in antiquity. The antients generally called themſelves Γηγενεις, *ſons of the earth*, as Heſychius informs us. Alluding to the ſame original, the Athenians ſometimes ſtyled themſelves, Τεττιγες, *graſshoppers*; and ſome of them wore graſshoppers of gold, faſtened to their hair as badges of honour, to diſtinguiſh them from others of leſs antiquity, and leſs noble extraction, becauſe thoſe inſects were believed to be generated out of the ground. *Pott.* Archæol. Græc. l. 1. c. 1.

GEISON. See GISON.

GELÆOPACHIA, in natural hiſtory, the name of a claſs of mineral fluids, which are inflammable, and of a ſomewhat thick texture, and opake.

The word is derived from the Greek γη the earth, ελαιον oil, and παχυς thick. The bodies of this claſs are the Barbadoes tar, oil of earth, and the common piſſaſphaltum of the ſhops, which ſee under their ſeveral heads. *Hill*'s Hiſt. of Foſſ. p. 421.

GELÆOPSILA, in natural hiſtory, the name of a claſs of foſils. The word is derived from the Greek γη earth ελαιον oil, and ψιλος thin, and expreſſes a thin oily ſubſtance naturally found in the earth. Theſe are thin and pellucid inflammable liquid ſubſtances, commonly known by the name of liquid bitumens, but by that denomination confounded with the thicker and coarſer kinds. The only bodies of this claſs are thoſe commonly diſtinguiſhed by the names of Naphtha, and Petroleum. See NAPHTHA. *Hill*'s Hiſt. of Foſſ. p. 419.

GELASINI *Dentes*, a term uſed by ſome authors to expreſs the four middle fore teeth, both of the upper and under jaw. They have this name from the Greek γελως laughter, becauſe they are ſhewn when people laugh.

GELATINA, *jelly*, a form of food, or medicine prepared from the juices of ripe fruits, boiled to proper conſiſtence with ſugar, or of the ſtrong decoctions of the horns, bones, or extremities of animals boiled to ſuch a height as to be ſtiff and firm when cold, without the addition of any ſugar.

The *jellies* of fruits are cooling, ſaponaceous, and aceſcent, and therefore are good as medicines in all diſorders of the primæ viæ, ariſing from alcaleſcent juices, eſpecially when not given alone, but diluted with water: on the contrary, the *jellies* made from animal ſubſtances are all alcaleſcent, and are therefore good in all caſes in which an acidity of the humours prevails: the alcaleſcent quality of theſe is however in a great meaſure taken off, by the adding lemon juice and ſugar to them. There were formerly a ſort of *jellies* much in uſe, called *compound jellies*; theſe had the reſtorative medicinal drugs added to them, but they are now ſcarce ever heard of. *Hoffm.*

GELATINA *Avenæ*, *oat jelly*, a preparation of common oats recommended by many of the German phyſicians, in all hectic diſorders, to be taken with broth of ſnails or crawfiſh.

It is made by boiling a large quantity of oats with the huſk taken off, with ſome hartſhorn ſhavings, and currants together, with a leg of veal cut to pieces, and with the bones all broken; theſe are to be ſet over the fire with a large quantity of water till the whole is reduced to a ſort of *jelly*, which when ſtrained and cold will be very firm and hard. A few ſpoonfuls of this are to be taken every morning, diluted with a baſon of either of the above mentioned broths, or any other warm liquor.

GELATIO, properly ſignifies freezing, but is alſo uſed for that rigidity of the body and limbs, which comes on in the cataleplis, and other diſorders of that kind.

GELBUM, a name given by the Hungarian miners to a ſort of marcaſite or mundick, which contains a conſiderable quantity of ſilver.

GELDING (*Cycl.*)—In *gelding* of horſes there are two things principally to be regarded, which are the age of the creature, and the ſeaſon of the year; if it be a colt that is to be gelt, it may be done at nine days old, or at fifteen, or as ſoon as the teſticles come down; for the ſooner this is done the better it always is for ſtrength and courage in the creature afterwards. But a farrier may geld a horſe at any age that he pleaſes, if he will be careful as to the cure. The ſecond thing is the time of the year, as to this, the months of April and May are always eſteemed the moſt proper, but it ſhould by no means be done later than in June for the ſummer time; if this is paſſed by, it ought to be deferred till the fall of the leaf, or end of September. The farriers generally add a third conſideration, which is always to do it in the wane or decreaſe of the moon.

The manner of *gelding* is this. Whether it be a foal, colt, or horſe it is to be caſt, or thrown on its back in a ſoft place, then the legs are to be faſtened ſo as to prevent miſchief from ſtruggling, and the operator is to take hold of the teſticles between the fingers, and ſlit the ſcrotum or cod, and ſqueeze out the teſticles at the ſlit. Then take hold of the veſſels with a pair of fine ſteel or box nippers, and hold them ſo tight that there may be no flux of blood on the cutting them; they are then to be cut off below the nippers, and the ends ſeared with a hot iron, or they may be burnt off with a thin drawing cauteriſing iron, and the whole operation performed at once. There muſt be in readineſs a plaiſter made of wax, roſin, and waſhed turpentine. The hot iron muſt be applied to this, and it muſt be made to melt and drop upon the ends of the veſſels where they were cut or burnt off, then the iron is to be applied to ſear them again, and after this more of the plaiſter melted on. This is to be repeated till there is ſuch a cicatrix formed, and ſuch a thickneſs of the ſalve left on, that there is no danger of the veſſels burſting out into a bleeding.

When this is thoroughly done, the nippers, which all this while held the veſſels faſt above the cutting, are to be looſened, and the other teſticle is to be taken off, and the veſſels ſeared up in the ſame manner. When this is done, the ſlit of the cod is to be filled with white ſalt, and the outſide rubbed over with hogs lard. After all is over the horſe is to be ſuffered to riſe, and led into a warm ſtable, where he is not to be tied up, but left looſe to walk about, for nothing is better for him than moderate exerciſe. If the parts ſhould ſwell, he muſt be trotted up and down an hour or two every day, and this alone will generally make all right.

This is a very coarſe operation, but it is ſafe, and generally ſucceeds very well.

GELDING, in the manege, is alſo uſed for a horſe, whoſe teſticles are cut out. Vid. Supra.

GELDUM, a name given by ſome to the philoſophers ſtone.

GELFUM, or *Gelbum*, a Hungarian name for a kind of mundick which contains ſilver.

GELLOSIA, in natural hiſtory, a name by which ſome of the writers of the middle ages call the chalazias.

GEMELLI, (*Cycl.*) two ſmall flat narrow muſcles, ſituated almoſt tranſverſely one above another, between the tuberoſity of the iſchium, and the great trochanter; immediately below the pyriformis, and parted by the tendon of the obturator internus.

The ſuperior or ſmaller *gemellus* is fixed to the lower part of the ſpine of the os iſchium, to the ſuperior part of the ſmall iſchiatic notch, and to a rough line which runs croſs the outſide of the iſchium, beginning at the ſpine, and continued under the acetabulum where it is bent downward.

The inferior and largeſt *gemellus*, is fixed to the ſuperior and back part of the tuberoſity of the iſchium, and to a rough impreſſion, which runs croſs the outſide of the iſchium, from the lower extremity of the iſchiatic

tic notch, and is bent upward toward the other line, together with which it forms a ſort of irregular ſemicircle. Both theſe muſcles have alſo a ſmall inſertion in the inſide of the iſchium, where being united together, by a particular membrane, one of them joins the upper ſide, and the other the lower ſide of the *obturator internus* a little after it has paſſed over the notch. They encloſe it as in a bag, and continue to be fixed to it by fleſhy fibres all the way to its extremity. The ſuperior muſcle terminates wholly with the tendon of the *obturator internus*, but the inferior being broader, is inſerted likewiſe by fleſhy fibres, in the orbicular ligament, and under the tendon of the ſame obturator. *Winſlow*'s Anat. p. 210.

GEMS (*Cycl.*)—Mr. Boyle ſpeaks of tinctures from *gems*, and of his having diſſolved them; and ſeems to think it not improbable, that they may have medicinal uſes exhibited in ſubſtance. *Boyle*'s Works, Abr. Vol. 1. p. 62.

GEMS of *the antients*. The *gems*, on which the antients engraved, and which are commonly called intaglios, are uſually of a long oval figure inclining to a point at each end, convex as well upon the engraved ſurface as on the others, and having a ridge running from end to end on the underſide, which is thereby as it were divided into two faces; both which are alſo, though not ſo diſtinctly, parted from the upper face by another ridge running quite round the oval. The ſtone moſt frequently engraved on, is what the jewellers call the beryl, a ſtone very different from that called the beryl by the antients, which was the *gem* we call the aquamarine.

This beryl of the jewellers is only a finer kind of cornelian, and is of three kinds; the red, the yellow, and the white. The firſt is much the moſt valuable of theſe, and is of the greateſt luſtre; that which is moſt frequent next this beryl, is the praſius, or as ſome call it, the *plaſma de ſmaraldo*. This our jewellers call the preme or prime emerald. It is of a ſomewhat duſky green, and is ſometimes tolerably clear, but moſt uſually it is full of black and white ſpecks, and rather opake.

The moſt frequent next to this is the jacynth or hyacinth. This alſo is not the *gem* known by the antients under this name, that having been a ſort of amethyſt, but the ſtone we now call the hyacinth, which is of a tawny red, or a ſort of fire colour, and is very bright and tranſparent.

The chryſolite is ſometimes but rarely found engraved on. It is of a greeniſh colour, and is tranſparent but not lively. Sometimes there are alſo met with the oriental pebble cryſtal, which is much more tranſparent and lively than the common cryſtal, and indeed but little inferior in beauty to the white ſapphire: the garnet which is of a deep red, and not ſo lively as the hyacinth; and finally the amethyſt which is of a deep purple, and is very lively and tranſparent. Theſe ſeem to have been all the ſtones uſed in the earlier times of the Roman empire. There are indeed ſometimes found ſome other ſpecies, but theſe are rarely of any time but the latter ages of the empire, when the art itſelf was greatly upon the decline. The beforementioned ſtones are ſaid to have been brought to Rome from the borders of the Nile or of the Ganges. The onyx agate, onyx ſardonyx, and alabaſter of two colours were alſo engraved on by the Romans in a different manner. Theſe, as alſo certain ſhells of different coats, were frequently engraved in relief, and theſe ſort of engravings are commonly called cameos; they alſo ſometimes engrafted a head or ſome other figure in relief of gold upon a bloodſtone. Philoſ. Tranſ. N°. 483.

Beſide theſe there are alſo ſome antiques, moſtly cornelians, which are covered with a ſtratum of white. This ſtratum has by ſome been looked on as natural; but it was really only a ſort of coat or enamel that was laid on: this was uſed only in the times of the lower empire. The antients engraved many of their ſtones juſt as they were found with their native poliſh, and in their native ſhape; but the beauty of the ſeveral ſpecies of the onyx could only be ſhewn by a proper cutting. The antique *gems* of Greek work are of all others the moſt eſteemed, and next to them the Roman in the time of the higher empire. Philoſ. Tranſ. N° 483.

Imitation of antique GEMS. There has been at different times a method practiſed by particular perſons of taking the impreſſions and figures of antique *gems*, with their engravings in glaſs of the colour of the original *gem*. This has always been eſteemed a very valuable method, and greatly preferable to the more ordinary ones of doing it on ſealing wax or brimſtone; but to the misfortune of the world, this art being a ſecret only in the hands of ſome particular perſons, who got their bread by it, died with them, and every new artiſt was obliged to new invent the method, till at length Mr. Homberg having found it in great perfection, gave the whole proceſs to the world to be no more forgotten or loſt, and ſince that time it has been very commonly practiſed in France, and ſometimes in other places.

Mr. Homberg was favoured in his attempts with all the engraved *gems* of the king's cabinet, and took ſuch elegant impreſſions, and made ſuch exact reſemblances of the originals, and that in glaſſes ſo artfully tinged to the colour of the *gems* themſelves, that the niceſt judges were deceived in them, and often took them for true antique ſtones. Theſe counterfeit *gems* will ſerve as well as the original ones to make more copies from afterwards; ſo that there is no end of the numbers that may be made from one; and there is this farther advantage, that the copy may be eaſily made perfect, though the original ſhould not be ſo, but ſhould have ſuſtained ſome damage from a blow or otherwiſe. Mem. Acad. Par. 1712.

The great care in the operation, is to take the impreſſion of the *gem* in a very fine earth, and to preſs down upon this a piece of a proper glaſs ſoftened or half melted at the fire, ſo that the figures of the impreſſion made in the earth, may be nicely and perfectly expreſſed upon the glaſs. In general, the whole proceſs much reſembles that of the common founders. But when it is brought to the trial, there are found a number of difficulties which were not to be foreſeen, and which would not at all affect the common works of the founder. For his purpoſe every earth will ſerve, that is fine enough to receive the impreſſions, and tough enough not to crack in the drying; theſe all ſerve for their uſe, becauſe the metals which they caſt are of a nature incapable of mixing with earth, or receiving it into them, even if both are melted together, ſo that the metal always eaſily and perfectly ſeparates itſelf from the mould; but it is very difficult in theſe caſts of glaſs. They are compoſed of a matter which differs in nothing from that of the mould, but that it has been run into this form by the force of fire, and the other has not yet been ſo run; but is on any occaſion ready to be ſo run, and will mix itſelf inſeparably with the glaſs in a large fire; and conſequently if there be not great care uſed, as well in the choice of the glaſs, as in the manner of uſing it, when the whole is finiſhed, there will be found great difficulty in the ſeparating the glaſs from the mould, and often this cannot be done without wholly deſtroying the impreſſion.

All earths run more or leſs eaſily in the fire, as they are more or leſs mixed with ſaline particles in their natural formation. As all ſalts make earths run into glaſs, and as it is neceſſary to uſe an earth on this occaſion for the making a mould, it being alſo neceſſary to the perfection of the experiment, that this earth ſhould not melt or run; it is our buſineſs to ſearch out for this purpoſe ſome earth, which naturally contains very little ſalt. It might be ſuppoſed, that earths artificially diveſted of their ſalts by means of fire or water, or by whatever other proceſs, might ſerve this purpoſe; but experiment proves this not to be the caſe. Theſe earths, though diveſted of their ſalts, yet retain thoſe cellules where their ſaline particles were once lodged, and are therefore ready to receive them on occaſion again; and glaſs being only a compoſition of earth, and ſalts run together as ſoon as it becomes hot, its ſaline parts are leſs firmly united than before to its earth, and readily run into the cellules of a foreign body, which are open to receive them; and thence when ſuch earths are employed as mould, the glaſs and the moulds are always found ſo blended together that the whole is ſpoiled. Whereas on the other hand, thoſe earths which naturally contain little or no ſalt, have no pores, or cellules ready to receive any, and never blend themſelves with the glaſs, unleſs the whole is kept too long over a great fire, in which caſe the ſalts of the glaſs will get looſe and ſerve as a flux to the reſt, and ſo deſtroy the whole. Of all the ſpecies of earth which Mr. Homberg examined on this occaſion, none proved ſo much diveſted of ſalts, or ſo fit for the purpoſe as the common tripela, or tripoly, uſed to poliſh glaſs and ſtones. Of this earth there are two common kinds, the one reddiſh, and compoſed of ſeveral flakes or ſtrata; the other yellowiſh, and of a ſimple ſtructure. Theſe are both to be had in the ſhops. The latter kind is from the Levant, and the former is found in England, France, and many other places. This tripela muſt be choſen ſoft and ſmooth to the touch, and not mixed with ſandy or other extraneous matter. The yellow kind is the beſt of the two, and is commonly called Venetian Tripoli. This receives the impreſſions very beautifully, and never mixes with the glaſs in the operation, which the red kind ſometimes does. Mr. Homberg uſually employed both kinds at once in the following manner. Firſt powder a quantity of the red tripela in an iron mortar, and ſifting it through a fine ſieve, ſet it by for uſe; then ſcrape with a knife a quantity of the yellow tripela into a ſort of powder, and afterwards rub it till very fine in a glaſs mortar with a glaſs peſtle. The finer this powder is, the finer will be the impreſſion, and the more accurately perfect the caſt. The artificer might naturally ſuppoſe that the beſt method to obtain a perfectly fine powder of this earth, would be by waſhing it in water; but he muſt be cautioned againſt this. There is naturally in this yellow tripoly a ſort of unctuoſity, which when it is formed into a mould keeps its granules together, and gives the whole a uniform gloſſy ſurface: now the waſhing the powder takes away this unctuoſity, and though it render it much finer, it makes it leave a granulated ſurface, not this ſmooth one in the mould, and this muſt render the ſurface of the caſt leſs ſmooth. Mem. Acad. Par. ibid.

When the two tripelas are thus ſeparately powdered, the red kind muſt be mixed with ſo much water, as will bring it to the conſiſtence of a paſte, ſo that it may be moulded like

a lump of dough between the fingers: this paſte muſt be put into a ſmall crucible of a flat ſhape, and about half an inch or a little more in depth, and of ſuch a breadth at the ſurface as is a little more than that of the ſtone, whoſe impreſſion is to be taken. This crucible is to be nicely filled with this paſte lightly preſſed down into it, and the ſurface of the paſte muſt be ſtrewed over with the fine powder of the yellow tripela not wetted. When this is done, the ſtone, whoſe impreſſion is to be taken, muſt be laid upon the ſurface, and preſſed evenly down into the paſte with a finger and thumb, ſo as to make it give a ſtrong and perfect impreſſion; the tripela is then to be preſſed nicely even to its ſides with the fingers, or with an ivory knife: the ſtone muſt be thus left a few moments for the humidity of the paſte to moiſten the dry powder of the yellow tripela, which is ſtrewed over it; then the ſtone is to be carefully raiſed by the point of a needle fixed in a handle of wood, and the crucible being then turned bottom upwards, it will fall out, and the impreſſion will remain very beautifully on the tripela. Mem. Acad. Par. ibid.

If the ſides of the cavity have been injured in the falling out of the ſtone, they may be repaired, and the crucible muſt then be ſet, for the paſte to dry, in a place where it will not be incommoded by the duſt.

The red tripoli being the more common and the cheaper kind, is here made to fill the crucible only to ſave the other, which alone is the ſubſtance fit for taking the impreſſion. When the ſtone is taken out, it muſt be examined to ſee whether any thing be lodged in any part of the engraving, becauſe if there be any of the tripela left there, there will certainly be ſo much wanting in the impreſſion. When the crucible and paſte are dry, a piece of glaſs muſt be choſen of a proper colour, and cut to a ſize proper for the figure; this muſt be laid over the mould, but in ſuch a manner, that it does not touch the figures, otherwiſe it would ſpoil them. The crucible is then to be brought near the furnace by degrees, and gradually heated till it cannot be touched without burning the fingers; then it is to be placed in the furnace under a muffle, ſurrounded with charcoal. Several of theſe ſmall crucibles may be placed under one muffle, and when they are properly diſpoſed, the aperture of the muffle ſhould have a large piece of burning charcoal put to it, and then the operator is to watch the proceſs, and ſee when the glaſs begins to look bright: this is the ſignal of its being fit to receive the impreſſion. The crucible is then to be taken out of the fire, and the hot glaſs muſt be preſſed down upon the mould with an iron inſtrument, to make it receive the regular impreſſion: as ſoon as this is done, the crucible is to be ſet at the ſide of the furnace out of the way of the wind, that it may cool gradually without breaking. When it is cold, the glaſs is to be taken out, and its edges ſhould be grated round with pincers, which will prevent its flying afterwards, which is an accident that ſometimes happens when this caution has been omitted, eſpecially when the glaſs is naturally tender. The different coloured glaſſes are of different degrees of hardneſs, according to their compoſition, but the hardeſt to melt are always the beſt for this purpoſe, and this is known by a few trials.

If it be deſired to copy a ſtone in relief, which is naturally in creux; or to take one in creux, which is naturally in relief, there needs no more than to take an impreſſion firſt in wax or ſulphur, and to mould that upon the paſte of tripela inſtead of the ſtone itſelf: then proceeding in the manner before directed the proceſs will have the deſired ſucceſs. Mem. Acad. Par. 1712.

Semipellucid GEMS. Theſe are defined to be ſtones, compoſed of a but ſlightly debaſed cryſtalline matter, of great beauty and brightneſs, of a moderate degree of tranſparence, and uſually found in ſmall maſſes. The bodies of this claſs are divided into two general orders, and under theſe into eight diſtinct genera. Of the firſt order are thoſe of but few variegations, and frequently of one plain ſimple colour, though ſometimes veined. Of the ſecond are thoſe remarkable for their veins, zones, and variegations. The genera of the firſt order, are the cornelians, chalcedonies, hydrophanæ, and pramnion. Thoſe of the ſecond, are the agates, onyxes, ſardonyxes, and cameæ. See each of theſe under its proper head. *Hill*'s Hiſt. Foſſ.

Indian GEM, *Indica Gemma*, a name given by Pliny, and ſome other of the antients, to a *gem* of a reddiſh colour, which according to their accounts, afforded a purple ſweat on being rubbed: another kind of it is alſo mentioned, which was white and looked duſty.

GEMMA *Veneris*, in natural hiſtory, a name given by ſome of the Latin poets, and other authors in that language, to a *gem*, which was much eſteemed by the Romans, and ſet in rings. It was called by the Greeks aphrodites. Many have ſuppoſed this to be the opal; but it is certain from the oldeſt accounts, that the moſt beautiful kind of the amethyſt was the *gem* they called by this name. They diſtinguiſhed the amethyſt as all the other *gems* into ſeveral kinds, according to the degrees of the colour, and to the moſt eminent of theſe they gave peculiar names, as is evident in the ſeveral kinds of the emerald and beryl. The worſt amethyſts were thoſe which had very little colour beyond that of cryſtal, and the very beſt were thoſe which had the fine red of the carbuncle, mixed with the purple of the violet; and the whole ſo pale, that a roſe colour ſeemed blended with them, and predominating over the reſt. Theſe Pliny tells us were called pæderotes, and anterotes, and were the *gems* called from their beauty *aphrodites lapis*, and *gemma veneris*; but all theſe names have been ſince given by others to the opal.

GEMMEUM, an epithet uſed by the Latins to expreſs ſuch veſſels, as were called dialitha and lithocolla by the Greeks. The more correct Roman authors however call this *gemmatum poculum*, and not *gemmeum*; the word *gemmeum*, ſignifying properly a vaſe or cup, cut out of a ſingle ſtone, as an agate or the like; but *gemmatum* expreſſing thoſe five vaſes of gold, which were ornamented with emeralds, and other precious ſtones.

GEMONIDES, a name by which ſome of the antients have called the peantides; probably the ſame with our ſtalactites, a ſtone famous with them for its ſuppoſed virtue, in promoting delivery. *Plin.* Hiſt. Nat.

GEMURSA, a word uſed by the antient writers on medicine, for a diſtemper which was an excreſcence of fleſh between the toes; a diſeaſe not known with us. *Caſt.* Lex. Med. in voc.

GENECANTHE, in botany, a name uſed by ſome authors, for the black bryony. *Ger.* Emac. Ind. 2.

GENERATION (*Cycl.*)—The act of *generation* is very differently performed in different animals, and is not leſs wonderful in the ſmaller than in the larger creatures.

GENERATION of *Butterflies*. The *butterfly*, whoſe whole life in that ſtate is employed only in the propagation of its ſpecies, gives the curious obſerver much cauſe of wonder in the manner of it. In all the ſpecies, the male, in the time of coupling, throws out from the laſt ring of his body a part which enters into the hinder part of the female. This organ may be ſeen on preſſing lightly with the fingers the body of a male *butterfly*. The end of the body where this is ſituated is extremely flexile, and the creature turns it with great facility upward or downward, or to either ſide; and to this it is owing, that there are many different attitudes in the *generation* of different *butterflies*. In many ſpecies the male lays his body in a parallel beſide the body of the female, and their wings being ſpread horizontally, make a ſort of cloſe covering for both their bodies, and the hinder part of the body of the male being capable of turning ſideways, is now able to perform all its functions. In other ſpecies the male gets upon the body of the female, and the work is then performed by means of his power of bending the end of his body downwards. In this ſtate, if any thing diſturbs them, the female ariſes from her ſeat, and flies away with the male upon her back; and this ſeems almoſt the only uſe the female has for wings, for ſhe is too heavy to fly with any pleaſure. The power the male has of bending this part of his body upwards, is of uſe when he meets the female on the wing; but this is ſeldom the caſe, and that only in a few ſpecies. But beſides all theſe forms of *generation*, they are not unfrequently ſeen joined tail to tail, with their bodies in a ſtrait line, and their heads ſtanding oppoſite ways. The act of *generation* in moſt ſpecies of *butterflies*, paſſes without any emotion, and ſeemingly in a ſtate of reſt and perfect tranquillity; but this is not the caſe in all, for in the *butterfly* bred of the ſilkworm caterpillar, the male raiſes and falls his wings all the time with great celerity. Mr. Malpighi has had the patience to count the number of theſe vibrations of the *butterfly* of this ſpecies wings, and found them 130 in number; after this the creature falls into a languor and faintneſs, which laſts about a quarter of an hour, and ſometimes ſeparates himſelf from the female; if not, at the end of this time he recovers himſelf and renews the agitations of his wings, but for a leſs number of times. The ſame author uſually counted at this latter time thirty ſix, and after this he becomes languid again, and afterwards revives ſeveral other times, but the intervals are longer and the clappings of the wings leſs numerous. Memoirs Acad. Scient. Par. 1736.

Unnatural GENERATION. One of the moſt ſingular accounts ever publiſhed as to the unnatural *generation* of animals, is that recorded in the Philoſophical Tranſactions, under the names of Mr. Roberts and Mr. Halley of Cheſter, of a male greyhound, which voided by the anus a whelp, reſembling a greyhound puppy. They ſay that the creature came into the world alive, and after a few hours died; but that it was preſerved in ſpirit of wine. A white mucous matter was voided with it, and it had a ſhot on one ſide exactly in the ſame part where the greyhound had, which voided it. The dog was killed and diſſected, but nothing particular was found in the internal parts. Many people atteſted the truth of this ſtrange ſtory, but if true, by whatever accident it happened, it is odd that hiſtory ſhould have produced no one inſtance of ſuch an accident before, nor the world have met with any thing like it ſince. Philoſ. Tranſ. N°. 222.

We read alſo in the ſame book of *generation* performed, notwithſtanding that a ſtone ſo filled the urethra, that for ſeveral years the urine did not paſs, but by the introduction of a knitting needle. The author of the relation does not pretend to account for the difficulty of the caſe; he only

increaſes it by telling us, his patient's wife had the character of a very virtuous woman. See Phil. Tranſ. N°. 480. p. 218.

There is no part of the hiſtory of animals ſo difficult to account for as their *generation*, in many particulars, and this is in none ſo abſtruſe, as in thoſe which are produced in places to which there is no viſible way for them to arrive. The animalcules diſcovered by Lewenhoek, in the *ſemen maſculinum* of animals, and the worms in the human bowels are of this kind. The firſt of theſe are too minute for our obſervation in regard to the clearing of this point; but as to the others, Valliſnieri has proved, that they are not produced from the eggs ſwallowed down our throats in our drink or otherwiſe, but that they really do propagate their ſpecies within us, and are owing to parents of the ſame kind hid in ſome parts of our inteſtines. Redi has given ſuch deſcriptions of the lumbrici rotundi, or common worms, that the thing is rendered paſt all doubt in regard to them; and this author taking up the ſubject where he dropped it, has proved as much in regard to the tænia, or tapeworm.

The bowels are evidently the true and proper ſeat and habitation of theſe creatures, but they are alſo ſometimes voided by urine, and thence conceived to have lived in the urinary paſſages. Valliſnieri gives an account of a worm in the form of a ſerpent voided by urine by a prieſt, from one Landus; and from Alghiſi another caſe of great numbers of worms of the ſize and ſhape of barley corns, voided in the ſame manner after terrible pains. Our tranſactions alſo give an account of a large and long worm, taken out of the penis of a youth by a ſurgeon of reputation. It is poſſible that worms different from thoſe uſually found in the body, may be ſometimes *generated* there, but as to their inhabiting the urinary paſſages, there is great reaſon to ſuſpect the fact. That they have been voided by urine is certain, but in perſons who have died ſoon after, and been diſſected, it has been found that the colon has been exulcerated, and that theſe creatures had eaten their way from thence into the bladder; and this is probably the caſe in all thoſe ſtories, where the fact is certain. And the opinion of Valliſnieri as to the reſt is, that they were concreated with the human frame, and that our bowels are their natural and proper nidus. *Valliſnieri* Obſer. Med.

The polypus, or polype, being neither male nor female, but producing its young, as plants do their ſhoots, only that at laſt the young polypes drop from their parent, ſhews a remarkable anology between animal and vegetable nature. See POLYPE.

Mr. Demours [a] affords us another fact to illuſtrate this analogy. It is in the act of propagation of water ſalamanders, the male of which has no penis, but ſquirts out his ſemen at a little diſtance from the female; and though it could not be obſerved that any of it is received into her body, yet her ova are fecundated. [a] *Obſervat. concern. L'Hiſt. naturelle.*

Some animals may be *generated* from the cuttings, or pieces of another of the ſame ſpecies, in the ſame manner as trees and plants are produced, by ſetting ſmall pieces of the ſame plant. See POLYPE.

GENERATION of *plants*. The *generation* of *plants* bears a near analogy to that of ſome animals, eſpecially ſuch as want local motion, as oiſters and ſome other ſhell fiſh. The flower is the container of the parts of *generation*, and each performs its peculiar office for the propagation of the ſpecies.

The flower of a lilly, for inſtance, conſiſts of ſix petals, or flower leaves, from the bottom of which, at the middle ariſes a kind of tube, called the piſtil, and round this there are diſpoſed ſeveral ſmall threads called the ſtamina or chives, which ariſe alſo from the bottom of the flower, and terminate at their tops in ſmall bodies called the apices, which contain a fine duſt called the farina. *Miller*'s Gard. Dict.

This is the general ſtructure of flowers, and though in many, ſome of theſe parts ſeem wanting; yet probably they are there, only leſs apparent. The fruit is uſually at the baſis of the piſtil, ſo that when the piſtil falls with the reſt of the flower, the fruit is ſeen in the place of it, though in ſome this is not the caſe, but the piſtil itſelf becomes the fruit. The petals ſeem only an outer covering to defend the piſtil and ſtamina, and the duſt which the apices at the ends of theſe are full of, was by many great men believed to be only an excrementitious matter ſeparated from the plant, by the chives, which they ſuppoſed tubes deſtined to carry off this abundant nutriment from the fruit. Later diſcoveries however have ſhewn this to be a very eſſential part of the flower, and to ſerve the office of the male ſperm of animals, and that the piſtil is properly the female organ of *generation*.

The ſeeds which come up in their proper involucra, ſeem of the nature of the unimpregnated eggs of animals; alſo that the farina ſeminalis, or duſt contained in the apices, is a congeries of plantules, each of which is to be lodged in one of thoſe ſeeds, which are only a proper matrix for its reception; that the ſtyle or upper part of the piſtil is a tube deſtined to convey theſe ſeminal plants into the uterus, or bottom of the piſtil where theſe ſeeds are lodged; and finally it appears, that the vaſt quantity of this farina is only becauſe of the multitudes that muſt miſcarry, for one that finds its way into this narrow paſſage.

To exemplify theſe conjectures by obſervation. It may be ſeen that in the crown imperial, the uterus, or vaſculum ſeminale of the plant, ſtands upon the center of the flower; and from the top of this ariſes the ſtyle, the vaſculum ſeminale and ſtyle together making the piſtil. Round this are placed ſix ſtamina, the apices of which are ſo artfully fixed, that they play about with every wind; and are in height almoſt equal to the ſtyle, round about which they are continually in motion, and which in this plant is manifeſtly open at the top, and hollow all the way down; and to this it muſt be added, that on the top of this ſtyle there is a tuft of pinguid villi, or ſmall tendrills, which ſeem deſtined to catch hold of the farina, or male duſt, as it is diſlodg'd from the apices when they burſt, and from theſe it may very eaſily find its way through the hollow to the ſeeds it is deſtined to impregnate. *Miller*'s Gard. Dict.

The tube or ſtyle of the piſtil always dies away as ſoon as the apices have diſcharged all their powder, having then ſerved the purpoſes it was deſigned for.

The ſeminal plant is always lodged in that part of the ſeed which lies neareſt the aperture of the tube, through which this farina is conveyed; and in beans there is an evident perforation to be diſcovered by ordinary glaſſes juſt above the eye, which probably has been the paſſage by which the plantula ſeminalis entered. In theſe and the other leguminous plants alſo, if we carefully take off the petala of the flower, we ſhall diſcover the pod cloſely covered by an enveloping membrane, which near the top ſeparates into ſeveral ſtamina, each loaded with its apex and farina, and theſe ſtamina are all bound cloſely to that bruſh which ſhews itſelf at the end of the pod.

In roſes there ſtands in the middle a column conſiſting of many tubes, which though cloſely clung together, yet are eaſily ſeparable, and each leads to its particular cell, the ſtamina being in great abundance placed all round the orifices of theſe tubes. In ſtrawberries and raſberries, the hairs growing on the outſides of thoſe fruit are ſo many tubes leading to the ſeeds, and in the firſt opening of the flowers of theſe plants, theſe hairs ſtand in a thick wood as it were at the bottom of the flower, and are every where ſurrounded by ſtamina with apices on their tops; and it is not till after theſe apices have diſcharged their farina, that the fruit ſwells out of the huſk. In flowers which naturally hang down, as the imperial crown and the like, the piſtil is much longer than the ſtamina, that it may receive the farina as it falls from the apices.

Mr. Geoffroy obſerved, that the cutting off the piſtil of a flower before the apices were ripe, always made the fruit abortive, and the plant barren for that ſeaſon. In ſome plants, whether male and female flowers ſtand on different ſtalks from the ſame root, or on different plants of the ſame ſpecies, the wind is the vehicle of this farina; and if it does not reach the female flowers, they ever remain barren. *Miller*'s Gard. Dict.

GENERATION of plants from pieces or cuttings of the ſame plant. See PIECES.

GENERATION, in mathematicks, is uſed for formation or production. Thus we meet with the *generation* of equations, curves, ſolids, &c.

GENERATION *of ſtone*. See LITHOGENESIA.

GENERICAL *name*, in natural hiſtory, the word uſed to ſignify all the ſpecies of natural bodies, which agree in certain eſſential *and peculiar* characters, and therefore all of the ſame family or kind; ſo that the word uſed as the *generical* name, equally expreſſes every one of them, and ſome other words expreſſive of the peculiar qualities or figures of each are added, in order to denote them ſingly, and make up what is called the ſpecific name.

Thus the word roſa, or roſe, is the *generical* name of the whole ſeries of flowers of that kind, which are diſtinguiſhed by the ſpecific names of the red roſe, the white roſe, the apple roſe, &c. The ignorance of former ages in the true principles of natural hiſtory, has occaſioned the bodies, which are the objects of it, to be arranged into very unnatural ſeries under the name of *genera*; and theſe have been called by names as improper, as the characters they were diſtinguiſhed by. Linnæus has done a great deal in the exploding the bad *generical* names in Botany, and Artedi has applied his rules about the formation of theſe names with very little difference to the ſubjects of ichthyology. See BOTANY.

Many of the *generical names* of fiſhes till the time of this author, were ſo barbarous and obſcure, that it was not eaſy to trace them to their original; or to find whether they were truly Teutonic, Engliſh, Dutch, Swediſh, French, Italian, Spaniſh, Portugueſe, Latin or Indian. The ignorance of the writers on theſe ſubjects, or their too ſcrupulous adherence to the cuſtoms of their predeceſſors, ſeem to have been principally the cauſes of this, and often an entire negligence. Artedi's rules for *generical* names for fiſhes are theſe.

Whatever

Whatever fiſhes there are which agree in the ſame *generical* characters, and are properly of the ſame genus; theſe ought all to be called by the ſame *generical* name, their differences being only expreſſed by ſpecific ones. This appears ſo plain, ſo juſt, and ſo neceſſary a rule, that it is almoſt a ſhame to lay it down; yet the writers on fiſhes, till the time of this author, had very ſeldom kept up to it: but in many different parts of their works, fiſhes of the ſame genus were found deſcribed under different *generical* names, and in other parts, on the contrary. The greateſt confuſion imaginable was brought on by the deſcribing fiſh of really and truly diſtinct genera under the ſame *generical* name. Thus the alburnus, the barbus, bubulca, brama, capito, caraſſius, carpa, erythrophthalmus, fundulus, gobius, griſlagine, leuciſcus, mugil, naſus, orfus, phoxinus, pigus, rutilus, ſqualus, tinca and varius, are all uſed as ſo many diſtinct *generical* names; yet they are all the names of the different ſpecies of only one genus, the cyprini. In the ſame manner, the agonus, alauſa, celerinus, and chalcis, the encraſicholus, harengus, lycoſtomus, pilchardus, ſardanus, ſprattus, ſparlingus, thriſſa, *&c.* are a parcel of barbarous names uſed as diſtinct *generical* terms; yet the fiſh they are applied to, are all ſpecies of the ſame genus, *viz.* the clupeæ. Numerous other inſtances of this kind might be brought.

On the other hand, fiſhes of the moſt different genera have been confounded under the ſame *generical* name. Thus we have two fiſh deſcribed under the ſame name tinca, as if of the ſame genus, but diſtinguiſhed by the ſpecific additions of their places of abode, the one called tinca lacuſtris, and the other tinca marina. The firſt of them is truly a ſpecies of cyprinus, and the other a ſpecies of as different a genus as can be well conceived.

Another barbariſm and impropriety in the *generical* names of fiſhes among the old authors, is the uſing the ſame words to expreſs them, which are alſo the names of other animals, quadrupeds, birds, and reptiles. Theſe are ſubject to great objection; becauſe when they are uſed it is not eaſy to ſee, in ſome caſes, whether the author is ſpeaking of a bird, a beaſt, or a fiſh. It is therefore one of the general rules of Artedi, that all theſe names are to be aboliſhed, as alſo all thoſe which are common to fiſhes, and to plants, minerals, and to the tools of huſbandry, or other ſervices. *Artedi* Ichthyolog. p. 10, 69.

Among the names common to fiſh, and to quadrupeds, we have the aper, the aſellus, the canis, the caper, the elephas, the gottorugine, or felis, the hyæna, the hyſtrix, the lepus, the lupus, the porcus, the monoceros, the muſtela, the oniſcus, the ſimia, the veſpertilio, and the vulpes. Who would think of boars, aſſes, dogs, and elephants among fiſhes? Or enquire into thoſe names common to the fiſhes and birds, who would expect to find in the ſea, the alauda, the aquila, the capo, the corvus, the cuculus, the gallus, the galerita, the gracculus, the hirundo, the larus, the merula, the milvus, the paſſer, the pavo, the ſcolopax, the turdus?

Among the names common to the amphibious animals, and to the fiſhes, we find the cecilia, draco, dracunculus, ophidion, lacertus, rana, ſaurus, ſerpens, tarantula, and typhle. Among thoſe common to inſects, and to fiſhes, we have the araneus, the aſellus, the gryllus, the ichneumon, the iulis, the libella, the ſcarabæus, the ſcorpio, the tænia, and the lumbricus. Among the names common to plants and fiſhes, we find the adonis, ammogloſſus, bugloſſus, cynogloſſus, erica, hippurus, holoſteum, papaver, paſtinacha, ſpinacha, thymus, and viola. It has been pretended that the old authors have given to fiſh the names of beaſts, as ſuppoſing their internal ſtructure the ſame with theirs; but this is an analogy almoſt entirely imaginary; and if it could have any ſhare in the comparing fiſh to quadrupeds, yet it leaves the comparing them to ſpinage, poppies, parſnips, and violets, wholly without excuſe.

Among the ſeveral names common to fiſhes, and to the inſtruments of huſbandry and other arts, the offices, trades, and employments of men and other things, as foreign to the nature of the ſubject as theſe, we find the following. The acus, bubulus, carbonarius, citharus, faber, gladius, huſo, hippogloſſus, hippuris, lingula, lucerna, lyra, maltha, mola, naſus, novacula, orbis area, quadratulus, rhaphis, remora, rhombus, ſerra, ſolea, umbra. To theſe alſo may be added the names taken from ſpiritual beings, to which the nameſake fiſhes can certainly have no reſemblance or affinity: ſuch are the angelus, and the diabolus.

Another rule of this excellent author is, that *generical* names that are compoſed of two whole words unnaturally tied together are to be aboliſhed, it being eaſy to contrive names leſs barbarous, and as expreſſive; among theſe we find the araneus marinus, aſper piſciculus, gobioni perſimilis, muſtelæ affinis, piſcis cornutus, veſpertilio aquaticus, and a great number of others formed upon the ſame plan with every one of theſe. Next to theſe are to be exploded thoſe names which are formed of two *generical* words before in uſe, the one broken, or cut ſhort, the other preſerved intire: of this kind are the ſquatino-raia, the lucio-percæ, the rhino-batus, and the like. *Artedi* Ichthyolog. p. 73.

Another general rule in regard to theſe names is, that all ſuch as are not of either Latin, or Greek origin, are to be proſcribed and wholly rejected. This rule cuts off a prodigious number of barbarous words, with which we find the books of authors of former ages on theſe ſubjects crowded. Among the barbarous names of German origin, are the caraſſius from karas, carpa from carpe, orfus from urff, triſſia from truſchen, *&c.* Among thoſe of Belgic origin are theſe, coretta from coret, and the hayen, lumpen, *&c.* which are all Belgic words. Among thoſe of Engliſh origin are the braulinus from brauling, gornatus from gurnard, graia from grey, and huitingo-pollachus from whiting pollach. Among thoſe of Swediſh origin are ſicus from ſilk or ſik, ſtromingus from ſtroming, *&c.* Among thoſe of Gallic origin are theſe, barbotta from barbott, celerinus from celerin, *&c.* Among thoſe of Portugueſe origin are theſe, tiburo from tiberaon, and linguado and pudiano, both Portugueſe words. Among thoſe of Italian origin come the fragolinus from fragolino; and the fiatola, rayna, and many others which are true Italian words. Amongſt thoſe of American origin are the paru, tamaota, narinari, and a multitude of other ſuch barbarous and unintelligible ſounds copied from Piſo, Marcgrave and others. And finally among thoſe of Aſiatic origin, or borrowed from the modern Greek, wholly differing from the antient, are the corcovada, cheriſcaria, liſſa, *&c.*

A ſixth rule for the regulating *generical* names is, that all ſuch are to be aboliſhed as terminate in *oides*, as expreſſing a reſemblance often imaginary, and often alluding to ſomething unknown, or rendered difficult to trace from the changing the names of other things ſince the time when it was formed. Theſe words convey no idea of the character of the genus expreſſed by them, except that they are like the other thing alluded to in ſome external, though perhaps not eſſential character: of this kind are the rhomboides, ſcorpoides, *&c.*

A ſeventh rule in regard to theſe names is, that all ſuch are to be rejected as are barely diminutives and terminate in *ulus* or *ula*. Theſe convey no other idea, but that of the fiſh being like ſome other fiſh, only leſs: now bigneſs is no *generical* character; therefore if this genus, and that referred to, differ only in ſize, they have no *generical* difference at all; if they do differ otherwiſe that ſhould be expreſſed. What makes many of theſe names alſo the more intolerable is, that they allude not to fiſhes, but to other things ſo different in their nature, that there muſt needs be many other more eſſential varieties between them, beſide ſize: of this kind are the lingula from lingua, capriſcus from caper, ſpinarolla from ſpina, ſardella, from ſarda, and ſo on to the anguella, dracunculus, albula, *&c.*

Another general rule is, that ſuch *generical* names as are pure Latin, but are mere adjectives are to be exploded, there being no reaſon for uſing them as ſubſtantives: the names of things of this ſort, are coracinus from corax, latulus from latus, aculeatus, centrine glaucus, and the like. *Artedi* Ichthyolog. 10, 79.

A ninth general rule is, that ſuch names as are formed of Latin words, unknown to the antient Romans, and formed by the later writers are to be expelled as barbarous, and others of better credit placed in their ſtead. Of the number of theſe new names are theſe, alburnus, lucius, ſalar, tinia, lampetra, *&c.*

Finally, ſuch *generical* names as have been given to fiſh from the places where they are caught, are to be rejected; of this kind are the ſardella and ſardina from the iſland of Sardinia, and the ſturio from Aſturia, a province of Spain. Theſe ſorts of names can convey no idea of the nature of the fiſh, and may belong as well to one genus as to another. *Artedi* Ichthyolog. p. 10, 79.

Theſe rules of proſcription baniſh ſo many of the received *generical* names of fiſhes, that it might be ſuppoſed the whole number was exhauſted, and all the fiſh in the world to be named anew. But this is not the caſe, the *genera* are in reality much fewer in number than they have been uſually ſuppoſed, and therefore fewer words will ſerve to expreſs them, and there yet remains many truly Latin words uſed by the antient Romans, by which the far greater part of the *genera* may be expreſſed, and the few remaining may be beſt denominated by compound Greek words, expreſſive of their real characters.

Among the true and genuine Latin and Græco-Latine names of the *genera* of fiſhes are theſe, accipenſer, amia, anthias, balæna, blennus, clupea, cobites, cyprinus, delphinus, elops, eſox, exocœtus, gobius, labrus, lamia, liparis, mugil, mullus, muræna, perca, phyſeter, priſtis, raja, ſalmo, ſalpa, ſcarus, ſcomber, ſilurus, ſparus, ſqualus, thynnus, torpedo, triton, turſio, uranoſcopus, xiphias, zeus. Theſe will go a great way toward the naming the true *genera*. Artedi has merited greatly of the world, in thus reforming the names of fiſhes, and the rules he has laid down, thus given at large, may with little variation be made to ſerve to any other author, in whatever branch of knowledge he has occaſion to write.

GENESIS, *(Cycl.)* in mathematics, is uſed for formation, or production. Thus authors ſpeak of the geneſis of equations, figures, *&c.*

GENETHLIA, Γενεθλια, in antiquity, a ſolemnity kept in memory of ſome perſon deceaſed. *Potter.* Archæol. Græc. l. 2. c. 20. Tom. 1. p. 375.

GENE-

GENETIDES, in natural hiſtory, a name given by the antients to the ſtone, more generally known under the name enchymonites. This was the ſpar incruſted on the tops and ſides of ſubterranean caverns, which they ſuppoſed daily to bring forth more, and therefore gave the powder of it to women at the time of their lying in, to promote their ſpeedy delivery. *Boetius* de Boot.

GENETTA, a ſmall animal of the weaſel kind. See the article GINETTA.

GENETTE, in the manege, a Turkiſh bit, the curb of which is all of one piece, and made like a large ring, and placed above the liberty of the tongue. When they bridle a horſe, they make his chin paſs through this curb, which ſurrounds his beard. This ſort of bit was much uſed at the court of France when Guillet wrote.

GENETTE is alſo uſed for the particular way of riding practiſed in Spain, which being ſo ſhort, that the ſpurs bear upon the horſe's flank, would be reckoned an indecency in France and England, but among the Spaniards, it paſſes for a piece of gallantry and handſome carriage when they ride upon their *genettes*, in going to court before the ladies.

GENETYLLIS, Γενετυλλις, in antiquity, a ſolemnity celebrated by women in honour of *Genetyllis*, the goddeſs of that ſex. *Potter*, Arch. Græc. l. 2. c. 20.

GENEVA *(Cycl.)*—There never was ſo great a quantity of the liquor vulgarly called by this name made as at preſent; but it is wholly different from what the liquor ſo called was at firſt. The beſt *geneva* we now have, is made from an ordinary ſpirit, diſtilled a ſecond time with an addition of ſome juniper berries; but the original liquor of this kind was prepared in a very different manner. It was a cuſtom in the diſtilling of ſpirits from wort, or other fermented liquors, to add in the working ſome aromatic ingredient; ſuch as ginger, cortex winteranus, or grains of paradiſe to take off the bad flavour, and to give a pungent taſte to the ſpirit. Among other things uſed with this intent, ſome tried the juniper berries, and finding that they gave not only an agreeable flavour, but very valuable virtues alſo to the ſpirit, they brought it to a general cuſtom, and the liquor ſold under this name. The method of adding the berries was to the malt in the grinding: a proper proportion was allowed, and the whole was reduced to meal together, and worked in the common way. The ſpirit thus obtained was flavoured *ab origine* with the berries, and exceeded all that could be made by any other method. Our common diſtillers leave out the juniper berries entirely from the liquor they now make and ſell under that name. Our raſcally chemiſts have let them into the ſecret, that the oil of juniper berries, and that of turpentine are very much alike in flavour, though not in price; and the common method of making what is called *geneva* in London, is with common malt ſpirit, and a proper quantity of oil of turpentine diſtilled together. *Shaw*'s Eſſay on Diſtill. p. 7.

GENICULARIS, in botany, a name uſed by ſome authors for the great garden valerian called phu. *Ger.* Emac. Ind. 2.

GENIPA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the monopetalous kind, and is ſhaped like a bell, and very wide at the mouth. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower. The cup finally becomes an oval fleſhy fruit, divided into two cells, and containing a number of flatted ſeeds. There is only one known ſpecies of this genus, which is the oval fruited *genipa* or *genipat* of authors. *Tourn.* Inſt. p. 658.

GENISTA, *Broom*, in Botany, the name of a genus of plants, the characters of which are theſe: the flower is of the papilionaceous kind; the piſtil which ariſes from the cup finally becomes a flat pod, which when ripe ſplits into two parts, and is found to contain kidney-ſhaped ſeeds. To this it is to be added, that the leaves ſtand either in an alternate or verticillate order. See Tab. 1. of botany, Claſs 22.

The ſpecies of *geniſta*, enumerated by Mr. Tournefort, are theſe. 1. The common Spaniſh *broom*, or ruſhy ſtalked *broom*. 2. The dwarf, ſweet ſcented Spaniſh *broom*. 3. The dyers weed, or German dyers *broom*. 4. The dyers weed with narrower leaves. 5. The ſhrubby dyers *geniſta*, with hoary leaves. 6. The broad leaved dyers *broom*. 7. The great Portugal dyers *broom*. 8. The Portugal *broom* with ſmall yellow flowers. 9. The low Dutch *broom*. 10. The branched *broom* with hypericum leaves. 11. The radiated or ſtarry *broom*. 12. The purging *broom* or ſpartum. 13. The ſhrubby African *broom* with nervous butchers *broom* leaves. 14. The ſhrubby African *broom* with narrower butchers *broom* leaves. 15. The African *broom* with lavender leaves. 16. The African ruſhy ſtalked *broom* with very ſmall leaves, and blue flowers. 17. The ſmalleſt African *broom* with myrtle like leaves, ending in a fine point. 18. The roſemary leaved African *broom* with bright yellow flowers. 19. The African tree *broom* covered with a ſilvery hoarineſs. 20. The ſhrubby African *broom* with very narrow leaves, and purple ſpiked flowers. 21. The broader leaved purple flowered ſhrubby African *broom*. 22. The African *broom* with hairy larch like leaves. 23. The African *broom* with thick and hairy larch like leaves. 24. The larch leaved ſhrubby African *broom* with ſpiked flowers. 25. The larch leaved ſhrubby African *broom* with glomerated heads. 26. The larch leaved ſhrubby African *broom* with yellow ſpiked flowers. 27. The ſhrubby African *broom* with woolly heads, and very ſhort larch like leaves. 28. The ſhrubby African *broom* with hoary larch like leaves. 29. The African *broom* with ground pine leaves, and very ſmall yellow flowers. 30. The gallium leaved African *broom*, and 31. The dorychnium leaved African *broom*. *Tourn.* Inſt. p. 644. *Broom*, is an attenuant, abſtergent, and aperient. The juice of the green ſhoots of *broom*, or a ſtrong infuſion of them in wine, is an excellent diuretic, and cleanſes the ureters and kidneys. If taken in large doſes it purges by ſtool, and therefore is doubly proper in dropſical caſes. The ſeed of *broom* is alſo a purge, and that of no weak kind, a dram and half of it being a ſufficient doſe. The young buds are frequently pickled in the manner of capers, and make a very agreeable addition to our food. The *Lixivium* of *broom* with white wine is a powerful diuretic, but muſt be taken with caution.

GENISTA *ſpartium*, in botany, the name of a genus of plants, agreeing in all reſpects with *broom*, but that the ſtalks are prickly.

The ſpecies of *geniſta ſpartium*, enumerated by Mr. Tournefort, are theſe. 1. The great yellow flowered *geniſta ſpartium*. 2. The great *geniſta ſpartium*, with pale yellow flowers. 3. The great hairy *geniſta ſpartium*. 4. The great ſmooth leaved *geniſta ſpartium*, with ſlender branches. 5. The ſmaller *geniſta ſpartium*. 6. The very prickly ſmall ſtone *geniſta ſpartium*. 7. The great *geniſta ſpartium* with ſome longer, and ſome ſhorter thorns. 8. The leſſer common, or German *geniſta ſpartium*. 9. The ſmaller Engliſh *geniſta ſpartium*. 10. The Spaniſh very woolly ſmall *geniſta ſpartium*. 11. The woolly Spaniſh *geniſta ſpartium* with very long and ſlender three pointed thorns. 12. The woolly Portugal *geniſta ſpartium* with very long three pointed thorns. 13. The Portugal *geniſta ſpartium* with ſhort three pointed prickles 14. The Portugal *geniſta ſpartium* with ſhort thick and crooked three pointed thorns. 15. The Portugal *geniſta ſpartium* with very ſhort blueiſh prickles. 16. The Portugal *geniſta ſpartium* with very thick ſet prickles and tufted flowers. 17. The ſilvery Portugal *geniſta ſpartium*, with very ſtrong thorns and numerous flowers. 18. The great prickly ſpiked flowered *geniſta ſpartium*. 19. The dwarf *geniſta ſpartium* with ſmall flowers. 20. The ſmall Portugal *geniſta ſpartium* with ſpiked flowers. 21. The Portugal *geniſta ſpartium* with crooked or falcated pods. *Tourn.* Inſt. p. 645, 646.

GENISTELLA, in botany, the name of a genus of plants, the characters of which are theſe. The flowers and fruit are the ſame as in the broom, but the leaves are jointed, or grow to one another by a ſort of articulation.

The ſpecies of *geniſtella*, enumerated by Mr. Tournefort, are theſe. 1. The narrow leaved herbaceous *geniſtella*, or chamæſpartium. 2. The broad leaved herbaceous *geniſtella*. 3. The broad leaved ſhrubby Portugal *geniſtella*, and 4. The narrow leaved ſhrubby Portugal *geniſtella*. *Turn.* Inſt. p. 646.

GENITURA, in botany, a name given by ſome authors to the anethum or dill, a plant common in gardens, and uſed in medicine and cookery. *Ger.* Emac. Ind. 2.

GENOA *Balſam*, in medicine, the name of a famous compoſition, called alſo the balſam of aquapendente. Its great virtues are the curing pains in the extremities of the body, and allaying the violent pain in the bowels to which many women are ſubject after delivery. The preſcription is given at large in Velſcius, but the medicine is now grown out of uſe. *Velſc.* Med. Obſ.

GENTIANA, *Gentian*, in botany, the name of a genus of plants of which there are ſeveral ſpecies. The characters of the genus are theſe. The flower conſiſts only of one leaf faſhioned like a bell, in ſome ſpecies long and tubular, in others broader and open, and uſually divided into ſeveral ſegments. From the bottom of the cup there riſes a piſtil, which perforates the bottom of the flower, and ripens into a fruit of a membranaceous texture, and pointed oval figure, this is formed of two valves, and contains only one cell, in which are a number of ſeeds uſually flat, of a rounded form and marginated, or rim'd round the edge.

The ſpecies of *gentian* are theſe. 1. The great yellow flowered kind. 2. The great purple flowered kind. 3. The great white flowered kind. 4. The great kind with a ſpotted flower. 5. The ſwallow-wort leaved *gentian*. 6. The great flowered alpine *gentian*. 7. The large dwarf ſpring *gentian*. 8. The leſſer dwarf ſpring *gentian*. 9. The centaury leaved ſpring dwarf *gentian*. 10. The ſhort leaved alpine dwarf kind. 11. The blue flowered kind with hoary edges. 12. The croſs leaved kind. 13. The branched autumnal kind. 14. The meadow *gentian*, with woolly flowers. 15. The ſhort and large flowered meadow *gentian*. 16. The bladder *gentian*. 17. The broad leaved marſh kind with ſpotted flowers. 18. The great narrow leaved autumnal kind, called pneumonanthe. and 19. The little dwarf *gentian*. *Tourn.* Inſt. p. 81. See GENTIAN, *Cycl.*

GENTIANA *nigra*, a name given by ſome botanical authors to the mountain daucus or black libanotis. *Rump.* Flor. Gen. 221. See DAUCUS.

GENTIANELLA, *Little Gentian*, a diminutive of the name *gentiana*, commonly applied to the ſmaller ſpecies of *gentian*. See GENTIANA.

GENTILITIA *ſacra*, among the Romans. See SACRA.

GENTILITIUS, an epithet uſed by ſome authors, to expreſs diſeaſes propagated from father to ſon, and running through whole families, ſuch as are more uſually called hereditary diſorders. Such is the gout very frequently, and often many others. See DISEASE.

GENTLE *Pit Ore*, in mineralogy, a name given by our miners in Suſſex to a kind of iron ore found in conſiderable plenty in that county, and very readily running in the fire, though not over rich in metal. It is a ſtrong ſubſtance, and lies in ſeveral parts of that county in form of a moderately thick ſtratum. It is of a duſky brown colour, and in ſome places much paler than in others. It has always a great number of glittering ſpangles in it, and very often contains foſſile ſhells, and other extraneous ſubſtances in it. *Woodw.* Cat. Foſ. Vol. 1. p. 225.

GENUS *(Cycl.)*—By the word *genus*, in natural hiſtory, we underſtand a certain analogy of a number of ſpecies making them agree together in the number, figure, and ſituation of their parts in ſuch a manner, that they are eaſily diſtinguiſhed from the ſpecies of any other *genus*, at leaſt by ſome one article. This is the proper and determinate ſenſe of the word *genus*. Some have extended it to the claſſes under which theſe *genera* are formed, calling the claſs *genus ſummum*, and this *genus ſubalternum*.

A *genus* in ichthyology, for inſtance, is a certain agreement between ſeveral ſpecies founded on the ſimilitude of their eſſential external parts, generally regarding their ſituation, number, figure, and proportion. On this foundation, if only one fiſh ſhould be found differing from all the known *genera* in ſome eſſential point, the ichthyologiſt is not to force this into the ranks of ſome former *genus*, but allow it one to itſelf, and it is extremely probable that ſome other fiſhes hereafter may be diſcovered belonging to the ſame *genus* with it, and no more than it reducible to any of the formerly eſtabliſhed ones. *Artedi* Ichthyolog.

GENUS, in the antient muſic, was a diviſion of the *diateſſaron*, or fourth [a], containing four ſounds, into three intervals [b].—[a *Euclid.* Introd. Harm. p. 1. Ed. Meibom. b Phil. Tranſ. N°. 481. p. 271. *Gaudent.* p. 5. Edit. Meibom.]

The Greeks conſtituted three ſuch *genera* known by the names of *enharmonic*, *chromatic*, and *diatonic*. See ENHARMONIC, *&c.*

The enharmonic was not ſubdivided, but the chromatic was divided into three ſpecies, and the diatonic into two; ſo that the antients had ſix ſpecies, or different diviſions of the fourth in uſe. The moderns know but four [c], and one of theſe, the enharmonic, is ſcarce ever met with. It does not appear that the antients themſelves could accurately define theſe ſeveral ſpecies. Ariſtoxenus left it to the ear and practice, and did not pretend to aſſign any true proportions in numbers. However he has attempted to convey ſome idea of theſe *genera* and ſpecies, by ſuppoſing the fourth divided into thirty parts. That is (as Ptolemy underſtands him) he ſuppoſes the difference of a chord and its fourth to be divided into 30 parts; and then aſſigns a certain number of theſe parts to each interval, or diviſion of the various ſpecies. Hence the fourth [d] containing two tones and a half, the tones will each have twelve parts, and the ſemi-tone ſix. —[c Philoſ. Tranſ. N°. 481. p. 272. d *Wallis* Append. and *Ptolem.* Harm. p. 164.]

In the enharmonic, he makes the interval between the hypate and parypate, as alſo, between the parypate and the lichanus, to be a *dieſis quadrantalis*, or $\frac{1}{1\frac{1}{2}}$; and from the lichanus to the nete he makes a ditonus or $\frac{2\frac{1}{2}}{3\frac{1}{2}}$. So that the enharmonic diviſions will be $3 + 3 + 24 = 30$.

In the chromaticum molle [e], he makes the interval between the hypate and parypate, as alſo from the parypate to the lichanus a triental dieſis, or $\frac{1}{1\frac{1}{2}}$; and from the lichanus to the nete $\frac{22}{1\frac{1}{2}}$, that is, an undivided interval equal to a tone, a ſemitone, and a triental dieſis. Hence the intervals of this ſpecies will be repreſented by the numbers, $4 + 4 + 22 = 30$ [f]. [e μαλακον. f *Wallis* Ibid.]

In the chromaticum hemiolium [g], or ſeſquialterum [h], he makes the interval from the hypate to the parypate, and from thence to the lichanus, a dieſis ſeſquialtera, that is $\frac{1}{2}$ of the enharmonic dieſis, or $4\frac{1}{2}$ parts of his diviſion of the fourth. The remaining undivided interval is of 21 parts; being equal to a tone, a hemitone, and quadrantal dieſis. This ſpecies will be repreſented by the numbers, $4\frac{1}{2} + 4\frac{1}{2} + 21 = 30$. [i]. or to avoid fractions, $9 + 9 + 42 = 60$.—[g ἡμιολιον. h Phil. Tranſ. N°. 481. pag. 272. i *Wallis* ibid.]

In the chromaticum tonicum or toniæum [k], he makes the interval between the hypate to the parypate, and from thence to the lichanus, a hemitone or $\frac{6}{1\frac{1}{2}}$, and from thence to the nete, a tone and an half or $\frac{18}{1\frac{1}{2}}$. Hence the ſpecies will be expreſſed by the numbers, $6 + 6 + 18 = 30$ [l].—[k τονιαιον. l *Wallis* ibid.]

In the diatonicum molle [m], he makes the interval between the hypate and parypate a hemitone or $\frac{6}{1\frac{1}{2}}$, from hence to the lichanus $\frac{9}{1\frac{1}{2}}$, and from this to the nete $\frac{15}{1\frac{1}{2}}$; ſo that this ſpecies will be repreſented by the numbers $6 + 9 + 15 = 30$ [n]. —[m μαλακον. n *Wallis* ibid.]

In the diatonicum intenſum or ſyntonum [o], the interval between the hypate and parypate, is according to him a hemitone; and between the parypate and lichanus, as alſo between the lichanus and nete, is a tone. Hence the expreſſion of this ſpecies will be $6 + 12 + 12 = 30$ [p].—[o συντονον. p *Wallis* ibid.]

The ſame diviſions are in Euclid [q], and Ptolemy [r] gives the like proportions from Ariſtoxenus, only doubling the numbers to avoid fractions.—[q Introd. Harm. p. 10, 11. Edit. Meibom. r *Harmon.* Lib. 1. c. 12.]

Ariſtoxenus does not pretend that the diviſions he propoſes are accurate. He ſeems to doubt of the diateſſaron being two tones and an half; and of its being at all meaſurable by any ſmall interval, as the hemitone or dieſis. He queſtions whether the enharmonic dieſis be preciſely the fourth part of a tone; or if the chromatic dieſis be its third part. All which doubts are very well grounded. And it ſeems as if this famous muſician had only propoſed his diviſions of the tetrachord, as approximations to convey ſome idea of the different ſpecies to the imagination; and not as an accurate ſtandard to guide the voice, and hand, in ſinging and playing. *Wallis* Append. and *Ptolem.* Harm. pag. 169.

This is the doctrine of the antients concerning their ſix ſpecies of fourths. How to reconcile this to modern notions, and with the true principles of muſic, might be a work of ſome difficulty. Dr. Pepuſch has given us his opinion as to what theſe ſix ſpecies ought accurately to be. How far his opinion is deducible from the remains of the antient muſicians, has not yet been publicly ſhewn. We have mentioned his doctrine under the heads CHROMATIC, DIATONIC and ENHARMONIC, and ſhall here give them in one ſhort view. Phil. Tranſ. N° 481. pag. 266. ſeq.

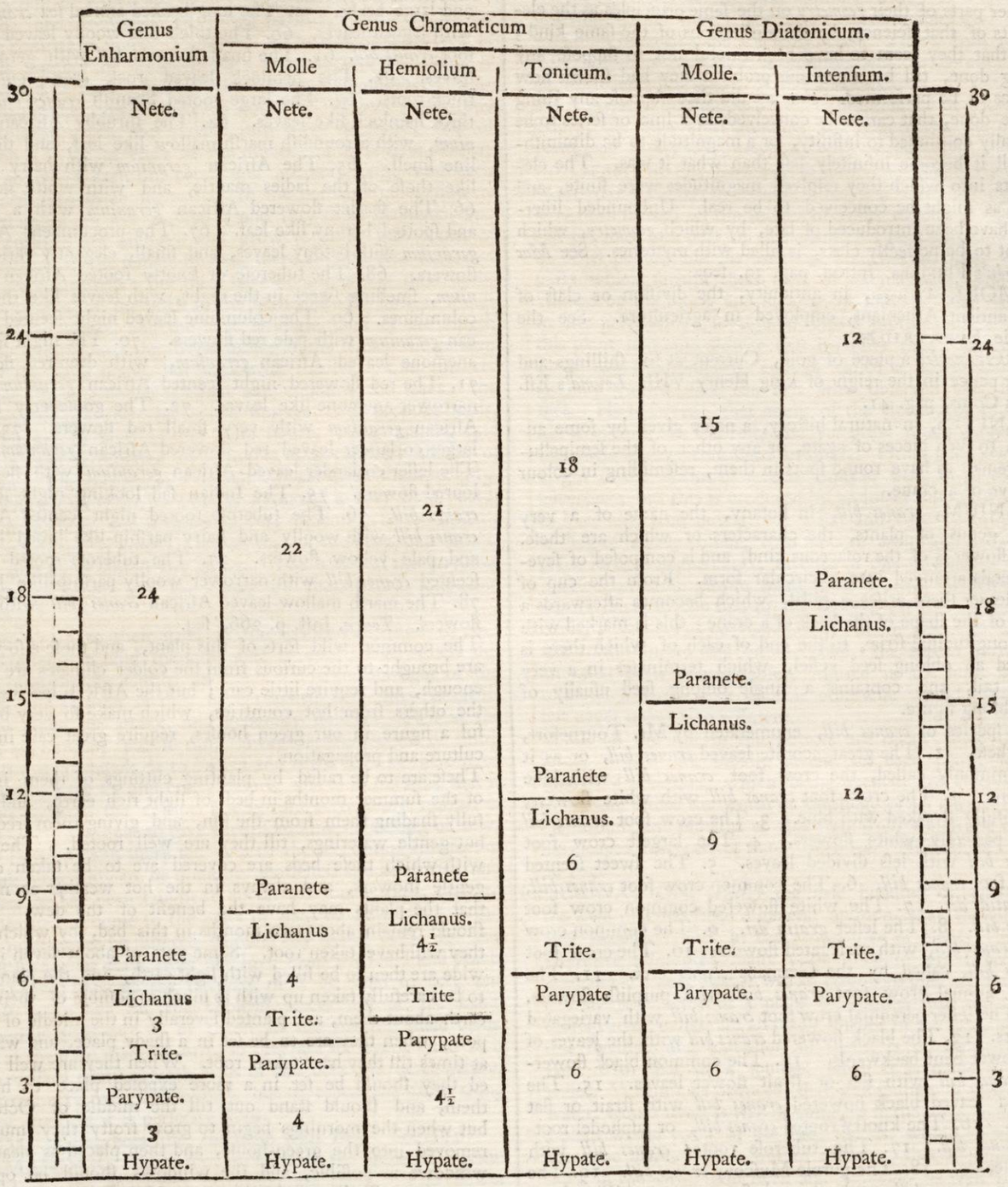
Intervals of the

Enharmonic, $\text{IV} = s + d + \text{III}$.
Cromaticum molle, $\text{IV} = s + s + (3 + d.)$
Chromaticum ſeſquialterum, $\text{IV} = S + s + 3$.
Chromaticum toniæum, $\text{IV} = S + S + (T + s.)$
Diatonicum molle, $\text{IV} = S + 2s + (T + d.)$
Diatonicum intenſum, $\text{IV} = S + t + T$.

To underſtand which, obſerve, that d ſtands for the dieſis enharmonica, s for the ſemi-tone minor, S for the ſemi-tone major, t for the tone minor, T for the tone major, 3 for the third minor, III for the third major, IV for the fourth; and when two intervals are placed within a parentheſis, it ſignifies a ſingle interval equal to the two joined by the ſign of addition $+$. Thus $(3 + d)$ is an interval equal to the third minor and dieſis enharmonica; $(T + s)$ is equivalent to the tone major & ſemitone minor, commonly called a ſuperfluous tone; and laſtly $(T + d)$ ſignifies a tone major and dieſis enharmonica, which interval, no more than $(3 + d)$ has no particular name. Phil. Tranſ. N° 481. pag. 272.

Dr. Wallis has given us a ſynopſis of the *genera* and ſpecies according to Ariſtoxenus, we ſhall here inſert it, as it gives light to the doctrine of the antient tetrachords. *Wallis.* Append. ad *Ptolem.* Harm. pag. 164.

Generum Synopſis ſecundum Ariſtoxenum.



The gradual approach of the paranete, in the different ſpecies to the nete, ſhews why this chord was called lichanus. The length of this ſcheme, or the ſide divided into thirty parts, is ſuppoſed to be the difference of any chord, and its fourth. Ptolemy takes theſe diviſions in an aſcending fourth; that is, the longeſt of the two chords, or the whole of one chord, is terminated at hypate; and the termination of the ſhorter chord, or of that part of the long chord, ſounding a fourth to the whole, is at nete. So that we muſt imagine ninety parts added upwards to this ſcheme beyond nete; and then, for inſtance, the lengths of the chord, or parts of a chord repreſenting the *diatonicum intenſum* of Ariſtoxenus, according to Ptolemy, will be, 120, 114, 102 and 90. *Ptolem.* Harmon. pag. 92. Edit. *Wallis* in Oper. Tom. 3.

But we muſt obſerve, that the ninety parts might be added downwards in the foregoing ſcheme, from hypate; and then we ſhould have a deſcending fourth expreſſed by the following numbers, 90, 96, 108 and 120, which is moſt perfectly in tune, and gives us the ſemitone major, the tone major, and the tone minor. For $\frac{90}{96} = \frac{15}{16}$ is the proportion of lengths of chords expreſſing the ſemitone major; $\frac{96}{108} = \frac{8}{9}$ is in like manner a tone major; and $\frac{108}{120} = \frac{9}{10}$ is the expreſſion of the tone minor. On the other hand, Ptolemy's numbers are much out of tune, and ſuch as a muſician like Ariſtoxenus dividing a ſtring by his ear could not fall upon. We do not know that any commentator of the antients ever made this obſervation; but if we purſue it through all the ſpecies, we ſhall find a very ſenſible difference in the expreſſions of the proportions of the various intervals found according to Ptolemy's manner, and thoſe found in the way here mentioned, and exemplified in the diatonicum intenſum. Ariſtoxenus and his followers determined the ſeveral ſpecies, or diviſions of the fourth by intervals, making the whole diateſſaron equal to two tones and an half. But the Pythagoreans ſetting aſide this method, took another, whereby they ſought for three ratios, which added together would produce the ratio of 4 to 3, being the expreſſion of the fourth or diateſſaron. And as this might be variouſly done, ſo they conſtituted various differences of *genera*. *Ptolem.* L. 1. c. 9. Edit. *Wallis* Oper. Tom. 3.

But they did not admit all ratios indiſcriminately. They chiefly regarded ſuch as were multiple and ſuperparticular; and did not admit of the ſuperpartient, but through neceſſity, and much leſs of incommenſurable expreſſions. *Wallis* Append. ad. *Ptolem.* Harm. pag. 166. Oper. Tom. 3.

Ptolemy [b] gives us ſeveral diviſions of the tetrachord, partly his own and partly of others, which we ſhall here place in one ſhort view from Dr. Wallis's Appendix to Ptolemy's harmonics [c].—[[b] Ibid. Lib. 1. c. 13, 14, 15 and 16. [c] Pag. 166. Oper. Tom. 3.]

$\frac{28}{27} \times \frac{36}{35} \times \frac{5}{4} = \frac{4}{3}$	Enharmonic	of Archytas.
$\frac{28}{27} \times \frac{243}{224} \times \frac{32}{27} = \frac{4}{3}$	Chromatic	
$\frac{28}{27} \times \frac{8}{7} \times \frac{9}{8} = \frac{4}{3}$	Diatonic	
$\frac{40}{39} \times \frac{39}{38} \times \frac{19}{15} = \frac{4}{3}$	Enharmonic	of Eratoſthenes
$\frac{20}{19} \times \frac{19}{18} \times \frac{6}{5} = \frac{4}{3}$	Chromatic	
$\frac{256}{243} \times \frac{9}{8} \times \frac{9}{8} = \frac{4}{3}$	Diatonic	
$\frac{22}{21} \times \frac{21}{20} \times \frac{5}{4} = \frac{4}{3}$	Enharmonic	of Didymus.
$\frac{16}{15} \times \frac{25}{24} \times \frac{6}{5} = \frac{4}{3}$	Chromatic	
$\frac{16}{15} \times \frac{10}{9} \times \frac{9}{8} = \frac{4}{3}$	Diatonic	
$\frac{46}{45} \times \frac{24}{23} \times \frac{5}{4} = \frac{4}{3}$	Enharmonic	of Ptolemy.
$\frac{28}{27} \times \frac{15}{14} \times \frac{6}{5} = \frac{4}{3}$	Croma molle	
$\frac{22}{21} \times \frac{12}{11} \times \frac{7}{6} = \frac{4}{3}$	——intenſum	
$\frac{21}{20} \times \frac{10}{9} \times \frac{8}{7} = \frac{4}{3}$	Diatonum molle	
$\frac{28}{27} \times \frac{8}{7} \times \frac{9}{8} = \frac{4}{3}$	——tonicum	
$\frac{256}{243} \times \frac{9}{8} \times \frac{9}{8} = \frac{4}{3}$	——ditonicum	
$\frac{16}{15} \times \frac{9}{8} \times \frac{10}{9} = \frac{4}{3}$	——intenſum	
$\frac{12}{11} \times \frac{11}{10} \times \frac{10}{9} = \frac{4}{3}$	——æquabile	

GEOME-

GEOMETRICAL *(Cycl.)*—GEOMETRICAL *method of the antients.* It is to be obſerved that the antients eſtabliſhed the higher parts of their *geometry* on the ſame principles as the elements of that ſcience, by demonſtrations of the ſame kind; and that they ſeem to have been careful not to ſuppoſe any thing done, till by a previous problem they had ſhewn how it was to be performed. Far leſs did they ſuppoſe any thing to be done, that cannot be conceived, as a line or ſeries to be actually continued to infinity, or a magnitude to be diminiſhed till it become infinitely leſs than what it was. The elements into which they reſolved magnitudes were finite, and ſuch as might be conceived to be real. Unbounded liberties have been introduced of late, by which *geometry*, which ought to be perfectly clear, is filled with myſteries. See *Mac Laurin*'s Fluxions. Introd. pag. 39. ſeq.

GEOMORI, Γεωμοροι, in antiquity, the diviſion or claſs of the antient Athenians, employed in agriculture. See the article EUPATRIDÆ.

GEORGE *noble*, a piece of gold, Current at ſix ſhillings and eight pence in the reign of king Henry VIII. *Lownd*'s Eſſ. upon Coins, pag. 41.

GERANITES, in natural hiſtory, a name given by ſome authors to ſuch pieces of agate, or any other of the ſemipellucid gems, as have round ſpots in them, reſembling in colour the eye of a crane.

GERANIUM, *cranes bill*, in botany, the name of a very large genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, and is compoſed of ſeveral petals arranged into a circular form. From the cup of the flower there ariſes a piſtil, which becomes afterwards a fruit of the ſhape of the beak of a crane; this is marked with five longitudinal ſtriæ, to the end of each of which there is affixed an oblong ſeed veſſel, which terminates in a very long tail, and contains a ſingle oblong ſeed uſually of an oblong figure.

The ſpecies of *cranes bill*, enumerated by Mr. Tournefort, are theſe. 1. The great aconite leaved *cranes bill*, or as it is commonly called, the crow foot *cranes bill* with blue flowers. 2. The crow foot *cranes bill* with white flowers, beautifully ſtreaked with blue. 3. The crow foot *cranes bill* with perfectly white flowers. 4. The largeſt crow foot *cranes bill* with leſs divided leaves. 5. The ſweet ſcented crow foot *cranes bill*. 6. The common crow foot *cranes bill*, or *gratia dei*. 7. The white flowered common crow foot *cranes bill*. 8. The leſſer *gratia dei*. 9. The common crow foot *cranes bill*, with variegated flowers. 10. The crow foot *cranes bill*, called by the Germans *cranes neck*. 11. The leſſer annual crow foot *cranes bill* with purpliſh flowers. 12. The leſſer perennial crow foot *cranes bill* with variegated flowers. 13. The black flowered *cranes bill* with the leaves of the flower bent backwards. 14. The common black flowered *cranes bill* with flat or ſtrait flower leaves. 15. The ſpotted leaved black flowered *cranes bill* with ſtrait or flat petals. 16. The knotty rooted *cranes bill*, or aſphodel rooted *cranes bill*. 17. The tuberoſe rooted *cranes bill* with trifid leaves. 18. The purple Muſcovy *cranes bill*. 19. The Roman *cranes bill* with ſtriated flowers. 20. The large flowered bloody *cranes bill*. 21. The bloody *cranes bill* with variegated flowers. 22. The bloody *cranes bill* with paler coloured and more deeply divided leaves. 23. The bloody *cranes bill* with more upright ſtalks and ſmaller flowers. 24. The greater tuberoſe rooted *cranes bill*. 25. The ſilvery alpine *cranes bill*. 26. The thick rooted aſh-coloured-leaved Pyrenean *cranes bill*, with large variegated flowers. 27. The ſhining leaved ſtone *cranes bill*. 28. The little ranunculus leaved *cranes bill*. 29. The roundiſh mallow leaved *cranes bill*, or dove's foot *cranes bill*. 30. The greater blue flowered dove's foot *cranes bill*. 31. The dove's foot *cranes bill* with ſmaller blue flowers. 32. The white flowered dove's foot *cranes bill*. 33. The greateſt perennial Pyrenean dove's foot *cranes bill*. 34. The round leaved mountain *cranes bill* with large purple flowers. 35. The greateſt dove's foot *cranes bill* with diſſected leaves. 36. The dove's foot *cranes bill* with diſſected leaves, and with flowers on long footſtalks. 37. The finely divided dove's foot *cranes bill*. 38. The finely divided dove's foot *cranes bill* with white flowers. 39. The leſſer dove's foot *cranes bill* with a larger flower compoſed of bifid petals. 40. The large finely divided dove's foot *cranes bill* with bifid petals. 41. The common marſh mallow leaved *cranes bill*. 42. The marſh mallow leaved *cranes bill* with deep purple flowers. 43. The ſmaller mallow leaved *cranes bill*. 44. The mallow *cranes bill* with thick, wrinkled, and undivided leaves. 45. The little procumbent ſea *cranes bill* with marſh mallow or betony leaves. 46. The *cranes bill* with leaves like thoſe of the bladder alcea. 47. The common or green leaved *herb robert*. 48. The red leaved *herb robert*. 49. The white flowered *herb robert*. 50. The ſhining ſtone *cranes bill* with *herb robert* leaves. 51. The hemlock leaved *cranes bill* with very long beaks. 52. The hemlock leaved *cranes bill* with the ſmell of muſk. 53. The ſcentleſs hemlock leaved *cranes bill*. 54. The ſmall procumbent hemlock leaved *cranes bill*. 55. The little procumbent hemlock leaved *cranes bill* with white flowers. 56. The upright hemlock leaved Roman *cranes bill*. 57. The Neapolitan *cranes bill*, with the Cretic corn marygold leaf. 58. The broad leaved Candy *cranes bill* with extremely long and large beaks. 59. The long beaked annual ſea *cranes bill* with jagged leaves. 60. The thick and woolly leaved crows foot *cranes bill*. 61. The ſmalleſt *cranes bill* with germander leaves. 62. The hemlock leaved rock *cranes bill* with thick roots. 63. The large rooted Spaniſh *cranes bill* with thick hemlock like leaves. 64. The ſhrubby African *geranium*, with a roundiſh marſh mallow like leaf, and the carline ſmell. 65. The African *geranium* with hairy leaves like thoſe of the ladies mantle, and with white flowers. 66. The ſcarlet flowered African *geranium* with a jagged and ſpotted betony like leaf. 67. The procumbent African *geranium* with betony leaves, and ſmall, elegantly variegated flowers. 68. The tuberoſe or knotty rooted African *geranium*, ſmelling ſweet in the night, with leaves like thoſe of columbines. 69. The columbine leaved night ſcented African *geranium* with pale red flowers. 70. The night ſcented anemone leaved African *geranium*, with deep red flowers. 71. The red flowered night ſcented African *geranium* with narrower anemone like leaves. 72. The gooſeberry leaved African *geranium* with very ſmall red flowers. 73. The larger coriander leaved red flowered African *geranium*. 74. The leſſer coriander leaved African *geranium* with fleſh coloured flowers. 75. The Indian ſad looking night ſcented *cranes bill*. 76. The tuberoſe rooted night ſcented African *cranes bill* with woolly and hairy parſnip-like broad leaves, and pale yellow flowers. 77. The tuberoſe rooted night ſcented *cranes bill* with narrower woolly parſnip-like leaves. 78. The marſh mallow leaved African *cranes bill* with ſmall flowers. *Tourn.* Inſt. p. 266, ſeq.

The common wild ſorts of this plant, and thoſe alſo which are brought to the curious from the colder climates are hardy enough, and require little care; but the African ſpecies, and the others from hot countries, which make ſo very beautiful a figure in our green houſes, require great care in their culture and propagation.

Theſe are to be raiſed by planting cuttings of them in any of the ſummer months in beds of light rich earth, and carefully ſhading them from the ſun, and giving them frequent, but gentle waterings, till they are well rooted. The mats with which theſe beds are covered are to be taken off in gentle ſhowers, and always in the hot weather at nights, that the plants may have the benefit of the dew. They ſhould remain about two months in this bed, by which time they will have taken root. Some pots of about ſeven inches wide are then to be filled with light earth, and the plants are to be carefully taken up with as much as poſſible of their own earth about them, and planted ſeverally in the middle of theſe pots; when they are to be ſet in a ſhady place, and watered at times till they have taken root. When they are well rooted they ſhould be ſet in a more expoſed place to harden them, and ſhould ſtand out till the middle of October; but when the mornings begin to grow froſty they muſt be removed into the green-houſe, and then placed as near the windows as poſſible, and the windows ſhould be opened upon them till the weather is very cold. During the winter they muſt be frequently watered a little at a time, and their dead leaves ſhould be pulled off. They muſt not ſtand under the ſhade of other plants, nor need any artificial heat. Some raiſe them alſo from ſeeds, which muſt be carefully preſerved and ſown on fine light earth, and when they come up be tranſplanted into other beds of rich earth, with dung at the bottom. They muſt be ſet here at about ſix inches aſunder, and in July they ſhould be tranſplanted into pots, and from that time managed exactly as thoſe raiſed by cuttings. *Miller*'s Gard. Dict.

Geranium ſtands recommended as one of the greateſt vulneraries and abſtergents of the vegetable world; and is highly extolled for its power of ſtopping profluvia of the menſes, and hæmorrhages of all kinds. Experience confirms the truth of this, eſpecially among the poor people in the country; and it were to be wiſhed that the plant could be brought into more eſteem in the ſhops, where at preſent it is diſregarded.

GERANOS, Γερανος, in antiquity, a remarkable dance performed in the feſtival called *delia*. See DELIA.

GERARDIA, in botany, the name of a genus of plants the characters of which are theſe. The perianthium is compoſed of one leaf divided into five ſegments, and remains after the flower is fallen. The flower is of the labiated kind, and compoſed only of one leaf. The tube is longer than the cup, and of a cylindric figure. The upper lip is erect, plain broad, obtuſe and emarginated. The lower lip is bent backwards, and divided into three ſegments. The two ſide ones are long and emarginated, and the middle one ſhorter and bifid. The ſtamina are four filaments ſomewhat ſhorter than the flower, and two of theſe are a little ſhorter than the other two. The antheræ are ſmall. The germen of the piſtil is ſmall and oval. The ſtyle is ſimple and ſhort, and the ſtigma is obtuſe. The fruit is an oval bivalve capſule, containing two cells, and opening at the bottom; when ripe the ſeeds are ſingle and oval. *Linnæi* Gen. Plant. pag. 289. *Plumier*, Gen. 12.

GERBERA, in botany, the name of a genus of plants, the characters of which are theſe. The common cup is imbricated, and compoſed of long, narrow, and erect leaves. The compound flower is radiated. The diſk is compoſed of a vaſt number of hermaphrodite flowers, and the radius is compoſed of female flowers about twenty in number. The hermaphrodite flowers are each compoſed of one petal, and are tubular, erect, and divided into three ſegments, one of which is twice as wide as the others. The female flowers alſo conſiſt of each one petal, and are very long, and each divided into three ſegments. In the hermaphrodite flowers the ſtamina are five capillary, and very ſhort filaments, and the antheræ are oblong, and grow together into a ſort of cylinder. In the female flowers there are alſo five ſubulated and erect filaments; but theſe have no antheræ at their ends. The germen of the piſtil in the hermaphrodite flowers ſtands below the flower, and the ſtyle is ſingle, and of the length of the ſtamina, and the ſtigma bifid; in the female the germen is of the ſame ſhape, but ſomewhat ſmaller. The cup remains after the flower is fallen and contains the ſeeds: the hermaphrodite and the female flowers both produce ſeeds, which are in both of the ſame figure, being oblong and ſingle, and terminated by a ſimple long capillary thread of down. The receptacle is naked. *Linnæi* Gen. Plant. p. 385.

GERFALCON (*Cycl.*)—This is naturally a very bold, wild, and fierce bird, and is therefore very difficult to be reclaimed; but when that is done, it proves one of the very beſt kinds, and will fly at almoſt any thing. The beak of the *gerfalcon* is always blue, and the claws are remarkably long and ſtrong.

In going up to their gate, as the ſportſmen expreſs it, this bird does not hold the ſame ſort of courſe that others do, but immediately climbs up upon the train on ſight of the bird, and as ſoon as they have reached her, they immediately make the attack, and generally pull her down at the firſt encounter; but if not, always at the ſecond or third. This ſort of hawk is to be fed and rewarded like the others. It is of a very ſly and crafty nature, and is ſo ſlothful, that it loves to keep the caſting a long time; therefore inſtead of cotton, it is proper to give them ſometimes a caſting of tow, and to keep them ſharp ſet. As to the reclaiming this ſort of hawk, it is only to be done by gentleneſs and kindneſs; and when ſhe has been taught to be turned looſe, ſhe is next to be learned to come to the pelts of hens or other fowl. But ſhe muſt never be ſuffered to taſte any living fleſh, for that will be apt to draw away her love from the hand and voice. Whenever ſhe eats the falconer muſt be cloſe to her, and muſt make her eat the choiceſt pieces out of his hand. There is great care to be taken in the making theſe birds, for as they are made at firſt, ſo they are for ever; and it is a neceſſary caution, with birds of this bold and fierce nature, not to hurry over the buſineſs, but to repeat the ſame thing very often till it is perfectly fixed.

GERM, among botaniſts, the ſame with *Bud*. See BUD.

GERMANDER, *Chamædrys*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind, but wants the upper lip, the ſtamina ſupplying its place. The lower one is divided into five ſegments, the middle one of which is hollowed like a ſpoon, and uſually bifid, the others ſtand oppoſite to one another in the neck of the flowers. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower, and is ſurrounded with four embryos, which are finally ripened into as many ſeeds in the cup of the flower. To theſe marks it may be added, that the flowers of the *germanders* grow in the alæ of the leaves, and that the cups are tubular.

The ſpecies of *germander*, enumerated by Mr. Tournefort, are theſe.

1. The great creeping *germander*, eſteemed the true *chamædrys*. 2. The great creeping *germander* with flowers, ſome red, and ſome white on the ſame plant. 3. The ſmall creeping *germander*. 4. The ſmall creeping *germander* with ſnow white flowers. 5. The hairy alpine *germander*. 6. The hoary marſh *germander*, which is the ſcordium of the ſhops. 7. The ſhrubby baum-leaved wild *germander*. 8. The variegated ſhrubby baum-leaved wild *germander*. 9. The ſhrubby balm-leaved *germander* with ſmaller leaves, and a ſmell like that of apples. 10. The purple flowered ſmall baum-leaved ſhrubby *chamædrys*. 11. The ſhrubby *germander*, commonly called teucrium, or tree *germander*. 12. The ſhrubby alpine *germander* with ſhining leaves. 13. The Spaniſh ſhining ſhrubby *germander*. 14. The purple flowered Cretic ſhrubby *germander*. 15. The narrow leaved, many flowered Spaniſh *germander*. 16. The ſmall, hoary, ſtone, Spaniſh *germander*. 17. The Canada *germander* with nettle like leaves hoary underneath. 18. The hoary, ſhrubby ſea *germander* with ſpear pointed leaves. 19. The jagged leaved *germander*. 20. The ſweet ſcented prickly *germander* with divided leaves. *Tourn.* Inſt. p. 204.

Authors have added ſome other plants, but that very improperly, to this genus. Such are, 1. The alpine *germander*, with cyſtus like flowers of Caſpar Bauhine, which is a ſpecies of caryophyllata. 2. The ſtone alpine *germander* of the ſame author, which is a ſpecies of Veronica. 3. The ſpiked ſingle ſtalked *germander* of the ſame author, which is a ſpecies of pedicularis, and ſome other plants called baſtard *germanders*, which all belong to the Veronica claſs. *Tourn.* Inſt. p. 205. The common *germander* is diuretic and diaphoretic. It is an ingredient in many of the compoſitions of the ſhops, and is given in infuſion in fevers, in ſuppreſſions of urine in the ſcurvy, the gout and jaundice, and where the uſe of it is continued ſufficiently, generally with ſucceſs.

Water GERMANDER, *ſcordium*, in medicine. See SCORDIUM.

GERMANDER *Galls*, in natural hiſtory, a term uſed by thoſe who have treated on the ſubject of *galls*, to expreſs a peculiar vitiated ſtate of a part of this plant. The ſtalks and leaves of other plants, and the bark and branches of trees, are the parts which furniſh theſe ſorts of excreſcences, and being vitiated by the biting and ſucking of ſome inſects, ſwell out in the parts where ſo injured into a protuberance; but in this plant it is the flower that becomes thus vitiated, and forms what is properly enough called a flower-gall. Mr. Bernard Juſſieu was the firſt who obſerved this ſingular fact. He obſerved, that many of the flowers of this plant never opened like the reſt, and yet grew much larger, and that theſe always contained an inſect. Other galls owe their origin to the worms of ſeveral kinds of flies, or to the little pucerons; but this is produced by an inſect not known before to have any ſuch power. A ſmall and very beautiful kind of bug of a grey colour, with ſpots of white and brown, depoſits its eggs in the calyx, or cups of this flower.

Theſe ſoon hatch into ſo many ſmall worms, which feeding on the juices of the bud of the flower, eat their way into its cavity; when lodged there they remain perfectly at eaſe, and continuing to feed on the petal, the flower grows like all other parts of vegetables, injured in the ſame manner, to a much larger ſize than it otherwiſe would have done, but never opens into a flower.

While all the reſt of the flowers are open, thoſe thus injured, which are uſually ſeveral on each plant, form ſo many red tubercles, which being opened, are always found to contain either the worm of the bug, or its chryſalis, or at the utmoſt, the remains of that ſtate from which the creature has eſcaped in its perfect ſtate. *Reaumur*, Hiſt. Inſect. Vol. 6. p. 195.

GERMINATION, (*Cycl.*) the firſt budding of plants from the ſeed. It has been a general opinion, that the air was a very neceſſary agent in the *germination* of plants; but Mr. Homberg attempted many years ſince to prove before the academy at Paris, that it was an erroneous one. He obſerves, that the *germination* of a plant is no other than the ſwelling of its parts, which are all ready formed in the ſeed, and that this ſwelling and extenſion of them, is no other than the ſame with that of a ſponge, when it is made to imbibe water. Whence he deduced, that as a ſponge, if wetted with water, would ſwell as well *in vacuo*, as in the air; ſo doubtleſs a plant would ſwell in the ſeed, that is, would *germinate* in the ſame manner in or out of the air: that therefore ſeeds ſown in the earth muſt ſwell and *germinate* as well *in vacuo*, as in open air; and conſequently, that the air contributed nothing to the effect.

Reaſon thus far anſwering for his ſentiments on this ſubject by analogy, he determined to bring the fact to experiment, which he did thus. He procured a wooden box, four inches long and two wide, he made five compartments in this box, filled all of them with garden mould, and ſowed in them five ſeveral ſorts of ſeeds, *viz.* Purſlain, creſſes, lettice, chervil and parſley; he put forty ſeeds into each compartment. On the firſt day of May 1693. he put this box into the receiver of an air pump, emptied of its air in the moſt careful manner poſſible; he every third day took out the box to water the earth, and returned it into the receiver as quick as poſſible, and every time emptied out all the air again as nicely as poſſible; and beſide this, he every morning emptied out the air that had come in with the water uſed to moiſten the earth.

That he might be able to judge perfectly of the *germination* of theſe ſeeds, and of others which had the common advantage of air, he ſowed the ſame number of the ſame ſeeds in a box of the ſame dimenſions, which he left expoſed to the open air, and watered it every third day as he did the others; he alſo expoſed this laſt box at times to the ſun, but this could not be often done, the May that year proving a very cloudy one. In the box expoſed to the air the *germination* of the creſſes appeared on the fifth day of May, that of the lettice on the ſeventh, of the purſlain on the eighth, of the chervil on the eleventh, and that of the parſley on the fourteenth. All the ſhoots continued to grow, except thoſe of the purſlain, which the uncommon cold of that ſeaſon killed. In the box kept in the receiver, there appeared no *germination* during the nine firſt days; but on the tenth there appeared ſome germs of the creſſes and ſome of the purſlain. The lettice did not appear to *germinate* till the fifteenth, and there were but four germs of all the ſeeds which were ſown; but in three days time theſe grew to an inch in height, yet the two firſt leaves never expanded themſelves, nor encreaſed in bulk. The caſe was the ſame with the creſſes and

and the purſlain, but with this difference, that the lettice leaves were not nearly of the ſize of thoſe growing in the open air; whereas thoſe of the purſlain and creſſes were of the ſame ſize. The purſlain lived only one day in the receiver, and the creſſes only five; after this their leaves became black, and flaccid; the lettice continued vigorous fifteen days. In all this time the chervil and parſley had not *germinated* at all, on which Mr. Homberg was deſirous to ſee what was the ſtate of thoſe ſeeds, which had not *germinated*, under the ſame circumſtances in which others had, and whether they would *germinate* in the open air after they had refuſed to do it in the exhauſted receiver; but that the trial might be confined to the ſame circumſtances only, he determined to keep them cloſed up in the ſame receiver, only filling it with air. He let in the air on the twenty fifth of May, and carefully cloſed the veſſel; and on the twenty ſeventh, there appeared ſome *germinations* of chervil, and ſome freſh ones of purſlain and creſſes, and on the thirty firſt of the ſame month there appeared above twenty *germinations* of the parſley. The following days produced no new *germinations*; and Mr. Homberg, to try whether thoſe ſhoots which had appeared in a cloſe air would live in an open one, removed the box out of the receiver into the open air, when in a few days all the ſhoots withered and decayed, though carefully watered every evening.

There happened alſo a remarkable change in the earth in the box on this expoſure; it was of the fine mould from the king's garden, and for the firſt five days it ſhewed no appearance of change, but on the ſecond watering on the ſixth day, when the air came to be exhauſted from among that water, the earth fermented as new leavened paſte or dough, and ſwelled over the ſides of the box, part of it falling into the receiver. The ſame thing after this happened from every watering and exhauſting, and what is very remarkable, the earth after this felt ſoft and fatty in the handling; whereas before it was rough and coarſe to the touch. This propably happened from the diſuniting of certain particles in the earth, which while held together made large granules, and gave a coarſeneſs to the touch.

Another remarkable change in the earth was, that on the eighth day after its being put into the receiver, it appeared to have changed colour, and when held in ſome lights appeared grey, and of a ſhining gloſſy look. On examining into the cauſe of this appearance by the microſcope, the whole ſurface of the earth was ſeen to be covered with fine ſlender filaments like thoſe of the ſpider's web. The whole earth appeared as it were mouldy, by means of this covering of the threads, ſome of which aroſe from little eminences on the ſurface, others from other parts, and croſſing one another they formed a web of ſuch ſort, that when the earth was watered, the wet would often roll about upon them in large drops for ſome time before it broke their texture to get in. This was at firſt ſuſpected to be nitre ſhooting out of the earth, but in reality it at length appeared to be a fungous ſubſtance which vegitated there, and which when once cleared off, never renewed itſelf again. So long as the ſhoots of the ſeeds in the exhauſted receiver continued to be kept there, there always ſtood a drop of water upon the top of each, which as it encreaſed in ſize from time to time, run down the ſides of the ſhoot and entered into the earth; but as ſoon as this was done, there was always another immediately formed on the top of the ſhoot.

Though theſe experiments did not ſucceed ſo far as might have been expected in the growth of the ſhoots, yet they prove ſufficiently, that neither the elaſticity, nor the weight of the air, are neceſſary to the *germination* of ſeeds, for here were plainly ſome ſeeds which did *germinate in vacuo*. It muſt be allowed that the air however, though not abſolutely an eſſential agent, proves an accidental one in this effect, ſince a great number of ſeeds which had not *germinated* in the exhauſted receiver, did afterwards *germinate* when the air was admitted to them. The reaſon Mr. Homberg gives for the number of ſeeds miſcarrying, ſeems a very juſt one: he obſerves, that there is always a little air contained in every ſeed, that this expands and dilates itſelf much more readily *in vacuo*, where there is nothing to reſiſt its motions than in the open air, by which it is preſſed on every ſide. If therefore a ſeed be ſown in the open air, this excluded air meeting with reſiſtance from without, can only expand itſelf in a ſlow and regular manner, ſo as to aſſiſt in the explicating the fibres of the included plant; whereas when the ſeed is ſown *in vacuo*, the included air burſts out at once with great violence, and uſually eſcapes without doing its office in vegetation. If in the violence of its getting out it tears the principal veſſels of the young plant, which doubtleſs is often the caſe, then the ſeeds muſt periſh; but if it eſcapes without injuring them, then the ſeeds may *germinate* without it. Thus it is that ſome ſeeds *germinate* in the exhauſted receiver. This is the reaſon that they *germinate* but weakly; and that ſo few of the general number do *germinate* at all. Mem. Acad. Par. 1693.

Metallic GERMINATION. Borrichius, in his hiſtory of chemiſtry, gives us ſome very remarkable accounts of theſe ſort of *germinations*, and of one in particular, for which he quotes a witneſs, as he ſays, of ſo great veracity and ſo little credulity, that he might be abſolutely depended on. This perſon he tells us living at Bruſſels, was viſited by a ſtranger, who entruſted him with a ſmall quantity of powder of about the weight of a barley corn, with which the operation of one of theſe *germinations* was to be performed, and which was afterwards to be returned to him. Three or four pound of river water was to be put into a glaſs, and this powder being put into it, the whole was to be ſhaken together that ſome part of the powder might be diſſolved in the water; after this the water was to be decanted into a clear veſſel, and the powder dried. The ſtranger came again for his powder, and bidding the perſon who had the water thus impregnated, to put ſome ounces of crude mercury into it, he took his leave. The mercury was put in, eight ounces of it, and immediately after there was ſeen the beginning of the *germination*. The quickſilver on all parts ſhot out multitudes of filaments, or thread like branches of ſilver, which by degrees extended themſelves all over the veſſel, and even roſe above the ſurface of the water; the liquor being poured off, the quickſilver was all found to be converted into pure ſilver, which ſtood the ſevereſt teſts of fire, and was acknowledged ſilver by the ſilver-ſmiths of the place. *Borrichius* de Ortu Chemiæ.

More quickſilver was added to the water, and procured a ſecond wood of pure ſilver, and ſo on to the ſixth time; but the liquor grew more languid every time, and at length had no more of this virtue. Stories like this have deluded many people into the ſacrificing their whole time and fortunes in the ſearch of ſuch *germinations* and tranſmutations; but there is yet no proof of the truth of any thing of this kind ever having been performed. We ſee that Borrichius, who is one of the ſtrongeſt advocates for this opinion among the chemical writers, gives the ſtory only at ſecond hand; and had he ſaid that himſelf had ſeen it, it would have ſcarce been credible without ſome further proofs. Phil. Tranſ. N°. 39.

GEROCOMIA, a term uſed by the antients for that ſort of medicinal practice, which treated of the proper regimen to be obſerved in old age.

GERRES, GERULI, or GIROLI, in ichthyology, names given by the Venetians to a fiſh common in that part of the world. It is the Smaris, or Mæna alba of authors. Artedi very judiciouſly makes it a ſpecies of the ſparus, and diſtinguiſhes it from the others, by its having a black ſpot on each ſide, and the pectoral and tail fins red.

GERRHA, γερρα, among the Greeks, wicker hurdles, reſembling the Roman *vineæ*, which the ſoldiers held over their head to ſhelter themſelves. *Potter*, Tom. 2. p. 93.

GERSA, a word uſed by ſome authors for ceruſs, or white lead. See CERUSS.

GERYON, a name given by ſome of the affected chymical writers to quickſilver.

GESOR, a name uſed by ſome of the Arabian writers for galbanum. See GALBANUM, *Cycl.*

GESTATION, *Cycl.* the ſtate of a woman with child. See PREGNANCY.

GESTU *&* *fama*, an antient writ, where a perſon's good behaviour was impeached, now out of uſe. *Lamb.* Eiren. Lib. 4. c. 14.

GET-*off*, among bowlers. See BOWLING.

GETHYLLIS, in botany, the name of a genus of plants, deſcribed by Linnæus, the characters of which are theſe. The cup is a ſpatha of a lanceolated form, compoſed of one membranaceous inflated leaf, and containing only one flower. The flower conſiſts of one petal. Its tube is extremely ſlender and long. The limb is plain, and is divided into ſix equal ſegments of a lanceolated form, which are of about a third part of the length of the tube. The ſtamina are either twelve or eighteen ſetaceous filaments ſtanding in the cup. They are ſhort and erect, and the antheræ are oblong. The Germen of the piſtil is oblong, and ſtands low in the ſpatha under the baſe of the flower. The ſtyle is capillary, and of the length of the ſtamina, and the ſtigma is trifid and obtuſe. The fruit is an oblong, inflated, triangular capſule, containing three cells in which are numerous ſeeds. *Linnæi* Gen. plant. p. 206.

GEUM, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral petals or leaves diſpoſed in a circular form. From the cup there ariſes a two pointed piſtil which afterwards becomes an oblong and double headed fruit, bicapſular and filled with very ſmall ſeeds.

The ſpecies of *geum* enumerated by Mr. Tournefort are theſe. 1. The larger round leaved *geum*, called by ſome round leaved mountain ſanicle. 2. The ſmaller round leaved *geum*. 3. The rounded leaved *geum* with the piſtil of the flower of a pale colour. 4. The rounded and finely crenated leaved *geum* with the piſtil of the flower of a fine red. 5. The larger rounded leaved *geum* with the piſtil of the flower red. 6. The ſmaller roundiſh leaved *geum* with the piſtil of the flower red. 7. The *geum* with the ſmalleſt rounded leaves. 8. The ſmaller marſh *geum* with oblong crenated leaves. 9. The ſmall branched Portugueze marſh

geum,

GERBERA, in botany, the name of a genus of plants, the characters of which are these. The common cup is imbricated, and composed of long, narrow, and erect leaves. The compound flower is radiated. The disk is composed of a vast number of hermaphrodite flowers, and the radius is composed of female flowers about twenty in number. The hermaphrodite flowers are each composed of one petal, and are tubular, erect, and divided into three segments, one of which is twice as wide as the others. The female flowers also consist of each one petal, and are very long, and each divided into three segments. In the hermaphrodite flowers the stamina are five capillary, and very short filaments, and the antheræ are oblong, and grow together into a sort of cylinder. In the female flowers there are also five subulated and erect filaments; but these have no antheræ at their ends. The germen of the pistil in the hermaphrodite flowers stands below the flower, and the style is single, and of the length of the stamina, and the stigma bifid; in the female the germen is of the same shape, but somewhat smaller. The cup remains after the flower is fallen and contains the seeds: the hermaphrodite and the female flowers both produce seeds, which are in both of the same figure, being oblong and single, and terminated by a simple long capillary thread of down. The receptacle is naked. *Linnæi* Gen. Plant. p. 385.

GERFALCON (*Cycl.*)—This is naturally a very bold, wild, and fierce bird, and is therefore very difficult to be reclaimed; but when that is done, it proves one of the very best kinds, and will fly at almost any thing. The beak of the *gerfalcon* is always blue, and the claws are remarkably long and strong.

In going up to their gate, as the sportsmen express it, this bird does not hold the same sort of course that others do, but immediately climbs up upon the train on sight of the bird, and as soon as they have reached her, they immediately make the attack, and generally pull her down at the first encounter; but if not, always at the second or third. This sort of hawk is to be fed and rewarded like the others. It is of a very sly and crafty nature, and is so slothful, that it loves to keep the casting a long time; therefore instead of cotton, it is proper to give them sometimes a casting of tow, and to keep them sharp set. As to the reclaiming this sort of hawk, it is only to be done by gentleness and kindness; and when she has been taught to be turned loose, she is next to be learned to come to the pelts of hens or other fowl. But she must never be suffered to taste any living flesh, for that will be apt to draw away her love from the hand and voice. Whenever she eats the falconer must be close to her, and must make her eat the choicest pieces out of his hand. There is great care to be taken in the making these birds, for as they are made at first, so they are for ever; and it is a necessary caution, with birds of this bold and fierce nature, not to hurry over the business, but to repeat the same thing very often till it is perfectly fixed.

GERM, among botanists, the same with *Bud*. See BUD.

GERMANDER, *Chamædrys*, in botany, the name of a genus of plants, the characters of which are these. The flower consists of one leaf, and is of the labiated kind, but wants the upper lip, the stamina supplying its place. The lower one is divided into five segments, the middle one of which is hollowed like a spoon, and usually bifid, the others stand opposite to one another in the neck of the flowers. The pistil arises from the cup, and is fixed in the manner of a nail to the hinder part of the flower, and is surrounded with four embryos, which are finally ripened into as many seeds in the cup of the flower. To these marks it may be added, that the flowers of the *germanders* grow in the alæ of the leaves, and that the cups are tubular.

The species of *germander*, enumerated by Mr. Tournefort, are these.

1. The great creeping *germander*, esteemed the true *chamædrys*. 2. The great creeping *germander* with flowers, some red, and some white on the same plant. 3. The small creeping *germander*. 4. The small creeping *germander* with snow white flowers. 5. The hairy alpine *germander*. 6. The hoary marsh *germander*, which is the scordium of the shops. 7. The shrubby baum-leaved wild *germander*. 8. The variegated shrubby baum-leaved wild *germander*. 9. The shrubby balm-leaved *germander* with smaller leaves, and a smell like that of apples. 10. The purple flowered small baum-leaved shrubby *chamædrys*. 11. The shrubby *germander*, commonly called teucrium, or tree *germander*. 12. The shrubby alpine *germander* with shining leaves. 13. The Spanish shining shrubby *germander*. 14. The purple flowered Cretic shrubby *germander*. 15. The narrow leaved, many flowered Spanish *germander*. 16. The small, hoary, stone, Spanish *germander*. 17. The Canada *germander* with nettle like leaves hoary underneath. 18. The hoary, shrubby sea *germander* with spear pointed leaves. 19. The jagged leaved *germander*. 20. The sweet scented prickly *germander* with divided leaves. *Tourn.* Inst. p. 204.

Authors have added some other plants, but that very improperly, to this genus. Such are, 1. The alpine *germander*, with cystus like flowers of Caspar Bauhine, which is a species of caryophyllata. 2. The stone alpine *germander* of the same author, which is a species of Veronica. 3. The spiked single stalked *germander* of the same author, which is a species of pedicularis, and some other plants called bastard *germanders*, which all belong to the Veronica class. *Tourn.* Inst. p. 205. The common *germander* is diuretic and diaphoretic. It is an ingredient in many of the compositions of the shops, and is given in infusion in fevers, in suppressions of urine in the scurvy, the gout and jaundice, and where the use of it is continued sufficiently, generally with success.

Water GERMANDER, *scordium*, in medicine. See SCORDIUM.

GERMANDER *Galls*, in natural history, a term used by those who have treated on the subject of *galls*, to express a peculiar vitiated state of a part of this plant. The stalks and leaves of other plants, and the bark and branches of trees, are the parts which furnish these sorts of excrescences, and being vitiated by the biting and sucking of some insects, swell out in the parts where so injured into a protuberance; but in this plant it is the flower that becomes thus vitiated, and forms what is properly enough called a flower-gall. Mr. Bernard Jussieu was the first who observed this singular fact. He observed, that many of the flowers of this plant never opened like the rest, and yet grew much larger, and that these always contained an insect. Other galls owe their origin to the worms of several kinds of flies, or to the little pucerons; but this is produced by an insect not known before to have any such power. A small and very beautiful kind of bug of a grey colour, with spots of white and brown, deposits its eggs in the calyx, or cups of this flower.

These soon hatch into so many small worms, which feeding on the juices of the bud of the flower, eat their way into its cavity; when lodged there they remain perfectly at ease, and continuing to feed on the petal, the flower grows like all other parts of vegetables, injured in the same manner, to a much larger size than it otherwise would have done, but never opens into a flower.

While all the rest of the flowers are open, those thus injured, which are usually several on each plant, form so many red tubercles, which being opened, are always found to contain either the worm of the bug, or its chrysalis, or at the utmost, the remains of that state from which the creature has escaped in its perfect state. *Reaumur*, Hist. Insect. Vol. 6. p. 195.

GERMINATION, (*Cycl.*) the first budding of plants from the seed. It has been a general opinion, that the air was a very necessary agent in the *germination* of plants; but Mr. Homberg attempted many years since to prove before the academy at Paris, that it was an erroneous one. He observes, that the *germination* of a plant is no other than the swelling of its parts, which are all ready formed in the seed, and that this swelling and extension of them, is no other than the same with that of a spunge, when it is made to imbibe water. Whence he deduced, that as a spunge, if wetted with water, would swell as well *in vacuo*, as in the air; so doubtless a plant would swell in the seed, that is, would *germinate* in the same manner in or out of the air: that therefore seeds sown in the earth must swell and *germinate* as well *in vacuo*, as in open air; and consequently, that the air contributed nothing to the effect.

Reason thus far answering for his sentiments on this subject by analogy, he determined to bring the fact to experiment, which he did thus. He procured a wooden box, four inches long and two wide, he made five compartments in this box, filled all of them with garden mould, and sowed in them five several sorts of seeds, *viz.* Purslain, cresses, lettice, chervil and parsley; he put forty seeds into each compartment. On the first day of May 1693. he put this box into the receiver of an air pump, emptied of its air in the most careful manner possible; he every third day took out the box to water the earth, and returned it into the receiver as quick as possible, and every time emptied out all the air again as nicely as possible; and beside this, he every morning emptied out the air that had come in with the water used to moisten the earth.

That he might be able to judge perfectly of the *germination* of these seeds, and of others which had the common advantage of air, he sowed the same number of the same seeds in a box of the same dimensions, which he left exposed to the open air, and watered it every third day as he did the others; he also exposed this last box at times to the sun, but this could not be often done, the May that year proving a very cloudy one. In the box exposed to the air the *germination* of the cresses appeared on the fifth day of May, that of the lettice on the seventh, of the purslain on the eighth, of the chervil on the eleventh, and that of the parsley on the fourteenth. All the shoots continued to grow, except those of the purslain, which the uncommon cold of that season killed. In the box kept in the receiver, there appeared no *germination* during the nine first days; but on the tenth there appeared some germs of the cresses and some of the purslain. The lettice did not appear to *germinate* till the fifteenth, and there were but four germs of all the seeds which were sown; but in three days time these grew to an inch in height, yet the two first leaves never expanded themselves, nor encreased in bulk. The case was the same with the cresses

might be to the people at that time, it was greatly confirmed afterwards by the diſcovery of two entire ſkeletons of elephants, found near the ſame place, which had both ſuch teeth fixed in their jaws. A ſecond ſkeleton of an imaginary *giant* was dug up near Tunis in 1630, and a tooth of it being ſent to the learned Pireſc, he took the impreſſion of it in wax, and upon comparing it with the tooth of an elephant ſhewn near the place, he found it to be of the very ſame ſhape and ſize. Philoſ. Tranſ. N°. 404. p. 514.

Lambecius gives an account of a tooth of a *giant*, ſent from Conſtantinople to Vienna, and offered to ſale to the emperor, at the price of two thouſand rix dollars. It was ſaid to have been found in a large ſubterranean cavern, over which was an inſcription in the Chaldaic language, ſignifying here lies the *giant* Og. This was pretended therefore to be a tooth of the *giant* Og, king of Baſhan, mentioned in the ſcriptures, but the whole ſtory being found to be a fable, the tooth was ſent back again. This was doubtleſs the tooth of an elephant like all the others. Sir Hans Sloane gives a very accurate and learned account of ſeveral other miſtakes on this ſubject, which we refer to in the above-mentioned Tranſaction.

GIANT's *Cauſeway*, a name given by the common people of the county of Antrim in Ireland, to a vaſt quantity of that kind of black marble, called baſaltes, which ſtands in columns, as is natural to that marble, and runs out a great way into the ſea.

The ignorance of the vulgar in the nature of this ſtone, has occaſioned this great pile of it to be ſuppoſed artificial, and the work of I know not what *giants*, once inhabitants there. But the truth is, that the baſaltes, in whatever part of the world it is found, is always naturally of this figure. See the article BASALTES.

Whoever conſiders this amazing ſeries of columns in Ireland, will be ſoon convinced no human hands could have formed them; and will find an accuracy in their figures, greater than could have been expected from the moſt curious hand. The length of the ſeveral columns, and their joints ſo regularly placed in ſeries, and the niceneſs of their articulations, by which no ſpace or vacuity is left between, is wonderful.

Nature has been abundantly curious in the ſtructure and formation of animal and vegetable bodies, but the foſſils in general are leſs curiouſly put together; but this *cauſeway* of *baſaltes* ſeems one of the works in this part of the creation, in which her greateſt accuracy has been employed.

The ſingle columns of which this maſs of piles conſiſts are ſometimes octangular, ſometimes of ſeven, or fewer ſides, and when examined, they are found juſt ſuch as muſt neceſſarily be required in the places where they ſtand to fill up between others, ſo as to leave no vacuity. Each of theſe columns is compoſed of a great many ſeries of joints, each of which is ſo well fitted to the place, that the joining appears only a crack, or crevice in the ſtone. Yet theſe are regularly articulated, there being always a ball on one part, and a ſocket in the other to receive it, ſo that the joints cannot ſlip off from one another. The triangular and ſquare columns are fewer in number than the others, but they ſtand principally in the inner part of the large ſeries, and are ſeldom ſeen unleſs ſearched after by a curious eye.

The regular figure of the ſtone compoſing this *cauſeway* is not more wonderful than its quantity. Other figured ſtones, as cryſtals, ſpars, and the remains of animals, ſuch as *entrochi* and *aſteriæ*, are found only ſcattered thinly up and down, but nature has been profuſe in this part of her workmanſhip, the whole country for many miles being full of it, and a vaſt maſs running no one knows how far into the ſea. For beſides what vulgarly goes by the name of the *giant's cauſeway*, which is itſelf of vaſt extent, there are great numbers of the ſame pillars at diſtances in other places.

There are two other ſmaller and imperfect *cauſeways* to the left hand of the great one, and farther in the ſea, a great number of rocks ſhew themſelves at low water, which appear plainly all to conſiſt of the ſame ſort of columns. In going up the hill from the *cauſeway* there are found, in different places, a vaſt number of the ſame columns; but theſe do not ſtand erect, but are laid ſlanting upwards in different angles and directions. Beyond this hill eaſtward alſo, at ſeveral diſtances, there ſtand a great number of the ſame pillars placed ſtrait and erect, and in cluſters of different ſizes. Theſe are ſeen ſcattered as it were over the ſeveral parts of the hills. One parcel of them is much admired, and called by the country people the looms or the organs. It ſtands in an elegant form, and faces the bottom of the hill. The columns, of which this cluſter conſiſts, are fifty in number, and they are ſo nicely put together, that the talleſt ſtand in the middle, and the ſhorter gradually on each ſide of it to the end, ſo that they look like the pipes of a church organ viewed from the front. The talleſt one of all theſe, which ſtands exactly in the center, is forty feet high, and conſiſts of forty four diſtinct joints.

Four miles weſtward of the *giant's cauſeway* ſeveral ranges of tall pillars, of the ſame kind with thoſe of the *cauſeway*, ſhew themſelves in cluſters, and ſmaller piles ſtanding for a long way on the ſides of the rocks. A neighbouring church was built of the ſtone of ſome like pillars found thereabout, and this ſtone on examination proves to be the very ſame with that of the pillars of the *giant's cauſeway*.

The inland pillars differ from thoſe which run into the ſea, and are called the *cauſeway* only in the following particulars; ſome of the inland pillars are much larger than thoſe of the *cauſeway*, being two feet and a half in diameter, and among theſe there are only found ſuch as have three, four, five, and ſix ſides, none of them having yet been found to have ſeven or eight ſides, as many of thoſe of the *cauſeway* itſelf have. And finally theſe inland pillars, though compoſed of as many joints as thoſe of the *cauſeway*, yet have not that curious articulation of the ball and ſocket, but are only joined by the laying one ſmooth ſurface on another; ſo that a joint of a ſingle column may be ſlipped off from the reſt by a conſiderable force preſſing againſt it. There is ſomething like this obſervable alſo in ſome of the columns of the *cauſeway* itſelf; for among the numbers which are jointed by the ball and ſocket, there are ſome which only adhere by being applied ſurface to ſurface. This is found only in a few of the columns, however, and they always ſtand within the cluſters, and are compoſed of leſs than ſeven ſides. In theſe alſo the joint is not made by the application of two horizontal planes, but by ſuch as ſlant, ſo that it looks very like the breaking of an entrochus, or aſteria, or ſome other ſuch ſparry body, of extraneous or animal origin.

Great numbers of the upper ends of the columns which compoſe the *cauſeway* itſelf are hollowed at the top, as if intended to receive another joint with a ball at its end, or as if ſuch a joint had fallen off from them. Theſe hollows are of great uſe to the neighbouring poor, for they make a kind of ſalt pans of them; and thus very eaſily procure themſelves a kind of bay ſalt in ſummer. They fill theſe little baſins with ſea water at high tides, and the heat of the ſun and of the ſtone contributing greatly to the evaporation, as well as the ſhallowneſs of the baſin, the whole humidity is found evaporated in the time of four tides, and they take out the ſalt ready for uſe. The joints, of which theſe pillars conſiſt, are generally convex at one end, and concave at the other; the firſt part ſerving as a ball for the ſocket of the joint next below, and the other as a ſocket for the ball of the joint next above. But this is not an unalterable law in their formation; for there are ſome joints found which are convex at both ends, and others which are concave at both ends, to receive balls, or enter ſockets both ways.

The vaſt height of theſe ſtrait jointed pillars, eſpecially of the more ſlender and perfect ones, is amazing. Forty foot is a very conſiderable height for a pillar, of perhaps leſs than a foot in diameter, yet this is far from being the whole real length of the pillar, for this appears above ground, but what is buried in the earth is not yet known. Some curious people have dug down eight feet at the baſe, and found the column run in the ſame ſhape and regularity to that depth; and there has appeared no room to doubt of its having gone in reality much farther.

The joints, as we ſee the pillars above the ſurface, are uſually as many in number, as the pillar is feet high; but they are not regularly each of a foot long, for they are ſhorteſt at the upper part of the columns, and run gradually longer and longer as they approach the baſe. This is obſerved both in the inland columns, and in thoſe of the *cauſeway*; but though the length of the joints differs, their convexities and hollows are much the ſame in all parts of the column.

It is to be obſerved, that where the top of any pillar ſeems compleat, and no part to have been broken off, the ſummit of the topmoſt joint is uſually flat and ſmooth, nature having provided no convexity or cavity in a part where it had no uſe.

There ſeems a very great difficulty to conceive by what means the ſtony joints, ſo bulky and ponderous, and ſo perfectly diſtinct, and diſcontinued bodies from one another, could arrive at the places where they now are placed, or be carried to the tops of ſuch high columns; but when we conſider many other natural phænomena, we ſhall find ſo many things equally wonderful, that this will not appear the leſs a work of nature becauſe beyond our comprehenſion.

The internal ſubſtance of the ſtone compoſing theſe columns, is extremely hard and compact. Its greet, or grain is ſo very fine, that the eye does not perceive it, unleſs examined very nicely, and that in the ſurface of a piece newly broken. It then ſhews itſelf like a very fine glittering ſand, thickly interſperſed among a more opake matter; the whole is heavier than almoſt any other ſimple ſtone; yet it contains not the leaſt particle of any metal ſo far as has been yet diſcovered. It is the pureſt and moſt homogene of any ſtone of this country; having no extraneous matter, no foſſils of the animal kind in it, ſuch as ſhells, entrochi, and the like; which are well known to be very common in the various ſtrata of ſtone, in Ireland, and in many other parts of the world. Marbles, in general, are very ſubject alſo to cracks, which when filled up as they uſually are with ſparry matter,

matter, make a ſort of white veins; but ſuch cracks and veins are not to be ſeen in the marble of theſe columns.

Theſe obſervations naturally lead us to an analogy between this marble and cryſtal in their origin and formation, as the columns of cryſtal are alike pure and homogeneous, alike of a regularly angular figure, and both are alike free from veins, cracks, and extraneous ſubſtances. See Philoſ. Tranſ. N°. 199, 212, 241. *Lowth.* Abrid. Vol. 2. p. 511. ſeq. See alſo the article TOUCHSTONE.

GIAR *Alnabar*, in botany, a name given by Aviſenna, Serapio, and the reſt of the Arabian writers to the potamogeiton of thoſe times. This is tranſlated by ſome the water ruſh, but that is founded on an error; it is certain that the plant thus called by the Arabians, was very different from the potamogeiton of our times. Aviſenna tells us it had flowers reſembling thoſe of the water lily; and it ſeems either to have been the ſagitta aquatica or water arrow head, or elſe the butomus, or ſome of the ſmaller ſpecies of nymphæa.

GIAROLA, in zoology, the name of a bird of the lark kind, remarkable for its very long heel. It is of the ſize of the common lark. Its head, neck, back, and wings, are of a mottled colour reſembling that of the quail. The general colour of the feathers is a cheſnut brown, and their edges are variegated with white, yellow, and red; the back part of its head has a ſort of crown or ring of white feathers. Its belly is white; its tail is ſo ſhort that it ſeems to have none; it is biſid however, and is elegantly variegated with cheſnut colour and white. *Aldrovand.* de Avibus. Lib. 17. Cap. 39.

GIAROLO, in zoology, a name by which a ſmall bird of the ſnipe kind, remarkable for its white tail, is known in the markets of Italy. It very much reſembles the bird we call in Engliſh the ſtint, but its beak is broad at the baſe, and tapers to a point, and its legs are thicker and ſhorter. It is not known among authors by any Latin name, except that Aldrovandus has called it the *cinclus tertius*, and cinclus is a very indeterminate name, being applied by different authors to ſeveral different birds. *Aldrovand.* Lib. 20. Cap. 56. See CINCLUS and STINT.

GIBBOUS, (*Cycl.*) crooked or hump-backed. *Gibboſity* is a preternatural incurvation of the *ſpina dorſi* either backward, or on one ſide. Infants are more ſubject to this diſorder than adults, and it oftner proceeds from external, than from internal cauſes. A fall, blow, or the like violence frequently thus diſtorts the tender bones of infants. When it proceeds from an internal cauſe, it is generally from a relaxation of the ligaments that ſuſtain the ſpine, or a caries of its vertebræ; though the ſpine may be inflected forward, and the back thrown out, by a too ſtrong and repeated action of the abdominal muſcles; and this if not timely redreſſed, uſually grows up and fixes as the bones harden, till in adults it is totally irretrieveable: but when the diſorder is recent, and the perſon young, there are ſome hopes of a cure. The common method is by a machine of paſtboard, wood, or ſteel, which is made to preſs principally upon the *gibbous* part, and this by long wearing may ſet all right. The ſurgeons however have a different inſtrument which they call a croſs, much more efficacious though not quite ſo convenient in the wearing; by the uſe of this, the parts are always prevented from growing any worſe, and are often cured. During the application of theſe aſſiſtances, the parts ſhould be at times rubbed with Hungary water, ſpirit of Lavender, and the like, and defended with a ſtrengthening plaſter of oxycroceum, opodeldoc or the like. *Heiſter*'s Surg. P. 2. p. 21.

GIBBOUS *fiſh*, *Gibboſus Piſcis*, in zoology, a name given by Mr. Ray to the fiſh called by the Dutch kromrugh. It is a ſmooth fiſh without ſcales, its belly is white, its fins and tail black. It grows to a conſiderable ſize, ſometimes to four feet. It is caught all over the Eaſt Indies, near the ſea ſhores, and is very firm, and much eſteemed at table. It has its name from the remarkable riſing of its back, which is like that of the pearch, but much higher. *Ray*'s Ichthyolog. Append. p. 4.

GIBUR, a general name given by ſome chemical writers, to all medicines drawn by their art from metallic or mineral ſubſtances.

GIFFT MEHL, the name given by the German chemiſts and metallurgiſts, to the firſt appearance of arſenic, or the grey flowers ariſing from the roaſting of cobalt, and ſticking to the long wooden funnel, which they carry from the furnaces. The grey colour of theſe flowers is occaſioned by the ſmoak of the fuel; and when they are afterwards ſublimed in a cloſe veſſel, the arſenical flowers begin to grow clammy in that part of the veſſel which is laſt made hot by the continuation of the fire, and there form themſelves into a ponderous thick ſublimate.

Nevertheleſs this ſublimate neither runs out, nor gets to the bottom of the veſſel when the fire is encreaſed. A tenacious doughy clammineſs is indeed communicated to arſenic by the fire; but fire alone cannot make it melt, but reſolves it into a ſmoak, which when it can find no way to eſcape, often burſts the veſſels in which it is confined. The yellow arſenic, which has one tenth part ſulphur, is by that mixture much more eaſily formed into a ſolid ſublimate than the white arſenic alone; but the red arſenic, which contains double that quantity of ſulphur, cannot eaſily be formed into a ſublimation by aſcent, becauſe of its extream readineſs to fuſe. The beſt way of preparing this is therefore to raiſe it out of a retort in the large and long neck of which it may be condenſed, and thence fall while yet fluid into the receiver. Arſenic of this kind may be immediately produced out of ſome ſpecies of pyrites without any previous addition; or by mixing a ſulphureous pyrites of the common kind with one of the white ones, or with any other ore of arſenic; and by this proceſs there will be ſeparated an arſenic either yellow or red, according to the ſmaller or larger proportion of the ſulphur in the mixture of the whole. *Cramer*'s Art. of Aſſay. p. 408.

The word *gifft mehl* is German, and ſignifies poiſonous meal or flower.

GIFT, *Donum*, in law, is a conveyance which paſſeth either lands or goods, and is of a larger extent than a grant, being applied to things moveable and immoveable; yet as to things immoveable, when taken ſtrictly, it is applicable only to lands and tenements given in tail; but *gift* and grant are often confounded.

GIGAROS, in botany, a name given by ſome writers to the dracontium.

GIGARTON, the ſtone or kernel of a grape or raiſin. Ægineta obſerves, that grape-ſtones are drying and refrigerating; and the ſtones of raiſins, on analyſis, afford an acid ſpirit, and empyreumatic oil, and as ſome ſay, a very conſiderable quantity of a volatile ſalt.

GIGERIÆ, a term uſed by ſome writers, to expreſs the offals of poultry of any kind, including the inteſtines, extremities, and whatever elſe is thrown away before the dreſſing.

GIGMILLS, a kind of fulling mills, for fulling and burling of woollen cloth, prohibited, *anno* 5 *and* 6. *Ed.* 6. c. 22.

GIGOT, in the manege. A branch after the form of a *gigot* or leg, is a branch, the lower part of which is round, and called in French *gargouille*.

GILAM-HIO, in the materia medica, a name uſed by ſome authors, for a peculiar ſort of the lignum aloes, which is ſoft, whitiſh, and very ſweet ſcented. *Camell.* Syll. p. 87.

GILARUM, in botany, a name uſed by Marcellus, for the ſerpyllum.

GILDING (*Cycl.*)—To *gild* iron with water gold, that is by means of quick ſilver, has formerly been thought difficult, if not impracticable; but Mr. Boyle tells us, it may be done by caſing the iron when bright, with copper, by frequently immerſing it in a ſtrong ſolution of good vitriol containing copper, in warm water; and letting the iron dry of itſelf, each time, till copper enough remains upon it; and then the iron may be gilt like copper, with the amalgam of gold and mercury. *Boyle*'s works Abr. Vol. 1. p. 152. See GILDING, *Cycl.*

GILDING *on china ware*. The gold is very much valued on *china ware*, and would be much more ſo, were it not that it is very liable to loſe its luſtre, and to rub off. The Chineſe at preſent have a method of preventing both theſe accidents in a great meaſure, by means of a ſort of poliſhing, which they give it after it is laid on. They prepare for this purpoſe a fine piece of agate, which they poliſh on one ſurface in as perfect a manner as poſſible. With this they rub over the gold as it lies on the porcelain ſeveral times, when it firſt comes from the baking.

This gives the gold a luſtre which it would not otherwiſe have, and fixes it down to the ware in ſuch a manner, that it cannot eaſily be got off. The principal miſchief that gold thus laid on is ſubject to, is the tarniſhing, or growing dull; this is remedied by the ſame ſort of means. They wet the veſſel upon which they would revive the luſtre of the gold, in common clean water, and while it is wet, they rub it with the ſame poliſhed agate, adding a little fair water at times to keep it moiſt. If the gold has not been laid on well at firſt, this may poſſibly raiſe it or take it off in ſome places; but if it was originally put on with the help of this ſtone, as all the gold on porcelain now is, the rubbing it with it a ſecond time never gives it any ſcratches, but recovers its priſtine luſtre and beauty. It muſt be obſerved, that the rubbing with this ſtone muſt be all done one way, both in the firſt laying on the gold, and in the brightning it up afterwards. This may ſerve as a method for us as well as the Chineſe, not only to recover the beauty of our tarniſhed gilt *china ware*, but alſo to lay gold upon ſome of our home manufactures of this kind. Obſer. Sur les Coutumes de l'Aſie.

GILDING *on wood*. This is performed two ways; the firſt called plain, the other burniſhed *gilding*. In the firſt, the leaf gold is laid upon a coat of whiting, which is laid ſeveral times over upon the wood, and allowed to dry each time; after which it is watered, and then the gold is laid gently on with a piece of cotton or otherwiſe; as the whiting dries the gold adheres, and the looſe pieces being afterwards taken off, the work is finiſhed; for this will not bear burniſhing.

The other method is by making a coat or two of gold ſize, and letting it dry; they wet it when the gold is to be laid on, and cover it with the leaf gold, wetting it again when the gold is on, and add freſh where there are any blemiſhes. When all is thoroughly dry, this is burniſhed with a dog's tooth, or other ſmooth ſubſtance. This is the ſhort method of *gilding* now practiſed. See the article GOLD *ſize*.

GILLS *of fiſhes*, (*Cycl.*) the parts which ſerve to their taking and throwing out again proper quantities of water, impregnated with its due and natural portion of air. The *branchiæ*, or *gills* of fiſh, therefore, are the organs which in them correſpond to the lungs in quadrupeds and birds, as alſo of frogs, ſerpents, and lizards, creatures too much confounded with fiſh by the old authors; all fiſhes therefore have theſe *branchiæ*, except the cetaceous and the petromyzum. The *gills* in all fiſh are eight in number, four being placed on each ſide the throat. The loweſt *gill* is always much ſmaller than either of the others; the other three on each ſide are gradually larger to the top one, which is in all fiſh the largeſt. Every one of theſe *gills* is compoſed of a bony ſubſtance formed into a ſemicircle, in moſt kinds, or bent into the ſhape of a bow. On the convex ſide of which there is formed a ſort of plume, or the reſemblance of a leaf.

Each leaf (to uſe that word) is compoſed of a double row of bony lamellæ, formed like ſo many ſickles, and each of theſe lamellæ is fixed to the convex part of the bow, by means of the membrane with which that bow is covered. Theſe lamellæ have one part convex, and the other concave. The convex ſide is covered with numerous hairs in all parts, and theſe are longeſt near the baſe, and ſhorteſt toward the apex. They are leſs hairy on the concave ſide; the hairs there being ſhorter, and continued only to the middle of the lamellæ, not running all the way along it. Theſe hairs are all the way connected to the *gill* by a very tender membranous ſubſtance, which covers the lamellæ, but they are each ſingle at the baſe. *Artedi*, Ichthyolog.

The concave part of every lamina is applied to the convex part of the next oppoſite lamina, and the laminæ are all connected one with another, by means of a membrane which ariſes at their baſe, and is continued up half their length; at this part the membrane becomes ſtronger and forms a ſort of cord. The reſt of the lamina is free and terminates in an extremely fine and flexile point. Every one of theſe laminæ is inveſted with a fine and thin membrane, and each ſerves to receive the ramifications of the veſſels which are brought into the branchia. The inſide of every bow or bony ſemicircle which makes one *gill*, gives place to one artery, one vein, and one nerve. The conformation of this hollow part of each *gill* is different in different fiſh; in ſome it contains a number of ſmooth tubercles, which are ſhort and ſcarce ſtand out beyond the ſurface: this is the caſe in the *gills* of the cyprinus, &c. In ſome it is in this manner beſet with very rough tubercles as in the cotti; in ſome others theſe tubercles are rough, and reſemble teeth, as in the ſalmons, &c. In ſome alſo this ſurface, inſtead of tubercles, is beſet with a ſort of long hairs reſembling rays as in the clupeæ; and finally in ſome this part is beſet with real, but ſhort prickles, as in the eſoces. The uſe of the *gills* in fiſh ſeems to be to receive the blood which is protruded from the heart into the aorta, and derive it to the utmoſt parts of the lamina, from whence it is returned by veins which diſtribute it to every part of the body and to ſerve for the office of reſpiration.

The motion of the *gills* of fiſh is no way ſo beautifully ſeen as in the viewing thoſe of a ſmall eel with a microſcope. Two rows of theſe are always bended roundiſh one againſt the other, while their ends play againſt one another, touching and going back again very regularly and ſucceſſively, and imitating the opening and ſhutting of a pair of bellows, in a regular ſucceſſion; and in the generality of fiſh, one pair does this, while another pair only continues advanced, ſo as to cloſe with their baſe, and this is done alternately by one and another pair all the time that the obſervation is continued. Philoſ. Tranſ. N°. 222.

Apertures of the GILLS. See BRANCHIARUM *foramina*.

Leaf of the GILLS. See FOLIUM *Branchiarum*.

GILT *head*, *Aurata*, in zoology, the name of a broad and flat ſea fiſh, not unlike the bream in ſhape, and by ſome called the ſea bream, a name too looſely uſed and ſometimes applied alſo to the ſparus, cantharus, and other flat fiſhes. It ſometimes grows to eight or ten pound weight, its ſcales are moderately large, its back is of a blackiſh green, and its ſides of a duſky brown, with a faint caſt of yellow. At the upper angle of the coverings of the *gills* it has uſually a black ſpot, and under that often a purple one between its eyes. It has a fine gold coloured, arched or lunated mark, the convex or gibboſe part of which is toward the mouth, the points toward the eyes.

The eyes are large, the mouth moderately wide, and the tongue pointed. It has ſix or eight teeth in each jaw with ranges of tubercles behind them, and theſe are covered by thick lips. Its back is ridged and ſharp, and its fins have ſome of their anterior rays prickly, the others ſoft. It is common in the markets of Rome, Venice, &c. and caught in great plenty in the ſummer months in different parts of the Mediterranean; in winter it is more ſcarce, but more valued. *Rondelet.* de Piſc. Lib. 5. Cap. 2. p. 115. *Bellon.* de Piſc. p. 118.

GIN. See the article GENEVA.

GIN, in mechanics. See CRABB.

GINGER (*Cycl.*)—The two ſorts of *ginger*, the one of which is cultivated in great plenty in the warm parts of the Weſt-Indies, and the root of which is what we uſe in the kitchen; the other a wild plant in ſome parts of the Eaſt Indies, and whoſe root is called *zerumbeth*, and uſed in medicine, are both kept in the gardens of the curious with us.

They are progagated by parting the roots, the beſt ſeaſon for doing which is early in ſpring before they begin to ſhoot. Every large part of the root may then be divided into ſeveral ſlips with two or three eyes to each, all which will ſucceed: theſe are to be planted ſeparately in pots of a light rich earth, and plunged into a hot bed of tanners bark, where they muſt be frequently watered, and in hot weather muſt often have the glaſſes raiſed with a brick to give them air. They will encreaſe greatly at the root, and ſometimes flower with us, but they muſt be kept in the hot bed all the ſummer, and in winter be removed into the back ſtove. *Miller*'s Gard. Dict.

GINGIBRACHIUM, a name given by ſome medicinal authors to the ſcurvey, when it affects the arms and other extremities.

GINGIPEDIUM, a name given by ſome authors to the ſcurvy when it affects the feet.

GINETTA, or GENETTA, the name of a ſmall animal of the weaſel kind, of a mixed colour, between yellowiſh and blackiſh, and ornamented with ſeveral black ſpots in different parts of the body. It is naturally a very tame and inoffenſive creature. It is uſually found about rivers feeding on what it finds about their banks. It is found in ſome parts of Spain, and at Conſtantinople, and in ſome other parts of the Turkiſh dominions. It runs looſe about the houſes like a cat, its tail is variegated with circles of darker and paler colours, and its ſkin is of a ſomewhat perfumed ſmell. *Ray*'s Syn. Quad. p. 101.

GINGRA, in antiquity, a kind of dance uſed at funerals, *Pitiſc.* Lex. Ant. in voc.

GINGRINA, in antiquity, a name given to a ſmall kind of flute fit for beginners.

GIOAR, in the materia medica of the antient Arabians, a word applied to ſeveral different ſubſtances, and ſometimes uſed as the diſtinct names of them; ſometimes only as an epithet to them. It is generally uſed by Aviſenna as a name for arſenic, ſometimes for antimony; and in Serapio, we often find it ſtanding for any of the mineral poiſons. The original meaning of the word is no more than what the Greeks expreſſed by the word οσια, ſubſtance, but it became applied to ſeveral things moſt eminent in their way, as to arſenic the moſt fatal of poiſons; to antimony, ſuppoſed at that time the moſt valuable of medicines; and to pearls, as the moſt valuable of gems.

GIOMELU, a body of the ſpahis, or horſe in the ſervice of the Grand Signior. *Pocock*'s Egypt. p. 166.

GIR, a name by which ſome of the chemical writers have called quick-lime.

GIRANDOLE, a large kind of branched candleſtick. See BRANCH and JESSE.

GIRDING-*girt*, at ſea. The ſeamen ſay a ſhip is *girt*, or hath a *girding-girt*, when her cable is ſo tight or ſtrained, that upon the running of the tide, ſhe cannot go over it with her ſtern part, but will lie acroſs the tides.

GIRDLE, among jewellers, the line which encompaſſes the ſtone, parallel to the horizon; or, which determines the greateſt horizontal expanſion of the ſtones. *Jeffries* on Diamonds.

GIRGILIM, in the materia medica, a name given by ſome authors to the ſeſamum, or oily purging grain.

GIRGITES, a name uſed by ſome chemical writers for a ſort of white ſtones found in rivers, of which they make a peculiarly ſtrong lime. The ſtones are of the ſparry kind worn into roundneſs by the motion of the water, and they have their name *Girgites*, from the word Gir, uſed by the chemiſts for lime.

GIRMER, a word uſed by ſome of the chemical writers, to ſignify tartar.

GIRROCK, the common Engliſh name of the fiſh called the lacertus, a larger ſpecies of gar fiſh, caught in the Mediterranean and Engliſh ſeas. *Willoughby*'s Hiſt. Piſc. p. 232. See LACERTUS.

GIRT, in meaſuring timber, is uſed for the circumference of a tree. See *Coggeſhall*'s SLIDING-*Rule*, *Cycl.*

Some call the fourth part of the circumference the *girt*, and ſuppoſe the ſquare of this equal to the area of the ſection of the tree. Treat. Pract. Geom. p. 150. See TIMBER, *Cycl.* and Suppl.

GISARMS, or GUISARMES, in our old writers, an halbert or hand ax; it comes from the latin *bis arma*, becauſe it wounds on both ſides. *Shene.—Eſt armorum genus longo manubrio*

manubrio & porrecta cuſpide. Spelm. It is mentioned in the ſtatute 13 Ed. I. c. 6.

GISCARA, a name uſed by ſome botanical authors for the *palma conifera minor Braſilienſis*, a ſmall palm common in the Braſils.

GISON, or GEISON, in the Jewiſh antiquities, a little wall about breaſt high, made round the temple properly ſo called, and the altar of burnt ſacrifices, to keep the people at a diſtance. Joſephus, in his book of antiquities, makes it to be three cubits high; and but one, in his hiſtory of the Jewiſh war. *Joſeph.* Antiq. l. 8. c. 2. p. 262. & de Bello Jud. l. 6. p. 918. *Calm.* Dict. Bibl.

GITHAGO, in botany, a name uſed by ſome authors, particularly by Pliny, for the lolium or darnel graſs. *Ger.* Emac. Ind. 2.

GITTITH. This word occurs frequently in the Pſalms, and is generally tranſlated *wine preſſes*. The conjectures of interpreters are various concerning this word *gittith*. Some think it ſignifies a ſort of muſical inſtrument; others, that the Pſalms, with this title, were ſung after the vintage; laſtly, others, that the hymns of this kind were invented in the city of *Gath*. Calmet is rather of opinion, that it was given to the claſs of young women, or ſongſtreſſes of *Gath* to be ſung by them. Pſ. viii. 1. lxxxi. 1. lxxxiv. 1. Dr. Hammond thinks that the Pſalms, with this title, were all ſet to the ſame tune, and made on *Goliah* the *Gittite*. See *Hammond* on Pſ. viii. *Calm.* Dict. Bibl.

GIZEIR, in the materia medica of Galen and the antients, a name given to the fineſt and beſt kind of caſſia fiſtula. The antients had ſeveral ſorts of this drug, ſome collected ſeparate from the wood, ſome with it; the young ſhoots, being cut bark and all, and preſerved together.

GLABELLA, a term uſed by ſome writers to expreſs the ſpace between the two eye-brows; it is ſo called from its ſmoothneſs, being uſually without hair.

GLACIATION is ſometimes uſed to ſignify congelation.

GLADIOLUS, *gladiole*, in botany, a plant which in the Linnæan ſyſtem of vegetables, makes a diſtinct genus. The characters of which are, that the flower cup is only compoſed of certain looſe ſpathæ or films. The flower is divided into ſix petals, which are all obtuſe and oblong. The three upper ones, which are next one another, cloſing together, and the inferior ones bending backward; all of them having their points growing together at their inſertion, and forming a ſhort tube. The ſtamina are three pointed filaments, one ariſing from every other ſegment of the flower, and all hid under the converging part of it. The antheræ are of an oblong form. The piſtillum has its germen placed beneath the receptacle. The ſtyle is ſingle, and of the ſame length with the ſtamina, and the ſtigma is trifid and concave. The fruit is an oblong, bellied capſule, irregularly three cornered, obtuſe, conſiſting of three cells, and having three valves. The ſeeds are numerous, roundiſh, and ſurrounded, being incloſed in a membrane. *Linnæi* Gen. Plant. p. 10.

GLADIOLUS, according to Tournefort, is characteriſed thus: the flower is of the liliacious kind, and is at the bottom of a ſort of funnel ſhape: it is compoſed only of one leaf, but from the bottom tube becomes greatly enlarged, and divides into two lips; the upper one is imbricated, and the lower is divided into five ſegments. The cup of the flower becomes afterward an oblong fruit divided into three cells, and filled with roundiſh ſeeds, covered with a ſort of hood.

To this, it is to be added, that the root is a double bulb, or compoſed of two thick and fleſhy parts, which lie the one over the other. See Tab. I. of Botany, Claſs 9.

Mr. Tournefort enumerates the following ſpecies of *gladiole*: 1. The great Indian *gladiole* with red flowers. 2. The great Conſtantinople *gladiole* with blackiſh purple flowers. 3. The great, tall, rediſh purple flowered *gladiole*, with the flowers all placed on one ſide the ſtalk. 4. The great tall *gladiole*, with white flowers placed all on one ſide the ſtalk. 5. The *gladiole* with fleſh coloured flowers. 6. The ſmall low *gladiole*, with flowers placed all on one ſide the ſtalk. 7. The leaſt *gladiole*, with flowers placed all on one ſide the ſtalks. 8. The little fleſh coloured flowered *gladole*, with flowers placed on one ſide the ſtalk. 9. The purpliſh blue *gladiole*, with flowers on both ſides the ſtalk. 10. The bright red *gladiole*, with flowers on both ſides the ſtalk. 11. The white flowered *gladiole*, with flowers on both ſides the ſtalk. 12. The narrow or graſſy leaved *gladiole*. *Tourn.* Inſt. p. 365.

GLADIUS *Piſcis*, in zoology, a name uſed by many for the ſword fiſh, called more frequently the xiphias. *Willoughby's* Hiſt. of Piſc. p. 161. See the article XIPHIAS.

GLAMA, in natural hiſtory, the name of a ſpecies of camel, called alſo *elaphocamelus*, by many authors, and by many erroneouſly accounted a ſheep; its length from head to tail is about ſix feet; its height about four feet; its head, neck, and the general appearance of the upper part of the body, greatly reſembles the camel; and its upper lip is divided, in the ſame manner, as in that creature. Its parts of generation are alſo the ſame as in the camel; and it is deſtitute of the fore teeth, and chews the cud like other animals that are ſo. It has no horns, and its feet are divided into two portions, which terminate in a ſort of claws, and are faſtened by a ſkin round the anterior part of the foot; and the ſole of the foot is tender, and covered over only with a thick ſkin, as in the camel.

It has at the place where the breaſt joins to the belly a protuberance, like that which the camel and dromedary have in the ſame part, and in this animal there is a continual diſcharge of a ſort of liquid excrement from it. It is a very tame animal, and fit for domeſtick uſes. It never offends any creature; but when provoked, revenges itſelf by diſcharging the contents of its ſtomach, by vomit, upon whatever injures it, and this it will do to a great diſtance.

It is a native of Peru, and is of vaſt uſe to the inhabitants for carrying burthens; the weaker of them very eaſily carrying a hundred and fifty pound weight, and the ſtronger two hundred and fifty. *Ray's* Syn. Quad. p. 143.

GLAMA, in the old writers of medicine, is ſometimes uſed to ſignify the ſordes of the eyes in lippitudes, and other diſorders attending them.

GLANDES *Terræ*, a name uſed by ſome authors for the tuberous roots of a plant of the lathyrus kind, called the *lathyrus repens tuberoſus*. See LATHYRUS.

GLANDS (*Cycl.*)—In all the moveable articulations, eſpecially of thoſe perſons who end their lives by ſudden or violent deaths, we find a viſcid liquor in ſome meaſure reſembling a liquid mucilage, or the white of an egg well beat, which is commonly called *ſynovia*, a name given at firſt to a diſeaſe. This liquor is contained, together with the articulations, in the ligamentary capſulæ, which hinder it from running out. It is furniſhed chiefly by ſmall bundles of *glands* more or leſs flat, which are contained in the ſame capſulæ, and known by the name of mucilaginous *glands*; theſe being the organs through which this mucilage is conveyed from the blood. It may likewiſe partly tranſude through the pores of the internal ſurface of the capſular ligaments, and partly be made up of an unctuous matter ſqueezed from the fatty ſubſtances lying near the *glands*, by the motion and friction of the articulated bones. Theſe *glands* are of a more or leſs red colour, and of a very ſingular ſtructure, reſembling ſmall floating fringes, of different thickneſſes made up of pelliculous or veſicular grains, and furniſhed with a great number of veſſels, running in different directions. In ſome places they appear like diſtinct grains fixed immoveably; they are proportioned to the bones and joints, and lodged ſo as to be ſecured from violent frictions, chiefly near the edges of the capſulæ, or in particular cavities contrived on purpoſe to receive them.

The liquor continually furniſhed by theſe *glands*, mixed with that which ſweats through the pores of the capſulæ, and perhaps with that which comes from the fatty moleculæ, is diffuſed between the articulated bones, and its uſe is to facilitate their motions, to prevent them from bruiſing each other, and to keep their cartilages from drying or wearing out. *Winſlow's* Anatomy, p. 117.

Some ſuppoſe and endeavour to prove the neceſſity of veſicles to the conglomerate *glands*, in order to receive all the different particles required in the compoſition of ſecerned liquors, which muſt be conveyed in different ſeries of veſſels, to be intimately blended in the veſicle, which will be conſiderably aſſiſted by the ſyſtole and diaſtole, which it is ſuppoſed the veſicle undergoes. See Acad. Bonon. Com. p. 336.

The *glands* are liable to be ſo altered by accidents as to be ſcarce known for what they really are; and their diſtemperatures are too often productive of the moſt miſchievous conſequences. The Paris memoirs give an account of a woman, who attempting to lift a large weight, had a ſwelling that appeared the ſame day on the lower part of her arm, which continued increaſing in ſize for eighteen months. After this there appeared a hole in the inner part of the hand, from which there was diſcharged a quantity of matter daily, but yet the ſwelling continued to increaſe. At the end of two years ſhe conſented to have it laid open. There was very little matter diſcharged, the whole not amounting to more than two ſpoonfuls of a thick viſcous fluid; all the reſt of the tumor was ſolid, and contained about two hundred white bodies, of a roundiſh, but ſomewhat oblong figure, and not unaptly reſembling ſome of the kinds of kidney beans. Theſe were covered with a ſolid membrane, and had no cavity within; and ſome of them had at one end a ſort of ſtalk, or pedicle, by which they ſeemed to have been faſtened to ſome other body. Theſe were the *glands* which had loſt their natural uſe, and were become hard, and what ſeemed a pedicle or ſtalk to ſome of them was their excretory duct which had not periſhed. Mem. Acad. Par. 1708.

The *glands* which have no particular ſecretory ducts, are called *glandulæ cæcæ*, or *clauſæ*.

Dr. Quietſchius argues for theſe *glands* being deſigned to prepare nouriſhment for the other parts, from the obſervation that they decreaſe after birth to full growth, then continue in the ſame condition till old age comes on; after which they gradually ſhrivel. Select. medic. Francofurt. Tom. 2. Vol. I. §. 3.

Renal GLANDS, *glandulæ renales*—Mr. du Vernoy remarks the *glandulæ renales* to be very variable in their magnitude, figure, &c. but that they are always contiguous, and firmly connected to the kidneys. In ſome fœtus's they appear ſolid, without any cavity, in others, they are diſtended with thin blood; in adults, they are always flat: they are readily diſtended, by blowing air into them by their vein. When the *glands* are opened, and quickſilver is injected, a great many ducts are ſeen, at which the mercury runs out. Two arteries and a vein belong to each *gland*, and a great many ducts, like rays, make a circle round it. An artery ariſing from the aorta, is ſent down from the lower edge of the *gland* to the teſtes of men, and ovaria of women, which Valſalva miſtook for ducts. Comment. Acad. Petrop. tom. 5.

GLANIS, in zoology, the name of a fiſh, called in Engliſh the ſheat fiſh, and in Latin, *ſilurus*. *Aldrovand.* de Piſc. l. 5. c. 25. See the article SILURUS.

GLANS *Marinus*, in natural hiſtory, a name given to a genus of ſhell fiſh, more uſually called balanus, and in Engliſh the center ſhell.

GLANS (*Cycl.*)—GLANS *Penis*. We read of a *glans penis* regenerated after amputation in the medical Eſſ. Edinb. vol. 5. art. 35.

GLANS *Trochitifera*, in natural hiſtory, a name given by Geſner, and ſome other writers, to a kind of figured foſſil, found uſually among the trochitæ and entrochi, and evidently appearing to have in ſome manner belonged to them. All the writers who have themſelves examined the places where the trochitæ are found, have mentioned theſe under the names of glandes trochitiferæ, others under leſs determinate ones. Agricola calls them lapides informes; and Liſter after him *rude ſtones*, having impreſſions of the entrochi.

Theſe ſtones are found bedded in clay or marble among the entrochi; they are uſually of the bigneſs of a middle-ſized walnut, and have the impreſſions of entrochi in many places upon their ſurfaces in conſiderable number, ſo that the trochitæ and entrochi in general ſeem to have grown from theſe, and thoſe who make the trochitæ a kind of rock plants, generally eſteemed theſe to be the bulbous roots of them. On cleaning theſe ſtones with vinegar the impreſſions appear more fair on them; they are round holes radiated, and exactly reſemble the holes in the main ſtones of the entrochi, out of which the ſmaller branches have been broke. The greater number of theſe *glandes* or roots of the entrochi are ſo ſhattered and broken, that they may very well be called *lapides informes*, or rude ſtones; but this is not the caſe with them all, for they are ſometimes found perfect and uninjured, and are then very elegant and regular bodies. *Geſner* de Foſſ.

Some of them are of the exact ſhape of a pine apple, or cone, with a hollow bottom, about half an inch deep, and as much over; on the tops of theſe are found the impreſſions of ſingle entrochi, and round their bottoms, at equal diſtances, there ſtand five ſingle feet in figure of creſcents. Theſe ſtones are formed of angular plates: the bottom is compoſed of five which are called feet, the middle of five more, all of a ſex-angular figure. Others of theſe *glandes* are found of the ſize of a walnut, of the ſame ſort of conic figure with the other, but the bottom convex. Theſe have alſo at the top generally the figure of one entrochus, and the bottom is edged with five double points, or feet all broken off, and reſembling ſo many creſcents. This, as well as the other kind, is uſually covered with incruſtated ſcales or plates, and they reſemble nothing more than the ſkin of ſome of the fiſh of the piſcis triangularis kind; the ſkin of the ſame fiſh, in theſe ſpecies, being covered in its ſeveral parts with ſcales of the moſt different figures, as trigonal, tetragonal, pentagonal, and hexagonal. The angular plates which cover theſe *glandes* or roots of the entrochi, are often found looſe among the clay, and in the rocks where the entrochi are found. They are of various figures, and many of them extremely elegant, and they are often heaped up together in ſuch vaſt numbers in the clay, that on waſhing it vaſt multitudes are ſeparated from the ſame ſmall lump. *Agricola* de Metall. Phil. Tranſ. N° 100.

The pentagonal ones are ſometimes half an inch long and near as much in breadth; they are convex on the one ſide, and concave like a little diſh on the other; on the convex ſide there are uſually ſeveral knots ſet in a regular ſquare order. Theſe plates grow thin toward the extremities, but very ſeldom form a ſharp edge; ſome of theſe are alſo found with but a little convexity on the outſide, and with no hollow at all within: theſe are uſually ſmooth all over, and have not the leaſt appearance of ever having had any knots, and are very blunt at the edges in ſome, but others of them go off ſo fine as to be as ſharp as a knife. There are ſometimes found alſo another kind of theſe, which have one edge indented and the reſt plain; theſe are ſmaller than the others, and their convex ſide riſes higher, though the concave is not more hollow than in the firſt kind: in theſe the indented ſide is always the thinneſt, and the ſtone is always moſt ſloped toward that ſide. Some of this laſt ſort are alſo found channelled on the concave ſide in a very regular and orderly manner. Dr. Liſter alſo mentions one very ſingular ſpecimen of this kind, found near Wansford-bridge in Northamptonſhire; they had one end notched or indented as the others, and the convex part had in the middle a round umbo like ſome of the antient ſhields, and round about the ſides of this a liſt of ſmaller ſtuds.

The ſexangular plates found looſe in the beds of the entrochi, and which have alſo made part of the coverings of ſome of theſe *glandes*, are uſually ſmall; they are convex on one ſide and a little hollowed on the other. The hollow ſide is uſually plain, ſometimes highly furrowed, but the convex ſide is uſually very elegantly wrought with a kind of ſtudded and emboſſed work. The figures expreſſed by this work are uſually an equilateral triangle, embracing each corner or angle of the plate, and a ſingle right line in the midſt, or two triangles one within the other. Another kind of the ſexangular plates are ſmooth on the convex ſide, or only irregularly ſcabrous. Theſe are but little hollowed on the under ſide, and ſome of them are ſo thick that they do not deſerve the name of plates. The ſides of theſe are very unequal, as the planes in cryſtals are; ſometimes there are five large and one ſmall plane, ſometimes two are broader than the reſt, and ſometimes more. Theſe are the moſt common of all the plates, a thouſand of them being generally found for one of the others. Phil. Tranſ. N° 100.

GLANUS, or GLANIS, in ichthyology, a name given by Pliny and many other of the old writers to that ſpecies of the ſilurus, which we in England call the ſheat fiſh, the *glanus* and ſilurus, of authors, diſtinguiſhed by Artedi by the name of the ſilurus, with four beards on the chin. See the article SILURUS.

GLAREANA, in zoology, the name of a bird deſcribed by Geſner from a figure, and ſuſpected to be no way different from the ſpipoletta, called tordino by the Venetians, a kind of lark. See SPIPOLETTA.

GLASS (*Cycl.*)—A *glaſs* much harder than any prepared in the common way, may be made by means of borax in the following method: take four ounces of borax, and an ounce of fine ſand; reduce both to a ſubtile powder, and melt them together in a large cloſe crucible ſet in a wind furnace, keeping up a ſtrong fire for half an hour; then take out the crucible, and when cold break it, and there will be found at the bottom a pure hard *glaſs*, capable of cutting common *glaſs* like a diamond. This experiment, duly varied, may lead to ſeveral uſeful improvements in the arts of *glaſs*, enamels, and factitious gems, and ſhews an expeditious method of making *glaſs*, without any fixed alkali, which has been generally thought an eſſential ingredient in *glaſs*, and it is not yet known whether calcined cryſtal, or other ſubſtances, being added to this ſalt inſtead of ſand, it might not make a *glaſs* approaching to the nature of a diamond. *Shaw*'s Lectures, p. 426.

Annealing of GLASS—The operation of annealing of *glaſs* is performed in a peculiar furnace called the *leer* which conſiſts of two parts, the *tower* and the *leer*. The veſſels as ſoon as made, are placed by the ſervitors on the floor of the former, to anneal; which done, they are drawn ſlowly in a ſort of pan called *fraches*, by an operator called the *ſarole-man*, all along the *leer*, the ſpace of five or ſix yards, to give them time to cool gradually; ſo that when they reach the mouth of the leer, they are found quite cold [a].

The particles of *glaſs* by annealing are ſuppoſed to loſe part of their ſpringineſs, and their brittleneſs at the ſame time. A gradual heating or cooling of *glaſs*, according to Dr. Hook, *anneals* or reduces its parts to a texture more looſe, and eaſy to be broke; but withal more flexible than before [b]. And hence in ſome meaſure the phænomena of *glaſs* drops.[—[a] *Merret*, Not. to Neri, p. 243. *ſeq.* [b] *Hook*, Microgr. obſ. 7. p. 37.—]

Borrichius, in his chymiſtry, ſeems to think that the rendering *glaſs* ductile or malleable, is not ſo impracticable as it is uſually thought; in ſupport of this, he alledges the inſtance of the luna cornea, which is a ſort of ſalt made of ſilver diſſolved in an acid, and which is in ſome degree ductile, and ſo far altered from the nature of ſilver that it may be melted at a candle, and reduced into ſmall tranſparent leaves; and adding to this the proceſs for making a ductile ſalt out of common ſal armoniac, diſſolved in a large *glaſs* and cryſtallized a vaſt many times; the cryſtals of this ſalt, he ſays, at laſt became half a foot long, and were flexile and elaſtic, and in ſome degree ductile under a hammer. From theſe changes in bodies naturally brittle as ſalts are, he judges, that the ſame changes may be made in *glaſs*. Phil. Tranſ. N° 39.

Glaſſes unannealed, are ſo exceſſively brittle, as to fly and break of themſelves, even frequently before they are well cold. Hence, the practice of nealing or annealing was deviſed.

Some of the phænomena depending on the fragility of unannealed *glaſs* deſerve the attention of the curious. Thoſe of the lacrymæ, or glaſs drops, were among the firſt taken notice of; and it has alſo been obſerved, that hollow bells made of unnealed *glaſs*, with a ſmall hole in them, will fly to pieces, by the heat of the hand only, if the hole by which the internal and external air communicate be ſtopped with a finger. Phil. Tranſ. N° 477. Sect. 3.

But

But lately ſome veſſels made of ſuch unannealed *glaſs* have been diſcovered, which have the remarkable property of reſiſting very hard ſtrokes given from without, though they ſhiver to pieces by the ſhocks received from the fall of very light and minute bodies dropped into their cavities. Thoſe *glaſſes* may be made of any ſhape; all that needs be obſerved in making them, is to take care that their bottoms may be thicker than their ſides. The thicker the bottom is, the eaſier do the *glaſſes* break. One whoſe bottom was three fingers breadth in thickneſs, flies with as much eaſe at leaſt as the thinneſt *glaſs*. Some of theſe veſſels have been tried with ſtrokes of a mallet, ſufficient to drive a nail into wood tolerably hard, and have held good without breaking. They alſo reſiſt the ſhock of ſeveral heavy bodies let fall into their cavities, from the height of two or three feet. For inſtance, muſket balls, pieces of iron, or other metal; pyrites, jaſper, wood, bone, *&c.* but this is not ſurpriſing, as other *glaſſes* of the ſame ſize do the ſame. But, the wonder is, that taking a ſhiver of flint of the ſize of a ſmall pea, and letting it fall into the *glaſs* only from the height of three inches, in about two ſeconds the *glaſs* flies, and ſometimes the very moment of the ſhock: nay, a bit of flint no larger than a grain dropt into ſeveral *glaſſes* ſucceſſively, though it did not immediately break them, yet they all flew, being ſet by, in leſs than three quarters of an hour. Phil. Tranſ. ibid. p. 509.

Some other bodies produce a like effect with flint: for inſtance, ſapphire, porcelain, diamonds, hard tempered ſteel, as alſo marbles, ſuch as boys play with[i], to which add pearls from the animal kingdom[k].[—[i] Phil. Tranſ. ibid. p. 510. ſeq. [k] ibid. p. 512.—]

The experiments ſucceeded alſo when the *glaſſes* were held in the hand, reſted on a pillow, put in water, or filled with water. It is alſo remarkable, that the *glaſſes* broke, upon their bottoms being ſlightly rubbed with the finger, though ſome of them did not fly till half an hour after the rubbing.

If the *glaſſes* be every where extremely thin they do not break in theſe circumſtances.

Some have pretended to account for theſe phænomena, by ſaying, that the bodies dropped into theſe veſſels cauſe a concuſſion, that is ſtronger than the coheſion of the parts of the *glaſs*, and that conſequently a rupture of the ſame muſt enſue. But, why does not a ball of gold, ſilver, iron, copper, or ſeveral other bodies, even a thouſand times heavier than a ſhiver of flint, equally cauſe this concuſſion, and break the *glaſſes*? Is it becauſe they are not elaſtick? But ſurely iron is more ſo than the end of one's finger[l].[—[l] Ibid. p. 513. and ſee p. 514, 515. the experiments of this kind made before the Royal Society.]

Mr. Euler has endeavoured to account for theſe appearances from his principles of percuſſion. He thinks this experiment entirely overthrows the opinion of thoſe who meaſure the force of percuſſion by the *vis viva* [d], and he thinks the principles he has eſtabliſhed [e], give a clear ſolution of this phænomenon. According to theſe principles, the extreme hardneſs of the flint, and alſo its angular figure, which makes the ſpace of contact with the *glaſs* veſſel extremely ſmall, ought to cauſe an impreſſion on the *glaſs*, vaſtly greater than lead or any other metal [f]; and this may account for the flint's breaking the veſſel, though the bullet, even falling from a conſiderable height, does no damage.—[c Mem. Acad. Berlin. 1745. p. 47. [d] See FORCE. [e] Mem. Acad. Berlin. 1745. p. 22, *ſeq.* [f] See FORCE.]

Hollow cups made of the green bottle *glaſs*, ſome of them three inches thick at bottom were inſtantly broken, by a ſhiver of flint weighing about two grains, though they had reſiſted the ſhock of a muſket ball from the height of three feet. Phil. Tranſ. Ibid. p. 515.

Colouring of GLASS. That the colours given to *glaſs* may have their full beauty, it muſt be obſerved, that every pot when new, and firſt uſed, leaves a foulneſs in the *glaſs* from its own earthy particles; ſo that a coloured *glaſs* made in a new pot can never be bright, or perfectly fine. For this reaſon, the larger of theſe when new may be glazed with white *glaſs*, but the ſecond time of uſing the pots loſe this foulneſs.

Thoſe pots which have ſerved for one colour muſt not be uſed for another, for the remainder of the old matter will ſpoil the colour of the new. The colours muſt be very carefully calcined to a proper degree, for if either too much or too little they never do well; the proper proportion, as to quantity, muſt alſo carefully be regarded, and the furnaces muſt be fed with dry, hard wood. And all the proceſſes ſucceed much the better if the colour be uſed dividedly, that is a part of it in the fritt, and the reſt in the melted metal. *Neri*'s Art of Glaſs, p. 44.

Balas coloured GLASS is made thus: put into a pot cryſtal fritt thrice waſhed in water; tinge this with manganeſe prepared into a clear purple; to this add *alumen cativum* ſifted fine, in ſmall quantities, and at ſeveral times: this will make the *glaſs* grow yelloviſh, and a little rediſh, but not blackiſh, and always diſſipates the manganeſe. The laſt time you add manganeſe give no more of the *alumen cativum*, unleſs the colour be too full. Thus will the *glaſs* be exactly of the colour of the *balas* ruby. *Neri*'s Art of Glaſs, p. 183.

Red GLASS. A blood red *glaſs* may be made in the following manner: put ſix pound of *glaſs* of lead, and ten pound of common *glaſs* into a pot glazed with white *glaſs*; when the whole is boiled and refined, add by ſmall quantities, and at ſmall diſtances of time, copper calcined to a redneſs, as much as on repeated proofs is found ſufficient; then add tartar in powder by ſmall quantities at a time, till the *glaſs* is become as red as blood; and continue adding one or other of the ingredients till the colour is quite perfect. Ibid. p. 182.

Yellow GLASS. It is a neceſſary remark in *glaſs* making, that the cryſtal *glaſs* made with ſalt, that has an admixture of tartar, will never receive the true gold yellow, though it will all other colours; for yellow *glaſs*, therefore, a ſalt muſt be prepared from polverine or pot-aſhes alone to make the *glaſs*. *Neri*'s Art of Glaſs, p. 12.

GLASS *of Antimony* may be deprived of its emetic quality, by digeſting it with pure ſpirit of vinegar till the menſtruum be highly tinged. *Boyle*'s Works Abr. Vol. I. p. 74. Where he ſays, that if you abſtract this liquor, and digeſt good rectified ſpirit of wine on the remaining powder, an excellent tincture againſt ſeveral diſeaſes may be obtained.

GLASS-*Chalcedony*. A mixture of ſeveral ingredients, with the common matter of *glaſs*, will make it repreſent the ſemi-opake gems, the jaſpers, agates, chalcedonies, *&c.*

The way of making theſe ſeems to be the ſame thing with the method of making marbled paper, by ſeveral colours diſſolved in ſeveral liquors, which are ſuch as will not readily mix with one another when put into water, before they are caſt upon the paper which is to be coloured. There are ſeveral ways of making theſe variouſly coloured *glaſſes*, but the beſt is this: diſſolve four ounces of fine leaf ſilver in a *glaſs* veſſel in ſtrong aqua fortis, ſtop up the veſſel, and ſet it aſide.

In another veſſel diſſolve five ounces of quickſilver in a pound of aqua fortis, and ſet this aſide.

In another *glaſs* veſſel diſſolve in a pound of aqua fortis three ounces of fine ſilver, firſt calcined in this manner: amalgamate the ſilver with mercury, mix the amalgama with twice its weight of common ſalt well purified, put the mixture in an open fire in a crucible, that the mercury may fly off, and the ſilver be left in form of powder. Mix this powder with an equal quantity of common ſalt well purified, and calcine this for ſix hours in a ſtrong fire; when cold, waſh off the ſalt by repeated boilings in common water, and then put the ſilver into the aqua fortis. Set this ſolution alſo aſide. *Neri*'s Art of Glaſs, p. 79.

In another veſſel diſſolve in a pound of aqua fortis three ounces of ſal armoniac, pour off the ſolution, and diſſolve in it a quarter of an ounce of gold. Set this alſo aſide.

In another veſſel diſſolve three ounces of ſal armoniac in a pound of aqua fortis, then put into the ſolution, cinnabar, crocus martis, ultramarine, and ferretto of Spain, of each half an ounce. Set this alſo aſide.

In another veſſel diſſolve in a pound of aqua fortis three ounces of ſal armoniac, then put into it crocus martis made with vinegar, calcined tin, zaffer, and cinnabar, of each half an ounce; let each of theſe be powdered very fine, and put gently into the aqua fortis. Set this alſo aſide. *Neri*, p. 80.

In another veſſel diſſolve three ounces of ſal armoniac in a pound of aqua fortis, and add to it braſs calcined with brimſtone, braſs thrice calcined, manganeſe, and ſcales of iron which fall from the ſmith's anvil, of each half an ounce; let each be well powdered, and put gently into the veſſel. Then ſet this alſo aſide.

In another veſſel diſſolve two ounces of ſal armoniac in a pound of aqua fortis, and put to it verdigreaſe an ounce, red lead, crude antimony, and the caput mortuum of vitriol, of each half an ounce; put theſe well powdered leiſurely into the veſſel, and ſet this alſo aſide. *Neri*, p. 81.

In another veſſel diſſolve two ounces of ſal armoniac in a pound of aqua fortis, and add orpiment, white arſenic, painters lake, of each half an ounce: keep theſe nine veſſels in a moderate heat for fifteen days, ſhaking them well at times. After this pour all the matters from theſe veſſels into one large veſſel, well luted at its bottom; let this ſtand ſix days, ſhaking it at times, and then ſet it in a very gentle heat, and evaporate all the liquor, and there will remain a powder of a purpliſh green. Ibid. p. 82.

When this is to be wrought, put into a pot very clear metal, made of broken cryſtalline and white *glaſs*, that has been uſed; for with the virgin fritt, or ſuch as has never been wrought, the chalcedony can never be made, as the colours do not ſtick to it, but are conſumed by the fritt. To every pot of twenty pound of this metal put two or three ounces of this powder at three ſeveral times; incorporate the powder well with the *glaſs*, and let it remain an hour between each time of putting in the powders. After all is in, let it ſtand twenty-four hours; then let the *glaſs* be well mixed, and take an eſſay of it, which will be found of a yelloviſh blue; return this many times into the furnace; when it begins to grow cold, it will ſhew many waves of different colours very beautifully. Then take tartar eight ounces, ſoot of the chimney two ounces, crocus martis made with brim-

brimſtone half an ounce; let theſe be well powdered and mixed, and put them, by degrees, into the *glaſs* at ſix times, waiting a little while between each putting in; when the whole is put in, let the *glaſs* boil and ſettle for twenty four hours, then make a little *glaſs* body of it, which put in the furnace many times and ſee if the *glaſs* be enough, and whether it have on the outſide veins of blue, green, red, yellow, and other colours, and have beſide theſe veins, waves like thoſe of of the chalcedonies, jaſpers and oriental agates, and if the body kept within looks as red as fire. *Neri*'s Art. of Glaſs, p. 73.

When it is found to anſwer thus it is perfect, and may be worked into toys and veſſels, which will always be beautifully variegated; theſe muſt be well annealed, which adds much to the beauty of their veins. Maſſes of this may be poliſhed at the lapidary's wheel as natural ſtones, and appear very beautiful. If in the working the matter grow tranſparent, the work muſt be ſtopped, and more tartar, ſoot, and crocus martis, muſt be put to it, which will give it again the neceſſary body and opacity, without which it does not ſhew the colours well. *Neri*, p. 74.

GLASS *of lead*, a *glaſs* made with the addition of a large quantity of lead, of great uſe in the art of making counterfeit gems. The method of making it is this. Put a large quantity of lead into a potter's kiln, and keep it in a ſtate of fuſion with a moderate fire till it is calcined to a grey looſe powder, then ſpread it in the kiln, and give it a greater heat, continually ſtirring it to keep it from running into lumps; continue this ſeveral hours till the powder become of a fair yellow, then take it out and ſift it fine; this is called calcined lead.

Take of this calcined lead fifteen pound, and cryſtalline, or other fritt, twelve pound, mix theſe as well as poſſible together, put them into a pot, and ſet them in the furnace for ten hours; then caſt the whole, which will be now perfectly melted, into water; ſeparate the looſe lead from it, and return the metal into the pot, and after ſtanding in fuſion twelve hours more, it will be fit to work. It is very tender and brittle, and muſt be worked with great care, taking it ſlowly out of the pot, and continually wetting the marble it is wrought upon. *Neri*'s Art of Glaſs, p. 110.

Glaſs of lead is capable of all the colours of the gems in very great perfection. The methods of giving them are theſe: for green, take polverine fritt twenty pound, lead calcined ſixteen pound, ſift both the powders very fine, then melt them into a *glaſs* ſeparating the unmixed lead, by plunging the maſs in water; after this return it into the pot, and add braſs thrice calcined ſix ounces, and one penny weight of crocus martis made with vinegar; put this in at ſix different times, always carefully mixing it together, let it finally ſettle an hour, then mix it together and take a proof of it; when the colour is right, let it ſtand eight hours, and then work it. If inſtead of the calcined braſs the ſame quantity of the caput mortuum of the vitriolum veneris be uſed, the green is yet much finer. *Neri*'s Art of Glaſs, ibid. and p. 112.

For topaz colour, take cryſtal fritt fifteen pound, calcined lead twelve pound, mix them well together by ſifting the powders through a fine ſieve, then ſet them in a furnace not too hot, and ſeparate the ſuperfluous unmixed lead, by caſting the whole into water; repeat this twice, then add half gold yellow *glaſs*, and let them incorporate and purify, and they will be of the true and exact colour of the oriental topazes. *Neri* p. 113.

For ſea green, take cryſtal fritt ſixteen pound, calcined lead ten pound, mix and ſift them together, and ſet them in a pot in a furnace, in twelve hours the whole will be melted; then caſt it into water and ſeparate it from the looſe lead, put them into the furnace again for eight hours, then ſeparate the looſe lead by waſhing a ſecond time, and return it to the pot for eight hours more. *Neri*, p. 114.

GLASS *porcelain*, the name given by many to a modern invention of imitating the china ware with *glaſs*. The method given by Mr. Reaumur, who was the firſt that carried the attempt to any degree of perfection, is delivered by that gentleman in the memoirs of the academy of ſciences of Paris to this effect. Memoirs Acad. Paris 1739.

The mixing *glaſs* reduced to powder, with other leſs eaſily vitrifiable ſubſtances for the forming a paſte to be afterwards made into a ſort of porcelain, has been a contrivance long practiſed, but it is very troubleſome, and the reſult ſubject to many faults; but this new ware is made of *glaſs* alone, and that with much leſs trouble, and without the reducing it to powder. By this art, veſſels of *glaſs* are changed into veſſels of a ſort of porcelain, without altering their form, and the meaneſt *glaſs* ſerves as well as the beſt for that purpoſe; our common coarſe green quart bottles, or the great bell *glaſſes* with which gardeners cover their melons, *&c.* being by this means changeable into a beautiful white ſort of porcelain ware; and this is to be done in ſo eaſy a manner and with ſo ſmall expence, that it requires no more trouble or charge, than that of baking a common veſſel of our courſe earthen ware, and for this reaſon the veſſels of this ſort of ware may be afforded extremely cheap.

It is very certain that all procelain ware is a ſubſtance in the ſtate of ſemivitrification; and in order to bring *glaſs*, which is a wholly vitrified ſubſtance, into the condition of porcelain, there requires no more than to reduce it to a leſs perfectly vitrified ſtate.

The queſtion which would naturally be ſtarted on this occaſion, is, whether it be poſſible to reduce *glaſs* to a leſs vitrified ſtate, it having already undergone what is eſteemed the laſt change by fire. But when we conſider that the *glaſs* of antimony, the vitrifications of many of the metals, as the *glaſs* of lead, and the counterfeit gems coloured by the metals, are more or leſs eaſily reduced again by chymiſtry to metals, *&c.* the reducing ſand, flints, *&c.* after they are vitrified, at leaſt a little way back toward their native or priſtine ſtate, may appear not wholly impracticable; and the attempts which Mr. Reaumur made on this occaſion, were what gave him the firſt hints of the *glaſs* porcelain.

The method of making it is this. The *glaſs* veſſels to be converted into porcelain, are to be put into a large earthen veſſel, ſuch as the common fine earthen diſhes are baked in, or into ſufficiently large crucibles; the veſſels are to be filled with a mixture of fine white ſand, and of fine gypſum or plaiſter ſtone burnt into what is called plaiſter of Paris, and all the interſtices are to be filled up with the ſame powder, ſo that the *glaſs* veſſels may no where touch either one another, or the ſides of the veſſel they are baked in. The veſſel is to be then covered down and luted, and the fire does the reſt of the work; for this is only to be put into a common potter's furnace, and when it has ſtood there the uſual time of the baking the other veſſels, it is to be taken out, and the whole contents will be found no longer *glaſs*, but converted into a white opake ſubſtance, which is a very elegant porcelain, and has almoſt the properties of that of China. Memoirs Acad. Sciences Par. 1739.

The powder which has ſerved once, will do again as well as freſh, and that for a great many times; nay it ſeems ever ſo often.

GLASS-*balls*, a term uſed to expreſs circular or otherwiſe ſhaped hollow veſſels of *glaſs*, coloured within ſo as to imitate the ſemipellucid *gems*. The method of doing it is this; make a ſtrong ſolution of ichthyocolla or iſinglaſs in common water by boiling, pour a quantity of this while warm into the hollow of a white *glaſs* veſſel, ſhake it thoroughly about, that all the ſides may be wetted, and then pour off the reſt of the moiſture. Immediately after this, throw in red lead, ſhake it and turn it about, throw it into many places with a tube, and the moiſture will make it ſtick and run in waves and pretty figures. Then throw in ſome of the painter's blue ſmalt, and make it run in waves in the ball as the red lead, then do the ſame with verdigreaſe, next with orpiment, then with red lake, all well ground; always caſting in the colours in different places, and turning the *glaſs* that the moiſture within may run them into the waves. Then take fine plaiſter of Paris, and put a quantity of it into the ball, ſhake it alſo nimbly about, this will every where ſtick firmly to the *glaſs*, and give it a ſtrong inner coat, keeping all the colours on very fairly and ſtrongly. Theſe are ſet on frames of carved wood, and much eſteemed as ornaments in many places. *Neri*'s Art of Glaſs, p. 167.

GLASS *Pots*, the veſſels in the *glaſs* trade uſed for melting the *glaſs*. Thoſe for the white *glaſs* works are made of a tobaccopipe clay, brought from the Iſle of Wight, which is firſt well waſhed, then calcined, and afterwards ground to a fine powder in a mill; which being mixt with water, is then trod with the bare feet till it is of a proper conſiſtence, to mould with the hands into the proper ſhape of the veſſels. When theſe are thus made, they are afterwards annealed over the furnace. Thoſe for the green *glaſs* work are made of the nonſuch, and another ſort of clay from Staffordſhire; they make theſe ſo large as to hold three or four hundred weight of metal. And beſides theſe, they have a ſmall ſort called piling pots, which they ſet upon the larger, and which contain a finer and more nice metal fit for the niceſt works. *Neri*'s Art of glaſs, p. 245.

GLASS *Tubes*, laid before the fire in an horizontal poſition, and their extremities ſupported, have been obſerved to have a rotatory motion about their axis; and alſo a progreſſive motion towards the fire, even when their ſupports are inclining from the fire, ſo that the tubes will move a little up hill. See Phil. Tranſ. N°. 476. § 1.

When the progreſſive motion of the tube is ſtopped by any obſtacle, its motion about its axis will ſtill continue. When the tubes are placed in a nearly upright poſture leaning to the right hand, the motion will be from eaſt to weſt; but if they lean to the left, the motion will be from weſt to eaſt; and the nearer they are placed to the perfectly upright poſture the leſs the motion will be either way.

If the tube be placed horizontally on a *glaſs* plane, the fragment for inſtance of coach *window glaſs*, inſtead of moving towards the fire, it will move from it, and about its axis, in a contrary direction to what it had done before. Nay it will recede from the fire and move a little up hill, when the

the plane inclines towards the fire. Vid. Phil. Tranſ. ibid. p. 343, 344.

Neither the draught of air up the chimney, nor attraction or repulſion are the cauſe of theſe phænomena. It ſeems rather owing to the ſwelling of the tube towards the fire; for allowing ſuch ſwelling, gravity muſt pull the tube down, when ſupported near its extremities horizontally; and a freſh part being expoſed to the fire, and ſwelling out again, muſt fall down again, and ſo on ſucceſſively; which will produce a rotatory motion towards the fire.

If the tube be ſupported by two other tubes, and theſe be brought near to each other and to the center of the ſupported tube, then its parts hanging over on each ſide, being larger than the part which lies between the ſupporters, will by their weight, pull downwards, and conſequently force the middle part, reſting upon its two props, upwards; and being leſs advanced towards the fire, as being leſs heated, will, by their oblique ſituation, pull the middle part backwards alſo from the fire, which will cauſe a rotatory regreſſive motion quite contrary to what the tube had when ſupported near its extremities. And when a ſingle tube lies inclining oppoſite to the fire, either to the right hand or to the left, out of a plane perpendicular to the ſurface of the fire, gravity will not permit the curved part to reſt, but pull it down till it coincides with a plane perpendicular to the horizon; and conſequently, as new curves are generated, new motions will be ſo too; that is, the tube will be made to move about its axis, with this difference, when the tube inclines to the right hand, the motion will be from eaſt to weſt; when to the left hand, from weſt to eaſt. The juſtneſs of this reaſoning is made manifeſt, by bending a wire and ſupporting it firſt near its extremities, then near its center on each ſide, afterwards inclining it to the right and to the left; the bending in every caſe repreſenting the curved part of the tube next the fire. This ſolution of the phænomena is rendered the more probable from hence, that when four ſupporters were made uſe of, one at each extremity, and two near the middle, there was no motion at all either backward or forward. Nor does the increaſe of contact hinder the motion, becauſe the plate of *glaſs* was ſo broad as to have a much greater contact with the tube, and yet both the rotatory and regreſſive motions were manifeſt. Philoſ. Tranſ. ibid. p. 347, 348.

The experiments ſucceeded beſt with tubes about twenty or twenty two inches long; the diameter about $\frac{1}{10}$ inch; and they had in each end a pretty ſtong pin fixed in cork, for an axis to roll with on the ſupporting tubes.

GLASS, how to cement the cracks of *glaſs* receivers. See RECEIVER.

GLASS. To take the impreſſion of antique gems in *glaſs*. See GEM.

GLASS-*wort*. See KALI.

GLAUCEDO, a term uſed by ſome medical writers, for the diſeaſe more uſually called glaucoma. See the articles GLAUCOMA and CATARACT, *Cycl.*

GLAUCIDIUM, in zoolygy, the name uſed by ſome authors, for the ſmaller ſpecies of glaucus, the ſecond ſpecies of Rondeletius. *Ray*'s Ichthyolog. p. 296. See the article GLAUCUS.

GLAUCIUM, in zoology, the name given by Bellonius to a ſpecies of duck, ſeeming by his deſcription to be the ſame with the *capo roſſo*, or *anas fera fuſca minor*, the ſmall brown wild duck of authors. See CAPO *Roſſo*.

GLAUCIUM, *horned Poppy*, in botany the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, being uſually compoſed of four leaves diſpoſed in a circular order. The cup conſiſts of two leaves, and from it there ariſes a piſtil, which finally becomes a long ſlender unicapſular pod, or ſeed veſſel, of a cylindric form, containing a number of roundiſh ſeeds.

The ſpecies of *glaucium* enumerated by Mr. Tournefort are theſe. 1. The ſmooth yellow flowered *glaucium*. 2. The hairy ſcarlet flowered *glaucium*. 3. The ſmooth ſcarlet flowered *glaucium*. 4. The *glaucium* with violet coloured flowers. *Tourn.* Inſt. p. 254.

GLAUCUS, in zoology, the name of a genus of fiſhes, of which Rondeletius has deſcribed three ſpecies. The firſt, or more common kind, is a broad fiſh approaching to the figure of the turbut, but very thin; its colour on the back and ſides is a duſky olive, and on the belly white, and it has on each ſide three or four black ſpots. Its ſcales are very ſmall and rounded, its mouth is moderately large, but its teeth are extremely ſmall; the whole inſide of its mouth is tinged with blue. Its gill fins are ſmall, and its back fins two in number, but the anterior ſcarce deſerving the name of a fin, being only a ſeries of looſe prickly rays or nerves; theſe are ſeven in number, and the foremoſt of them bends forward pointing toward the head, the other all ſtoop toward the tail. The tail is extremely large, and more forked than almoſt in any other fiſh; the tips of the forks are tinged black. This is caught in the Mediterranean. *Willugh.* Hiſt. Piſc. p. 298.

The ſecond kind has much of the figure of the firſt, and is called by ſome *glaucidium*, as being a diminutive of *glaucus*; it never arriving at the ſize of the former. This has alſo an undulated line running on each ſide from the membrane of the gills, to the middle of the body, from whence it is continued ſtrait to the tail; whereas in the common *glaucus*, this line runs ſtrait all the way. The fins alſo of this are ſpotted with black, and its body is ſomewhat leſs broad in proportion to its length. *Rondelet.* de Piſc. p. 460.

The third kind differs from the former in its having very ſtrong and ſharp teeth, and having its ſide lines from the gills much more ſinuous, and waved, reſembling the curling of a ſerpent in motion. The back, to this line, is of a deep bluiſh black, below this line it is perfectly white. *Rondelet.* de Piſc. p. 400.

GLAUX, *milk wort*, in botany, the name of a genus of plants. the characters of which are theſe. The flower conſiſts of one leaf, formed into the ſhape of a bell, ſometimes open at the end, and ſometimes ſhut, and divided into ſeveral ſegments. From the middle of the flower there riſes a piſtil which afterwards ripens into a fruit or ſhell, which is uſually of a globular figure, and opening at the extremity, ſhews a great number of ſmall ſeeds fixed to a placenta. The ſpecies of *glaux* enumerated by Mr. Tournefort are theſe.

1. The common ſea kind. 2. The white flowered ſea kind, and 3. the marſh *glaux* with leaves like thoſe of purſelain and a ſtriated ſhut flower. *Tourn.* Inſt. p. 88.

GLAZING. The Roman method of *glazing* ſome of their urns, might give our workmen a hint toward a method greatly ſuperior to any thing now in practice for the *glazing* earthen ware. There are a ſort of red urns found in Yorkſhire, which are, inſtead of *glazing*, covered all over inſide and out with a fine coral coloured varniſh, which gives them a beauty, no earthen ware of our times can come up to; and is not only far more durable than our way of doing it with lead, which is apt to crack and fly, both with wet and with heat, but far more ſafe and wholſome. Lead being well known to be a vapourable metal, and its fumes very noxious, there is great reaſon to ſuſpect that it muſt be unwholeſome when brought to the fire. This antient *glazing* ſeems to have been done either by the bruſh, or elſe by dipping, for both inſide and out are varniſhed with equal regularity; and ſomething may be gueſſed at as to the materials they uſed in it from what Pliny has left us. This author occaſionally obſerves, that ſuch earthen ware as was painted with bitumen, never loſt its beauty; and afterwards that it was a cuſtom to cover over whole ſtatues with this ſort of *glazing*, which he obſerves did not only make a ſmooth coat, but ſunk into the matter of the ſtone or earth, and therefore this could not be likely to crack and fly off like our lead coat on plates, *&c.* which is merely a cruſt laid over them. *Hook*'s Philoſ. Collect. p. 89.

Black GLAZING is made of lead aſhes eighteen meaſures, iron filings three, copper aſhes three, and zaffer two meaſures. This when melted will make a brown black; and if you want it blacker, add more zaffer to it.

Blue GLAZING is thus prepared: take lead aſhes one pound, clear ſand or pebble two pound, ſalt two pound, white calcined tartar one pound, venice or other glaſs ſixteen pound, zaffer half a pound; mix them well together, and melt them for ſeveral times, quenching them always in cold water. If you would have it fine and good, it will be proper to put the mixture into a glaſs furnace for a day or two.

Brown GLAZING is made of common glaſs and manganeſe or brown ſtone, of each one part, and lead glaſs twelve parts.

Fleſh-colour GLAZING is made of twelve parts of lead aſhes, and one of white glaſs.

Gold coloured GLAZING. To make gold coloured *glazing*, take of litharge parts iij. of ſand or calcined flint, p. i. pound, and mix theſe very well together, then run them into a yellow glaſs with a ſtrong fire. Pound this glaſs and grind it into a ſubtile powder, which moiſten with a well ſaturated ſolution of ſilver, make it into a paſte; which put into a crucible, and cover it with a cover. Give at firſt a gentle degree of fire, then increaſe it, and continue it till you have a glaſs, which will be green. Pound this glaſs again, and grind it to a fine powder; moiſten this powder with ſome beer, ſo that by means of an hair pencil you may apply it upon the veſſels, or any piece of earthen ware. The veſſels that are painted or covered over with this *glazing*, muſt be firſt well heated, then put under a muffle, and as ſoon as the glaſs runs, you muſt ſmoak them, and take out the veſſels. Mr. Heinſius of Peterſburg, who ſent this receipt to the Royal Society, uſes the words *afflare debes fumum*, which is rendered *ſmoak them*, in the Tranſactions. Phil. Tranſ. N°. 465. § 6.

Green GLAZING may be prepared of eight parts of litharge, eight parts of venice glaſs, four parts of braſs duſt; or, of ten parts of litharge, twelve of flint or pebble, and one of *æs uſtum*, or copper aſhes.

Iron-

Iron-colour GLAZING is prepared of fifteen parts of lead aſhes, fourteen of white ſand, five of copper aſhes, one of manganeſe, one of zaffer, and one of iron filings.

Liver coloured GLAZING is prepared of 12 parts of litharge, eight of ſalt, ſix of pebble or flint, and one of manganeſe.

Purple brown GLAZING conſiſts of lead aſhes 15 parts, clear ſand 18 parts, manganeſe one part, white glaſs 15 meaſures, and one meaſure of zaffer.

Red GLAZING is made of antimony two pounds, litharge three, and ruſt of iron calcined one; grind them to a fine powder.

Sea-green GLAZING is made of five pound of lead aſhes, one pound of tin aſhes, three pound of flint, three quarters of a pound of ſalt, half a pound of tartar, and half a pound of copper duſt.

White GLAZING. A fine white *glazing* for earthen ware is thus prepared. Take two pounds of lead, and one of tin; calcine them to aſhes: of this take two parts, calcined flint or pebble one part, and ſalt one part, mix them well together, and melt them into a cake for uſe.

The white *glazing* for common ware is made of 40 pound of clear ſand, 75 pound of litharge or lead aſhes, 26 of pot-aſhes, and ten pound of ſalt: theſe are three times melted into a cake, quenching it each time in clear cold water. Or, it may be made of 50 pound clean ſand, 70 of lead aſhes, 30 of wood aſhes, and 12 of ſalt.

Yellow GLAZING is prepared of red lead, three pints; antimony and tin, of each two pound. Theſe muſt be melted into a cake, then ground fine; and this operation repeated ſeveral times. Or, it may be made of 15 parts of lead ore, three parts of litharge of ſilver, and 15 parts of ſand.

Citron yellow GLAZING is made of ſix parts of red lead, ſeven parts of fine red brick-duſt, and two parts of antimony. Vid. *Smith*'s Laboratory.

GLECHOMA, in botany, the name by which Linnæus calls ground-ivy. See IVY.

GLECHONITES, a name given by the antient phyſicians to a ſort of wine impregnated with penny-royal, much recommended in all obſtructions. It takes its name from *glechon*, the Greek name of penny-royal or pulegium. See PULEGIUM.

GLEDISTIA, in botany, a name given by Clayton to the plant called ceſalpinoides, by the author of the Hortus Cliffortianus, and others. The characters of the genus are theſe: it produces ſeparate male and female flowers; the male are cloſe and compact *amenta*, and the females more open and looſe ones, but both are pendulous. In the male amentum, the peculiar cup of every flower is erect, and open, and is compoſed of one leaf, divided into four concave ſegments. The flower conſiſts of four petals, of an oval figure, but very narrow, and ſomewhat hollowed; the ſtamina are ſix ſlender filaments longer than the flower, and the antheræ lie upon them. *Linnæi* Gen. Plant, p. 481.

In the female flower the cup is of the ſame ſtructure with that of the male; the flower is alſo compoſed of four like petals, but they are much larger, and there are in the baſe of this flower two ſlender nectaria-like filaments; the germen of the piſtil is broad, and compreſſed, and is longer than the flower; the ſtyle is long, the ſtigma lies upon it, and is large and crooked: the fruit is a very large and broad pod, of an extremely compreſſed figure; there are ſeveral tranſverſe ſepta in it, and the cells between them are filled with pulp; in each of theſe there is alſo contained a ſingle ſeed which is roundiſh and very hard. Hort. Cliffort. p. 489.

GLESUM, or *glæſum*, in natural hiſtory, a name given by many of the antients to the common yellow amber or ſuccinum. The word ſeems to have been originally German, and to have been adopted by the Romans in their conqueſts in that part of the world. They ſeem to have uſed the word in general for any tranſparent ſubſtance, and thence to have applied it to amber as a tranſparent ſtone. The iſland Auſtravia of the Germans afforded a very great quantity of fine amber on its ſhores, and the Roman ſoldiers thence gave it the name of *Glæſaria*. This is a proof of the word *gleſum*, being received into common uſe as the name of amber. Pliny tells us, that this iſland was called by the Roman ſoldiers *Glæſaria*, becauſe of the great quantity of ſuccinum found in it; and that by the barbarous natives, that is the Germans of thoſe times, it was called Auſtravia. The finding amber in plenty on this iſland, on which there grew alſo a great number of pines of a ſpecies not known to the Romans before, gave origin to an opinion that prevailed a long time among them; that is, that the amber was the condenſated reſin of this tree. Pliny ſays, that the reſin of this tree ſweating out of its cracks and chinks in the heat of the autumn, and falling into the ſea, was there toſſed about and hardened by the water; and finally, ſo concreted by the cold weather, as to acquire the ſtony hardneſs we ſee in it; and it is in this ſenſe that the Roman authors tell us, that the diſcovery of the true nature of amber was owing to Cæſar Germanicus, who diſcovered this new ſort of pine in the amber country.

Pliny alſo tells us, that the *gleſum*, or amber, was produced in India, and relates a ſtory of Archelaus, a governor of a province, who ſent from thence a rude or rough maſs of amber to Rome, with the bark of the pine tree, from which it had exſudated, yet remaining affixed to it. This might ſeem a proof of its being the gum or reſin of a tree; but when we conſider the inaccuracy of the writers of that time, it will have but little weight againſt the modern ſyſtem of amber being a true and genuine mineral. The ſtory might poſſibly not be true; or if ſo, the amber might be only adhering to that ſort of cortical ſubſtance reſembling the barks of trees, among which it is found foſſile in Pruſſia at this time. This ſubſtance is not the bark of any tree, though it much reſembles it. Finally, it might not be amber which this governor ſent to Rome; but ſome Indian gum, of which there are two or three ſo like amber, that nothing but experiments can ſhew that they are not ſo, and this might very naturally be ſent with the bark of the tree, which produced it, yet adhering to it. Tacitus tells us, that the amber brought from Germany was rough or rude, but he does not ſay any thing of its having any bark adhering to it.

GLEUCINUM, a term uſed by the old Greek writers, to expreſs a compoſition made of the oil of unripe olives, in which there were infuſed ſchænanth, ſpikenard, and many other of the aromatic drugs, with a conſiderable quantity of muſk; all theſe were put together into a veſſel, which was ſurrounded with the preſſings of grapes, the fermentation of which gave it a gentle heat; and it was left thus thirty days, being well ſtirred about every day: at the end of this time it was ſtrained off, and the clear oil reſerved for uſe. It was eſteemed warming, emollient, and relaxing, and was uſed externally in many caſes.

GLINUS, in zoology, a name by which Bellonius and ſome other authors have called a ſmall ſea fiſh, more commonly known by the name of the *dracunculus*.

GLIS. In the common acceptation of the word, this only ſignifies the dormouſe. But Linnæus has uſed it in a larger ſenſe; and, in his ſyſtem of zoology, makes it the claſſical name of a ſet of animals. The characters of the creatures of this claſs are, that they have only two fore teeth in each jaw, they have no dentes canini or dog teeth, and have all eight paps placed on their belly. The animals of this claſs are the ſeveral ſpecies of the porcupine, the hare, the ſquirrel, the beaver, and the mouſe and rat. *Linnæi* Syſtem. Natur. p. 38.

GLIS is commonly uſed as the name of an animal of the mouſe kind; but ſo differently deſcribed by different authors, and ſo imperfectly and erroneouſly by many, that it is a queſtion whether we can properly call any known animal by the name.

Geſner deſcribing it by hearſay, ſays, that it is larger than a ſquirrel, and either black, or brown on the back, and white on the belly, its tail ſhort, and its general figure ſomewhat approaching to that of the bear. *Ray*'s Syn. Quad. p. 230.

GLIS *Volans*, the *flying dormouſe*, in zoology, the name of an animal, properly of the veſpertilio or bat kind; it is diſtinguiſhed, by Linnæus, by the name of *veſpertilio caudatus naſo foliato obverſe cordato*. *Seba*, Vol. I. p. 9. *Linnæi* Syſt. Nat. p. 37.

GLISCHROCOLOUS, an epithet uſed by ſome writers, to expreſs excrements which are at once viſcid, and very highly ſated with gall.

GLISCHROMICTHES, in natural hiſtory, the name of a genus of compound earths. The word is derived from the Greek γλισχρὸς tough, and μικθὶς mixed. The bodies of this genus are loams compoſed of ſand and a more viſcid clay, and are of a tough and firm texture.

The earths of this genus are uſed in making bricks, and on ſome other occaſions, and are of ſeveral diſtinct ſpecies. 1. A greyiſh white one, dug in many counties of England, and making a very firm brick. 2. A pale yellow one, dug plentifully in the neighbourhood of London, and making a fine red brick. 3. A yellowiſh brown one, frequent at ſmall depths in all parts of the kingdom. 4. A rediſh brown one, dug in Staffordſhire, and ſome other counties, and ſhewing itſelf in ſome places on the ſurface in the roads. *Hill*'s Hiſt. of Foſſ. p. 429.

GLISOMARGA, a word uſed by ſome authors as a name for chalk. See CHALK.

GLISSA, in zoology, the name of a ſea fiſh of the tunny kind, but of a perfectly ſmooth ſkin, and wholly free from ſcales. It uſually grows to the length of two cubits, and the thickneſs of a man's body. It is of a very round body, and has very rough jaws, but no diſtinct teeth; its tail is forked, but not ſo arched or lunated as that of the tunny; it lives in deep water, and is a fiſh of very delicate taſte. *Geſner* de Piſc. p. 1158.

GLOBE (*Cycl.*)—Our common *globes*, though inſtructive inſtruments for explaining the firſt rudiments of geography, and the ſpherical doctrine of aſtronomy, yet labour under ſeveral defects, as they do not ſhew how the phænomena ariſe from the motion of the earth, which is one of the chief points beginners ſhould have in view. Mr. Joſeph Harris has therefore contrived to remedy theſe defects, in the Philoſophical Tranſactions, N° 456. Sect. 7.

He places two horary circles under the meridian, one at each pole, ſo that the *globe* ſerves equally well for ſolving of queſtions in ſouth, as in north latitudes. He alſo divides the braſs meridian, at one of the poles, into months and days according to the ſun's declination, reckoning from the pole. If then the day of the month be brought to the horizon, and the *globe* rectified according to the time of the day, the horizon will repreſent the circle ſeparating light and darkneſs; and the upper half of the *globe*, the illuminated hemiſphere, the ſun being in the zenith. Mr. Harris alſo gives an account of a cheap machine for ſhewing the annual motion of the earth in its orbit, without the great expence of an orrery. See Phil. Tranſ. N° 456. Sect. 7. p. 323.

GLOBULARIA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the floſculous kind, and is compoſed of a number of ſmall floſcules of an unilabiated figure, divided into many ſegments, and each contained in its proper and peculiar cup: from the bottom of each ariſes a piſtil, which is fixed in the manner of a nail to the hinder part of the floſcule; and this, finally, becomes a ſeed, which remains till ripe in a capſule made of what was before the cup of the flower; and all theſe capſules are affixed to a placenta, which ſtands in the center of the general flower.

The ſpecies of *globularia* enumerated by Mr. Tournefort are theſe. 1. The common daiſy leaved *globularia*, called by many the blue daiſy, with foliaceous ſtalks. 2. The long leaved pyrenæan *globularia* with naked ſtalks. 3. The low, procumbent, creeping mountain *globularia*. 4. The ſhrubby *globularia*, with tridentated myrtle-like leaves. 5. The ſhrubby African *globularia*, with woolly leaves like the thymelæa. 6. The prickly *globularia*; and 7. The ſmalleſt origanum leaved alpine *globularia*. *Tourn.* Inſt. p. 466.

GLOKEN *ſpeiſſe*, in mineralogy, a term uſed by the Germans to expreſs a ſort of impure regulus of biſmuth, obtained by accident, ſometimes in the making of ſmalt. The biſmuth ores are often ſo intimately mixed with the cobalt, that they cannot be ſeparated from them. In this caſe, the arſenic being raiſed in flowers, there remains at the bottom, inſtead of the fixed vitrifiable earth of the cobalt, a ſort of impure regulus of a reddiſh colour. This is biſmuth, with an admixture of the earth of cobalt, and other extraneous matter. They ſometimes call this whole matter by the common name of *ſpeiſſe*, but more uſually they ſeparate it into two parts; and call the under part, which is moſt ſolid, *gloken ſpeiſſe*, and the upper part they diſtinguiſh by the name of *æs caldarium*.

GLOMERELLS, in our old writers, commiſſaries appointed to determine differences between ſcholars of a ſchool or univerſity, and the townſmen of the place. In the edict of the biſhop of Ely, anno 1276, there is mention of the maſter of the *glomerells*.

GLOSSOCATOCHOS, a word uſed by ſome writers to expreſs a chirurgical inſtrument, uſed to depreſs the tongue for examining the mouth. See GLOSSOSPATHA.

GLOSSOGRAPHE, in botany, a name uſed by ſome authors for the fumaria, or common fumitory. *Ger. Emac.* Ind. 2.

GLOSSOIDES, in natural hiſtory, a name given by ſome authors to a ſpecies of ſtone, reſembling the figure of the human tongue. This is a mere accidental configuration of a common flint, or pebble, perfectly indeterminate in ſize and colour, and owing its form to no animal mould, as the ſtones found in ſhells uſually do, but is a mere *luſus naturæ* in the concretion of the ſtone.

GLOSSOPETRÆ. See the article LAMIODONTES.

GLOSSOSPATHA, a chirurgical inſtrument, called by ſome *ſpeculum linguæ*, and uſed to depreſs the tongue, in order to look into the fauces.

There are many inflammatory diſorders of the mouth, fauces, and palate, which require a depreſſion of the tongue, while they are inſpected, and treated with proper remedies. The handle of a ſilver ſpoon is made to ſupply the place of this inſtrument in moſt caſes, and anſwers the purpoſe very well. Whichever is uſed, care ſhould be taken to depreſs very gently, to avoid giving the patient pain, as alſo to avoid irritating the mouth and inflamed parts.

When injections are to be made into the mouth, this inſtrument or the ſpoon ſhould alſo be applied, and the ſyringe ſhould be conveyed into the mouth over it. *Heiſter* Surgery, p. 464.

GLOTTIS, in zoology, a name given by many authors to a bird of the long leg'd kind, approaching to the nature of our redſhank, but larger and longer legg'd, and generally known by the name *limoſa*. See LIMOSA.

GLOVE. The delivery of a *glove* was in frequent uſe formerly, as a ſymbol of inveſtiture. See *Du Cange* Gloſſ. Lat.

Gloves was alſo uſed to ſignify the ſteward's or bailiff's fee, or part of the price of the inveſtiture, or purchaſe money of the land. *Si aliquam territorii partem venundari contigerit, domini venditiones habebunt; ſcilicet, tot denarios quot venditor inde habuerit ſolidos. Major vero terræ illius pro* wantis *accipiet duos denarios.* Where *wanti*, ſignifies *gloves*, or in French, *gants*. *Du Cange* Gloſſ. Lat.

Hence the common cuſtom in many bargains of giving ſervants money for a pair of gloves.

GLOUTIUS, in anatomy, a name given by Riolan, and ſome others, to the muſcles of the thigh, generally called *glutæi*, or ſingly *glutæus major*, &c.

GLOW-*worm*, *cantharis*, in zoology, a claſs of inſects, the antennæ of which are ſetaceous, the exterior wings flexile, the thorax ſomewhat flatted, and the ſides of the abdomen plicated and papilloſe.

The ſpecies of *cantharis* enumerated by Dr. Hill are theſe. 1. The *cantharis*, the female of which has no wings, and is the common *glow-worm*. 2. The *cantharis*, with blackiſh exterior wings, and with a red thorax, with a black ſpot. 3. The red winged *cantharis*, with a red thorax and black ſpot. 4. The *cantharis*, whoſe exterior wings are black, with two red tranſverſe lines. 5. The large, yellowiſh, or orange-coloured *cantharis*, without ſpots. 6. The black-winged *cantharis*, with a red thorax, and black ſpot on it. 7. The red-wing'd *cantharis*, with a black thorax, and red ſpot on it. 8. The braſſy-green *cantharis*, with the exterior wings reddiſh toward their edges. 9. The braſſy-green *cantharis*, with the exterior wings red at the tips. 10. The black *cantharis*, with the exterior wings yellow at the extremities. 11. The brown *cantharis*, with the exterior wings yellowiſh at the extremity, and the breaſt reddiſh. 12. The black *cantharis*, with livid wings. *Hill*, Hiſt. of Animals, p. 53. ſeq.

The common *glow-worm* is frequently met with under our hedges, and, if carefully taken up, may be kept alive many days on freſh turfs of graſs; all which time it will continue to ſhine in the dark.

The light of this little inſect is ſo ſtrong, that it will ſhew itſelf through ſeveral ſubſtances, in which the creature may be put up; a thin pill box eaſily ſhews it through, and even though lined with paper, the light is not impeded in its paſſage by both. The creature is ſluggiſh, and appears dead in the day-time, and its light is not diſtinguiſhable, even if carried into a darkened room, unleſs the creature be turned upon its back, and diſturbed, ſo as to be put in motion, and then it is but very faint: after ſun-ſet the light begins to return, and with it the life and motion of the animal. The motion and light of this creature ſeem, in ſome meaſure, to depend upon one another: it never ſhines but when its body is in ſome ſort of motion; and when it ſhines moſt the body is extended to one third more than its length in the day-time. In the time of brighteſt ſhining, it will ſometimes of a ſudden turn its body about, and the light will not be larger than the head of a pin; and, on being touched, ſhe will then immediately extend herſelf, and the light will become as large and as bright as ever. Phil. Tranſ. N° 71.

Flying GLOW-*worm*, *Cicindela volans*. In the warmer months of the year, this creature is ſometimes caught in our houſes flying to the flame of a candle, and when examined in the dark it is found luminous at theſe times, though perhaps leſs, or not at all ſo, at others; which may be a reaſon of its not being known though caught in the fields: and to this it may be owing, that many who have deſcribed it have thought it not a native of England. See Tab. of microſcopical Objects, Claſs 1. Without wings it is frequently enough found in form of the common *glow-worm*, and then always ſhines. Aldrovand has very well deſcribed the *cicindela volans*; and ſays, that it lays eggs which hatch into ſmall worms, and that theſe after a time become flies, by the ſame ſort of change which happens to caterpillars and other reptiles which become butterflies, and other ſpecies of winged inſects. Mouffett, and Thomas Bartholine, both deſcribe the animal much as Aldrovand has done, but they allow only the male to have wings; but Julius Scaliger contradicts this, and ſays, that he has caught them both winged in the act of generation; this is a plain proof that both ſexes are winged; yet it has not happened that both have been acknowledged to be ſo even by thoſe who have quoted this paſſage. And Mr. Waller, who gives an account of them in the Philoſophical Tranſactions, obſerved them in the ſame manner in the act of copulation both winged, and with no other difference between them, but that the female was the larger of the two, which is the caſe in regard to many inſects. *Julius Scalig.* Exerc. 191. Phil. Tranſ. N°. 167. p. 841.

The male and female in this winged ſtate, both ſhine in hot weather, and their light is ſo vivid as to be eaſily ſeen even while there is a candle in the room; the vibrations of it are irregular, and its colour greeniſh. The luminous parts are two ſmall ſpecks under the tail at the end, and the light continues in theſe ſome time after the tail is cut off, but then gradually goes out.

The parts of inſects continue alive in ſome degree for a conſiderable time after they are cut off, and probably the light in the tail of this animal continues juſt as long as that ſort of life remains in it. *Mouffett*, Cap. 15.

The uſe of this light ſeems to be to direct the animal in its courſe, and in the taking of its prey, and to this purpoſe it is admirably placed. The tail is eaſily bent under the belly, and then throws the light full upon any object about, or under the head of the animal, and the eyes are placed not on the upper part, but on the under ſide of the head; ſo that they have all the advantages of it, while the light in this part is not offenſive to the eyes, as it naturally would have been, if carried before the head. The creature can

upon occaſion cover this light ſo as not to be known, or purſued by it, by its enemies. *Thomas Barthol.* de Luce Anim. Lib. 2. Cap. 12.

This inſect is of the beetle kind, of a brown and duſky colour. It has hard caſe or ſhell wings as the other beetles have, and when theſe are expanded, there appear a pair of very large membranous ones; its head is covered with a ſort of ſhield or broad brim'd hat; under this hat are placed the eyes, which are black and large, and are moveable; ſo that the creature can upon occaſion thruſt them forward to the ſides of the hat, or covering of the head; it has two hairy antennæ, and its legs are like thoſe of the common fly, hard, ſhelly, and hairy. Its eyes afford an elegant object for the microſcope, being compoſed of an infinite number of lenſes, as thoſe of the libellæ and other inſects. *Aldrovand.* de Inſect. Lib. 1. Cap. 8.

GLUE *(Cycl.)*—A ſtrong and fine *glue* may be prepared with iſinglaſs and ſpirit of wine, thus; ſteep the iſinglaſs for twenty four hours in ſpirit of wine or common brandy. When the menſtruum has opened and mollified the iſinglaſs, they muſt be gently boiled together, and kept ſtirring till they appear well mixed, and till a drop thereof ſuffered to cool, preſently turns to a ſtrong jelly. Then ſtrain it while hot through a clean linnen cloth, into a veſſel to be kept cloſe ſtopped. A gentle heat ſuffices to diſſolve this *glue* into a tranſparent and almoſt colourleſs fluid, but very ſtrong; ſo that pieces of wood *glued* together with it, will ſeparate elſewhere, than in the parts joined. *Boyle*'s works, Abridg. Vol. 1. p. 130.

GLUME, *gluma*, among botaniſts, a ſpecies of cup conſiſting of two or three membranous valves, which are often pellucid at their edges. This kind of cup belongs to the graſſes. See the article GRASS.

GLUTTA, a name given by ſome authors to the gutta gamba, or gamboge. See GAMBOGE.

GLYCOPICROS, in botany, a name by which ſome authors have called the ſolanum lignoſum, or dulcamara. *J. Bauhin.* Vol. 2. p. 109.

GLYCYCALAMUS, a word uſed ſingly as the name of a vegetable ſubſtance, by ſome of the Greek writers; but by the moſt antient, it is only uſed as an epithet for a peculiar kind of lotus. This *lotus glycycalamus*, is a name given by Myrepſus and others to the caſſia fiſtula, but by other of the antients, it ſeems to have been made the name of the ſugar cane. See LOTUS.

GLYCYNE, in botany, the name given by Linnæus to a genus of plants, ſome of the ſpecies of which are deſcribed by Boerhaave under the name of *apios*, the characters are theſe. The cup is a one leaved compreſſed perianthium, divided at the extremity into two lips, the upper of which is emarginated and obtuſe, the under one is long, obtuſe, and divided into three ſegments, the intermediate one of which is longer than the others. The corolla is of the papilionaceous kind. The vexillum is obtuſely cordated, the ſides are bent back, and the back gibbous, the end ſtrait and marginated. The alæ are oblong, oval toward the end, ſmall and bent downwards. The carina is ſlender, falcated, and bent upwards, and is broadeſt toward the apex, where it riſes up to the vexillum. The filaments are diadelphous, and the apices ſimple. The germen of the piſtil is oblong. The ſtyle is cylindric, and twiſted into a ſpiral form, and the ſtigma is obtuſe. The fruit is an oblong bilocular pod. The ſeeds are kidney ſhaped. *Linnæi* Gen. Pl. 370. *Boerhaave* Ind. ult. 146.

GLYCYRRHIZA, *liquorice*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the papilionaceous kind, and from its cup there ariſes a piſtil, which finally becomes a ſhort pod, which uſually contains a number of kidney ſhaped ſeeds. To this it may be added, that the leaves are placed oppoſite to one another, many of them on a long middle rib which has a ſingle one to terminate it at the end.

The ſpecies of *glycyrrhiza* mentioned by Mr. Tournefort are two. 1. The *glycyrrhiza* or liquorice with echinated heads, and 2. the german or podded *liquorice*. See LIQUORICE.

GNAPHALIUM, *cudweed*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the floſculous kind, being compoſed of many ſmall floſcules, ſtanding on the embryo ſeeds, each divided into ſeveral ſegments at the end, and among theſe are intermixed many imbricated leaves, all comprehended in a general cup of a foliacious ſtructure and hemiſpheric figure. The embryos become hard ſeeds covered with a ſort of hood.

There is only one known ſpecies of this genus, which is the plant commonly called *Gnaphalium maritimum*, the ſea *cudweed*. *Tourn.* Inſt. p. 461.

The common *cudweed* is deſiccative and aſtringent, and is of great efficacy in hæmorrhages of all kinds. In dyſenteries, and in floodings of the menſes, it has been known to do great cures. Some have recommended the diſtilled water of it in cancers, but this ſeems to have no very great foundation. A decoction of it in ſmall beer is a common medicine among country people for quinſies, and is ſaid ſometimes to have done remarkable cures in them.

GNAPHALOIDES, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the floſculous kind, being compoſed of a number of ſmall floſcules which are barren. The embryo ſeeds conſtitute the cup of the flower, which afterwards becomes a creſted fruit containing uſually an oblong ſeed.

There is only one known ſpecies of this plant, which is called by ſome, the ſmall procumbent *cudweed* from Portugal with echinated ſeed. *Tourn.* Inſt. p. 439.

GNAPHEUS, in ichthyology, a name given by Athenæus and other of the Greek writers to the tench. See the articles TINCA and CYPRINUS.

GNATS. There is no ſpecies of inſect that we have ſo much reaſon to diſlike in regard to the injury it does us as the *gnat*. Others indeed give us more pain with their ſtings, but 'tis but by accident that we are ſtruck by them; the *gnats* thirſt for our blood, and follow us about in whole companies for it. There are many marſhy places where the legs and arms are all the ſummer ſwelled to an enormous ſize by the repeated bitings of theſe inſects, and in many other countries they are yet greatly more troubleſome than with us. *Reaumur* Hiſt. Inſ. Vol. 4. p. 574.

But as troubleſome enemies as theſe little creatures are to us, there is that about them which is extremely worthy our admiration, nor can we indeed fail greatly to admire even the very inſtrument of the miſchief they do. They have beſide this many very obſervable particulars in the courſe of their lives, and there is one moment of that in which forgetting the trouble they are likely to give us we cannot but be ſolicitous for their ſafety.

All the naturaliſts of late years have applied the microſcope to the examination of the parts of this little animal, and Swammerdam, Hook, Bonanni, Lewenhoek, *&c.* have given very good accounts, and very valuable drawings of the creature.

The external figure of the *gnat* is well known, yet not enough to prevent ſome miſtakes about it, as it is frequently confounded with the tipula, or *father long legs* as we vulgarly call it in England. There are many marks indeed which they have in common, they both have ſuch long legs, that they look as if mounted upon ſtilts. Both have long ſlender bodies, and both prominent corcelets, which make them look hump backed; but when either of theſe inſects is taken into the hand it is very eaſily known, the *gnat* having a very long trunk, and the tipula no trunk at all.

There is a great number of very ſmall ſpecies of *gnats*, and though ſome are conſiderably large, yet none even of theſe approaches to the ſize of the tipula. The larger tipulæ are therefore eaſily diſtinguiſhed from the *gnats*, but Swammerdam, Goedart, Liſter, and others have very often given us the ſmaller tipulæ among the ſpecies of *gnats*.

There is a prodigious number of ſpecies of the *gnat* kind taking in the ſmaller ones, but of thoſe of a ſize to be remarked with eaſe, and without the help of glaſſes, there are three principal kinds; the one has its body variegated with white and black; this is the larger kind, and its corcelet is ſtreaked with black or deep brown, and white lines or greyiſh ones; theſe have brown eyes. Another is ſmaller than this ſpecies, and has a plain brown body, the colour of the corcelet, and that of the eyes is the ſame as in the larger or firſt ſpecies. The third kind is the ſmalleſt of the three and the moſt common, has its corcelet reddiſh, or of a faded reddiſh yellow, and the body whitiſh, and on the under part of the belly, every ring has one ſingle brown ſpot; the reſt is grey. The eyes of this ſpecies are of a very pleaſant green.

All the *gnats* have a long cylindric body compoſed of eight rings; their corcelet is ſhort, but large in proportion to the ſize of the fly, and to this are fixed the leg, the wings, and the balancers; four ſtigmata are alſo found here as is the caſe in other flies. The two firſt of theſe are placed near the head, and have been miſtaken for ears.

When the *gnat* is in a ſtate of reſt, it holds one wing ſomewhat croſſed over the other, in ſuch a manner, as that they cover the body. It has a multitude of little oblong ſcales on its wings, and not only there, but on its corcelet and body; and they are ſo thick laid on the body, that one cannot touch it without rubbing them off, and leaving the part naked. Beſide theſe, they have alſo very long and extremely fine hairs, and ſome of the ſpecies have ranges of theſe on each ſide the body appearing like fringes. The antennæ of the *gnats* are extremely worth obſervation, and differ much from one another. Some of them are elegantly feathered, theſe belong to the males of certain ſpecies, for the antennæ of the females are not ſo beautiful.

Theſe feathered antennæ of the male *gnats*, examined by the microſcope, ſhew at every junction of two of the rings, a ſmall cluſter of hairs in form of a pencil on each ſide; the hairs of which theſe are compoſed ſeparate, and ſpread toward their extremities; theſe cluſters of them grow ſhorter as they approach the upper part of the antennæ, and toward the extremity of each, there is a vacant ſpace where they are wholly wanting; this part however is covered with ſingle ſhort hairs.

The antennæ both of the males and females of ſome ſpecies have alſo their ſtalks covered with ſingle hairs and at certain diſtances, or at every articulation theſe have four hairs longer than the reſt, and eaſily diſtinguiſhable by the naked eye.

The *gnats* have no ſmall or gloſſy eyes as moſt of the other flies have, but in recompence for the want of theſe, they have reticular eyes ſo large as to ſurround, and in a manner cover the whole head. Thoſe of many ſpecies are extremely beautiful, of a fine changeable green in ſome lights, and of a bright red in others.

Many of the ſpecies of *gnats* have before their heads two ſmall oblong cylindric bodies, ſomething reſembling the antennæ of the ſhort bodied flies; theſe we may not improperly call the beards of the *gnat*, for immediately below them is placed the trunk, and they ſeem to have ſome analogy with the beards of the butterfly claſs, which are placed in the ſame manner. *Reaumur*, ibid. and p. ſeq. For the trunk and wings of the *gnat*, ſee the articles TRUNK and WINGS.

GNAT-*worm*, in natural hiſtory, a ſmall water inſect, produced of the egg of a *gnat*, and which is after its ſeveral changes transformed into a *gnat* again.

Theſe worms do not frequent rivers, but ditches, ponds, and other ſtanding waters afford them in vaſt abundance, from the middle of May, till toward the beginning of winter. This is the reaſon why watery and marſhy places are found moſt to abound with *gnats*, and why the wet ſummers are found to produce the greateſt numbers of them; becauſe in dry ſeaſons, the ponds and ditches, where they are to paſs their worm ſtate, are dried up, and the worms killed. Theſe are a creature however, that one need not go far to ſeek, ſince one need only expoſe a veſſel of water in a garden, or any open place in the ſummer months, and ſooner or later it will not fail to afford plenty of theſe worms.

Before theſe worms are arrived at their full growth, though they are then but ſmall, they are eaſily found, becauſe they are under a neceſſity of coming frequently to the top of the water, by having occaſion for frequent reſpiration; and to do this, they are obliged to keep the end of a ſmall pipe they are furniſhed with, from the laſt ring of their body, above water. The end of this pipe is hollow and indented, and forms a ſort of funnel on the ſurface of the water: it is of the length of about three rings of the body, and is ſomewhat thicker at its inſertion than at its extremity.

As there is a vaſt number of ſpecies of *gnats*, there is no leſs of the worms from whence they are produced, and to this is in a great meaſure owing the variety in the figures given of the worms by the authors who have treated of them; which may alſo be not a little added to by the particular views in which thoſe draughts have been taken. Notwithſtanding all the variations of theſe figures, the general form of the animal is however the ſame in all, and the ſpecies cannot but be known from any of them.

The worm is of the third claſs of thoſe which are transformed into two winged flies; that is, it has no legs, and has a head of a conſtant and invariable figure, and has no teeth or moveable jaws formed to play againſt one another. Their body is ſomewhat long, and the head is detached from the firſt ring, to which it is faſtened by a ſort of neck. This firſt ring is the longeſt and largeſt of all, and ſeems a ſort of corcelet to the worm. The creature has eight rings beſide this, theſe grow ſmaller as they approach the hinder extremity.

The tube of reſpiration which is ſent off from the laſt ring, uſually makes an angle with it, and is ſeldom ſeen in a right line with the reſt of the body; but beſide this there is ſent off from the ſame ring, another pipe or tube as wide as this, though much ſhorter; this is affixed to the lower part of the laſt ring near the belly, and is placed almoſt perpendicularly to the length of the body; this is the paſſage for the excrements of the worm, which is often ſeen to void green ones through it.

This whole tube is ſurrounded with long hairs, and from its end, from within the hollowed part, there are propagated four very tranſparent, thin, and ſcaly oval bodies, which ſeem intended as ſo many oars; they are placed by pairs, one pair going out from the right hand ſide, and the other from the left, and the creature has a power of drawing them toward, or ſeparating them from one another. Every ring of the body has on each ſide about the middle of its length a pencil of fine hairs, but the firſt ring which may be compared to the corcelet of flies, is furniſhed with three of theſe pencils.

While the worm is young, the body is whitiſh or greeniſh, but when it is at its full growth, and draws near the time of its changes, it becomes greyiſh. The great tranſparence of the body of this worm, gives a fine view of what paſſes within it; it is at any time eaſy to ſee into the motion of the inteſtines, by which the food is puſhed on towards the anus. The two principal tracheæ are alſo ſeen very diſtinctly in this creature, they are two white tubes placed in a parallel direction one to another, and run from the firſt ring to the tube of reſpiration.

The head is of a browner hue than the reſt of the animal, and is ſomewhat flatted; on each ſide one may eaſily diſtinguiſh a brown ſpot which are the eyes. There are no teeth diſcoverable in the mouth, but all about it there are placed a number of ſmall beards; two of theſe are much larger than the reſt, and are ſomething of the figure of two creſcents; theſe are fringed within, and the creature has a power of moving them very ſwiftly, and by that means makes a current of water about its mouth, which brings with it the proper food for the animal.

The head of this creature is adorned alſo with a ſort of antennæ; theſe are bent into a ſort of circle, and the concave ſide of one is turned toward the concave ſide of the other. Theſe are antennæ of a very different ſtructure from thoſe of the winged inſects, for they have no articulation except that of their baſe. Their concave ſide is ſmooth and poliſhed, and all along the convex ſide, there are placed at certain diſtances ſmall hairs, which look like ſo many weak thorns or prickles. And at ſome diſtance from the end of each antenna, is a ſmall cluſter of long and fine hairs.

The *great worm*, ſeveral times changes its ſkin in the courſe of its life. After three changes of this kind, which uſually happen in the ſpace of three weeks, or thereabout, it undergoes a fourth, where the old ſkin is as eaſily thrown off as in the reſt, but the animal now appears in a new form, that of a nymph: it is now ſhorter and rounder than before, and the body is ſo bent that the tail is applied to the under part of the head; this, however, is only its form in a voluntary ſtate of reſt, for it can yet move, and when it pleaſes extends its tail, and ſwims about as ſwiftly as when in its other ſtate.

All the parts of the future *gnat* may be ſeen in this nymph; the ſkin of it is extremely thin and tranſparent, yet ſufficiently tough and firm for the uſe it is intended for. It is uncertain how long exactly the animal lives in this nymph ſtate; but after the time is accompliſhed, its change into the *gnat* is very quick, and is attended with great danger to the animal, ſince multitudes are drown'd, and periſh in the act of getting out. *Reaumur*, Hiſt. Inſect. Vol. IV.

GO, in ichthyography, a name given by ſome to the common rock fiſh, or ſea gudgeon. *Willoughby*'s Hiſt. Piſc. p. 206. See the article GOGET.

GOACONEZ, in botany, the name of an American tree which affords a white balſam, but little known in Europe; it is called by ſome authors *balſamum album*, and by others *balſamum purius*.

GOAN, the name of a Perſian tree, of the aſhes of which they make a ſort of antiſpodon, or medicinal powder for diſeaſes of the eyes. *James*, Med. Dict. in voc.

GOARING, on ſhip-board. The ſeamen ſay a ſail is cut *goaring*, when it is cut ſloping by degrees, and is broader at the clew than at the earing, as all top-ſails and top-gallant ſails are.

GOAT, *capra*, in zoology, a genus of animals; the characters of which, according to Mr. Ray, are theſe. That it is covered with hairs, not with wool; that its horns are leſs crooked than thoſe of the ſheep, and that it has a beard hanging down from its chin, and is of a ſtrong ſmell.

It is very ſingular, that this genus of animals are all able to run and climb about the rugged parts of mountains without falling, though their feet ſeem by no means contrived by nature for any ſuch purpoſes. There are eleven known ſpecies of this animal. 1. The common kind ſufficiently known. 2. The *capra mambrina* or Syrian *goat*. This is remarkable for the length of its ears, which reach almoſt to the ground; the horns are two or three hand's breadth long, and are very little inflected backwards; it is of the ſhape of the common *goat*, but larger; its colour is that of the fox; its horns are black, and its ears very like thoſe of the common hunting hound; it has two appendages hanging from under its throat, and is a creature eaſily tamed, and feeds on hay and other vegetables. 3. The *capra Africana*, or African *goat*, deſcribed in the German ephemerides, which is of a duſky grey colour, and has a bundle of erect hairs growing on the middle of its head; and on each ſide, between the eyes and noſe, it has two cavities, which contain a thick, fat, yellowiſh liquor, which afterwards congeals into a black ſubſtance, of a mixed ſmell, between thoſe of muſk and caſtor. As ſoon as the matter contained in theſe cavities is taken away there returns more in its place, which is in like manner dried and hardened by the air. Theſe cavities have no communication with the eyes, and therefore the matter deſcribed here is nothing of the nature of the *lachryma cervi*, mentioned in the catalogues of the materia medica: this creature is figured without horns, in which it agrees with the muſk animal. The other ſpecies are, 4. The *ibex*, 5. The *rupi capra*, 6, 7, 8. The three ſpecies of *gazella*. 9. The *buſelaphus*, and 10, 11. The two *tragelaphi*, each of which ſee under its proper head. *Ray*'s Syn. Quad. 180. Ephem. Germ. ann. 14. obſ. 57.

Goats may be of great advantage to the farmers in ſome parts of the kingdom, as they will live in rocky barren countries, where nothing elſe can get a ſupport for life. They will climb

climb the ſteepeſt rocks, and there browſe upon briars, heath, and ſhrubs, of various kinds, which other creatures will not taſte of. They will feed on graſs in paſtures, but as they love browſing on trees much better, great care muſt be taken to keep them from valuable plantations. *Mortimer*'s Huſbandry, p. 246.

The greateſt advantage of theſe creatures is their milk, which they yield in large quantities, and which is accounted the beſt milk of all animals. They mix this and cow's milk together in many parts of the kingdom, and a very valuable kind of cheeſe is made of it. Beſide this, the kids or young *goats* are very fine food, and the beſt kinds bring forth theſe two or three at a time, and that twice a year. See MILK.

Goat's hair alſo is of value, it may be ſheared as the wool from ſheep, and is excellent for making ropes that are to be uſed in the water, as they will laſt a great while longer than thoſe made the common way. A ſort of ſtuff is alſo made of it in ſome places. The beſt kind of *goats* for keeping to advantage ſhould be choſen in this manner: the male ſhould have a large body, his hair ſhould be long, and his legs ſtrait and ſtiff; the neck ſhould be plain and ſhort, the head ſmall and ſlender, the horns large, the eyes prominent, and the beard long. The female ſhould have a large udder, with large teats and no horns, or very ſmall ones. They ſhould be kept in flocks, that they may not ſtraggle, and they ſhould have good ſhelter both in ſummer and in winter, the heat and cold being both prejudicial to them. They ſhould be coupled in December. They ſhould have no litter in winter, but only a paved floor kept clean. The kids are to be brought up for the table in the ſame manner as our lambs are. They are recommended to lie among horſes, their ſmell, as is ſuppoſed, preventing many diſtempers in thoſe cattle. Ibid. p. 247.

GOAT *of Greenland*, *Caprea Greenlandica*, in zoology, the name of an animal of the northern parts of the world. We are not perfectly acquainted with the ſhape or figure of the creature, but its horns are preſerved in the muſæum of the Royal Society, and in ſome other collections, and are uſually an ell long, very much branched, and the branches not flat but rounded, covered all over with a velvety down, compoſed of ſhort filaments ſtanding erect every way, and about a quarter of a finger's breadth long.

GOAT-*fiſh*, *Capriſcus*, in ichthyography, the name of a fiſh called alſo by ſome *caper*. Its head is very much flatted both ways, its eyes are placed very high in the head, its mouth is ſmall, but well furniſhed with teeth, each jaw having eight of them, and all ſtrong, broad, and not ſerrated, but much reſembling the human ones. The gills are four on a ſide, covered only with a membrane, and opening by a ſmall ſlit as in the mola. In the middle of its back it has three very ſtrong and large prickles, the firſt of which is three times as large as any of the others, and all are connected by a membrane. Behind theſe is a furrow in the back, into which at pleaſure the animal can depreſs theſe. Behind theſe there begins a fin, which runs down the back to the tail. It has another thorn running along under the ſkin of the lower part of its body, and at length appearing externally in a very ſtrong and ſharp prickle; and behind that ſeveral other ſmaller and more feeble ones, which are ſerrated at their edges. From the anus to the tail there runs another fin, and there are two ſmaller ones at the gills. See Tab. of Fiſhes, N° 22.

The whole fiſh is covered with a ſcaly ſkin, but the ſcales have more the appearance of thoſe of a ſerpent, than thoſe of a fiſh; for they are placed in cancellated lines interſecting one another, and are ſo well fixed, that they with difficulty come off; and wood or ivory may be poliſhed with the ſkin, as with the common fiſh ſkin uſed by the turners, &c. It is of a blueiſh green colour, ſpotted with a fine blue, and the back and belly fins are black, with ſome blue and red ſpots. Its whole figure is very broad and flat, as well as ſhort, ſo that it approaches to a round form. It ſeldom exceeds two pound in weight. It is caught in the Mediterranean ſea, but not commonly. The ſkin of it is frequently found in the cabinets of the curious. *Salvian.* p. 207.

GOAT-*ſucker*, in zoology, a name by which the *caprimulgus* is called in ſome parts of England, but its more uſual name with us is the *churn owl*. It is a very beautiful bird, ſeeming rather to approach to the cuckow than the owl kind, and has had its common Latin name and this Engliſh one from an opinion, there ſeems to be no foundation for, of its ſucking the *goat*'s dugs in the night time. *Ray*'s Ornitholog. p. 70. See the article CAPRIMULGUS.

GOATS *Beard*, in botany. See TRAGOPOGON.

GOATS *Thorn*, in botany. See TRAGACANTH.

GOBEMOUCH, the *fly-catcher lizard*, a ſpecies of American lizard that is always employed in catching of flies. It is the ſmalleſt of all the lizard kind, and is very beautiful, its ſkin often appearing as if covered with leaf gold, or leaf ſilver, and in ſome others of a green, or red and gold, wonderfully bright and beautiful. They are not at all ſhy or fearful of men, but as they do no hurt, ſo they ſeem to dread none; they enter chambers and cloſets, and do no ſort of damage, but deſtroy the flies and other troubleſome vermin they find there. Their whole lives ſeem ſpent in the chace of theſe inſects, and it is a very pleaſing thing to obſerve the various ways they have of catching them. They are a very cleanly creature, and may be ſuffered to run over the table at meal time; where if they ſee a fly, they will purſue it over the very hands or cloaths of people, or over the diſhes, without doing the leaſt hurt.

Notwithſtanding their great beauty while alive, they are only of a duſky grey when dead, all their other colours immediately vaniſhing, *Rochefort*, Hiſt. Antill.

GOBIO *capitatus*, a name by which many writers in zoology have called the cottus, a ſmall fiſh called in Engliſh the bull head, or miller's thumb. *Aldrovand*, de Piſc. Lib. 5. c. 27. See COTTUS.

GOBIONARIA, in ichthyology, a name given by Gaza and others to the little fiſh called cobitis, and aphya cobitis by the antient Greeks, and by many of the modern authors; and by ſome marſio, or ſimply cobitis. See the article APHYA.

GOBIUS, in ichthyology, the name of a genus of fiſhes of the acanthopterygious, or prickly finned kind, the characters of which are theſe. The branchioſtege membrane contains on each ſide five very diſtinct bones. Theſe are very irregular in their ſize, the firſt and fourth being much broader than the others. The belly fins grow together ſo as to form one ſingle fin, of the ſhape of a funnel. Theſe, and the pectoral fins, are placed at the ſame diſtance from the head. There are two fins on the back, the anterior of which conſiſts of ſomewhat rigid bones. The ſcales are rough, the body is oblong, the head compreſſed, and the eyes covered with the common ſkin of the head. It is eaſy to ſee from theſe characters, that the common river gudgeon is no *gobius*, as thus diſtinguiſhed. The ſpecies properly belonging to this genus are theſe. 1. The blackiſh variegated *gobius* with fourteen ribs in the ſecond back fin. This is the *gobius niger* of authors. The *go*, and *goget* of the Venetians, called by us the rock fiſh, or ſea gudgeon. 2. The *gobius* with a yellow tranſverſe line in the top of the anterior back fin. This is the *gobius ſecundus* and *paganellus* of authors. 3. The inch *gobius* with ſeventeen bones in the ſecond back fin. This is the *aphua cobitis* of authors. 4. The *gobius* with the blue belly fin, and with the rays of the anterior back fin riſing above the membrane. This is the white *gobius* of authors, and the *jozo* of the Roman markets. *Artedi*, Gen. Piſc. p. 23.

According to Willughby, there are only three kinds of this fiſh. 1. The common kind, caught about the ſhores of the Mediterranean, and called by the Venetians *goget*. See GOGET. 2. The large yellow kind, called by authors the *gobius marinus maximus flaveſcens*, and by ſome *paganellus*. See the article PAGANELLUS. And 3. the white kind, called the *gobius albus* by authors, but more commonly known by the name *jozo*. *Willughby*, Hiſt. Piſc. p. 206. See the article JOZO.

GOBIUS *aſper*, in ichthyology, a name given by Geſner and others to a ſpecies of pearch called by many *aſper piſciculus*, a name confounding it with many other very different fiſhes. It is diſtinguiſhed among the pearch tribe by Artedi under the name of the pearch with eight or nine black lines on each ſide. See PEARCH.

GOBIUS *fluviatilis*, in zoology, the freſh water *gudgeon*, a ſmall river fiſh, of which there are two ſpecies. The firſt, our common river *gudgeon*, known by its long and rounded body, the ſmallneſs of its ſcales, and its brown colour, with the variegations of its black ſpots. The ſecond is the leſſer river *gudgeon*, differing from the former not only in ſize, but in being of a more tapering ſhape, growing very ſmall toward the tail, and being of a whiter colour and leſs ſpotted. The firſt is common in our rivers, the ſecond in thoſe of Germany, where it is commonly called a *wapper*. *Geſner*, de Aquat. p. 474.

GOD (*Cycl.*)—Monſieur de Maupertuis having aſſerted the principle of the leaſt quantity of action, as the univerſal principle of all the laws of motion and of reſt, thinks this principle ſo wiſe and ſo worthy of the ſupreme being, that a better argument may be drawn from hence for his exiſtence, than any that has been hitherto framed from the courſe of nature. See Mem. de l'Acad. de Berlin. Tom. 2. p. 268, ſeq. But this principle is either abſolutely neceſſary, or contingent. If the former, it cannot prove the exiſtence of the deity. If the latter, it has no privilege beyond other regular contingencies. See *Quantity of* ACTION.

GOGET, in zoology, a name frequently uſed for the *gobius niger*, the ſea gudgeon or rock fiſh, and by which it is known in moſt parts of the world.

This is a long and ſlender fiſh, of a rounded not flat body, and ſeldom exceeds ſix inches in length. Its colour is very various, being either a brown variegated with white and yellow, or a blueiſh white with lines of a faint olive colour, and black ſpots. Its fins and tail are of a pale blue, but the ribs or nerves in them are ſpotted with black; the coverings of the gills and the belly are yellow. The head is large, and the jaws look tumid, and the eyes ſmall, placed very near one another, and bent or directed upwards. The mouth

is large, and the jaws have each two rows of teeth. The belly fins join together into one, and make a ſort of funnel ſhaped hollow, by which the fiſh is ſuppoſed to apply itſelf, and ſtick faſt to the rocks, whence it has its name of rock fiſh. It is very ſoft and ſlippery, yet is covered with ſcales, but they are very ſlender and ſoft. It is caught about the Engliſh and Italian ſhores, and lives in ſhallow water. It is conſtantly in the markets of Rome, *&c.* *Willughby*, Hiſt. Piſc. p. 206.

GOHDAKADURA, in botany, a name given by ſome authors to the tree which produces the *nux vomica*. *Herm.* Muſ. Zeyl. p. 41.

GOHKATHU, in botany, a name given by ſome authors to the tree which produces the gamboge, or *gutta gamba* of the ſhops. *Dale*, Pharm. p. 327.

GOING, in the manege, called in French *alleure*, is the pace or gate of a horſe.

GOLD *(Cycl.)*—This metal is found in many places mixed in ſmall grains among the ſand of rivers. The way of ſeparating it is this: They have a long trough made with a declivity, and lined at the bottom with flannel; the ſand is received into this, and while it is ſtirred about in the water by the hand, the ſand is waſhed off, and the ſmall particles of *gold* left in the pores, and among the woolly matter of the flannel, and is afterwards waſhed out from thence.

This is the method where the ſand is fine, but when it is mixed with large gravel, they ſift it through wire ſieves, whoſe meſhes are of one determinate ſize; by which means all the *gold* is ſure to go through with the ſand, and the gravel or larger ſtones are left behind, and thrown away. The ſand thus ſeparated is treated as before, and there is no danger of any *gold* being thrown away with the gravel, becauſe it is extremely rare to meet with any one grain of *gold* in this ſtate ſo large as a barley corn; and therefore as the meſhes of their ſieves are kept to more than that ſize, there is no fear of loſing any of the metal. *Shaw*'s Lectures, p. 253.

Mr. Boyle mentions an artiſt in Holland, who by digeſting *gold* with aqua fortis, had ſeparated the tincture, or yellow ſulphur from it, and made it volatile; the remaining body growing white; and that with this *golden* tincture he had turned ſilver into very perfect *gold*, with conſiderable profit. Mr. Boyle [a] ſeems to credit this account; and ſince that Monſieur Homberg [b] declares, he has actually converted ſilver into *gold* by heat.—[[a] Works Abr. Vol. 1. p. 166. [b] Mem. de l'Acad. des Sciences 1709.]

Monſieur Homberg is of opinion, that there is in ſilver ſome parts, which, though not yet *gold*, eaſily become ſo by means of fire; and he thinks that in *gold* naturally pale, there is a whitiſh matter, which fire brings to the true colour of *gold*. He obſerves, that this pale *gold* does not afford ſilver, and therefore thinks there is a mean metal between *gold* and ſilver. See Mem. de l'Acad. Loc. cit.

Mr. Boyle mentions an anti-elixir he tried, that is, one that would debaſe *gold*, and which changed its malleability, colour, homogeneity, and ſpecific gravity, ſo that tho' the powder did not weigh the thouſandth part of the *gold*, yet the ſpecific gravity of the metal to which it was debaſed was to that of water, but as $15\frac{2}{3}$ to 1. inſtead of 19 to 1. See his Works Abr. Vol. 1. p. 78.

The ſolution of *gold* in vegetable acids has not yet ſucceeded according to Mr. Marggraf, but he thinks it poſſible, as well as that of ſilver and mercury. See the articles SILVER and MERCURY.

It is the received opinion, that whatever has been done to this metal, the common way of purifying it by the copel reſtores it eaſily to itſelf again; but this is not always ſo certain, or ſo eaſy, as is generally imagined. Mr. Homberg put into the copel an ounce of *gold*, which he had uſed in ſeveral chemical experiments, in order to reſtore it to its original ſtate; but after four times copelling it, he found, that whatever quantity of lead he uſed, ſtill the metal, tho' of the right and beautiful colour, was brittle, and not at all in the ductile ſtate of pure *gold*. Finding therefore that lead would not anſwer his purpoſe, he incorporated the *gold* with four times its quantity of ſilver, and having performed the operation of the depart in the common manner, he fuſed it with borax; but after all this the *gold* was as brittle as before, though ſtill of the ſame beautiful colour. He then melted it again without any addition, but ſtill it remained in the ſame brittle ſtate. His next trial was by antimony, not doubting but that the particles, whatever they were, that had ſtood the operation of the depart, and of lead, would be abſorbed by this powerful ſemi-metal, and the *gold* left in its natural malleable ſtate: He melted it twice to this purpoſe with eight ounces of antimony; but after ſeparating the antimony, and then melting the *gold* ſeveral times with ſalt petre, and many times without any mixture, it was found of the moſt perfect and beautiful colour imaginable, but ſtill brittle, and not in the leaſt malleable. Surpriſed to ſee all the common methods fail, he melted it again with ſix ounces of antimony, and afterwards melted this regulus with three times its own weight of lead, and ſet the whole in a copel in a proper degree of fire, to evaporate both the antimony and the lead. But when the fire was out, he was ſurpriſed to find the *gold* covered with a browniſh ſubſtance, reſembling a muſhroom, which fell to powder on being touched by the fingers. The *gold* itſelf was become of a grey colour, and was full of wrinkles on the upper ſurface, from whence this fungous matter had been thrown out; but on the under ſurface, where it ſtuck to the copel, it was ſtill of a fine and beautiful *gold* colour. He then melted ſeveral times the *gold* and the fungous ſubſtance together, and every time there appeared the ſame ſort of fungous cruſt at the top. At laſt he gathered this fungous ſubſtance carefully off from the *gold*, and then melting the metal by itſelf, there was no more any fungous matter thrown out upon it, but only a thin layer of a powder of the ſame nature and colour with the former. Three times it was melted, and at every time threw off a quantity of this powder; and after this being fuſed with borax, it at length became perfect malleable *gold*.

He then fuſed together the fungous matter, and all the quantities of powder which he had ſaved, there appeared a new fungus on the matter, and that for ſeveral times melting; but at laſt this diſappeared, and there was found a ſmall lump of pure *gold* in the copel. It is not eaſy to gueſs at the cauſe of this obſtinate brittleneſs of the *gold*, becauſe it had paſſed ſeveral experiments, and been mixed with ſeveral ſalts and ſeveral metals, particularly at laſt with iron and with emery. The emery ſeemed moſt to be ſuſpected as the cauſe, but this brittleneſs cannot be given to *gold* by emery alone, and muſt have been owing to the mixed effect of ſome of the ſalts and emery together, as by means of the ſalts, the particles of emery are thrown farther, and more intimately mixed with thoſe of the *gold* than they could otherwiſe be. We have been told of the degradation of *gold*. This *gold* would have been declared degraded, and robbed of one of its greateſt qualities, its malleability, had it fallen into any hands but thoſe of ſo great a chemiſt; and it is much to be doubted, whether Mr. Homberg would not have been able to reduce the degraded *gold* of any other chemiſt, and reſtore it to its natural ſtate and purity, though the common methods of operating on it ſhould all have failed, as they did in this caſe. Mem. Acad. Par. 1693.

The method of rendering *gold* perfectly pure from ſilver, by means of aqua regia, is as follows. The mixture of *gold* and ſilver muſt firſt be copelled with lead in the uſual way, which ſeparates from it all other metals. Out of the remaining regulus hammer thin plates, and when the metal grows rigid under the hammer, make it red hot in a gentle fire, by which means its ductility will be reſtored. When the plates are ſufficiently thin, make them red hot for the laſt time, and then cut them into ſmall pieces with a pair of ſheers. Put theſe pieces into a cucurbite of clear glaſs ſet in a warm place, and pour on them a ſufficient quantity of pure and ſtrong aqua regia, ſtopping the orifice of the cucurbite with a cornet of paper, to keep out duſt.

When the diſſolution is finiſhed the ſilver will remain at the bottom, in form of a white powder. Pour off the clear ſolution, and put on the remaining calx ſome phlegm of the ſpirit of ſalt; make the whole boil a good while, to incorporate all the remaining ſolution of *gold*, and pour it off clear to the former ſolution: This done, inſpiſſate the whole over a very gentle fire till quite dry; put what remains into a crucible, cover it with powder of borax, melted beforehand with a little nitre, cover the crucible cloſe with a tile, and when the fuſion is perfect, pour it into an ingot. *Cramer*'s Art of Aſſaying, p. 260.

The purifying of *gold* by cementation is to be performed in this manner. Chuſe ſome tiles or bricks not vitrified by an exceſſive fire, nor too much tempered with ſand; the oldeſt alſo are the beſt; clean them well from lime and all other filthineſs, pound them in an iron mortar, and then ſift them through a coarſe ſieve; take four parts of this powder, and one part of colcothar not waſhed, and the ſame quantity of common ſalt; mix theſe thoroughly together, grind them in a mortar, and wet them with a little water or urine, ſo that they may cohere when preſſed between the hands. Then take a clean earthen veſſel of a proper ſize (it muſt be quite round) ſufficiently thick, and not glazed; ſtrew the bottom of this with the moiſtened powder, or cement, and diſtribute it evenly all over with a finger, and preſs it down very gently, ſo that the thickneſs of the cement may be half an inch all about; put upon this the *gold* in ſmall pieces, and in thin plates, made perfectly clean by heating them red hot in the fire; cover the ſurface of the cement with theſe pieces, then lay ſuch another bed of cement over theſe, and over that another of *gold*, and ſo on alternately, till the veſſel is full within the breadth of a finger; let this laſt ſpace be filled with cement; lute well a tile upon the veſſel, and keep it moderately red hot in a furnace for ſixteen or twenty hours, then open the pots and waſh the purified *gold*. *Cramer*'s Art of Aſſaying, p. 271.

A ſolution of *gold* in aqua regia affords a very curious object for the microſcope. Mr. Lewenhoek took great pains to obſerve the configurations it would put on in its concretions: He found that in warm weather, if a drop of the ſolution

was laid on a clean glaſs, and examined by the microſcope, the ſalts ſoon coagulated, but appeared very irregular in their manner of concretion. They ſometimes aſſumed a regular hexangular form, but more frequently they were rendered irregular, by the application of other ſubſtances, in form of ſmaller cryſtals upon them. One thing in this is very remarkable, that is, the cryſtals formed at different times ſeem very differently impregnated with the metal, thoſe which concrete firſt being uſually large, and perfectly clear and tranſparent, and thoſe which afterwards form themſelves upon theſe, and alter and injure their figures, being ſmaller and ſeemingly much more impregnated with the metal, as being all of a fine *gold* yellow. Sometimes alſo it happens, that the ſmall ſalts ſated with the particles of the *gold* ſhoot firſt, and when the other clear and tranſparent cryſtals of ſalt form themſelves afterwards, it not unfrequently happens that they form about the others, and encloſe them within their own bodies. Thus it is not uncommon to ſee one of theſe large and tranſparent cryſtals with a ſmall *gold* coloured cryſtal immerſed in its center.

This is a very elegant and entertaining ſight by the microſcope, but it is only to be obſerved in dry ſeaſons, for in moiſt weather the cryſtals either do not form themſelves at all, or elſe it is done but very confuſedly, and they melt and diſſolve away on the acceſs of freſh damp air.

If a ſmall piece of copper be put into this ſolution of *gold* in aqua regia, the liquor immediately operates upon it, and not only diſſolves the copper, but precipitates the *gold* it had before held in a ſtate of ſolution upon the ſurface of the copper, in the place of what copper it had taken away. The ſame thing happens when a piece of copper is put into a ſolution of ſilver in aqua fortis, but in this laſt caſe the effect is more beautiful; for the ſilver particles precipitated on the copper arrange themſelves in the form of trees and ſhrubs, like the arbor Dianæ; [ſee DIANÆ *Arbor*] but in the caſe before us, the *gold* is only precipitated in form of irregular filaments, or ſmall granules, and ſeems rather to imitate that proceſs obſerved in the famous water of the Ziment, or Cement Springs in Hungary; where the water being highly impregnated with a ſolution of blue vitriol, containing a very large portion of copper, if a piece of iron be put into it, immediately it works upon the iron, and diſſolving it, precipitates copper in ſmall irregular granules in its place: So that in the opinion of the vulgar, the copper is made of the iron, but in reality the iron is all diſſolved, and the copper left in a ſolid form by the menſtruum which diſſolved it; as in this experiment, the copper put into the ſolution of *gold* is diſſolved, and taken up into the liquor, and the *gold* which was before diſſolved is precipitated in its place. Philoſ. Tranſ. N° 286. p. 1438.

If the aſſiſtance of art be called in, and the ſolution of *gold* be made according to the rules of chemiſtry in a ſand heat, and the menſtruum ſo ſated with it, that it can diſſolve no more, then it readily ſhoots into cryſtals, on being expoſed to dry in drops before the microſcope on plates of glaſs; and the cryſtals which it forms are in this caſe all of one kind, all ſated with *gold*, of a regularly angular figure, and their angles very ſharp.

Theſe cryſtals appear only like ſo many pieces of pure *gold*, of a fine luſtre and brightneſs, and ſeem maſſes of native *gold* of this form juſt taken from ſome mine. In order to procure theſe *gold* cryſtals as regularly formed as can be, the ſmall drop, laid on the plate of glaſs, muſt be poured off again at one ſide, and by this means the liquor being ſpread extremely thin, the cryſtals will be formed extremely regular; but then they will be ſo ſmall, that they are only viſible through very powerful glaſſes; when thus managed, however, they ſhew their true form, which is regularly hexangular, but that not in form of a column, as in the hexangular cryſtals; but in a ſhort and thick maſs, reſembling a die, only more long ſhaped, not ſo exactly ſquare. Notwithſtanding that theſe ſmall cryſtals are yellow, they are as tranſparent as cryſtal, and the liquor remaining about them is alſo yellow and tranſparent. Some of theſe cryſtals, though of the ſame figure with the others, appear not of the ſame even and plain ſtructure, but are plainly ſeen to be formed of a great number of rings, or concentric circles, extended round each other. Copper being put into this ſolution, ſo highly ſated with *gold*, is not preyed upon ſo faſt as in a weaker ſolution; ſome few air bubbles, however, are driven to the ſurface, but without any great effect; but if the ſolution be diluted with a little water, the acid then preys with violence upon a piece of copper put into it. A part of the copper is ſoon diſſolved, and the liquor becomes green, and a ſmall portion of the *gold*, out of the ſolution, is precipitated on the copper, in the place of that part of it which was diſſolved. In this caſe alſo the *gold*, in ſome meaſure, emulates the appearance of the ſilver in its concretion; for though it does not form regular trees and branches, it forms long and ſlender filaments, and theſe do not look of a pure fine yellow, or like pure *gold*, but ſeem duſky, and to have ſome copper among them.

If a ſmall parcel of this ſolution be evaporated on a glaſs plate over a gentle heat, the nature of the metal, and its effects on vitrified bodies, are more eaſily diſcovered than one would expect in ſuch ſmall quantities. Where the liquor has lain the thinneſt in this caſe, the glaſs is tinged red by the entrance of the particles of *gold* into its ſurface, which they do eaſily; becauſe in thoſe places where the liquor lay thin, they formed themſelves into extremely minute concretions, according to the foregoing obſervations; and it is well known, that red is the colour which *gold* imparts in the earth to cryſtals and other ſtones, and in the experiments of the chemiſts, to glaſs of any kind. In ſuch places as the liquor has lain thicker in, and has been conſequently evaporated in larger quantity, and from a larger portion of the *gold*, the glaſs is not tinged red, but there is ſeen a remainder of the ſolution ſticking to it: This however is not formed into cryſtals, but is in this caſe pure *gold*, left from the evaporation in its proper metalline form. This however was in ſuch minute concretions, that where they lay ſingle, or ſeparate, they were not viſible, according to Mr. Lewenhoek's account, to the naked eye, and he computes that many thouſand millions of them were not equal in ſize to a ſingle grain of ſand: In moſt places they were not however thus ſeparate, but were formed into oblong and ſlender concretions, which were ſometimes ſimple, and ſometimes ramoſe, and the microſcope ſhews theſe concretions very elegantly, ſome in form of ſimple threads, ſome of branches of trees or plants. Philoſ. Tranſ. N° 286. p. 1441.

The denſity of *gold* is no way better ſeen than in this experiment; for though it may eaſily be conceived, that ſuch particles of theſe as were but of a thouſand millionth part, or much leſs than that, of the bigneſs of a grain of ſand, muſt needs be of an almoſt inconceivable thinneſs, yet not the ſmalleſt of theſe would tranſmit any light through it, but all were as perfectly opake as a piece of ſheet lead. A ſmall drop of a ſolution of *gold* in aqua regia being laid over a ſtrong fire, approaching it by degrees, till being expoſed to its utmoſt fury, both the *gold*, and the glaſs on which it lies, begin to melt; in this caſe the *gold* is found concreted in like manner into filaments compoſed of globules, or of particles nearly round; and if it be taken from the fire juſt at that time, when the glaſs only begins to run, it affords to the microſcope a very diſtinct way of obſerving the ramifications of the *gold* and ſilver ores in their firſt ſtate, and ſhews how they are formed. *ibid.*

Mr. Homberg found by experiment, that *gold* properly managed in the focus of the great burning glaſs, after the evaporation of ſome of its conſtituent parts, was vitrifiable, like other metals. That part of this metal which flies off in fume, he ſays, is the mercury which entered its compoſition, and what then remains, which is an earth penetrated by ſulphurs, runs into glaſs, as all other ſubſtances of a like kind muſt with a like fire. As the ſubſtances expoſed to the focus of the burning glaſs are laid upon a piece of charcoal, and that charcoal is always in part reduced to aſhes about the body in trial, and theſe aſhes often fly over and all about it; it had been objected to Mr. Homberg, by ſome who ſaw his experiments, that it was theſe aſhes alone which vitrified on the *gold*, and not any part of the *gold* itſelf; but Mr. Homberg very judiciouſly anſwers, that if this were the caſe, theſe aſhes would alſo be vitrified upon ſilver in the like trials and circumſtances, and give an appearance of the ſilver's vitrifying; but often repeated experiments have proved, that ſilver expoſed to the focus of the burning glaſs, gives not the leaſt ſign of vitrification in any circumſtance, unleſs it has been refined with antimony; that is to ſay, unleſs there has been given to it by art more ſulphurs than it is naturally poſſeſſed of; but in that caſe, theſe unnatural abundant ſulphurs will always vitrify a part of its earth. Mem. Acad. Par. 1707.

Mimic GOLD. See AURUM *ſophiſticum*.

GOLD, in medicine, is now of little other uſe, than as a covering for pills. Some mechanical phyſicians have had a notion, that if the particles of *gold* could be rendered fine enough, ſo as to circulate with the blood, that it would prove more effectual in the cure of diſeaſes than mercury. But this is mere hypotheſis. The *aurum fulminans* has been uſed, and other preparations of *gold* are to be met with in authors; but they ſeem to meet with little credit among modern practitioners.

GOLD *colour*. The manner of giving this colour to glaſs is this. Take cryſtal fritt two parts, and rochetta fritt one part, both made with tarſo, not ſand; mix theſe well, and to every hundred weight of this add of tartar in lumps, but well powdered afterwards, and of manganeſe prepared, each one pound, mix theſe well together and put them into the fritt; when this is done put all into the furnace, and let it ſtand there four days in a common fire not too violent, and at the end of this time work it. It will be thus very beautiful, but if all cryſtal fritt be uſed, it will be yet much finer. It may be made deeper or paler, by adding to, or diminiſhing the quantity of the ingredients, in proportion to that of the fritt. *Neri's* Art of Glaſs, p. 89.

GOLD *coloured glazing*. See GLAZING.

GOLD *on china-ware*. The *gold* on this ware is never laid on alone, but managed in the following manner: they grind it in water to a fine powder, and leave it to dry in the ſhade.

They then mix with every ten grains of *gold* one grain of ceruſs, and incorporating the whole with gum water, they lay it on in the manner of other colours.

There have been many methods of imitating the colour and appearance of *gold* in the baſer metals, but none of them come up to that of Mr. Homberg, which is performed in this manner: make an amalgame of one part pure copper and three parts quickſilver, boil this in river water for two hours, then diſtil off the quickſilver, and cohobate it once; take out the copper, and fuſe it, and it will be found of a beautiful gold colour, and more ductile than common copper under the hammer, and is extremely fitted for watch-work, gilding, and the finer machines and utenſils. *Shaw*'s Lectures, p. 282.

GOLD *ore*. They have one way of working this ore at Chremnitz in Hungary, which is very ſingular, as no lead is employed in the whole courſe of the work. They waſh the pounded ore very often, and lay it in powder upon cloths, and by the gentle and oblique deſcent of the water over it, and their continual ſtirring of it, the earthy, clayiſh, and lighter parts are all clean waſhed away, while the heavier and metalline remain in the cloth. Not much unlike to this proceeding is that with ſheeps ſkins and wool, which they place either in the water that comes from the works, or in the ſtreams of rivulets, which have their origin in hills where there is much gold; ſo that while the water or fluid parts paſs through or over them, the more ſolid, heavy, and metalline are inſnared and detained, and by this means the ſkin becomes a golden fleece. The cloths which are by the Chremnitz works in this manner impregnated with *gold*, are waſhed in large tubs of water, and after ſettling, the water is decanted ſlowly off; the ſediment which is left behind is, after this, waſhed in three or four other waters, and to the clean remainder they add quickſilver, which they then work and knead into an amalgam, like dough or paſte. When they have worked this together for an hour or two, they throw it into water, and waſh off the quickſilver, which did not adhere, and then there remains a pure and perfect maſs of the amalgam. They ſqueeze as much of the quickſilver as they can from this, firſt through coarſe cloths and then through fine ones, they then put the remainder on a perforated plate, which they place over a deep pan, ſet in the earth, in the bottom of which there is put ſome quickſilver; they then cover with a hollow earthen lid, luting it carefully on, and when the lute is dry they make a charcoal fire over it. By this means the quickſilver yet remaining with the *gold* in the amalgam is driven off, and runs down through the holes of the plate, mixing itſelf with the reſt in the bottom of the pan, and the *gold* is left alone in a ſpungy maſs, which only needs once melting in the common way to be pure and malleable *gold*. *Brown*'s Travels, p. 67.

GOLD-*finch*. This bird is particularly fond of the buds of the gooſeberry tree. They often come in whole droves at once into gardens, and will clear away all the buds from the trees in a few days; they are eaſily ſhot, but the trees are uſually injured by this, ſo that it is better to lime the twigs. *Mortimer*'s Huſbandry.

GOLD *fiſh*, in zoology, a name by which ſome authors have called the alauſa or ſhad, from the yellow colour it frequently has on the covering of the gills. See the articles ALAUSA and AGONUS.

GOLD *ſize*. The method of making *gold ſize* for burniſhed gilding or wood is this: take a pound and a half of pipe clay, half an ounce of red chalk, a quarter of an ounce of black lead, forty drops of ſweet oil, and three drachms of pure tallow; grind the clay, chalk, and black lead, all ſeparately, very fine in water, then mix them together, and add the oil and tallow, and grind all to a due conſiſtence. This is the ſize now in uſe, and is accounted the better the older it is.

GOLD-*ſmith*, or as ſome chuſe to expreſs it *ſilver-ſmith*, the artiſt, who makes veſſels, utenſils, and ornaments in *gold* or ſilver. The *goldſmiths* work is either performed in the mould, or beat out with the hammer, or other engine. All works that have raiſed figures are caſt in moulds, and afterwards poliſhed and finiſhed; plates or diſhes of ſilver or *gold* are beat out from thin flat plates, and tankards and other veſſels of that kind are formed of plates ſoldered together, and their mouldings are beat, not caſt. The buſineſs of the *goldſmith* formerly required much more labour than it does at preſent, for they were obliged to hammer the metal from the ingot to the thinneſs they wanted: but there are now invented flatting mills, which reduce metal to the thinneſs that is required at a very ſmall expence. The *goldſmith* is to make his own moulds, and for that reaſon ought to be a good deſigner, and have a taſte in ſculpture: he alſo ought to know enough of metallurgy to be able to aſſay mixed metals, and to mix the alloy.

The *goldſmith* in London employs ſeveral hands under him for the various articles of his trade. In this great city there are always hands that excel in every particular branch of the trade, and there is commonly employment enough for every one in his particular branch. The jeweller, the ſnuff-box and toy maker, the ſilver turner, the gilder, the burniſher, the chaſer, the refiner, and the *gold* beater, are all employed by and under the *goldſmith*.

GOLDEN *(Cycl.)*—GOLDEN *eye*, in ornithology, the Engliſh name of a ſpecies of ſea duck, called by authors *clangula*. It has its Engliſh name from the beautiful yellow of the iris's of its eyes. See Tab. of Birds, N°. 50. the article CLANGULA.

GOLDEN *eye*, is alſo uſed for a ſpecies of fly. See CHRYSOPIS.

GOLDEN *fleece*: Suidas imagines that the *golden fleece* which Jaſon and the Argonauts carried over the Pontic Sea from Colchis, was only a book written on ſkins, which taught the manner of making *gold* by the chemical art. This, if proper vouchers could be given for it, would carry back the antiquity of chemiſtry very far indeed, even thirteen centuries before Chriſt, in which time the ſcience muſt have been both known, practiſed, and even written of, ſo as to prove the occaſion of this painful and hazardous expedition. But what diſcredits all theſe accounts, is, that Moſes and the other ſacred writers, as alſo Sanchoniatho, Orpheus, Homer, Pindar, Heſiod, Herodotus, Thucydides, Hippocrates, Ariſtotle, Theophraſtus, Dioſcorides, Galen, and Pliny, are all utterly ſilent on this head; when the ages they lived in, muſt have given them opportunities to have ſpoken of it in their works. The malleable glaſs mentioned by Pliny, and Caligula's extracting *gold* from orpiment, are only proofs that they were great maſters in the art of glaſs and aſſaying. *Boerhaave*'s Chem. p. 17.

GOLDEN *head*, in zoology, a name by which ſome have called the anas artica cluſii, a web footed fowl, common on our ſhores. See DUCK.

GOLDEN *rod*, *virga aurea*. We have ſeveral very beautiful ſpecies of this plant cultivated in our gardens, where they are very great and laſting ornaments, beginning to flower in May, and one kind or other of them continuing flowering till October. See VIRGA *aurea*.

They are all eaſily propagated by parting their roots in ſpring, before they begin to ſhoot; they will grow in any ſoil, or ſituation, but they ſucceed beſt in a light freſh earth and an open expoſure, and ſhould be planted in the middle of large flower beds: they are perennial plants, dying down to the ground, as ſoon as they have ripened their ſeeds, but riſing again the following ſpring. Theſe ſeeds ſown will very freely grow, and often produce varieties in the flower. *Miller*'s Gardners Dict.

GOLDEN *Saxifrage*, in botany. See CHRYSOSPLENIUM.

GOLTBERGENSIS *terra*, in the materia medica, a whitiſh earth, uſed in the ſhops of Germany and Italy as an aſtringent, a cordial, and a ſudorific, but little known among the Engliſh apothecaries. It is dug in many parts of Germany, but particularly at this time in the neighbourhood of Hoſſel, in the biſhopric of Liege, in the circle of Weſtphalia. It is taken up there in conſiderable quantities, and uſually is ſealed with the impreſſion of an eagle, and with its old name *goltbergenſis terra* under it. It is imagined to contain ſome particles of ſilver, and thence to derive ſome of its virtues. It is a denſe compact earth, of a dull greyiſh white, ſoft and friable, and adheres firmly to the tongue, and makes no efferveſcence with acids. *Hill*'s Hiſt. of Foſſils, p. 4.

GOMARA, or GOMARIS, in natural hiſtory, a name given by ſome of the old authors to *talc*; ſome have alſo called it *gamara*: this laſt ſeems only a corruption of the word *gomaris*, and that of *comaros* or *comaris*, a name this ſtone was often called by among the Greek writers of the middle ages. Some have alſo called the ſelenites by this name, and it ſeems to have originally belonged to that foſſile; but both being foliaceous foſſils, both were often confounded together.

GOMATUS, in zoology, a name uſed by many for the *gurnard*, more frequently called by authors *gurnardus*. *Ray*'s Ichthyog. p. 279. See the articles GURNARD and CUCULUS *Piſcis*.

GOMPHASIS, a word uſed by the old Greek phyſicians for a pain in the teeth, and ſometimes for their being looſe in their ſockets.

GOMPHII, a word uſed by the old Greek writers for the *dentes molares*.

GOMUTTRA *ſelagitta*, in natural hiſtory, the name given by the Indians to a kind of foſſil, found in great plenty on the mount Vindy in the Eaſt-Indies, in places, as they obſerve, where the cows frequently urine. It is a bituminous ſubſtance, and after calcination the reſiduum is given in caſes of internal ulcers and in gonorrhœas. The Indians ſuppoſe it is formed by the drying up of the cow's urine.

GONAMBUCH, in zoology, a name by which many called the *guainumbi*, or humming bird; the ſmalleſt of all birds. See the article GUAINUMBI.

GONANDINA, the name of a Braſilian tree, remarkable for its great height.

GONDOLA *ſhell*, in natural hiſtory, a name given by authors to a peculiar kind of *concha globoſa*; ſuppoſed, in ſome degree, to repreſent the ſhape of a Venetian boat. It is of the genus of the dolium, and there are ſeven ſpecies of it. 1. A grey thick one. 2. A long ſhaped greeniſh one. 3. An oblong reddiſh one. 4. A thin white papyraceous one. 5. A yellow one, with four brown circular lines. 6. A browniſh one, with capillaceous lines. 7. A white one umbilicated on each ſide. Theſe are called by the Latin writers

writers *cymbium*, and the firſt is generally known by the name of *nux maris*.

GONGOLARA, in botany, a name by which Imperatus has called a very beautiful ſea plant, known among botanical writers by the name of *fucus ericæ foliis*, or *erica marina*, the ſea heath. See ERICA *Marina*.

GONGRONA, a word uſed by many authors to expreſs a round and hard tubercle in the trunk of a tree: it is alſo uſed in medicine to expreſs any round and hard tumour of the nervous parts, but principally a bronchocele.

GONGRUS, in ichthyology, a name given by Elian, Appian, and ſome other of the Greek writers to the *conger*, or ſea eel.

GONIOMETRICAL *lines*, in geometry, lines uſed for meaſuring or determining the quantity of angles. Such are, ſines, tangents, ſecants, verſed ſines, &c.

We have a paper by Mr. Jones in the Philoſophical Tranſactions, containing a commodious diſpoſition of equations for exhibiting the relations of *goniometrical* lines. From whence a multitude of curious theorems may be derived. See Phil. Tranſ. N° 483. Sect. 26.

GONION, in ichthyology, a name given by the French to the common gudgeon.

GONIOSIS, a term uſed by Archigenes, to expreſs a peculiar ſort of pulſe, which ſeems to ſtrike, not with the whole circle of the artery, but with an angle of it; or when the elevated artery is not felt like the curve of a circle, but like the vertex of a triangle. The cauſe of this is an imbecillity in the motion of the blood, which renders it incapable of elevating the whole artery.

GONYALGIA, a termed uſed by ſome authors to expreſs a violent pain in the knee.

GOODS, among diſtillers. See SPIRITS.

GOOLE, a breach in a ſea bank or wall; or a paſſage worn by the flux and reflux of the ſea. Vid. 16 and 17 Car. 2. c. 11. The word comes from the French *goulet*, the gullet or neck.

GOOSANDER, in zoology, the Engliſh name for the male *merganſer*; the female of that ſpecies having been univerſally eſteemed a different bird, and called the *dundiver*, and *mergus cirratus longiroſter*. *Ray*'s Ornitholog. p. 253. See MERGANSER and DUNDIVER.

GOOSE, *Anſer*, in the Linnæan ſyſtem of zoology, the term uſed to denote one of the orders of the feathered kingdom, the general character of which is, that the mouth is dentated or toothed, and jagged or ſerrated. The *gooſe* is a well known bird in the common ſpecies, but of which there are beſide that ſeven other kinds. 1. The *anſer ferus*, or wild *gooſe*, of the ſame ſhape with the tame kind, and of the ſame ſize, but of a browner and greyer colour. 2. The *bernacle*. See the article BERNICLA. 3. The brent *gooſe*. See the article BRENTA. 4. The *anſer hiſpanicus*, or ſwan *gooſe*, which always moves in a ſtately manner, and with its head erect like the ſwan. Its back is of a browniſh grey, its belly white, and its breaſt a little tinged with a reddiſh brown, and it has a line of blackiſh brown running ſtrait down the middle of the neck to the back. 5. The *anſer gambenſis*, or gambo *gooſe*, which in figure and ſize reſembles the Muſcovy duck, but has very long red legs, and a fine ſhining purple back; its belly is white, its beak red, and its head has a red caruncle, but its moſt obſervable character is, that it has a ſtrong ſpur ſtanding out from the firſt joint of the wings, as ſome of the Braſilian birds deſcribed by Marggrave have. 6. The *anſer canadenſis*, or Canada *gooſe*; this is of the ſhape of the common *gooſe*, but a little longer bodied. Its back is of a browniſh grey, and its rump black, and its neck black at the bottom, and white in every other part, its belly is white, and its tail and wings black, and 7. The *rat gooſe*, or *road gooſe*, which is but of about half the ſize of the common *gooſe*, and is of a blueiſh grey on the back, and white at the belly. This is wild in the northern counties of England. *Linnæi* Syſt. Nat. p. 46. *Ray*'s Ornitholog. p. 272, to 276.

Soland GOOSE, the Engliſh name of a large water fowl, called by authors *anſer baſanus*.

It is of the ſize of the common *gooſe*, and its wings are very long and capable of extending to a very remarkable breadth; its beak is long and ſtrait, and of a duſky grey, and a little hooked at the end. It has alſo near the hooked part, two ſmall appendages like teeth. It is naked behind the eyes. Its mouth opens to a great width, and it ſeems to have no noſtrils; but in the place of them, has a long furrow running nearly the whole length of the bill, it has alſo a row of ſerratures or indentings all along, provided by nature for its holding fiſh more firmly. Its feet are black, and all the four toes are connected by the ſame membrane. It is all over of a clear white when full grown, except that the larger wing feathers have ſome blackneſs, and the head with age is apt to become yellow. Its ſkin adheres but looſely to its fleſh, and the young are mottled with grey and brown. It flies well, but if it fall on the ground does not eaſily raiſe itſelf. They are a bird of paſſage, and build in the iſland of the Baſs in Scotland, in vaſt numbers. Each female lays only one egg. The young *geeſe* are eſteemed a great delicacy, and ſell at a great price. *Ray*'s Ornitholog. p. 247.

Magellanic GOOSE, *anſer magellanicus*, in zoology, the name given, though improperly by Cluſius, to a bird of the diver kind. It is a ſea bird, and is uſually very fat; it is of the ſize of the largeſt *geeſe*, and is black on the back, and white on the belly. The neck is ſhort and thick, and has a ring or circle of white feathers round it. Its ſkin is thick and tough like that of a hog, and it has only two coriaceous or leather-like fans in the place of wings, hanging from its ſides like two arms, covered with a few feathers which are ſhort and partly black, partly white, and by no means of any uſe to fly with, but very ſerviceable to the creature in ſwimming. It lives continually in the water, except at its breeding time; the tail is very ſhort, and the beak as large as a raven's, but not protuberating on the top, but flatted. *Cluſius* Exot.

GOOSE *dung*, in agriculture and medicine. See the articles DUNG and CHENOCOPRUS.

GOOSE *wing*, at ſea, a certain manner of fitting a ſail; which is thus performed: when a ſhip ſails before a wind, or with a quarter wind, and in a freſh gale, the ſeamen ſometimes, to make the more haſte, unparal the miſſen-yard, and then they launch out both ſail and yard over the quarter on the lee-ſide, fitting guyes at the further end, to keep the yard ſteddy with a boom, and this booms out the miſſen-ſheet. This they do to give the ſhip the more way, which otherwiſe, with theſe winds, the miſſen-ſail could not do; and this ſail ſo fitted, is called a *gooſe wing*, and ſometimes a *ſtudding ſail*.

GOOSEBERRY-*buſh*, in botany. See GROSSULARIA.

The *gooſeberry-buſh* is propagated either by ſuckers or cuttings, but the latter way is preferable, as the roots are leſs ſubject to ſhoot out ſuckers afterwards.

The beſt ſeaſon for planting the cuttings is in February, juſt before the buds begin to open; obſerving always to take the handſomeſt ſhoots, and to pick them from ſuch branches as produce the greateſt quantity of fruit. The cuttings ſhould be about eight inches long, and ſhould be planted in a bed of light earth expoſed to the morning ſun; they muſt be planted about three inches deep, and watered to help their taking root. The ſhoots ſhould all be rubbed off from theſe plants as they put out, except thoſe at the top, that there may be a regular ſtem. In the September following, they ſhould be removed to a bed of fine light earth, and planted at two feet diſtance. They ſhould remain here two years, and the croſs branches at times be cut off, as alſo the lower ones, ſo as to keep a clean ſtem about a foot above the ground. They will be then fit to plant out where they are to ſtand; which ſhould be in a light ſandy loam. They ſhould be kept from the ſhade of other trees; and to have the fruit in its utmoſt perfection ſhould be ſet in an expoſed place in rows of eight feet a ſunder, and each of the ſhrubs, ſix feet from the others in the rows. The beſt time for tranſplanting them is in October, after the leaves are fallen. *Miller*'s Gard. Dict.

GOOSEBRRY-*galls*, in natural hiſtory, the name given by authors to a ſpecies of protuberances of the *gall* kind, found very frequently on the oak. They are of a roundiſh figure, and ſometimes adhere to the tree by a ſhort pedicle, but more frequently by a part of their ſpheric ſurface. They are uſually found on the underſide of the leaves of the oak, but ſometimes on the young ſhoots, and ſometimes on the pedicles of the leaves.

They are moſt frequent in ſpring, but they are found at all times when the leaves are upon the trees. Theſe *galls* are greeniſh at firſt, and afterwards become yelloviſh, and finally red; in which laſt ſtate, they very much reſemble the ſmall red *gooſeberry*. They are very ſoft to the touch, and when opened are found to contain a juicy ſubſtance, with a cavity in the midſt, in which there is lodged a ſingle inſect. This, according to the time in which the *gall* is opened, is found in the form of a white worm, or elſe of a white chryſalis, or finally of a ſmall ſhort bodied four winged fly, of a black colour. For the creature does not leave the *gall* to go through any of its changes, but paſſes all its ſtates in it. The *gall*, in all theſe caſes, is found whole and unhurt; but if one is opened in which there is a hole pierced, this is ſure to be found empty, that being the paſſage by which the fly has made its way out. *Reaum.* Hiſt. Inſ. Vol. 6. p. 214.

GOOSEBERRY *worm*, in natural hiſtory, the name of an inſect, found very frequently on the *gooſeberry* buſhes, and uſually ſuppoſed to be a caterpillar, but differing eſſentially from that genus of animals, and being one of thoſe which the French call *fauſſe chenilles*. It has a round head, and has twenty two legs, and finally becomes not a butterfly, but a common four winged fly. This worm is at firſt of a greeniſh colour, with ſome yellow variegations, and ſeveral black tubercles; but on the laſt change of its ſkin it becomes whitiſh or cream coloured, and loſes its tubercles. *Reaum.* Hiſt. Inſ. Vol. 9. p. 18.

GOR, a name given by ſome writers to a very lofty tree, which bears a fruit like a cheſnut; it grows principally on the banks of the river Niger, and that not near the ſea, but far up the country.

GOR-*cock*, in zoology, the name of a bird of the gallinacious kind, called by authors the lagopus altera, and by many the moor cock, or red game; it is of the ſhape of the partridge, but is half as large again. Its beak is black and ſhort, and it is very remarkable for the bare ſpace over its eyes, which is very broad and of a fine bright red, and in the cock is ſurrounded by a prominence of the ſame bright colour, bare of feathers, and fimbriated like a cock's comb. The male is alſo diſtinguiſhed from the female, by having a black plumage at the baſe of the bill interſperſed with frequent white ſpots, and ſome large white ſpots near the origin of the under chap. The male is alſo redder than the female in all parts, and on his throat and breaſt is of a fair red without the mixture of any other colour. The head, neck, back, and wings are all variegated with red and black. The breaſt and belly are of the ſame colours with the back, but on the breaſt there are ſome variegations of white. The legs and feet are covered with a very long and thick plumage to the very ends of the toes. The wings are browniſh, with ſome reddiſh variegations, and the tail is almoſt wholly black. It is ſeldom found but on the tops of very high hills, and is very common in Derbyſhire, Yorkſhire, and Wales. It lays ſeven or eight eggs, which are of a mixed red, and black colour, and are all over covered with ſmall ſpots, except for one or two ſpaces, which are clear near the ſmall end. It feeds on worms and other inſects. It is a very well taſted bird. *Ray*'s Ornitholog. p. 128.

The Italians call this as well as the lagopus, by the common name of *francolino*, and there is much reaſon to ſuſpect that the lagopus and this, are indeed the ſame ſpecies of bird, tho' different in colour.

GORAIS, in zoology, a name uſed by ſome authors for the more common ſpecies of the *caraſſius*. The third ſpecies, as it is called by Geſner, *&c.* *Willughby*'s Hiſt. Piſc. p. 249. See the article CARASSIUS.

GORCE, or GOURT, denotes a wear. By ſtat. 25. Ed. 3. c. 4. it is ordained, that all *gorces*, mills, wears, *&c.* levied or ſet up, whereby the king's ſhips and boats are diſturbed, and cannot paſs in any river, ſhall be utterly pulled down, without being renewed. Sir Edward Coke [a] derives this word from *gurges*, a deep pit of water, and calls it a *gors* or gulf; but this ſeems to be a miſtake, for in domeſday it is called *gourt* and *gort*, the old French word for a wear. [[a] Co. Litt. 5.]

GORGET, in military affairs, a piece of braſs or ſilver, worn by officers upon their breaſts when on duty. The *gorget* hangs round the neck by a ribband; they are ſometimes gilded, and have commonly ſome device engraved on them; as the ſovereign's, or even the colonel's coat of arms, creſt or cypher.

GORGONIAS, in natural hiſtory, a name given by ſome old writers, to coral, on occaſion of its ſuppoſed change from a ſoft ſubſtance, to an abſolute ſtone, on being brought out of the water into the air; but this is known now to be a fabulous opinion, coral being as hard while growing to the rocks, as when it has been ever ſo long out of the ſea.

GORGONEI *fontes*, an affected term uſed by ſome of the writers in chemiſtry, to expreſs thoſe ſprings or waters, which turn things into ſtone. We have ſeveral ſprings in England, which cover over things with a ſtony matter, without introducing it into their inner ſtructure; but there are very few certain inſtances of waters, which at this day abſolutely petrify wood, that is, fill its bores with true ſtony matter. The famous water of Lough Neagh in Ireland, is much diſputed by ſome as to its having this quality, and many fruitleſs experiments have been made in attempting to prove that it has.

GORGONEUM, Γοργονειον, in antiquity, a kind of maſque uſed on the antient theatre to repreſent hideous and frightful figures, in imitation of the *gorgons*. Mem. Acad. Inſcrip. T. 5. p. 184. See GORGONS.

GORGONIUM, in botany, a name given by ſome authors, to the common eryngium, or eryngo, the roots of which we uſe candied.

GORGONS, in antiquity. Authors are not agreed in the account they give of the *Gorgons*. Diodorus Siculus will have the *Gorgons* and Amazons to have been two warlike nations of women, who inhabited that part of Libya, which lay on the lake Tritonidis. We may well imagine, ſays that author, that they had frequent quarrels together, as being women and neighbours. He goes on to give an account of a moſt bloody engagement between them, wherein the Amazons had the better, three thouſand of the *Gorgons* being made priſoners, and the reſt obliged to take ſhelter in a wood, to which the Amazons ſet fire, with an intention to deſtroy the whole nation of *Gorgons*; but as the wind did not prove favourable, they were obliged to deſiſt, and retire to their own territories. Here the Amazons, intoxicated with their victory, gave themſelves up to feaſting and mirth; and as the guard was very negligently kept in the night time, the three thouſand priſoners laid hold on the opportunity, and ſeizing the ſwords of theſe imprudent females, maſſacred a great many of them, but were themſelves at laſt overpowered and cut to pieces. Myrine the queen of the Amazons, cauſed monuments to be erected to her female warriours, who had been ſlain on this occaſion; which monuments were to be ſeen, ſays our author, in his days. The extermination of theſe female nations was not effected till Hercules undertook and performed it.

Pauſanias's account of the *Gorgons* is much to the ſame purpoſe. They were, ſays he, the daughters of Phorbus, after whoſe death, Meduſa his daughter reigned over the people dwelling near the lake Tritonidis. The queen was paſſionately fond of hunting and war, ſo that ſhe laid the neighbouring countries quite waſte. At laſt Perſeus having made war on them, and killed the queen herſelf; when he came to take a view of the field of battle, he found the queen's corpſe ſo extremely beautiful, that he ordered her head to be cut off, which he carried with him to ſhow his countrymen, the Greeks, who could not behold it without being ſtruck with aſtoniſhment.

Theſe accounts appear ſomewhat credible, but others repreſent them in a very incredible manner, making them to be a kind of monſtrous women, all covered over with hair, who lived in woods and foreſts. Others again make them a kind of animal, reſembling wild ſheep, with ſuch long hair on their faces, that it required their utmoſt efforts to remove it before they could ſee any thing; but when once they had effected this, they killed all that they ſaw, with the poiſonous influence of their eyes. For a further account of them, ſee Mem. Acad. Inſcript. Vol. 4. p. 72. ſeq.

GOSHAWK, in zoology, the Engliſh name for the *accipiter palumbarius*, a very large hawk, which preys on pheaſants, geeſe, and hares, and is remarkable for the ſhortneſs of its wings. *Ray*'s Ornitholog. p. 51.

GOSSAMPINUS, a name given by Pliny and the antients to a tree growing in the Eaſt Indies, which produced a ſort of cotton, the threads of which were too ſhort to be ſpun or corded; ſo that it ſerved only for the ſtuffings of beds and the like, for which it was very proper, being very light and ſoft. It was in ſome eſteem in medicine alſo, to recall the heat and ſpirits into parts to which it was applied. It is called by Piſo *arbor lanigera*, the wool tree, and had its antient name from the words *goſſipium* cotton, and *pinus* the pine tree, being ſomewhat like the pine in external appearance, yet bearing a ſort of cotton.

GOTTORUGINE, in zoology, the name of a ſmall fiſh common in the Mediterranean, and brought to market at Rome, Venice, *&c.* It has no ſcales, but is ſoft and lubricous to the touch, large toward the head, and ſmaller toward the tail, and of a flatted ſhape. Its colour is motled with olive colour and a browniſh red, diſpoſed in lines running half lengths, and parted by other lines of a pale blue. The lower part of the fiſh toward the belly is variegated with the ſame colours, but they are ſomewhat paler and fainter. It is uſually of about ſix or ſeven inches long; it has one back fin running from near the head to the tail; the tail is not forked but ſtrait, and of a redder colour than the reſt of the body. The eyes ſtand very prominent, and are placed in the ſummit of the head, very near one to the other. And near them are two extremely ſmall fins, thick at their baſes, and ending very thin. Its mouth is of a moderate ſize, and its teeth are like thoſe of the blennus. It has no ſwimming bladder, and the anus is ſituated nearer the head than the tail.

GOVERNOUR (*Cycl.*)—*Governours of the cheſt at Chatham*, are officers appointed to take care of, and relieve the poor and maimed ſeamen belonging to the navy royal. Vid. 22 and 23 Car. 2.

GOUMA, in mineralogy, the name given by the natives of the iſland of Samos, to the Samian earth, called *Terra Samia* by the old writers. *Pocock*'s Egypt. Vol. 2. P. 2. p. 29.

GOURD, *Cucurbita*, in botany the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, faſhioned like a bell, very open at the mouth, and ſo deeply divided into five ſegments, that it appears to be a five leaved flower. Some of the flowers in this plant are male and ſteril, others are female, and have an embryo which ripens into a large fruit, in ſome ſpecies long and ſlender; in others reſembling a bottle, uſually divided into five cells, and containing flat and oblong ſeeds; obtuſe at one end, and very broad at the other, and ſeemingly ſurrounded with a ring or circle within the edge.

The ſpecies of *gourds* enumerated by Mr. Tournefort are theſe. 1. The long fruited *gourd* with ſmooth leaves and white flowers. 2. The crooked or falcated *gourd* with ſmooth leaves and white flowers. 3. The broader *gourd* with ſmooth leaves and white flowers. 4. The long *gourd* with a white flower and protuberant belly. 5. The very long cylindric American *gourd*; this grows to three or four feet long. 6. The bottle *gourd* with ſmooth leaves and white flowers. 7. The white flowered ſmooth leaved *gourd* with a turbinated fruit. 8. The larger variegated bottle *gourd*, and 9. the ſmaller variegated bottle *gourd* with a rough fruit.

Gourds are eſteemed cooling and diuretic, are uſed in emulſions, and eſteemed good in fevers, and all diſorders ariſing from the acrimony of the blood or humours. Emulſions of theſe, and the other cold ſeeds, are anodyne, and are generally uſed to take off ſtranguries occaſioned by bliſters.

GOURY *Paſhnum*, in natural hiſtory, a name given by the people of the Eaſt Indies, to a kind of orpiment of a deep yellow colour, veined with red in ſeveral places, and in ſome with white. It is found principally at the bottoms of mountains. They calcine it ſeveral times, and afterwards give it internally in intermitting fevers, and uſe it externally in ointments for the itch.

GOUT (*Cycl.*)—As this diſeaſe receives different appellations, according to the places it affects, the following diſtinctions will be found neceſſary, to prevent confuſion on this head.

Arthritis is a word very differently underſtood by different authors, ſome expreſſing by it only what we call the *gout*, others making it the general name of that and many other diſeaſes of the ſame nature and origin, and diſtinguiſhing that particular ſpecies of it which we call the *gout* by the term *podagra*. Stahl, and from him Junker, define the *arthritis* to be a ſpaſtic affection of the joints in any part of the body, afflicting the patient with a violent and laſting pain, and never coming to that ſalutary end, which nature ſeemed to intend by her motions in it. The *podagra* in particular is thus defined to be a ſpaſtic and painful affection of the foot, taking its origin from a congeſtion of blood, which ſhould have been voided by the hæmorrhoidal veſſels, and which finding no means of evacuation there, becomes very painful in its emotions, and growing into a habit afterwards recurs on any light occaſion.

When the *arthritis* is taken in its general ſenſe, it comprehends ſeveral diſeaſes ſubdiſtinguiſhed by their ſeveral ſpecific names, as the hemicrania, the ſpurious pleuriſy, the ſciatica, the chiragra, the gonagra, and finally the podagra, or *gout* in the feet.

Some authors take the word *arthritis* in a more ſpecific ſenſe than this, and yet diſtinguiſh it ſufficiently from the *podagra*; theſe expreſs by it thoſe ſpaſtic affections which happen in the upper limbs and parts of the body; it is then made of the ſame genus with the *podagra*, and diſtinguiſhed from it, as one ſpecies from another by the following particulars.

The *arthritis* affects young perſons, the *podagra* thoſe more advanced in years. The *arthritis* is naturally the firſt of theſe two diſeaſes in perſons who have them both, and as people afflicted with it grow into years, it very naturally degenerates into a *podagra*. This is a diſtinction of ſome very judicious authors, yet in reality the ſeveral appearances of the *arthritis*, as taken in its moſt general ſenſe, differ no otherwiſe than as to the place they affect, and the times at which they happen; for they all agree in their eſſential conditions and general cauſes. The true *arthritis* is however to be carefully diſtinguiſhed from what is called the *arthritis vaga*, the wandering, ſimple, or ſcorbutic *arthritis*. This very ſuddenly flies from one part of the body to another, and changes place from the feet to the thorax, from thence to the hips, and ſo on. *Junker*'s Conſp. Med. p. 615.

The rheumatiſm and *arthritis* are diſeaſes alſo not greatly different from, but properly ſubordinate to one another, and a light *arthritis* is very often called a fit of the rheumatiſm. The rheumatiſm is no other than a ſtagnation of the maſs of blood about particular parts of the body; taking its origin from a copious congeſtion of the blood, particularly directed by nature to that part. The rheumatiſm has its ſeat in the muſcular parts of the body, the *arthritis* principally affects the joints of the ſeveral limbs. The rheumatiſm naturally precedes the *gout*, and very often degenerates into it; it is even certain that the rheumatiſm and *arthritis* often are complicated together. Simple congeſtions and commotions of the blood differ extremely from the *arthritis*; firſt in regard to their effects, for they uſually terminate in an eruption of the blood by ſome means, but the *arthritis* never arrives at that end.

Secondly in their duration, for they are uſually terminated ſome way within a very ſhort period; but this diſeaſe is of very long and terrible duration, they differ thirdly in regard to the parts they affect. The ſimple congeſtions affect the internal parts and the blood veſſels; but the *arthritis* affects the external, and the muſcular fibres. Finally they differ not leſs in regard to the event, for the ſimple congeſtions bring on inflammations and ulcerations, but the *arthritis* contractions and extenuations of the limbs.

The ſigns of the ſciatica are a vehement and excruciating pain in the hip, which remains a long time, and is felt principally in the tendons, and in the junctures of the bones. This ſpaſm ſo violently affects the muſcles of the whole ſide, that the patient is compelled to walk in a crooked poſture.

The other *arthritic* complaints, as the hemicrania, *&c.* are deſcribed under their ſeveral heads, and the general method of cure is the ſame in all of them, and the following is the proper treatment.

Method of cure. The material cauſe, which is a plethoric habit, is to be removed by bleeding at proper times, and by applying leeches to the hæmorrhoidal veins to promote a diſcharge that way; and in perſons of a moiſt habit, cupping is very proper. After this, the crudities of the primæ viæ, eſpecially ſuch as are of a bilious nature are to be abſterged, and gently carried off as they always are the occaſion of all ſpaſtic pains, being greatly exaſperated. The digeſtive ſalts, ſuch as *tartarum vitriolatum*, *arcanum duplicatum* and the like, are very good abſtergents; and the proper method of evacuating the matter is by gentle laxatives, ſuch as purging draughts of ſena and rhubarb, with a little ſoluble tartar. Glauber's ſalt or the common purging ſalt, called Epſom ſalt, ſucceeds alſo very well; and great ſervice is done by the medicated wines, impregnated with the abſtergent diuretic and purging ingredients. The violent emotions of the blood and its ſulphureo-ſaline acrid quality are to be attemperated, and the rigors of the ſolids ſoftened and taken off. This is excellently done by nitrous medicines with ſaline abſorbents; and in the more robuſt habits, ſometimes the ſtronger acids are neceſſary: after this nature is to be aſſiſted in making an equal and regular diſtribution of the humors. This is to be done in perſons of choleric habits, by means of the neutral ſalts, and the drinking large draughts of warm and diſcutient decoctions, ſuch as a tea made of the herb veronica, which has of late years been celebrated as a medicine able to cure all the diſeaſes of this kind alone. In other habits, the temperate alexipharmics are to be added on this occaſion, ſuch as decoctions of the woods of ſaſſafras and guaiacum, and of china and ſarſaparilla, and pimpernel root. *Junker*'s Conſp. Med. p. 623.

Finally, the vehement ſpaſtic and painful ſtate of the parts is to be mitigated and taken off. To this purpoſe, ſmall doſes of cinnabar, with the powder of earth-worms are to be given, and with theſe the gentle diaphoretics; at the ſame time that theſe are given internally, there may be applied externally ſpirit of wine with camphor mixed with tincture of ſaffron. The acid ſpirit diſtilled from ants, and the ſpirit of earth-worms. Tincture of caſtor may alſo be applied in this manner, and in ſome caſes Venice ſoap diſſolved in ſpirit of wine or our famous opodeldoc ointment. A cerate with a large portion of galbanum has alſo been known to have good effect, and ſome have applied with ſucceſs the common ſoap plaiſter; others prefer bags with the warm vegetables, ſuch as the leaves of germander, ground pine, origanum, and ſerpyllum, with the roots of pimpernel, angelica, and ſolomon's ſeal, and the ſeeds of aniſe and daucus ſylveſtris; others make theſe bags in a ſhorter way, uſing only oat-meal, elder flowers, and ſaffron, and ſprinkling the bag over with camphorated ſpirit of wine, or elſe dipping it all over in hot wine, and applying it immediately to the part. Some greatly recommend alſo the applying cheeſe beaten to a ſort of paſte to the part, covering it with a piece of a hare-ſkin; and many ſpeak largely of the effects of ſuffumigations made by burning under the part the flowers of ſtæchas, or of maſtic and olibanum, with the woods of ſaſſafras and guaiacum, with rhodium and yellow ſaunders. The vapour of the decoctions of warm and aromatic herbs is alſo greatly recommended, and ſome preſcribe gentle rubbing on the parts with a fleſh bruſh, or with flannels which have before been thoroughly impregnated with the fumes of the before mentioned dry fumigations. Theſe are the principal means of a cure; but there is not leſs judgment required in the time and manner of giving and applying them, than in the ſelecting them. In the time of the fits, it will be proper for the patient to take three or four times a day, a powder prepared of nitre and tartar vitriolated, each half an ounce, crabs eyes ſaturated with lemon juice three drams, cinnabar four ſcruples; theſe are to be all perfectly mixed together, and a ſcruple weighed out for every doſe, and after theſe it will be proper to take ſome gently diaphoretic draught; during the internal uſe of theſe, rags dipped in camphorated ſpirit of wine, impregnated with ſaffron, are to be applied to the parts: and to keep the bowels lax and ſoluble, a glyſter of the common emollient kind is to be given as occaſion ſhall require, with a ſmall quantity of nitre diſſolved in the decoction; and afterwards ſmall doſes of the common Epſom ſalt will be very proper for the keeping them in a due lax ſtate. After a fortnight's continuance in the uſe of the nitrous powders, it will be proper to take every day two or three doſes of a mixture of tincture of ſalt of tartar, and ſpirit of ſal armoniac, of which twenty five drops are a doſe, and every night a ſmall doſe of the ſtorax pill may be taken when the violence of the fit is abated. The gentle alexipharmics are to be taken without keeping up a hot regimen, and the frequent waſhing the feet in warm water, impregnated with an alkaline ſalt from the aſhes of vegetables, or otherwiſe, proves of the greateſt ſervice to compleat the carrying it off, and reſtore the parts to their natural tone. *Junker*'s Conſp. Med. p. 623. When the fits are thoroughly off, bleeding ſhould never be omitted ſpring and autumn, and in people of ſucculent habits, cupping upon the parts is often very uſeful; with women, the menſes are to be conſidered before all things, and brought to their regular periods before any hope of a

cure

cure can be had. In men, the application of leeches to the hæmorrhoidal veins is of ſervice, and four times, at leaſt, in the year purging medicines, ſuch as rhubarb, ſena, and the like, are to be taken in decoctions, or infuſions, mixing with them ſuch things as are known to ſweeten the blood. And in the general regimen, a ſufficient quantity of weak liquors is to be always drank, and a moderate exerciſe of the body is to be kept up. And finally, as the ſpring and autumn are the times at which the fits of all *arthritic* diſeaſes uſually return, it will be proper, by way of prevention, to take at ſuch times decoctions or infuſions of ſaſſafras, or the other woods, in the manner of tea, and with them a few moderate doſes of ſome of the nitrous medicines.

It is a general obſervation in all *arthritic* caſes, that all kinds of excretion, moderately promoted, leſſen the pains, and, on the contrary, that the ſuppreſſion of any of them render them much more violent and intenſe. Hence opiates are to be as much as poſſible avoided in the height of the fits, for tho' they give ſome eaſe for the preſent, they always encreaſe the pain afterwards. The aſtringent ſteel preparations, with the boles and other medicines of this claſs, ſuppreſs the excretions, conſtringe the viſcera, and ſometimes bring on dropſies. Volatile ſalts given imprudently, and in too large doſes, conſtringe the viſcera, and at the ſame time excite a violent emotion in the humours: hence they are often the occaſion of great miſchiefs, and it is very unhappy that the preſent practice is ſo free in the uſe of them in theſe caſes.

Among the external applications, thoſe which are aſtringent, cooling, ſaturnine, and the like, all give a temporary relief; but they are of very dangerous, and often of fatal conſequences, as they bring on nodes, tophs, and contractions of the parts in ſome caſes, and in others forcibly repel the matter to the internal parts, and bring on fatal ſymptoms, which no other medicines can relieve.

The acrid, hot, and nervine medicines uſed externally, ſuch as the chemical oils, and the natural balſams, all exaſperate the ſymptoms, and bring on intolerable pains and inflammations; for there is in theſe caſes no weakneſs of the parts to be ſtrengthened by ſuch medicines, but a too great ſtricture and tenſion of them, which all medicines of this kind, by their acrid qualities, muſt neceſſarily add to.

Strong purges given in the time of the fit have often proved fatal, by drawing in the morbid matter to the internal parts; and bleedings in the time of the fits always make them more violent, ſubject the patient to more frequent returns, and bring on a neceſſity of repeating the bleedings every time, before any medicines can take effect. But bleeding in the very beginning, or at the coming on of the fit, as alſo at its decline, have their real uſe; eſpecially the applying four or five leeches to the hæmorrhoidal veins, or in the ſciatica the cupping with deep ſcarification on the part: by this means alone this diſeaſe has ſometimes been abſolutely cured, ſo as never to return again. Camphorated ſpirit of wine, and the bags of dry ingredients ſprinkled with it, are proper in all ſtages of the diſeaſe, and in all conſtitutions.

A cerate of galbanum and camphor often gives immediate relief. This ſhould be applied after bleeding in the acceſs of the fit, and if it does not take effect in three hours time, it ſhould be taken off again. The ſoap plaiſter, with a large portion of camphor, is often alſo found of great ſervice in the beginnings of theſe caſes. The waſhing the feet in warm water, if uſed juſt before the coming on of a fit of the *gout*, always makes it much more ſevere, but if uſed afterwards, it often proves of ſervice. The proper time for it is in the decline of the fits.

Above all things, when a fit is gone off, the occaſional cauſes of its returning are to be avoided; theſe are, a too rich diet, the drinking too much wine, an immoderate uſe of venery, violent emotions of the mind by anger, or other paſſions, and violent and immoderate exerciſes; if theſe are not reſtrained, the return of eaſe will probably be of but very ſhort duration.

The uſe of ſalivation has been recommended by ſome in theſe caſes, but was never found to be of any real uſe.

Dr. Stahl commemorates a very remarkable caſe, proving the *gout* in the feet to be contagious or catching. It is, that a certain gentleman, ſubject to the *gout*, giving his footman a pair of boots which he had been uſed to wear, the man, after a ſhort time wearing them, became gouty.

A total milk and ſeed diet will, it is ſaid, cure the *gout*. See *Cheyne*'s Nat. Meth. of Curing, p. 266.

Dr. Dover ſays, a *gouty* patient will be free in two or three hours at fartheſt, after taking a doſe, from forty to ſeventy grains, of the following powder. Take ſalt petre, and tartar vitriolated, each four ounces, put them into a red hot mortar, ſtir them with a ſpoon till they have done flaming, then powder them very fine, and after that ſlice in an ounce of opium; grind thoſe to powder, then mix it with an ounce of the powder of ipecacuanha, and as much of the powder of liquorice. This is to be taken going to bed in a glaſs of white wine poſſet drink, covering up warm, and drinking a quart or more of poſſet drink while ſweating.

The doctor is alſo of opinion, that Mynſicht's elixir of vitriol often taken, though it may cauſe pain for ſome time, yet moſt certainly deſtroys the *gouty* matter in the end. Med. Eſſ. Edinb.

Dr. Stevens endeavours to prove the *gouty* humours to be rather of an alkaline than acid nature.

Dr. Cajetanus Tacconus tried many experiments with the mucilage of the joints of brutes, and of men, both ſound and *gouty*, in order to diſcover whether the *gouty* matter is acid or alkaline, and concludes, that its matter is ſometimes of the one, and ſometimes of the other nature. If the *gout* produces no *tophi*, or knots, or does it very ſlowly, and eſpecially if it is attended with œdematous ſwellings, he pronounces it to depend on an alkaline humour; but if the knots are large, and quickly formed, it is owing to an acid.

Monſieur de Sault being of opinion that the *gout* depends on the want of perſpiration, propoſes warm baths, exerciſe, keeping always warm, and defending from cold; clean clothes, moderate eating, abſtaining from ſupper, tranquillity of mind, friction, and milk diet, as preſervatives from it. Garlic being obſerved by Sanctorius to increaſe perſpiration, is recommended; as are *cortex Peruvianus* and ſteel in winter. When the ſtomach is attacked he lets blood at the ankles, and applies epiſpaſtics of different kinds to the feet, and then endeavours to procure a general ſweat. When the pain is very violent he blunts it, by applying a cloth dipped in liquid laudanum to the pained part, and exhorts the patient to uſe exerciſe after this. Medic. Eſſ. Edinb.

GOUTY *land*, in agriculture, a term uſed by the farmers to denote a hollow fuzzey black earth with little ſprings, that have no free outlet, and therefore ſwell and elevate the ſurface in many places. *Moreton*'s North. p. 39.

GRACILIS (*Cycl.*)--GRACILIS *rectus*, in anatomy, a name given by Riolan to one of the muſcles of the leg called by Winſlow the *rectus cruris anterior*, and by Cowper the *rectus femoris*. Albinus calls it the *rectus cruris*.

GRACULUS, in the Linnæan ſyſtem of zoology, a diſtinct genus of birds, of the order of the *anſeres*. The diſtinguiſhing character of which is, that the beak is of a conic figure, and has a crooked point. *Linnæi* Syſt. Nat. p. 46.

GRACULUS *palmipes*, in zoology, a name given by ſome to a bird called in England the *ſhagge*, and by Mr. Ray the *corvus aquaticus minor*, or leſſer cormorant, being regularly a ſpecies of that bird. *Ray*'s Ornith. p. 249. See the article CORVUS *aquaticus minor*.

GRADATION, *Gradatio* in rhetoric. See CLIMAX, *Cycl.*

GRADO, in the Italian muſic, ſignifies *degree*; thus *di grado* is uſed to denote *conjoint degrees*, which is when the notes riſe or fall from ſpace to line, or from line to ſpace, without making any leap of a third, fourth, or other interval. See SALTO.

Di grado aſcendente intimates, that all the notes riſe by *conjoint degrees*, as *ut*, *re*, *mi*, *fa*, &c.

Di grado deſcendente, is when all the notes deſcend or fall by *conjoint degrees*, as *ſol*, *fa*, *mi*, *re*, *ut*. *Broſſ.* Muſ. Dict. in voc. See DEGREE and CONJOINT.

GRÆA, a name uſed by the old Greek writers for the wrinkled pellicle which ariſes upon milk in the boiling.

It was alſo uſed in a figurative ſenſe for the wrinkles in the ſkin of old people.

GRAFFER, from the French *greffier*, i. e. *ſcriba*, a notary, or ſcrivener; it is uſed in the Stat. 5 Hen. VIII. c. 1.

GRAFFIO, or GRAVIO, in our old writers, denotes a *landgrave*, or *earl*.—*Nec princeps nec* graffio, *hanc lenitatem mutare audeat*. Blount.

GRAFFIUM, in old writers, is uſed for a writing book, regiſter, or cartulary of deeds and evidences.

GRAFTING (*Cycl.*)—Many have talked of changing of ſpecies, or producing mixed fruits by *engrafting* one tree on another of the ſame claſs; but as the *graft* carries the juices from the ſtock to the pulp of the fruit, there is little hope of ſucceeding in ſuch an expectation by ever ſo many repeated *grafts*; but if after changing the *graft* and ſtock ſeveral ſucceſſive times, you ſet the ſeed of the fruit produced on the *graft* in a good mould, it is poſſible that a change may happen, and a new mixed plant may be produced. Thus the almond and peach may, by many changes in the *graftings*, and by interrations of the ſtones of the peaches, and of the ſhells of the almonds, and by terebrations of the ſtem of the root here and there, alter their nature ſo much, that the coat or pulp of the almond may approach to the nature of the peach, and the peach may have its kernel enlarged into a kind of almond; and on the ſame principle the curious gardiner may produce many things of ſuch mixed kinds. Philoſ. Tranſ. N° 46.

Mr. Du Hamel of the Academy of Sciences of Paris has obſerved, that in *grafting* of trees there always is found at the inſertion of the *graft* a change in the directions of the fibres, and a ſort of twiſting or turning about of the veſſels, which greatly imitates that in the formation of certain of the glands in animal bodies; and he very judiciouſly infers from thence, that a ſort of new viſcus being formed by this means, the fruit may very naturally be ſo far influenced by it, as to be meliorated on the new branch; but that no ſuch ſudden and eſſential changes can be effected by this means, as too many

of the writers in agriculture pretend. This author obſerves, however, that this anatomical obſervation alone would not have convinced him of the falſity of too many of theſe relations, had not experiment joined to confirm it; he tried many *grafts* on different trees, and, for fear of error, repeated every experiment of conſequence ſeveral times, but all ſerved only to convince him of the truth of what he at firſt ſuſpected. He *grafted* in the common way the peach upon the almond, the plum upon the apricot, the pear upon the apple, the quince, and the white thorn, one ſpecies of plum on other very different ſpecies, and upon the peach the apricot and the almond; all theſe ſucceeded alike, the ſpecies of the fruit was never altered, and in thoſe which would not come to fruit, the leaves, the wood, and the flowers, all were the ſame with thoſe of the tree from which the *graft* was taken.

Authors in agriculture have mentioned alſo a very different ſort of *grafting*, that is the ſetting *grafts* of one tree on ſtocks of a different genus of trees; ſuch as the *grafting* the pear upon the oak, the elm, the maple, or the plum; the mulberry upon the elm, the quince, and the fig; the cherry upon the laurel; the peach upon the hazel; the vine upon the cherry tree, and upon the hazel; and the like unnatural conjunctions. Mr. Du Hamel tried all theſe ſeparately, and carefully, and the event proved very plainly, that thoſe who had mentioned them had never tried them; and a natural concluſion from this was, that there muſt be a natural alliance between the *graft* and the ſtock which receives it, otherwiſe it will either never grow at all, or elſe very ſoon periſh. Memoirs Acad. Par. 1727.

The facility with which *grafts* take place, and grow on proper ſubjects, is well known; there are, however, many accidents and uncertainties attending them in their different periods. Some periſh immediately, ſome after appearing healthy for many months, ſome even after years of health. Of theſe laſt ſome die without the ſtocks ſuffering any thing; others periſh together with it. It is very certain, that the greater part of *grafted* trees do not live ſo long as they would have done in their natural ſtate, yet this is no unexceptionable rule, for there are ſome which evidently live the longer for this practice; nay there are inſtances of *grafts*, which being placed on ſtocks naturally of ſhort duration, live longer than when placed on thoſe which are more robuſt and laſting. Theſe are irregularities which have been little conſidered hitherto, though they happen in a practice, the advantages of which are very great. One great requiſite for the ſucceeding of any *graft* is, that it be in its own nature capable of ſo cloſe and intimate an union with the ſubſtance of the ſtock, that it becomes as it were a natural branch of it. If all trees reſembled one another in their ſtructure and juices, if their ſolid parts were all of the ſame figure, and their ſap all of the ſame nature and conſiſtence, their veſſels all of the ſame diameters, and their elaſticity, and the number of the tracheæ equal in all, and in all filled with the ſame quantities of air; if trees were alike in theſe particulars, probably *grafts* of all trees would ſucceed upon one another, but this is by no means the caſe.

Trees are well known to be compoſed of numerous arrangements of hollow fibres, and theſe are different and unequal in every ſpecies of tree. In order to the ſucceeding of a *graft*, it is evident that there muſt be a mutual conformity in its veſſels and juices with thoſe of the ſtock, and the more nearly they agree in this, probably the better they ſucceed; and the farther they differ, the worſe.

If there be, however, ſome difference in the ſolid parts of trees, there are evidently many more in their juices. The ſap in ſome trees is white as milk, in others it is reddiſh, and in others clear and limpid as water; in ſome it is thin and very fluid, in others thick and viſcous. In the taſte and ſmell of theſe juices there are alſo not leſs differences; ſome are ſweet, ſome bitter, ſome inſipid, ſome acrid, and ſome fœtid; the differences in one or other claſs are varied almoſt to infinity, and the ſucceſs of *grafts* may very rationally be ſuppoſed owing to the agreement between the juices as well as ſtructure of the *graft* and of the ſtock. The quality of the ſap thus makes a very great difference in the nature of trees, but its quantity, and readineſs of derivation to the parts, is ſcarce leſs obſervable. In this we have familiar inſtances in the willow and the box, one of which will puſh out longer ſhoots in a year than the other in twenty.

Another difference yet more ſtriking, and indeed more eſſential in regard to the growth of *grafts* than all theſe, is the different ſeaſon of the year at which different trees ſhoot out their leaves, or ripen their flowers. The almond tree is in flower before other trees in general have opened their earlieſt buds, and when other trees are in flower, this is full of leaves, and has its fruit ſet before the mulberry begins to puſh out its buttons. When we conſider all theſe differences in trees, we cannot but wonder how it is poſſible for a branch of one to live upon another; and it becomes a much more perplexing queſtion, how any *graft* can ſucceed, than how ſuch numbers come to miſcarry. A *graft* of one pear upon the ſtock of another of a different kind, ſhall be ſeen to grow immediately, as if upon its own tree, and in a fortnight to gain ſix inches in length, and ſo of ſome others. This muſt be owing to the great ſimilarity between the ſtock and the *graft* in all reſpects; and a great contrariety, or difference in the ſtructure of parts, will make as remarkable a want of joining on the other hand. An inſtance of this may be had in the plum and the elm, which no art can ever make to ſucceed with one another, whether the plum be *grafted* on the elm, or the elm on the plum ſtock. Theſe are examples of the extremes of eaſy growth, and of abſolute decay; but there are many conjunctions of trees which ſeem of a middle nature between the two, and neither immediately periſh, nor totally ſucceed. Of theſe, ſuch as were *grafted* in autumn uſually remain green the whole winter without puſhing, and thoſe which are *grafted* in ſpring remain green a month, or longer, but ſtill without ſhooting. Some particular ones have been alſo known to make ſome ſhoots the firſt, or even the ſecond ſap ſeaſon after the operation, but all periſh at the end of theſe times. Of this kind are the *grafts* of the pear tree upon the elm, the maple and the hornbeam, and the mulberry upon the elm, and upon the fig, with many others.

When we come to enquire into the cauſe of this, we find that theſe *grafts*, though unnatural, have yet had a communication with the ſtock by means of a few ſmall veſſels, which has been ſufficient to keep them green, or even to make them ſhoot a little during the great aſcent of the ſap: But the far greater number of the fibres have had all the while no communication, and are found putrified, dried up, or covered with a putrid juice. This has evidently happened, by means of the diſproportion in ſize between the veſſels of the ſtock and of the *graft*, and the great difference between their natural juices, which are obſtacles abundantly ſufficient to prevent either an union of the fibres, or the introduction of new ſap.

The *grafts* of the almond on the plum, and of the plum on the almond, always grow very vigorouſly for the firſt year, and give all the appearance imaginable of ſucceeding entirely, yet they always periſh in the ſecond, or elſe in the third year. The almond *graft* upon the plum ſtock, always puſhes out very vigorouſly at firſt, but the part of the ſtock immediately under the *graft* grows ſmaller, and periſhes; the *graft* abſorbing too much of its juices, and the *graft* neceſſarily periſhes with it. The decay of the whole generally happens early in the ſpring, and that plainly from the different ſeaſon of the natural ſhooting of the two trees, the almond puſhing very vigorouſly, and conſequently draining the ſtock of its juices, at a time when, according to its nature, the juices are but in ſmall quantity in it, and the ſap does not begin to aſcend. The *grafts* of the plum on the almond are, from the ſame cauſe, furniſhed with an abundance of ſap, which they have at that time no occaſion for, and conſequently they as certainly periſh of repletion, as the other of inanition. Mem. Acad. Par. 1730.

The peach *grafted* on the plum ſucceeds excellently, and lives longer than it would have done in its natural ſtate. The reaſon of which is this: the peach is a tender tree, it ſhoots with great vivacity, and produces more branches than the root is able to maintain, which is the reaſon why peach trees are uſually full of dead wood, and often their large branches periſh, and ſometimes their whole trunk; on this occaſion, the plum being a ſlow ſhooting tree, communicates its virtue to the *graft*; and the peach conſequently ſends out ſhoots, which are more robuſt, and ſtrong, and are no more in number than the root is able to ſupply with nouriſhment; and conſequently the tree is more ſtrong and laſting. Ibid.

Tools neceſſary for GRAFTING. In order to *grafting*, a perſon muſt be provided with the following tools. 1. A neat and ſmall hand-ſaw to cut off the heads of large ſtocks. 2. A ſtrong knife with a thick back, to make clefts in the ſtocks. 3. A ſharp penknife to cut the *grafts*. 4. A *grafting* chiſſel and a ſmall mallet. 5. Braſs ſtrings, or elſe woollen yarn to faſten on the *grafts* with, and finally, a quantity of clay, which ſhould be prepared a month before it is uſed, and kept turned and worked about every day like mortar. The beſt mixture for this matter is: a quantity of ſtrong, fat and viſcous loam muſt be got, and into this muſt be well beat and mixed ſome ſtone-horſe dung, and ſome chopp'd ſtraw cut very ſhort and ſmall; finally, a quantity of common ſalt muſt be thrown in, this muſt be mixed up and beat together into a paſte with water, but it muſt not be expoſed to the froſts. This is equally proper to be employed for all the different ſorts of *grafting*. *Miller*'s Gardners Dict.

Principal kinds of GRAFTING, are, 1. *Grafting* in the rind, called alſo ſhoulder-*grafting*, and by ſome crown-*grafting*; this is only fit for large trees, and the *grafts* in this are ſet in form of a circle or crown. This is moſt properly performed in the latter end of March or beginning of April.

2. *Cleft-grafting*, which is alſo called by ſome ſtock and ſlit-*grafting*. This is proper for ſtocks or trees of a leſſer ſize, and not exceeding two inches in diameter. This *grafting* is to be performed in the months of February and March, and ſupply the failure of the eſcutcheon way, which is uſually performed in June, July, and Auguſt.

3. *Whip-grafting*, which is alſo called tongue-*grafting*; this is proper for ſmall ſtocks of an inch, or an inch and half diameter, and from this down to the ſmalleſt ſize; this is found the moſt effectual way of any, and is what is now almoſt univerſally practiſed.

4. *Grafting* by approach or ablactation. This is performed when the ſtock to be *grafted* on, and the tree from which the bud is taken, are ſo near together that they may be joined. This is beſt performed in the month of April, and is called by ſome inarching; and is chiefly uſed for jaſmines, oranges, and the tenderer exotic trees.

All thoſe trees which are of the ſame tribe, that is, which agree in their flower and fruit, will take upon one another; thus all the nuts may be engrafted on one another; as may alſo all the plums, and all that are allied to them; as the almond, peach, nectarine, and the like: but as theſe generally loſe a great deal of gum in the *grafting*, the operation of inoculation is greatly more proper for them.

All the trees which bear cones will ſucceed very well on one another, even though ſome ſhed their leaves in winter, and others do not. Thus the cedar of Lebanon and the larch tree do very well on one another; but theſe, becauſe they abound ſo greatly in reſin, muſt be *grafted* by approach, becauſe the reſin of the *graft* being loſt from it before it is ſet into the ſtock, makes it otherwiſe often miſcarry.

Bad weather will often deſtroy the hopes of the beſt operator; otherwiſe with theſe regulations the whole generally ſucceeds very well; and is not only of uſe for the propagating many exotic plants, but even will make very tender ones bear our climate, by placing them on the hardier ſtocks of the ſame kind. *Miller*'s Gardners Dict.

The antients were very fond of *grafting*, and if we are to underſtand their writings as they now ſtand, we muſt acknowledge that they had an art greatly ſuperior to ours, as they could make the moſt unlike trees ſucceed upon one another. Thus they *grafted* the mulberry on the fig, the plum upon the cheſnut, and ſo on: but it ſhould ſeem that either the authors who have affirmed theſe things wrote upon hearſay, without any knowledge of experiments, or elſe that they called other plants by theſe names; ſince experience abundantly ſhews us, that no tree, however like another in leaf, or any other particular, will ever be made to ſucceed upon another, unleſs they have both the ſame fructification. Id. Ibid.

GRAILE, *gradale* or *graduale*, a gradual, or book containing ſome of the offices of the Roman church.—Gradale, *ſic dictum, à gradalibus in tali libro contentis. Lyndewod.* Provincial. Angl. l. 3.

It is ſometimes taken for a maſs-book, or part of it, inſtituted by Pope Celeſtine, *anno* 430. See Stat. 37 Hen. 6. c. 32.

GRAIN (*Cycl.*)—*Structure of* GRAIN. There are three particulars obſervable in every *grain*, whether it be wheat, barley, oat, or whatever elſe of that kind. Theſe are, 1. The outer coat or pellicle which contains all the reſt. This in the ſame ſpecies of *grain* is found to be very different in thickneſs in different years, and as it has grown in different ſoils. 2. The germ or bud. This is always hid within the ſeed or *grain*, and is the plant in miniature that is to ariſe from it; and 3. The meal, or that farinaceous matter which is incloſed in the ſkin, and which ſurrounds the germ, and ſerves to give it nouriſhment when firſt put into the earth, before it is capable of drawing it from the earth itſelf. Dr. Grew, in his anatomy of plants, has treated of this at large. See VEGETATION, &c.

The whole ſtructure of the plant which produces theſe ſeeds is equally admirable. The chaffy huſk is admirably adapted to ſhield and defend the ſeed as long as that is neceſſary, and then to let it fall; and the ſtalk formed hollow and round is neceſſarily at once light and ſtrong, capable of ſuſtaining the ear, without abſorbing too much of the juices deſtined to its nouriſhment; and the beards of many kinds are a defence againſt the birds, that would otherwiſe deſtroy the ſeed before its ripening. The covering of the ſeed is formed of two membranes, which meeting in a line on one part of the ſeed, form together that furrow we ſee on it. This is the place at which the ſeed is to burſt open on being moiſtened. Had not nature provided this means of the germ's coming out, the toughneſs neceſſary to the coat of the ſeed, as a defence from injuries, would have ſuffered the farinaceous matter and the germ to rot together, within it, before it would have given them way to come out, and for the germ to grow.

Nor is this the only uſe of this place of opening. The great Creator of all things has provided theſe ſeeds, not only for a ſupply of the ſame ſpecies of plant, but for our food, and for that of birds, *&c.* We have art enough to erect machines for the reducing the farina to powder, and the freeing it from its covering membrane, but the birds eat it as it is, and it would paſs through them whole, and without doing them any good, were it not that the juices of the ſtomach ſwelling it up, it burſts open at this furrow, and all the nutritive matter pours itſelf out. *Des Landes* Trait. Phyſ. p. 62.

This farinaceous matter is compoſed of an infinite number of white and tranſparent bodies, of a globular figure: theſe every way ſurround and incloſe the young plant, and by their figure being eaſily put in motion, as ſoon as the heat and humidity of the earth act upon them, they, by degrees, force themſelves into the veſſels of the plant, and give it increaſe from time to time till they are received into it; and they then have ſo far given it ſtrength, that it is in a condition to feed on the juices in the earth. The ſame proceſs of nature is obſervable in the caſe when *grains* of corn grow out of time, on being thrown too careleſsly together in a moiſt place.

When the corn is ground into powder, it is theſe farinaceous globules, that make what we call the flower. The germs are always leſs white, and leſs tranſparent than they, but they are of great uſe: ſince it is principally to them, that we owe the agreeable flavour of bread, and almoſt wholly to them, that the fermentation of dough is owing. Their little parts being, of all others, of the *grain* the moſt eaſily put in motion. And it is alſo to theſe, that the rotting of wheat, preſerved in damp granaries, is to be attributed, their natural tendency being to motion and to corruption, if that motion be given without the neceſſary accidents. That the obſervation of the fermentation of dough, and the lightneſs of bread, being owing to theſe germs, may not ſeem advanced at random; it may be proper to confirm it, by the obſervations of the people employed in the making bread for the army. Theſe people always find, that fine flour, if well dried, and put up in dry barrels, will keep good a long time; but that after it has been thus kept long, though it will make biſcuit, and ſerve for many other neceſſary uſes, it will never make the fine light bread eaten at table; and this they attribute to the life of the flower being ſpent; that is, to theſe germs being deſtroyed, as to their vegetative power, by having been a long time broken to pieces.

GRAIN *of iron.* Even iron has its *grain* as well as wood, and that not the ſame in all iron, though all iron is very evidently the ſame ſpecies of body. The common caſt iron has a *grain* very different from that which has been hammered, or wrought, the granules which compoſe the maſs, being in this laſt ſtate forced as it were into combinations with one another, by the repeated blows of the hammer: the tempering of iron into ſteel alſo alters its *grain*, partly by means of the ſalts and ſulphurs, which are by that operation introduced into it, and partly by the ſtopping the effect of the fiery particles received into it at a certain time.

But beſide theſe differences, the common wrought iron has in its ſeveral pieces, or ſometimes in the ſeveral parts of the ſame piece, different *grains*. Firſt a laminated one, ſecondly a granulated one, and thirdly a fibroſe or ſtringy one. Theſe, however, are not ſo different, in reality, as they appear to be; for the laminæ, as they become ſmaller, become granules; and arrangements of theſe granules, in long lines, make the fibres of the thready kind. The artificers, however, know by theſe marks of the *grain*, what iron is fitteſt for tempering into ſteel; and they find the laminated pieces to be the worſt of all, and the granulated ones the beſt. Mem. Acad. Scien. Par. 1722.

The world has talked much about the different *grains* of lead ores, but theſe are three, juſt as in iron, and are owing only to the ſize and arrangement of the ſame ſhaped particles as in the iron. The broad grained lead ore being analogous to the laminated kind of iron, the ſteel grained being equally analogous to the granulated iron, and what is called the antimoniated lead ore, being in the ſame manner analogous to the fibrous grained iron, and all in the ſame manner ariſing out of one another.

GRAIN *weight.* The *grain weight* in uſe among jewellers is one fourth of a carrat; and the carrat is about the one hundred and fiftieth part of an ounce troy; according to Mr. Jeffreys, in his treatiſe on diamonds and pearls.

Hence, the jewellers *grain* is to the troy *grain*, inverſely, as 600 is to 480, that is directly as 4 to 5.

GRAMINIFOLIA, in botany, a name given by Dillenius to a genus of plants, called by Micheli and Linnæus *zannichellia*. *Dillen.* Gen. 169. See ZANNICHELLIA.

GRAMMELOUC, in natural hiſtory, the name of an Eaſt-Indian ſhrub, very common in the woods and foreſts. It grows to five or ſix feet high. Its leaves are very long and narrow, and terminate in a point; they are of a lively green. The fruit is carried in a bag of a triangular ſhape, of the ſize of a hazel-nut, but ſomething longer: on opening this there appear three cells, in each of which is contained one fruit, reſembling the ſeed of the palma chriſti, but covered with a tranſparent pellicle, and a black one under that. The inſide of the fruit is white, and is of a ſharp and pungent taſte. It is a very violent medicine, operating both by ſtool and vomit, and that often, ſo as to endanger the life of the perſon, who has taken it. They allay its operation by eating betle. Mem. Acad. Par. 1699. See BETLE.

GRAMPUS, in ichthyology, an Engliſh name given to one of the cetaceous fiſhes, properly of the genus of the *delphinus*, or dolphin, according to the new Artedian ſyſtem, and diſtinguiſhed from the others of that genus by the name of the dolphin, with the ſnout bending upwards, and with broad

ſerrated teeth. This is the orca of almoſt all the antient as well as modern writers, and is called the loper and north caper by the people of Scotland. Sibbald gives it the name of the *balæna*, but he diſtinguiſhes it from the common whale by its ſmaller ſize, and having teeth in both the jaws. Paulus Jovius calls it alſo *capidolius*. Theſe are all the names it is known by; and that of *porpeſſe* is ſometimes ignorantly given to it, but properly belongs to another ſpecies of the ſame genus, the *phocæna*. See PHOCÆNA.

GRANA *regia*, in the materia medica, the ſeeds of the common ricinus, called by ſome *palma chriſti*. See RICINUS.

GRANA *figlia*, in the materia medica, the fruit of a ſpecies of ricinus. See RICINUS.

GRANADILLA, *paſſion flower*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral petals diſpoſed in an orbicular form. The cup conſiſts of many leaves, and from this there ariſes a piſtil which has a fringed crown at its baſe, and at its apex a tender embryo, adorned with three bodies of the ſhape of nails, and with a great number of ſtamina underneath. The embryo ripens afterwards into a globular or oval fruit which is fleſhy, unicapſular, and furniſhed with ſeeds covered with a ſort of hoods, and adhering to the ribs of the fruit as to ſo many placentæ.

The ſpecies of *granadilla* enumerated by Mr. Tournefort are theſe: 1. The common *granadilla* called the maracot and paſſion flower. 2. The *granadilla* with three pointed leaves, and blackiſh purple flowers. 3. The *granadilla* with tricuſpidate leaves, and large yellow flowers. 4. The *granadilla* with tricuſpidate leaves, and ſmall yellow flowers. 5. The *granadilla* with tricuſpidate leaves, and an olive faſhioned fruit. 6. The *granadilla* with narrower tricuſpidate leaves, and olive ſhaped fruit. 7. The *granadilla* with ſmooth narrow tricuſpidate leaves, and very ſmall green flowers. 8. The ſtinking *grandilla* with a tricuſpidate hairy leaf and white flower. 9. The ſtinking *granadilla* with tricuſpidate hairy leaves, and variegated purple flowers. 10. The many leaved *granadilla* with an oval fruit. 11. The many leaved *granadilla* with fruit of the ſhape of the colocynth. 12. The many leaved *granadilla* with curled flowers. 13. The ivy leaved *granadilla* with very ſmall flowers and fruit. 14. The ivy leaved *granadilla* with white flowers, and hairy globoſe fruit. 15. The ivy leaved *granadilla* with variegated leaves. 16. The *granadilla* of Surinam with oblong ſerrated leaves. 17. The elm leaved *granadilla* of Surinam. 18. The *granadilla* with two pointed leaves, and beautiful red flowers. 19. The apple fruited broad leaved *granadilla*. 20. The long leaved citron fruited *granadilla*. 21. The *granadilla* with ſmall corymboſe fruit. 22. The *granadilla* with androſæmum leaves, and fruit like the jujube.

GRANARY (*Cycl.*)—In the care of public *granaries*, or magazines of corn, one great caution neceſſary, is, the laying up in them ſuch corn as will be leaſt ſubject to decay, and the ſingle thing to be conſidered in this, is the laying up only ſuch as is the product of hot and dry countries. In France the corn of the ſouthern provinces keeps many years longer than that of the other parts of the kingdom; and antient and modern hiſtory both inform us, that the corn which is the produce of Africa, particularly of the country about Algiers and Tunis, will keep much longer than that of any other country. The Romans, in old time, annually imported vaſt quantities of corn from Egypt; this they found not only to produce much larger crops than ſuch as was the produce of their own country, but to keep many years in their public *granaries* without injury. The Marquis of Santa Cruz, the author of many excellent obſervations on the politic and military ſtate of different nations, obſerves, that in Galicia and the Aſturias the corn will hardly keep in the *granaries* from one year to another, and that it is the humidity it contains that rots and decays it; and that the corn brought from Caſtile will keep good many years. This corn, he tells, is the only kind they ever venture to lay up in the public *granaries* of Spain, and that the whole difference between this and the other, is, that it grows in a country where there is leſs rain in ſummer. *Des Landes* Trait. Phyſ.

It would be eaſy to import corn from Barbary in ſufficient quantity, for all the ſeed corn of the kingdom; and in countries where the people are ſubject to famine, even for the ſupport of the nation; and the advantage this African corn would have over the European, would be much greater than that of Caſtile is obſerved to have over the produce of the other parts of Spain. Flat bottomed veſſels, of conſiderable burthen, yet not made to draw much water, would be very proper for this ſort of ſervice; and the voyage through the ſtraits of Gibraltar would, at a proper ſeaſon of the year, be ſhort, and performed at ſmall expence. We might thus be furniſhed with ſeed corn, vaſtly better than any we can purchaſe at preſent; and France with corn that would guard ſufficiently againſt the miſeries of a famine, which a long war generally brings upon that nation; and if the public magazines for receiving and laying up this corn, were erected near the mouths of the ſeveral larger rivers, the water carriage would eaſily diſperſe it in time of want to all parts of the kingdom.

The kingdoms of Fez and Morocco might be alſo as good marts for us, though the French are forbid trading for corn in them, on any other condition than that of exchanging military ſtores for them, which they make a point of it not to do. The keeping up a good underſtanding with Algiers and Tunis, is however of ſo much conſequence to us, that we do not ſcruple purchaſing their friendſhip at this price; and we therefore might, if we pleaſed, as well traffic for corn with fire-arms in Fez and Morocco, as with any other of the commodities of our country. Id. Ibid.

The choice of the *grain* being made, and the manner of procuring it regulated, the next conſideration is how to preſerve it; for this purpoſe, we have the concurrent teſtimony both of the antients and moderns, that ſubterranean caverns made in a dry ſoil, and preſerved from the ingreſs of damp air, are the propereſt places. Pliny tells us, that in his time they kept corn a long time in theſe ſort of ſtore rooms, covering the bottom with ſtraw, and laying upon that the corn in the ear. We find that corn will be preſerved thus very well, for five, ſix, or ſeven years. And an accident, ſome years ago, diſcovered a parcel of corn thus preſerved at Amiens, which, though it had been laid up a great number of years, was found to be freſh and good, not worm eaten, not rotten, nor even mouldy. This is certainly owing to the moiſt air having been kept out, and with it the eggs of animals, and ſeeds of thoſe minute vegetables, which we ſee in form of mouldineſs on ſuch corn, as has been leſs carefully defended from the acceſs of them.

Experimental philoſophy has proved that the air is the great ſource of corruption; keep out that, and all is kept out; and the moſt corruptible ſubſtances, ſuch as meal, butter, milk, and the like, have been preſerved freſh four months in the exhauſted receiver of an air pump.

The only objection to this ſcheme for public *granaries* is the expence, but it is not proper that any but a monarch ſhould undertake them; and there does not appear any way in which the public money could be better employed, than in ſo general a good. They have near Grand Cairo a magazine of this kind, defended with good walls, and called Joſeph's *granaries*. It is not probable, that they are quite ſo old as the days of that patriarch, but they abundantly proved the utility of ſuch ſtorehouſes, by the vaſt quantities of *grain* annually preſerved in them.

Many parts of Africa abound with *granaries* of this kind. They are ſo many deep pits made in the ſolid rock, the deſcent into them is but juſt large enough for a man to go down into them by, but they grow larger as ſoon as the perſon is in, and are uſually ſquare, and from thirty to forty feet in diameter. In theſe the great men of the country preſerve their corn; they firſt ſtrew over the floor with ſtraw, then they lay on the corn; ſtill as the heap riſes, placing a thin bed of ſtraw between the corn and the ſides, as they did at the bottom. In this manner they proceed till the whole cavity is filled: when this is done, they cover the mouth of the entrance with a ſort of hurdle of green boughs of trees, interwoven one with another. This they cover with about two feet thickneſs of ſand, and over this they raiſe a ridge of earth, well beat together, in order to throw off the rain both ways, that none may ſettle on the place and ſoak into the magazine.

The corn thus ſtored up always keeps three, four, or more years very good; and not unfrequently the proprietor being taken off by the ſeverity of the eaſtern governments, under which they live, the magazine is forgotten, and ſome accident diſcovering it many years afterwards, the corn is almoſt always found perfectly good in it. All the care they take, in regard to the corn, is to expoſe it two or three days to the ſun's heat, to dry it thoroughly before they carry it into the magazine.

In the dutchy of Lithuania, and in the Ukraine, the people always preſerve their corn in the ſame manner in wells or pits made in dry places; but in theſe countries great care is to be taken in the opening theſe ſtore rooms; for if people deſcend into them, before they have had ſufficient communication with the freſh air, they are often killed by the damps; this, however, is eaſily guarded againſt, and by theſe and numerous other inſtances of the practice of other countries, it appears evident that the advantage of theſe ſubterranean *granaries* over all others is very great. Id. Ibid. p. 30.

Though theſe are to be recommended before all others, yet the common *granaries* may, with proper care, be rendered greatly more uſeful than they are at preſent. The grand caution neceſſary to this purpoſe is to guard againſt the too great humidity, which there always is in places, where there is a great number of doors and windows. A too free acceſs of the external air is alſo to be carefully guarded againſt; for this brings in with it the eggs of a vaſt number of different inſects, which prey upon and deſtroy the corn. A third caution is, when the corn is the produce of the country, where it is preſerved, not to fill the place with the crop of one place only, but to mix the harveſts of

cure can be had. In men, the application of leeches to the hæmorrhoidal veins is of ſervice, and four times, at leaſt, in the year purging medicines, ſuch as rhubarb, ſena, and the like, are to be taken in decoctions, or infuſions, mixing with them ſuch things as are known to ſweeten the blood. And in the general regimen, a ſufficient quantity of weak liquors is to be always drank, and a moderate exerciſe of the body is to be kept up. And finally, as the ſpring and autumn are the times at which the fits of all *arthritic* diſeaſes uſually return, it will be proper, by way of prevention, to take at ſuch times decoctions or infuſions of ſaſſafras, or the other woods, in the manner of tea, and with them a few moderate doſes of ſome of the nitrous medicines.

It is a general obſervation in all *arthritic* caſes, that all kinds of excretion, moderately promoted, leſſen the pains, and, on the contrary, that the ſuppreſſion of any of them render them much more violent and intenſe. Hence opiates are to be as much as poſſible avoided in the height of the fits, for tho' they give ſome eaſe for the preſent, they always encreaſe the pain afterwards. The aſtringent ſteel preparations, with the boles and other medicines of this claſs, ſuppreſs the excretions, conſtringe the viſcera, and ſometimes bring on dropſies. Volatile ſalts given imprudently, and in too large doſes, conſtringe the viſcera, and at the ſame time excite a violent emotion in the humours: hence they are often the occaſion of great miſchiefs, and it is very unhappy that the preſent practice is ſo free in the uſe of them in theſe caſes.

Among the external applications, thoſe which are aſtringent, cooling, ſaturnine, and the like, all give a temporary relief; but they are of very dangerous, and often of fatal conſequences, as they bring on nodes, tophs, and contractions of the parts in ſome caſes, and in others forcibly repel the matter to the internal parts, and bring on fatal ſymptoms, which no other medicines can relieve.

The acrid, hot, and nervine medicines uſed externally, ſuch as the chemical oils, and the natural balſams, all exaſperate the ſymptoms, and bring on intolerable pains and inflammations; for there is in theſe caſes no weakneſs of the parts to be ſtrengthened by ſuch medicines, but a too great ſtricture and tenſion of them, which all medicines of this kind, by their acrid qualities, muſt neceſſarily add to.

Strong purges given in the time of the fit have often proved fatal, by drawing in the morbid matter to the internal parts; and bleedings in the time of the fits always make them more violent, ſubject the patient to more frequent returns, and bring on a neceſſity of repeating the bleedings every time, before any medicines can take effect. But bleeding in the very beginning, or at the coming on of the fit, as alſo at its decline, have their real uſe; eſpecially the applying four or five leeches to the hæmorrhoidal veins, or in the ſciatica the cupping with deep ſcarification on the part: by this means alone this diſeaſe has ſometimes been abſolutely cured, ſo as never to return again. Camphorated ſpirit of wine, and the bags of dry ingredients ſprinkled with it, are proper in all ſtages of the diſeaſe, and in all conſtitutions.

A cerate of galbanum and camphor often gives immediate relief. This ſhould be applied after bleeding in the acceſs of the fit, and if it does not take effect in three hours time, it ſhould be taken off again. The ſoap plaiſter, with a large portion of camphor, is often alſo found of great ſervice in the beginnings of theſe caſes. The waſhing the feet in warm water, if uſed juſt before the coming on of a fit of the *gout*, always makes it much more ſevere, but if uſed afterwards, it often proves of ſervice. The proper time for it is in the decline of the fits.

Above all things, when a fit is gone off, the occaſional cauſes of its returning are to be avoided; theſe are, a too rich diet, the drinking too much wine, an immoderate uſe of venery, violent emotions of the mind by anger, or other paſſions, and violent and immoderate exerciſes; if theſe are not reſtrained, the return of eaſe will probably be of but very ſhort duration.

The uſe of ſalivation has been recommended by ſome in theſe caſes, but was never found to be of any real uſe.

Dr. Stahl commemorates a very remarkable caſe, proving the *gout* in the feet to be contagious or catching. It is, that a certain gentleman, ſubject to the *gout*, giving his footman a pair of boots which he had been uſed to wear, the man, after a ſhort time wearing them, became gouty.

A total milk and ſeed diet will, it is ſaid, cure the *gout*. See *Cheyne*'s Nat. Meth. of Curing, p. 266.

Dr. Dover ſays, a *gouty* patient will be free in two or three hours at fartheſt, after taking a doſe, from forty to ſeventy grains, of the following powder. Take ſalt petre, and tartar vitriolated, each four ounces, put them into a red hot mortar, ſtir them with a ſpoon till they have done flaming, then powder them very fine, and after that ſlice in an ounce of opium; grind thoſe to powder, then mix it with an ounce of the powder of ipecacuanha, and as much of the powder of liquorice. This is to be taken going to bed in a glaſs of white wine poſſet drink, covering up warm, and drinking a quart or more of poſſet drink while ſweating.

The doctor is alſo of opinion, that Mynſicht's elixir of vitriol often taken, though it may cauſe pain for ſome time, yet moſt certainly deſtroys the *gouty* matter in the end. Med. Eſſ. Edinb.

Dr. Stevens endeavours to prove the *gouty* humours to be rather of an alkaline than acid nature.

Dr. Cajetanus Tacconus tried many experiments with the mucilage of the joints of brutes, and of men, both ſound and *gouty*, in order to diſcover whether the *gouty* matter is acid or alkaline, and concludes, that its matter is ſometimes of the one, and ſometimes of the other nature. If the *gout* produces no *tophi*, or knots, or does it very ſlowly, and eſpecially if it is attended with œdematous ſwellings, he pronounces it to depend on an alkaline humour; but if the knots are large, and quickly formed, it is owing to an acid.

Monſieur de Sault being of opinion that the *gout* depends on the want of perſpiration, propoſes warm baths, exerciſe, keeping always warm, and defending from cold; clean clothes, moderate eating, abſtaining from ſupper, tranquillity of mind, friction, and milk diet, as preſervatives from it. Garlic being obſerved by Sanctorius to increaſe perſpiration, is recommended; as are *cortex Peruvianus* and ſteel in winter. When the ſtomach is attacked he lets blood at the ankles, and applies epiſpaſtics of different kinds to the feet, and then endeavours to procure a general ſweat. When the pain is very violent he blunts it, by applying a cloth dipped in liquid laudanum to the pained part, and exhorts the patient to uſe exerciſe after this. Medic. Eſſ. Edinb.

GOUTY *land*, in agriculture, a term uſed by the farmers to denote a hollow fuzzey black earth with little ſprings, that have no free outlet, and therefore ſwell and elevate the ſurface in many places. *Moreton*'s North. p. 39.

GRACILIS (*Cycl.*)--GRACILIS *rectus*, in anatomy, a name given by Riolan to one of the muſcles of the leg called by Winſlow the *rectus cruris anterior*, and by Cowper the *rectus femoris*. Albinus calls it the *rectus cruris*.

GRACULUS, in the Linnæan ſyſtem of zoology, a diſtinct genus of birds, of the order of the *anſeres*. The diſtinguiſhing character of which is, that the beak is of a conic figure, and has a crooked point. *Linnæi* Syſt. Nat. p. 46.

GRACULUS *palmipes*, in zoology, a name given by ſome to a bird called in England the *ſhagge*, and by Mr. Ray the *corvus aquaticus minor*, or leſſer cormorant, being regularly a ſpecies of that bird. *Ray*'s Ornith. p. 249. See the article CORVUS *aquaticus minor*.

GRADATION, *Gradatio* in rhetoric. See CLIMAX, *Cycl.*

GRADO, in the Italian muſic, ſignifies *degree*; thus *di grado* is uſed to denote *conjoint degrees*, which is when the notes riſe or fall from ſpace to line, or from line to ſpace, without making any leap of a third, fourth, or other interval. See SALTO.

Di grado aſcendente intimates, that all the notes riſe by *conjoint degrees*, as *ut*, *re*, *mi*, *fa*, &c.

Di grado deſcendente, is when all the notes deſcend or fall by *conjoint degrees*, as *ſol*, *fa*, *mi*, *re*, *ut*. *Broſſ.* Muſ. Dict. in voc. See DEGREE and CONJOINT.

GRÆA, a name uſed by the old Greek writers for the wrinkled pellicle which ariſes upon milk in the boiling.

It was alſo uſed in a figurative ſenſe for the wrinkles in the ſkin of old people.

GRAFFER, from the French *greffier*, i. e. *ſcriba*, a notary, or ſcrivener; it is uſed in the Stat. 5 Hen. VIII. c. 1.

GRAFFIO, or GRAVIO, in our old writers, denotes a *landgrave*, or *earl*.—*Nec princeps nec* graffio, *hanc lenitatem mutare audeat*. Blount.

GRAFFIUM, in old writers, is uſed for a writing book, regiſter, or cartulary of deeds and evidences.

GRAFTING (*Cycl.*)—Many have talked of changing of ſpecies, or producing mixed fruits by *engrafting* one tree on another of the ſame claſs; but as the *graft* carries the juices from the ſtock to the pulp of the fruit, there is little hope of ſucceeding in ſuch an expectation by ever ſo many repeated *grafts*; but if after changing the *graft* and ſtock ſeveral ſucceſſive times, you ſet the ſeed of the fruit produced on the *graft* in a good mould, it is poſſible that a change may happen, and a new mixed plant may be produced. Thus the almond and peach may, by many changes in the *graftings*, and by interrations of the ſtones of the peaches, and of the ſhells of the almonds, and by terebrations of the ſtem of the root here and there, alter their nature ſo much, that the coat or pulp of the almond may approach to the nature of the peach, and the peach may have its kernel enlarged into a kind of almond; and on the ſame principle the curious gardiner may produce many things of ſuch mixed kinds. Philoſ. Tranſ. N° 46.

Mr. Du Hamel of the Academy of Sciences of Paris has obſerved, that in *grafting* of trees there always is found at the inſertion of the *graft* a change in the directions of the fibres, and a ſort of twiſting or turning about of the veſſels, which greatly imitates that in the formation of certain of the glands in animal bodies; and he very judiciouſly infers from thence, that a ſort of new viſcus being formed by this means, the fruit may very naturally be ſo far influenced by it, as to be meliorated on the new branch; but that no ſuch ſudden and eſſential changes can be effected by this means, as too many

It is common in Egypt and Arabia, and is found in many parts of the world beſide. We have of it in the weſt of England very little inferior to the Oriental.

The whitiſh red granite is ſometimes found in form of large ſtrata, but much more frequently in large looſe nodules. It is very little inferior in beauty to the Oriental *granite*, and is of a leſs coarſe and rude texture; it's ground colour has different degrees of its red tinge, and is ſometimes even whitiſh. This is beautifully ſpangled with black, white, and yellow; much in the ſame manner as the Oriental kind, and it is equally hard, and capable of as elegant a poliſh. It is very plentiful in many parts of the iſland of Minorca, from whence we might have it in abundance, and it would make very beautiful tables, *&c.* The rough maſſes of it are ſometimes found alſo on the ſhores of our iſland of Guernſey, whence they are taken up for ballaſt for ſhips, and are ſometimes by this means brought among us and uſed in the pavements of our ſtreets. *Hill*'s Hiſt. of Foſſ. p. 500.

GRANULATION *of metals* (*Cycl.*) in aſſaying, is the reducing metals into very ſmall particles, that they may the more readily fuſe, and the more equally mix with other bodies in ſome of the nicer operations.

This is done more coarſely in the wet way, by means of running them into water through a new broom, or rolling them about in a hollow cylinder contrived on purpoſe; but the nicer and finer way is the dry method, by means of a wooden box chalked within. Lead is very nicely granulated this way, and it is to be done in the following manner.

Put a quantity of lead into an iron ladle, and melt it ſlowly over a gentle fire; ſo ſoon as it is perfectly liquid, pour it into a round wooden box, with a wooden cover well fitted to it, and both that and the cavity of the box well rubbed over with chalk; ſhut the box immediately when the melted metal is in, and ſhake it violently, ſo that the metal within may be agitated forcibly againſt all parts of the box; continue this agitation till the metal is cold; and on opening the box, you will find the greater part of it finely granulated, or comminuted into very ſmall porous grains. Let the chalk that adheres to theſe grains be waſhed off, and then ſift them to make them of an equal ſize.

Lead, tin, and braſs, are the moſt proper metals for this proceſs, ſince theſe, when ready to melt, are always extremely brittle, in ſome degree like wetted ſand. The chalk with which the inſide of the box is rubbed over gives the ſurface a great reſiſting force, and keeps it from being burnt; while the metal daſhed againſt its ſides, being extremely brittle juſt as it becomes ſolid, is broken into a minute powder, not to be obtained any other way than by this operation.

There are however ſome cautions neceſſary in the management of this. The lead muſt not be melted at too fierce a fire; for this occaſions a ſkin upon the ſurface, which however often it be taken away, is always immediately ſucceeded by another; and the matter of theſe ſkins mixing with the metal during the ſhaking, makes the whole tenacious, and much obſtructs the operation. Though the fire is not to be fierce, the lead however muſt be all perfectly fluid; otherwiſe it will concrete almoſt as ſoon as poured into the box, and little powder will be produced.

This ſort of *granulation* cannot be obtained from ſuch metals as are the more tenacious, the nearer they come to fuſion, as gold, ſilver, *&c.* Theſe therefore can only be *granulated* the other and coarſer way, by means of water. *Cramer*'s Art. Aſſ. p. 70.

GRANULOSE *Roots*, are thoſe compoſed of ſmaller knobs than the grumoſe ones, and reſembling ſo many grains of corn; of this ſort is the white ſaxifrage.

GRANUM *Viride*, in botany, a name given by ſome authors to the turpentine tree. The fruit of this tree is reddiſh while unripe; but as it ripens it becomes of a deep blueiſh green colour, and hence the name.

GRAPES (*Cycl.*)—Thoſe kinds of *grapes* which are thin ſkined, grow ſooner ripe than others, and will thrive in a temperate climate where the others will not. If it happen that *grapes* are ſtruck with hail at the time that they are large and near ripening, they never become ripe at all, but harden and ſo remain. *Portzius* de Vin. Rhen.

We have in the Philoſophical Tranſactions a remarkable account of the change of colour in *grapes* of the ſame tree. A muſcadine *grape* tree was raiſed from a cutting of a parent vine of this kind, whoſe fruit was white; it was planted againſt an eaſtern wall, where it had the benefit of the ſun from its riſing, to half an hour after twelve. The ſoil a ſtiff clay, but rendered fitter for the growth of this ſort of tree, by a mixture of rubbiſh of an old wall.

At about five years ſtanding it was ſo pruned, as to make it ſhoot two principal branches, one to the right, the other to the left hand; from hence it ſhot twenty two inches on each ſide, before it came to a joint. That on the right was a very luxuriant branch, as thick as the body of the tree, the other about half that bigneſs. The leaves on the right hand were alſo of twice the bigneſs of thoſe on the left, and indeed larger than the leaves of the parent tree; but what is moſt ſingular is, that the luxuriant branch produced annually fine black *grapes* in large bunches, and the left hand branch white ones. But the white were often in the greateſt quantity, though the black grew on the much ſtronger branch. It is obſervable, that in all thoſe vines which bear black and blue *grapes*, that the leaves die red; but in this tree, whoſe origin was from a white *grape*, the leaves on that branch which bore black *grapes* died white, as well as thoſe on the other. The ſucceeding year, the number of the branches on the right hand ſhoot were greatly encreaſed in number, and the ſucceeding year all bore fine deep black *grapes* in very large numbers. Phil. Tranſ. N° 366. p. 102.

Wolf-GRAPES. See LYCOSTAPHYLA.

GRAPE *galls*, in natural hiſtory, a name given by authors to a ſpecies of protuberances reſembling cluſters of *grapes*, and when ripe of a reddiſh colour, which are found hanging from the oak at ſome ſeaſons of the year. Theſe are genuine *galls*, though of a peculiar kind; and owe their origin to a very ſmall four winged black fly. This little creature depoſits its eggs either on the ſurface, or within the ſubſtance of thoſe pedicles of the oak which nature has deſtined for producing the catkins, or ſmall flowers of that tree. The biting and ſucking of the worms, which are produced from theſe, occaſion a wrong derivation of the juices to the part, and the conſequence of this is, that inſtead of flowers, there appears a protuberance over the part where each of theſe inſects is lodged. This tubercle at firſt is ſmall, and of a pale greeniſh colour, but it finally becomes yellowiſh, or reddiſh, and is juicy and large. A number of theſe ſtanding cloſe together upon the ſtalk, give the appearance of a cluſter of *grapes* on the bunch, and when any one of theſe is opened, there is found in it either a worm, a chryſalis, or a fly, the animal never quitting its habitation till in its perfect ſtate, but paſſing through all its changes in it. *Reaumur*, Hiſt. Inſect. Vol. 6. p. 16.

GRAPES, in the manege, is uſed to ſignify the *arreſts*, or mangy tumours that happen in a horſe's legs. See ARREST.

GRAPHIDA, in natural hiſtory, a name by which ſome authors have called the *morochthus*, or French chalk. *Worm.* Muſ. p. 71. See the article MOROCHTHUS.

GRAPHISCUS, in the writings of the antients, a name given to an inſtrument uſed for the extracting darts from wounds. It is ſaid to have been the invention of Diocles, and is deſcribed by Celſus.

GRAPLINGS, in a ſhip. See GRAPNEL.

GRAPNEL, on ſhip board, a kind of anchor for boats or gallies to ride by. It differs from other anchors, as having four flukes and no ſnack, though there are ſome with three flukes, with which they uſe to ſweep for hawſers or ſmall cables. In men of war alſo, the *grapnels*, or at leaſt a lighter kind of them, are uſed to be thrown into an enemy's ſhip, in order to catch hold of ſome of her gratings, rails, gunwales, *&c.* this is done in order to boarding of her.

GRASS (*Cycl.*)—The Engliſh *graſs*, when good in its kind, is much ſuperior to that of all other nations, and in our *graſs* plats, and turfed walks, our gardens excel thoſe of all the world.

The common way of making theſe is by laying on turfs from a common, and the plats thus made are greatly ſuperior to thoſe made by ſowing, there being great nicety and art required in bringing the latter to good order, and in the procuring the proper ſeed, that from common hay-lofts being of a mixture of good and bad kinds, and by no means fit for the purpoſe, as containing the ſeeds of weeds, as well as very improper *graſſes*.

In order to ſow *graſs*, the ground muſt be dug up with the ſpade, then finely and evenly raked over, all the clods and ſtones taken off, and an inch thickneſs of good mould ſifted on to facilitate the growing of the ſeed. This done, the ſeed muſt be ſown very thick, that the blade may come up cloſe and ſhort; and the ground muſt be then raked over again to bury the ſeed, otherwiſe, if it ſhould happen to be windy weather, a great part of it may be blown away.

The beſt ſeaſon for ſowing of *graſs* is the latter end of Auguſt, and it is beſt to ſow it in a mild day, when there is a likelyhood of rain. When it is come up to any height, it muſt be mowed, and this repeated very frequently, for the oftener it is mowed, the thicker it grows. It ſhould be rolled alſo frequently with a wooden roller. In autumn, wherever there are naked patches, the ground ſhould be ſown with freſh ſeed. *Miller*'s Gard. Dict.

Everlaſting GRASS, a name given by ſome of our farmes to the plant more properly called *ſaint foin*. It ſerves as *graſs* for the food of cattle, and dries into hay; and a crop of it once well rooted in the ground, will continue forty years without renewing. See the article SAINT-*Foin*.

Rey GRASS. See REY *graſs*.

GRASS-*hearth*, in our cuſtoms, *graſing*, or turning up the earth with a plough. Hence the cuſtomary ſervice for the inferior tenants of the manor of Amerſden in Oxfordſhire, to bring their ploughs to do one day's work for their lord, was called *graſs-hearth*, or *graſs-hurt*. *Kenn.* Paroch. Antiq. p. 496, 497.

GRASS *walks*. Theſe are a great ornament in the Engliſh gardens, our turf being, like our gravel, ſuperior to that of any other country.

They are either made by turfing them with turf cut off from a common, or by ſowing with hay ſeed, and will be always handſome with good rolling and frequent mowing. If the ſoil be dry, it is beſt to lay theſe quite even, and level, but if damp, they may be laid a little rounding, but that not more than an inch in twenty feet. The oftener theſe walks are mowed and rolled in ſummer, the thicker their bottoms will be, and in autumn they ſhould be kept ſhorter than at any other ſeaſon, for if the blade runs up high at that ſeaſon, the bottom will be bare in winter. All *graſs walks* ought alſo to be frequently polled, as the gardeners call it. This operation is the diſperſing the worm-caſts all over the walks with long aſh poles; this, beſide deſtroying the worm-caſts, is very beneficial to the *graſs* of the walk. *Miller*'s Gard. Dict.

GRASSA, a name given by ſome authors to native *borax*.

GRASSETTE, in botany, the name given by the French to the *pinguicula*, or butter-wort, called alſo in Yorkſhire *ſanicle*. See PINGUICULA.

GRASSHOPPERS. Theſe animals are of the locuſt kind, and ſometimes come in ſwarms to particular places, in the ſame manner as that devouring creature does. They appeared ſome years ago in Languedoc, and ſome other places, in very formidable ſwarms, and eat up all the harveſt of ſeveral years. They took their flight like birds, and were about an inch long, and of a grey colour, in ſhape wholly like the common *graſshoppers*. They were found in many places covering the whole ſurface of the earth four or five inches deep, and uſed to lie quiet till toward noon; but when the ſun then ſhone warmly upon them they uſed to ariſe and take wing, and ſettling on the corn-fields, they would in a few hours eat up the whole produce, ears, leaves, and even the more tender parts of the ſtalks.

When they had deſtroyed one field in this manner, they uſed to take wing and fly to another. They uſually flew very high in the air, and directly againſt the wind; but as ſoon as they ſaw a new crop of corn, they dropped together in a ſwarm, and cleared it as they had done the firſt. This practice they continued the whole day, and toward evening they ſettled upon the ground, where they remained quiet till the heat of the following day raiſed them again. When they had deſtroyed all the corn in the country, they ſeized upon the vines, garden herbs, and willows, and at laſt upon the hemp, whole fields of which they eat up, notwithſtanding its great bitterneſs. Toward autumn they left off feeding, and were found in copulation, and ſoon after this the females were every where ſeen laying their eggs, which they depoſited in the ground, making a hole with their tail large enough to receive a gooſe quill.

In theſe holes every female would lay forty or fifty eggs, each of the ſize of a millet ſeed, and when they had finiſhed the laying, they covered up the hole to keep out the water; after this they died apace, and the multitudes of their carcaſſes ſtunk intolerably, poiſoning the air. The next year they hatched in April, and from this one ſwarm there were ſuch prodigious numbers hatched, that fifteen tuns of them were deſtroyed, while no bigger than flies, and nine tuns of their eggs before the hatching, and yet there remained enough of them to deſtroy, in a great meaſure, the ſucceeding harveſt. After this they gradually decreaſed for ſeveral years, till they were not more numerous there than elſewhere. This was attributed to the induſtry of the farmers in killing them; but it is more probable, that unfavourable ſeaſons deſtroyed them. Philoſ. Tranſ. N° 182. p. 146.

GRATINGS, in a ſhip, are ſmall ledges of ſawed plank, framed one into another like a lattice, or priſon grate, lying on the upper deck, between the main-maſt and fore-maſt, ſerving for a defence in a cloſe fight; and alſo for the coolneſs, light, and conveniency of the ſhip's company.

GRATIOLA, in botany, the name of a ſmall plant not unfrequent in watery places. It is a ſpecies of the *digitalis*. See DIGITALIS.

Mr. Geoffroy has obſerved, that the leaves of this plant are a very ſtrong purge, and that in the dry extract, a method he is very fond of, for the extracting the virtues of many medicines. A briſk purge may be prepared from the *gratiola*, which operates in a ſmall doſe, and without any diſagreeable taſte. The manner of preparing it is this. The leaves are to be infuſed in water, till they have communicated their virtue to it by the means of heat, and this liquor is to be evaporated over a balneum mariæ to a perfect dryneſs; when it leaves a dry pulveriſable extract, that operates in a doſe of eight or ten grains. Mem. Acad. Scienc. 1738. p. 287.

This is a very rough purgative, it often operates by vomits as well as by ſtool, and carries off a great quantity of water in dropſical caſes. It alſo deſtroys worms, and opens obſtructions of the viſcera. Its operation, however, is ſo violent, as to be only fit for perſons of robuſt conſtitutions. The *gratiola* is uſually given in decoction in water or ale, half an handful being a ſufficient doſe for a very ſtrong man. Its operation is rendered more mild, by being boiled in milk, and the decoction drank. It purges very well in the form of glyſters, but care muſt be taken not to give it when the bowels are in an inflamed ſtate.

Externally, it is ſaid to be a vulnerary, a cataplaſm of the bruiſed herb being ſometimes applied to wounds with ſucceſs.

GRAVE, (*Cycl.*) in the Italian muſic, ſerves to denote a ſlow motion, ſomewhat faſter than *adagio*, and ſlower than *largo*. *Broſs*, Muſ. Dict. in voc. See ADAGIO, and LARGO.

GRAVEDO (*Cycl.*)—The ſigns of a *gravedo* are a dizzineſs and heavineſs of the head, attended with tenſive and preſſing pains, which ſometimes become violently pungent and as it were burning, a remarkable turgeſcence of the veſſels, thirſt, and a dryneſs of the mouth, and unſound ſleep; and finally the breaſt is drawn into conſent, and is afflicted with a tenſive and oppreſſive pain.

The *gravedo* is a ſpecies or rather ſymptom of the head-ach, and conſequently is removed by the ſame means uſed againſt it. See HEAD-ACH.

GRAVEL (*Cycl.*)—The *gravel* of England as much excells that of France, Holland, Flanders, *&c.* as the graſs does. This and graſs are the natural ornaments of a country ſeat. We have ſeveral ſorts of *gravel* in the different parts of England, but that which is common on black heath is the moſt valuable ſort for garden walks, as it conſiſts of round, even, and beautiful pebbles, and when mixed with a ſtiff loam, binds well, and keeps in order the longeſt of all kinds of *gravel*.

GRAVEL *walks*. Theſe are deſervedly eſteemed a vaſt advantage, which our gardens have over thoſe of all other nations. The method of laying ſuch walks is this.

The bottom ſhould be laid with lime rubbiſh, or large flint ſtones, or any other hard matter, for eight or ten inches thick, to keep weeds from growing through, and over this the *gravel* is to be laid about ſix or eight inches thick: This ſhould be laid rounding up in the middle, by which means the larger ſtones will run off to the ſides, and may be raked away, for the *gravel* ſhould never be ſcreened before it is uſed, that ſpoiling it. It is a common miſtake to lay theſe walks too round, which not only makes them the more uneaſy to walk on, but takes off from their apparent breadth. One inch in five feet is a ſufficient proportion for the riſe in the middle; ſo that a walk of twenty feet wide ſhould be four inches higher in the middle than at the edges, and ſo in proportion. As ſoon as the *gravel* is laid it ſhould be raked, and the large ſtones thrown back again; then the whole ſhould be rolled both lengthwiſe and croſswiſe, and the perſon who draws the roller ſhould wear ſhoes with flat heels, that he may make no holes, becauſe holes made in a new walk are not eaſily remedied. The walks ſhould always be rolled three or four times in very hard ſhowers, after which they will bind more firmly than they could ever be made otherwiſe to do.

Gravel, with ſome loam among it, binds much more firmly than the rawer kinds, and when *gravel* is naturally very harſh and ſharp, it is very proper to add a mixture of loam to it. The beſt *gravel* for walks is ſuch as abounds with ſmooth round pebbles, which being mixed with a little loam, binds ſo firmly, as never to be injured after, either by wet or dry weather. Theſe are not ſo liable to be turned up by the feet in walking, as the more irregular ſhaped pebbles, and remain much more firmly in their places after rolling. *Miller*'s Gard. Dict.

GRAVELY *land*. The farmers obſerve, that *gravely* and ſandy lands eaſily admit of heat and moiſture, but that they have leſs advantage from the laſt than any other lands, becauſe they let it paſs too ſoon, if they have a looſe under ſtratum; or retain it too long, if they have a firm one, ſuch as clay, or a cold ſolid ſtone. From theſe accidents it either parches, or chills too much; but when *gravely* ground has a thin coat of good mould at top, and a bottom of looſe ſtone, it will produce excellent crops of *graſs*, for it will receive heat and moiſture enough; and if at any time it parches up the roots, the leaſt rain refreſhes it again, and the growth is quicker than before. *Mortimer*'s Huſbandry. Tom. 1. p. 69.

GRAVITAS, Βαρυτης, in the antient muſic, was uſed to ſignify a ſound produced by the remiſſion, or falling of the voice. *Gravitas* differs from remiſſion, as the effect from its cauſe. Vid. *Ariſtoxen*, p. 10—13. Edit. Meibom.

GRAVITAS is alſo uſed to denote the ſtate of a woman going with child. See PREGNANCY.

GRAVITATION (*Cycl.*) is ſometimes diſtinguiſhed from gravity. Thus Monſieur Maupertuis takes gravity for that force, whereby a body would fall to the earth, ſuppoſed at reſt; and *gravitation* for the ſame, but diminiſhed by the centrifugal force. See Fig. of the Earth determ. p. 206. of Mr. Murdoch's tranſlation.

It is only *gravitation*, or gravity thus blended with the centrifugal force, that we can meaſure by our experiments. However, methods have been found to diſtinguiſh what remains of primitive gravity, and what has been deſtroyed by the centrifugal force. See *Maupertuis* loc. cit.

GRAUPEN, a term uſed by the German miners to expreſs the reſiduum of any ore after the regulus, or metalline part is run from it. Thus the ores of biſmuth leave behind them, after the regulus is melted off, an earthy ſubſtance called *biſmuth graupen*, with which, mixt with flints and an alkali, they make a kind of ſmalt, not diſtinguiſhable from the true ſmalt made from cobalt. Philoſ. Tranſact. N° 390.

GRAY, in zoology, a name given in ſome counties of England to the badger. See the article TAXUS.

GRAY is alſo uſed in ſome places for a ſpecies of wild duck, more commonly known by the name of the *gadwall*. See the article GADWALL.

GRAYLING, or UMBER, the Engliſh name for the fiſh called by authors *thymallus*, and *thymus*, and by Artedi made a ſpecies of coregonus. See THYMALLUS and COREGONUS.

GREEN (*Cycl.*)—The fineſt method of giving this beautiful colour to glaſs is this. Take five pound of cryſtalline metal, that has been paſſed ſeveral times through water, and the ſame quantity of the common white metal of polverine, four pound of common polverine fritt, and three pound of red lead; mix the red lead well with the fritt, and then put all into a pot in a furnace. In a few hours the whole maſs will be well purified; then caſt the whole into water, and ſeparate, and take out the lead; then return the metal into the pot, and let it ſtand a day longer in fuſion; then put in the powder of the reſiduum of the vitriol of copper, and a very little crocus martis, there will be produced a moſt lively and elegant *green*, ſcarce inferior to that of the oriental emerald. There are many ways of giving a *green* to glaſs, but all are greatly inferior to this. *Neri*'s Art of Glaſs, p. 55.

GREEN *fiſh*, in the fiſh trade, a name given to the cured cod fiſh which has been caught and preſerved in Greenland. *Willughby*, Hiſt. Piſc. p. 166. See the article COD *fiſh*.

GREEN-*hew*, or *Green-hue*, in our old writers, the ſame with *vert* in foreſts, &c. *Manwood*, Par. 2. cap. 6. num. 5. Vid. Terms of Law.

GREEN-*houſes*. The length of *green-houſes* muſt be proportioned to the number of plants intended to be preſerved in them, and cannot therefore be reduced to rule; but their breadth ſhould never be more than twenty feet in the clear, and the length of the windows ſhould be at leaſt equal to the breadth, or depth of the houſe; and theſe muſt be carried quite up to the cieling, that there may be no dead air in any part of the houſe, and they ſhould come down within ten or twelve inches of the floor. In a ſmall *green-houſe* they ſhould not be leſs than four feet broad, and in a large one they ought to be ſix. The piers between the windows muſt be as narrow as may be to ſupport the building, for which reaſon they ſhould either be of ſtone, or of hard burnt bricks.

If the piers are made of ſtone, they ſhould be twenty inches wide in front, and ſloped off behind to ten inches, by which means there will be no corners to take off the rays of the ſun. If they are of brick, they will require to be at leaſt two feet in front, but they ſhould be in the ſame manner ſloped off behind. Over the *green-houſe* may be rooms for drying and preſerving ſeeds, roots, &c. and behind it a place for tools and other purpoſes; and both theſe behind, and the rooms above, will be of great uſe in keeping off the froſts, ſo that the wall between theſe need not be of more than two bricks in thickneſs.

The floor of the *green-houſe*, which ſhould be laid either with marble, ſtone, or flat tiles, muſt be raiſed two feet above the ſurface of the adjoining ground, or if the ſituation be damp, at leaſt three feet; and under the floor, about two feet from the front, it will be very adviſeable to make a flue of ten inches wide, and two feet deep; this ſhould be carried the whole length of the houſe, and then returned back along the hinder part, and there be carried up into funnels adjoining to the tool-houſe, by which the ſmoak may be carried off. The fire place may be contrived at one end of the houſe, and the door at which the fuel is put in, as alſo the aſh grate, may be contrived to open into the tool-houſe, and the fuel being laid in the ſame place, the whole will be out of ſight. The uſe of fires muſt, however, be very ſparing in this place, and it is not one winter in three or four that will require them in any part, only when the weather is very ſevere, and the froſt cannot well be kept out any other way, this is an expedient that is good to have in readineſs, as it may ſave a whole houſe of plants. There muſt be a number of truſſels, with forms of wood upon them, to ſupport the pots of plants, the talleſt to be placed hindmoſt, the loweſt within four feet of the windows; and all the inſide of the *green-houſe* ſhould be white-waſhed, or painted white, to reflect as much as poſſible the ſun's rays. The placing the euphorbiums, cereus's, and other ſucculent plants among orange trees, and other common *green-houſe* plants, is always deſtructive of them, by making them receive an improper ſort of effluvia, which plants of that kind imbibe very freely. They ſhould therefore be placed in two wings built at each end of the *green-houſe*, which, if well contrived, will be a great beauty, as well as uſe, to the building. Theſe wings may be made capable of a greater warmth alſo, by more flues, and may be made to contain a hot-bed of tanners bark for the raiſing many of the tender plants, natives of warm climates. *Miller*'s Gard. Dict.

GREEN *muſtard*, an Engliſh name for the herb dittander, or pepperwort. See LEPIDIUM.

GREEN *ſilver*, the name of an antient cuſtom within the manor of Writtel in the county of Eſſex; which is, that every tenant, whoſe fore-door opens to Greenbury, ſhall pay an halfpenny yearly to the lord, by the name of *green ſilver*. *Blount*.

GREEN *wax*, is uſed where eſtreats are delivered to the ſheriffs out of the Exchequer, under the ſeal of that court, made in *green wax* to be levied in the ſeveral counties. This word is mentioned in the ſtat. 43 Ed. 3. c. 9. And 7 Hen. 4. c. 3. Terms of Law.

GREGARIOUS *birds*, are ſuch as do not live ſolitarily, but aſſociate in flights or coveys, a great many together in company.

GRENAILLE, a name given by the French writers to a preparation of copper, which the Chineſe uſe as a red colour in ſome of their fineſt china, particularly for that colour which is called oil red, or red in oil. The china ware coloured with this is very dear. The manner in which they procure the preparation is thus: they have in China no ſuch thing as ſilver coined money, but they uſe in commerce bars, or maſſes of ſilver; theſe they pay and receive in large bargains, and among a nation ſo full of fraud as the Chineſe, it is no wonder that theſe are often adulterated with too great an alloy of copper. They paſs, however, in this ſtate in the common payments. There are ſome occaſions, however, ſuch as the paying the taxes and contributions, on which they muſt have their ſilver pure and fine: on this occaſion they have recourſe to certain people, whoſe ſole buſineſs it is to refine the ſilver, and ſeparate it from the copper and the lead it contains. This they do in furnaces made for the purpoſe, and with very convenient veſſels. While the copper is in fuſion, they take a ſmall bruſh and dip the end of it into water, then ſtriking the handle of the bruſh, they ſprinkle the water by degrees upon the melted copper; a ſort of pellicle forms itſelf by this means on the ſurface of the matter, which they take off while hot with pincers of iron, and immediately throwing it into a large veſſel of cold water, it forms that red powder, which is called the *grenaille*; they repeat the operation, every time they in this manner ſeparate the copper; and this furniſhes them with as much of the *grenaille* as they have occaſion for in their china works. Obſervations ſur les Coutumes de l'Aſie, p. 309.

GRESLING, in ichthyology, a name given by the Germans to the *gobius fluviatilis*, or common gudgeon, which is very frequent in their ſmaller rivers.

GRESSURA, a word uſed by ſome writers, to expreſs the part between the pudenda and the anus. See the article PERINÆUM.

GREWIA, in botany, the name given in the *hortus malabaricus*, and continued by Linnæus to a genus of plants, the characters of which are theſe: the cup is a perianthium, compoſed of five oblong, erect, lanceolated leaves ſtanding open, and coloured within. The flower is compoſed of five petals, ſomewhat ſmaller than the leaves of the cup, and edged with a foliacious rim at the baſe. The nectarium is compoſed of certain little ſcales, inſerted one in the baſe of each petal; theſe are thick, and ſomewhat incurvated, and ſurround the ſtile. The ſtamina are very numerous filaments inſerted in the baſe of the germen, and of the length of the flower; the apices or antheræ are roundiſh. The piſtil is a long columnar receptacle, erect and edged with a pentangular rim; it is terminated with a roundiſh germen. The ſtile is capillary, and is of the length of the ſtamina; the ſtigma is obtuſe and quadrifid; the fruit is a quadrangular berry with four cells; the ſeeds are globoſe. *Linnæi* Gen. Plant. 439. Hort. Mal. Vol. 5. p. 46.

GREWT, in mineralogy, a word uſed by our miners to expreſs earth, but particularly that earth found in the flat countries, and in the banks of rivers in their ſearches after mineral veins, which is different in colour and nature from the reſt of the bank or bottom. This they always underſtand to have been waſhed off from the neighbouring hills, in the time when the ſhoad ſtones, by which they train their new mines, were alſo waſhed down, that is at the univerſal deluge; and this wherever found, proves of great uſe to them in theſe reſearches, as it ſhews which way the waſh from the hill has run, and directs them how to trace the reſt, and where to look for the ſhoad ſtones with any probability of ſucceſs.

They generally examine the banks of rivers, where they have been worn away by land floods, in order to find theſe *grewts*, and then examine, in a ſtrait line with the next hill,

hill, though four or five miles off; and, if there be any mine there, they generally meet with ſhoad ſtones, as tokens of it in the way. Phil. Tranſ. N° 69.

GREY (*Cycl.*)—GREY, in zoology, an Engliſh name for a truttaceous fiſh, caught in many of the rivers of England. It is a very large fiſh, often growing to the full ſize of the larger ſalmon, but differing from that ſpecies, in the body being broader, and all over covered with immenſe numbers of *grey* ſpots; from theſe ſpots it has its name. Its tail is not forked, and its fleſh is much finer taſted than the ſalmon, and in the places where both are to be had, the *grey* ſells at the larger price. It comes up into the freſh waters in the month of Auguſt, and is a very ſcarce fiſh. *Willughby*'s Hiſt. Piſc. p. 193.

GREY-*hound* (*Cycl.*)—Among a litter of *greyhound* puppies, the beſt are always thoſe which are lighteſt. Theſe will make the lighteſt and nimbleſt dogs as they grow up. The *greyhound* is the beſt uſed in open countries where there is little covert; in theſe places there will ſometimes be a courſe after a hare of two miles or more, and both the dogs and the game in ſight all the while. It is generally ſuppoſed that the *greyhound* bitch will beat the dog in running; but this ſeems to be an error, for the dog is both longer made, and conſiderably ſtronger than the bitch of the ſame kind. In the breeding theſe dogs the bitch is principally to be regarded; for it is found, by experience, that the beſt dog, with a bad bitch, will not get ſo good puppies as an indifferent dog with a good bitch. The dog and bitch ſhould be as nearly as can be of the ſame age, and for the breeding of perfect and fine dogs, they ſhould not be more than four years old; an old bitch may be uſed with a young dog, but the puppies of a young bitch and an old dog will never be good for any thing.

The general food of a *greyhound* ought to be chippings or raſpings of bread, with ſoft bones and griſtles, and theſe chippings ought always to be ſoaked in beef or mutton broth; and when it is nearly cool, ſome milk ſhould be added; this given the dog morning and evening will keep him in good heart and ſpirits; he muſt never have any hard bones given him, becauſe they harden his mouth and hurt his teeth. If the dog grow ſick and weakly upon this diet, then take ſheeps heads with the wool on, waſh them clean, and boil them in a ſufficient quantity of water, to make a very rich and ſtrong broth, and add a large quantity of oat-meal to it; when the meat is very tender, and the broth rich, it is good and fit for the dog; and giving him ſometimes the one, and ſometimes the other, will very ſoon recover him.

If one of theſe dogs is to run for a wager, or on any particular occaſion, he may be dieted with the following bread. Take half a peck of good wheat, and the ſame quantity of the fineſt and drieſt oat-meal, grind theſe together, and let the meal be ſifted very fine, then add as much liquorice and anniſeeds, in powder, as will not give it too diſagreeable a flavour, and knead the whole into dough with the whites of eggs. This ſhould be baked in ſmall loaves conſiderably hard, and when the dog is to be fed with it, it is to be ſoaked in beef or other broth. He is to be led out to walk half an hour after ſun riſe every morning, and half an hour before ſun ſet every evening, and at his coming in fed with this ſoaked bread.

The proper exerciſe for a *greyhound* is the courſing him three times a week, and rewarding him with blood, which will animate him in the higheſt degree, and encourage him to proſecute his game. But the hare alſo ſhould ever have fair play; ſhe ſhould have the law, as it is called, that is, have leave to run about twelve ſcore yards before the dog is ſliped at her, that he may have ſome difficulty in the courſe, and not pick up the game too eaſily. If he kill the hare he muſt never be ſuffered to tear her, but ſhe muſt be taken from him, his mouth cleaned of the wool, and the liver and lights given him by way of encouragement. Then he is to be led home, and his feet are to be waſhed with butter and beer, and about an hour after he is to be fed.

When the dog is to be taken out to courſe, he ſhould have nothing in the morning but a toaſt and butter, and then he is to be kennelled till taken out to the field. The kennelling theſe dogs is of great uſe, always giving them ſpirit and nimbleneſs when they are let looſe; and the beſt way of managing a fine *greyhound* is never to let him ſtir out of the kennel, except at the times of feeding, walking, or courſing.

GRIEF. The influence of this paſſion on the body is very great, ſo as often to deſtroy all appetite, and deſire of meat, either by inſpiring men with a diſreliſh for life, or by a mechanical inſtinct; becauſe food taken at ſuch a time makes but bad nouriſhment, fitter to corrupt the blood than prolong life: on which account it is aſſigned as a phyſical cauſe for the faſting practiſed among the heathens. [See FASTING.] The influence of this paſſion extends itſelf even to beaſts; which when indiſpoſed, not only take no pains to provide themſelves food, but alſo refuſe it when laid before them. Vid. Mem. Acad. Inſcript. Tom. 5. p. 50. ſeq. This paſſion has been found to leſſen perſpiration and urine. See PERSPIRATION.

GRINDERS, *molares dentes*. See MOLARES.

GRINETTA, in zoology, the name of a water fowl of the gallinula, or moor hen kind, having open feet, and no membranes annexed to them. It is ſmaller than the moor hen, and the water rail. Its legs are of a duſky greeniſh colour, and its toes very long; its beak very ſhort, compreſſed ſideways, and pointed at the end, and is covered at the origin with a deep yellow ſubſtance, looking like a plaiſter put on it. Its neck and beak are variegated with an irregular mixture of a blackiſh, greeniſh, and whitiſh, but none of the colours are clear or bright. It is common in Italy and Germany, as well as in England. Aldrovand has twice deſcribed this bird, once under the name of *gallinula alia chloropus fulicæ ſimilis*, and another time under that of *gallinula ſerica*. *Ray*'s Ornitholog. p. 235. *Aldrovand*, Lib. 3. p. 340.

GRISLAGINE, in zoology, the name of a freſh water fiſh of the gudgeon kind, common in rivers of Germany. It ſomething approaches to the common roach in ſhape. Its back is of a duſky blue, and its belly and ſides, below the ſide lines, are of a ſilvery whiteneſs. The ſide lines are yellow and dotted, and over this there is an interrupted blackiſh line running in ſeveral oblong ſtreaks from the gills to the tail. *Willughby*, Hiſt. Piſc. p. 263.

GRISLEA, in botany, the name of a genus of plants, the characters of which are theſe. The perianthium conſiſts of one leaf, and is of a tubulated bell-faſhioned ſhape. It ſtands erect, and is divided into four ſegments at the end. The flower conſiſts of four oval petals extremely ſmall, ſcarce indeed exceeding in ſize the ſegments of the cup. The ſtamina are eight ſubulated, erect, and extremely long filaments. The antheræ are ſimple and erect. The germen of the piſtil is oval. The ſtyle is capillary, and of the length of the ſtamina. The ſtigma is ſimple. The fruit and ſeeds are not known. It is an American tree, extremely well diſtinguiſhed from all others by the flower alone. *Linnæi* Gen. Pl. p. 160.

GRISOLA, in zoology, the name of a bird of the lark kind deſcribed by Aldrovandus, and ſuppoſed by Mr. Ray to be the ſame with the *ſpipoletta*, or *tordino* of the Venetians. See the article SPIPOLETTA.

GRITHBRECHE, in our old writers, the ſame with breach of the peace. In this ſenſe we find it mentioned in *leg.* Hen. I. c. 36. *In cauſis regiis* grithbreche 100 *Sol. emendabit.* Terms of Law.

It comes from the Saxon, *grithbryce*, which ſignifies the ſame.

GRITHSTOLE, in our old writers, a place of ſanctuary. Blount. See FRIDSTOLE, *Cycl.*

GROMA, among the Romans, a way-wiſer, or ſurveying inſtrument; whence thoſe who uſed it were called *gromatici*, and the place in the camp where it was kept, *groma*. *Pitiſc.*

GROMETS, in a ſhip, are ſmall rings faſtened to the upper ſide of the yard of a ſhip by ſtaples, to tie unto it, or to faſten the laſkets.

GROMPHENA, in botany, a name uſed by ſome authors, particularly by Pliny, for the common garden marygold. *Ger.* Emac. Ind. 2.

GROMWELL, in botany. See LITHOSPERMUM.

GRONDEUR, a name given by the French in America to a fiſh which is commonly eaten there; the jaws of which have been brought into Europe, and being examined by Mr. Juſſieu, were found beſet in a remarkable manner with teeth, which perfectly reſembled the buſonitæ called crapandines, and by ſome, ſerpents eyes; and which, in their foſſile ſtate, had been for many ages accounted gems. The arrangement of theſe teeth is ſuch, that the whole flat ſurfaces of the upper and lower jaw are in a manner paved with them. They are of different ſhape and ſize in the different parts; thoſe placed toward the edges were of the ſmall and flat kind, commonly found in Malta, and called ſerpent's eyes; and the larger toad-ſtones, as they are called, were placed more toward the middle; the largeſt of all being placed in two ſtrait rows, or lines, along the center of each jaw.

Each of theſe teeth is articulated by gomphoſis in the jaw, and when taken out, they all have that natural cavity which is found in the hinder part of the foſſile ones. The ſockets of theſe teeth have much the appearance of thoſe from whence teeth have been frequently changed, and probably the fiſh ſheds them often in the courſe of its life. Mem. Acad. Par. 1723.

GRONNA, in our old writers, a deep pit, or bituminous place, where turfs are dug for burning. Hoved. 438. Mon. Angl. Tom. 1. p. 243. *Blount.*

GROOVE, in mining, is the ſhaft, or paſſage into the lead mines, by which they draw up their ore. They are ſometimes ſunk in the vein, and ſometimes out. *Houghton*'s compl. Miner, in the Explan. of the Terms.

GROOZDISHYS, in botany, a name given by the Ruſſians to a ſpecies of muſhroom reſembling our pepper, or milky muſhroom, deſcribed by Liſter, Ray, &c. but larger. The *groozdiſhys* is very broad and thick, and abounding with an acrid juice. The Ruſſians preſerve them in pickle, and eat them

them with their meats. When eaten freſh they inflame the mouth and throat, and endanger ſuffocation. Phil. Tranſ. N° 89.

GROSSBEAK, in zoology, a name by which we commonly call the coccothrauſtes, called alſo at other times the hawfinch. See COCCOTHRAUSTES.

GROSSULARIA, the *gooſeberry* and *currant buſhes*. Theſe in botany make together but one genus of trees, under the common name *groſſularia*; the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals placed in a circular order, between the ſegments of a one leaved cup, which is hollowed into the form of a baſon; the hinder part of which finally becomes a globoſe or oval ſoft fruit, containing ſmall ſeeds.

The ſpecies of *groſſularia*, enumerated by Mr. Tournefort, are theſe. 1. The common wild prickly *gooſeberry*. 2. The cultivated prickly *gooſeberry*. 3. The broad leaved prickly *gooſeberry* with duſky purple fruit. 4. The ſmooth *gooſeberry* with blueiſh fruit. 5. The common great white *gooſeberry*. 6. The great oblong fruited yellowiſh white *gooſeberry*, commonly called the *amber gooſeberry*. 7. The double fruited *gooſeberry* without ſeeds. 8. The common *red currant*. 9. The great fruited *red currant*. 10. The great white garden *currant*. 11. The ſingle fruited *currant*. 12. The ſower *white currant*. 13. The ſweet Alpine *currant*. 14. The *black currant*. 15. The ſmooth *groſſularia* with ſmall black fruit. 16. The American *groſſularia* with large plantain-like leaves. 17. The broad plantain-leaved American *groſſularia* with ſmall blue fruit. 18. The American *groſſularia* with narrow hairy plantain-like leaves. 19. The ſmooth plaintain-leaved American *groſſularia* with roſe coloured flowers. See the article GOOSEBERRY.

GROTTO *(Cycl.)*—The famous *grotto* of our own country, known by the name of Ookey Hole, lies on the ſouth ſide of Mendip Hills, within a mile of Wells. The entrance of it is in the fall of thoſe hills, which is beſet all about with rocks, and has near it a precipitate deſcent of near twelve fathom deep, at the bottom of which there continually iſſues from the rocks a conſiderable current of water. The naked rocks above the entrance ſhew themſelves about thirty fathom high, and the whole aſcent of the hill above is about a mile, and is very ſteep. As you paſs into this vault, you go at firſt upon a level, but advancing farther, the way is found to be rocky and uneven, ſometimes aſcending, and ſometimes deſcending. The roof of this cavern, in the higheſt part, is about eight fathom from the ground, but in many particular places it is ſo low, that a man muſt ſtoop to get along. The breadth is not leſs various than the height, for in ſome places it is five or ſix fathoms wide, and in others not more than one or two. It extends itſelf in length about two hundred yards. People talk much of certain ſtones in it, reſembling men and women, and other things, but there is little matter of curioſity in theſe, being only ſhapeleſs lumps of a common ſpar. At the fartheſt part of the cavern there is a good ſtream of water, large enough to drive a mill, which paſſes all along one ſide of the cavern, and at length ſlides down, about ſix or eight fathom, among the rocks, and then preſſing through the cleſts of them, diſcharges itſelf into the valley.

The river within the cavern is well ſtored with eels, and has ſome trouts in it; and theſe cannot have come from without, there being ſo great a fall near the entrance. In dry ſummers, a great number of frogs are ſeen all along this cavern, even to the fartheſt part of it; and on the roof of it, at certain places, hang vaſt numbers of batts, as they do in almoſt all caverns, the entrance of which is either level, or but ſlightly aſcending or deſcending; and even in the more perpendicular ones they are ſometimes found, provided they are not too narrow, and are ſufficiently high. The cattle that feed in the paſtures, through which this river runs, have been known to die ſuddenly ſometimes after a flood; this is probably owing to the waters having been impregnated, either naturally or accidentally, with lead ore. Philoſoph. Obſerv. N° 2. p. 2.

In the Philoſophical Tranſactions [a], we have an account of a ſubterranean *grotto*, or cavern, near Weredale, about twenty miles ſouth weſt of Newcaſtle. The entry into this *grotto* is by a little hole in the ſide of a vaſt mountain, by this you enter a ſpacious cavity, chambered with walls and pillars of deſcending lapideſcent waters. The hollowneſs is pervious farther than any yet has adventured to diſcover, the darkneſs of theſe caverns requiring the help of candles, which are often extinguiſhed by the dropping water. [[a] Numb. 480. p. 223.]

GROUND *(Cycl.)*—GROUND *angling*, the art of catching fiſh under water without a float, only with a plumb of lead, or a bullet. This method is moſt expedient in cold weather, when the fiſh ſwim low. The bullet is to be placed nine inches from the baited hook; the top of the rod is to be very gentle, that the fiſh may more eaſily run away with the bait, and not be ſcared with the ſtiffneſs of it. The angler in this way is not to ſtrike as ſoon as he feels the fiſh bite, but ſlacken his line a little, to give the fiſh an opportunity to ſwallow the hook.

The tackle here is to be fine and ſlender, ſtrong and big lines being apt to fright the fiſh. Morning and Evening are the chief ſeaſons for the *ground* line for trout, but in a cloudy day, or a muddy water, you may fiſh at *ground* from morn to night. Dict. Ruſt. in voc. *Ground*.

GROUND, among bowlers. See BOWLING.

GROUND, in the manege. See TERREIN.

GROUND *ivy*. See the article IVY.

GROUND *pine*, in medicine, &c. See CHAMÆPITYS.

GROUND *plates*, in architecture, are the outermoſt pieces of timber lying on, or near the *ground*, and framed into one another with morteſſes and tennons. In theſe alſo are morteſſes made to receive the tennons of joiſts, the ſummers, and girders; and ſometimes the trimmers for the ſtair caſe and chimney way, and the binding joiſts.

GROUND *timbers*, in a ſhip, are thoſe timbers which lie on her keel, and are faſtened to it with bolts through the keelſon. They are ſo called, becauſe the ſhip lies at reſt upon them when ſhe is aground.

GROUNDAGE, a cuſtom, or tribute, paid for the ſtanding of a ſhip in a port. *Blount*.

GROUNDLING, an Engliſh name for that ſmall ſpecies of the cobitis more commonly called the loach, and by Artedi, the ſmooth ſpotted cobitis with the body cylindric. See the article COBITIS.

GROUNDSEL. See ERIGERUM.

GROUSE, in zoology, the name of the *tetrao*, or *urogallus minor*, called alſo the black game, and the heath hen, and by Turner, the moor hen. It is a large bird of the gallinaceous kind. The male is all over black, but the edges of his feathers, eſpecially on the neck and back, have a blueiſh gloſs mixed among the black, and its thighs are grey. The female is of the colour of the partridge, and is variegated with tranſverſe black lines on the back, and the breaſt and belly are grey. Its beak is black and crooked. It is found in the mountainous and heathy parts of the kingdom, and is a very well taſted bird. The male and female differ ſo much in colour, that ſome very accurate writers on theſe ſubjects have been deceived into an opinion of their being two different ſpecies of bird; and Geſner has diſtinguiſhed them in this manner, calling the female of this the *grygallus minor*, and that of the great *urogallus*, or cock of the mountain, the *grygallus major*. *Aldrovand*, de Avib. Lib. 14. c. 16. *Ray*'s Ornithol. p. 125. See UROGALLUS.

GROWAN, in natural hiſtory, a word uſed by the miners in Cornwall to expreſs a ſort of coarſe and gritty ſtone, which they are uſually obliged to dig through before they come at the veins of ore. This is uſually grey or whitiſh, but ſometimes it is of various colours, often yellowiſh, and ſometimes ſpotted with iron colour, and an inky black; and often its texture is ſo looſe and ſpungy, that there are holes in it of the ſize proper to receive a pea, or a horſe bean; theſe are ſometimes empty, but more uſually they are filled up either with chalk, or with ſpar. Beſide the ſtrata of this ſtone that lie over the ore, there is alſo a large quantity of it often placed by its ſide. They have this, and two other ſorts of ſtone, lying in their way to the tin ore in Cornwall. The firſt of the others they call *moor ſtone*; a very uncertain name, as it is alſo given by ſome to the common white granite of that country; but the miners only mean by it a looſe ſort of freeſtone, ſomewhat ſofter than that uſually employed in building. The other ſtone is called *killos*. This is a grey ſtone of the ſlate kind, eaſily ſplitting into thin plates, and is very full of talcky flakes. This *killos* is, however, a very indeterminate name, as well as the other, for the ſame people ſometimes uſe it alſo to ſignify a white earth, common among them; this laſt, however, they ſometimes diſtinguiſhed by the epithet white. The word *growan* ſeems the only name they have kept to any determinate ſignification, for they never expreſs by this word any other ſubſtance, than the ſtone above deſcribed.

GROWME, in our old writers, an engine to ſtretch woollen cloth after it is woven; it is mentioned in the ſtatute 43 Ed. 3. c. 10. *Cowel*.

GROWTH. The *growth* of animals, nay even of the human ſpecies is ſubject to great variations as to the time and manner of it in particular inſtances. We have lately had in England, an account of a boy at Willingham, who though he lived but a few years, grew ſo faſt as to be accounted a prodigy; but in the Memoirs of the Academy, there is recorded a much more memorable inſtance in France, in the year 1729. The French Academy of Sciences examined a country youth born in Normandy, whoſe name was Noel Fichet, who was not only remarkable for ſtature, but for ſtrength alſo greatly beyond his age. He was then only ſeven years old, and the account his mother gave of him was, that he *grew* in a very uncommon manner in the firſt year, and that afterwards, he encreaſed ſix inches in height every year to the fourth year; that at that time the people of the place meaſured him exactly, and found him three feet ſix inches high; and at the time the Academy meaſured him he was, at ſeven years old, four feet eight inches and four lines high without his ſhoes.

His mother obſerved the ſigns of puberty on him at two years old, which continued to encreaſe very quick, and ſoon arrived at the uſual ſtandard. At four years old, he was able to lift and toſs the common bundles of hay in ſtables into the horſes racks; and at ſix years old, could lift burthens which were as much as a ſturdy fellow of twenty could well manage. The mother had had four children before him, which were no way remarkable, and he was no larger than other children when brought into the world. It was remarkable, that this youth, though a man in ſtature, was but a child in underſtanding; he was no greater a proficient in knowledge than children of his age; and the boys plays, ſuch as other children diverted themſelves with at his age, were alſo his favourite amuſements. This is no way ſurpriſing, ſince knowledge is only acquired by a ſucceſſion of ideas which neceſſarily require time; while on the other hand, the encreaſe of the body and its ſtrength depend only on the continual addition of matter which many accidents might cauſe to be made more readily, and more abundantly than uſual. Memoirs Acad. Scien. Par. 1736.

Nor is it peculiar to boys to *grow* ſometimes in this extraordinary manner; there are not wanting inſtances of a like nature in the other ſex. There is an account in the Paris Memoirs, of a girl who at three months old had the menſes regularly come on, and *growing* very faſt in her younger time, was, at the age of four years, three feet ſix inches high, and had her limbs well proportioned to that height; her breaſts large and plump, and the parts of generation like thoſe of a girl of eighteen; ſo that there is no doubt but ſhe was marriageable at that time, and capable of being a mother of children. Theſe things are more ſingular and marvellous with us, than they would appear in ſome other places, where the females come ſooner to maturity. In the Eaſt Indies, there are ſome places where the girls have children at nine years old.

GROWTH *Half-penny*, a rate ſo called, and paid in ſome places for the tithe of every fat ox, or other unfruitful cattle. *Blount.*

GRUARII, in our old writers, the principal officers of the foreſt in general. The word comes from the old French *gruyer*, which ſignifies the ſame.

GRUB, the Engliſh name of the hexapode worms, or maggots, hatched from the eggs of beetles. See SCARABÆUS. *Grubs* are an excellent bait for many kinds of fiſh. In angling for the grayling, the aſh *grub* is to be preferred to all others. This is plump, milk white, but round from head to tail, and has a red head. There is alſo another *grub*, which is very common, and is longer and ſlenderer than the aſh *grub*. It is yellower and tougher, and is known by having a red head, and two rows of legs all along the belly. The trout and grayling uſually frequent the ſame places, and it is not uncommon to take the trout while fiſhing for the other. Theſe *grubs* are to be kept in bran, in which they will grow tougher than they were at firſt; but the aſh *grub* is always ſo tender, that it is difficult to make a good bait of it. The beſt method is to wrap it in a piece of ſtiff hair with the arming, leaving it ſtanding out about a ſtraw's breadth at the head of the hook, ſo as to keep the *grub* from totally ſlipping off when baited. The horſe hair that the hook is faſtened to ſhould be as white as poſſible, that it may reſemble the colour of the bait, and not be ſuſpected.

GRUB *of the box*, or *box puceron*, in natural hiſtory, a name given to a ſort of inſect approaching to the nature of the *puceron* of the elder and other trees, but differing from that animal in ſome eſſential characters, and being more properly of the ſame genus with the fig-inſect or falſe *puceron*. *Reaumur*'s Hiſt. Inſ. Vol. 6. p. 100. See FIG-*inſect*.

In the months of March and April the leaves of box are often found forming a ſort of ball at the extremities of ſome of the branches. Theſe balls are hollow, and are form'd of the two outer leaves bent each into the half of a ſphere and joined at their edges, and of ſeveral other ſmaller inner ones rounded in the ſame manner. All theſe balls are the places of abode of inſects of the falſe *puceron* kind; they have flat bodies in the manner of the fig inſect; but the caſes of their wings are leſs obſervable. There are different numbers of theſe animals found in different balls of the plant: ſome containing twenty or thirty, others only three or four, and theſe are ſometimes found crawling about looſe in the cavity, ſometimes between the outer and the inner leaves. Among theſe inſects there is always found a great quantity of a yellowiſh white matter of a tolerably firm conſiſtence; but ſuch that it may eaſily be flatted by preſſing it between the fingers. This is ſometimes found in looſe and regular grains, reſembling ſmall ſeeds, and ſometimes in long and flat pieces. This is the dung of the animal, it is often ſeen hanging in part out of the anus, while they are voiding it in the round grains; and often the long pieces hang out to a great length from the anus, making a ſort of tail twice or tree times as long as the body of the animal. This very much reſembles the common vermicelli, and is of a ſweet and very agreeable taſte; for it is the juices of the plant very little altered, retaining yet their ſaccharine nature, and greatly reſembling the common manna. Mr. Reaumur ſuppoſes this might be of great uſe in medicine, and obſerves that it would eaſily be gathered in the neceſſary quantity for experimenting, as the box affords theſe animals in vaſt abundance, and every ball of the leaves would yield the quantity of the bigneſs of a pea of the matter. As the common *puceron* therefore voids by ſtool a ſaccharine water, this creature voids a kind of manna, and this when newly excluded from the body of the animal is not firm and hard, but ſoft and viſcous. It dries as it becomes expoſed to the air, and ſometimes it is a diſeaſe in the animal to have it dry too quickly, or be too hard before it is voided; and it is in this caſe that it forms a long tail to the creature. Theſe animals have the ſame ſort of trunk with the *pucerons*, and ſuck the juices of trees in the ſame manner; and as the wounds given by the true *pucerons* of the poplar occaſion its leaves to fold themſelves together, and make a ſort of caſe; ſo probably it is the biting or wounding of the leaves of the box by theſe animals, that makes its leaves form theſe balls at the end of the branches. It is to be obſerved however, that the balls of the preſent year only are to be ſearched for theſe creatures; thoſe of former years having been long abandoned by them, and being uſually inhabited by ſmall ſpiders, or other minute inſects. *Reaumur*'s Hiſt. Inſ. Vol. 6. p. 107.

Theſe inſects change their ſkin ſeveral times in the manner of the *pucerons*, and they change their colour at the ſame time. They are at firſt reddiſh, but they are then extremely ſmall; after this they throw off a ſkin and become yellowiſh; after this they are of a deeper yellow, ſpotted with black; and finally when at their full growth they are greeniſh, and have black antennæ. The exuviæ which theſe creatures leave behind them, have often a grain of the excrement remaining fixed to them.

Mr. Reaumur, who took great pains to know the hiſtory of theſe minute animals, found that they finally became flies of a peculiar kind, reſembling thoſe of the fig-inſect; they hopped in the manner of graſshoppers, but only a little way at a time, and he was able to diſcover the parts peculiar to the male and female ſex, in the different individuals, but never could find any eggs, or embryo animals in the latter.

Vine GRUBS, in the hiſtory of inſects. See VINE.

GRUBBING, the term uſed by our farmers to expreſs the taking up the roots of trees out of the ground. Several occaſions offer for the doing this; as when trees are old and paſt growing to any uſe, the roots muſt be taken up, that young trees may be planted in their place. This is a chargeable operation in moſt places, but in ſome countries the farmers have deviſed a machine, which does a great part of the work in a much ſhorter time than in any other way can be done. It is a hook of iron, of about two feet and a half long, with a large iron ring faſtened to its ſtrait end or handle. The whole inſtrument may be made for about three or four ſhillings, and is to be uſed in this manner. The ground is firſt to be cleared away about the root, and any ſtraggling ſide roots found running horizontally are to be cut off. They then faſten the point of the hook to ſome part of the ſtump or root, and putting a long and ſtrong lever through the ring, two men at the end of it go round forcing it every way, 'till they tear the root out, twiſting the top roots off at ſome diſtance under ground. The digging down to which in the common way is one great article of the expence. It is very effectual in ſtubbing up the roots of the underwood, but when large tree roots are to be taken up by it, it is beſt to cleave them firſt with wedges into ſeveral pieces, and then pull them out ſeparately. *Mortimer*'s Huſbandry.

GRUINA, the *crane fly*, a name given by ſome authors to the tipula, or father long legs, from its legs being like thoſe of a crane.

GRUMOSE *Roots*, are thoſe which are compoſed of ſeveral ſmall knobs, ſuch are thoſe of the anemones, and of the little celandine.

GRUNDEL, or GRUNDLING, in zoology, a name uſed by ſome for the common loach, or loche, a ſmall freſh water fiſh, known among writers by the names of cobitis and fundulus. *Geſner* de aq. p. 486. See the article COBITIS.

GRUNDLING, in ichthyology, a name given alſo by the Germans to the *gobio fluviatilis*, or common gudgeon. Theſe fiſh, though of different genera, the one being a cyprinus, and the other a cobitis, yet are ſo perplexed by this common name, that the Germans in general do not diſtinguiſh their difference. They have beſide this, however, their peculiar names for each of the two, the loach or cobitis being called the ſmerle and ſmerling, a name never applied to the gudgeon; and that being called a gobe and a greſſling, names never given to the loach. When there are ſo many diſtinct names for each of theſe fiſhes, it is ſtrange to find the authors of that nation, who write in their own language, ſo often uſing, inſtead of either, this name *grundling*, which is common to both.

GRUNDULUS, in ichthyology, a name given by Figulus and others, to the fiſh called by us the loach, or grundling; it is a ſpecies of cobitis, called by authors in general

cobitis barbatula, and *cobitis fluviatilis*. Artedi has diſtinguiſhed it by the name of the ſmooth ſpotted cobitis, with the cylindric body. See the article COBITIS.

GRUMA, a word uſed by ſome chemical writers, as a name for crude tartars.

GRUNNIENS *Piſcis*, *the grunting fiſh*, the name of a fiſh caught in many parts of the Eaſt Indian ſeas, and called by the Dutch there *knorre pot*. It ſeems of the gurnet or gurnard kind, and nearly related to the guabi-coara of the Braſilians. When it is firſt taken out of the water, it makes a remarkable *grunting* noiſe. It has two ſide lines on each ſide, running from the gills to the tail; the one of which is brown, and the other yellow. It is covered with very ſmall ſcales, and is a very fat and fleſhy fiſh. It grows to about ſix or ſeven inches long, and its head is large and ill ſhaped. It is a very well taſted fiſh. *Ray*'s Ichthyolog.

GRUS, *the crane*, the name of a genus of birds very tall and remarkable for the length of their legs and neck, of which there are three known ſpecies. 1. The common *crane*, the body of which is ſo large, as ſometimes to weigh ten or twelve pounds, and when meaſured from the tip of the beak to the toes extended, is five feet long. Its beak is of a greeniſh black and is long and pointed, its wings are large, and its legs and feet black, its toes very long. But what is moſt obſervable in this bird, is the conſtruction of its wind pipe or aſpera arteria, which runs deep into the breaſt, by means of a foramen prepared for it, and there ſuffering ſome windings and turnings, goes out again at the ſame paſſage, and then deſcends into the lungs. It is a very common bird in Italy, and other places, and ſometimes comes over to us in England, large flocks of them being ſometimes ſeen in Lincolnſhire, and Cambridgſhire in ſummer. It has been ſaid that they build here, but this wants confirmation. It is ſuppoſed by many, that this bird eats fiſh, but erroneouſly, the ſtructure of its ſtomach plainly ſhows it a granivorous bird, and its fleſh is very delicate, and much valued in the Italian markets.

2. The *Indian crane*. This is ſmaller than ours, and of the ſame gray colour; its tail is ſo ſhort that the wings hide it, and it is not ſeen. Its beak is longer than that of our *crane*, but its moſt obvious diſtinction is, that it has on the top of its head, from the inſertion of the beak to the crown, a rough red ſkin, beſet with a few looſe hairs.

3. The laſt ſpecies is the *grus Balearica*, the Majorca *crane*; this is of the ſhape of the ſtork, but has not its long beak, but that of the *crane*, and is diſtinguiſhed by a fine thick ſhewy creſt which it carries on its head. This is not made up of feathers, but of hairs like hogs briſtles. It runs very ſwiftly, and feeds on herbs and corn like the hens and turkeys. *Ray*'s Ornithol. p. 200, 201.

The general diſtinctions of the *crane* kind from the herons are theſe. 1. The claw of the middle toe is not ſerrated. 2. They are much larger. 3. Their beak is ſhorter. Beſide theſe, the make of their ſtomach, guts, and above all, of their aſpera arteria, greatly diſtinguiſh them.

GRUS, the *crane*, in the Linnæan ſyſtem of zoology. This is made a diſtinct genus of the order of the macrorynchæ, or long beaked. The characteriſtic of this genus is, that the head is criſtated or creſted, and almoſt bare of feathers. *Linnæi* Syſt. Nat. p. 45.

GRYGALLUS, in zoology, the name of the female of the urogallus. It obtained this name as if another ſpecies of bird, being ſo unlike the male in colour, as not to be ſuppoſed to belong to the ſame ſpecies. See the article GROUSE.

GRYLLOTALPA, the *mole cricket*, a creature approaching to the locuſt kind, and very properly called by this name by Mouffett, as it has much of the form of the *cricket*, and makes a noiſe like it in the evening, and is like the mole, continually employed in digging the ground. It is an inſect of a very unpleaſant form. It is of the length and thickneſs of a man's little finger, and is of a brown colour, which is darker in the male than in the female. There are on each ſide of the anus two hairy proceſſes, reſembling the tails of mice; its belly is compoſed of eight joints, and is covered with as many ſcales which are of a pale fleſh colour, and are covered with ſhort hair. The back is covered by a pair of pointed wings, along each of which there runs a black ſtreak or line. Theſe wings fold any way at the creature's pleaſure, and when fully expanded are very large. Over theſe lye the antennæ; theſe are variegated alſo with black, and reach about half the length of the wings. It has only four legs; the hinder pair are long and fit for hopping; the anterior pair are ſhort, and furniſhed with a ſort of hands for digging in the manner of the mole. The breaſt is covered with a cruſtaceous ſubſtance which is blackiſh, and hairy on the outſide, and ſmooth and pale within. The eyes are very bright and black, and are very hard, and the mouth is wide and has two tonſils, and teeth in both jaws. This creature lives under ground, and is principally found in damp and boggy places. There has for many years been a breed of them in the gardens of lord Burlington at Chiſwick, under the graſs walk toward the lower end of the canal, where they are now very numerous. They come out in the duſk of the evening, and make a very lowd noiſe of the nature of that of the *cricket*.

The *mole cricket* moves very ſlowly, and Goedartius is of opinion, that its wings were given it rather as an ornament, than as a thing of uſe; or if they have any real uſe, that it is the covering and defending the tender body of the creature, which is very ſoft, and eaſily liable to accidents; and Mouffett ſays, that its flights are no more than long leaps. But we have a very different account of the uſe this creature makes of its wings in the German ephemerides. Mentzelius, in a paper there, declares this to be one of the moſt miſchievous inſects of the creation. He ſays it lives equally well under ground, in the air, or under water; that while it is under ground, it does infinite miſchief by burrowing under the beds of a garden, and eating the roots of flowers, and that in the night it comes out, and taking wing ſettles upon the fruit trees, where it does little leſs miſchief; and all this the author affirms from his own experience, in the gardens where he lived. *Mouffett*'s Hiſt. Inſ. *Ray*'s Hiſt. Inſ. p. 64. *Goedartius* de Inſ. Ephemerid. Germ. Anno. 10. Obſ. 48.

This creature is very nice in the conſtruction of its neſt. This is always under ground, and it chooſes a ſolid clay for the purpoſe; in this it makes a large cavity, with a ſmall paſſage to go in and out at, and in this it depoſits a hundred and fifty or more eggs. When the whole number of eggs is laid, the creature ſtops up the hole at which it was uſed to go in and out, with a large piece of firm clay, and then burrows away all round, and all under the neſt. By this means ſhe keeps the ſides of the neſt firm and cloſe, ſo that no inſect can get in to eat the eggs; and the whole neſt being thus rendered looſe and moveable, ſhe is at the pains of raiſing it toward the ſurface in warm weather, that the eggs may have the advantage of the ſun towards their hatching; and in cold weather ſhe ſinks it deeper into the ground to defend it from froſts. This has been obſerved by Goedartius, and is recorded in his hiſtory of the creature. Swammerdam obſerves, that this creature, while young, has four ſmall protuberances on its back, and has no wings over the body, and that theſe are the rudiments of the wings, which by degrees become expanded afterwards. The creature in this ſtate being of the ſame nature with the graſshopper found without wings, and thence called bruchus and attebalus. It is remarkable of this creature, that it can move backward as faſt as forward, and often does ſo when frighted. *Goedart.* de Inſ. *Ray*'s Hiſt. Inſ. p. 66.

GRYLLUS, *the cricket*, in natural hiſtory, the name of a genus of inſects nearly allied to the locuſt claſs. The two principal kinds are the houſe and field *cricket*. The firſt of theſe is ſmaller, and is of a brown colour ſpotted with black. The latter is more than an inch long, and has a great head and very large eyes. The antennæ in this ſpecies have no articulations.

GRYLLUS, in ichthyology, a name given by ſome to the conger, or ſea eel. Ritterſhuſius, who has given commentaries on Oppian's Halieutics, has given this word as the tranſlation of the gongros of that author, which is the name of the ſame fiſh with the congrus of Ariſtotle, and the other antient Greeks. Artedi has avoided the occaſion of any ſuch errors for the future, by not allowing it any generical name at all. He makes it a ſpecies of his genus of muræna, and diſtinguiſhes it from all the others by the name of the muræna with the rim of the back fin black. *Ritterſhuſius* in Oppian. See MURÆNA.

GRYLLUS *vulgaris*, in ichthyology, a name given by Geſner, Bellonius, and others, to the ophidion of the generality of authors; diſtinguiſhed by Artedi by the name of the ophidion with four cirri, or beards, at the lower jaw. Pliny has mentioned this under the name of the *piſciculus congro ſimilis*. See OPHIDION.

GRYPHITES, in natural hiſtory, the name of a very common foſſile ſhell, the recent, or living fiſh, to which it belongs, not being known, either on our own or other ſhores.

It is an oblong ſhell, very narrow at the head, or cardo, and gradually becoming wider to the extremity, where it ends in a circular limb. The head or beak is very crooked, or very much bent inward. It has been called by ſome the *conchites anomius rugoſus*, by others they are called *conchæ rugoſæ*, and they are commonly known among us by the name of *crow ſtones*. They are very frequent in many parts of the kingdom in our gravel-pits and clay-pits, and we ſeem to have three or four diſtinct ſpecies of them. Some are extremely rounded and convex on the back, others are leſs ſo, and the plates of which they are compoſed are in ſome ſmaller and thinner, in others much larger and thicker, in ſpecimens of the ſame bigneſs. *Hill*'s Hiſt. of Foſſ. p. 650.

GRYPHIUS *pes*, the *griffons claw*, a name of a chirurgical inſtrument deſcribed by Ambroſe Parêy, and uſed for extracting moles from the uterus.

GRYPHUS, one of the many names uſed by chemiſts for the philoſophers ſtone.

GRYPHUS, in ſurgery, a ſort of crooked pincers uſed by ſurgeons.

GRYPOSIS, in medicine, the name of a diſtemperature of the toe nails, in which they bend inwards, and make their way deep into the fleſh.

GUACAGUACA, in zoology, the Braſilian name of a bird of the larus, or gull kind, the eggs of which are much valued in America, but the fleſh not at all. It is called by the Portugueſe there, the *gaviota*. See GAVIOTA.

GUACARI, in zoology, the name of an American fiſh of a roundiſh, or in ſome ſort a pyramidal figure, and of a foot or more than that in its common length. Its head is flat below, and roundiſh on the upper part. Its mouth is ſmall and round, and is placed in the under part of the head, and is furniſhed with a ſort of beard, of ſlender, but ſtiff bodies, reſembling ſhort ſegments of hogs briſtles. Its back fin is ſomewhat prickly, as in the pearch, and its tail is ſupported by ſtrong nerves, and is very forked. Its head is covered with a hard ſhelly cruſt, which feels rough to the touch; and its body with triangular ſcales, which are larger toward the tail than near the head; and all of them are rough, as if they had been cut and ridged, and have a ſort of tubercle in their middle; ſo that the whole fiſh ſeems covered with a coat of armour, and has a quadruple arrangement of tubercles on each ſide. It is all over of a pale ſaffron colour, but ſomewhat deeper on the belly than on any other part, and is all over variegated with brown ſpots, of the ſize of muſtard ſeeds.

There is alſo another kind of this fiſh which differs in colour, being all over of a duſky brown, ſpotted with ſmall ſpecks of a fine deep black. They are both eaten, but the firſt kind has very little fleſh; the latter has more, and it is alſo better taſted. *Marcgrave*'s Hiſt. Braſil.

GUACUCUA, in zoology, the Braſilian name of a kind of water bat. *Barlæus*, p. 224.

GUACUIA, the name of a very remarkable Braſilian fiſh, called alſo by ſome the *veſpertilio aquaticus*, or water bat, and by others the *monoceros piſcis*. The anterior part of the body of this fiſh is like a plough; the head is eight fingers long, and five wide in the broadeſt part; the hinder part of its body is round, and pointed toward the tail. It is broad and flat, and the head ſcarce appears beyond the rim of the body; and has between the eyes a ſingle horn, which is very hard, of a conic ſhape, and near two fingers long. It has a tolerably wide mouth, but no teeth; and it has on each ſide, in the middle of the body, an arm, and under theſe, on the belly, has two fins, which ſeem to ſerve as feet. It has a tough ſkin, and no ſcales. It is brown on the back, and full of tubercles, and is red on the belly. It, moſt of all fiſh, approaches to the *rana piſcatrix*. *Marcgrave*, Hiſt. Braſ. p. 39.

GUADUM, *woad*, a name given by the people of ſome parts of France in common to the glaſtum, or iſatis, properly called *woad*, and uſed in dying a blue colour; and to the *geniſtella tinctoria*, or dyers weed, uſed in dying yellow.

We alſo have the ſame confuſion of names in the Engliſh language, many of our Herbals calling the geniſtella *wold*, *weld*, or *woad*. The Latins alſo called both this and that by the ſame name, *cymene*, properly the Greek name of the geniſtella. See ISATIS.

GUAIAC (*Cycl.*)—Decoctions of this wood taken internally, as alſo applied in fomentations externally, have been found of ſervice in cancerous diſorders. See Medic. Eſſ. Edinb. Vol. 5. Art. 9.

It is a very remarkable quality in *guaiac*, that the ſalt it yields has very little of the alkaline quality of other ſalts of that kind.

GUAIACANA, in botany, the name of a genus of trees, the characters of which are theſe. The flower conſiſts of one leaf, and is of the bell-faſhioned kind. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the under part of the flower; this finally becomes a roundiſh, ſoft, and multicapſular fruit, containing a number of hard ſeeds.

The ſpecies of *guaiacana* enumerated by Mr. Tournefort are theſe. 1. The *guaiacana*, called by authors the broad leaved African lotus; and 2. the *guaiacana*, called the narrow leaved African lotus. *Tourn.* Inſt. p. 600.

GUAIAVA, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular form. The cup is of the ſhape of a funnel, and finally becomes a ſoft coronated fruit of an oval figure, in the pulpy part of which there are encloſed ſeveral ſmall ſeeds. There is only one known ſpecies of this plant, which is the pomiferous *guaiava* of America, deſcribed by Gaſpar Bauhine, and others. *Tourn.* Inſt. p. 660.

GUAIBI *Coara*, in zoology, the name of an American fiſh, called by the Portugueze *burace de velha*. It is flat bodied, with a riſing back, and is uſually caught between five and eight inches long, and of about a third part of its length in breadth. Its noſe is pointed, and its head very large, and in each jaw it has one row of very ſmall teeth: its tongue and palate are red, and its eyes are large, and of a browniſh yellow. Its tail is forked, and it has only one fin on the back; the anterior rays of which are prickly, the others ſoft to the touch. Its ſcales are of the ſize of thoſe of the pearch, they are of a ſilvery white, with duſky edges, and on the back are all over of a blueiſh hue. It is caught among the rocks and about the ſhores, and is eaten in conſiderable plenty in the Braſils, both by the natives and Portugueſe. *Marcgrave*'s Hiſt. Braſil.

GUAIMINIBIQUE, in zoology, a name by which many authors have called the humming bird, or *guainumbi*. *De Laet*'s Hiſt. Ind. Occ. l. 15. c. 7. See the article GUAINUMBI.

GUAINUMBI, in zoology, the name of an American bird, called the *humming bird*, and by ſome authors *tomineus*. It is a large genus of birds, many ſpecies of it having been deſcribed by authors, and many which they have not deſcribed, having been ſent into Europe by the curious. It is the ſmalleſt of all birds, but of the moſt beautiful and lively colours of all others. It flies very ſwiftly, and in flying makes a noiſe exactly like the humming of a bee, and is not much larger than the humble bee. It can ſuſtain itſelf a long time on the wing, and in that poſture thruſts its little beak into flowers, the juices of which it ſucks and feeds on. As it has no other food but this, there is no keeping it alive, but all die that are taken; and they are preſerved and ſent over as curioſities to us. Many have reported ſtrange ſtories of their ſleeping all the winter months, and reviving at the approach of ſpring; but Marcgrave ſaw them in great plenty, in the woods in all ſeaſons. The Indians make pictures with the feathers of theſe birds, which are ſo brightly coloured, as to vie with the fineſt paint, and ſo thin as to be as cloſe as colours on canvas. *Ray*'s Ornithol. p. 165.

The *humming bird* is ſo ſmall, that its leg and foot together meaſure but half an inch, and its whole trunk not an inch. The body weighs only $\frac{1}{10}$ of an ounce, which is about equivalent to a ſilver ſix-pence; whereas a titmouſe, the ſmalleſt bird among us, weighs two ſhillings, or half a crown [a]. Its neſt, which is made of cotton, is much of the ſize and figure of the thumb of a man's glove; its egg about the bigneſs of a pea. Some of the Indians wear them in their ears for pendants [b].[—[a] Phil. Tranſ. N° 200. p. 760. [b] Phil. Tranſ. N° 206. p. 993.—]

GUALACLING, in natural hiſtory, the name given by the people of the Philippine Iſlands, to a ſpecies of bird of the ſtarling kind. It is of the bigneſs of the turtle, it feeds on fruits, and is a very briſk and lively bird. It appears to be of a plain black colour, except when viewed in the ſun, and then is ſeen to be of a vaſt variety of bright colours.

GUAMAJACU *ape*, in zoology, a name by which Marcgrave, and ſome other writers, have called the *piſcis triangularis*. *Willughby*'s Hiſt. Piſc. p. 149. See TRIANGULARIS *piſcis*.

GUAMAJACU *Atinga*, in zoology, the name of a fiſh of the orbis or globe fiſh kind; which is thorny, and has the mouth of the ordinary frog-mouthed ſpecies. It is uſually about ſeven fingers breadth long, and in the place of teeth has a hard bone above and below in its mouth. The holes for its gills are large enough to admit one's finger, and near theſe there are two ſquare, broad, and ſhort fins. Near the tail it has another ſmall oblong fin, and one oppoſite to it on the belly. Its tail is a ſimple fin, of a finger and a half long, and a finger broad. Its head is covered with a hard bony ſhell, and all its body with prickles, except on the belly, where it is ſoft as the belly of a frog; the prickles are ſo many ſmall pointed bones. The head, back, and ſides are of a browniſh grey, the belly is of a yellowiſh white, as are alſo the prickles. It has about its gills, mouth, and back fin ſome ſmall black ſpots. It can, at pleaſure, inflate its whole body into the reſemblance of a bladder. It is not eatable, but eſteemed poiſonous. *Piſo*, Hiſt. Nat. l. 5. c. 16.

GUAMAJACU *Guara*, in zoology, a name by which ſome call that ſpecies of the *hiſtrix*, or ſea porcupine, called by Marcgrave *Diabe*. *Willughby*'s Hiſt. Piſc. p. 147. See the article DIABE.

GUANABANUS, a name by which Plumier, and other authors, have called ſeveral ſpecies of the anona. *Plumier* 10. See the article ANONA,

GUAPERVA, in zoology, the name of an American fiſh, of the toad fiſh or rana piſcatrix kind, but different from that in many things, and remarkably ſmall. It is ſeldom found of more than four finger's breadth long, and its more uſual ſize is but two fingers. It has no gills; its mouth is large, projected like that of a dog, and furniſhed with extremely ſmall teeth. It has a bone, ſupplying the place of a tongue. Its eyes are extremely ſmall, and of a fine pale blue, like that of the turquoiſe. Between its eyes, or in the middle of its upper lip, it has a little horn, ſtanding upright, but bending a little backward, and before that horn is a ſlender filament, half a finger long, turned backward, and with a little button at its end. It has one large fin upon its back, and two ſmaller on his belly or breaſt, and in the middle of its body, but rather neareſt the head. It has on each ſide an arm, which toward the extremity degenerates into a fin, and is prickly at the end. It has no ſcales, but a

tough

tough ſkin, rough on the back, and ſmooth on the belly. It is of a reddiſh brown colour, and ſpotted all over with large black ſpots. *Marcgrave* Hiſt. Braſ. p. 131.

GUARA, in zoology, the name of a Braſilian bird, called by Cluſius, *Numenius Indicus*, or the *Indian Curlew*. It is a large bird, of the ſize of the platea, or ſpoonbill, and lives about waters: its beak is long, and of a whitiſh grey, figured like a Poliſh ſword: the tail is ſhort, and is hid by the wings when they are cloſed. It is all over of a fine gay red, only that the long-wing feathers are tipped with black at their extremities, and there is ſomething very remarkable in its growth, for it is black when firſt hatched from the egg, from this it becomes greyiſh, and from this at length changes to its fine red. *Marcgrave*'s Hiſt. Braſil.

GUARACAPEMA, in zoology, a name uſed by ſome for the fiſh more uſually called the *dorado*, or *auratus piſcis*. *Marcgrave*'s Hiſt. Braſil. See the article DORADO.

GUARA TEREBA, in zoology, the name of an American fiſh of the cuculus kind, approaching to the nature of the trachurus, and which Mr. Ray thinks may properly be called the trachurus Braſilienſis, or the Braſilian ſcad. It is uſually of about four or five inches in length, its head is obtuſe, and its mouth furniſhed with very ſmall teeth. The ſide lines towards the tail are armed with prickly hooks, all pointed backwards. The tail is divided into two horns. Its ſcales are of a triangular figure, and are ſo ſmall, that it is very ſmooth to the touch. It is of a greeniſh gloſſy hue, very bright and glittering; the lower parts of its ſides and its belly are yellow, but with a white gloſs among it. The belly fins are white, the tail and the reſt of the fins are yellow. It is eaten in Braſil and other American countries. *Ray*'s Ichthyog. p. 291.

GUARAUNA, in zoology, the name of a ſmall Braſilian bird common in watery places, and of the ſize of our ſnipe. Its bill is ſtrait, but a little hooked at the end, and is between four and five fingers breadth long. Its body is about the ſame length, and its legs ſix fingers long. It is all over of a duſky brown, with an admixture of a caſt of greeniſh. It is a well taſted bird. *Marcgrave*'s Hiſt. Braſil.

GUARIBA, in natural hiſtory, the name of a ſpecies of monkey found in the Weſt-Indies. It is of the ſize of a fox; its face is raiſed high, its eyes are black and ſhining, and its ears ſmall and round. Its tail is very long, naked toward the end, and extremely moveable; the creature frequently twiſting it round things to faſten itſelf by it. It is covered all over with fine black ſhining hairs, except on the legs and part of the tail where they are brown. The hairs are ſo nicely diſpoſed all over the body, that the creature appears perfectly ſmooth; and they are much longer under the chin and throat, ſo that they form a ſort of beard there. *Ray*'s Syn. Quad. p. 152.

This ſpecies is found in prodigious numbers together in the woods, and makes a very loud and frightful noiſe; and it is very common for one only to make a noiſe, and all the reſt to form a mute aſſembly round him. Marcgrave relates a very ſingular thing of this creature, in this reſpect, which he ſays he has frequently been an eye-witneſs to. They meet in great numbers before and after mid-day, when they form a large circle, and one placing himſelf above the reſt, begins to make a loud noiſe; when he has ſung thus by himſelf for ſome time, the reſt all remaining in perfect ſilence, he lifts up his hand, and they inſtantly all join in a ſort of chorus; this intolerable yell they keep up inceſſantly, till the ſame monkey, who gave the ſignal for their beginning, lifts up his hand a ſecond time, on which they all ceaſe and become ſilent again in a moment. He then exalts his pipe alone again, and ſo finiſhes the buſineſs of the aſſembly.

Theſe creatures carry their young upon their backs, and ſkip very nimbly with them from tree to tree, the young ones claſping faſt round their body with their arms. They are a very fierce animal, and can never be tamed. There is a ſpecies of this kind alſo much larger than theſe, which have a very long black hairy beard. Theſe, as Marcgrave aſſures us, on his poſitive knowledge, will often attack the negro women as they go through the woods, and lie with them by force.

GUARUGUARU, in zoology, the name of a ſmall American freſh water fiſh, ſeldom exceeding an inch and half in length, and of a very ſlender body: its head is flatted, its eyes very ſmall, with very black pupils, and yellow iris's. It has only five fins, two at the gills, two under the belly, and one on the hinder part of the back. Its tail is ſmall and rounded. It is covered with extremely minute ſcales, and all its upper part, both back and head, are of a duſky olive colour, till near the tail; where, as alſo on the ſides, it is of a fine yellow, and on the edges of the ſcales of a duſky amber colour. The belly and under part of the head are of a ſilvery white; near the tail it has alſo on each ſide a large black ſpot. It is eaten, though very ſmall, being very well taſted. It is caught in abundance in lakes and ponds. *Marcgrave*'s Hiſt. Braſil.

GUASSEM, a word uſed by Avicenna, and ſome other authors, to expreſs certain black ſcorbutic ſpots and blotches appearing on the ſkin.

GUATUCUPA, in zoology, the name of a ſea fiſh caught about the Braſilian ſhores. It grows to about two feet long; its back is a little elevated, its mouth ſmall, and beſet with ſharp teeth. It has only one long fin upon the back, the rays of which are rigid and prickly. Its ſcales are of a fine ſilvery white, and its back and ſides are variegated with ſtreaks of a fine browniſh yellow, and others of a gloſſy ſilvery red; theſe are not tranſverſe, but run from the head to the tail; and beſide theſe, there is the common line on each ſide, reaching from the gills to the tail, which is elevated above the ſurface of the body. Its head is of a mixt colour, of white, yellow, and a reddiſh brown. Its fins all white, except the tail, which is of a reddiſh brown. Its belly is white. It is caught among the rocks, and is an extremely well taſted fiſh. *Ray*'s Ichthyog. p. 338. *Marcgrave*, Hiſt. Braſ. *Willughby*, Hiſt. Piſc. p. 338.

GUATUCUSA, in zoology, the name of an American fiſh, approaching to the nature of the *coracinus* of the Mediterranean, and called by ſome *corvina*. It is of an oblong ſhape. Its back is a little prominent, but its belly perfectly flat and even. Its uſual length is from twelve to twenty inches. Its mouth is large; its noſe pointed, and the lower jaw longer than the upper. Its teeth are very ſmall. It has ſeven fins; two behind the gills, two on the belly, one long one behind the anus, and one long, high, and triangular on the back. This is ſupported by very rigid nerves, and behind this there is a long and low one, extended to the tail. Its tail is large and broad, and of a ſomewhat ſquare figure. Its ſcales are very ſmall, and it appears ſoft to the touch. It is all over of a ſilvery whiteneſs, except that on the back there is a ſlight admixture of yellow. Its belly, its tail, and all its fins, are of a pure white; and its ſide lines, which run ſtrait from the gills to the tail, are of a ſilvery whiteneſs. It is caught on the Braſilian ſhores, and is a very delicate fiſh. *Marcgrave*, Hiſt. Braſ.

GUAZAMA, in botany, the name of an American tree, deſcribed by Plumier as of the nature of the cacao. They are both ſpecies of the theobroma of Linnæus, but the *guazama* is peculiar in the ſtructure of its fruit, which is of a ſomewhat globular figure, full of tubercles and perforations on the ſurface, and yet divided into five lodgments for ſeeds within. *Plum.* Nov. Gen. 18.

GUDGEON, in ichthyology, the Engliſh name of the fiſh called by authors the *gobio*, and *gobius fluviatilis*. According to the new Artedian ſyſtem, the word *gobius* is made the name of another genus of fiſhes, and the *gudgeon* is reduced to the genus of the cyprini; of which, according to the diſtinctions and characters of that author, it is a true ſpecies. See GOBIUS and GOBIO.

GUDGEONS, in a ſhip, is uſed for the eyes driven into the ſtern poſt, into which the pintles of the rudder go, to hang it on.

GUEBUCU, in zoology, the name by which ſome have called the fiſh more uſually known by the name of the bicauda, a kind of ſword fiſh. *Marcgrave*'s Hiſt. Braſ. See the article BICAUDA.

GUESDA, in botany, is properly the name of woad, but it is alſo uſed by ſome for the lutum, or *lutea herba* of the Romans, and cymene of the Greeks. This is an error in too many of the old authors, though ſo palpable, that one would have thought no body could have run into it; the lutum, or cymene, having been always uſed to dye yellow, and the glaſtum, or *gueſda*, to dye blue; and the characters of the lutum, or, cymene, plainly ſhewing it to be our *geniſtella tinctoria*, or dyers weed, but not at all agreeing with the glaſtum, or woad.

GUEST-*rope*, on ſhip-board, is that rope by which the boat is kept from *ſteeving*, or going too much in and out, as ſhe lies in the tow of a ſhip.

GUIANA *bark*, in the materia medica, the ſame with what is otherwiſe called *ſima-rouba*. See SIMA-*rouba*.

GUIDA, in the Italian muſic, the guide, or leading voice or inſtrument, in fugues. The parts, that are to imitate and follow, are ſaid to be *in conſequenza*. *Broſs*, Muſ. Dict. in voc. See FUGUE, *Cycl.*

GUIDONIA, in botany, the name given by Plumier to the plant, called afterwards by Linnæus, ſamyda, and ſuppoſed to be allied to the melia. See SAMYDA.

GUILANDINA, in botany, the name of a genus of plants called *bouduc* by Plumier, who firſt gave the deſcription. The characters are theſe. The ſeveral plants are ſome male, others female. The male has a one-leaved perianthium lightly divided into five ſegments, and falling off with the flower. Its lower part is a cylindric tube, marked with ten ſtriæ. The margin is concave, and the ſegments very ſmall. The flower is compoſed of five petals, which are equal in ſize, and are hollow, ſeſſile, and inſerted into the mouth of the calyx, and are a little larger than its ſegments. The ſtamina are ten erect pointed filaments; they are inſerted into the cup, and are ſhorter than it, and are alternately ſmaller one than another. The apices are obtuſe, and incumbent. The fruit, which ſucceeds the female flowers, is a pod of a rhomboidal form, with a convex ſuture on the upper part; it is ſmooth, inflated, but ſomewhat compreſſed, and contains,

tains only one cell, which is divided into ſeveral lodgments by their ſepta. The ſeeds are numerous, of a bony hardneſs, of a globoſe, but ſomewhat compreſſed form, and are placed one in every lodgment. The dry fruit is common in the Muſeums of the curious, who collect fruits and ſeeds. *Plumier*, 39. *Linn.* Gen. Pl. 518.

This plant is eſteemed good in colics, and hernias; and is ſaid to diſcuſs flatulencies, comfort a weak ſtomach, provoke the menſes, and expel the ſtone.

GUILLEM, in zoology, the name given in many parts of England to the bird called by authors *lomwia*, and in ſome places the *kiddaw*. See LOMWIA.

GUINEA *corn*. See the article CORN.

GUINEA *pig*, the name given by our common people to a ſort of animal, diſtinguiſhed by authors by the name of *mus porcelli pilis et voce*, the rat with the hair and voice of a hog.

It is a very ſingular kind of animal, and there are three ſorts of it, all very different from one another. 1. The *porcellus indicus*, or common *Guinea pig*. 2. The *aguti*: and 3. The *paca* of the Americans. This creature ſeems to partake of the nature of ſeveral animals. Its hair and voice are like the hog's; its teeth and head reſemble the rabbit's, as does alſo its general ſize; and its ears are wholly like thoſe of the mouſe and rat kind. See PORCELLUS, AGUTI, and PACA.

GUINIAD, in zoology, a name given by ſome to the fiſh, known among authors by the name of *ferra*, a fiſh of the truttaceous kind, common in the lakes of Wales, and ſome of the northern counties of England; and in the laſt of theſe places called the ſchelley. *Willughby*, Hiſt. Piſc. p. 184. See the article FERRA.

GUIRA ACANGATARA, in zoology, the name of a Braſilian bird of the woodpecker kind, and of the ſize of our larger ſpotted woodpecker. Its tail is remarkably long, and conſiſts of eight feathers. Its head feathers are brown in the middle, and yellowiſh at the ſides, ſo that the bird looks creſted; and on the contrary, the feathers of the wings and neck are yellow in the middle, and brown at the edges; its belly, and great part of its back, are of a pale yellow; its feet and legs are of a blueiſh green. It is common in the woods in ſeveral parts of America, and, like our woodpeckers, makes a very loud yelling. *Marggrave*, Hiſt. Braſil.

GUIRACENOIA, in zoology, the name of a ſmall Braſilian bird of the parus, or titmouſe kind. Its head, throat, breaſt, belly, and the lower half of its back, are all of a fine blue; its neck, and the upper half of its back, black; its wings are black, variegated with blue; its tail is black; and its legs brown. *Marggrave*, Hiſt. Braſ.

GUIRACOEREBA, in zoology, the name of a Braſilian bird of the ſize of a greenfinch. Its head is ornamented with a large ſpot of ſea-green feathers; the reſt of its head, its throat, its breaſt and belly, and the lower half of its back, are of a fine ſhining blue, with white variegations. There runs a fine blue line acroſs the wings. The upper half of the back is of the deepeſt black imaginable, and is very gloſſy and ſhining; the tail is black, and the wings are large, and have a great deal of yellow in them; but that is not ſeen, unleſs when the bird is flying. *Marggrave*, Hiſt. Braſ.

GUIRA GUAINUMBI, in zoology, the name of a bird of the king-fiſher, or merops kind, of the ſize of a pigeon in appearance, being very thick covered with feathers, but its body is really not larger than that of a thruſh; the bill is longiſh and black, a little crooked, and notched at the edges like the teeth of a ſaw; its legs are very ſhort; its tail very long, and very narrow. It is a very beautiful coloured bird; its head is of a very fine blue, and has a large black ſpot in the middle; its breaſt, throat, and belly, are of a duſky yellow, and its back of a fine graſs green; and the neck and wings have a blueiſh caſt with the green, like that on the necks of the drake, the peacock, and ſome other birds. *Marggrave*, Hiſt. Braſ.

GUIRANHEEMGATU, in zoology, the name of a Braſilian ſparrow of the ſize of our common ſparrow. Its head and throat are yellow, and its neck, breaſt, and belly, of a deep ſaffron colour. The wings are variegated with green and yellow. The male of this ſpecies ſings very ſweetly, but the female is much leſs beautifully coloured, and has no other note but *tſchrip*, *tſchrip*. *Marggrave*, Hiſt. Braſ.

GUIRAPANGA, in zoology, the name of a Braſilian bird of the thruſh kind, remarkable for the loudneſs of its voice. It is the largeſt of all the thruſh kind, approaching to the ſize of a ſmall pigeon. Its beak is a finger's breadth long, broad at the baſe, and very ſharp, and a little hooked at the point. Its mouth opens very wide. Its throat is very broad, and it has ſeveral black fleſhy protuberances hanging down from it of a finger long, and the ſhape of a ſpear point. Its head is of a duſky brown; its neck, breaſt, belly, back, and thighs, are of a duſky greyiſh hue, and the back ſpotted with black, and toward the origin of the tail a little alſo with brown. Its tail is ſhort, and is variegated with black, grey, and green; and its wings are black, ſhaded and variegated with green. Its breaſt is, as it were, bifid, and gives place for a very large wind-pipe, by means of which it is able to make a very loud noiſe. Its only ſounds are *cick cock kur kur kur*, which it repeats almoſt inceſſantly during the ſeaſon when it cries, which is only for ſix or ſeven weeks about Midſummer. *Marggrave*, Hiſt. Braſ.

GUIRAPEREA, in zoology, the name of a Braſilian bird. It is of the ſize of a lark, and has a ſhort, thick, black beak. Its head, neck, back, and belly, are of a pale yellow, like that of wax; and the lower part of the head, the throat, and the breaſt are black; the wings and tail are brown and black, with a ſlight variegation of ſea green. *Marggrave*, Hiſt. Braſ.

GUIRAGUACUBERABA, in zoology, the name of a Braſilian bird of the ſize of a goldfinch. Its throat and the extremity of the belly are of a fine pale yellow, as is alſo the back. Its head, the outſide of its neck, and the anterior half of its back are of a pale green, as are alſo its wings and tail; but the wings have ſome brown feathers intermixed. It has a large black ſpot under its throat, reaching almoſt to its eyes. Its beak is ſtrait, ſlender and pointed. Its feet are brown. *Marggrave*'s Hiſt. Braſ.

GUIRAQUEREA, in zoology, the name of a Braſilian bird of the caprimulgus, or goat-ſucker kind, a ſort of ſmall owl, approaching to the figure of the cuckow. It is about the ſize of the lark, but its wings and tail are very long, which make it look much larger than it is. It has a large flat head, a ſhort beak, a very wide mouth, and ſome briſtles about the origin of the bill. It is of a browniſh grey colour, variegated with yellowiſh and whitiſh ſpots; and about its head and neck has a ſort of ring of a deep yellow. Its legs are very ſhort, and its toes are connected by a membrane, but not webbed like the ducks. It is not ſaid whether this be a night bird, or one that flies by day light, but probably it is of the firſt kind, as its whole figure reſembles the caprimulgus. *Ray*'s Ornitholog. p. 71.

GUIRARA NHAENGETA, in zoology, the name of a Braſilian bird of the œnanthe or wheat ear kind. Its beak and legs are black, its head, neck, breaſt, and belly are of a very pale grey, its back of a pale aſh colour; on each ſide of the head, from the angle of the beak, there is a long black ſtreak; the wings are black, and the tail of an extremely deep and gloſſy black, with a fine white tip and ſome white ſpots on ſeveral parts of it. *Marggrave*'s Hiſt. Braſ.

GUIRATANGEIMA, in zoology, the name of a Braſilian bird of the woodpecker kind. It is of the ſize of a lark, its head and neck are black; it has a broad black ſpot on its back, and its wings are alſo black, but have a long white ſpot in the middle. Its general colour, excepting theſe marks, is a deep and ſomewhat reddiſh yellow. Its legs are blue. There is a great deal of beauty in the contrivance of the neſt of this bird; it is of a long cylindric figure, and is very nicely hung down from the firm twigs of trees. *Marggrave*'s Hiſt. Braſ.

GUIRATINGA, in zoology, the name of a Braſilian bird of the heron kind, but ſmaller than the common heron; it walks very erect, its neck is long, and its feet and legs of a greeniſh yellow; it is all over of a pure ſnow white, and its neck feathers are whiter and ſofter than thoſe of the oſtrich. It is always ſeen about waters. *Marggrave*'s Hiſt. Braſ.

GUIRATIRICA, in zoology, the name of a Braſilian bird of the bulfinch kind, called by Mr. Ray *rubicilla Americana*. It is of the ſize of a lark, and has a very ſtrong beak. Its head, throat, and the middle and lower part of its neck are of a fine ſhining blood red. The ſides of its neck, its breaſt, and its belly are white, the upper part of the neck is black with a ſlight variegation of white. Its back is grey ſpotted with black, and its wings and tail black with a little whiteneſs at the edges. *Marggrave*'s Hiſt. Braſ.

GUIRAUPIAGARA, in zoology, the name of a ſpecies of ſerpent found in America, and ſo called from its love of eggs, the word expreſſing a devourer of eggs. It is a long ſlender ſnake, black on the back, and yellow on the belly. It is a great climber of trees, and rolls about among their upper branches, as ſwiftly as if ſwimming in water: it is a great enemy to birds, deſtroying vaſt quantities of their eggs. *Ray*'s Syn. Anim. p. 329.

GUITARRA, in the Italian muſic, the name of a muſical inſtrument of the ſtring kind, with five double rows of ſtrings, of which thoſe that form the baſs are in the middle; unleſs it be one for the burden, an octave lower than the fourth. *Broſs.* Muſ. Dict. in voc.

This inſtrument was firſt uſed in *Spain*, and the Italians give it the particular denomination of *Spagnuola*. It is found in Italy, and other countries, but more frequently in Spain. Id. ibid.

GUITGUIT, in zoology, the name under which Nieremberg has deſcribed a bird, which he ſays is no larger than a wren, and of a beautiful green colour; and much eſteemed for the table. This bird he ſays has great courage though ſo very ſmall, and often attacks whole flights of ravens, which it perſecutes till they ſeek ſhelter among reeds and in thickets, to hide themſelves from it. *Ray*'s Ornitholog. p. 297.

Mr. Ray eſteems the whole to be an entirely fabulous and

alſe account, contrived as an imitation of the antient tradition of the wren's fighting the eagle.

GULASISI, in natural hiſtory, a name given by the people of the Philippine iſlands, to a very ſmall and very beautiful ſpecies of parrot.

GULBE in architecture, the ſame as *gorge*. See the article GORGE, *Cycl.*

GULE *of Auguſt*, the day of St. Peter ad vincula, which is celebrated on the firſt of Auguſt.

It is called the *gule of Auguſt*, from the Latin *gula*, a throat, for this reaſon, that one Quirinus a tribune, having a daughter that had a diſeaſe in her throat, went to pope Alexander, the ſixth from St. Peter, and deſired of him to ſee the chains that St. Peter was chained with under Nero, which requeſt being granted, and ſhe, kiſſing the chains, was cured of her diſeaſe: whereupon the pope inſtituted this feaſt in honour of St. Peter; and, as before, this day was termed only the calends of Auguſt, it was on this occaſion called indifferently either the day of St. Peter ad vincula, from what wrought the miracle, or the *gule of Auguſt*, from that part of the virgin whereon it was wrought. *Durand.* Rationale Divinorum. lib. 7. c. 19. Terms of law.

GULL, in zoology, properly the common name of all the larus kind, but generally underſtood only as the name of the common black and white kind. This is the largeſt of all the *gull* kind; it uſually weighs between four and five pounds. Its beak is yellow, flatted ſideways, and three fingers breadth long, and a little hooked at the end. Its head is large and flatted at the top, and its back, breaſt, belly, and tail white, but with a little blackneſs juſt in the middle of the back, and in the long feathers of the wings. Its legs and feet are white, and its hinder toe very ſhort. Its mouth opens to a great width; it feeds on fiſh, and is common on ſome of our coaſts. *Ray*'s Ornitholog. p. 261.

GULYAVAN, in natural hiſtory, a name given by the people of the Philippine iſlands, to a very beautiful bird, common in that part of the world; it is of the ſize of a turtle dove, and is very beautifully variegated with black and gold coloured feathers. It feeds on fruits.

GUM-*Apples*, in Languedoc, and ſome other parts of France. The juice of apples will ſometimes exſudate thro' their rind, and congeal all about them in form of a clear white *gum*, hard like ice, by reaſon of its being ſoon dried in the ſun into a thin cake. The people call ſuch an apple, *pomme gelée*, or a frozen apple. It is very common to ſee apples covered in part with this *gum* in ſeveral ſpecks; but it is more rare to meet with them wholly ſo. The *gum* is inſipid to the taſte.

We have one plant cultivated in ſome gardens, which yields in the heat of ſummer ſuch another white icy and taſteleſs *gum*. This is the common rhubarb, of the ſtalks of the leaves of which tarts are made. The ribs of the larger leaves of this plant, in June and July, are covered with large tranſparent drops of this *gum*, and an ounce of it may be ſometimes collected from a ſingle plant. Philoſ. Tranſ. N°. 224.

The common plums and ſloes in our hedges alſo afford the ſame clear and taſteleſs white *gum*. If they are wounded on purpoſe for it, they uſually throw more or leſs of it out at the wound; but this is after ſome time, and is not in ſo large quantity as what they naturally throw out. The common laurel alſo affords a little tranſparent white and taſteleſs *gum* of no ill effect, though its leaves are poiſonous. And it ſeems upon the whole, that this clear juice is not peculiar to apples or to two or three plants only; but that a great number, even moſt of them, do contain it, if we knew by what means to get it of them.

GUM-*Boils*, a morbid affection of the *gums*, called by the writers of ſurgery *parulides*. Theſe are of different degrees, and uſually ariſe from pains in the teeth. They are to be treated by diſcutients or other inflammatory tumors, but if theſe fail, or the diſorder is neglected, it uſually terminates in an abſceſs or fiſtula. Sage, camomile and elder flowers, boiled in milk and water, make a good gargariſm to be held in the mouth, and the remaining herbs may be ſowed up in a bag to be kept hot to the cheek. A half roaſted fig is a very good internal application, and when the ſoftneſs of the tumor ſhews that the matter is ſuppurated, it ought immediately to be opened by the lancet, to prevent the matters lodging there, and eroding the bone, and producing a fiſtula or caries. After it is opened, the matter ſhould be gently preſſed out with the fingers, and the mouth frequently waſhed with red wine mixed with a decoction of vulnerary herbs till it is well. When the ulcer has penetrated deep, it will be neceſſary to inject the ſame liquors with a ſyringe, and compreſs the part by a proper external bandage, to make the bottom part heal firſt; and when it is already become fiſtulous, and has callous edges, it may then often be cured by injecting tincture of myrrh, and elixir proprietatis, continuing this for ſome time. If all theſe prove ineffectual, the fiſtula muſt be laid open by inciſion, and the caries removed by medicines, cauſtics, or the actual cautery. If this proceeds, as ſometimes it does, from a carious tooth, this is firſt to be drawn before any thing elſe can be done; and it is a good rule in theſe caſes always to be rather too ſoon than too late in laying them open. *Heiſter*'s Surg. p. 463. See alſo *Schelhammer* de Epulide.

GUM *Lacc.* See the article LACCA, *Cycl.* and *Supplem.*

GUMMA, a ſort of venereal excreſcence on the perioſteum of the bones.

GUMMI *Olivæ*, *olive gum*, in the materia medica of the antients. We meet with this name given to a drug they ſometimes uſed in coughs, and diſeaſes of the lungs. Many have been of opinion, that the antients expreſſed no other than the common oil of olives by this name, and ſome things which they have ſaid about it, ſeem to give countenance to this opinion, though a very ſtrange name be warranted by it for a very common thing. But there are many paſſages in other of the antient writers, which are wholly incompatible with this opinion, and ſhew that ſomething elſe, not oil, was meant by it. Aviſenna deſcribing the common ſtorax tells us, that ſome called the *gummi olivæ* by its name. It could not be that any could call oil and ſtorax by the ſame name.

There is no ſort of reſemblance or affinity between the two things; but the Greek authors ſeem to ſet us right in this matter: they all deſcribe a ſubſtance under the name of δάκρυα Ελαίας, the tears of the olive tree, which ſeems to have been a thing wholly different from oil, and rather a concreted gum thus called; as the galbanum, ammoniacum, and other gums in common uſe with us, are called the ammoniacum in tears, &c.

The Greek authors meant the ſame ſubſtance by this name, that the Latins, or at leaſt the generality of them did by *gummi olivæ*; and they expreſsly deſcribe this as a gum, and diſtinguiſh it from the oil by ſaying, that it is not the expreſſed juice of the fruit of the *elaia*, or olive, but the ſpontaneous exſudation of the tree.

This *gummi oleæ*, or *olivæ*, might very well be compared to the *ſtorax ſtegonius*, or ſtorax in tears, or drops; and the inaccuracy of the early writers among the Arabians might authorize its being called by the ſame name; that it is not likely that any ſhould call a gum and an oil by the ſame name.

GUN *(Cycl.)*—The advantage of large *guns*, or cannon, over thoſe of a ſmaller bore, is generally acknowledged. This advantage ariſes from ſeveral circumſtances, particularly in diſtant cannonading. The diſtance to which larger bullets fly with the ſame proportion of powder, exceeds the flight of the ſmaller ones, almoſt in proportion to their diameters; ſo that a thirty two pound ſhot for inſtance, being ſomewhat more than ſix inches in diameter, and a nine pound ſhot but four inches, the thirty two pound ſhot will fly near half as far again as that of nine pound, if both pieces are ſo elevated as to range to the fartheſt diſtance poſſible. The reaſon of this is, the extreme great reſiſtance of the air, which is ſuch, that the diſtances to which bullets fly, is more regulated by this reſiſtance, than by the velocity they receive from the powder: and the larger bullets are leſs reſiſted in proportion to their weight, than the ſmaller; ſo that their reſpective ranges are found to be nearly in the proportion of their diameters, as before mentioned [a]. [[a] *Robins*, propoſ. for increaſ. the ſtrength of the navy. p. 2, 3.]

This advantage in the range of the heavier bullet, will not eaſily be counterballanced by increaſing the charge of powder allotted for the ſmaller bullet. For though the ſwiftneſs of this laſt, at it's iſſuing from the piece, may be thereby greatly increaſed, yet the diſtance to which the bullet will fly is thereby but little influenced: as all this increaſe of velocity is ſoon taken away by the reſiſtance of the air, which increaſes much faſter [b]. This aſſertion might ſeem a paradox, but it is irrefragably eſtabliſhed by ſome experiments made by the French [c]. [[b] Ibid. p. 4. [c] Ibid. p. 4. not.]

Another and more important advantage of heavy bullets is, that with the ſame velocity they break holes in all ſolid bodies, in a greater proportion than their weight. Thus a twenty four pound ſhot will, with the ſame velocity, break out a hole in any wall, rampart or ſolid beam, in which it lodges above eight times larger than will be made by a three pound ſhot. For the great ſhot will penetrate to above twice the depth that the ſmall one will, and leſs of the cavity it makes will be filled up again by the ſpring of the body pierced [d]. [[d] Ibid. p. 6.]

Large cannon alſo by carrying the weight of their bullet, in grape or lead ſhot, may annoy the enemy more effectually than could be done by ten times the number of ſmall pieces [e]. [[e] Ibid. p. 7.]

The author here quoted, has propoſed to change the fabric of all the pieces employed in the Britiſh navy, from the twenty four pounders downwards; ſo that they may have the ſame or leſs weight, but a larger bore. He thinks the thirty two pounders in preſent uſe, would be a proper model for this purpoſe. Theſe being of fifty two or fifty three hundred weight, have ſomewhat leſs than an hundred and two thirds for each pound of bullet. And that this proportion would anſwer in ſmaller pieces in point of ſtrength, ſeems clear from theſe conſiderations. 1. That the ſtrength of

iron or any other metal is in proportion to its ſubſtance. 2. That the leſſer quantity of powder fired in a ſpace it fills, has proportionably leſs force than a larger quantity. So that if two pieces a large, and a ſmall one, be made in the ſame proportions to their reſpective bullets, and fired with a proportionable quantity of powder, the larger piece will be more ſtrained, will heat more, and recoil more than the ſmaller [f]. [f Ibid. p. 11, 12.]

On this ſcheme, our preſent twenty four pounders will be eaſed of ſix or eight hundred weight of uſeleſs metal; and ſome pieces of a leſs calibre, as 9 and 6 pounders, would be ſometimes eaſed by 14 hundreds. Hence much larger *guns* of the ſame weight might be borne. Thus inſtead of 6, 9, 12, and 18 pounders, our ſhips might carry 12, 18, and 24 pounders [g]. [g Ibid. p. 14.]

Guns would be kept cooler and quieter, and would be of more ſervice in many reſpects, if their uſual charge of powder were diminiſhed. See CHARGE.

The author here quoted is of opinion, from his own trials, that a much greater reduction of the weight of ſhip-guns might ſafely take place, and that one fourth, and even one fifth of the weight of the bullet in powder, if properly diſpoſed, would be ſufficient for naval purpoſes [h]. [h See the ſaid Treatiſe, p. 22. and the note.]

GUN is alſo a name given by the miners, to an inſtrument uſed in cleaving rocks with gunpowder. It is an iron cylinder of an inch and quarter thick, and about ſix inches long, and having a flat ſide to receive the ſide of a wedge, and a hole drilled through it to communicate with the inſide of the hole in the rock. The hole is made of about eight inches deep, and in the bottom of it is put about two or three ounces of gunpowder; then this *gun* is driven forcibly in, ſo as to fill up the hole, and the wedge is driven in on its flat ſide to ſecure it. The priming at the hole is then fired by a train, and the orifice being ſo well ſtopped by this *gun*, the force of the powder is determined to the circumjacent parts of the rock which it ſplits. See MINING.

GUN-*Room*, in a ſhip, is the apartment under the great cabin, where the maſter gunner and his crew rendezvous, get ready their cartridges, &c. and do all things belonging to their buſineſs.

GUNNELLUS, in zoology, the name of a fiſh caught upon the Corniſh ſhores, and there called the butter-fiſh. It is always very ſmall, and is of the anguilliform, or eel like claſs. It ſeldom arrives at ſix inches in length, or above one finger's breadth, and has a flat and thin body; its colour is ſomething various, being either of a reddiſh brown and white, or elſe of an olive colour and white, and is variegated all over with lines of theſe colours. At the root of the back fin it has very beautiful round black ſpots, ſurrounded with a circle of white on each ſide; theſe are ten or twelve in number, and run at equal diſtances all down the back. Its head is ſmall and flatted, its noſe ſhort, its mouth wide, with only one range of teeth. Its eyes are ſmall, and it is covered with fine ſmall ſcales.

GUNNERS-*Tackle*, in a man of war. See TACKLE.

GUNNERY. See the *Appendix*.

GUNPOWDER *(Cycl.)*—It is generally aſſerted by hiſtorians, that *gunpowder* has no exploſion within the vapour of the Grotto del Cane in Italy, and every traveller who viſits that place, returns with the ſame opinion, which he ſuppoſes he has had ocular demonſtration of, as one of the experiments made there by the people who ſhew the grotto, is always the ſnapping a loaded piſtol within the body of the vapour, and this never gives fire. We owe to Lamberti the clearing up this piece of curioſity, and it is found from his experiments, that the vulgar opinion is erroneous. This gentleman on making the experiment ſeveral times himſelf, and that with great care, always found that the piſtol indeed miſſed fire, but that this did not appear a defect in the nature of the *gunpowder*, but in the fire; for he took notice, that all the ſparks ſtruck off by the flint and ſteel, became extinguiſhed by the vapour the inſtant of their appearance, and not one of them ever reached the *powder* in the pan, in its fiery ſtate. It appeared now no wonder that *gunpowder* ſhould not go off in a caſe in which fire never touched it; and to try whether the vapour here would prevent its exploſion when really kindled, he cauſed ſome *gunpowder* to be wetted, and made into a ſort of paſte, in which caſe it does not explode all at once, but burns away gradually. On lighting a parcel of this in the open air, and throwing it while on fire into the body of the vapour, he found it continued to burn under, or within it, as well as elſewhere. After this he carried the experiment yet further, by placing ſeveral heaps of dry *gunpowder* within the vapour on the ground; from one to the other of theſe a train was laid, and then a parcel of the wetted *gunpowder* being fired and thrown into the vapour, near the train of the dry powder, the firſt ſpark from it that touched the train while on fire, ſet fire to the train, and all the heaps exploded at the ſame inſtant. Act. Erudit. Anno. 1717.

As to the theory of *gunpowder*. See the *Appendix*.

GUNSHOT-*Wounds* are attended with much worſe conſequences than wounds made by ſharp inſtruments, for the parts are more ſhattered and torn, eſpecially when the ſhot falls upon the joints, bones, or any conſiderable part. Wounds of this kind have an eſchar formed upon them, and are therefore attended with little or no hæmorrhage at firſt, unleſs ſome conſiderable veſſel is wounded; but as ſoon as this eſchar falls off, the hæmorrhage is ſometimes ſo violent, as to endanger the life of the patient unleſs the ready aſſiſtance of a ſurgeon can be had. For the five or ſix firſt days there is little or no diſcharge of matter from theſe wounds; there is therefore no wonder that *gunſhot-wounds* exceed all others in violence of ſymptoms, ſuch as inflammation, pain, gangrene, &c.

The eſchar which is formed upon theſe wounds, is not occaſioned ſo much by the heat of the bullets, as by the rapidity with which they deſtroy the parts, and the violence of the ſymptoms is owing chiefly to this manner of wounding. Neither is there any thing poiſonous in theſe wounds, as has been by ſome imagined, for nothing poiſonous enters the compoſition, either of powder or ball.

Gunſhot-wounds are ſome deeper than others, and in ſome the muſcular parts alone are hurt; in others the veſſels, bones, or viſcera, are wounded. Sometimes the ball paſſes clear through, and ſometimes it remains fixed in the wound, and frequently carries part of the cloths, or wadding with it. From the difference of theſe circumſtances very different ſymptoms ariſe.

Gunſhot-wounds in the cranium, even the ſlighteſt of them, are attended with very great danger, and frequently bring on terrible ſymptoms, by the concuſſion of the internal parts, which they occaſion; inſomuch, that it is ſurpriſing to ſee how ſmall an external wound upon this part will bring on death, if not prevented by the trepan. Internal wounds of this ſort are alſo extremely dangerous, but if no large veſſel is wounded, they are frequently cured.

When they are inflicted on the bones or joints, they are attended with very bad ſymptoms; for in this caſe it is next to impoſſible to eſcape inflammation, gangrene, caries, and dangerous fiſtulæ, which either require amputation of the limb, or leave it without ſenſe or motion.

If any part of the cloths, wadding, or any other extraneous body, be forced into the wound, it muſt be removed before you can attempt to heal the wound; and the ſame caution is to be obſerved in regard to any ſplinters of bone: When theſe are removed, the hæmorrhage is to be ſtopped, then ſuppuration is to be promoted, and new fleſh encouraged, and care taken to procure an even cicatrix.

Extraneous bodies are much eaſieſt to be removed from theſe wounds at firſt; for after ſome delay, the tumor, and inflammation of the part, renders it difficult and painful: beſide, the bullets will by degrees work themſelves deeper, and be buried under the muſcles, which will occaſion fiſtulæ, rigidity of the limb, and other inconveniences. In extracting balls that lie deep, you muſt take great care not to lay hold of blood veſſels or nerves; which accident will be beſt avoided, by introducing the forceps ſhut, and not opening them till you feel the ball.

Sometimes the orifice of theſe wounds is ſo narrow, that it is impoſſible to come at the body you are to extract, without making a larger opening; this then muſt be done on the moſt convenient ſide, always obſerving that no nerve, blood veſſel, tendon, or ligament, lies in the way. When the parts are very much inflamed, and ſwelled, an opening of this kind is frequently of ſervice; for by this means the obſtructed blood is diſcharged, and the bad conſequences of the inflammation are prevented. When the extraction of the ball is attempted, the patient muſt be put into the ſame poſture and ſituation that he was in when he received the wound. When the ball has penetrated ſo deep, that it may be eaſily felt with the finger on the oppoſite ſide, it is ſometimes better to make an inciſion there, and take it out in that place, than to attempt the getting it back the other way. If the wound cannot ſafely be enlarged, nor the ball extracted at firſt, without great pain and danger, it muſt be left in the wound, either till the pain is abated, or the wound is ſo enlarged by ſuppuration, that it either can work itſelf out, or be extracted with leſs danger. On the other hand, all other extraneous bodies are inſtantly to be removed, where there is danger of their bringing on pain, inflammation, and convulſions, by being left behind. If a ball has paſſed into the cavities of the body, it is beſt not to attempt to extract it, but to heal the wound, leaving it there. Perſons have carried a ball thus in them for many years without inconvenience, and, at one time or other, it frequently happens that it will work itſelf into ſome part of the body, out of which it may be extracted with ſafety.

Balls lodged in the bones, are either to be extracted immediately, or, if fixed firmly in the bone, to be left to be ſet at liberty by the ſuppuration of the parts; but balls that are thrown into the joints, are always to be extracted with all poſſible expedition, for delays are very dangerous; and indeed, in moſt caſes of this kind, the amputation of the limb is found abſolutely neceſſary. In wounds from large guns, the joint or bone are frequently grievouſly ſhattered; and in this caſe, the moſt prudent method is always to take off

the

the limb at once, not to ſpend time in fruitleſs attempts to make a cure.

If a large artery is wounded by the ball, either in the arms or legs, which will be known by the loſs of blood, the tourniquet muſt be applied, and the blood being ſtopt, the veſſel muſt be taken up by a crooked needle; but if this cannot be done, or little hopes of a cure appear from future dreſſings, it will be prudent to take off the limb juſt above the wound. When wounds of this kind have been well cleaned, and the blood ſtopped, the firſt intention is to uſe the utmoſt endeavours to prevent, or aſſwage the tumor and inflammation. The wound ſhould be dreſſed with lint dipped in warm ſpirit of wine, and covered with a compreſs wetted with the ſame liquor, or with camphorated ſpirit of wine, either alone, or diluted with lime water. Having done this, the next intention is to forward the ſuppuration of the bruiſed and torn parts; to which end, it is common to uſe the common digeſtive made of turpentine diſſolved in the yolk of an egg, or a mixture of baſilicon and Arcæus's liniment, ſoftened with ſpirit of wine and oil; and where there is a very great corruption of the parts, a little myrrh and aloes are to be added, as alſo Venice treacle, the brown ointment; and, where the occaſion requires it, and the nerves do not lie bare, a little of the red precipitate.

In deep wounds, where the ball has gone quite through, a ſkein of thread being drawn through the eye of a blunt needle, and well ſaturated with the digeſtive ointment, is to be paſſed through the wound in manner of a ſeton, and kept there till the wound is found in a condition to heal, and then the common methods purſued to heal and cicatrize. *Heiſter*'s Surg. p. 51.

GUNWALE, or GUNNEL *of a ſhip*, is that piece of timber which reaches on either ſide of the ſhip, from the half deck to the fore-caſtle, being the uppermoſt bend, which finiſhes the upper works of the hull in that part, and wherein they put the ſtanchions which ſupport the waſte-trees. This is called the *gunwale*, whether there be guns in the ſhip or not. The lower part of any port, where any ordnance are, is alſo termed the *gunwale*.

GUR, in mineralogy, a word uſed to expreſs a fluid matter looking like milk, but reduced ſometimes, by evaporation, to the conſiſtence of honey, and appearing in form of a white ſediment. It always contains more or leſs ſilver, and is common in the mines of Sweden, and in ſome other places. *Bromell.* de Lapid.

GURGEATIO, a name by which ſome authors have called that peculiar diſeaſe, ſo fatal in England at one time, and commonly called *ſudor Anglicus*, from the violent profuſions of ſweat which appeared immediately on being ſeized with it. See SUDOR, *Cycl.*

GURGULIO, in natural hiſtory, a name given by the antients to a peculiar claſs of *ſcarabæi*, or *beetles*; the characters of which are, that they have not a ſhort head like the other *beetles*, but a long one, forming a trunk in the manner of the common flies: in this the horns, or antennæ of the creature are lodged. Theſe are divided by Liſter into two kinds; the one having only one joint in this promuſcis, or ſnout, and that placed in, or near the middle; the other having ſeveral placed near the end. Of the firſt kind we have only two ſpecies. 1. The great rough grey and black *beetle*. This is a very large ſpecies of *beetle*. Its ſnout, or promuſcis is lodged under the belly, where there is a cavity made to receive it. It is all over covered with a ſort of tubercles. When caught it makes a mournful noiſe; and is a very large creature, never loving to move. It is a very ſcarce animal, but is found in ſome places among willows by river ſides in the beginning of April. 2. The brown hoary *beetle*. This is a middle ſized *beetle*, and is very common in paſtures, in moſt of the ſummer months.

Of the other kind, in which the promuſcis has ſeveral joints at the end, we have five ſpecies; and in all theſe, as well as in the former, the antennæ are inſerted in the promuſcis. 1. The great reddiſh black *beetle*. This is a very large *beetle*; it has long and ſlender antennæ. 2. The ſcarlet *beetle*. This is of about the ſize of a horſe bean, and its colour is all over a bright red. It is a very ſcarce ſpecies. 3. The ſmall blueiſh *beetle*, called the *weevil*. This is too well known, and is much too frequent among corn in granaries. 4. The greeniſh gold *beetle*. This is a middle ſized *beetle*; its promuſcis is ſhort, and its antennæ very long. This is found frequently among nettles in June. 5. The little grey *beetle* with two large black ſpots on its wings. This is a very ſmall ſpecies. It is of a cheſnut colour, ſprinkled over as it were with a whitiſh powder. It is common in June on the leaves of the *verbaſcum album*, or white mullein. *Ray*'s Hiſt. Inſect. p. 395.

GURNARD, a ſea fiſh, of which there are ſeveral ſpecies. See the article CUCULUS.

The *grey* GURNARD is the moſt common kind; it is frequent in the Britiſh ſeas, and elſewhere, and eſteemed a very well taſted fiſh. This is of a long ſlender ſhape. Its back is of a duſky green, marked with black ſpots, and with yellow and white ones. The ſide lines are dotted, and rough; under theſe the ſides are of a pale colour, and variegated with numerous white ſpots. The belly is white. The head is large, and is covered with a ſort of boney plates; the upper one of which runs out behind into two ſharp prickles. The ſnout has alſo two horns, each having four or five little thorns, or teeth, and there are alſo two others before each eye. The mouth is large, and the teeth very ſmall. Its gill fins are not ſo large, as in many others of this kind; and its back has a cavity between two rows of pointed bones. *Willughby*, Hiſt. Piſc. p. 279.

Red GURNARD, an Engliſh name given to the fiſh called by authors in general the *cuculus*, and by ſome, *coccyx*, *lyra*, and *capo*. It is properly a ſpecies of the trigla, according to the new Artedian ſyſtem, and is diſtinguiſhed from all the other ſpecies, by the name of the wholly red trigla with the ſnout lightly divided into two horns, and the opercula of the gills ſtriated. This is an inſtance of the value of the Artedian names: this conveying ſo good an idea of the fiſh, that it cannot be miſtaken, and the others conveying none at all. See Tab. of Birds, N° 46. and the article CUCULUS. This red ſpecies is what we ſometimes ſimply call the *gurnard*, and ſometimes the *rotchet*.

GUROUNDI, in zoology, the name of a ſmall Braſilian bird, frequently kept in cages for its ſinging, and more commonly called *teitei*. See TEITEI.

GUTS. It is obſerved in the diſſections of many of the beaſts of prey, that the *guts* are very remarkably ſhort in compariſon of thoſe of other animals. The lion and the lynx are of this number; the *guts* being in theſe only of three times the length of the body. This argues ſpeedy digeſtion, and great voracity in the creature. Ouvrages, Adopt. Acad. Par. Vol. 1. See INTESTINES.

GUTTA (*Cycl.*)—GUTTÆ *anglicanæ*. See the article DROPS.

GUTTA *roſacea*. See BUTIGA.

GUTTA *ſerena*. The proximate cauſe of a *gutta ſerena* is, according to Hoffman [a], and other eminent phyſicians, a palſy of the optic nerves.—[a Oper. Tom. 3. p. 228.]

The mediate cauſes of this diſorder may, as in other nervous caſes, be referred to two kinds, repletion, and inanition.

To the firſt belong all ſuch cauſes as encreaſe the blood too much, or force it with too much violence into the head. Thus too great motion; immoderate hot bathing; violent fits of anger; deficiency of the menſes; and ſpaſms in the lower parts forcing the humours upwards, as it ſometimes happens to women in labour; and by vomits. All theſe cauſes, as alſo the repulſion of humours appearing on the ſkin, and drying up of ulcers; the tranſlation of morbid matter in malignant fevers, ſmall-pox, or phrenſy; and the improper uſe of mercurials; have been known to bring on a *gutta ſerena*; ſometimes indeed only tranſitory, and ſometimes curable, by evacuations, as bleeding, &c.

To the ſecond kind, belong all immoderate effuſions of the vital juices. Thus great hæmorrhages; bloody vomits; profuſe bleeding; and, above all, early and immoderate venery; have been obſerved to produce blindneſs, extremely difficult, if not impoſſible, to cure. See *Hoff.* Oper. Tom. 3. p. 228. ſeq. See BLINDNESS, *Cycl.* and *Suppl.*

Mercurials, and antimonials, have been known to cure the *gutta ſerena*. Pitcairn recommends calomel; and Hoffman the ſulphur of antimony.

GUTTUROSUS *piſcis*, a ſmall fiſh common in the Mediterranean, and brought to market at Rome, Venice, and elſewhere; and called, in different parts, *gotoroſala*, *gottorugine*, and *gotto di mare*. *Willughby*, Hiſt. Piſc. p. 132.

GUY, in a ſhip, is any rope uſed to keep off things from bearing, or falling againſt the ſhip's ſide, when they are to be hoiſed in. Thus, if any thing is to be haled in over the gunwale, it is gently eaſed in by a *guy-rope*, faſtened uſually to the ſtanchions of the waſte-trees.

That rope alſo which is made faſt to the fore-maſt at one end, and is reeved through a ſingle block, ſeized to the pendant of the winding tackle, and then again reeved through another, ſeized to the fore-maſt, and whoſe uſe is to hale forward the pendant of the winding tackle, is called a *guy*.

GWABR-MERCHED, in our old writers, a Britiſh word ſignifying a payment, or fine, made to the lords of ſome manors, upon the marriage of their tenants daughters; or otherwiſe, on their committing incontinency. *Blount.* See MARCHET, *Cycl.*

GYLPUT, in our old writers, the name of a court held every three weeks, in the liberty or hundred of Pathbew, in the county of Warwick. *Inquiſit. ad quod damn.* 13 Edw. III. *Blount.*

GYLTWITE, in our old writers, a compenſation or amends for treſpaſſes, &c. *Mulcta pro tranſgreſſione.* LL. Edgar. regis, anno 964. *Terms of Law.*

GYMNASTES, Γυμναστης, among the antients, an officer in the antient *gymnaſium*, next in authority to the *gymnaſiarch* and *Xyſtarch*. *Hoffm.* Lex. in voc.

GYMNASTERIUM, Γυμναστηριον. See CORICEUM.

GYMNOCRITHON, in botany, a name given by ſome authors

authors to the zeopyrum, or hordeum nudum, the naked barley. *Chabræus*, p. 175.

GYMNOPODIA, γυμνοποδια, among the antients, a kind of ſhoes which diſcovered the naked feet. They were worn by the Grecian women, who affected them much. *Hoffm.* Lex. in voc.

GYMNOPYRIS, in natural hiſtory, the name of a genus of foſſils, the characters of which are theſe. They are of the claſs of the pyritæ, and are compound, inflammable metallic bodies, found in detached maſſes, of no determinately angular figure; of a ſimple internal ſtructure, not ſtriated; and are naked, or not covered with any inveſtient coat, or cruſt, in which they differ from the pyriplaces. See Tab. of Foſſils, Claſs 5. *Hill*'s Hiſt. of Foſſ. p. 614.

Of this genus there are only two known ſpecies. 1. The green ſmooth variouſly ſhaped *gymnopyris*; and 2. the *gymnopyris* with a botryoide ſurface. The firſt of theſe is the moſt common of all the pyritæ, and appears to be under a great variety of ſhapes. It is a very hard and firm body, of a compact and cloſe texture, and very conſiderably heavy. It is found in maſſes of various ſizes, from half an inch to ten inches, or more, in diameter, and is uſually of a ſomewhat flatted form, and of an undulated, or rigid ſurface, though not unfrequently it emulates the ſhape of the common pebbles, and often is perfectly ſmooth. Its ſurfaces are never very rugged in their native ſtate, and when broken, it appears of a ſmooth even ſtructure, and is both within and without of a pale ſilvery green. It cracks and burſts in the fire, and yields a deep blue flame, and finally burns to a purple powder.

It is very common in the ſtrata of tile clay in all parts of England, and ſhews itſelf there in a number of various ſhapes and forms, very often having formed itſelf in the cavities of ſea ſhells buried there, and ſince periſhed; but moſt frequently of all in the pores of wood, pieces of branches of trees, and even of old boards, being frequently wholly ſaturated with it. All theſe as well as the ſubſtance in its native ſtate, readily moulder away on being expoſed to a moiſt air, and are then found very pregnant with vitriol. It is from theſe, and particularly from the foſſile wood, impregnated with this pyrites, that the green Engliſh vitriol, or common copperas, is made at Deptford, vaſt quantities of foſſile wood thus impregnated, being lodged in the ſtrata of clay in the cliffs of Sheppey iſland and elſewhere, which the ſea at times waſhes out, and leaves ſcattered about the ſhore, and which are there gathered by people employed for that purpoſe.

The ſecond ſpecies, or botryoide *gymnopyris*, is a very elegant and beautiful foſſil. It is very hard and heavy, and is very irregular in ſhape and ſize; but moſt frequently met with either in oblong, or ſomewhat globular pieces of many pounds weight; though ſmaller, and thoſe very elegant flatted ſpecimens, are not uncommon. It has naturally no coat or cruſt, but when it has been long expoſed to the air, it ſometimes acquires a browniſh ruſt, like that of iron which covers it and looks like one. When broken it appears the moſt uniform and regular in its ſtructure of any of the pyritæ, looking like a maſs of ſome melted metal. It is uſually of a pale ſilvery green, though ſometimes of a deeper browniſh one; but what abundantly diſtinguiſhes it from all the other pyritæ, is, that its ſurface is ever beautifully elevated into a number of tubercles, of various ſizes, but of irregularly roundiſh ſhapes; and ſometimes not only its ſurface but its whole ſubſtance is thrown into theſe forms. Hence it is, that it reſembles cluſters of grapes, hanging very thick upon the branches. It is frequent in Yorkſhire, nor leſs ſo in Devonſhire and Cornwall, and there is a great deal of it in the clifts of Sheppey iſland, but there the ſpecimens are uſually ſmall.

GYMNOSPERMIA, in botany, the name given by Linnæus to a certain ſeries of plants of the didynamia claſs. This claſs, according to that author, comprehends the plants with labiated and perſonated flowers: thoſe with labiated flowers always have four ſeeds ſucceeding each flower, and theſe are placed without any capſule or covering in the baſe of the cup. Theſe are therefore called *gymnoſpermia* or naked ſeeded, whereas the others which have perſonated flowers, have the ſeeds incloſed in capſules, and are therefore called *angioſpermia*. See DIDYNAMIA.

GYMNOTUS, in ichthyology, the name of a genus of fiſhes, the characters of which are theſe. It is of the malacopterygious kind. The branchioſtege membrane contains five bones, and it has no fin upon the back. There is only one known ſpecies of this genus. It is an American fiſh, deſcribed by Marggrave, under the name of *carapo*. *Artedi* Gen. Piſc. 22.

GYNÆCOCOSMI, γυναικοκοσμοι, in antiquity, Athenian magiſtrates, whoſe buſineſs it was to regulate the women's apparel, according to the rules of modeſty and decency. See GYNÆCONOMUS, *Cycl.*

GYNÆCOMASTOS, a term uſed by the antients, to expreſs a man, whoſe breaſts are large and turgid like thoſe of women, and afford milk.

It was an obſervation among the antients that ſuch men were naturally impotent. Paulus Ægineta obſerves, that the breaſts of men as well as women ſwell at the time of puberty, but that thoſe of women continue ſwelled, and thoſe of men ſubſide again, except in the caſe of the *gynæcomaſtoi*, where they remain turgid, and become in time more and more ſo, as the fat increaſes under them.

As this ſwelling of the breaſts gave a ſuſpicion of impotency, thoſe who laboured under that deformity, uſually had recourſe to a very painful operation in ſurgery to get rid of it. An inciſion was made in the form of a creſcent in the lower part of the breaſt, then the ſkin being drawn back the fat was taken out, and the lips of the wound healed by means of a ſuture. When the breaſts were very large, and hung down, they made two inciſions, one within the other, meeting at the extremities, and then ſeparating all the ſkin between them they took out the fat: and finally, if the diſeaſe returned, or they had performed the operation imperfectly, leaving ſome behind, they repeated the whole a ſecond time.

GYNÆSIA, a word uſed by the writers in medicine, ſometimes for the menſtrua and ſometimes for the lochia. See MENSTRUA and LOCHIA.

GYNANDRIA, in botany, a claſs of plants, in which the male and female parts of the flower are joined at their origin, the ſtamina or male parts of which grow to the piſtillum or female part, and not to the receptacle of the ſeed.

The word is formed of the Greek γυνη female, and ανηρ male. Among the plants of this claſs are the paſſion flower, birthwort, &c.

The general character of this claſs of plants is very obvious: they are diſtinguiſhed at firſt ſight from all others, by the ſtamina being placed upon the ſtyle; or, in other words, the receptacle is elongated into the form of a ſtyle, and bears on it both the piſtil and ſtamina.

The order of the *diandria*, the firſt of this claſs, is a very natural diſtinction among plants, and its genera differ from one another in no other grand particular, but the nectaria. Botaniſts, in general, have judged the roots of this order of plants, which are either teſticulated, or palmated, to be a very certain mark of diſtinction: but this obſervation, of the difference of the nectaria, which is owing to Linnæus, is much to be preferred, as being both more certain and more obvious. The ſtructure of the fructification, in this order of plants, is very ſingular. The germen of the piſtil is always contorted, and the petals are five in number: the two external ones often form themſelves into a galea, the lower lip of which forms the nectarium, which ſupplies the place of a ſixth petal and a piſtil. The ſtyle is affixed to the interior margin of the nectarium, ſo that it and its ſtigma are ſcarce to be diſtinguiſhed in the flower. The ſtamina are always two filaments, very ſhort, and ſupporting two antheræ, which are of a narrow ſhape below, and are naked, and divided into ſeveral lobes, in the manner of the pulp of an orange. Theſe are covered each with a ſmall cell, which is open downwards, and growing on the inner margin of the nectarium. The fruit or ſeed veſſel is a capſule, containing only one cell, and formed of three valves. The ſeeds are very numerous, and as ſmall as grains of duſt, and are affixed to a ſlender receptacle, which is placed within each valve. All theſe plants are extolled by authors as provocatives. See Tab. 1. of botany, Claſs. 1.

The flowers of all the plants of this claſs have a ſtrange and, as it may be called, monſtrous appearance, very different from that of all other plants in their flowers; but this is only owing to the ſingular diſpoſition of the parts of fructification in theſe flowers, as deſcribed above. *Linnæi* Gen. Pl. p. 451.

GYPSINE *ſtone*, a name given by ſome writers to the *gypſum*, or foſſile ſubſtance, of which the powder called plaiſter of Paris is made by calcination. There are in many parts of Arabia vaſt rocks of this ſtone; it reſembles alabaſter, but is ſofter, and of a more lax texture. It is found to be a very eaſy ſtone to form by tools, and therefore the Arabs build with it in ſome of the places in the neighbourhood of the quarries, but they are forced to make the walls very thick, as the ſtone is ſo ſoft and crumbly. The building called Arſoffa, or Arſoffa Emir, which ſeems the remains of a monaſtery, is built wholly of this ſtone; and when the ſun ſhines upon it, the walls give ſuch a luſtre, that they dazzle the eyes; but the ſoftneſs of the ſtone, and the redneſs of the mortar, have conſpired to make it a very ruinous pile at preſent, though of no great antiquity; the ſtones having ſplit and mouldered away in the walls, and the foundations failed in many places. Phil. Tranſ. N° 218. p. 150. See GYPSUM.

GYPSINUM *metallum*, in the natural hiſtory of the antients, a name uſed for the common *lapis ſpecularis*, of which they often made windows as we do of glaſs. It was by ſome called *cyprinum metallum*, becauſe frequently found in Cyprus. *Hill*'s Theophraſt. p. 142.

GYPSOCHI, artiſts who work in plaiſter. See the article PARADIGRAMMATICE.

GYPSOPHYTON, in botany, a name given by ſome authors to the *ſaxifraga antiquorum*, or ſaxifrage of the antients. *Chabræus*, p. 210.

GYPSUM (*Cycl.*) in natural hiſtory, the name of a claſs of foſſils; the characters of which are theſe. They are compoſed of ſmall flat particles, irregularly arranged, and giving the whole maſſes ſomething of the appearance of the ſofter marbles; they are bright, gloſſy, and in a ſmall degree tranſparent: not flexile nor elaſtic, not giving fire with ſteel, nor fermenting with or diſſoluble in acid menſtruums, and calcine very eaſily in the fire. *Hill*'s Hiſt. of Foſſils, p. 111.

Of this claſs of bodies there are two orders, and under thoſe four genera. The firſt order is of the *gypſums*, which are of a firm compact texture, and conſiderably hard. The ſecond of thoſe which are of a lax or looſe texture, and are accordingly ſoft and crumbly.

The genera of the firſt order of the *gypſums* are theſe. 1. Thoſe which are hard, compoſed of ſomewhat broad particles, and of a bright cryſtaline luſtre; the *pholides*. 2. Thoſe of a ſofter texture, compoſed of very ſmall particles, and of a leſs glittering hue; the *lepra*. Id. Ibid.

The genera of the ſecond order are, 1. Thoſe of a ſofter texture, which are very bright and glittering; the *timachides*. 2. Thoſe of a ſofter texture, which are dull and opake; the *claſmia*. All the ſpecies of this whole claſs burn with a very ſlight degree of fire, to what is commonly called plaiſter of Paris: but the ſofter require the ſmaller degrees of fire; and, in general, the harder and more marbly make the better plaiſter.

The common way of burning this ſtone into plaiſter, is too ſlight to give it all the hardneſs it is capable of. It is reported by many, that a greater degree of heat renders it greatly ſuperior in hardneſs; and, it is ſaid, that the artificial marble, with which the whole palace of Munich is adorned, and which the elector of Bavaria eſteems more than marble, for which it is miſtaken by all that ſee it, is made of the common *gypſum*, firſt burnt in the ordinary way, and afterwards put over the fire again in a copper veſſel, and ſuffered to boil, as it will like water for a long time. When this boiling ceaſes of itſelf, the matter is taken out, and common colours, ſuch as are uſed in painting, are mixed with it in various proportions; which on the wetting it with water, and working it in the common manner of plaiſter of Paris, diffuſe themſelves, and imitate the veins of natural marble. Phil. Tranſ. N° 93.

Gypſum is uſed in the Canaries by way of remedy for their wine, and about Malaga a large quantity is tunned up with the juice of their grapes. *Boyle*'s Works abr. Vol. 1. p. 146.

GYPSY, a name given to a ſet of vagrants. See the article BOHEMIANS.

GYRFALCO, in zoology, the name of a large and fierce ſpecies of falcon, called in Engliſh the jerfalcon. See the article FALCON.

Its name is a compound of the German *gyr* which ſignifies a *vulture*, and *falco* the *falcon*. It is the largeſt of all the falcon kind, its head is flatted and of a greyiſh colour, its beak very thick and ſtrong, but ſhort, and of a blueiſh colour. The iris of its eyes is blue, and its back, wings, belly and tail are white, but moſt of the back and wing feathers are variegated with one black ſpot, of a cordated form, and in ſome degree reſembling the eye ſpots in the peacock's tail. The long wing feathers have alſo a large black ſpot near their extremities. The throat, breaſt, and belly are of a pure white. The tail is ſhort, and variegated with tranſverſe black lines. The legs are thick and ſtrong, and both they and the feet are of a pale blue. *Ray*'s Ornithol. p. 44.

It is a very bold and daring bird, attacking all other fowl without reſerve, and particularly the heron and ſtork kind. The other falcons are all afraid of this.

H.

HABENA, in ſurgery, the name of a bandage contrived to keep the lips of a wound together, and ſave the painful operation of a ſuture. See the articles BANDAGE and SUTURE.

HABHAZZIS, in botany, a name given by Leo Africanus, and ſome other of the writers of geography, to a plant growing in many parts of Africa, which they ſay produces its fruit under the earth in form of ſmall round globules, which are much eſteemed as food, and have the taſte of an almond. The fruit as it is called, is no other than the disjunct tubera of the root, which are connected by fibres or ſtrings, and are in the propagation of the plant very uſeful to its ſpreading over a large ſpot of ground in a little time; all the fibres which ſhoot out horizontally from the root being terminated by theſe tubera, and each of theſe ſending out on the oppoſite ſide ſeveral other fibres, which at due diſtances produce other tubera. The Africans dig up the ground at random near to the place where they ſee any of theſe plants, and never fail of picking up a great number of them. The plant which produces them is the traſi, and they are eaten in many other places beſides Africa. The Spaniards are very fond of them, and call them avellanda from their likeneſs to hazel-nuts in ſhape.

HABIT *(Cycl.)*—The different *Habits* and cloaths that the generality of the world wear, are thro' inadvertency and inattention very frequently the cauſe of very unhappy maladies. Mr. Winſlow, in the memoirs of the royal academy of ſciences at Paris, has obſerved that the greateſt attention and care is neceſſary on ſeveral occaſions in regard to this, as it is ſuppoſed, trifling article; and given many inſtances of the ill effects of it.

The antients have obſeved the inconveniencies of many parts of dreſs, and daily obſervation confirms to us the many miſchiefs the ladies ſuffer from the ſtiff whale-bone ſtays they wear, and the diſorders of the viſcera of the lower belly to which thoſe are ſubject who lace themſelves too tightly; and this is not only of dangerous conſequence to themſelves, but frequently is the death of children in breeding women.

The tight binding of the neck by the men's neckcloths, ſtocks, or the too tight collars of their ſhirts, *&c.* has been very frequently the only occaſion of ſeveral very terrible diſorders of the head, the eyes, and the breaſt; deafneſs, vertigoes, faintings, and bleedings at the noſe, are the frequent conſequences of this practice; and the phyſicians conſulted for relief in theſe caſes, have found all means ineffectual, merely from their not attending to the cauſe of the malady; when a cure might have been, and often has been, made without the help of medicines, only by leaving off thoſe unnatural bandages which had been the occaſion of them, from the not ſuffering the free return of the blood by the jugular veins, which had paſſed up into the head without moleſtation by the carotide arteries.

Mr. Cruger added to theſe relations, that a certain officer in the army of the king of Denmark, always ordered his ſoldiers to tye their cravats very tight, and garter their ſtockings below the knee, tying them alſo very hard; by which means they always looked red and florid in the face and thick leged, ſo that his men always appeared ſtout, robuſt, well fed, and in good caſe. But the conſequence of this was, that after ſome time his men were all ſeized in a very particular manner with diſorders, for which the common methods of treatment gave no relief, and great numbers of them died, after all the internal as well as external methods which could be tried were found ineffectual. Their diſeaſe ſeemed a putrid ſcorbutic infection, and this not only appeared externally, but was found to affect even the internal parts of ſuch of them as were opened after their death. It is unqueſtionable, but that this wholly proceeded from the ligatures they continually wore about their necks and legs by order of their officer, and might have been cured merely by leaving them off; and it has even been proved on animals, as calves, ſheep, *&c.* that extremely tight ligatures on their legs, *&c.* will have ſo great an effect, as to alter the whole maſs of blood, render the animal morbid, and even make the fleſh unwholeſome and unfit for food. Memoirs Acad. Scien. Par. 1740.

Mr. Winſlow has obſerved, that the different motions of the bones of the foot which are very free in their natural ſtate, as is very plainly ſeen in young children, are uſually wholly loſt to us as we grow up, by means of the improper preſſure of our ſhoes. The high heeled ſhoes the women wear, entirely change the natural conformation of the bones of the whole foot. They render the foot elevated and arched, and uncapable of being flatted by reaſon of the unnatural union and ancyloſis they bring on between the bones, which is not unlike that which happens to the vertebræ of people who are humpbacked: for theſe high ſhoes make the extremity of the os calcis, to which the tendo achillis is affixed, to be always unnaturally elevated, and the anterior part of the foot on the contrary is much more depreſſed than it naturally would be. The conſequence of this is, that the muſcles which cover the hinder part of the leg, which ſerve by the attachment of the tendon to ſtrech out the foot, are continually in an unnatural ſtate of contraction, while the muſcles of the anterior part of the leg, whoſe office is to bend the foot forward, are on the contrary kept in a like unnatural ſtate of elongation and diſtention. To this cauſe it is owing, that we very frequently ſee women unable to go down a hill or any declivity without great pain, whereas on the contrary, in walking up hill their high heeled ſhoes make them walk as it were on even ground; the end of the foot being only ſo far elevated as to bring it on a level with the unnatural poſition of the heel. The women who wear theſe ſort of ſhoes find it alſo very troubleſome to walk for a long time, tho' it be on the moſt even ground, and eſpecially if they are obliged to walk quick. They can by no means leap ſo freely and eaſily as thoſe who wear lower heeled ſhoes. The reaſon of which is, that in the human ſpecies as well as in birds and beaſts, the action of leaping is executed by a ſudden lifting up the hinder part of the os calcis, by means of the action of thoſe muſcles to which the great tendon is faſtened.

Low heeled ſhoes by no means ſubject the wearer to any of theſe inconveniencies, but on the contrary, they greatly facilitate all the natural motions of the feet, as we have daily and innumerable inſtances in the labourers, chairmen, porters, and others of the lower claſs of mankind; and the wooden ſhoes worn by the lower claſs of people in France, notwithſtanding their weight and inflexibility, do not ſo much prevent the proper motions of the muſcles whoſe office it is to move the feet. For beſide the lowneſs of their heel, they are rounded at the end downwards, which in ſome degree compenſates for their inflexibility, ſerving in the place of the alternate inflection of the foot on its toes on the one part, while the other is lifted up in walking.

But to return to the miſchiefs done by high heeled ſhoes, there is yet a farther inconvenience from them than what has been mentioned, ſince not only the muſcles of the tendo achillis which ſerve to move the foot in the extenſion, but the anterior muſcles alſo, which ſerve to the extenſion of the toes, are by the height of theſe ſhoes always in an unnatural ſtate; and not only the anterior muſcles which ſerve to the bending of the foot, but the poſterior muſcles alſo which ſerve to the bending the toes, are at the ſame time by means of this height, kept forcibly in an elongated and extended ſtate. This continual unnatural ſhortening of ſome of the muſcles, and as unnatural lengthening of others, cannot but cauſe ſooner or later, a greater or leſſer diſtemperature of their veſſels as well the veins and arteries, as the lymphatics and nerves; nor may this be confined merely to the parts affected, but by the communication of theſe veſſels with thoſe of other more diſtant parts, nay even with thoſe of the abdomen and its viſcera, may bring on diſorders which will be attributed to very different cauſes, and therefore will be treated with medicines which will not only prove uſeleſs, but in many caſes hurtful. It is certain that long cuſtom makes theſe unnatural extenſions and contractions of the muſcles as it were natural to women; inſomuch that thoſe who are accuſtomed to theſe ſhoes would find it painful and diſagreeable to walk in others; but this is no proof that the unnatural ſtate in which the muſcles are continually kept, may not often be the occaſion of all the remote diſorders before hinted at, and which, many of them at leaſt, may appear to have no relation to their original cauſe. Memoires de Acad. Scien. Par. 1740.

HACK, a tool uſed by miners, in ſhape like a mattock. *Houghton*'s Compl. Miner, in the Explan. of the Terms.

HADBOTE, in our old writers, a recompence or amends for violence offered to perſons in holy orders. *Blount*. Sax. Dict.

HADDOCK, in ichthyology, a name given by us to a ſpecies of fiſh of the aſellus kind, according to the generality of writers, and of the genus of the gadi according to the new Artedian ſyſtem. It is called by Salvian, the aſellus major or greater aſellus, and by Willughby, the onos and aſinus of the antients. Charleton tells us that it was the callaris, galeris, or galaxis of the old Romans mentioned by Pliny; but Artedi has ſome doubt about that. It is called by Artedi by a name much more expreſſive than any of the old ones: this is the gadus with a bearded mouth, with three fins on the back, with a whitiſh body, with the upper jaw longeſt, and with the tail a little forked. *Artedi*, Gen. Piſc. 38. See ASELLUS.

HADE, in mining, is where any ſhaft or turn goes deſcending like the ſide of a houſe, or like the deſcent of a ſteep hill. It is then ſaid to *Hade*. *Houghton*'s Compl. Miner, in the Explan. of the Terms.

HADRIANISTS, *Hadrianiſtæ*, in church hiſtory, heretics who followed the errors of Simon Magus. *Hoffm.* Lex. in voc.

HÆMACHATES, *the Blood-coloured Agate*, in the natural hiſtory of the antients, the name of an agate found at this time in the Eaſt Indies and in ſome parts of Germany, and called by Dr. Hill achates ſanguineus variegatus; or the blood-coloured variegated agate.

It is one of the moſt beautiful of the agate kind, and was extremely well characterized by the name the antients gave it, being always of a ſtrong and deep red like that of blood. Often, it is only of this plain and ſingle colour throughout the maſs, but more frequently it is found beautifully variegated with a pale blue, and with brown; the blue in this caſe always ſurrounding the red, and appearing like the ſerum which ſeparates from and floats about the blood, when it has been ſome time out of the body. The brown or hair colour is often the baſis or ground colour of the ſtone, and the red in ſpots only, and variegations, ſurrounded with this thin bluiſh colour; it is very hard, and takes a fine polliſh, and is cut into the tops of ſnuff-boxes and other toys, and much valued by our lapidaries. *Hill*'s Hiſt. of Foſſ. p. 472.

HÆMAGOGOS, the name of a medicinal compoſition deſcribed in Myrepſius, and intended to bring away the lochia, or forward the menſtrual diſcharges; it conſiſts of black hellebore and the fætid gums with honey.

HÆMALOPS, a term uſed by many authors for that blackneſs which appears about the eyes from blows; but Hippocrates uſes it to expreſs a black thick and fæculent blood overſpreading the chorion in the formation of the fœtus, and rejected afterwards as of no uſe, and diſcharged into the ſpace between the uterus and chorion. Some authors alſo uſe the word for ſpitting of blood.

HÆMANTHUS, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the monopetalous lilliaceous kind, and is divided into ſix ſegments. The cup finally becomes a ſeed veſſel compoſed of three cells and containing a number of oblong ſeeds. To this it is alſo to be added, that the flowers are collected into a head, and ſurrounded with little leaves at their baſe. *Tournef.* Inſt. p. 657.

There is only one known ſpecies of this plant, which is the African *Hæmanthus*, called by ſome the cape tulip, and by others the ſcarlet Indian narciſſus.

The ſeaſon for tranſplanting the bulbs of this plant is in May or June, when the leaves are decay'd; they may be kept out of the earth at this ſeaſon three or four months, but it is more adviſeable to plant them ſooner, as they always flower the ſtronger for it. Their ſoil is half a fine hazel earth and half old rotten dung; in September they muſt be removed into a moderate ſtove, and watered gently at times: they flower in the depth of winter.

HÆMATITES, (*Cycl.*) in medicine, is accounted aſtringent and deſiccative. Its doſe in hæmorrhages is from ten grains to five and twenty. It is alſo uſed in diſtemperatures of the eyes. *Hill*, Hiſt. Mat. Med. p. 10.

HÆMATION, a word uſed among the antients, for a ſort of reddiſh garon, made of the inteſtines and blood of fiſhes macerated in ſalt.

HÆMATOCELE, a ſpecies of rupture where the ſwelling contains blood.

HÆMATOCHYSIS, a term uſed by Willis and ſome others for an hæmorrhage.

HÆMATOPUS, in zoology, a bird called by others the *pica marina*, or ſea-pye. This, in the Linnæan ſyſtem of nature, make a diſtinct genus of birds of the order of the ſcolopaces; the diſtinguiſhing characters of which are, that the toes are three in number on each foot, and the apex of the bill in form of a wedge. *Linnæi* Syſtem. Naturæ, p. 47.

HÆMATOPUS *Ardea*, the red-leg'd heron, a very beautiful bird common in Italy, and called by the antients *cirris*; it is one of the ſmalleſt of the heron kind, and is of a yelloviſh cheſnut colour. *Ray*'s Ornithology, p. 206. See the article CIRRIS.

HÆMATOXYLUM, in botany, the name by which Linnæus calls the tree which produces the logwood, called by Sir Hans Sloan *campechia*. The general characters of this tree are theſe: The perianthium conſiſts of one leaf divided into five ſegments of an oval figure, which do not fall with the flower; the flower conſiſts of five oval petals ſomewhat larger than the ſegments of the cup. The ſtamina are ten ſubulated filaments longer than the flower; the antheræ are ſmall; the germen of the piſtil is oval and oblong, the ſtyle is ſimple and of the length of the ſtamina, and the ſtigma is thick and emarginated: The fruit is an obtuſe pointed capſule compoſed of two carinated valves, and containing only one cell in which are ſome oblong flatted ſeeds. *Linnæi* Gen. Plant. p. 184. *Sloan*, Jamaic. V. 2. T. 20.

HÆMIONIUM, in botany, a name by which Dioſcorides calls the aſplenium.

HÆMITYBION, in the writings of the antients, a linnen piece of apparel fringed on both ſides. Others call it a ſoft kind of handkerchief to wipe off ſweat; but Galen makes it ſignify a thick piece of linnen cloth. In this he has an eye to ſome paſſages of Hippocrates where the word ſeems plainly to be uſed in that ſenſe; others of the antients have alſo uſed it exactly in the ſame meaning.

HÆMOCENCHRUS, in medicine, a term uſed by ſome of the old writers for a ſpiting of blood, attended with a ratling noiſe in the noſe and fauces.

HÆMODIA, a ſtupor of the teeth, cauſed by auſtere and acid ſubſtances.

HÆMOPTOE, in medicine. See HÆMOPTYSIS, *Cycl.* and *Suppl.*

HÆMOPTYSIS, or HÆMOPTOE (*Cycl.*)—This diſorder is by ſome confounded with the ſputum cruentum, or bloody ſpit, but very improperly, ſince in this caſe the blood is thrown up pure and florid from the lungs, and that without any violent efforts: Whereas in the other the ſaliva is only thrown out tinged or ſtreaked with blood, and that with much trouble and laborious hauking; and ſometimes a ſlight roſion of the gums or fauces tinging the ſaliva with blood, makes what is thus called. The *Hæmoptyſis* differs alſo from the vomiting of blood, in that the blood is arterial and unmixed and voided without emotion, and with a little cough; whereas in the other caſe there is always a ſtraining to vomit, and the blood is venal, and uſually coagulated, and there is no cough.

Signs of it. The *Hæmoptyſis* is generally preceded by a ſenſation of oppletion and narrowneſs of the breaſt; or more tacitly by a ſort of itching or titillation felt all along the aſpera arteria; and in moſt caſes there is a dry, and not very violent or troubleſome cough, for ſome time before. Sometimes, however, the blood is voided without any of theſe antecedent ſymptoms, and only with a ſenſation of ſomething warm coming up out of the breaſt to the mouth.

Perſons ſubject to it. This is a caſe that more rarely happens than moſt other of the complaints of the lungs, and the perſons afflicted with it are principally young men between eighteen and twenty-five; it very rarely happens after thirty, and principally affects perſons of a plethoric habit, or ſuch as uſe high ſeaſoned food. Women are more ſubject to it than men, from the frequent diſturbances nature meets with in the menſtrual diſcharges; and people who are accuſtomed to loud ſpeaking or ſinging, are ſometimes afflicted with it from the violent diſtentions they give the veſſels of the breaſt. Sometimes alſo it ſeizes perſons who have changed an active life to a ſedentary one; and more than any others thoſe who have had ſome other hæmorrhage, or natural and habitual evacuation, ſtopped upon them, without having the caution to bleed or evacuate properly on the occaſion. *Junker*'s Conſp. Medic. p. 28.

Cauſes of it. Youth and a plethoric habit, with too great a derivation of the blood upon the lungs, are ſometimes the natural cauſes of this; but external accidents frequently concur, or alone bring it on: Such are all violent ſtrainings of the breaſt; violent attempts to lift or carry burthens to which the body is not accuſtomed, blowing vehemently in the playing on trumpets and other wind inſtruments, violent paſſions, as anger, &c. and violent motions in wreſtling, running, jumping, or the like; violent coughing may alſo bring it on; but this is not the caſe ſo often as is ſuppoſed, the cough attending this diſorder and ſuppoſed to be the cauſe of it, being uſually only a ſymptom of it.

Prognoſticks from it. This is a diſorder of the utmoſt conſequence, and is by far the moſt dangerous of all hæmorrhages; and tho' the quantity of blood voided is ſeldom ſo great as to bring on ſudden death, yet what remains extravaſated in the lungs eaſily corrupts there, and brings on a phthiſis of which death is the conſequence. The uſe of violent aſtringents is often the cauſe of this alſo, where nature would have eſcaped it.

The method of cure. When the quantity of blood brought up is ſmall, and the ſymptoms not violent, ſuch things only are to be given as quiet the violent emotions of the blood; ſuch are nitre, and cinnabar made into powders with crabs eyes or any other abſorbent: If the caſe is more violent, a gentle anodyne or opiate may be added, ſuch as the pill de ſtyrace, or de cynogloſſo. In more violent caſes, where the attemperating medicines take no effect, the milder aſtringents are to be uſed; or if the urgency of the ſymptoms make it neceſſary even the ſtronger; but with theſe there ſhould always be given a gentle opiate; the antimonial crocus of ſteel, and the vitriolic colcothars, may then be given with the ſtorax pill. Revulſion muſt alſo be attempted, by diaphoretics, bleeding in the foot, and clyſters, and gentle purges; and finally the cure is to be compleated by pectorals and detergents. *Junker*'s Conſp. Med. p. 30.

If a ſuppreſſion of the menſes, or hæmorrhoidal diſcharges, have been the cauſe of the diſtemper, great care is to be taken to bring them on regularly again, by bleeding in the foot, applying leeches to the hæmorrhoidal veſſels, and the like means. Authors diſtinguiſh an *Hæmoptoe* into a great many ſpecies, ſuch as anaſtomoſis, diaireſis, diapedeſis, rixis, and diabroſis; and write a great deal of the different cauſes of theſe *Hæmoptoes*, and of the ſigns by which they are to be diſtinguiſhed. But a late author thinks this of little importance. He thinks it moſt advantageous to conſider a *Hæmoptoe* ſimply as a præternatural efflux of blood, and as ſuch it agrees with the hæmorrhage

of

of the noſe, vomiting of blood, dyſentery, bloody urine, too great flow of the menſes, &c. all which have the ſame immediate cauſes, the ſame effects and conſequences, and ſuggeſt the ſame indications of cure; which are, in the beginning to diminiſh the quantity of blood, and to make a revulſion by opening a vein in the arm, foot, &c. then to moderate the velocity and rarefaction of the blood by cooling medicines; and laſtly, to contract and ſtrengthen the veſſels by aſtringents. The ſame method muſt take place in all, and therefore the general ſtyle of this claſs of diſeaſes ought to be hæmorrhage. See Medic. Eſſ. Edinb. Vol. I. Art. 25.

HÆMORRHAGES (*Cycl.*)—Theſe are divided, by the medical writers, into natural and preternatural.

Natural *Hæmorrhages* comprehend bleeding at the noſe, ſpitting of blood, the fluxes of the hæmorrhoids and menſes, the lochia in lying-in women, vomiting of blood, and voiding blood by urine.

The preternatural *Hæmorrhages* are ſuch as derive their origin from external accidents, as falls, blows, and wounds. Some alſo comprehend, under this term, the artificial evacuations, by bleeding, cupping, and the like.

Hæmorrhages differ much, according to the age and ſtate of the patient, and other accidents. *Hæmorrhages* from the noſe are moſt frequent in young perſons, thoſe of the hæmorrhoids in people of a middle age, or later in life; the ſpitting of blood, to perſons in a middle age; and voiding blood by urine uſually to older people. Some *Hæmorrhages* are periodical, and others vague or uncertain. The firſt obſerve ſome ſtated period of time for their return upon people; the laſt are wholly uncertain in that particular. Some are alſo termed critical; theſe are ſuch as happen at the criſes of fevers. There are uſually violent pains about the part whence natural *Hæmorrhages* are to proceed; but theſe always go off as ſoon as the bleeding comes on in due quantity.

Perſons moſt ſubject to HÆMORRHAGES. Young perſons of a healthy and florid conſtitution are moſt ſubject to *Hæmorrhages*; people of plethoric habits are alſo much ſubject to them, and eſpecially ſuch whoſe blood is ſound and fluxile, not ſubject to any dyſcracy. Thoſe who drink much wine, or eat high ſeaſon'd foods; and, more than all theſe, perſons who are ſubject to violent paſſions, eſpecially to anger. Hence it is that brutes are very rarely afflicted with them.

Cauſes of HÆMORRHAGES. Among the principal of theſe are to numbered a plethora, violent commotions of the body, hot foods and liquors, a heat of the ſeaſon, a ſudden cooling of the body after violent heat, and paſſion. *Junker*'s Conſp. Med. p. 12.

Prognoſtics from them. *Hæmorrhages* from the lungs, and vomiting, and voiding blood by urine, are all very dangerous. The others, when regulated, and in due proportion, are ſalutary, and often prevent diſeaſes. And the common cuſtom of ſtopping them by aſtringents, or otherwiſe, is often productive of ſtagnations, inflammations, and violent fevers.

Method of Cure. *Hæmorrhages* flowing moderately, and from natural paſſages, require no aſſiſtance of medicine; when they happen to plethoric perſons, they are to be ſuffered to continue a ſufficient time. When the quantity of the blood is leſſened by theſe diſcharges, its quality, if diſtemper'd, is next to be amended by internal remedies; if ſulphureous and acrid, by nitrous medicines and abſorbents, and by gentle acids; to this purpoſe ſal prunellæ, crabs eyes, lemon juice, and the like, are excellent; if the blood be too thick, a ſmaller quantity of food, and a larger of drink, is to be preſcribed, and to this the reſolvent and attenuating medicines are to be added, as the neutral ſalts and diuretic roots. Theſe are the neceſſary things out of the fit; and during the bleeding ſuch things are to be given as repreſs the violent motion of the blood, ſuch as cinnabar, nitre, and crab's eyes, ſated with a vegetable acid. Spirit of hartſhorn and tincture of antimony may next be given, and, after theſe, moderately ſtyptic and anodyne medicines; but the ſtronger ſtyptics and aſtringents are not to be uſed but with great caution.

Mr. Petit, in examining all the different methods employed by ſurgeons for ſtopping *Hæmorrhages*, aſſures us, that in each of them a piece of clotted blood is contained in the veſſel, which ſerves to keep the blood from eſcaping, after the effect of the medicine, firſt employed, ceaſes. Where abſorbents or aſtringents are uſed, that there is not only a cylindrical piece of clotted blood in the veſſel, but there is a covering of it on and round the orifice of the cut veſſel; which cylindrical form makes it eaſily puſhed out. Cauſtics have much the ſame effects, only the covering on the extremity of the veſſel is firmer, by the ſolid parts being confounded with the clotted extravaſation. When a ligature is uſed, there is no clotted covering, and the internal plug is of a pyramidal figure, therefore it is with difficulty that ſuch a clotted piece can be puſhed out. Beſides this advantage, the ſides of the veſſel, which are brought to be contiguous by the ligature, will probably grow together; for which reaſon, and the ſaving both pain to the patient, and loſs of ſubſtance of the ſtump, he prefers compreſſion to all the other methods. In proof of the effects of coagulated blood ſtopping the efflux of blood from large arteries, he relates two hiſtories; in one, the artery was oſſified; and, in the other, it lay in a bony groove: So that, in both, it muſt have been a plug which prevented the *Hæmorrhage*. He endeavours to prove, that the plug is ſtronger and firmer, when formed of coagulated lymph, than when compoſed of red blood. For executing the compreſſion right, after amputation of the larger extremities, he has contrived a machine, compoſed of a large circular belt, to be put round the trunk of the body, or ſuperior part of the member, which is to ſuſtain the bandage, by ſtraps going from it, which are faſtened, at the other end, to a leſſer circular belt, that is put round the part of the member where the tourniquet is commonly applied. This leſſer belt is to have two ſcrews, &c. in the form of his ſcrew-tourniquet. From this leſſer belt four ſtraps go out, to croſs over two plates with their ſcrews, as in the tourniquet, placed on the ſtump. When the operation is performed, he applies thick bolſters of lint on the ſide of each large artery fartheſt from the bone, and placing the interior convex plate of the ſmall tourniquet on them, he ſecures it in the right ſituation with the four ſtraps, and ſcrews down the plate on the bolſters and veſſel, which being preſſed between the inſtrument and the bone, can allow no blood to paſs. See Mem. de l'Acad. des Sciences, 1731 & 1732.

Mr. Morand imagines, that the change which happens to the artery, on being wounded, aſſiſts greatly in ſtopping the flux of blood; and that this and the congelation are uſually joint agents in this caſe. When the artery is either empty, or at leaſt leſs diſtended than uſual with blood, it naturally will collapſe, in ſome degree, and become more or leſs flatted; and if this goes ſo far as that the ſides come to touch one another, they naturally unite, and the whole cure is performed by this alone. And this is very frequently the caſe in wounds of ſmall arteries, and in internal *Hæmorrhages*. Nor is it more difficult for a large veſſel to become flatted and collaſpe in the ſame manner, till its ſides touch, provided that the courſe of the blood thro' it be by any means reſtrained. Mr. Morand gave the academy of ſciences of Paris a very remarkable account of a thing of this kind, which fell within his knowledge. A countryman having received a very violent blow upon his arm, had afterwards no pulſation in the artery, in that part of the arm beneath the place where the blow had been given, tho' he had a plain one in that part of the artery which was above it. There was at firſt ſome fear that the arm muſt have been taken off, but Mr. Morand ſaved it, and, as the cure went on, the pulſe was obſerved gradually to be felt again in the hand, and lower part of the arm. The occaſion of this was plainly, that the artery had become flatted by the blow, and the blood was unable to force the oppoſition, and circulated only thro' the ſmall veſſels, while the injury from the blow remained violent, but gradually made its way again, as the parts reſtored themſelves to their natural ſtate. Memoirs Acad. Scienc. Par. 1736.

A wounded artery, in caſe it be cut quite aſunder, is in the ſame ſtate with a cord which is cut in two while it is on the ſtretch. We well know, that when this is done, the two ends recede a great way from one another, and that in proportion to the tention they had before: The caſe is wholly the ſame with an artery, and that for the ſame reaſon. Its longitudinal fibres are drawn back and ſhortened, and its circular ones are, by this very action, compelled to run together more cloſe than they naturally ſhould, and in conſequence they form thicker rings about the extremities of the divided veſſel; the conſequence of which is, that they make the inner hollow narrower. This is a thing of great importance, as not only the ſides of the veſſel are brought nearer together, and therefore they more eaſily may come to touch; but the diameter of the bore of the artery being leſs, a ſmaller maſs of congealed blood may ſtop it; and this blood, adhering to the ſides of the veſſel on every hand, fills up the paſſage as it congeals, and, by degrees, brings them together.

Mr. Petit, in confirmation of his opinion, that *Hæmorrhages* are ſtoppod by plugs of clotted blood, ſhewed the academy of ſciences, at Paris, ſuch a plug, in an artery which had been opened. See Hiſt. de l'Acad. des Scienc. 1735.

What is remarkable is, that this plug of clotted blood had loſt nothing of its conſiſtency, nor of its adheſion to the aperture of the artery, after lying two months in water, and three years in brandy. This ſhews the plug to be analogous to a ſcar: Nor is this ſtrange, ſince both are formed from the juices deſtined to the nouriſhment of the part. Hiſt. de l'Acad. &c. ibid.

The ſtyptic powder of Helvetius has been found excellent in *Hæmorrhages*. See STYPTIC *Powder of Helvetius*.

The *Vitrum antimonii ceratum* has likewiſe proved very efficacious in uterine *Hæmorrhages*. See VITRUM *antimonii ceratum*.

Soft compreſſion is, by Garengort, thought more effectual to ſtop *Hæmorrhages*, than hard ſubſtances; and its uſe recommended even when ſtitches of arteries give way, in which caſe the uſe of vitriol buttons is condemned.

Internal HÆMORRHAGES. The Omentum itſelf is not free from being the ſeat of fatal internal *Hæmorrhages*, tho' this rarely happens. The Peterſburg commentaries give us an account of a woman, who dying almoſt immediately of a blow ſhe received on the belly, was opened, and the cavity of the abdomen

abdomen was found greatly diſtended with blood, which had plainly been diſcharged from the omentum, as a great number of grumes of blood were found lodg'd between its foliages. It was obſerved alſo, in this ſubject, that the omentum was firmly attach'd to the fundus of the uterus.

The ſame papers give an account alſo of another very remarkable internal *Hæmorrhage*; this was of the ſtomach. In this caſe the patient died inſtantaneouſly; and the blood having been diſcharged into the ſtomach too faſt, either for its being ejected upwards or downwards, when the body was opened, the ſtomach was found greatly diſtended, and compleatly filled with one great grume, or maſs, of coagulated blood. It is remarkable that, in this ſubject, the ſtomach was found in a perfectly ſound ſtate, but the ſpleen was found putrid and rotten. Act. Petropol. vol. 1. p. 382.

HÆMORRHAGE *of the Noſe.* Mr. Le Dran propoſes to make a ſeton, like that mentioned in the article *Polypus*, ſerve for ſtopping *Hæmorrhages* of the noſe; for which purpoſe he faſtens two doſſils to the cord, and, after drawing one out at the noſtril, to bring away the clotted blood, he continues to draw the cord, and ſo fills up the poſterior part of the noſtril with the other, which ought to be larger, and well wet in a ſtyptic liquor; by which not only the *Hæmorrhage* will be ſtopped, but if it ſhould continue, the blood and medicines will be effectually prevented from running down the throat, which commonly occaſions a cough or vomiting, that increaſes the bleeding. Med. Eſſ. Edin.

Unnatural HÆMORRHAGES, a term uſed by ſome medical writers to expreſs ſuch diſcharges of blood as are made from parts not naturally, or, in the common courſe of things, admitting ſuch evacuations. Of theſe we have a very remarkable inſtance, recorded in the philoſophical tranſactions. It is of a young child which bled firſt at the noſe and ears, and afterwards at the hinder part of the head, where there was no ſore, and afterwards at the ſhoulders, waſte, and at the fingers and toes, and the bending of the arms.

HÆMORRHAGES *from Wounds.* Profuſions of blood, from wounds, ariſe from injuries of the veins or arteries, received in the inflicting the wound; and the violence of the *Hæmorrhage* is ever in proportion to the ſize of the wounded veſſel: it is no wonder, therefore, that great weakneſs, fainting fits, and ſometimes inſtant death, are the dreadful conſequences attending this ſymptom, according to the ſize of the wounded veſſel. The ſurgeon ought, for this reaſon, never to be without the proper remedies, to ſtop blood, about him; but there are ſome caſes in which it is by no means proper to ſtop the *Hæmorrhage* inſtantly. In a young plethoric habit, or in a wound got in a drunken fit, or even in a fit of great paſſion, it is beſt to let the blood run as long as it continues to do ſo without inconvenience to the patient; for, by a moderate loſs of blood, the inflammation, tumour, pain, and fever, are either entirely prevented, or much leſſened.

The ſtopping of *Hæmorrhages* is to be done by various ways: If no large veſſel is wounded, dry lint alone is always ſufficient; the wound is to be filled with this, and a proper compreſs and bandage put over it. The wound muſt be filled pretty cloſely with the lint, and a proper degree of preſſure given over the compreſs, with the hand, by which more is done ſometimes than by all the bandages or violent remedies in the world. But if the *Hæmorrhage* is too large to be ſtopped by the application of dry lint alone, the uſe of aſtringent medicines is to be called in. The uſual application, in this caſe, is rectify'd ſpirit of wine applied cold to the wound, filling it up with doſſils dipped in the ſame ſpirit, and covering it with large compreſſes wrung out of the ſame liquor, and making a proper preſſure over all with a bandage. The other aſtringents, uſed on this occaſion, are vinegar, the lycoperdon, or puff-ball oil, and ſpirit of turpentine, alum, vitriol, or ſaccharum ſaturni, diſſolved in water or vinegar, or the dry powders of bole armenic, bloodſtone, dragon's blood, *&c.*

When veſſels of a larger ſize are divided, we are to have recourſe to cauſtic medicines inſtead of aſtringents, the common medicine, in this intention, is the Roman vitriol, which being coarſely powder'd, and ſprinkled upon cotton, is to be applied to the wound, dreſſing up with doſſils, a compreſs and bandage. It is uſually neceſſary to be very greatly cautious in the application of this, that it only be laid to the bottom of the wound, or the part where the veſſel wounded lies, otherwiſe the other parts will ſuffer too great an eroſion from it.

If theſe applications all prove fruitleſs, it will be proper wholly to divide the artery, yet only divided in part; for, by this means alone, it will contract and hide its end under the muſcular fleſh, and its orifice will, by that means, either be entirely choaked up, or at leaſt it will be more ready to yield to the force of the medicines before adviſed to be uſed on ſuch occaſions. This method of treatment is moſt uſually neceſſary in wounds of the temporal arteries, and thoſe of the cubits, and tibiæ.

If this method ſhould fail, you muſt then have recourſe to the hot iron, or actual cautery; the orifices of veſſels being burned, a cruſt is formed over them, and this method is ſo very effectual, that it is ſcarce poſſible for an *Hæmorrhage* to happen in wounds of the external parts, which may not certainly be ſtopped by it. In this caſe, two cauteries ſhould be always ready, that, if one ſhould be extinguiſhed before the operation is finiſh'd, the other may be at hand without waiting for it. Cauteries are made of different ſhapes and ſizes, according to the parts they are intended to be applied to. The great inconvenience attending the uſe of the cautery, is, that after two or three days, the eſchar ſometimes falls off, and then a ſecond, and that commonly a fatal *Hæmorrhage* ſucceeds; to prevent this fatal accident, the wounds muſt be handled very tenderly at the time of dreſſing, and every time the wound is dreſſed, to be provided with a cautery ready heated, to repeat the operation if it ſhould be neceſſary. This caution is to be obſerved, in regard to the larger arteries, for fourteen days; after this there is no great danger of a return of the complaint; but when the crural or axillary arteries are wounded, the cautery is of no uſe.

In very dangerous wounds of the large arteries, ſuch as the crural and axillary, and, in amputations of the limbs, the ſafeſt method is that of making a ligature round the veſſels: If this is performed by paſſing a ſtrong waxed thread under the artery, by means of a crooked needle, the blood is preſently ſtopped, and the orifices of the artery coaleſce.

Inſtruments for the ſtopping of *Hæmorrhages* have alſo been in uſe in all ages, which, by their forcible compreſſion on the part, ſtop the mouths of the veſſels, the moſt convenient of which is thus compoſed: A braſs plate, three fingers long, and two fingers broad, is perforated in the middle to admit a ſtrong ſcrew, which is provided at the lower end with a ſmall round plate; a piece of leather is ſtrongly faſtened to one end of the braſs plate, of equal breadth with it. In violent *Hæmorrhages* this inſtrument is fitted to the wounded part. The end of the leather is brought round the part, and, by means of holes made through it, is faſtened, at the proper part, to two ſmall hooks made on the braſs plate, at the end, oppoſite to that where the leather is faſtened; this is to be adjuſted in ſuch manner, that the ſmall plate at the bottom of the ſcrew is to be brought to preſs exactly upon the compreſſes and dreſſings that cover the wound; the handle of the ſcrew is then to be turned round with a gentle preſſure, till it is found turned far enough to make a preſſure of force, to ſtop the blood: It is then to be left in this condition for a day or two, or till it may ſafely be taken off. *Heiſter's* Surg. p. 45.

HÆMORRHOIDS (*Cycl.*) are diſtinguiſhed, from the manner and time of their return upon the patient, into regular or periodical, and vague or irregular.

Signs of HÆMORRHOIDS. They are generally preceded by a ſenſation of pain, and tenſion in the hypocondria, and vibrative or ſpaſtic motions about the ſtomach, meſentery, and ſpleen; and what is much more obvious than theſe, there is a ſenſation, as it were, of a hard nucleus ſticking in the extremity of the rectum; and the more high up in that inteſtine this is felt, the more difficult will be the eruption of the hæmorrhoidal diſcharge, and the longer before its appearance. With theſe ſymptoms there alſo very frequently comes on a teneſmus. Theſe are the uſual antecedent ſigns; but there are ſome in whom they appear without any previous notice. When preſent, there is a diſcharge of blood, and that uſually very pure and florid in perſons who have them frequently and regularly; in others who have them ſeldom and imperfectly, the blood appears black and grumous; and in ſome caſes, eſpecially in perſons who never have had a genuine and proper flux of this kind, there is excreted a ſanious matter inſtead of pure blood. The evacuation of the blood from them is ſeldom voluntary, but uſually is forced out by the preſſure and hardneſs of the ſtools. *Junker's* Conſp. Med. p. 47.

Perſons ſubject to them. They equally affect both ſexes, but are oftener met with in men than in women. They are moſt frequent in the middle and advanced ages of life, and when they happen to young people, they are uſually hereditary.

Cauſes of them. Among theſe are to be reckoned a plethora, and thickneſs of the blood, for an over thinneſs and acrimony of it is ſeldom the cauſe, tho' very often ſuppoſed to be ſo. Violent concuſſions of the abdomen, as by violent exerciſes of riding or walking, will alſo bring them on, as will a ſedentary life, in which, by the compreſſion of the abdomen, the circulation is impeded at the vena portæ; alſo an omiſſion of any cuſtomary evacuations of blood, an abuſe of hot foods and ſpirituous liquors, and the taking of aloes, or other the like medicines. In Saxony the *Hæmorrhoids* are very frequent, from their taking great quantities of elixir proprietatis; and in Hungary, from their eating large quantities of garlic, violent binding of the bowels, and paſſions of the mind, eſpecially anger and fear, and the venereal infection will alſo frequently bring them on; but this laſt cauſe chiefly brings on the blind piles, or ſuch as do not bleed.

Prognoſticks from them. The *Hæmorrhoids*, when they flow naturally and moderately, are very beneficial to health, and often prevent violent diſeaſes. They are peculiarly the moſt certain of all remedies in hypocondriacal affections; they eaſe deliriums, and very often take off fits of the gout. With all theſe advantages in them, when moderate, they are, however, attended, when immoderate, or when too long continued, with bad ſymptoms, and are often dangerous: They bring on great weakneſs, and, in length of time, induce ca-

chectic

chectic diſpoſitions; but they very ſeldom are attended with ſo copious an hæmorrhage as to endanger life on the ſudden, tho' this has ſometimes happened. The ſudden ſtopping them is always dangerous, and often brings on immediate fatal ſymptoms; ſchirruſes of the viſcera, inflammations, melancholy, madneſs, vomiting of blood, and dropſies, and jaundices, often are the conſequence of ſuch practice. Thoſe perſons who have them while very young, generally are attended regularly with them thro' their lives, and ſeldom live to be very old; on the contrary when they do not appear till perſons are advanced in years, and continue regular and moderate afterwards, they promiſe a long life. Finally, when the *Hæmorrhoids* are continual, and flow without any intermiſſions, there is great cauſe to ſuſpect a ſchirrous or ulcerated ſtate of ſome of the abdominal viſcera.

Method of Treatment. When the *Hæmorrhoids* have never yet appeared, but there are ſigns of their approaching, it is not always adviſeable to forward or promote their diſcharges, for they ſeldom anſwer exactly to expectation; but when there is room to fear the ſucceſs, it is better to endeavour at a revulſion by bleeding in the arm or foot, and at the ſame time to ſtrengthen the tone of the parts by a decoction of yarrow or the like medicines. And the bleeding is to be repeated afterwards at ſtated periods, and the uſe of the internal means continued if neceſſary; but when the *Hæmorrhoids* have already been uſed to flow, as ſoon as the patient feels the ſignals of their approach, their diſcharge is always to be gently promoted, by a moderate uſe of elixir proprietatis, or tincture of black hellebore, or its reſin made with ſpirit of wine; and externally by the application of leeches, or, if that is not ſufficient, by opening the veins with a lancet. *Junker*'s Conſp. Medic. p. 47.

During the time of the flux, if that be moderate, there is no occaſion for any aſſiſtance from medicines, but a proper diet is to be obſerved; all windy foods are to be avoided, as alſo all aſtringent ones; the uſe of ſpirituous liquors is to be reſtrained, and the mind kept quiet and free from the commotions of any of the paſſions. When the diſcharge is too ſmall, it is to be promoted; and when it is really too great, and the ſtrength of the patient cannot bear it, then the nitrous, cinnabarine, and abſorbent medicines are to be given, as powders prepared of ſal prunellæ, cinnabar either native or antimonial; if there be urgent neceſſity ſome gentle opiate may be added to theſe, as the pill de ſtyrace, or de cynogloſſo. After this, gentle clyſters are to be injected, and then the uſe of ſpecifics is to be entered on; among theſe, a decoction of the common yarrow is of ſingular virtue: decoctions of maiden hair alſo and other of the like herbs are of great uſe. After the fit is over, bleeding muſt be repeated at the equinoxes, and gentle purges given at times, eſpecially ſmall doſes of rhubarb, which has an abſtergent virtue that renders it peculiarly proper; and this may be given even in the time of the fit, in ſmall doſes.

Blind HÆMORRHOIDS, *Hæmorrhoides cæcæ*, the name given by medical writers to what are vulgularly called the piles. The *blind* and *external piles* are infarctions of the external *hæmorrhoidal* veſſels about the orifice of the inteſtinum rectum, which ſometimes form ſimply turgeſcent, ſometimes inflammatory tumors; and are meant by nature for the diſcharge of blood from this part to relieve *Hæmorrhages*.

The *blind piles* are of two kinds, either ſimply turgeſcent, or tumid, the latter kind are painful, the former wholly indolent.

The turgeſcent *blind piles* reſemble a ſoft tranſparent veſicle filled with a blackiſh blood, and are attended with no ſenſible uneaſineſs, except at the time of going to ſtool, when they occaſion a ſenſation reſembling that of a bean or plum ſtone, or the like, ſtopping in the paſſage; and at times there is an uncommon heat in the parts.

The tumid *blind piles* are ſituated a little deeper within the verge of the extremity of the inteſtine, and reſemble a hard and inflammatory tumour; theſe are properly indeed no other than furunculi of this part, and occaſion very violent and exquiſite pains from the ſenſibility of the nervous and muſcular coat which lines the inteſtines. Many authors beſide theſe reckon under the name of *blind piles* all the tumid excreſcences and fungous and ulcerated protuberances that happen about the anus: theſe are diſtinguiſhed indeed by the appellation of ſpurious *Hæmorrhoids*; they uſually owe their origin to venereal taints, but ſometimes ariſe from the *turgeſcent piles*, which, in bad habits, and bodies ſubject to ulceroſe ſeroſities, ſometimes degenerate into theſe dry and verrucoſe ſwellings, and are called *thymi*, *mariſci*, and *ficus ani*. *Junker*'s Conſp Med. p. 233.

The external or *blind piles* differ from the internal, in regard to the veſicles to which they owe their origin, the internal ariſing from the vena porta, the external from the vena cava; they differ alſo in their ſize, and in the quantity of blood they diſcharge; the internal ones uſually diſcharge a moderate quantity, and if they are any way diſturbed they will throw off a great deal; whereas the external rarely bleed at all, but only ſhew themſelves in theſe blind tumors. The internal alſo have their regular periods, and very frequently obſerve the monthly diſcharges of the menſtrua in women, returning as regularly in men as theſe in that ſex: the others have no regular periods, but principally appear about ſpring and autumn; and they appear the larger, and have the more blood derived to them, the oftener they have already ariſen in a perſon. Their magnitude is very different in different perſons; in ſome they are of the ſize of a hazel-nut, in others of a walnut, and in ſome they often grow to the ſize of a pigeon's or even a hen's egg.

The *turgeſcent piles* either break naturally, or are to be opened by a ſurgeon; and when this is done, they not only diſcharge the blood they contained, but alſo ſupply a farther quantity afterwards. The tumid ones have all the ſigns of inflammatory tumors, attended with the moſt exquiſite pains.

Perſons ſubject to them. The turgeſcent external piles are principally incident to thoſe of a phlegmatic and pituitous habit; they often indeed appear in women during their going with child, without their being of this temperament, eſpecially toward the latter part of their time, if they ſit much; and ſometimes they happen even during the labour pains, when the fœtus preſſes heavily upon the pelvis.

Cauſes of them. The general cauſe of them is a plethora attended with a thickneſs of the blood; whence nature, attempting to relieve herſelf by an hæmorrhage of theſe veſſels, derives a larger quantity of blood than ordinary into them, where it remains, and according to its different ſtate, forms either ſimple veſicles, or inflammatory tumors. The accidental cauſes which bring them on, are immoderate attritions in theſe parts, from riding long journeys in perſons unuſed to that exerciſe, from an itching or ſharp humour about the part, from the painful voiding of the excrements in perſons very coſtive, and from labour pains in women. Junker ſays that they are ſometimes got by ſitting down in the ſeat in which a perſon has been juſt ſitting, who has the ulcerated piles, while it is yet warm from him. To theſe it is to be added, that they frequently come on from an omiſſion of accuſtomed bleedings, from an improper uſe of aloetic, helleborine, and other hot medicines, and from too high ſeaſoned foods, and the immoderate uſe of ſpirituous liquors.

Prognoſtics in them. The *blind piles* are always in a ſtate of tendency to a ſalutary end, that is to the evacuation of part of the abundant blood in plethoric habits; but from the ſmallneſs of the veſſels where they are formed, they very often miſs of the proper end. When they either burſt naturally or are opened by art, they then afford for ſome time a diſcharge that may ſupply the place of that by the *internal Hæmorrhoids*. When they burſt of themſelves, they eaſily become ulcerated afterwards, but this is not attended with any violent pain. As ſoon as opened, the veſſel which formed the tumor becomes flaccid and rugoſe in that part, and forms a ſort of papulæ or little tubercles, which, if not taken care of in the proper way, often continue to diſcharge a ſmall quantity of blood at every time the perſon has a hard ſtool; and even in ſome caſes theſe papulæ have continued without intermiſſion diſcharging a ſmall quantity of blood for many years; ſometimes alſo they degenerate into ſerpiginous and pruriginous little ulcers, which are called ſerpigo ani, or pruritus ani. This is a troubleſome complaint, and is not unfrequent in people ſubject to the external *Hæmorrhoids*, tho' not much regarded by authors; it never ſpreads far, but often continues many months in the ſame ſpot; and if by unſkilful treatment it be repelled from thence, it ſometimes returns again more violently in the neighbouring parts, and ſometimes occaſions diſorders of a worſe nature in the more diſtant ones. *Junker*'s Conſp. Med. p. 239.

The tumid and *turgeſcent piles* are both without danger to the life of the patient, unleſs in ſuch caſes where they are violently ſuppreſſed, on perſons who have been long ſubject to them. The tumid are however attended with one danger which the turgeſcent are free from; this is, that if unſkilfully managed, they will ſometimes come to a ſuppuration, which terminates often in a fiſtulous ulceration. This too often happens when they are cut too deeply into, during the time of their ripening, and are kept open too long afterwards without being well cleanſed. When *hæmorrhoidal* affections become ulcerous, they are more contagious than almoſt any other diſeaſe; and as this is not commonly known, many ſuffer by it.

Method of cure. The *turgeſcent piles*, if treated in the common way of tumors and little ulcers by a ſkilful ſurgeon, are very rarely attended with any bad conſequences. The tumid give much more trouble. The firſt attempt muſt be to diſcuſs them; and to this end bleeding in the foot is one of the firſt things to be done, in caſes where there is a plethoric habit, and very ſtrong decoctions of yarrow are to be given, ſeveral doſes in a day, and external remedies, ſuch as the unguentum linariæ, and the root of the ſcrophularia, are to be applied; theſe are by ſome eſteemed ſpecifics, and botanical authors boaſt wonders of their effects.

If by theſe means, after three or four days trial, there appears no hope of their being diſcuſſed, then they are to be maturated by all means and with all ſpeed that may be. To this purpoſe a cataplaſm of a roaſted onion with linſeed oil and veal fat, is by many greatly recommended; and when the pains are violent, internal medicines are to be given, ſuch as nitre with the cooling emulſions, and when neceſſary a gentle opiate. Oil of eggs is greatly recommended alſo for external uſe, to allay the pain. When they are brought to maturation, they are to be carefully opened by the hand of a ſurgeon; and the cleanſing and healing them up is then to be forwarded by

all poſſible means. Internally, gently laxative medicines are to be given, ſuch as the lenitive electuary and the like, with manna, ſena, and other gentle purges; then medicines which purify the blood, and ſuch as quiet its too violent emotions. After the cure is completed, the beſt method to prevent a return is bleeding in ſpring and autumn, and applying leeches to the *hæmorrhoidal* veins, at any time when threatened with a relapſe. *Junker*'s Conſp. Med. p. 240.

Suppreſſions of the HÆMORRHOIDS. Phyſicians conſider the ſuppreſſion of the *Hæmorrhoids* in three reſpects: 1. When they have never yet flowed at all, but all the attempts of nature are obſerved toward their appearance, and all the preceding ſymptoms of them ſeen. 2. When they have been uſed to to flow habitually, but their courſe has uſually been impeded by accidents; this is often the caſe in what are called the blind piles. And, 3. When they have been uſed to flow regularly and well, and at ſtated times, for a long courſe of time; the ſuppreſſions in theſe different ſtates are attended with different ſymptoms and different diſorders.

Signs of Suppreſſions of them. Theſe are frequently the common hypocondriacal affections, firſt appearing in pains and tenſion of the left hypocondrium, extending to the region of the loins. Theſe are ſucceeded by ſpaſtic pains, violent colics, inflations of the ſpleen, reachings to vomit, obſtinate coſtiveneſs, a hardneſs of the abdomen, and finally, infarctions and ſchirruſes of the viſcera, melancholy, madneſs, and a vomiting of blood; theſe are the ſucceſſion of ſymptoms, which naturally attend ſuppreſſions of the internal *Hæmorrhoids*. The ſuppreſſions of the external are often violent fits of the gout, nephritic complaints, and the voiding of blood by urine; add to theſe that the moſt frequent ſymptom attending the ſuppreſſion, either of the external or internal, is an aſthmatic difficulty of breathing, often attended with a cough. The perſons moſt ſubject to theſe ſuppreſſions from natural cauſes, are thoſe of a melancholic diſpoſition, ſuch as are eaſily terrified, or grieved at trifles, and ſuch as have ſuddenly changed a life of labour into a ſedentary one. *Junker*'s Conſp. Med. p. 84.

The internal and natural cauſes of theſe ſuppreſſions are principally a thickneſs of the blood, or a violent orgaſtic commotion of it; the external and accidental cauſes of it are the improper uſe of aſtringent medicines, the drinking large draughts of cold liquors when very hot, a thick and heavy diet, and a too great coldneſs of the abdomen. This ſuppreſſion is uſually very difficult to be removed, but in general is found much more eaſily to give way to medicines when owing to natural cauſes than to accidental; and it is to be obſerved, that a ſuppreſſion of them in their firſt attack is leſs dangerous than when they have appeared.

Method of Cure. In caſes where the *Hæmorrhoids* have never yet appeared, but only the antecedent ſymptoms are perceived, great caution is neceſſary to determine, from the habit and conſtitution of the patient, whether it be proper to encourage and promote their appearance, and aſſiſt nature in the way ſhe is endeavouring to eaſe herſelf; or whether it may not be better to carry off the redundant blood ſome other way. If the body be in ſuch a ſtate as to promiſe a ſucceſsful flux from them, it is to be promoted by gentle aperients; but if otherwiſe, the blood is to be derived another way by bleeding in the arm, and the patient is to be ordered to uſe frequent exerciſe. In caſes of ſuppreſſions of uſual and habitual fluxes of the *Hæmorrhoids*, the ſymptoms are to be firſt alleviated by bleeding in the arm, then emollient clyſters are to be adminiſtred, ſuch as chamomile flowers boiled in milk, and after theſe the quality of the blood is to be amended by proper internal medicines, its violent emotions to be taken off by nitre, abſorbents, and the like, and its ſpiſſitude removed by attenuants. After this, its derivation to the proper parts is to be promoted by gently ſtimulating medicines; ſuch are aloes and all its preparations, particularly elixir proprietatis; and ſaffron and borax may alſo be given in ſmall doſes; to this maybe added the uſe of ſtimulating clyſters and acrid ſuppoſitories, and the application of leeches to the parts. *Junker*'s Conſp. Med. p. 87.

HÆMORRHOSCOPIA, an old term uſed by the writers in medicine to expreſs an examination of the blood drawn from a patient by phlebotomy, in order to judge of the nature of the diſeaſe by it.

HÆMORRHOUS, the *blood ſnake*, the name of a peculiar ſpecies of ſerpent; ſo called, becauſe it was ſuppoſed, that on a perſon's being bit by it the blood flowed out of every part of the body. It is a ſmall ſerpent, ſeldom arriving to more than a foot long; its eyes are remarkably vivid, bright, and ſparkling, its ſkin is very gloſſy, and its back variegated with a great number of black and white ſpots, its neck is very ſlender, its tail extremely ſharp, and it has a ſort of ſmall horns placed over its eyes: it is found in Egypt. There is alſo an American kind of this found in the ſouthern parts, and called by the natives ahucyatli, which is larger than the other, and reſembles the rattleſnake in many particulars, but wants the diſtinguiſhing character of the rattle in the tail. See Tab. of Quadrupeds and Serpents N°. 33. and *Ray*'s Syn. An. p. 287.

HÆMOSTASIA occurs in ſome writers as the name of a diſeaſe occaſioning ſudden death; and is ſaid to be a total ſtagnation of the whole maſs of blood from a plethora.

HÆMOSTATICA, a name given, by ſome authors, to medicines uſed to ſtop hæmorrhages, whether for internal taking, or external application.

HÆPHESTITES *Lapis*, in natural hiſtory, a name given, by authors, to a ſtone of a reddiſh colour, and capable of a high poliſh. The antients gave it this name, from its property of ſetting fire to dry ſubſtances by reflection, when formed into a concave ſpeculum. They hence called it the Vulcanean ſtone, or fire-ſtone, not conſidering that the ſhape into which they formed it, and not the nature of the ſtone, was the cauſe of the effect; any ſtone being capable of the ſame, if hard enough to bear a proper poliſh. About Hilderſheim they have, at this time, a ſort of blackiſh-red coarſe jaſper, which they take to be the *Hæpheſtites* of the antients, and uſe it, at this day, for the ſame purpoſes, hollowing large pieces of it into ſpeculums, and ſetting them, when well poliſh'd, in proper frames, and uſing them as burning glaſſes. *Boet.* de Gemmis, 526.

HÆRETULA, in natural hiſtory, a name given, by Mr. Lhuyd, to a ſpecies of foſſile oyſterſhell. See the article *foſſile* SHELLS.

HÆRMIA, an Indian fruit, reſembling pepper, eſteemed good to ſtrengthen the ſtomach, diſperſe flatulencies, and reſtore the uvula when relaxed.

HAFFHERT, in zoology, the name of a bird, deſcribed by Hoier, which is ſeen uſually at ſea, and is ſuppoſed to be a foreteller of ſtorms. It is of the ſize of a common hen, and reſembles the falcon in ſhape. It is all over of a greyiſh colour, variegated with ſpots of white. Its beak is ſtrong and hooked like the falcons, but it is ſhorter. The fiſhermen dread the appearance of this bird, and at ſight of it always make to ſhoar as faſt as poſſible, expecting tempeſts and bad weather. *Ray*'s Ornithol. p. 36.

HAGA, in our old writers, has different ſignifications. In domeſday it is taken for a houſe in a city or borough. An antient anonymous author ſays 'tis a houſe with a ſhop, *Domus cum ſhopa*. See Co. Litt. 56. *Blount*, *Cowel*.

HAGABLUM, in our old writers, the ſame with *gablum* or gabel. *Blount*. See GABEL, *Cycl.*

HAGIAM, in the materia medica, a name given, by ſome of the Arabian phyſicians, to a kind of ſchænanth, or camel's hay. The Greeks made ſeveral kinds of this, according to the places from whence they received it; the ſchænanth of different countries differing in virtue: but the Perſian was, in many ages, eſteemed the beſt kind; and this is probably what the Arabs called *Hagiam*. The interpreters of Aviſenna leave this word wholly unexplained. Garcias, according to what ſkill he had in the Arabic, ſuppoſes it the name of the city Damaſcus, and given to ſuch ſchænanth as came from that part of the world; but this ſeems erroneous. The Arabs called all other nations barbarians; and this term gentiliſm or barbariſm, was, in their language, expreſſed by the word *Hagiam*; they hated the Perſians beyond all other nations in the world, and called them *Hagiam* by way of eminence, and therefore *Hagiam* and Perſian were a ſort of ſynonymous words. It is probable they had their ſchænanth principally from Perſia, and that this, whether better or worſe than the Nabatæan ſchænanth of their own country, was diſtinguiſhed by the epithet of foreign, and that with the word by which they expreſſed Perſian.

HAIHALEM *Maovi*, in botany, a name by which the modern Ægyptians call the plant we name *ſtratiotes* and *ſempervivum aquaticum*, the water ſoldier and water houſeleef. The laſt of theſe names is a verbal tranſlation of the Ægyptian one. Some have ſuppoſed that the niluſar was called by this name by the antient Ægyptians, but this is an error; the plants are ſo perfectly different from one another, that they have nothing but the growing in water in common between them. *Proſper. Alpin.*

HAII, a name uſed, by the Braſilians, for the animal we call the *ſloath*, or *ignavus*. The word ſeems pronounced by the creature itſelf, as its common note, and thence became uſed as its name. *Grew*'s Muſ. p. 11. See SLOATH.

HAIL (*Cycl.*)—The miſchiefs that violent hail-ſtorms are able to do, is ſcarce to be conceived by any but thoſe who have ſeen them. We have, in the philoſophical tranſactions, an account of a ſtorm of this kind in our own country, in which the cloud from which it deſcended was of about two miles in diameter, and for that ſpace immediately below it nothing was ſpared; it happened toward the latter end of April, and all ſorts of fowls were killed by it, and moſt of the ſmaller animals, that happened to be out in it, ſhared the ſame fate; the windows in all the houſes thereabout were broken to pieces, and it plough'd up the earth, and cut down the blade of the green corn, ſo as wholly to deſtroy it. The bowling greens of ſoft mould were all torn up, and had the appearance of beds in a garden, ready for things to be ſown in, and all the ſoft lands ſhared the ſame fate, where the graſs was not ſo high as to prevent it, for the hailſtones came with ſuch force, that they buried themſelves in the ground, and tore up large quantities of it in their way. They were of about five ounces weight each, and were irregular in their ſhapes, ſome being round, and others variouſly angular and crenated; but what was remarkable was, that every one of them had a piece of

ſnow, in the manner of a nucleus or kernel, in the middle. They muſt have fallen from a very conſiderable height, by the force with which they came down; and it was obſerved, that the cloud of them paſſed more than ſixty miles in length undiſperſed. The ſea where it fell was raiſed up into the appearance of a wood of watery trees, and, in leſſer waters, the ſurface was daſhed up to the height of a yard or two in many places. The ſea fowl fared the worſt of all creatures in this ſtorm, and, having no ſhelter to fly to, were deſtroyed in ſuch numbers, that the next tide brought them on ſhore in heaps, and the people in Lancaſhire collected many buſhels of the eatable kinds. Phil. Tranſ. N°. 229. p. 574.

HAIR (*Cycl.*)—It has been ſaid by many, that *Hair*, nails, feathers, *&c.* are not parts of the animal they belong to, but mere vegetable excreſcences; and what argues greatly for this, is, that they are very well known to grow upon the body even after the deceaſe of the animal.

The outer ſurface of the body is the natural place for *Hair*, but both that and teeth have been found in other parts, where the common courſe of nature never produces them. Amatus Luſitanus mentions a perſon who had *Hair* upon his tongue. Pliny and Valerius Maximus concur in their teſtimonies, that the heart of Ariſtomenes Meſſenius was found hairy; and Cælius Rhodiginus relates the ſame of Hermogenes the Rhetorician, and Plutarch, of Leonidas, to omit a great many others. *Amat. Luſitan.* Cent. 6. Can. 65. *Valer. Max.* l. 1. c. 6.

Hairs are ſaid to have been frequently found in the breaſts of women, and to occaſion the diſtemper called trichiaſis; but ſome authors have been of opinion, that theſe are not *Hairs*, but ſmall worms. See TRICHIASIS.

There have been, however, various and indiſputable obſervations of *Hairs* found in the kidneys, and voided by urine. Galen, Actuarius, Braſſavolus, Fernelius, Scultetus, and Tulpius, are among the number of authors who give unqueſtionable inſtances of it.

Hippocrates is of opinion, that the glandulous parts are moſt ſubject to *Hair*; but bundles of *Hair* have been found in the muſcular part of beef, and in ſuch parts of the human body as are as firm as that. *Hair* has often been found in abſceſſes and impoſtumations, as the experience of ſurgeons in all ages has proved. Scultetus opening the abdomen of a woman, found twelve pints of water, and a large lock or bundle of *Hair* ſwimming looſe in it. But of all the internal parts, there is none ſo ſubject to an unnatural growth of *Hair* as the ovaria, or teſticles of females. Dr. Tyſon gives three memorable inſtances of this, from his own obſervation. The firſt in a bitch, which, on diſſecting, appeared to have the omentum larger than uſual, and faſtened very firmly to the inteſtines, to the extremities of the cornua uteri, and to the right ſide: Where the adheſion was, there was an inflammation, and ſeveral ſmall glands, and there was a great quantity of *Hair* growing there, ſome on the omentum, ſome on the cornua uteri, and others in the ovary; ſeveral hairs alſo lay looſe in the veins, and two or three lay in the right ventricle of the heart, and ſeveral were rooted in ſmall glands. The cornua uteri alſo were joined together at their extremities, and both the teſticles made but one large and rude glandule, which had ſeveral ſinuous cavities within, filled with a purulent matter and *Hair*. In the cornua uteri there were the veſtiges of former fœtus's. The creature was much emaciated in her hinder parts, and the *Hair* found in the ſeveral parts of the body was like that of the human ſkin, and was about an inch and half long. The moſt remarkable particular, in this creature, was the *Hair* lying looſe in the veins; but this is not a ſingle inſtance of ſuch a caſe. Cardan mentions his having found *Hair* in the blood of a Spaniard, and Slonacius in that of a gentlewoman of Cracovia; and Scultetus declares, from his own obſervation, that thoſe people who are afflicted with the plica polonica have very frequently *Hair* in their blood. Dr. Tyſon's ſecond inſtance is in the caſe of a young gentlewoman, at the diſſecting of whom he was preſent with many other phyſicians. She had died of a long and tedious illneſs, and, ſearching for what might have been the cauſe of it, they obſerved a tumour in the right teſticle, or ovarium, which was ſwelled into two veſicles, or bags, almoſt as large as a man's head; theſe conſiſted of a thin membrane, and had a free communication one with another within. They were filled with a matter much reſembling curds and whey, for there were ſeveral lumps or pieces of a ſteatomatous or curdy matter ſwimming in a clear lymph. Theſe lumps were fatty and ſoft to the touch, of a pale yellow colour, and of no remarkable ill ſmell, and in part diſſolved in warm water. One of theſe lumps was as large as a man's fiſt, and in this there lay a large quantity of *Hair* of a ſilvery colour, very fine and ſtrong, and ſome of it was two foot long; there were ſmaller parcels alſo of it in ſeveral other of the lumps of fatty matter, and theſe did not grow to any thing, but were quite looſe. On the outſide of the larger bag there was found the remaining part of the ovarium, or teſticle, and in it ſeveral eggs, or hydatides; and beſide theſe, there was a hard and ſolid bony ſubſtance, in all reſpects reſembling an eye tooth. This firmly adhered, at its baſis, to the membranes of the ovary, and had, at its ſides, two other ſmaller, but leſs regularly ſhaped teeth.

The third obſervation was of a gentlewoman who had long complained of all the ſymptoms of a ſtone in the kidneys, as great pains, bloody urine, vomiting, *&c.* which, in all probability, were the principal cauſe of her death: Upon opening her body, there was obſerved, near the uterus, a cyſtis, or bag, of the bigneſs of a large turkey's egg; and in this there was a like fatty ſubſtance, with a large quantity of fine ſoft *Hair*, and a bone reſembling, in ſome ſort, a mandible, with ſeveral ſockets, in which were three dentes molares in a triangle, and a fourth not yet grown out. Beſide theſe, there was alſo found, in one of the kidneys, a large ſtone.

Beſides theſe there are a number of inſtances in the authors of the greateſt credit in phyſic, of *hair* found in the ovaries; but what beyond all other things proves that *hair* may grow without any aſſiſtance of the circulating juices of the body, and be encreaſed merely as an excreſcence of the vegetable kind from it, not as a part of it, is that memorable inſtance, recited in Mr. Hook's philoſophical collections, of a body, which after having been buried forty-three years, was found in a manner wholly converted into *hair*. The woman was buried in a coffin of wood, and lay the loweſt of three in the ſame grave, there being two other coffins over hers; the bones of which being removed, and this coffin appearing, it was obſerved that a great quantity of *hair* had grown out through the cleſts of it. On removing the lid of the coffin, the whole appeared a very ſurpriſing ſight: there was the whole figure of the corpſe reſembling perfectly the human ſhape, exhibiting the eyes, mouth, ears, and every other part, but, from the very crown of the head to the ſole of the foot, covered over with a very thick-ſet *hair*, long and much curled. The people who ſaw this, amazed at the appearance, went to touch the corpſe, but the ſhape fell away as it was handled, leaving only a quantity of ſhapeleſs *hair* without the leaſt remainder of the bones, unleſs a ſmall part of what they judged to be the great toe of the right foot. *Hook*'s Philoſ. Collect. N° 2. p. 10.

Though we meet with ſeveral inſtances of *hairs* being voided by urine in medical authors, yet Dr. Mortimer doubts of their being real *hairs*, and thinks them rather ſlender grumous concretions, formed only in the kidneys by being ſqueezed out of the excretory ducts into the pelvis. See Phil. Tranſ. N° 460, p. 707. in the remark.

HAIR *microſcopically examined.* The *hairs* of different animals are very different in their appearance before the microſcope. Malpighi diſcovered *hairs* to be tubular, or compoſed of a number of extremely minute tubes or pipes; this he diſcovered in examining the *hairs* of the main and tail of a horſe, and the briſtles of a boar; and theſe tubes were much more diſtinguiſhable near the ends of the tubes than elſewhere, as they there appeared more open, and ſometimes above twenty of them might be reckoned in one *hair*. In the hedge-hog's prickles alſo, which are of the nature of *hairs*, theſe tubes are very elegantly diſcovered, and may be ſeen to have a medullary part, and valves, and cells. There are alſo in the *hairs* of many animals, in ſome tranſverſe and in others ſpiral lines, ſomewhat of a darker colour, and running from top to bottom in a very elegant manner; a mouſe's *hairs* are of this ſort, and appear in joints, as it were, like the backbone; they are not ſmooth, but jagged on the ſides, and terminate in the ſharpeſt point imaginable. The *hairs* taken from the mouſe's belly are the leaſt opake, and fitteſt for the microſcope. The *hairs* of men, and of horſes, ſheep, &c. are compoſed of ſmall, long, tubular fibres or ſmaller *hairs*, encompaſſed with a rind or bark; and from this ſtructure a ſplit *hair* appears like a ſtick ſhivered by beating. They have roots of different kinds in different animals, and are always thicker at the middle than at either end. *Baker*'s Microſc. p. 246.

Hairs of the Indian deer are perforated from ſide to ſide, and thoſe of our Engliſh ones ſeem covered with a kind of ſcaly bark or rind. The whiſkers of a cat, cut tranſverſely, have in the middle ſomething which reſembles the pith of elder; and the quills of the hedge-hog and porcupine have ſomewhat of a pith in a ſtarlike form. The *hairs* taken from the different parts of the human body, differ very much in their figures, appearing like different ſpecies of the ſame genus in plants. *Hook*'s Microgr. p. 157.

Diſeaſes of the HAIR. Among the many remedies for diſeaſes of the *hair*, the following are recommended in the philoſophical tranſactions. To make *hair* grow, take a quantity of the largeſt and fineſt roots of the common burdock that can be collected; let them be taken out of the ground in the month of December; bruiſe them in a marble mortar, and boil them in a quantity of white-wine till there only remains as much as will cover them; let this be carefully ſtrained off, and every night, going to bed, let the head be waſhed with ſome of it warm. The other preſcription is this: Burn the ſlender twigs of vines to aſhes, and boil theſe aſhes in ſuch a quantity of common water as will make a ſtrong lye; let this be ſtrained clear off, and the head waſhed every night with ſome of it warm. When the *hair* is good, but in danger of falling off by degrees, the aſhes of the vine branches

are

are to be boiled in red-wine inſtead of water, and this lye is to be uſed inſtead of the other. When the perſon wears powder, let ſome hermodactyls be reduced to fine flour and mixed with it: let this be the only powder uſed, and the liquor conſtantly employed in waſhing the head every night, and the falling of the hair will be wholly prevented. Philoſ. Tranſ. N° 288, p. 90.

HAIR-*Balls*, maſſes of *hair* of different ſhapes and ſizes found in the ſtomachs of cows, oxen, calves, deer, and other animals. Some of theſe are covered with a ſmooth, thin, hard, and ſhining coat or ſhell, and others have no covering at all, but ſhew the naked *hairs* on their ſurfaces. Some are of a cheſnut brown, others of an aſh-colour, and others of yet different colours. They are often found to ten or eleven inches in circumference, ſometimes more, but very often much leſs; ſome of them are pretty exactly ſpherical, others of the figure of a prolate ſpheroide, others oblong and compreſſed, and others regularly oval.

Theſe balls are found in one or other of the four ventricles of the animal, and are ſometimes voided by ſtool. It is very evident that they are formed of the *hair* of the animal, which it has licked off and ſwallowed, and which, by the motion of the ſtomach, which in theſe creatures is very ſtrong and frequent, is wrought and compacted together very firmly, and the thin, ſmooth, and ſhining coat which is found upon ſome of them, ſeems formed of the ſlimy matter of the ſtomach.

Among calves, that ſome have theſe *hair-balls* and others not, ſeems in one reſpect owing to their being the firſt or later offſpring of the creature, ſince thoſe that ſuck of a heifer which never had a calf before, have the taking off of a large quantity of hair from the paps. There is always found more or leſs *hair* in the fourth ventricle of theſe calves that have ſucked young heifers, which has unqueſtionably been licked off from the paps, and waſhed down with the milk, and which at times forms theſe balls. *Moreton*'s Hiſt. Northampt. p. 451.

HAIR-*Cloths*, in military affairs, are large pieces of cloth made with half *hair*; they are uſed for covering the powder in waggons, or upon batteries; as alſo for covering charged bombs, or hand-grenades, and for many other uſes in magazines.

Horſe-HAIR *worms*. See AMPHISBÆNA.

HAIR-*weed*, *conferva*, in botany, the name of a genus of moſſes, the characters of which are theſe: it is a water plant, deſtitute of flower and ſeed, ſo far as has hitherto been obſerved, and compoſed only of ſimple and uniform filaments, which uſually extend to a great length, and are often branched, and uſually of a cylindric figure. The generality of authors have ſuppoſed that theſe are not produced of ſeeds, but are formed of ſome viſcous or gelatinous matter floating in the water, by mere appoſition of parts; but this ſeems erroneous, and probably will be hereafter confuted by the diſcovery of their ſeeds, as has been already the caſe in the ſea fucus's, and in many other genera of plants ſuppoſed formerly to want them. The *confervæ* are uſually divided into ſeveral orders, according to the nature of the filaments they conſiſt of. Some conſiſt of equable and even threads, others are knotted or jointed in the manner of a worm, or other ſuch inſect. Theſe are called the geniculated *confervæ*, to diſtinguiſh them from the other ſimple ones; and, finally, others are compoſed as it were of ſeveral globules joined one to another; theſe laſt are called the knotted *confervæ*. *Dillen.* Hiſt. Muſc. p. 11—17.

Of the firſt kind, or ſimple *confervæ*, there are twenty-four ſpecies: 1. The common ſilky floating *conferva*, called hairy river weed, and crow ſilk. This conſiſts of very long filaments of a ſhining green. 2. The wide ſpreading ſilky *conferva*. The filaments of this are broader and thicker than in the former, and are not ſo long, but more numerous from the root. Theſe are common in freſh waters both in ſpring and ſummer. 3. The ſmall byſſus-like *conferva*. This is the ſmalleſt of all the *confervæ*. Its filaments are ſhort, ſlender, or branched, and of a brown colour. 4. The ſlippery or fleſhy alpine *conferva*. This is common in mountainous places, in all waters, and conſiſts of fine and ſlender filaments ſo cloſely arranged, as to make a ſort of fleſhy moſs. 5. The tender mud *conferva*. This is of a browniſh or greeniſh colour, and lies in form of large cluſters on the mud of ditches. Its filaments are extremely ſmall and ſlender. All theſe are ſimple in their figure as well as ſtructure, and compoſed of ſingle threads. The remaining ſpecies of this order are branched. Theſe are, 6. the common forked *conferva*. This reſembles the common *conferva*, but the ends of the filaments are divided ſometimes into two, ſometimes into three branches. 7. The white ſilky *conferva*. This is of about a hand's breadth long, and is finely divided, and of a ſilky texture and white colour. 8. The fennel-like ſea *conferva*. This grows on the rocks in the ſea, and ſomewhat reſembles the leaves of fennel. It is of a middle texture between the fucus's and *confervas*. 9. The forked briſtly *conferva*. This is of a duſky green colour, and grows to five or ſix inches in length; it is common in ditches about the Thames. 10. The ditch hair *conferva*. The filaments of this are three or four inches long, and uſually thick ſet and expanded every way; they are about the thickneſs of a human hair, and are of a duſky green. 11. The ditch cottony *conferva*. This is of a greeniſh colour, with ſome faint caſt of yellow, and grows to a foot or more in length, ſending off ſhort filaments every where from the main ſtems. 12. The white flock ſea *conferva*. This is of a greyiſh or greeniſh white, and is compoſed of filaments ſo cloſely arranged together, that they are ſcarce diſtinguiſhable. 13. The ruſty flock ſea *conferva*. This is larger, longer, and of a harſher ſtructure than the laſt, and is of a browniſh red colour; it grows very common on rocks about the ſea coaſt. 14. The net-like *conferva*. This is compoſed of ſlender but ſomewhat rigid filaments, arranged into a kind of reticular work; it is of a faint greeniſh colour, and is common in ditches. 15. The velvet mill *conferva*. This is common on the boards and ſides of mill pools, and is uſually very ſhort, and of a blackiſh green. 16. The rough fibrous river *conferva*. This is of a ſomewhat rigid texture, of a browniſh colour, and hairy on the branches; it is common in clear waters in auguſt. 17. The thready and ſpungy amphibious *conferva*. This is found ſometimes in the water, ſometimes at land under old walls. It is of a pleaſant green, and compoſed of ſuch ſlender filaments that it is not eaſy to perceive that they are branched. 18. The ſhort pale-green river *conferva*. This is very ſlender, and of about half an inch long, and very much branched or divided; it is of a pale-green colour, and is covered often with little globules of a whitiſh colour, ſeeming to be the eggs of minute water-inſects. 19. The ſoft long ſea *conferva*. This is of a yellowiſh green, and is ſix or eight inches long; it grows on ſtones about the ſea ſhores. 20. The ſhort ſea-green *conferva*. This is diſtinguiſhed from all the reſt by being of a ſea-green, or bluiſh green; it is ſmall and very much branched. 21. The ſhort-lock ſea *conferva*. This is very ſhort, and its filaments thick ſet together, and is frequent on the branches of fucus's and other ſea plants. 22. The latticed ſea *conferva*. This is of a duſky whitiſh-green colour, and of a cancellated figure; it grows on ſmall ſtones by the ſea ſhores, and is of about an inch and half in length, and very much branched. 23. The feathered ſea *conferva*. This is of a deep green colour, and its branches are ſpread every way, and divided into a number of filaments, and hairy all their length. 24. The jelly ſea *conferva*. This grows to ſome ſmall pebble, and ſpreads its branches every way from it; they are an inch and half long, and ſometimes more, and is of a bright green, and of a gelatinous texture. The ſea-gulls eat this in great quantities. *Dillen.* Hiſt. Muſc. p. 17—29.

Of the ſecond order, or the *geniculated conferva*, there are fourteen kinds. 1. The marſh geniculated thready *conferva*. This is of a yellowiſh white colour, and of the thickneſs of a coarſe thread, and of a foot or more in length. 2. The branched geniculated river *conferva*. This is ſhort and of a fine green. 3. The link-jointed *conferva*. This grows in thick tufts, and affords a lodging for ſmall ſhell-fiſh; the filaments are thick, and the joints long; it grows on ſtones about the Bahama iſlands. 4. The river *conferva* with branched ends, called the river beard. This grows to three inches long, and its filaments ſtand very thick, and are of a duſky browniſh green. 5. The branched hairy ſea *conferva*, called the ſea beard. This reſembles the former, but is of a deeper green, and more branched. 6. The ſpreading *ſea beard*. This is ſometimes of a deeper, ſometimes of a paler green, and is very much branched, and the geniculæ very obvious and evident; it is common on ſmall ſtones on the ſea coaſts. 7. The cluſter *conferva*. This is very full of branches, and of a pale green; it grows in freſh waters. 8. The woolly ſea *conferva*. This is very much branched, and has its filaments divided into numerous ſlender branches, which are ſo interwoven as to reſemble a lock of wool; it is common in ſalt-water ditches. 9. The fine ſilky river *conferva*. This ſeldom exceeds three inches in length, and its filaments are divided at their ends into numerous ſhort and extremely fine threads. 10. The palmated ſea *conferva*. This uſually grows upon the fucus's and other ſea plants, and is of a browniſh green. 11. The larger gelatinous coralline-like ſea *conferva*. This is whitiſh and pellucid, and much reſembles ſome of the corallines in its external figure. 12. The finer ſlippery coralline-like ſea *conferva*. This is of a tougher texture, and finer ramification than the former; it is uſually of a purpliſh-red colour, and ſometimes of a greeniſh or whitiſh. 13. The more branched jointed ſea *conferva*. This grows to about four inches long, and is of a reddiſh colour, and ſhews its joints very remarkably. 14. The hollow ſea *conferva*. This is from two to four inches long, its branches inordinately diſpoſed, and all much branched; it is common on the coaſt of Cornwall.

Of the third order, or the knotted *confervæ*, there are only eight known ſpecies. 1. The ſlippery red ſea-pearl *conferva*. This is a very elegant little plant, and uſually grows upon the fucus's and other ſea plants. 2. The ſlippery coralloide-like ſea *conferva*. This grows like the coralloide moſſes, forming a ſort of ſhrub; it is of a beautiful red colour, and is common on the coaſts of the Iſle of Man, and in ſome other places. 3. The larger mouſe-coloured frog's ſpawn *conferva*. This grows to ſtones and ſticks in freſh-water rivers, and is three

of the noſe, vomiting of blood, dyſentery, bloody urine, too great flow of the menſes, &c. all which have the ſame immediate cauſes, the ſame effects and conſequences, and ſuggeſt the ſame indications of cure; which are, in the beginning to diminiſh the quantity of blood, and to make a revulſion by opening a vein in the arm, foot, &c. then to moderate the velocity and rarefaction of the blood by cooling medicines; and laſtly, to contract and ſtrengthen the veſſels by aſtringents. The ſame method muſt take place in all, and therefore the general ſtyle of this claſs of diſeaſes ought to be hæmorrhage. See Medic. Eſſ. Edinb. Vol. I. Art. 25.

HÆMORRHAGES (*Cycl.*)—Theſe are divided, by the medical writers, into natural and preternatural.

Natural *Hæmorrhages* comprehend bleeding at the noſe, ſpitting of blood, the fluxes of the hæmorrhoids and menſes, the lochia in lying-in women, vomiting of blood, and voiding blood by urine.

The preternatural *Hæmorrhages* are ſuch as derive their origin from external accidents, as falls, blows, and wounds. Some alſo comprehend, under this term, the artificial evacuations, by bleeding, cupping, and the like.

Hæmorrhages differ much, according to the age and ſtate of the patient, and other accidents. *Hæmorrhages* from the noſe are moſt frequent in young perſons, thoſe of the hæmorrhoids in people of a middle age, or later in life; the ſpitting of blood, to perſons in a middle age; and voiding blood by urine uſually to older people. Some *Hæmorrhages* are periodical, and others vague or uncertain. The firſt obſerve ſome ſtated period of time for their return upon people; the laſt are wholly uncertain in that particular. Some are alſo termed critical; theſe are ſuch as happen at the criſes of fevers. There are uſually violent pains about the part whence natural *Hæmorrhages* are to proceed; but theſe always go off as ſoon as the bleeding comes on in due quantity.

Perſons moſt ſubject to HÆMORRHAGES. Young perſons of a healthy and florid conſtitution are moſt ſubject to *Hæmorrhages*; people of plethoric habits are alſo much ſubject to them, and eſpecially ſuch whoſe blood is ſound and fluxile, not ſubject to any dyſcracy. Thoſe who drink much wine, or eat high ſeaſon'd foods; and, more than all theſe, perſons who are ſubject to violent paſſions, eſpecially to anger. Hence it is that brutes are very rarely afflicted with them.

Cauſes of HÆMORRHAGES. Among the principal of theſe are to numbered a plethora, violent commotions of the body, hot foods and liquors, a heat of the ſeaſon, a ſudden cooling of the body after violent heat, and paſſion. *Junker*'s Conſp. Med. p. 12.

Prognoſtics from them. *Hæmorrhages* from the lungs, and vomiting, and voiding blood by urine, are all very dangerous. The others, when regulated, and in due proportion, are ſalutary, and often prevent diſeaſes. And the common cuſtom of ſtopping them by aſtringents, or otherwiſe, is often productive of ſtagnations, inflammations, and violent fevers.

Method of Cure. *Hæmorrhages* flowing moderately, and from natural paſſages, require no aſſiſtance of medicine; when they happen to plethoric perſons, they are to be ſuffered to continue a ſufficient time. When the quantity of the blood is leſſened by theſe diſcharges, its quality, if diſtemper'd, is next to be amended by internal remedies; if ſulphureous and acrid, by nitrous medicines and abſorbents, and by gentle acids; to this purpoſe ſal prunellæ, crabs eyes, lemon juice, and the like, are excellent; if the blood be too thick, a ſmaller quantity of food, and a larger of drink, is to be preſcribed, and to this the reſolvent and attenuating medicines are to be added, as the neutral ſalts and diuretic roots. Theſe are the neceſſary things out of the fit; and during the bleeding ſuch things are to be given as repreſs the violent motion of the blood, ſuch as cinnabar, nitre, and crab's eyes, ſated with a vegetable acid. Spirit of hartſhorn and tincture of antimony may next be given, and, after theſe, moderately ſtyptic and anodyne medicines; but the ſtronger ſtyptics and aſtringents are not to be uſed but with great caution.

Mr. Petit, in examining all the different methods employed by ſurgeons for ſtopping *Hæmorrhages*, aſſures us, that in each of them a piece of clotted blood is contained in the veſſel, which ſerves to keep the blood from eſcaping, after the effect of the medicine, firſt employed, ceaſes. Where abſorbents or aſtringents are uſed, that there is not only a cylindrical piece of clotted blood in the veſſel, but there is a covering of it on and round the orifice of the cut veſſel; which cylindrical form makes it eaſily puſhed out. Cauſtics have much the ſame effects, only the covering on the extremity of the veſſel is firmer, by the ſolid parts being confounded with the clotted extravaſation. When a ligature is uſed, there is no clotted covering, and the internal plug is of a pyramidal figure, therefore it is with difficulty that ſuch a clotted piece can be puſhed out. Beſides this advantage, the ſides of the veſſel, which are brought to be contiguous by the ligature, will probably grow together; for which reaſon, and the ſaving both pain to the patient, and loſs of ſubſtance of the ſtump, he prefers compreſſion to all the other methods. In proof of the effects of coagulated blood ſtopping the efflux of blood from large arteries, he relates two hiſtories; in one, the artery was oſſified; and, in the other, it lay in a bony groove: So that, in both, it muſt have been a plug which prevented the *Hæmorrhage*. He endeavours to prove, that the plug is ſtronger and firmer, when formed of coagulated lymph, than when compoſed of red blood. For executing the compreſſion right, after amputation of the larger extremities, he has contrived a machine, compoſed of a large circular belt, to be put round the trunk of the body, or ſuperior part of the member, which is to ſuſtain the bandage, by ſtraps going from it, which are faſtened, at the other end, to a leſſer circular belt, that is put round the part of the member where the tourniquet is commonly applied. This leſſer belt is to have two ſcrews, &c. in the form of his ſcrew-tourniquet. From this leſſer belt four ſtraps go out, to croſs over two plates with their ſcrews, as in the tourniquet, placed on the ſtump. When the operation is performed, he applies thick bolſters of lint on the ſide of each large artery fartheſt from the bone, and placing the interior convex plate of the ſmall tourniquet on them, he ſecures it in the right ſituation with the four ſtraps, and ſcrews down the plate on the bolſters and veſſel, which being preſſed between the inſtrument and the bone, can allow no blood to paſs. See Mem. de l'Acad. des Sciences, 1731 & 1732.

Mr. Morand imagines, that the change which happens to the artery, on being wounded, aſſiſts greatly in ſtopping the flux of blood; and that this and the congelation are uſually joint agents in this caſe. When the artery is either empty, or at leaſt leſs diſtended than uſual with blood, it naturally will collapſe, in ſome degree, and become more or leſs flatted; and if this goes ſo far as that the ſides come to touch one another, they naturally unite, and the whole cure is performed by this alone. And this is very frequently the caſe in wounds of ſmall arteries, and in internal *Hæmorrhages*. Nor is it more difficult for a large veſſel to become flatted and collaſpe in the ſame manner, till its ſides touch, provided that the courſe of the blood thro' it be by any means reſtrained. Mr. Morand gave the academy of ſciences of Paris a very remarkable account of a thing of this kind, which fell within his knowledge. A countryman having received a very violent blow upon his arm, had afterwards no pulſation in the artery, in that part of the arm beneath the place where the blow had been given, tho' he had a plain one in that part of the artery which was above it. There was at firſt ſome fear that the arm muſt have been taken off, but Mr. Morand ſaved it, and, as the cure went on, the pulſe was obſerved gradually to be felt again in the hand, and lower part of the arm. The occaſion of this was plainly, that the artery had become flatted by the blow, and the blood was unable to force the oppoſition, and circulated only thro' the ſmall veſſels, while the injury from the blow remained violent, but gradually made its way again, as the parts reſtored themſelves to their natural ſtate. Memoirs Acad. Scienc. Par. 1736.

A wounded artery, in caſe it be cut quite aſunder, is in the ſame ſtate with a cord which is cut in two while it is on the ſtretch. We well know, that when this is done, the two ends recede a great way from one another, and that in proportion to the tention they had before: The caſe is wholly the ſame with an artery, and that for the ſame reaſon. Its longitudinal fibres are drawn back and ſhortened, and its circular ones are, by this very action, compelled to run together more cloſe than they naturally ſhould, and in conſequence they form thicker rings about the extremities of the divided veſſel; the conſequence of which is, that they make the inner hollow narrower. This is a thing of great importance, as not only the ſides of the veſſel are brought nearer together, and therefore they more eaſily may come to touch; but the diameter of the bore of the artery being leſs, a ſmaller maſs of congealed blood may ſtop it; and this blood, adhering to the ſides of the veſſel on every hand, fills up the paſſage as it congeals, and, by degrees, brings them together.

Mr. Petit, in confirmation of his opinion, that *Hæmorrhages* are ſtoppod by plugs of clotted blood, ſhewed the academy of ſciences, at Paris, ſuch a plug, in an artery which had been opened. See Hiſt. de l'Acad. des Scienc. 1735.

What is remarkable is, that this plug of clotted blood had loſt nothing of its conſiſtency, nor of its adheſion to the aperture of the artery, after lying two months in water, and three years in brandy. This ſhews the plug to be analogous to a ſcar: Nor is this ſtrange, ſince both are formed from the juices deſtined to the nouriſhment of the part. Hiſt. de l'Acad. &c. ibid.

The ſtyptic powder of Helvetius has been found excellent in *Hæmorrhages*. See STYPTIC *Powder of Helvetius*.

The *Vitrum antimonii ceratum* has likewiſe proved very efficacious in uterine *Hæmorrhages*. See VITRUM *antimonii ceratum*.

Soft compreſſion is, by Garengort, thought more effectual to ſtop *Hæmorrhages*, than hard ſubſtances; and its uſe recommended even when ſtitches of arteries give way, in which caſe the uſe of vitriol buttons is condemned.

Internal HÆMORRHAGES. The Omentum itſelf is not free from being the ſeat of fatal internal *Hæmorrhages*, tho' this rarely happens. The Peterſburg commentaries give us an account of a woman, who dying almoſt immediately of a blow ſhe received on the belly, was opened, and the cavity of the abdomen

red circle, or areola, about the nipple, from its ſimilitude to the circles formed round the ſun and moon at certain times, and called *Haloes*.

HALOSACHNE, in the materia medica of the antients, was a name given to a peculiar ſea ſalt, made by the evaporation of ſmall quantities of ſea water on rocks, by the ſun's heat. It no way differed from the common ſea ſalt in its qualities or properties, except that it did not crackle ſo much in the fire; and this was merely owing to its being compoſed of finer particles, and in form of a ſort of powder, in which ſtate even common ſea ſalt will no more crepitate in the fire than this. *Hill*'s Hiſt. of Foſſ. p. 386.

Tho' this, however, was the common appearance of the *Haloſachne*, it was not its univerſal one; for it was found ſometimes concreted on, or embodied in the alcyonia, and other marine productions, and then appeared in a harder form.

HALOSANTHOS, *Flower of Salt*, in the materia medica of the antients, was a ſubſtance, tho' commonly ſuppoſed only an efflorescence of common Salt, yet really a bituminous matter mixed with ſome particles of ſalt.

It was a tough, viſcous, and fatty ſubſtance, found ſwimming on the waters of ſome ſprings and rivers, and was of a ſoft conſiſtence, and of a yellow colour. And the ſame ſubſtance is ſtill found in the ſame places, and that not only yellow, but of various other colours, as blackiſh, green, or blue. Theſe it takes up, according to the various earths it has waſhed againſt on the ſhores, or the ſubſtances mixed among it at its original concretion. The deſcription Dioſcorides gives of it is very expreſs; he ſays it was found ſwimming on the waters of the Nile, and ſome lakes; and was of a yellow colour, very ſharp to the taſte, fattiſh, and of an unpleaſant ſmell. This, tho' that author did not diſtinguiſh to what claſs of foſſils it properly belonged, is enough, however, to teach us what it truly was; and it is ſomething wonderful, that thoſe who have accounted it a Salt, ſhould not obſerve that the ſame author adds, that it was ſoluble in oil, and not in water. *Hill*, Hiſt. Foſſ. p. 386.

HALTER, in the manege, a head-ſtall for a horſe, of Hungary leather, mounted with one, and ſometimes two ſtraps, with a ſecond throat band, if the horſe is apt to unhalter himſelf.

HALTER-*Caſt*, is an excoriation of the paſtern, occaſioned by the halter's being entangled about the foot, upon the horſe's endeavouring to rub his neck with his hinder feet.

HALTER-*Strap* or *String*, a cord, or long ſtrap of leather, made faſt to the head-ſtall, and to the manger, to tye the horſe.

HALTING (*Cycl.*)—*Halting* in a horſe, happens ſometimes before, and ſometimes behind; if it be before, the ailment muſt neceſſarily be in the ſhoulder, knee, paſtern, flank, or foot. If it be in the ſhoulder, it muſt be toward the withers, or the pitch of the ſhoulder, and this may be known, in that he will a little draw his leg after him, and not uſe it ſo nimbly as he does the other.

If he caſt it more outward than the other in going, it is a ſign of lameneſs, and that the cauſe lies in the ſhoulder; the rider ſhould then take him in his hand, and turn him ſhort, firſt one way, and then the other, and it will be eaſily ſeen which ſhoulder the pain is in, and he will either favour that leg, or trip in the turning. The lameneſs may be ſeen in him alſo while ſtanding in the ſtable, for he will there hold the lame leg out more than the other. If he is worſt when the rider is on his back, it is a ſign that the complaint is in the withers, and this may be ſoon tried, by preſſing down the ſaddle, and pinching him in that part; for if this be the caſe, he will flinch at it, and probably he will offer to bite.

If the complaint be ſeated in the knee, the only way of making this out, is in the going, for he will be ſeen to be ſtiff of this, and not to move it ſo freely as the other.

If the complaint be in the flank, or ſhin bone, it may be ſeen, or felt, being a back ſinew-ſtrain, ſplinter, or the like. If in the bending of the knee, it is a malander, and that alſo is eaſily diſcovered. When the paſtern, or lower joint, is affected, it will be ſeen by his not bending it ſo freely as the other, and generally, if the hand be laid upon the place, it will be found to be very hot.

If the complaint be in the foot, it muſt be ſituated either in the coronet or ſole, and, if in the coronet, it probably came by ſome ſtrain or wrench. If in the hoof, by ſome overreach or diſtemper in or about the fruſh. If it be in the ſole, it probably ariſes from ſome nail or prick.

Theſe are the methods of judging of the cauſe of a horſe's *halting*, and that often leads very directly to the cure, when a great deal of time and coſt might otherwiſe be thrown away in applying remedies, as has often been done to a part a yard or more diſtant from the ſeat of the diſorder.

HAMAMELIS, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a four-leav'd perianthium, placed in an erect poſture, and compoſed of oblong, obtuſe, and equal leaves. The flower is compoſed of four ſtrait, very long, and equal leaves. The ſtamina are four tapering filaments, of the length of the cup. The antheræ are ſimple. The germen of the piſtil is oval and hairy, and ends in two ſtyles, which are of the length of the ſtamina. The ſtigmata are ſimple. The fruit is a capſule divided into two cells, with two valves. The ſeed is ſingle, ſmooth, but of an oblong oval figure. *Linnæi* Gen. Plant. p. 54.

HAMBLING. See HAMELING, *Cycl.*

HAMFARE, in our old writers, a breach of the peace in a houſe. *Brompton* in Legibus, Hen. 1. c. 80. *Blount*.

HAMMA, a word uſed, by ſome chirurgical writers, for a knot that faſtens a bandage.

HAMMER, in the manege. See SHOEING *Hammer*.

HAMMOCK (*Cycl.*)—Mr. Le Cat has contrived a *Hammock* of Turkey leather, which may be eaſily raiſed, or let down, with a ſick perſon in it, by ropes and pullies. See Phil. Tranſ. N°. 468. §. 3.

HAMMON, in the heathen mythology. See CHAMOS.

HAMMOSTEUS, the oſteocolla of the ſhops. See the article OSTEOCOLLA.

HAMSOKEN, the liberty or privilege of a man's own houſe; alſo a franchiſe granted to lords of manors, whereby they hold pleas, and take cognizance of the breach and violation of that immunity: And it likewiſe ſignifies *quietantiam miſericordiæ intrationis in alienam domum vi & injuſte*. *Fleta*, lib. cap. 47. In Scotland violations of this kind are equally puniſhable with raviſhing a woman. *Skene*. And our old records expreſs burglary under the word *Hamſocne*. *Blount*. *Cowel*. in voc.

HANAB ALTHALEB, in the materia medica, a name uſed, by the antient Arabian writers, to expreſs the lycoperſicum, or pomum amoris. The meaning of the name is the wolfs-grape; and the Greeks have called it by an exactly correſponding term, lycoſtaphylon. We generally call it lycoperſicon, or the wolf's peach. Some have ſuppoſed this the name of a plant differing from the pomum amoris; but it appears, on a ſtrict enquiry, to be wholly the ſame. Some of the Greeks have uſed the word ſtrychnus in this ſenſe alone; and Alexander Trallian, in particular, always makes it the name of an eſculent plant; but Dioſcorides and Theophraſtus uſe it as the common name of the eſculent nightſhade, and of the poiſonous kinds.

HAND (*Cycl.*)—*Cartilages of the* HAND. All the bones of the carpus, metacarpus, and fingers, are cruſted over with cartilages, at thoſe places called cartilaginous ſurfaces, in the deſcriptions of thoſe bones; but in the freſh bones they are much thicker, ſofter, and whiter, than in the ſkeleton. In adult ſubjects, their figure indeed remains the ſame in both ſtates, but it changes in the dried bones of younger ſubjects, particularly thoſe of children. *Winſlow*'s Anatomy, p. 143.

Ligaments of the HAND. The ligaments of the carpus are very numerous. Some of them ſerve to tie each bone of it to the neighbouring bones in the ſame rank; and theſe are ſo very ſhort as to allow theſe bones only a very ſmall degree of motion; ſome of them tie the bones of one row to thoſe of another; theſe are likewiſe made up of numbers of filaments, but are not ſo ſhort as the former, and allow thoſe bones a more manifeſt motion; and laſtly, there are other ligaments of the wriſt, by which the three firſt bones of the firſt row are connected with thoſe of the arm, and to theſe may be added thoſe of the ſecond row, by which its bones are connected to thoſe of the metacarpus, and to the firſt phalanx of the thumb. Beſide all theſe ſhort ligaments belonging to each bone, in both rows, the rough ſurfaces of all the bones, eſpecially of thoſe which form the convexity of the carpus, give inſertion to a great many ligamentary faſciculi, which are ſtretched over, and cloſely united to the former ſmall ligaments, and probably ſerve to ſtrengthen them: There is likewiſe a conſiderable ligament, called the inner tranſverſe ligament of the carpus. It has formerly been called an annular ligament, and may ſtill juſtly enough retain that name.

The bones of the metacarpus, beſide thoſe ligaments by which they are tied to the ſecond row of the bones of the carpus, have ſeveral others by which both their baſes and heads are connected together. The baſes of the third and fourth bones are not ſo cloſely connected as the reſt, and therefore have a very ſenſible motion. The heads of theſe bones are firmly tied to each other by a ſtrong ligament, ſituated tranſverſely in the palm of the hand, and fixed, by diſtinct productions, in the neighbouring parts of the heads. The firſt phalanx of the thumb is fixed to the os trapezium by ſhort ligaments which paſs obliquely over the articulation. The firſt phalanges of the four fingers are joined to the heads of the metacarpal bones by ligaments like the former, and almoſt in the ſame manner. The third phalanx of the thumb is joined to the ſecond, and the ſecond phalanges of the other fingers to the firſt, and the third to the ſecond, by lateral ligaments, almoſt in the ſame manner as the bones of the fore arm to the os humeri; that is, theſe ligaments ſpread from a point fixed in the lateral tubercles of the heads of the phalanges, and are inſerted in their other extremity like radii in the baſes of the neighbouring phalanges. The two firſt phalanges of each finger have a ſtrong ligamentary vagina, inſerted in the rough line or ridges, on their flat ſides; theſe vaginæ are lined with a mucilaginous membrane, which runs like a tube from one phalanx to the other, over the articulation. Theſe ſerve for frænа to the

flexor muſcles of the fingers, the tendons of which paſs thro' them. *Winſlow*'s Anatomy, p. 143.

Luxation of the HAND. Notwithſtanding that the *Hand* is very accurately connected to the ulna and radius, by means of the carpus, and ſtrong ligaments, yet it is liable to luxations, and ſometimes ſuffers them in all directions either outward or inward, or on either ſide, but is generally not ſo eaſy to be luxated ſideways, as in the other directions, becauſe of the two proceſſes of the radius and ulna which guard it on each ſide. The *Hand* is ſaid to be luxated forwards or inwards, when it recedes from the muſcles which bend the fingers, and to be luxated backward, when it departs from the muſcles which extend the fingers. Much in the ſame manner alſo the *Hand* is ſaid to be luxated outwards, when the carpus makes a tumour near the thumb, and a cavity near the little finger, and to be luxated inward, when the contrary of this happens.

To reduce luxations of the *Hand*, it muſt be ſufficiently extended by two aſſiſtants, one of which is to lay hold of the *Hand*, and the other of the humerus, pulling in oppoſite directions; and that part of the extended *Hand* where the ſinus is, muſt be placed on a flat and even table, that whatever ſticks up may be depreſſed into its place; by which method the *Hand*, in whatever part luxated, may be very readily reduced into its natural ſeat. It alſo ſometimes happens, that one or two of the eight little bones of the carpus are luxated and diſtorted from their natural ſeat by ſome external violence. When this happens, there will be perceived a tumour in one part, and a cavity in another, which may be perceived by the feeling, as well as by the ſight, and the patient will feel very violent pains. This is a luxation very readily and eaſily cur'd, by extending the *Hand* as before directed, and replacing the bone. *Heiſter*'s Surg. p. 165.

HAND, in the manege. To make a horſe right upon the *Hand*, and free in the *ſtay* or *reſt*, he muſt be taught to know the *Hand* by degrees, and gentle methods; the horſeman muſt turn him, or change *Hands*; ſtop him, and manage with dexterity the *appui*, or preſſure of his mouth, ſo as to make him ſuffer chearfully and freely the effect of the bit-mouth, without reſiſting or reſting heavy upon the *Hand*. The ſhort, or *Hand* gallop, teaches horſes to be right upon the *Hand*.

HAND is alſo found, in many other terms, or phraſes of art belonging to the manege, as,

To ſlack or yield the HAND, is to ſlacken the bridle.

To hold up, or ſuſtain the HAND, is to pull the bridle in.

To guide a Horſe by the HAND, is to turn or change *Hands* upon one tread.

Appui, or ſtay of the HAND. See APPUI.

Beat upon the HAND. See BEAT and CHACK.

To preſs upon the HAND. See PRESS.

To change the HAND. See CHANGE.

Effects of the HAND. See EFFECTS.

Haſten the HAND. See HASTE.

To feel a Horſe upon the HAND. See FEEL.

Full HAND, *or full Reſt upon the* HAND. See APPUI and MOUTH.

To have Mares covered in the HAND. See STALLION.

To make a Horſe part from the HAND, or ſuffer him *to ſlip from the* HAND, is to put on at full ſpeed.

To make a Horſe part right from the HAND, he ſhould not put himſelf upon his back or reins, but bring down his hips.

All HANDS. A horſe is ſaid to turn upon *all Hands*, that is not reſty for one *Hand*; this is called in French *entier*. See ENTIER.

Fore-HAND and *Hind*-HAND of a horſe, is an expreſſion diſtinguiſhing the parts of a horſe, as divided into the fore and hinder parts, by the ſituation of the horſeman's *Hand*. The parts of the fore-hand are the head, the neck, and the fore quarters. Thoſe of the hind-hand include all the other parts of the body.

HAND, or HANDING, in the ſea language. When a thing is to be delivered away, or paſſed from one to another, or to be brought to any one, then the word is, *hand* it this way, or that way. Alſo, when more men are wanted to do any labour, as hoiſing, &c. they call for more *Hands*, not more men.

HAND *in and out*, in our old writers, the name of an unlawful game, now diſuſed and prohibited by the ſtatute 17 Edw. 4. c. 2. *Blount*, *Cowel*.

HAND-*Barrow*, in the military art, is commonly made of hard light wood. It is of great uſe in fortification, for carrying earth from one place to another, and in a ſiege, for carrying bombs, or cannon ball, along the trenches, and for ſeveral other uſes.

HAND-*Spike*, a leaver, or piece of aſh, elm, or other ſtrong wood, five or ſix feet long, cut thin like a wedge at one end, that it may get the eaſier betwixt things which are to be ſeparated, or under any thing that is to be raiſed; it is better than a crow of iron, becauſe its length allows a better poiſe.

Hand-ſpikes are frequently uſed in ſhips, as to traverſe the ordnance, to heave withal in a windlaſs, to weigh up the anchor, &c.

HANDACOCHA, in botany, a name by which Pliny, and ſome other authors, have called the trifolium bituminoſum, or ſtinking trefoil. *Ger*. Emac. Ind. 2.

HANDFUL, (*Cycl.*) in the manege. Two *Handfuls* are called, in French, *une jointeè*, and is as much grain or bran as two hands will hold, when joined together. A quantity frequently ordered to be given horſes.

HANDGRITH, in our old writers, peace or protection given by the king with his own hand.—*Hæc mittunt hominem in miſericoridia regis, infractio ſeu violatio pacis quam per* Manum *ſuam dabit alicui*. Leg. Hen. 1.

The word is Saxon, from *Hant* or *Hond*, manus, and *grith*, pax. *Blount*. in voc.

HANDY *Warp*, in our old writers, a kind of cloth mentioned in ſtat. 4 & 5 Ph. & Mar. c. 5. *Blount*.

HANG *Benches*, in mining. See STOWS.

HANIG, in our old writers, a term for cuſtomary labour to be performed. *Blount*. in voc.

HANDLES *of a Plough*, the name given, by farmers, to the two pieces of the plough faſtened to the earth-board, and to the ſheat, and ſerving the plowman to reſt his force upon in the guiding of the plow. When they are conſiderably long, the plow is always guided the better, and the land is better tilled; but the lazy plowmen are apt to cut them off ſhorter, that, by bearing their whole weight upon them, they may, in a manner, ride, inſtead of walking. If they ſhould ride, in this manner, on the long handles, they would tilt up the end of the beam, and raiſe the plow out of the ground. *Tull*'s Huſbandry.

HANTELODE, in our old writers, ſignifies an arreſt.

The word is Saxon from *Hant*, hand, and *load*, *i. e.* laid; *Manus immiſſio*, becauſe arreſts are made by laying hold on the debtor, &c. *Du Cange*, *Blount*.

HAQUE, in our old writers, a little hand-gun, prohibited to be uſed for deſtruction of game, &c. by ſtatute 33 Hen. 8. c. 6. and 2 & 3 Ed. 6. c. 14. There is alſo the *half Haque*, or *Demi-Haque*, within the ſaid acts. Terms of Law.

HARACH, in the eaſtern revenues, is a poll tax laid on the Chriſtians and Jews in Ægypt. This had long been in the hands of the janizaries, but of late has got into the power of an officer, called thence the *Harach Aga*, ſent from Conſtantinople. Before this the Chriſtians paid but a trifle, by capitulation with ſultan Selim; and this capitulation the coptis ſay they have in their own hands, it was only two dollars and three quarters a head. The great men conſented to this, and now they pay either two and three quarters, or five and a half, or eleven, according to their ſubſtance, each dollar being about half a crown. The perſons who pay this are thoſe only who have arrived at the age of ſixteen. *Pocock*'s Egypt, p. 173.

HARAHA, in botany, a name uſed, by ſome authors, for the Gourd. *Ger*. Emac. Ind. 2.

HARANKAHA, in the materia medica, a name by which ſome authors have called zedoary. *Herm*. Muſ. Zeylan. p. 50.

HARD *Bodies*, in natural hiſtory. By *hard Bodies* are underſtood ſuch bodies as are abſolutely inflexible by any ſhock or colliſion whatſoever.

This is the common meaning of the term; but Huygens, by *hard Bodies (Corpora dura)* meant what others call perfectly elaſtic bodies; for he thus expreſſes himſelf, *Quæcunque ſit cauſa*, Corporibus duris, *a mutuo contactu reſiliendi cum ſe invicem impinguntur*; *ponimus, cum corpora duo inter ſe æqualia, æquali celeritate, ex adverſo ac directe ſibi mutuo occurrunt, reſilire utrumque eadem qua advenit celeritate. Huyg*. De Motu Corp. ex Percuſſ. Hypoth. 2.

But this hypotheſis is conſiſtent only with perfect elaſticity, and not with the common ſuppoſition of *hardneſs* or inflexibility, which produces no reſilition.

The laws of motion for *hard bodies* are the ſame as for ſoft bodies; and theſe two ſorts of bodies might be comprized under the common name of *unelaſtic*.

Some who follow Leibnitz's doctrine, concerning the meaſure of the moving force of bodies, deny the exiſtence of *hard* or inflexible bodies. And it is ſo far true, that no experience ever taught us, that there are any ſuch. The hardeſt bodies, to appearance, do not preſerve their figures in colliſion, ſuch bodies being only elaſtic, yielding to the ſhock, and then reſtoring themſelves. See *s'Graveſand*. Phyſ. Elem. Math. *Deſaguliers*, Exp. Philoſ. *Muſchenbroek*, &c.

Mr. Bernoulli goes ſo far as to ſay, that *hardneſs*, in the vulgar ſenſe, is abſolutely impoſſible, being contrary to the law of continuity. (See CONTINUITY.) For ſuppoſing two ſuch *hard* bodies of equal maſſes, and with equal velocities to meet directly, they muſt either ſtop or return after the colliſion. The firſt ſuppoſition is commonly admitted; but then it follows, that theſe bodies muſt inſtantaneouſly paſs from motion to reſt, without going thro' ſucceſſive diminutions of their velocities till they ſtop. But this is thought to be contrary to the fundamental laws of nature. See *Bernoulli* Oper. Tom. 3. p. 10.

Hence this author rejects perfectly ſolid and inflexible atoms, which others think a conſequence of the impenetrability of matter. See *Maupert*. Mem. de l'Acad. de Berlin. T. 2. p, 284.

HARD *Horſe*, in the manege, is one that is inſenſible of whip or ſpur.

HARDENING (*Cycl.*)—HARDENING *of timber*. The Venetians are famous for the ſoundneſs of their ſhips, which do not

rot

rot as thoſe of other nations, but will endure many times the common period. Tachenius tells us, that the whole ſecret of this conſiſts in the manner of their *hardening* their timber intended for this ſervice; and that this is done by ſinking it in water while green, and leaving it there many years. This prevents the alkali, or that ſalt which furniſhes the alkali in burning, from exhaling afterwards; and by this means the timber becomes almoſt as incorruptible as ſtone. It is evident that the exhaling of this ſalt, and the rotting of wood, have ſome very great connexion with one another, ſince the more ſound any piece of timber is, the more ſalt it proportionably yields; and the wood which is rotten is found on trial to contain no ſalt at all. *Tachen.* Hippocr. Chym. See the article TIMBER.

HARDNESS *of bodies*. See HARD *bodies*.

HARDWIC. See HERDEWIC, *Cycl.*

HARDY-*Shrew*, a name given by the people in ſome parts of England to the mus araneus, called more uſually the *ſhrew*, or the *ſhrew* mouſe. See MUS *araneus*.

HARDY *Shrubs*. The two *hardieſt ſhrubs* we are poſſeſſed of are the ivy and box; theſe ſtand the ſeverity of our ſharpeſt winters unhurt, while other *ſhrubs* periſh; and trees have their ſolid bodies ſplit and torn to pieces. In the hard winter of the year 1683, theſe two *ſhrubs* ſuffered no injury any where; tho' the yews and hollies, which are generally ſuppoſed very hardy, were this winter in ſome places killed, and in others ſtripped of their leaves, and damaged in their bark. Furze-buſhes were found to be ſomewhat *hardier* than theſe, but they ſometimes periſhed, at leaſt down to the root. The broom ſeemed to occupy the next ſtep of *Hardineſs* beyond theſe; this lived where the others died; and where even this died, the juniper *ſhrubs* were ſometimes found unhurt. This laſt is the only *ſhrub* that approaches to the *Hardineſs* of the box and ivy, but even this does not quite come up to them, for while they ſuffer nothing in whatever manner they are expoſed, the juniper, tho' it bears cold well under the ſhelter of other trees, yet cannot bear the viciſſitudes of heat and cold, inſomuch that ſome juniper *ſhrubs* were found half dead, and half vigorous; that ſide which faced the mid-day ſun, having periſhed by the ſucceſſive thawings and freezings of its ſap; while that which was not expoſed to the viciſſitudes of heat, had bore the cold perfectly well. Such *ſhrubs* as are not *hardy* enough to defy the winter, but appear half dead in the ſpring, may often be recovered by Mr. Evelyn's method of beating their branches with a ſlender hazel wand, to ſtrike off the withered leaves and buds, and giving a free paſſage to the air to the internal parts. Where this fails, the method is to cut them down to the quick; and if no part of the trunk appears in a growing condition, they muſt be taken off down to the level of the ground. Philoſ. Tranſ. N° 165.

HARDER, in zoology, a name given by ſome to a fiſh of the mullet kind, called by Marcgrave paſtor piſcis. *Willughby*'s Hiſt. Piſc. p. 276. See the article PASTOR *piſcis*.

HARE (*Cycl.*)—The ſportſmen diſtinguiſh four ſorts of this animal: the one lives in the mountains; the ſecond kind in open fields; a third kind in marſhy grounds; and the fourth is a rambler, having no particular fixed ſpot of reſidence. It is eaſy to ſee that theſe are no diſtinction in the eye of the naturaliſt; but they have their ſeveral properties according to theſe differences of place, which are of conſequence to the ſportſmen. Thus the mountain *Hares* are the ſwifteſt of all, and the marſh *Hares* the ſloweſt; the field *hares* have a middle degree of ſwiftneſs between theſe; and the rambling *Hares* are the moſt difficult of all others to hunt, for they are not only conſiderably ſwift, but they generally know all the coverts and thickets, and have the art to make a thouſand doublings and eſcapes that the others would not think of.

Hares and rabbits are very miſchievous to new planted orchards, by peeling off the barks of the tender and young trees for their food; they do alſo the ſame ſort of miſchief to nurſeries; for the prevention of which, ſome bind ropes about the trees up to ſuch a height as they are able to reach; ſome daub them with tar; but tho' this keeps off the *Hares*, it is itſelf miſchievous to the trees; but this hurtful property of it is in ſome degree taken off by mixing any kind of fat or greaſe with it, and incorporating them well over the fire. This mixture is to be rubb'd over the lower part of the trees in November, and will preſerve them till that time the next year, without any danger from theſe animals. It is only in the hard weather in the winter ſeaſon, when other food is ſcarce, that theſe creatures feed on the barks of trees.

People who have the care of warrens, pretend to an odd way of making *Hares* fat when they get them there. This is the ſtopping up their ears with wax, and rendering them deaf. The *Hare* is ſo timorous a creature, that ſhe is eternally liſtening after every noiſe, and will run a long way on the leaſt ſuſpicion of danger; ſo that ſhe always eats in terror, and runs herſelf out of fleſh continually. Theſe are both prevented by her feeding in a ſafe place, and that without apprehenſion; and they ſay ſhe will always readily be fattened by this.

HARE, in zoology. See LEPUS.

HARES *Ears*, *Beupleurum*, in botany, the name of a genus of umbelliferous plants, the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral leaves placed in a circular form, and ſtanding on a cup, which afterwards becomes a fruit compoſed of two oblong ſeeds, gibboſe and ſtriated on one ſide, and ſmooth and plain one the other. To this it is to be added, that the leaves are ſingle, not of the compoſite kind, as in the other umbelliferous plants, and that they ſtand alternately on the ſtalk.

The ſpecies of *Beupleurum* enumerated by Mr. Tournefort, are theſe: 1. The broad and rigid leav'd *Beupleurum*. 2. The moſt common, or roundiſh leav'd *Beupleurum*. 3. The narrow leav'd annual *Beupleurum*. 4. The ſmalleſt annual narrow leav'd *Beupleurum*. 5. The ſmall *Beupleurum*, with very long and narrow leaves. 6. The other *Beupleurum*, with extremely narrow leaves. 7. The roundiſh leav'd perfoliate annual *Beupleurum*, commonly called *Thoroughwax*. 8. The double flower'd annual perfoliate *Beupleurum*, called by authors the moſſy flower'd thoroughwax. 9. The long leav'd annual perfoliate *Beupleurum*. 10. The broad leav'd mountain *Beupleurum*. 11. The mountain *Beupleurum*, with extremely ſmall flowers. 12. The ſmaller broad leav'd alpine *Beupleurum*, called by authors the ſmall alpine thoroughwax. 13. The larger narrow leav'd perfoliate alpine *Beupleurum*. 14. The middle ſiz'd narrow leav'd perfoliate alpine *Beupleurum*. 15. The little narrow leav'd perfoliate alpine *Beupleurum*. 16. The graſſy leav'd perfoliate mountain *Beupleurum*. 17. The willow leav'd ſhrubby *Beupleurum*, called by many the Æthiopian ſeſeli. 18. The graſſy leav'd ſhrubby Spaniſh *Beupleurum*. 19. The prickly, graſſy leaf'd ſhrubby Spaniſh *Beupleurum*. 20. The Portugal *Beupleurum*, with long rigid graſſy leaves. *Tournef.* Hiſt. p. 310.

HARENARIA, in botany, a name uſed by ſome authors for the buckſhorn plantain. *Ger.* Emac. Ind. 2.

HARENGIFORMES, in ichthyography, a genus of fiſhes approaching to the herring in ſhape, the principal character of which is, a ſerrated line made up of ſcales running along the bottom of the belly; to which may be added, that the ſides and belly are of a bright ſilver colour, and that the ſcales are large and looſe. *Willughby*'s Hiſt. Piſc. p. 218.

HARENGUS, in zoology, the common *Herring*. The characters by which this fiſh is diſtinguiſhed from the reſt of the fiſhes which approach to it in ſhape, and which are thence called *harengiformes*, are theſe. Its uſual length is ſeven or eight inches, tho' it ſometimes grows to a foot. Its head is flatted, and its mouth placed upwards; its back is a bluiſh brown, and its belly and ſides white, and where the ſcales are off, of a ſilvery brightneſs; the ſcales are large and round; it is not at all ſpotted; and its belly is ſharp, and as it were prickly, a row of denticulated ſcales running all along it; its ſide lines are ſmall, and ſcarce diſtinguiſhable; the lower jaw is longer and more prominent than the upper; its gills are four in number, as in other fiſhes, but their teeth or fibres are remarkably long; it has one fin on its back, which is in the midway between the head and tail; and the tail is forked. *Willoughby*'s Hiſt. Piſc. p. 219.

HARENGUS *Minor Indicus*, in zoology. See the article BLICEA *marina*.

HARMALA, *Harmel*, or *wild rue*, in botony, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, conſiſting of ſeveral leaves arranged in a circular form. The piſtil ariſes from the flower cup, and becomes a roundiſh, tricapſular fruit, uſually containing oblong ſeeds. The leaves in this genus always are placed alternately on the ſtalks; and we have only one known ſpecies of it, which is the plant uſually called *wild rue* and *Harmel*. *Tournf.* Hiſt. p. 257.

HARMONICA, (*Cycl.*) among the antient muſicians, is defined by Ptolemy, a perceptive power of the differences of ſounds, according to acute and grave. Vid. Ptolem. pag. 1. Edit. Wallis.

HARMOS, a word uſed by the old medicinal writers for the fleſh growing between the teeth.

HARP, in the manege. See GRAPPLE, *Cycl.*

HARPAX, a name given by ſome naturaliſts to amber, and by ſome of the chemiſts to quicklime, and by others to ſulphur.

HARPE, in natural hiſtory, the name of a kind of ſhell-fiſh of very great beauty. It is of the genus of the dolium, or concha globoſa. See LYRA.

HARPEGGIATO, or HARPEGGIO, in the Italian muſic, ſignifies the cauſing the ſeveral ſounds of one accord to be heard, not together, but diſtinctly one after the other, beginning with either at pleaſure, but commonly with the loweſt. Vid. *Broſſ.* Muſc. Dict. in voc.

HARRIGATE *Well-water*, a ſtrong ſulphureous water, containing beſides ſulphur, marine ſalt, and nitre, or nitre only and earth. See Dr. *Short*'s Hiſtory of the Mineral Waters of Yorkſhire, &c.

HARSCHEF, in botany, the name by which Aviſenna, Serapion, and the reſt of the Arabian writers call the cinara, or hartichoke. Some who have been puzzled for an etymology for the word hartichoke, or artichoak, as we differently ſpell it, have ſuppoſed that it was derived by corruption from this Arabian word *Harſchef*, which the Engliſh phyſicians, who practiſed according to the rules of Serapion and Aviſenna, might bring into uſe, and adopt in their own language, as the name of the ſame plant.

The

The word *Harſchef* ſeems however like the word cinara, and all the other names of the artichoak, to take in alſo another plant of the ſame kind called by us the chardoon, a ſort of garden thiſtle, the tender ſtalks of which are earthed up and blanched, and are eaten by us, and were ſo by the Greeks. The moſt modern accounts of the Perſians tell us alſo, that they eat the young ſhoots and tender ſtalks of the *Harſchef*, which, as the artichoak plant is not uſed for blanching in this manner, probably ſignifies in this ſenſe the chardoon.

HART (*Cycl.*)—*Harts* at one year old have no horns, but only bunches; and at two years they are very imperfect, being ſtrait and ſingle; at three years old they grow out into two ſpears; at four into three; and ſo increaſe every year in number of branches, till they are ſix years old; but after that their age is not to be known by their heads. February and March are the months in which they caſt their horns; and in general the older ones caſt them ſooner than the young ones. Thoſe that have been injur'd at rut, or which have been gelded, never caſt them at all; if they are gelded while young, they never have any horns; if after their horns are grown, they keep thoſe which they had on at the time, as long as they live. The horns of ſome are reddiſh, thoſe of ſome black, and thoſe of others finally are white. The red horns are generally the largeſt and ſtrongeſt, the black are uſually ſhorter, and the white are worſt of all, being the leaſt ſolid or ſtrong.

This animal is the moſt cunning in its care of itſelf of all the deer-kind. It is the moſt timorous of any, and by its windings and turnings and other ſubtilties, as the running among herds of cattle, often deceives the huntſman, and puts a foil upon the dogs. In the chace, which generally is a long one, he takes over hedge, ditch, or river, or whatever comes in his way, nothing ſtopping him.

This creature loſes its horns in the ſpring time, as the other deer do; but, during the time that it is without them, does not appear, but abides in the thick woods, and only comes out in the night time for food.

HART's *Tongue*. See LINGUA *Cervina*.

HART, or STAG-*Evil*, in the manege, a ſort of rheum or defluxion that falls upon the jaws, and the other parts of the forehand of a horſe, which hinders him from eating: Sometimes alſo this diſtemper affects the parts of the hinder quarters.

HARTANITHE, in the materia medica of the antient Arabs, was one of the names of the ſtruthium, or lanaria herba of the Greeks and Romans, a kind of thiſtle the root of which was uſed in the cleaning of wool. Aviſenna, following the Arabic tranſlation of Dioſcorides extant in his time, gives, under this name, a deſcription of the leontopetalon, and the virtues of the cyclamen, or ſow-bread; but he finds out the error himſelf, and charges it upon the interpreter; acknowledging that in his time *Harthanitha*, or artanita, was not a name either of ſow-bread or of the leontopetalon, but of the ſtruthium. See CYCLAMEN.

HARTSHORN (*Cycl.*)— HARTSHORN *jelly*, in medicine, is nutritive and ſtrengthening, and is ſometimes given in diarrhœas; but a decoction of burnt *Hartſhorn* in water is more frequently uſed for this purpoſe, and is called *Hartſhorn-drink*.

The ſalt of *Hartſhorn* is a great ſudorific, and given in fevers with ſucceſs; its ſpirit is a volatile alkali, and of frequent uſe.

HARVEST-*Fly*, *Cicada*, in natural hiſtory, the name of a large fly, remarkable for the noiſe which it makes in the ſummer months, and particularly about the time of *Harveſt*. The generality of authors have very improperly tranſlated *Cicada* by the Engliſh word graſshopper; but this is extremely erroneous, the *Cicada* having not the leaſt reſemblance to the graſshopper. It is called the Cigale in France in the provinces of Languedoc, *&c.* it is very common in that country: Italy and all the hot countries abound with it; and it is in moſt of theſe places called by the common people by a name expreſſing the *Harveſt-fly*; but in England we have not the inſect, and few of us have any notion of what it is. It is probable, that people who found the *Cicada*, according to the deſcriptition of the antients very noiſy, fancied the graſshopper muſt be the ſame creature, this being of all our inſects the moſt noiſy in the ſummer months.

The *Cicada* is a large four-wing'd fly; its body is ſhort and thick, and its wings long and large: The great or common *Cicada* is by far the largeſt of all the known ſpecies of ſhort-bodied flies, and the ſmaller kinds are larger than the hornet. The head of the *Cicada* is ſhort and obtuſe, the eyes are reticulated as thoſe of other inſects of the winged kind, but they are ſmaller in proportion to the ſize of the body, than thoſe of moſt other ſpecies; they are placed at the two ſides of the back part of the head, and leave a very large naked ſpace of forehead between them, the breadth of this plain ſpace is not leſs than that of the breaſt of the animal, and it therefore makes a very ſingular figure. The reticulated eyes are of an oblong figure, and are cut into a vaſt number of faces, and between theſe there are in the plain ſpace of the forehead three other ſmall and ſhining eyes, reſembling thoſe of ſpiders, and placed in a triangle. The corcelet, or breaſt of this fly is divided into two; the head is fixed to the anterior diviſion, and the body to the other; the anterior has a triangular figure delineated upon it in creux, and the poſterior to which the body is fixed has a ridge in the middle, riſing above the reſt of the ſurface. *Reaumur*'s Hiſt. Inſ. vol. 9. p. 186.

The two pair of wings are of the membranaceous kind: The outer pair are greatly the larger, they are compoſed of an extremely thin membrane, ſupported by ſome ſtrong nerves or ribs; theſe are joined to the poſterior part of the corcelet, near the place where it is joined to the anterior; and the under wings, which are ſmall, are affixed to the other end of this part of the corcelet, near where the body is joined to it. Theſe wings form a ſort of tent or canopy over the body, yet they are ſo placed as to leave a part of it naked: The body is compoſed of eight rings, including that part which terminates it: The firſt ring, or that which joins to the corcelet, is much larger than any of the reſt: The laſt ring in both ſexes, is long and ſlender; but in the female it is more remarkably long, than in the male: The body is perfectly ſmooth, there being very little hairyneſs on any part of the animal, and what little there is being placed on the corcelet, and about the reticulated eyes. Theſe are the parts which are ſeen on viewing the upper ſide of this animal; but the great curioſity is the turning the belly upwards; in this poſition there come in view the trunk, and the remarkable organization with which the female makes the holes in which it buries its eggs. In this view are alſo ſeen the organs, by means of which the creature makes that noiſe, for which it has been admired for ſo many ages. Theſe are things extremely worth a curious examination, and are as diſtinctly ſeen and underſtood in a dead *Cicada*, as in a living one.

Ariſtotle, and the other antient writers who have treated of the *Cicada*, have mentioned two ſpecies; which they have diſtinguiſhed by the names Achetæ and Tettigoniæ. Theſe have been generally underſtood to mean the two general kinds now known: The achetæ being our large *Cicada*, and the tetigoniæ our ſmall ones; but Mr. Reaumur has added to theſe two general kinds a third, which is of a middle ſize between the other two. This he ſuppoſes to have been the tettigonia of the antients, and ſeems very confident that our ſmall kind was wholly unknown to them.

Theſe three kinds do not only differ in ſize, but alſo in colour. The large kind is of a deep and blackiſh brown, with a little yellow on the breaſt, and on ſome of the rings of the body. The middle-ſiz'd kind is of a paler brown, and has much more of the yellow in it, particularly it has on the body two croſs lines of yellow, which repreſent in ſome ſort the letter X. The third kind, or ſmalleſt of all, are called Cigalons by the French; they are very different from both the others, having a reddiſh caſt on the body, and more yellow than the largeſt, and leſs than the middling kind. Theſe diſtinctions we owe to Mr. Reaumur, who very candidly acknowledges, that he had not ſo great opportunities of examining the *Cicadæ* of different countries as he could have wiſh'd; and is of opinion, that farther obſervations will give us ſeveral more kinds of them. *Reaumur*'s Hiſt. Inſ. vol. 9. p. 191.

When the large *Cicada* is examined on the under part, the belly is found to be of a dirty yellowiſh colour, ſurrounded on each ſide by a line or band of brown: This is a continuation of each extremity of every one of the upper rings of the body which are brown, and which at the two ſides of the animal fall over the under rings, or parts of the rings which form the belly. The antennæ are extremely ſhort and ſmall; they are inſerted juſt cloſe to the eyes, and when viewed by the microſcope they are found to be each compoſed of five pieces joined nicely together at the ends, and to be of a conic figure, the baſe being ſomewhat broad and the extremity terminating in a point. The anterior part of the head is covered with a ſort of conic piece which equals the diameter of the head between the eyes at its baſe, and thence terminates by degrees in a ſmaller point, the whole being bent under the head and reaching beyond the inſertion of the firſt pair of legs; to the extremity of this piece is fixed the trunk of the *Cicada*, an organ diſtinct to receive other food than what the antients allowed this creature, for their opinion was that it lived wholly upon the dew. In its firſt ſtate it has a ſtrong trunk, by means of which it feeds on the juices of the roots of plants during its abode under ground in this ſtate; and this trunk ſeems continued to it after its change into the fly-ſtate, and is made the ſame uſe of by the animal; it continually thruſting it into the ribs of the leaves of plants and trees to ſuck their juices by way of food for itſelf. Sometimes alſo the large *Cicada* will pierce the bark of a tree, in order to come at the ſap; and in this caſe, as it is difficult to get it into ſo hard a ſubſtance, ſo it is alſo hard to get it out: Perſons who have caught the *Cicada* on the branches of trees have frequently found the trunk thus engaged in the bark, and the creature has found it a matter of difficulty to get it out again. This trunk is very tender and delicate, and is well defended from injuries. When the extremity of the conic piece which covers the under part of the head of the *Cicada* is examined, there is ſeen growing from it a long and ſlender cylindric body of the length and

thickneſs of one of the ſmaller ſort of pins; this lies flat upon the breaſt and belly, reaching from the extremity of this piece to the inſertion of the third pair of legs. This, however ſmall and delicate it appears, is not the trunk of the animal, but is only the caſe or ſheath of it, deſtin'd to preſerve it from injuries. This is of a cartilaginous ſubſtance, and has a longitudinal fiſſure running all along it which the creature can ſhut or open at pleaſure for the cloſing up or exerting the trunk, which is an extremely tender and delicate long filament contained in it. The males among the *Cicadæ* only ſing; but this is a circumſtance determined but lately, and that only among the more accurate obſervers. The antients and the country people at preſent in places where the *Cicadæ* are common, declare juſt on the oppoſite ſide of the queſtion, that it is only the females that ſing; and this is an error owing to the figure of the hinder part of the body of the female, which has been uſually taken as a character of the male: The ſexes have been thus generally miſtaken one for the other; and Malpighi acknowledges that he was very near falling into it himſelf, having with the reſt of the world miſtaken the cylindric part at the extremity of the body of the female with which ſhe pierces the bodies in which ſhe lays her eggs for the penis of the male. *Reaumur*'s Hiſt. Inſ. vol. 9. p. 198.

It has been the common opinion, that the noiſe which the *Cicada* makes was occaſioned by a ſwift motion of the wings and their rubbing againſt the breaſt, and the grating of the under pair of wings in their paſſage againſt the upper ones; were this the caſe, there is no reaſon why the female *Cicada* ſhould not make this noiſe as well as the male, ſince ſhe has wings and all the other requiſites to ſinging, according to this ſyſtem; but in reality the matter is far otherwiſe, and the bare inſpection of the body of the male *Cicada* will ſhew that the noiſe is owing to other cauſes. If we are determined to call nothing a voice but the articulation of air thrown from the lungs in its paſſage through the larynx and other parts, then the *Cicada* has properly indeed no voice; but if we extend the meaning of the term farther, and take in the ſeveral ſounds made by inſects in other manners yet intelligible to other inſects, we muſt allow the *Cicada* has a voice, and a very ſtrong one, the organs of which are not in the lungs and throat, but in the belly.

On examining the belly of a large male *Cicada* there are found two large ſcaly ſpots very different from the reſt of the ſubſtance of the rings; theſe are not found in the female, and are of the ſhape of the half of an oval cut through its ſhorter axis, one ſide of them terminating in a ſtrait line, and the other part being rounded; theſe are fixed without any articulation to the lower part of the lower corcelet or breaſt, their ſtrait edge being firmly united to it; they are ſo large that they meet in the middle of the belly, covering in part one another, and are ſo long as to reach to the third ring at their rounded ends. If theſe pieces be raiſed with the point of a pin, and the part of the belly which is covered by them be nicely examined, there is found a very curious ſtructure of the parts; and there can remain no doubt but that theſe are the organizations deſtin'd to ſerve the male, in whom only they are found, to make that noiſe for which he is ſo famous. Theſe are ſo nicely formed that the ſtructure of our own throats is not more admirable than that of the parts by which the *Cicada* makes its noiſe. There is a cavity formed in a very ſingular manner in the anterior part of the belly of the creature: The firſt ring of the body is cut to form it, and the ſecond is drawn back, and the upper part of this cavity is ſurrounded by a rim or edge much ſtronger than the common matter of the rings of the body; this cavity is rounded at the ſides, and in the middle there runs up a ſmall oblong membrane toward the head. The cavity is divided into two parts by a ſcaly triangle of a convex figure, where it is in ſight; the baſe of this triangle is at the breaſt, and the apex runs to the belly, and meets the oblong membrane before-mentioned running under it. In the middle of the triangle there riſes alſo a rib which runs to the membrane, and joins with it; this raiſes the triangle to a level with the reſt of the belly. At the bottom of each of the cavities that the triangle divides the larger cavity into, there is ſeen a poliſh'd and reſplendent part looking like a ſemicircle, the one edge of it being fixed to the triangle that divides the cavity, and the other following the round of the other parts of it. Theſe reſemble two pieces of extremely thin and tranſparent glaſs, or extremely fine flakes of talc, the fineſt glaſs or pureſt talc not being more perfectly bright or tranſparent. When they are viewed ſideways we perceive all the rainbow colours upon them. It ſeems as if the *Cicada* had two windows covered with the fineſt glaſs, by means of which we are able to look into the body and ſee all that paſſes there; but theſe windows are generally cloſed with a ſort of ſhutters made by the ſcaly piece which covers the whole cavity. We may eaſily obſerve, that the ſound or noiſe made by the *Cicada* comes from this cavity, and ſhall then eaſily conceive that this fine membrane is only placed there to modify it. This ſound, tho' not agreeable to our ears, may pleaſe the female, and that is all that was intended by it, ſince it is only to her that the male deſires to ſing. The piece which covers the whole cavity is moved up and down in the making this noiſe; but nature has provided a ligament to prevent its riſing too high, and a ſupport to prevent its ſinking too low into the cavity of the belly. And finally there is a white membrane going from the anterior part of the cavity to the thorax. While many have ſuppoſed the noiſe made by the *Cicada* to be produced by the motion of its wings: Many others have been convinced that it was made by this part, becauſe none of the *Cicadæ* but thoſe which have this organization, that is, none but the males ſing.

Some have ſuppoſed that the rings of the body in bending it quickly backwards and forwards made the noiſe by their rubbing againſt the piece which covers the cavity, but it is eaſy to be aſſured that this is not the caſe, ſince in rubbing theſe ever ſo briſkly together by bending the body between the fingers there is no ſuch noiſe made: Others have judg'd that the ſound proceeded from the fine tranſparent membrane that lies extended at the bottom of each cavity, but there is no finding the pieces which they ſuppoſe to ſtrike upon this membrane: Finally, others ſuppoſe it to ariſe from the bending and again extending of the membrane, which goes from the lower edge of the cavity to the thorax; but it is eaſy to find alſo upon tryal, that the bending and unfolding of this by moving the body in different directions between the fingers makes little or no ſound. When the upper rings of the back are taken off, there are ſeen two extremely large and ſtrong muſcles running from the corcelet toward the belly, and meeting in an angle at the extremities. It is wholly by the motion which this ſtrong muſcle puts the parts contained in the cavity into, that the noiſe of the *Cicada* is produced; and even after the creature is dead and dry if this muſcle on either ſide be raiſed a little with a pin, and then ſuffer'd to fall back into its place, it makes the parts in ſome ſort perform their motions; and there is the ſame noiſe produced that the *Cicada* makes while living, only that it is more faint. The parts deſtin'd to the making this noiſe are not all contain'd in the cavity above deſcribed, but there is a triangular eminence on the firſt ring of the body, on each ſide in the male, which the females have not; this covers a part of the mechaniſm of this ſound, and this may be eaſily raiſed with the point of a knife, without hurting the part within; there is then found under this one of the principal organs of the ſound. This is a membrane of a very rigid nature, always form'd into ſeveral folds and wrinkles, and which when ſtruck upon yields a ſound like that of parchment when ſtruck upon. When we draw over this membrane a piece of paper rolled up, or any other ſoft body that is not able to hurt it, we find it immediately make a noiſe which is owing to the bending inwards of ſome parts of it which ſtood convex by means of the folds, and their immediately throwing themſelves out again in the manner of a piece of ſtiff parchment, or any the like ſubſtance. The ſound that we thus make is produced by the making ſome parts of the membrane concave which were before convex, and then ſuffering them to return to their former convexity, by means of their own elaſticity. This is eaſily performed in very quick times by the long and ſtrong muſcles before deſcribed; each of theſe is placed behind or on the concave ſide of one of theſe folded and ſonorous membranes. Its fibres are all faſtned into one or other part of this membrane, and it is very plain from hence, that the contraction of this muſcle muſt pull in the whole convex ſurface and render it concave by drawing the convexity to its ſide, and the remiſſion of the action of this muſcle muſt let the whole return into its former ſtate; this when done ſuddenly cannot be done without the noiſe that we have before deſcribed. The muſcles are capable of a very ſwift contraction and dilatation of this kind, and to that is owing the repeated noiſe of this membrane in unfolding itſelf, which makes the ſound of this creature. *Reaumur*'s Hiſt. Inſ. v. 9. p. 218.

The antients have obſerved that the tettigonia or ſmall *Cicada* did not ſing ſo well as the large, and this is plainly explain'd by the ſtructure of this membrane, which in the middle and ſmall kinds is longer than in the larger ones, and is carried up under the firſt ring of the body, and cannot be acted upon ſo ſtrongly by the muſcles which are the origin of the ſound. The tranſparent membrane at the bottom of each of the cavities is alſo much ſmaller in proportion to the ſize of the body in the little *Cicada* than in the great one; and the whole ſtructure of the parts ſhews, that tho' the membrane which cauſes the ſound be in theſe proportionably as large as in the male, yet all the other parts are leſs qualified to act upon it, and to raiſe the ſound; the muſcles are placed in theſe, juſt as in the great kind.

Tho' the female *Cicada* wants the organs of ſinging of the male, ſhe has however a part in her body which the male has not, and which deſerves a peculiar attention. The eggs of the *Cicada* muſt be lodged in the ſubſtance of wood, in order to their happily ſucceeding in the hatching, and the inſtrument of the female is intended for the purpoſe of lodging them properly. The creature makes long cavities in the wood, and in theſe places her eggs in the moſt nice order imaginable; and the inſtrument, by means of which ſhe does this, is larger and more remarkable than that of any other

inſect deſtin'd to the ſame purpoſe; it is made of a ſort of horny matter, as all theirs are, and has many obſervable peculiarities, which are ſeen even by the naked eye. This inſtrument in the larger ſpecies of *Cicadæ* is nearly half an inch long. In both the male and female of this inſect the body is terminated by a conic part, but this in the females is longer than in the males, and is larger at the baſe; this makes the body of the female appear longer than that of the male. In the female this conic part is all of one piece, not compoſed of two halves, as in the male; and this is ſlit all the way down to give paſſage to the inſtrument on occaſion. The inſtrument lodg'd in this is called by authors the piercer: It has its own peculiar ſheath over it, and this conic part of the body only ſerves to make a general covering for both. If the belly of the *Cicada* be gently preſſed between the fingers, this inſtrument ſhews itſelf in its whole length; it is alſo ſeen naked, for its peculiar caſe or ſheath does not follow it out of the body, but is fixed in part to the baſe of the conic end of the body. This inſtrument is oblong and cylindric, nearly of a bigneſs all the way, except that it is a little larger at the extremity than elſewhere, and terminates in a ſharp point which is notched with nine teeth on each ſide. A very exact account of this inſtrument is given at large in Reaumur, to whom we refer the reader. *Reaumur*'s Hiſt. Inſ. v. 9. p. 218.

Moſt other inſects which lodge their eggs in wood, do it in the young ſhoots and tender branches of ſhrubs and trees while yet living, where the eggs receive juices and nouriſhment from the ſap. See the article ROSE-*fly*.

The *Cicada*, on the contrary, knowing that her eggs only want a proper lodgment, not a nouriſhing juice, always lays them in dry or dead ſticks. The creature never regards what kind of wood ſhe meets with, but ſeizes the dead twigs of any tree, and bores a row of holes in it, putting an egg into each. The twigs which have theſe eggs in them are eaſily known by their appearing uneven and full of elevations over the places where the eggs are. The common courſe of the operation throws off the bark, but the ſmall fragments of the wood cut to pieces in making the hole uſually remain upon the place, and theſe make ſo many little hillocks which all point regularly one way, as the animal keeps one direction in making them all. In order to diſcover the mechaniſm of theſe holes, it is neceſſary to ſplit off a thin piece of the branch in which they are made, and it is common then to ſee ſeveral of them diſtinctly. The creature uſually chuſes ſuch trees as have a pith in their young branches, ſuch as the mulberry and the like; and when ſhe has pierced to the pith, ſhe never wounds the wood on the other ſide, but carries on the hole in the center to the whole length of her piercer. The length of this hole makes it a proper lodging for a number of eggs, often nine or ten; ſometimes but four or five are placed in each; theſe are oblong and pointed at both ends, and of a white colour. The number of eggs laid by every female is very great, for on opening the body of one of them there are uſually found more than an hundred and fifty in each ovary, in thoſe which are leſs filled than the common ones; and ſome authors mention the finding in the whole ſix or ſeven hundred eggs in thoſe which are full and have not begun to lay. The holes where the eggs are depoſited, are all carefully ſtopped up by the creature, to defend them from being eaten by other ſmaller inſects. Some have ſuppoſed that the female to this purpoſe covers them with a viſcous fluid ſecreted from her body; but there is no appearance of any thing of this kind to be found on examination; on the contrary, the method ſhe uſes is this, ſhe carefully places the duſt or ſmall fragments of the wood which ſhe cuts out on one ſide of the hole, and when ſhe has done, ſhe draws them into it again, making it receive as much of them as its cavity will admit; thus the orifice is well ſtopp'd, and the reſt of the duſt is piled up in a hillock over it. On opening the ſticks in which theſe eggs are placed at different ſeaſons, there are found two ſorts of inſects of different kinds, the one an oblong worm without legs and arm'd with four teeth, the other a ſhorter animal of the ſhape of a flea, and having ſix legs. Theſe laſt are the produce of the eggs of the *Cicada*, the others are the offſpring of an ichneumon fly, and are only depoſited there to feed on the proper inhabitants. The ſix-legg'd inſects have a ſmall head bending down under the body, and lengthening out into an appearance of a ſort of trunk, and the head is as it were cleft in two. Theſe creatures depoſit their firſt exuvia in the neſt, and after this they come out at the ſame hole at which the egg was let in, and they are no ſooner out than they fall to the ground, and immediately make their way into it and bury themſelves; they live ſome time under ground in the form of a hexapode worm, with a trunk, but without the fiſſure ſeen in the head of the young ones while in the neſt. After living ſome time under ground they become transformed into a ſort of nymphs, which have alſo a motive power, and have yet a part of their growth to attain to: Theſe nymphs were well known to the antients; Ariſtotle has deſcrib'd them under the name of Tettigometræ, or mothers of the *Cicadæ*. Theſe nymphs are of a dirty brown colour, and differ principally from the hexapode worms, in that the caſes of the wings of the future fly are eaſily ſeen in this ſtate, but not at all in that of the worm. The head of the nymph is of the ſame ſhape with the head of the ſucceeding fly, and has its trunk placed in the very ſame manner, and covered with the ſame ſort of ſheath or caſe. The double corcelet is divided in the ſame manner in the nymph as in the perfect *Cicada*, and the rings of the body may be as eaſily counted; but the parts which characterize the different ſexes, are not to be ſeen in theſe. The ſounding organs in the belly of the male, and the piercer at the hinder part of the female, never ſhew themſelves till the creature is in its perfect ſtate. *Reaumur*, Hiſt. Inſ. vol. 9. p. 235.

The moſt remarkable thing in the nymphs of the *Cicadæ* is their anterior pair of legs; theſe are made ſomewhat in the ſhape of a crab's claws, having a kind of foot at the ends; and theſe are armed with a ſort of hooks, which authors call claws, from their reſemblance to the claws of a bird's foot. Theſe legs ſeem admirably contrived for the creature to make its way into the ground, and travel under it at its pleaſure. The other four legs of the nymph of the *Cicada* have nothing remarkable in them, but are terminated by a ſort of claws, inſtead of the large feet which terminate the others. The ſtructure of the anterior feet of this animal is extremely neceſſary to it; for it is frequently found at two or three feet depth in the earth, in winter, having often made its way through a ſtiff clay to that depth. As the young are always hatched in the branches of trees, the old ones depoſiting their eggs in no other place, ſo theſe nymphs are uſually found in the earth, about the roots of trees, and find their nouriſhment in ſucking their roots. The creature remains in this nymph ſtate two years, and when the time of its final transformation into the fly ſtate approaches, it leaves the earth, and crawls up the body of the tree, and there faſtening itſelf to ſome of the branches, it changes into the fly, in the manner that all the other creatures paſs into that ſtate, that is, by breaking through its ſeveral coverings, by means of the repeated inflations of its body. When the fly firſt comes out of this caſe, it is green, but it becomes brown by degrees, and in a few hours loſes all its firſt agreeable colour.

Theſe inſects are extremely troubleſome, by their noiſe, in moſt of the hot countries: They are now made no uſe of any where; but we find that the antients revenged themſelves of their noiſe by eating them. They accounted them an excellent diſh in all their ſtates; but the nymph, or tettygometra, was what they were moſt of all fond of; they alſo eat them in the fly ſtate, and were ſo nice as to diſtinguiſh their ſexes and ſeaſons. They preferred the females when they were full of eggs, and the males before that time, while they were full of the ſemen. *Reaumur*, Hiſt. Inſ. vol. 9. p. 236.

HASCHE, in botany, a name by which ſome authors have called thyme. *Ger.* Emac. Ind. 2.

HASELA, in zoology, the name of a freſh water fiſh, of the malacoſtomous or leather-mouth'd kind, called, by ſome, a ſpecies of the mullet, by others, of the chubb; and in many places, the haſler. It is a ſmooth, ſoft, and ſmall fiſh, of an oblong and ſlender body, and ſeldom exceeding ſix or ſeven inches in length. It is of a blackiſh green on the back, and a ſilvery white on the belly. Its tail, and its back fin are of a bluiſh hue, the other fins are ſomewhat red. The ſcales are large, thin, and fimbriated at their edges. Its ſide lines are dotted, and are nearer the back than the belly. They are eſteemed a good fiſh, at ſome ſeaſons of the year, for the table, but at others they are ſaid to breed worms, and be very unwholeſome. They are caught in lakes and rivers; but thoſe from running waters are eſteemed the beſt; and April and May are accounted the months in which they are in higheſt ſeaſon; they are eaten alſo in June and July, but ſeldom after thoſe months. *Willughby*, Hiſt. Piſc. p. 261. *Geſner*, de Piſc.

HASINELLAS, in the glaſs-making trade, are a number of hooks faſtened to the ſides of the working furnace, by means of which the workmen are able to reſt and turn their veſſels as they ſcald them. *Neri*'s Art of Glaſs, p. 242.

HASSA *Alrhai*, in the materia medica of the Arabian phyſicians, a name given to a plant, the virtues of which they commend on many occaſions.

The meaning of the words *Haſſa Alrhai* is virga paſtoris, ſhepherd's rod; and hence many have been led to ſuppoſe, that the plant we call virga paſtoris, or dipſacus minor, the ſmaller teaſel, or ſhepherd's rod, has the virtues given to the *Haſſa Alrhai*, and was the ſame plant. But though it happens that the names of theſe two plants agree in ſignification, there is nothing elſe in which they agree, the *Haſſa Alrhai* being the ſame plant with the polygonum of the early writers, which, with the epithet of maſculum, ſtood for the common knotgraſs; and when the word fæmininum was added, ſignified the common equiſetum, or horſetail, which was called polygonum, for the ſame reaſon that the knotgraſs was; that is, becauſe its ſtalk was compoſed of a great number of joints. Theſe two plants agree in the virtues of agglutinants and aſtringents, neither of which virtues our virga paſtoris has any title to.

HASTATED *Leaf*, among botaniſts. See LEAF.

HASTATI, among the Romans, ſoldiers armed with ſpears, who were always drawn up in the firſt line of battle. *Hofm.* Lex. in voc. See BATTLE.

HASTE, or QUICKEN *your Hand*, in the manege, called, in French, *Hatez le Main*, or *Hatez*, *Hatez*, is an expreſſion frequently uſed by riding-maſters, when a ſcholar works a horſe upon volts, and the maſter has a mind he ſhould turn his hand quicker to the ſide on which the horſe works; ſo that if the horſe works to the right, he turns quicker with his ſhoulders to the right. And the contrary is obſerved, if the horſe works to the left.

HASTING *Pear*, a name given, by the gardeners, to a ſpecies of *Pear*, called alſo by ſome, the green chiſſel *Pear*. This is a moderately large *Pear*, and is longiſh toward the pedicle; its ſkin is thin, and of a whitiſh green; the pulp is melting, and of a ſugary flavour. It ripens in July.

HATCHES (*Cycl.*)—HATCHES, in mining, a term uſed, in Cornwal, to expreſs any of the openings of the earth, either into mines, or in ſearch of them. The fruitleſs openings are called eſſay *Hatches*; the real mouths of the veins, tin *Hatches*; and the places where they wind up the buckets of the ore, wind *Hatches*. See the article WIND *Hatch*, &c.

Coamings of the HATCHES, in a ſhip. When the *Hatches* are raiſed up higher than the reſt of the deck, thoſe planks, or pieces of timber, which raiſe and bear them up, are called *Coamings* of the *Hatches*.

HATCHET, (*Cycl.*) a ſmall ax, uſed by the pioneers, who go before to prepare the ways for an army, by cutting down hedges, buſhes, ſtyles, or gates. The grenadiers carry ſometimes each a *Hatchet* by his ſide; and the French dragoons, who have but one piſtol, have a *Hatchet* hanging at their ſaddle-bows, on the right ſide.

HATUMURUNGHA, in botany, a name by which ſome authors have called the tree whoſe fruit is the ben nut, the balanus myrepſica, or glans unguentaria, and whoſe wood is the lignum nephriticum of the ſhops. *Herm.* Muſ. Zeyl. p. 62.

HAVELDA, in zoology, the name of a bird of the duck kind, common in Iceland, and known, among the natives, by this name, called, by authors, *Anas caudata Iſlandica*, the long-tail'd Iceland duck. It is ſmaller than the Wigeon, and has a very ſmall flatted head; its feathers round about the eyes are white; in other parts of the head, black, with a mixture of grey; the neck is of the ſame colour; the back is of a bluiſh black, and the rump variegated with black and white; the tail is compoſed of four black feathers, two of which are nine inches long, the other two not more than three inches; the breaſt, throat, and half the belly are black; the reſt of the belly is white. *Ray*'s Ornithol. p. 290.

HAUBERGETTUM, in our old writers, the ſame with halsberga and habergeon, which all ſignify a coat of mail. *Fleta.* lib. 1. c. 24. *Blount.*

HAUNCH, or HIP, in the manege. To make a horſe bend, or lower his *hips*, you muſt frequently make him go backwards, and make uſe of the aids of the hands, and of the calves of your legs, in giving him good ſtops; and if that does not ſucceed, he muſt be tried upon a *calcade*, or ſloping ground, after the Italian faſhion.

Head in, and *Hips in*. See HEAD.

To gallop with the *Haunch in*. See GALLOPADE.

HAUSTELLUM, in natural hiſtory, a name given, by ſome authors, to a peculiar kind of ſhell-fiſh, of the purpura kind, which the French have named the *Becaſſe*, and we the woodcock ſhell. It is remarkable for its extremely long and ſlender beak. There is a very elegant echinated or ſpinoſe kind, and two or three ſmooth ones. See BECASSE.

HAUSTILIA *Succina*, in natural hiſtory, a term uſed to expreſs that kind of amber, or, more properly ſpeaking, thoſe maſſes of amber which are obtained by dragging the bottoms of the ſea near Pruſſia, or found on the ſhores, in diſtinction from thoſe pieces which are found foſſile in the ſame or other kingdoms. Hartman has evidently proved, that amber is formed of a bitumen, mixed with vitriol and other ſalts; and tho' this is allowed him in regard to the foſſile amber, many diſpute the ſea or *hauſtile* amber, as they expreſs it, being ſo produced. It is, however, very evident, that all amber is of the ſame origin, and probably all the *hauſtile* amber is firſt waſhed into the ſea out of the cliffs; tho' Hartman thinks it very poſſible, that ſome of it may be formed in the earth under the ſea, and be waſhed up thence. The *hauſtile*, or ſea amber, is uſually finer to the eye than the foſſile; but the reaſon is, that it is diveſted of that coarſe coat with which the other is covered while in the earth. *Hartman*'s Hiſt. Succini.

The foſſile amber itſelf very much differs, not only in degree of beauty and purity, but alſo in hardneſs, ſome of it being ſo poor, ſo coarſe, and ſo brittle, as not to be worthy the name of amber; and ſome, that is yet ſomewhat better than this, breaking in the taking up.

This difference in purity, hardneſs, and goodneſs, ſeems wholly owing to the different proportion in which the ſalts are mixed with the bitumen, in the compoſition of the amber; and it is no wonder that the ſea or *hauſtile* amber is never of the ſame coarſe kind with ſome of the worſt that is dug, becauſe ſuch is daſhed in pieces by the waves, and deſtroyed, and only the good preſerved. The *hauſtile* amber is uſually found in irregular maſſes, for the moſt part wholly diveſted of its rough coat, and often broken, ſo that its original ſhape cannot well be aſcertained; but the foſſile amber generally carries the marks of its origin with it, and is either found in form of large drops of a roundiſh or oval figure, or elſe in flatted cakes, formed by the narrow ſpaces it is found in, between the layers of the matrix, which is always a kind of foliated or flakey ſubſtance, by ſome miſtaken for foſſile wood, or the barks of trees preſſed together, though, in reality, it is no other than a bituminous earth coagulated by ſalts, and hardened by the gradual evaporation of its ſuperfluous moiſture by the ſun's heat. Phil. Tranſ. N°. 258. p. 18. See MATRIX.

The vulgar form to themſelves an idea of reſemblances of fruits, ſuch as almonds, peaſe, onions, pears, and the like, in the form of the natural maſſes of foſſile amber; but theſe are only the accidental form of the drops from which it was coagulated. The external ſurface of the foſſile amber is often marked with odd figures: Of the number of theſe are letters according to the alphabets of various languages. Hebrew characters are very common, and the Roman letter S has been often found marked in white, upon a brown piece; but this is all accident.

HAUTIN, in zoology, the name by which ſome call the fiſh, more uſually called *Outin*, and known, among the writers on fiſhes, by the name of *Oxyrynchus*. *Willughby*'s Hiſt. Piſc. p. 187. See OXYRYNCHUS.

HAW (*Cycl.*)—A ſmall parcel of land is ſo called in Kent; as a *Hemphaw*, or *Beanhaw*, lying near the houſe, and encloſed for thoſe uſes. Sax. Dict. But Sir Edward Coke, in an antient plea concerning Feverſham in Kent, ſays *Hawes* are houſes. Co. Litt. 5. See HAGA.

HAW, HAWGH, or HOWGH, is uſed, in the north of England, for a green plot in a valley. *Cambd.*

HAWFINCH, in zoology, an Engliſh name for the coccothrauſtes, called alſo the groſsbeak, and by the Italians, the Friſone. See COCCOTHRAUSTES.

HAWK (*Cycl.*)—The Engliſh legiſlature has thought theſe birds worthy of its protection: Taking their eggs out of any man's ground, is puniſhable by impriſonment for a year and day, and by a fine at the king's will, one half to him, and half to the owner of the ground. Stat. 11 *Hen.* 7. c. 17. See FALCON.

HAWK-*weed*, in botany, See HIERACHIUM.

HAWSE-*full*, or *to ride* HAWSE-FULL, at ſea. See RIDE.

HAY (*Cycl.*)—The herb called *ſaintfoin*, and cultivated in many parts of this kingdom, affords a kind of *Hay* preferable on all accounts to that made from the common graſs, and ſubject to fewer accidents. If the common meadow *Hay* cannot have good weather to be cut in its proper ſeaſon, it will ſerve as little elſe than dung, and yet the charge of cuting and carrying it off the ground muſt not be omitted: But if there be not weather to cut the ſaintfoin at a proper time, we may wait till it is in flower, or even till the flowers are fallen; and then if it ſtill rain on, it may ſtand for ſeed, and will turn to as good account this way as any other; ſo that a field has four chances for one that a meadow of common graſs has.

The ſecond kind, or that which is cut when the plant is in flower, is the common ſort; and this, tho' inferior to the virgin *Hay* of the ſame plant, is yet greatly ſuperior to any other kind of *Hay* propagated in Europe. About three tun to an acre is the uſual produce of this; and the larger and longer this is, the better it is eſteemed. The farmers in Oxfordſhire will go ſeveral miles to purchaſe the large ſtalked ſaintfoin *Hay* for their horſes, when they could have the low leafy ſort at the ſame price near home.

The third ſort of ſaintfoin *Hay*, is the full grown. This is cut juſt when the bloſſoms are fallen off. It is larger and longer than any of the former kinds, and yields a much greater crop as it ſhrinks very little in the drying; but this is not ſo good as the others. The ſeaſon for making this is about midſummer, and the farmer has thus three chances for the making his *Hay*. The manner of making it is this: In a day or two after it is mow'd, it will be dried on the upper ſide, and then it is to be turned, not ſingly, but two and two ſwaths together; for by thus turning them in pairs, there is a double ſpace of ground between pair and pair, which needs but once raking; whereas if the ſwaths were turned ſingly, that is, all the ſame way, the ground would require twice raking, at leaſt the greater part of it would ſo. As ſoon as both ſides of the ſwaths are dry from rain and dew, they ſhould be made up into little cocks the ſame day before the evening dews come on; for it will be much leſs expoſed to the injuries of wet when in theſe little cocks, than when ſpread all over the ground. The virtues of the plant are very ſoon carried away in the lying ſpread upon the ground. A week's lying thus expoſed to the rain and dew, will make it no better than ſo much ſtraw.

The ſaintfoin being larger in the ſtalks than common *Hay*, may be much ſooner put up in cocks, for this prevents the heating and fermenting of the *Hay*, the air having a free paſſage among and into theſe ſtalks, whereas it is excluded in

common *Hay*, whoſe ſlender ſtalks fall cloſe together. Saintfoin, on this account, gets no harm on ſunday's by remaining in the cocks; whereas the laws of this country, tho' not of others, prohibiting the working on this occaſion on that day, the Engliſh farmer often loſes his whole charges by the ruin of his *Hay*, from the cocks not being opened on a wet ſunday.

When the little cocks of ſaintfoin *Hay* have ſtood one night, let them be ſpread out the next morning, and three or four of them then made up into one larger cock; this may be done after they have been ſpread about an hour; and if the weather be unfavourable, they ſhould not be ſpread at all, but three or four cocks lightly ſhook upon one another, ſo as to leave them hollow, and the air a free paſſage between them.

Clover *Hay* will turn black, not only with every little ſhower of rain, but even with any miſt or fog that happens while it is making; but ſaintfoin having thinner leaves, is not ſo eaſily ſpoiled this way. The ricks of ſaintfoin *Hay* ought always to be thatched over as ſoon as they are made. That which is laid up when well dried, will come out of a fine green colour, but that which is ſomewhat wet or damp when put up, will not be green nor black, but browniſh.

Whatever uplands are deſigned to be mowed for *Hay*, are to be ſhut up in the beginning of February, and no cattle ſuffered to come upon them afterwards; but the meadows and marſh-lands, where the graſs grows quicker, need not be ſhut up till April, except the ſpring be bad; and many farmers feed thoſe meadows which are in danger of overflowing till the firſt of May, and then ſhut them up for mowing. *Mortimer*'s Huſbandry.

In ſpring, the ſtones, ſticks, and all other kinds of foulneſs that lie upon the land, are to be picked up, and the mole-hills all levelled and ſpread, becauſe they hinder the mowers. If the meadows lie any thing uneven, or if they have been trodden down in winter, they ſhould be rolled all over with a large wooden roller; the mowers will then be able to cut much cloſer; for this, and the quantity of the *Hay*, will very well anſwer the trouble.

The time of mowing the graſs muſt be proportioned to its ripeneſs; nothing can be more prejudicial to the crop, than the cutting it too ſoon, becauſe the ſap is not then fully come out of the root; and ſuch graſs when dry'd into *Hay*, ſhrinks up almoſt into nothing. It is very wrong alſo to let it ſtand too long, for when the ſeed has been ripened, and is ſhed, the moiſture of the ſap all dries away out of the ſtalks, and they become no better than ſo much ſtubble, as is plainly ſeen in thoſe graſſes which grow in hedges, and not being mow'd, dye away after they have perfected their ſeed, and become taſtleſs and very different from *Hay*. The middle or latter end of June is the general ſeaſon for mowing; and the red flowers of the honey-ſuckle beginning to wither, generally give the farmer notice that the time is coming on. But he may be more aſſured of this, by the tops or heads of the graſs looking full, bending downwards, and looking brown: It is then in the proper ſtate to be cut down.

If there is great plenty of the *Hay*, and it lie thick in the ſwarth, the haymakers ſhould follow the mowers, and turn the ſwarths as they cut them, unleſs there ſeems danger of wet weather; but in that caſe it is better to let them lie in the ſwarth. At night it muſt be made up into little cocks, and theſe in the morning muſt be ſpread again and turned, ſo that the other ſide may wither. After this it is to be made into ſmall cocks again, and the next day it is to be ſpread again, and drawn into long rows, which they call winrows. From theſe it is to be made up into large cocks after a little drying; and theſe large ones, if any wet comes, are to be ſpread open once again before they are carried in.

Mowing of land too often, and continuing it too long, is a very great prejudice to it, unleſs it have the advantage of being fed and renewed by land floods at times. The farmer who has not this advantage to his lands, ſhould feed them once in two or three years, inſtead of making *Hay* from them, unleſs he chuſes to lay on manure conſtantly to keep them in heart. Feeding the *Hay* lands is the ſame ſort of reſpite that fallowing is to corn lands, both very neceſſary and advantageous.

Mr. Boyle tells us, that by ſurrounding glaſſes with refuſe *Hay*, well preſſed and uniformly wetted, it would for ſeveral days afford ſuch a heat, as rendered that of horſe-dung uſeleſs. Works abr. Vol. 1. p. 72.

It is well known that *Hay* laid up wet in ſtacks, often takes fire. Hence the cuſtom of the antients to place their *Hay* ſtacks, or fœnilia, out of their villages.

HAY-*water*, a liquor prepared by the curious, and kept for the examination of the microſcope, as affording numbers of animalcules. *Hay* is not the only ſubſtance uſed to this purpoſe, but either that, or ſtraw, or graſs, oats, wheat, or barley, or indeed any other vegetable production, being infuſed in water, after a few days a whitiſh ſcum or motherineſs will appear upon it, which always contains a multitude of animalcules, and thoſe of very various ſizes, ſhapes, and kinds. Many of theſe are the ſame with ſome of the animals in pepper-water; for there are ſome which are found indifferently in all watery fluids expoſed to the air. The moſt general among theſe, is an oval one, ſomewhat reſembling an ant's egg in ſhape. Theſe are extremely nimble, and run backward and forward with great velocity; ſometimes alſo they will ſtop, and turn ſeveral times with ſurpriſing ſwiftneſs round their own axis. This is owing to a great number of legs or fins which they have, placed in a circular order; nor is this ſtrange motion peculiar to theſe, but is found in many other animalcules.

Another kind there is alſo very like the former, but that they have one end conſiderably ſharper than the other; they always move with this ſharp end foremoſt; they are moſtly tranſparent, but ribb'd longitudinally like a melon; others are only tranſparent at their ſmaller end: Theſe have no legs nor fins. Another ſort are alſo found in theſe infuſions, which are nearly as long as thoſe of the larger ſize in pepper-water; they are very nimble, and have a power of contracting themſelves as they ſwim along. Theſe have ſeveral feet viſible at the end, which ſeems their forepart, and theſe are moſt diſtinguiſhable as the water dries away, and the body of the animal ſhrinks up. Another ſort of animals are found in theſe infuſions, whoſe bodies are ſpherical, but pointed at one end ſomewhat like a pear: Theſe much reſemble bladders filled with water, and there are always ſeen a number of dark particles ſwimming in them. The motion of theſe animals is chiefly a revolving one, they will turn round an hundred times in a minute, firſt one way, and then another, and all the while will never ſtir a hair's breadth out of their place; but they are able alſo, when they pleaſe, to run backwards and forwards very nimbly. *Baker*'s Microſcope, p. 79.

Animalcules in the ſhape of eels are frequently met with alſo in theſe infuſions, and in many other liquors; their ſize is extremely different; ſome being more than a hundred times ſmaller than others.

HAY-*worms*. Beſide the ſmall worms or animalcules bred in water, in which *Hay* has been infuſed, which are only the objects of microſcopical obſervations, we find that it is a proper nidus of itſelf, ſometimes, for a much larger ſpecies of inſect called the *Hay-worm*, whoſe origin and changes have not, as yet however, been properly obſerved. An animal which can be produced from the egg, and grow to its full ſize during the ſhort time that *Hay* is left in the field in making, muſt be very quick in its growth, but yet it is found that multitudes of ſuch are produced, tho' probably few come to perfection, the removing of the *Hay* naturally deſtroying many. In the Philoſophical Tranſactions we have an account of the ſame ſort of inſect breeding among the cocks of barley while left in the field, many millions of them being diſcovered together on ſtirring or lifting up the cocks with a cane. They are alſo found in the barns where barley is laid up, and are ſo numerous that they ſtrow the way the carts go that carry the barley home, by the multitudes that are ſhook off. They are about half an inch long, as thick as a pigeon's feather, and of a whitiſh colour ſhaded with faint ſtripes of a yellowiſh brown. They have fourteen feet, and ſeem evidently by all their marks to be true caterpillars. They are of an offenſive ſmell, and their excrements are hard white pellets of pure flour, like that of barley; whence it is plain that they eat the grain.

HAZLE, *Corylus*, in botony, the name of a genus of trees, the characters of which are theſe: The flower is of the amentaceous or catkin kind, being compoſed of a number of leaves affixed in a ſquammoſe order to an axis; under each of theſe there are placed a number of apices. Theſe flowers are barren, and the embryo fruits are placed in different parts of the tree; theſe finally become a hard and roundiſh ſhell, containing a ſingle kernel, and ſurrounded by a callous fimbriated cup.

The ſpecies of *Corylus* enumerated by Mr. Tournefort, are theſe: 1. The common *Corylus* with a ſmall white fruit. 2. The *Corylus* with a very large round fruit. 3. The *Corylus* with a very long reddiſh fruit. 4. The *Corylus* with a large and long red fruit, covered with a white pellicle. 5. The cluſter fruited *Corylus*. 6. The common wild *Hazle*. And, 7. The dwarf exotic or Conſtantinople *Corylus*. *Tourn.* Inſt. p. 581.

HAZLE-*earth*, in agriculture, a moderately compact earth, much approaching to the nature of the chiſely ſoil, and indeed properly a ſpecies of it, but always containing a large quantity of a reſin-colour'd ſand. *Moreton*'s Northampt. p. 39.

HAZLE-*hen*, in zoology, the name of a bird of the gallinaceous kind, common in the woods of Germany, and ſuppoſed by many to be the *attagen* of the antients.

It is of the ſize of a very ſmall pullet; its belly is all over perfectly white; its breaſt white, variegated with black; its throat is reddiſh, and under the beak black, in the male, but in the female, of the ſame colour with the reſt; it has on each ſide of the head a white line; its head is of a greyiſh brown, and its back and rump much of the ſame colour with the partridge; its ſides are of a yellowiſh or reddiſh brown, variegated with white; its wings are variegated with black, brown, and white, as is alſo the tail, but that has an admixture of red. It is caught in thick woods, and feeds on vegetables. *Ray*'s Ornithology, p. 126.

HEAD (*Cycl*)—The diſeaſes of the *Head* are often miſtaken, even by phyſicians, for thoſe of other parts. Mr. Lieutand, of the French Academy, gives an extraordinary caſe of this kind. A man had a fever, with a violent diſorder of the *Head*; he afterwards was ſeized with a violent cough, and brought up a large quantity of matter. It was not doubted but that this was from the lungs, and no one queſtioned but that the man had an abſceſs there. On opening the body, however, the lungs were found perfectly ſound, and all his diſorder was found to be in his *Head*, where the ſphenoidal, frontal, and maxillary ſinuſes were found ſo full of matter, that they could contain no more.

Some phyſicians tell us, that perſons who are ſubject to diſorders of the *Head*, ought not to take any food at night. Dr. *Bryan Robinſon* of the Food and Diſcharges of Hum. Bod. p. 95.

M. le Dran, in his obſervations on wounds of the *Head*, ſhews how much more dangerous the caſe is, when the cranium does not break by violent blows, *&c.* than when it is fractured, becauſe of the greater commotion of the brain, *&c.* And therefore concludes it neceſſary to perform the operation of the trepan oftener than is commonly practiſed. Med. Eſſ. Edinb.

M. Winſlow has given us ſome very particular and curious remarks on the motions of the *Head* and neck, in the Memoires de l'Acad. Royale des Sciences, An. 1730.

Bleeding in the HEAD. Many phyſicians have been of opinion, that bleeding from the veins of the *Forehead* and temples is more expeditious in giving relief in diſorders of the *Head*, than the like diſcharge by veins more remote from the part affected. There ſeems, however, to be but little foundation for this, and that the bleeding by the jugular vein would much more expeditiouſly anſwer the end propoſed. If the ſurgeon, however, is called upon to perform this operation, he muſt firſt draw a handkerchief or neckcloth as tight round the neck as can be conveniently borne, that by compreſſing the jugular vein, thoſe branches of it may become more turgid and conſpicuous. The vein being opened, the patient muſt hold down his *Head*, that the blood may not trickle down into his eyes or mouth, when the ſtream does not ſpin out with ſufficient force. If the blood does not ſtop of itſelf, after a ſufficient quantity is diſcharged, you muſt compreſs the orifice with a finger, and, after wiping the forehead and face, apply a compreſs or two, with the proper bandage. *Heiſter*'s ſurgery, p. 282.

Bleeding in another part of the *Head* however, that is, by the occipital veins, which communicate with the lateral ſinuſes of the dura mater, is both by reaſon and experience approved to be ſerviceable in moſt diſorders of the brain, where that part is overcharged with blood, which may be this way diverted and evacuated. Theſe occipital veins are opened by the ſame apparatus with thoſe in the forehead.

Cartilages of the HEAD. The condyloide apophyſes of the os occipitis, the glenoide cavities, or articular foſſulæ of the oſſa temporum, the eminences next theſe cavities, and the condyloide apophyſes of the lower jaw are all cruſted over with very white and ſmooth cartilages, and there is likewiſe an interarticular or moveable cartilage in each articulation of the lower jaw with the temporal bones. The remaining cartilages of the *Head* are the cartilaginous ſeptum, and other cartilages of the noſe; the ſmall cartilaginous ring in each orbit, the cartilages of the outer ear, and thoſe which are joined to the os hyoides, which ſee in their proper places. *Winſlow*'s Anatomy, p. 150.

Ligaments of the HEAD. The ligaments of the bones of the *Head* are theſe: Thoſe between the occipital condyles and the ſuperior apophyſes of the firſt vertebra of the neck; thoſe between the os occipitis and the apophyſis dentiformis of the ſecond vertebra; thoſe of the articulation of the lower jaw with the tempoal bones; and thoſe by which the os hyoides is connected to the ſtyloide apophyſes. To theſe muſt be added the ligaments which connect the cartilages of the ear, thoſe of the noſe, the ſmall cartilaginous pulleys of the orbits, and the ciliary cartilages.

The ligaments of the occipital condyles reſemble thoſe of the vertebræ, and conſiſt of a ſtrong intertexture of ligamentary filaments, placed cloſe by each other, round the whole articulation, and fixed by one end in the occipital bone, by the other in the ſuperior apophyſes of the firſt vertebra, and ſurrounding the capſular ligaments.

The ligaments which go from the os occipitis to the apophyſis dentiformis are very thick, and diſpoſed in ſeparate faſciculi, which afterwards unite, and the ligaments of the articulation of the lower jaw are very ſtrong, and diſpoſed and inſerted in ſuch a manner as thoſe by which the clavicle is inſerted into the ſternum. They are fixed, by one extremity, round the glenoide cavity, or articular foſſula and eminence of each temporal bone, by their middle, round the interarticular cartilage, and by the other extremity round each condyle of the lower jaw. *Winſlow*'s Anatomy, p. 151.

Ulcers of the HEAD. There are ſeveral ulcers which the hairy part of the *Head* is ſubject to, and which the writers in medicine have diſtinguiſhed by the ſeveral names of *tineæ*, *favi*, and *achores*; tho' they do not all agree about the determinate ſignification of each of thoſe words. By the term *favus*, however, we now generally underſtand ſuch ulcers of the *Head* as are full of cavities, like a honeycomb; by *achores*, thoſe which are full of ſmall holes, and contain a moderately viſcid humour. Many call theſe diſorders by the common name of tinea, becauſe, from the abundance of ſmall holes in them, they make the head look like a moth-eaten garment; but this is a vague ſignification of the word, and we uſually now underſtand it, in a more determinate ſenſe, to mean a large and dry ſcab, to which the heads of children are ſubject, and which is full of thick foul ſcales, and very offenſive to the ſmell. This ſometimes alſo extends itſelf to the face, in which caſe it is called *cruſta lactea*. It is often of a mild and benign nature, but is ſometimes very ill-condition'd and dangerous. There is alſo a yet worſe kind of tinea than this, which covers the whole hairy ſcalp with an aſh-colour'd thick cruſt, attended with a violent itching and grievous ſtench. This is generally very difficult of cure, and the perſons afflicted with it have generally a pale unhealthy countenance. It much more frequently affects young perſons than adults, and is generally occaſioned either by the nurſes irregular courſe of life, or by the child's being uſed to foul feeding. Sometimes alſo ulcers of this kind, from the ſame cauſes, break out in adults, and are very difficult to cure; theſe much reſemble the leproſy: And in the pox, it is common to find the *Head* and face, particularly the forehead, ſpread with dry ſcabs and ſcabby ulcers.

When ulcers of theſe kinds are ſlight, gentle purges, with the addition of calomel, ſhould be given at proper intervals, adminiſtring between whiles, to adults, the decoctions of the woods, with the ſweetening powders. Infants at the breaſt may take diaphoretic powders; and their nurſes ought to proſecute the other methods. Externally it is proper to uſe cream, with a ſmall quantity of ceruſs mixed in it, or the oil of eggs, or of wax, with the elecampane ointment, or that of ceruſs or the diapompholygos. And if the ulcers are of a worſe kind, doſes of calomel are to be given more frequently, and a little crude quickſilver may be added to the external applications with great ſucceſs. But in worſe caſes, and where mercurials may not be employed, it will be neceſſary to take off all the hair; this may be done either by degrees, or at once, by means of a pitch plaſter ſpread upon ſtrong cloth, and applied all over the ſcalp, after the hair has been cut pretty ſhort. When a plaſter of this kind has lain on twelve, or four and twenty hours, the method is to pull it off at once, and it brings away with it both all the hair and the ſcabs. This, though a good method, is however a very harſh one, and cannot be done without great pain and effuſion of blood. When the plaiſter is taken off, the blood is to be wiped away with dry lint, and then the *Head* anointed with oil of bricks, with a ſmall admixture of oil of wax among it, and afterwards the whole ſcalp ſhould be covered with a plaſter of frogs ſpawn, with a ſmall admixture of camphor. This dreſſing ſhould be repeated every day, till the injured parts are clean, and then they may be healed with the oil of eggs and eſſence of amber. Internal medicines to ſweeten the blood, and a regularity of diet ſhould alſo be obſerved at the ſame time; a mixture of crude antimony and flower of brimſtone ſerve well for this purpoſe, and ſhould be given for ſome time before the external remedies, here directed, are employed. *Heiſter*'s Surgery, p. 268.

HEAD *of Fiſh*, *Caput Piſcium*. The *Head*, in the fiſh kind, is ſo very various in its ſhape and figure, that it makes one of the great articles of their diſtinction and characters. The *Head* is always ſingle, and placed at the anterior extremity of the body; but its proportion or ſize, as well as figure, is very various in the ſeveral kinds. Its differences in figure are five.

1. It is, in ſome fiſhes, cathetoplateous; that is, its ſides ſeem ſqueezed together, and its perpendicular meaſure, for this reaſon, is greater than its tranſverſe meaſure. We have inſtances of this in the pearch, the cyprini, and in ſeveral others.

2. In others it is plagioplateous; that is, depreſſed ſo that its top and bottom ſeem to have been ſqueezed downwards upon one another. Hence its horizontal breadth is greater than its perpendicular, and it is, in all reſpects, the contrary to the other *Head*. The conger, the ſturgeon, and the rayfiſh, give us evident inſtances of this ſort of *Head*.

3. In ſome fiſhes the *Head* is evidently rounded and cylindric, as in the petromyzæ.

4. The *Head* is, in ſome, ſmooth, as is the caſe of moſt fiſhes; but in others it is rough and aculeated, as in the ſcorpænæ, the cotti, and the legyri.

The differences with reſpect to proportion are alſo very great. The *Head*, in reſpect of the reſt of the body, is in ſome, 1. narrower than the middle of the body, as in the cyprini, ſalmons, mackrel, pearch, *&c.* 2. In ſome it is broader than the middle of the body, as in the cotti, ſiluri, *&c.* And 3. In others it is about equal to the middle of the body in breadth, as in the clarias.

The differences of the mouths of fiſhes, ſee under the article MOUTH.

The bones of the *Head*, in all animals, deſerve great attention; and in fiſh particularly, as they are more numerous in theſe than in any other creatures. They differ much alſo

in

in the various kinds of fiſh, in number, figure, and ſituation. As to number, 1. They are fewer than uſual in the cetaceous and cartilaginous kinds. 2. In the ſpinoſe fiſhes, in general, they are very numerous. The bones in the *Head* of the perca fluviatilis of Bellonius will ſerve as an inſtance of this. The number is not the ſame in the ſeveral kinds that ſeem neareſt allied. In the fiſh laſt mentioned there are no leſs than eighty. There are five in the tongue, one oblong, one in the anterior part, and four ſhorter in the hinder part. There are four in the lower jaw, two on each ſide. The oſſa hypophthalmica are ten on each ſide, four are ſmall, and of different figures from the reſt. The membrana branchioſtega contains on each ſide ſeven of them. The oſſeous laminæ, behind the eyes, are four on each ſide. The upper jaw conſiſts of four bones, two on each ſide. The noſtrils have each one bone placed below them. The bones of the palate are four; three of theſe are ſmall, and ſtand forwards; the other is long, and ſhaped like a pick-ax head, and extended all over the palate. The middle of the anterior bone is nicely articulated with this. There is, beſide theſe, a cartilaginous bone, of a very ſingular figure, extended under the bones of the palate, almoſt to the end of the ſnout; this has on each ſide an angular bone faſtened to it, and under that end which is neareſt the ſnout, there is yet another placed, which is of a very ſingular figure.

The bones that cover the *Head* above are four; the two anterior ones are ſmall, the two poſterior ones are long, and ſo broad, that they cover the greateſt part of the *Head* and cranium. The bones of the cranium are eleven in number; that which is neareſt the vertebræ is large, and has ſeveral apophyſes and cavities. In the lower part of this there are contained two oblong and flat little bones, of almoſt a ſtony hardneſs; all the reſt are ſmaller, and all of very ſingular and remarkable figures. *Artedi*, Ichthyolog.

HEAD-*Ach* (*Cycl.*)— Phyſicians commonly diſtinguiſh the *Head-ach* into two kinds, according to its degree and continuance. The gentleſt kind they call *cephalalgia*, and the more violent and obſtinate *cephalæa*; of which in order.

Cephalalgia is defined to be a pain in the *Head*, proceeding from a copious congeſtion of the blood and humours to that part, which do not find any exit or paſſage from thence.

They generally diſtinguiſh it alſo into two kinds, the idiopathic, and the ſymptomatic.

The idiopathic is that which ariſes from a plethora, and an immediate congeſtion of blood or humours in the *Head*. The ſymptomatic is that which ariſes from a fault in the primæ viæ, communicating with the *Head* by means of the par vagum of nerves, or from a tranſlation of the humours to the *Head*, in fevers, or other diſorders.

The diſtinction of the *Cephalalgia* from the *Cephalæa* is, that in the latter all the ſymptoms are more violent; the *Cephalæa* alſo is uſually chronical and habitual; the *Cephalalgia* only returns at times, and has but ſhort periods. The ſimple *Cephalalgia* is alſo diſtinguiſhed from the venereal *Head-ach* by the burning heat and ſenſation of eroſion which attends the latter, which alſo is continual, or, at leaſt, never wholly ceaſes, and is always moſt violent in the night, when the body is at reſt, and is hotter than in the day. *Junker*, Conſp. Med. p. 96.

The *Cephalalgia* ſometimes ſeizes on the whole *Head*; but more uſually the forehead is the ſeat of it; very frequently alſo it is felt about the origin of the noſe, and a weight or preſſure and burning heat are felt in the os cribroſum, and often at the ſame time there is felt a violent weight and preſſure in the bulbs of the eyes; not unfrequently a tooth-ach attends upon the *Cephalalgia*, and when this is violent, the other abates in proportion. A noiſe and ringing in the ears is often alſo an attendant on it, and the eyes are often red and inflamed; the face alſo looks red, and often turgid, but ſometimes it looks as remarkably pale, or has a redneſs irregularly ſpread over it; both theſe caſes are from ſtrictures upon the veſſels. The veſſels of the neck and temples are often turgid. Women are very ſubject to this pain about the time of their menſtrual diſcharges, either before their eruption, or at any time on their diminution; ſometimes the *Head-ach* is attended with a vertigo, which gives proof of a very violent congeſtion, and ſometimes a binding of the bowels, and a ſlight ſuppreſſion of urine attends it.

People of a plethoric habit of body are more ſubject than others to this pain, and, in general, young people more than ſuch as are older, and women more than men, and perſons who live high, and drink much wine, and uſe little exerciſe, ſuffer much more by it than thoſe who live lower, and uſe much labour and exerciſe.

Cauſes of the HEAD-ACH. Among the natural and internal cauſes, the principal are an over quantity of blood, and a derivation of great quantities of it toward the head, with an intention of nature to relieve herſelf there by a hæmorrhage from the noſe. The external or accidental means that may bring on this pain, are very numerous. The natural and habitual evacuations of blood being ſuppreſſed, and of theſe particularly a bleeding at the noſe, the neglect of accuſtom'd bleedings, ſweats prevented or repelled, and the omiſſion of purging, cuſtomary before at certain periods of the year; great commotions of the body, or paſſions of the mind; eſpecially anger, drunkenneſs with ſpirituous liquors of any kind, the attracting acrid fumes thro' the noſe, a ſudden cooling of the legs or feet, a tranſlation of the peccant matter toward the head in fevers, and a peculiar ſenſibility in the organs of ſmelling, whence perfumes give ſome perſons the *Head-ach*; and to all theſe are to be added an hereditary diſpoſition, or injuries from blows or concuſſions of the head long before. *Junker*'s Conſp. Med. p. 100.

Prognoſtics from it. The *Head-ach* is a pain rather troubleſome than dangerous in itſelf, but it too eaſily degenerates into worſe complaints, and not unfrequently preſages defects of the ſight, or hearing, or the gout; and in old age, lethargies, apoplexies, and paralytic diſorders. The *Head-ach* often is cured by nature, by plentiful hæmorrhages from the noſe, and ſometimes by inflammatory diſorders of the adjacent parts; it more eaſily leaves young people than old; and indeed where long ſettled upon a perſon, and become habitual, rarely gives way to any remedies.

Method of Cure. The congeſtions of humors are to be derived from the ſuperior to the inferior parts, and above all things the bowels are to be looſen'd by clyſters and purges, for they are uſually bound up in this diſorder. After this, medicines are to be given which will quiet the violent emotions of the blood; ſuch are powders of nitre, crabs-eyes, and ſome diaphoretic, with a little cinnabar, according to Stahl. When the blood is thick, a ſcruple of tartarum vitriolatum may be given every day with great ſucceſs. After theſe the gentle diaphoretics are to be given in ſmall doſes with the diluent decoctions of the common tea-herbs, ſuch as baum, ſage, and the like. And if the pains are exceſſive, a gentle opiate, ſuch as a ſmall doſe of the ſtorax pill may be added to theſe. External applications ſometimes alſo aſſiſt the uſe of internal medicines; of this kind are ſpirit of wine camphorated, with a ſmall admixture of ſaffron; this ſometimes almoſt inſtantaneouſly removes the pain. Coarſe bread with juniper berries, caraway-ſeeds, and ſalt, laid on as an epithem, is alſo ſometimes a preſent help; and bags of the aromatic ingredients reduced to a groſs powder are, tho' a flower, yet often a very valuable relief. All theſe are only to be uſed in the idiopathic *Head-ach*; for in the ſymptomatic, regard is to be had only to the principal diſorder; and when the cauſe is removed, the effect always ceaſes. After the fits of the *Head-ach* are over, it is proper by way of prevention for the future to bleed in the ſpring and autumn, and frequently to bathe the feet in warm water. The uſe of gentle exerciſe is to be greatly recommended. The fatty or oleaginous remedies preſcribed by ſome for rubbing on the head, are to be carefully avoided, as they ſtop up the pores, and prevent perſpiration. The ſmelling to pungent liquids is not of ſo much benefit, as uſually ſuppoſed. The urinous volatiles, ſuch as ſpirit of hartſhorn, ſal volatile, and the like, are ſometimes of a little preſent relief; but the common uſe of ſpirit of lavender and Hungary-water, on theſe occaſions, is often the cauſe of more violent pain, by cauſing a freſh derivation of humours on the parts. Cinnabar has, by many authors, been ſuppoſed a dangerous medicine in all caſes of this kind; but Stahl affirms, on repeated experience, that it has great good effects; and that in theſe and many other caſes, it ſupplys the place of opiates and anodynes. *Junker*'s Conſp. Med. p. 104.

Cephalæa is a violent and continual pain in the head, occaſioned by a rheumatic congeſtion of humours in the head. Notwithſtanding the *Cephalæa* is a continual and unintermitting pain of the head, yet it is ſubject to ſome remiſſions, and is thence diſtinguiſhed by authors into the periodic, the continual, and the vague *Cephalæa*. The continual kind is that which is always in the ſame degree, and admits not of the leaſt remiſſions. The periodical is that which has its regular periods of being leſs intenſe; theſe are called its remiſſions. And finally, the vague *Cephalæa*, is that which has times of being leſs violent; but theſe return at no regular nor ſtated periods. *Junker*'s Conſp. Med. p. 116.

Signs of it—The *Cephalæa* ſometimes ſo much reſembles the *Cephalagia*, or common *Head-ach*, that it only differs from it by its obſtinate continuance, and the violence of the pain; and in women it has all the ſame ſymptoms with the clavus hyſtericus, except that it affects indifferently all parts of the head. When this complaint ariſes from a venereal taint in the blood, it is always violent; but moſt ſo, when the perſon is warm in bed. When it ariſes from a ſcorbutic coagulation of the blood, or an inflammation of the meninges of the brain, the pain is remarkably ſharp and piercing, and is attended with a febrile heat, and an intolerable thirſt. There generally comes on a vertiginous diſorder of the head after this complaint has held the patient ſome time, and the patient can never bear any motion; and on the leaſt ſhaking, or diſturbing the head, the pain becomes violently intenſe, and reſembles the beating of an artery in pulſation. The pain is in general leſs violent while the patient lies down, but as ſoon as the *Head* is raiſed up ever ſo little, it increaſes to a great degree. The leaſt noiſe or motion is terrible to perſons in this ſtate, and the light is frequently offenſive and painful; ſo that the patient loves retirement in darkened and quiet rooms, and avoids company. Liquors of any ſtrength give

violence to the pain as ſoon as drank; and in caſes of this kind where a ſcorbutic habit is at the bottom, frequent and violent bleedings at the noſe happen, which give no laſting relief but only an abatement of the pain for the time.

Women are generally more ſubject to this terrible pain than men, theſe being rarely afflicted with it, unleſs when there is ſome violent diſorder in regard to the hæmorrhoids; or when there is a venereal taint in the blood. Among women, thoſe are moſt ſubject to it who live high, and lead ſedentary lives, and who are of a melancholy diſpoſition, or ſubject to obſtructions of the menſes.

Cauſes of it.—The general cauſe of this, as well as of all other *Head-achs* is a violent congeſtion of blood directed to the head; and the peculiar cauſes which determine the *Head-ach* to this terrible kind, are ulceroſe or exulcerated diſpoſitions of the body; theſe principally are owing to the ſcurvy, the venereal diſeaſe, or any violent cutaneous eruptions driven in, or to external injuries, as blows and wounds of the head, ill-treated. The antients ſuppoſed this owing to impoſtumes or collections of a viſcid matter in the head, and therefore always preſcribed bliſters, ſetons, and the like, and ſometimes the piercing the ſkull in the part where the pain was moſt violent. *Junker*'s Conſp. Med. p. 116.

In the moſt favourable caſes this is a diſtemper that with difficulty admits of a cure. Where there is a ſimple ulceration in the caſe, the cure becomes yet more difficult, but not quite to be deſpaired of; but where a venereal taint is at the bottom, a cure is ſcarce to be expected. For tho' the cauſe be removed, yet in this or any other kind of *Cephalæa* attended with a caries of the bones, the pain will afterwards often return, and that with little leſs violence than before.

Thoſe *Cephalæas* which ſometimes are relieved by nature, by copious diſcharges of ſerous humours, are more difficult of cure than others; and thoſe which happen to perſons of remarkably plethoric habits, threaten an approaching apoplexy.

Method of Cure.—The ſame general method is to be obſerved, as in the common *Head-ach*; which ſee above. But in this there are to be added to the medicines there preſcribed, ſuch as powerfully diſſolve mucous humours; ſuch are the roots of pimpernell, arum, and maſterwort, with the bitter herbs, ſaſſafras, gum ammoniacum, tartarum vitriolatum, and the like. After theſe, purging is proper; and in caſes where the ſcurvy or any venereal taint is joined, there muſt be always regard had to thoſe complaints in the whole method of cure. And indeed the ſcorbutic *Cephalæa* ſhould always be treated as the ſcurvy itſelf, and the venereal *Cephalæa* as the pox. And where any old ulcers have been dried up, or any other habitual diſcharge ſtopped, and the complaint is owing to that; the making iſſues or ſetons muſt be premis'd to any other attempt of a cure. Some inveterate complaints of this kind have been happily cured by mercury, whether they had or had not any thing venereal in their foundation; and in general, a ſalivation is a ſort of laſt reſource, be the origin what it will.

HEAD, in the manege, is to give a horſe *Head.* See ESCHAPER.

HEAD *in, and likewiſe the hips*, is a phraſe importing that you muſt paſſage your horſe with his *Head and Croupe in*, i. e. work him ſide-ways upon two parallel lines, at ſtep or trot, ſo that when the horſe makes a ſtep or volt, his ſhoulders mark a *piſte*, or tread, at the ſame time that his haunches give the tract of another; and the horſe plying or bending his neck, turns his head a little within the volt, and ſo looks upon the ground he is to go over.

HEAD-*Land*, in the ſea language. See LAND.

HEAD-*Lines* in a ſhip, thoſe ropes of all ſails which are next to the yards, and by which the ſails are made faſt to the yards.

HEAD-*Pence*, an exaction of a certain ſum formerly collected by the ſheriff of Northumberland from the inhabitants of that county, without any account to be made to the king. This was aboliſhed by the ſtatute 23 Hen. VI. c. 7. *Blount.*

HEADS, a term uſed by builders for that kind of tile, which they uſe to lay at the eaves of a houſe; being the full breadth of a common tile, and but half a tile in length.

HEAD-*Sails* in a ſhip, thoſe which belong to the foremaſt and boltſprit; for it is by theſe that the *Head* of the ſhip is governed, and by which it is made to fall off, and keep out of the wind. And theſe in quarter-winds are the chief drawing-ſails.

HEAD-*Stall*, among antient muſicians. See PHORBÆA.

HEAD-*Tin*, in metallurgy, is a preparation of tin ore toward the fitting it for working into metal. When the ore has been pounded and twice waſhed, that part of it which lies uppermoſt, or makes the ſurface of the maſs in the tub, is called the *Head-tin*; this is ſeparated from the reſt, and after a little more waſhing becomes fit for the blowing houſe. *Ray*'s Engliſh words, p. 122.

HEARING (*Cycl.*)—*Difficulty of* HEARING. In common caſes of difficulty of *Hearing* ſuddenly coming on, the following is an excellent remedy: Take eſſence of amber a dram, of caſtor a ſcruple, oil of chamæmile half a ſcruple, oil of amber one drop; mix theſe together, and three or four times a day put into the ear a piece of cotton wetted in them.

This is a complaint frequently happening to young women, from a ſuppreſſion of the menſes; and, in that caſe, there is no more requir'd for a cure, than barely to reſtore that diſcharge to its natural and proper courſe. It ſometimes alſo happens to men, from a ſtoppage of the hæmorrhoidal diſcharges, and is then to be cured by recalling them, and applying leeches to the part; or if the patient is averſe to that, bleeding or cupping often prove an immediate cure. When this difficulty of *Hearing* ariſes from any obſtruction in the auditory paſſage, the matter that cauſes the obſtruction is to be carefully removed by a ſurgeon. *Heiſter*'s Comp. Med. p. 174.

Old men often have a difficulty of *Hearing* from mere debility and loſs of the due ſtrength and tone of the parts. In this caſe medicines can give no aſſiſtance, but all applications uſually render the caſe worſe. And the ſame is to be obſerved in all caſes where the diſorder is very inveterate, or is hereditary; or owing to external injuries by which the tympanum has been broke, or any other of the principal parts are deſtroyed: The total loſs of *Hearing* after having held a perſon for many years, and not been at all relieved by the common methods of cure, has been ſometimes known to go off of itſelf, and the patient to hear as perfectly as ever; ſo that we are not to deſpair of relief even in the worſt caſes of this kind, and ſuch as have reſiſted all remedies. Perſons who are ſubject to returns of this complaint ſhould uſe frequent bleeding or cupping, be moderate in diet, and ſhun all exceſſes of ſtrong liquors, and uſe moderate exerciſe. Heiſter alſo affirms, on his own experience, that the drinking the mineral waters every ſpring in a proper and regular manner is of the utmoſt ſervice in preſerving the patient from returns of this diſorder during the year. *Heiſter*'s Compend. Med. p. 180.

Mr. Le Cat, in his treatiſe on the organ of ſound, propoſes an inſtrument as of his own invention, to aſſiſt dull *Hearing*. It conſiſts of a ſhell or cornet of copper, into which a ſmall funnel-like tube is fixed, ſo as its narrow end is at the center of the cornet. Dr. Parſons ſays, this inſtrument is common in England. See Philoſ. Tranſ. N°. 466. §. 9.

HEART (*Cycl.*)—The French anatomiſts have diſputed, whether or not the *Heart* is ſhortened in its ſyſtole, though all allow that it is then ſtraitned. Vid. Hiſt. de l'Acad. des Scienc. 1731.

The proportion of the weight of the *Heart* to that of the body is greater in the males than in the females of birds, both wild and tame. But this proportion differs leſs in the males and females of wild birds, than of tame birds; which may probably be owing to the exerciſe of the former being more nearly equal than that of the latter. Ibid. p. 106.

The proportion of the *Heart* to the body is much greater in birds than in fiſh; at a medium about 8 to 1. Dr. Robinſon thinks this great difference owing to the vaſtly ſuperior heat of birds. Ib. p. 108.

Dr. Bryan Robinſon has given us a table of the mean weights of the bodies, *Hearts*, and livers of ſeveral ſpecies of birds and fiſhes, as alſo of the proportions of the *Hearts* and livers to the weight of the body, and of the liver to the weight of the *Heart*. It appears from theſe tables, that the proportion of the weight of the *Heart* to the weight of the body is greater in wild birds than in tame birds. The former uſe more exerciſe, or move their muſcles more than the latter. And it is known that the motions of the *Heart* and blood are much increaſed by the motion of the muſcles. On the contrary, when the quantity of motion in the muſcular ſyſtem is greatly diminiſhed by the inactivity of bodies, the force of the *Heart* and motion of the blood will likewiſe be diminiſhed in the ſame proportion. But muſcles which are much moved, always increaſe in magnitude, weight, and ſtrength; and yet bodies which uſe much muſcular motion, are ſeldom obſerved to grow fat, or increaſe in weight; and therefore the weight of the *Heart* in proportion to the weight of the body will be greater in wild animals than in tame; and in bodies which uſe much exerciſe, than in bodies which are inactive.

The weight of the *Heart* in proportion to the weight of the body, is greater in ſmall birds than in large ones. It is likewiſe greater in a mouſe than in an ox, in a child than in a man; and probably greater in litttle men, than in large men. Now ſince ſmall animals are generally more active than great animals, we may allow the activity of the body to depend much on the proportion of the weight of the *Heart* to the weight of the body. Diſſert. on the food and diſch. of hum. bod. p. 103, 104.

The proportion of the weight of the *Heart* to the weight of the body, is leſs in fat bodies than in lean. As animals grow fat, the weight of their bodies increaſe, and their quantity of blood and weight of *Heart* leſſens; for the fat in the membranes compreſſes the blood veſſels, and leſſens the quantity of blood; and as this leſſens, the weight of the *Heart* leſſens, the weight of the *Heart* and quantity of blood always increaſing and decreaſing together. Ib. p. 105.

Various unnatural accidents happen to the *Heart*, and are the cauſes of diſorders, which never are underſtood till too late, on the diſſection of the body. Of this kind Mr. Hunauld ſhewed the Paris academy a remarkable inſtance in the *Heart* of a woman of thirty years old; in this the valves of

the left auricle were joined and cemented together, and left only a very ſmall aperture formed in the middle of the plane made by their re-union; the blood coming from the lungs into this auricle, could not without a very great and unnatural difficulty, paſs thence into the ventricle; and the auricle compelled by this to extend itſelf to contain a large quantity of blood, was become much larger than it ought to have been in its natural ſtate. In different parts of the united valves there appeared ſeveral little points where an oſſification was begun. The woman died phthiſical, nor could it be otherwiſe, ſince the lungs could not but be affected by the difficulty with which the blood entered into the left ventricle of the *Heart*. And the gentleman who gave the account obſerved, that this was no ſingle inſtance of a caſe of this kind, but that he had met with ſeveral ſuch, particularly one in the right auricle of the *Heart* of a girl of fourteen. Another inſtance of a remarkable diſtemperature of the *Heart*, is given by Mr. Du Fay of the ſame academy: A man who had lived to thirty-four in very good health, became at that age very ſubject to the vapours, but the complaint encreaſed to no particularly violent degree for the ſpace of eighteen years, but at this time he perceived a palpitation of the *Heart* to join with the other ſymptoms, and this held him to the time of his death, which was two years afterwards. Mem. Acad. Scien. Paris, 1735.

Theſe palpitations, which were ſlight at firſt, became afterwards ſo ſtrong, that they communicated their motion to the ſides, and might be ſeen through the patient's cloaths even when he was dreſſed. If the hand were applied to the region of the *Heart*, it was perceived to move very forcibly, and the arteries all partook of the diſorder, while the veins were all conſiderably ſwelled in the upper parts. In the latter part of his life he became dropſical, his legs ſwelling violently. On opening his body, the cavities of the breaſt and belly were found to be full of water, the lungs were ſound, but conſiderably waſted; the liver and ſpleen ſomewhat larger than ordinary, and the pancreas very large, and very hard and ſcirrhous. The *Heart* weighed above two pounds, and was ſo large that it threw the left lobe of the lungs toward the upper part of the breaſt. It meaſured fifteen inches round at the baſe, and the two ventricles were full of blood; the right was nearly of its natural ſize, but the left, which ought to be ſmaller than that, was ſo dilated as to be vaſtly larger, tho' its ſides had not at all loſt their thickneſs. The pericardium was ſomewhat thicker than ordinary, and was nicely applied to the *Heart*, but had on one ſide a tumor of the ſize of an egg, full of blood; the aorta was oſſified at the place where it goes out of the left ventricle. Mr. Du Fay eſteems this caſe to have been an extraordinary aneuriſm of the left ventricle of the *Heart*; a caſe ſeldom heard of.

Another ſcarce leſs memorable inſtance there is in the memoirs of the ſame academy, which proves that wounds of the *Heart* are not always ſo immediately mortal as is generally ſuppoſed. The caſe was this; a ſoldier was brought into one of the hoſpitals with a wound made by a ſword in the upper part of the left breaſt; he ſeemed very well for three days, but on the fourth he was taken with a fever and difficulty of reſpiration, and in fine died on the tenth day. On opening the body it was found that the ſword had pierced the pericardium, traverſed the right ventricle of the *Heart* in its lower part, and near the point, and pierced the pericardium on the oppoſite ſide, and gone through the diaphragm, and an inch deep into the liver; there was much blood found in the pericardium, a little clot of congealed blood in the wound in the *Heart*, and a quantity of purulent water on each ſide of the breaſt.

We have an account of a child which lived ſeveral days, yet upon diſſection its *Heart* was found without a pericardium, and turned upſide-down, ſo that its baſis, with all the veſſels, had fallen down as low as the navel, and its apex ſtill on the left ſide, lay hid between the two lungs. See Phil. Tranſ. N° 461. Sect. 7.

Mr. Boyle tells us of a kind of fiſh on the coaſt of Ireland, about the ſize of mackerel, the *Heart* of which was inverted, the baſis lying towards the tail, with the mucro pointing to the head, and adhering to the aorta. Works abridg. Vol. 1. p. 27.

Some creatures are known to live a conſiderable time after their *Hearts* are taken out: Mr. Boyle mentions frogs ſwimming in this condition, and living above an hour; and the *Heart* of an animal often gives ſigns of life after exſection. The ſame author mentions the *Heart* of a chicken unhatched, but perfectly formed, which continued to beat above an hour after the head and breaſt-bone were clipped off to diſcloſe it. And when the *Heart* was dead to appearance, it might be excited to freſh motion by puncture. The motion was alſo again excited by placing the part in the ſteam of warm water; and thus the *Heart* was kept beating for two hours and an half. See *Boyle*'s Works abridg. Vol. 1. p. 28.

HEARTS *of Fiſh*. The *Heart* in fiſhes is ſituated a little below the gills. It is uſually contained in an extremely thin membrane by way of pericardium, and placed in a large cavity. The *Heart* in the ſeveral kinds of fiſhes is of many different figures: 1. In ſome it is quadrilateral; of this we ſee inſtances in moſt of the common fiſh. 2. In ſome it is of a ſemicircular figure, but a little flatted, as in the cyprini. 3. Its ſituation is generally tranſverſe with reſpect to the head, but not always ſo. In the cetaceous fiſhes the *Heart* has two ventricles, as in land animals: but in all other fiſhes, that is, in all that have gills and not lungs, it has only one cavity. The *Heart* in all fiſh has only one auricle; this is very large, and is always placed on the left ſide of the *Heart*: At the place of the inſertion of this auricle, there are two valves, the one an upper, the other a lower one. The auricle in its lower part contains the receptacle of the veins, and this has alſo, at its inſertion into the auricle, two valves.

The aorta, or great artery in fiſhes, adheres to the upper part or baſe of the *Heart* by a ginglymus. Its firſt part, or that next the *Heart*, is ſmall, and contains two ſigmoide valves. Soon after this it is dilated into a large cavity, which is whitiſh on the outſide, and within is ſupported by ſeveral carneous fibres, forming a ſort of columns. From this part the artery is formed into a ſort of cave, and thence is carried to the gills; it gives one great branch to the hollow of each gill, that is four to each ſide; and each of theſe large branches is again, a little beyond its inſertion into the hollow part of the bow of each gill, divided into four other branches, which running along the baſe of the lamellæ, are divided finally into as many branches as there are lamellæ, each receiving one; theſe are carried to the extremity of the lamellæ, and there loſt; but the blood returns by as many veins, and is thence diſtributed throughout the whole body. In the margin of every lamina in the leaves of the branchiæ, or gills, there is a vein which diſcharges the blood it receives from the arteries of theſe parts into a trunk, which runs over the ſurface of every arch or bow of the gills; and in fine, every vein coming from all the bony circles of the gills, are by degrees, ſome higher and ſome lower, inſerted into one common trunk. This grand trunk of the vein runs along the ſpine, and performs the office of the deſcending trunk of the aorta in land animals, and diſtributes the blood to every part of the body of the fiſh. The trunks of the lower part of each bony circle take this courſe, but thoſe of the upper part are carried up to the brain and organs of ſenſation, and are returned thence by other branches, which join theſe lower trunks. Theſe veins when thus join'd, are carried to the origin of the gills, and there are diſcharged into another trunk lying upon the aorta, which is opened into the receptacle of du Verney. This receptacle is no other than a venoſe trunk formed by the meeting of ſeveral veins coming from the ſpine, from the liver, and other parts, and terminating in the auricle. Thus is the circulation in fiſh carried on in a very different manner from that in land animals; and the gills ſerve to offices little thought of by many authors. *Artedi* Ichthyolog.

HEARTS *of inſects*. It is eaſy to diſcover that many inſects have a true and regular *Heart*; nor is this any where more beautifully diſtinguiſhable than in the claſs of flies; the ſmall ones, and thoſe of tranſparent bodies, are to be choſen indeed for this examination, the larger and more opake being wholly improper for it. None is more eligible on this occaſion than the little fly produced of the puceron eater; this is a very pale yellowiſh fly of a flat body, and ſo perfectly tranſparent, that examined in a proper manner, its internal parts are ſeen as clearly as if they were in a white glaſs veſſel.

One of theſe little flies is to be taken ſoftly by the head between the fingers; the wings are to be bent backward, and held with the head, the body inverted and held up againſt a ſtrong light, and the belly then examined with the help of a magnifying glaſs. This examination will convince any one that flies have a real *Heart*; they have not a long veſſel only, in the place of one running lengthway down the back, as Malpighi thinks is the caſe in caterpillars and butterflies; but toward the middle of the ſecond ring, and ſometimes in the third, counting from the corcelet, one plainly diſcovers a part which can be taken for no other than a real *Heart*. The figure of the *Heart* in theſe animals varies however much more than in any others that we are acquainted with. Sometimes this *Heart* is of the figure of a kidney placed tranſverſely, and with its hollowed part toward the corcelet, with a long veſſel running ſtrait from this hollowed part up the corcelet. At other times the hollow of the *Heart* diſappears, it lengthens itſelf, and acquires the figure of a bottle, with the veſſel before deſcribed placed as its neck. Sometimes it is more, and ſometimes leſs inflated and diſtended; ſometimes the tranſverſe diameter ſurpaſſes the longitudinal, and at others the longitudinal diameter exceeds the other. At all times, however, one may ſee a regular alternative contraction and dilatation of the *Heart*; and to the contraction there conſtantly ſucceeds a jet of liquor thrown into the long veſſel as if by a ſyringe; but what is very ſingular is, that after four or five of theſe jets, one always ſees the liquor before thrown up deſcending into the *Heart* again out of the corcelet, by the ſame veſſel by which it was received from the *Heart*. *Reaumur*'s Hiſt. Inſ. Vol. 4, p. 261.

HEART-*burn*, a diſeaſe properly called by medical writers ſoda. See the article SODA.

HEART-*ſhells*, *Conchæ cordiformes*, in natural hiſtory, the name of a genus of ſhells, by ſome authors referred to the pectunculus or cockle kind, but by later writers juſtly diſtinguiſhed into a ſeparate genus. The characters are theſe: It is a bi-

valve ſhell-fiſh of a globoſe elated form, furrowed in deep lines, and in ſome ſpecies imbricated, in others prickly, never auriculated, and always expreſſing what we call the figure of a *Heart*. Hiſt. Nat. Eclairc. p. 332.

There are ſeveral very remarkable ſpecies of this genus. The imbricated cordiform, or *Heart-ſhell*, is a very elegant one; the French authors call this the faitage, or roof-ſhell, from its reſembling the rafters on the top of a houſe. It repreſents in one view a *Heart* opened, but its great character is the external work, which perfectly reſembles the beams and rafters on the top of a houſe. The French call another ſpecies of this the choux, or cabbage-ſhell, from its being undulated like the leaves of ſome of the garden curl'd cabbages. The Noah's-ark ſhell is alſo of this genus, which no author has been able before to reduce to any genus at all. The name *cordiformis* is as old as Matthiolus's time, but never was made a generical term before.

The ſpecies of the *Cordiformes*, or *Heart-ſhells*, may be arranged under ſeveral general heads: Some are of a very globular figure; of theſe we have the following ſpecies: 1. The yellow furrowed *Heart-ſhell*. 2. The grey ſpinoſe *Heart-ſhell*. 3. The white furrowed *Heart-ſhell*. 4. The *Cartiſſa* of Rumphius. 5. The thick *Heart-ſhell*, with the cardo ſeparated from the apex. 6. The thick *Heart-ſhell* with the cardo at the apex. 7. The *Corbula*: This is an oblong *Heart-ſhell*, very nearly approaching in ſhape to the *ſhell* called, the *Noah's-ark ſhell*.

Some of the *Cordiformes* are of a triangular ſhape; of theſe we have the following ſpecies: 1. The reticulated and ſpotted *Heart-ſhell*. 2. The ſtrawberry *Heart-ſhell*: This is elegantly variegated with ſmall red ſpots. 3. The white ſtriated *Heart-ſhell* denticulated at the edge. 4. The variegated ſtriated *Heart-ſhell*. 5. The variegated and furrowed *Heart-ſhell*. 6. The ſtriated gondola *Heart-ſhell*.

Of thoſe *Cordiformes* which are more nearly of the ſhape of the human *Heart*, there are the following ſpecies: 1. The *Heart-ſhell* variegated with roſe coloured ſpots, and denticulated at the edge. 2. The white circular *Heart-ſhell*. 3. The ſmall roſe-colour'd *Heart-ſhell*.

4. Of the imbricated *Cordiformes*, we have the following ſpecies: 1. The *Heart-ſhell* with great yellow laminæ. 2. The compreſſed *Heart-ſhell* with yellow laminæ. 3. The roſe-coloured *Heart-ſhell* with yellow laminæ. 4. The cabbage-leaf *Heart-ſhell*; this is elegantly cut and curl'd in the manner of the leaves of ſome of the curl'd cabbages, and is beautifully variegated with ſpots of red. 5. The common *Noah's-ark ſhell*. 6. The yellow and white *Noah's-ark ſhell*. 7. The elegantly variegated *Noah's-ark ſhell*. 8. The rare *Heart-ſhell* deſcribed by Fabius Columna: This is a foreign *ſhell*, and has its margin terminated in a point, and has an oblong hollow within. It is white and very tender. Hiſt. Nat. Eclairc. p. 330.

HEAT (*Cycl.*)—The changes from *Heat* to cold are ſometimes ſo great and ſudden in South Carolina, as to cauſe 30 degrees difference in Fahrenheit's thermometer, in the ſpace of a day. See Phil. Tranſ. N° 470. Sect. 4.

The *Heat* at Aſtracan, in July 1746, was ſo great as to raiſe Mr. de L'Iſle's thermometer, in the ſhade, to the 89th degree, which correſponds to 103½ of Fahrenheit's. And during the whole month of July, and for ſeveral days in Auguſt, the thermometer was higher than what it riſes to by the natural *Heat* of the blood, which in Fahrenheit's is placed at 96. Mem. de l'Acad. de Berlin, 1746.

Hence it appears, that the opinion ſome entertain of animals not being able to live in air heated beyond the heat of the human blood, or the 96th degree, is erroneous.

All bodies *heated* beyond a certain degree, and applied to our bodies, give us pain, ſtimulate, and inflame; when greatly heated they mortify whatever part they touch.

Animal HEAT. To what organs or operations the *Heat* of the human and other animal bodies is owing, is hitherto extremely doubtful. The opinions which at preſent prevail, are, 1. That the *Heat* of animal bodies is owing to the attrition betwixt the arteries and the blood. 2. That the lungs are the fountain of this *Heat*. 3. That the attrition of the parts of the ſolids on one another produce it. 4. That it is owing to the whole proceſs, by which our aliment and juices are conſtantly undergoing ſome alteration.

The arguments in favour of the firſt opinion are: That if an artery is tied or cut, the part to which it goes turns cold; on the ceaſing of the pulſation of the arteries, cold and death follow. An increaſe of *Heat* attends a briſk circulation, and a languid circulation is accompanied with a ſmall *Heat*. One who burns in a fever, or is hot with exerciſe, has a full and frequent pulſe; in cold faintings, chloroſis, &c. the pulſe is ſmall and ſlow; and laſtly, that the thermometer ſhews the arterial blood to be a little hotter than that of the veins. This is accounted for from the conical figure of the arteries, from their flexures and branchings into exquiſitely ſmall capillaries; whence the reſiſtance and conſequent attrition muſt be great; from the number, ſtrength, and elaſticity of their coats; from the propelling power of the heart, and their ſtrong reſiſtance. From all theſe the particles of the blood perpetually getting new motions, directions, and rotations, are attenuated, condenſed, have their angles ground off, and are made homogeneous: Hence the fluidity, red colour, and *Heat* of the maſs which is here perfected. But this theory is doubtful; for what is ſaid of arteries, may be ſaid of any other parts, whoſe functions are neceſſary to life. The *Heat* and pulſation of the arteries do not keep together in any regular proportion; in ſome morbid caſes there is a great ſenſible *Heat*, and a ſmall pulſe; and in others a full pulſe, and great coldneſs. Beſides, all the length this demonſtration goes, is to ſhew, that the motion of the arteries and *Heat* are generally in proportion, which however does not ſhew which is the cauſe, and which the effect; nor indeed that either is the cauſe or effect of the other, ſince both may be the effects of ſome other cauſe. As to the proof by the thermometer, it ſeems doubtful; and what adds to the doubt is, that the venal blood does not coagulate ſo ſoon as the arterial. In ſhort, this theory is not eſtabliſhed by any ſatisfactory and convincing proof.

The ſecond opinion is, that the lungs are the fountain of *Heat* in the human body. All that has been ſaid for the blood's being heated in the arteries, is advanced to prove this hypotheſis, with conſiderable addition, *viz.* that in the lungs the blood veſſels every where attend, divide, and ſubdivide along with the ramifications of the wind-pipe; and as theſe are perpetually changing their ſituation and form, becoming longer or ſhorter, making more acute or more obtuſe angles, ſo muſt the concomitant blood-veſſels every moment make new angles, and give the blood new directions; that at laſt the blood enters into an exquiſitely fine net-work, ſpread every where on the vaſtly thin air veſicles, where theſe air-bladders are perpetually changing their angles, points of contact, their form, volume, interſtices, and ſo forth. From theſe, and the elaſticity of the air, and weight of the atmoſphere, the blood is ſaid to be churned, preſſed backward and forward, broken and kneaded together, diſſolved and condenſed, made red and hot in reſpiration. This theory, however plauſible, is not ſatisfactory. For, 1. What was ſaid before of the improbability of *Heat* being generated by the ſole attrition of fluids, takes place here. 2. Tho' the lungs be regularly ſupplied with plenty of air, which has weight and elaſticity enough to carry on the alternate ſwelling and ſubſiding of the veſicles; yet life and *Heat* ſoon fail, if that air has, by paſſing through the fire, or any other way, been robbed of ſome particles or quality, different from its weight and elaſticity. 3. The argument from the additional action of the ſolids of the lungs on the blood, more than what is found in the arteries, from their greater and conſtantly varying motion, ſeems to be fully taken off by one part of Hook's experiment, exhibited before the royal ſociety, in which the lungs of a dog being kept conſtantly diſtended by a freſh blaſt of air, the dog lived, and his heart beat regularly: So that there is no need for that frequent and great variation of angles, and points of contact, upon which the additional attrition is built. 4. That the cold air ruſhing into the ſpongy lungs, on the numberleſs air-bladders, on which the blood is almoſt ſuperficially ſpread, ſhould make the blood hot, is an improbable opinion, and ſupported by no proof. And as the cauſe appears not at all promiſing à priori, ſo the effect ſeems to demonſtrate this not to be the cauſe. For, 5. That the blood is rather cooled than *heated* in the lungs, may be inferred from the benefit received by the inſpiration of cool air in many inflammatory diſeaſes, eſpecially thoſe of the lungs. In burning fevers, with a full quick pulſe, red ſkin, and a large and quick reſpiration, relief has often been given by opening a window, and admitting a ſtream of cool air to breath in: The effects of which has been obſerved to be, that tho' the body was cloſe covered, yet in one minute the reſpiration became ſlower, and very ſoon after the pulſe abated of its fullneſs; and not only the face, but the whole body, of its fiery *Heat* and colour. 6. If the blood was *heated* in the lungs, we ſhould need leſs of their function, when we are warm, or in a warm place, the *Heat* of our bodies, or of the atmoſphere, doing ſo much of the office of the lungs; and that we ſhould want more of it, when cool, or in cool air. But when we are hot, and want to be cooled, we breathe full and quick; and when we are cold, and want to be warmed, our reſpiration is ſlow and ſmall; contrary to what one would expect, if the action of the air on the blood in the lungs were to *heat* it. 7. The blood which comes from the ſmall veſſels of the lungs, is not more expanded than before, as has been aſſerted, but not proved by any experiment, which it would certainly be if it was hotter; for liquors rariſy by *Heat*, and few more than blood. 8. If the blood owes its *Heat* to the action of the lungs, we muſt look out for another ſource of *Heat* in the egg and fœtus. To the objection, that the *Heat* of the mother is ſufficient for the purpoſe, till this new function comes into action, two obſervations may be oppoſed: The firſt is, that toward the end of incubation, an egg may be left by the dam, in a cold ſeaſon, for a little longer time than would be ſafe for the chick, if all its *Heat* depended upon her; yea long enough for an egg, that contains no warm principle to become of the temperature of the ambient air; yet upon opening it, the chick has been found neither quite ſo cold, nor dead. The ſecond is, that a ripe fœtus, taken away from the mother, but continuing within the membranes, can live

ſeveral hours by its own *Heat*, without any aſſiſtance from the lungs. What is the cauſe of this *Heat* before the lungs act? How comes it to fail as ſoon as the lungs play? Med. Eſſ. Edinb. Abr. Vol. 1. p. 228. ſeq.

The third opinion is, that the cauſe of animal *Heat* is owing to the action of the ſolid parts upon one another. The heart and arteries move moſt, and it is natural to expect, that the *Heat* ſhould be owing to this motion. But even this does not ſeem very plauſible, from the following conſiderations. 1. The moving parts, however we term them ſolid, are neither hard nor dry; which two conditions are abſolutely requiſite to make them fit to generate *Heat*, by attrition. 2. None of their motions are ſwift enough to promiſe *Heat* in this way. 3. They have no great change of ſurface in their attritions. 4. The moveable fibres have fat, mucilage, or liquors every way ſurrounding them, to prevent their being deſtroyed, or *heated* by attrition. Med. Eſſ. Abr. vol. 1. p. 231.

A fourth cauſe aſſigned for the *Heat* of our bodies, is that proceſs by which our aliment and fluids are perpetually undergoing ſome alteration.

This proceſs, according to Dr. Stevenſon, may be one *ſui generis*, ſomewhat of a middle nature, betwixt fermentation and putrefaction, and he thinks it to come ſo near to the latter, that he chooſes to call it by that name. In putrefaction, which is a moſt powerful diſſolvent of bodies, the inteſtine action of their minute particles creates, collects, or ſome way or other is the cauſe or means of *Heat*. The Doctor thinks it probable, that this proceſs is conſtantly carried on in all our juices, eſpecially where there is blood, and this chiefly in the veins; ſo that the blood is both the fountain of *Heat*, and the firſt ſpring of motion. He obſerves, that it is agreeable to the laws of natural philoſophy to reaſon on the chemiſtry of the animal body, as well as on its mechanics; the minute component parts of ſolids having a ſet of laws peculiar to them; and their intimate changes and actions on one another, are not to be accounted for by the courſer mechanical laws. He obſerves laſtly, that ſince it has never been demonſtrated, that any fluid acquired *Heat* in the coarſe mechanic way, by friction with a ſolid body; or that ſo conſiderable a change was made on the ſtructure of the minute parts of bodies, as is made in this proceſs, without producing *Heat* at the ſame time; and ſince in fermentation, putrefaction, &c. the *Heat* is not pretended to be owing to the veſſels containing the changed ſubject, but to what happens to its minute parts, in undergoing the change, it ſeems, on the whole, an unphiloſophic partiality for mechanics to maintain, that our juices have all their *Heat* communicated to them from the ſolids, and acquire it by rubbing with the veſſels. See Medic. Eſſ. Edinb. vol. 5. art. 77. Abridg. Vol. 1. p. 222. ſeq.

A late author thinks the *Heat* of animals explicable from the phoſphorus and air they contain. Phoſphorus exiſts, at leaſt in a dormant ſtate, in animal fluids; and it is alſo known that they all contain air; it is therefore only neceſſary to bring the phoſphoreal and aereal particles into contact, and *Heat* muſt of conſequence be generated; and were it not for the quantity of aqueous humours in animals, fatal accenſions would frequently happen. Dr. *Mortimer* ap. Phil. Tranſ. N° 476. ſect. 20. See the article PHOSPHORUS.

HEATH, *Erica*, in botany. See the article ERICA.

HEATH-*hen*, in zoology, a common Engliſh name for the urogallus, or tetrao minor, called alſo the grouſe. See the article GROUSE.

HEATH-*moſs*, *Coralloides*, in botany, the name of a genus of the moſſes; the characters of which are theſe: They are compoſed of ſtalks often branched in the manner of corals, and compoſed of parts of a different figure and appearance, not ſimple and uniform as the byſſi and confervæ. On the ſummits of the branches there grow a ſort of fleſhy tubercles, which Micheli calls the receptacles of flowers; and the little atoms which are ſeen adhering to the different parts of the ſtalks, he calls the ſeeds. Dillenius is rather for thinking them the farina; and the tubercles, either the capſules of ſeeds, or the young plants, ready to fall off from the parent ſtem, and ſhoot for themſelves like the bulbs of the dentaria, biſtort, and the like. However this be, theſe are parts too minute to found generical diſtinctions on, theſe may be better deduced from a groſſer conſideration of the ſtalk, and the figure of the tubercles. Theſe have no rim or margin, and are uſually larger in the leſs branched kinds, and ſmaller in the more ramoſe. This being a very numerous genus of moſſes, it is divided into ſeveral orders: 1. The fungiform. 2. The cup-like. 3. The ramoſe, or corniculate ones. *Dillen.* Hiſt. Muſc. p. 76.

The fungiform *Coralloides*, are neither hollow nor branched. Of theſe there are only five known ſpecies: 1. The fleſh-coloured fungiform *Coralloides*; this has a wide cruſtaceous and granulated baſe, of a greeniſh or greyiſh colour; on this there firſt appear ſeſſile tubercles of the bigneſs of a pin's head, and of a pale fleſh-colour. Theſe afterwards riſe up, and are ſupported on ſlender pedicles, and grow to the ſize of coriander ſeeds. It has been called by moſt authors a fungus, by ſome a lichen, and by ſome a lichenoides. It is found in England and other places. 2. The brown muſhroom-like *Coralloides*. This has a duſky foliaceous baſis, from which it riſes in form of ſmall oblong ſtalks, which widen into a ſort of tubercles at the ends. This is found on Hampſtead Heath, and in other places. 3. The ſmall black pin-like tree *Coralloides*. This has very little cruſtaceous matter at the bottom, and its heads are of the ſize of muſtard-ſeeds, ſupported on ſmall black ſtalks, the whole not unaptly reſembling pins with their points ſtuck in the wood. 4. The pale ſmall ſtone pin-like *Coralloides*: This has a large cruſtaceous bottom, and its fungiform heads are very ſmall, and placed upon very ſhort ſtalks. 5. The pale fleſh-coloured ſhort-ſtemmed fungiform *Coralloides*: This has been often found on the hooſs of horſes half rotted with the weather, and has been uſually called a fungus by authors. See Tab. 2. of Botany, N° 5.

The *Coralloides* of the ſecond order, or the *Cup-moſſes*, as they are uſually called, are tubuloſe, uſually not branched, and often ſingle, often proliferous.

Of theſe there are ſome which have more regular and perfect cups, and others which have them leſs perfect. Of the more perfect kind are the following ſpecies. 1. The common *Cup Coralloides*, or *Cup-moſs*. 2. The ſcarlet-headed *Cup-moſs*. This is leſs common than the former, and is adorned with beautiful ſcarlet tubercles. 3. The *Cup-moſs*, with indented edges. This is uſually taller and ſlenderer than the common kind, and is frequent on ditch-banks, &c. 4. The *Cup-moſs*, with radiated edges. The rims of the cups in this are beautifully foliated. 5. The ſmall rattle leav'd *Cup-moſs*. The cups of this are formed like the mouth of a trumpet, and grow out of a large and beautifully divided leaf, creeping upon the ground; the cups are ſmall. 6. The ſhort-footed *Cup Coralloides*. The leaves of this ſpecies creep on the ground, and are green on the upper ſide, and white underneath; the cups which ariſe from theſe are ſmall and browniſh within. 7. The elks-horn-leav'd *Cup Coralloides*. The leaves of this are large, and ſtand ſomewhat erect, and have ſegments like an elk's horn; they are ſmooth, hard, and cartilaginous; the cups are ſmall, and riſe from every part of theſe; they are but lightly hollowed, and a little crenated at the edge. 8. The branched and indented *Cup-moſs*. This is taller and ſlenderer than the other *Cup-moſſes*, and the pedicles of the cups are ſmooth and very ſlender.

Of the *Cup-moſſes*, with leſs perfect cups, the following are the known ſpecies: 1. The ſkewer *Coralloides*. This is ſcarce at all branched, and its cups are not eaſily diſtinguiſh'd. It is commonly called *horned Moſs*; the cups have tubercles, and are ſituated near the bottom of the ſtalks; it is very common on heaths. 2. The thighbone *Cup Coralloides*. The tubercles on this are large and brown, cover the whole extremity of the ſtalk, ſo that the cup is ſcarce diſcernible. 3. The horned *Cup Coralloides*. This grows to two inches high, and is ſometimes branched; it is of a greeniſh white colour, and is hollowed into a cup at the end of each. 4. The branched cornucopiæ *Cup-moſs*. This is hoary on the ſurface, and the cups are cruſted at the edges. 5. The clumſy indented *Cup Coralloides*. This is hoary on the ſurface, and of the thickneſs of a gooſe quill, and of a greyiſh green colour. 6. The ſcarlet headed branched *Cup-moſs*. 7. The brown-headed leſs branched *Cup-moſs*. Theſe are but very lightly pixidated, and the firſt of the two ſcarce diſtinguiſhably ſo. *Dillen.* Hiſt. Muſc. p. 100.

Of the third order of the *Coralloides*, or thoſe which are branched, and appear like ſmall ſhrubs, with their tops bent, and divided into numerous fine ramifications. The following are the known ſpecies: 1. The great ſoft perforated *Coralloides*. This is very common on Heaths, and grows to three or four inches high. 2. The ſmall, ſoft, open *Coralloides*. This is whiter and more branched than the former. 3. The elegant fine cut *Coralloides*. The joints of this are hollowed like a ſaucer, and nicely foliated. It is a native of the American Iſlands. 4. The little, criſp, imperforated *Coralloides*. This is found in Virginia. 5. The prickly, diſtorted *Coralloides*. This ſpreads variouſly and irregularly on the ground. 6. The leſs branched horned *Coralloides*. This is common in woods among other *Moſſes*. 7. The more branched *Coralloides*, with ſhorter ramifications. This is frequently found about the roots of trees. 8. The ſmall, brittle, madrepora-like *Coralloides*. This ſcarce exceeds half an inch in height. 9. The common white mountain *Coralloides*, called ren-deer-*moſs*. This is every where common with us on Heaths, and is what the ren-deer feed upon in Lapland. 10. The common mountain *Coralloides*, with brown tips. This is compoſed of ſlenderer branches than the former, and the extremities of all of them are tipped with a reddiſh brown, whereas the others are white throughout. 11. The brown ſolid prickly *Coralloides*. This is a very elegant ſpecies; it rarely exceeds an inch in height, and is very much branched. 12. The black lace *Coralloides*. This alſo is a very elegant ſpecies, it rarely exceeds half an inch in height, but ſpreads very wide; it has no thick ſtalk, but is compoſed of numerous fine ones, ſo interwoven as to reſemble lace. 13. The criſp warty alpine *Coralloides*. This grows to rocks and ſtones, with a woody baſe, in the manner of the ſea fucus's, and riſes variouſly branched to an inch or two in height. 14. The alpine coralline-like *Coralloides*. This is called, by ſome, mountain

mountain *Coralline*, and would ſcarce be diſtinguiſhable from ſome of the ſmall *Corallines*, if it were articulated. 15. The cypreſs-like *Coralloides*. This has globoſe tubercles at the extremities of the branches, and when ſeen at a diſtance, has ſomewhat of the appearance of favin. 16. The cluſter branched *Coralloides*. This grows in the mountains of Ruſſia, and reſembles a ſmall ſea coral. 17. The horned wrack, or fucus-like *Coralloides*. This grows in thick tufts on the mountains in Wales. 18. The warty and pod-like *Coralloides*. This grows in ſmall cluſters, from a ſort of cretaceous baſis; the branches are furrowed, and riſe in prominences in ſeveral places, as if they were pods containing ſeeds. 19. The horned cluſter *Coralloides*, uſed in dying, and reſembling ſome of the round branched fucus's. This is commonly called argol, and canary weed, and by ſome rocella and orcella. It grows from a tophaceous or cretaceous baſis; the branches are two or three inches long, ridged, ſolid, and ſomewhat branched. This is uſed in the dyers buſineſs for making a red colour. *Dillen.* Hiſt. Muſc. p. 115.

HEATOTOTL, in zoology, the name of an American bird, deſcribed by Nieremberg, and called alſo *Avis Venti*. It is remarkable for a very large and round creſt of whitiſh feathers on its head. Its breaſt is of a browniſh grey; its belly white, and its feet yellow; its tail is round when expanded, and is variegated with black and white. Its back and wings are black. *Ray*'s Ornithol. p. 301.

HEAVING *a Peek*, in the ſea language. See the article PEEK.

HEAVY, in the manege. A horſe is ſaid to reſt *heavy* upon the hand, who, through the ſoftneſs of his neck, the weakneſs of his back, the weight of his fore-quarters, or through wearineſs, throws himſelf upon the bridle; but withal, without making any reſiſtance, or any effort to force the horſeman's hand. This fault is remedied, and the horſe made light upon the hand, by ſtopping, and making him go back frequently; if it proceeds only from lazineſs and ſtiffneſs; but if cauſed by any defect in the back, there's no remedy for it.

HEBBING-*Wears*, in our ſtatutes, is uſed for wears or engines made or laid at ebbing water, 23 Hen. 8. 5. *Blount.*

HEBDOME, Ἑβδόμη, among the Athenians, a feſtival or holy day kept always on the ſeventh day of the moon in honour of Apollo; that being ſuppoſed to have been his birth-day. *Hofm.* Lex. in voc.

HEBENSTRETIA, in botany, the name of a genus of plants, the characters of which are theſe: The Perianthium is of a tubular form; it conſiſts of one leaf lightly divided at the verge into two lips, the upper lip is ſhort, ſtrait, and narrow, the under is lanceolated, long, and bent downwards; the flower conſiſts of one irregular petal; the tube is cylindric, and ſhorter than the cup; the lip is only one, not two, as in other labeated flowers; it is broad, and divided into four ſegments at the end, and is of the length of the under lip of the cup. The ſtamina are four filaments, two ariſing from each ſide of the lower part of the lip of the flower. The germen of the piſtil is oblong, the ſtyle is ſlender, and of the length of the flower, and the ſtigma is very thin. The fruit is an oblong capſule opening into two parts. The ſeeds are two in number, and are oblong, convex and triſulcated on one ſide, and flat on the other. *Linnæi* Gen. Plant. p. 306. Hort. Amſt. 11, 109.

HEBRAICA *Concha*, in natural hiſtory, a name given by authors to a very beautiful ſea-ſhell of the voluta kind, from a number of black marks which ſeem to reſemble the Hebrew characters. See the article VOLUTA.

HEBREW *Characters*, (*Cycl.*)—It has been ſuppoſed by many very learned men, that the *Hebrew* characters or letters were often uſed hieroglyphically, and had each its ſeveral diſtinct ſenſe underſtood as an hieroglyphic. Neuman, who ſeems to have taken infinite pains to find out this ſecret meaning of theſe letters, gives the following explication: א aleph, he ſays is a character denoting motion, readineſs, and activity; ב beth, ſignifies 1°, matter, body, ſubſtance, thing. 2°, Place, ſpace, or capacity. And 3°, in, within, or contained; ג gimel, ſtands for flexion, bending, or obliquity of any kind; ד daleth, ſignifies any protruſion made from without, or any promotion of any kind; ה he, ſtands for preſence, or demonſtrative eſſence of any thing; ו vau, ſtands for copulation or growing together of things; ז dſain, expreſſes vehement protruſion and violent compreſſion, ſuch as is occaſioned by at once violently diſcharging and conſtringing a thing together; it alſo ſignifies, ſometimes, the ſtraitening of any figure into a narrow point at the end; ח cheth, expreſſes aſſociation, ſociety, or any kind of compoſition, or combination of things together; ט teth, ſtands for the withdrawing, drawing back, or receſs of any thing; י jod, ſignifies extenſion and length, whether in matter or in time; כ caph, expreſſes a turning, curvedneſs, or concavity; ל lamech, ſtands for an addition, acceſs, impulſe, or adverſation, and ſometimes for preſſure; מ mem, expreſſes amplitude, or the amplifying any thing in whatever ſenſe; in regard to continuous quantities, it ſignifies the adding length, breadth, and circumference; and in disjunct quantities it ſignifies multitude; נ nun, ſignifies the propagation of one thing from another, or of the ſame thing from one perſon to another; ס ſamech, expreſſes cincture and coarctation; ע ain, ſtands for obſervation, objection, or obviation; פ pe, ſtands for a crookedneſs or an angle of any figure; צ tſade, expreſſes contiguity and cloſe ſucceſſion; ק koph, expreſſes a circuit or ambit; ר reſh, expreſſes the egreſs of any thing, as alſo the exterior part of a thing, and the extremity or end of any thing; ש ſhin, ſignifies the number three, or the third degree, or the utmoſt perfection of any thing; ת tau, expreſſes a ſequel, continuation, or ſucceſſion of any thing.

According to this explication, as the ſeveral particular letters of the *Hebrew* alphabet ſeparately ſignify the ideas of motion, matter, ſpace, and the ſeveral modifications of matter, ſpace and motion, it follows, that a language the words of which are compoſed of ſuch expreſſive characters muſt neceſſarily be of all languages the moſt perfect and expreſſive, as the words form'd of ſuch letters according to their determinate ſeparate ſignifications muſt convey the idea of all the matters contained in the ſenſe of the ſeveral characters, and be at once a name and a definition or ſuccinct deſcription of the ſubject, and all things material as well as ſpiritual, all objects in the natural and moral world muſt be known as ſoon as their names are known, and their ſeparate letters conſidered.

The words Urim and Thummim are thus eaſily explained and found, perhaps the moſt appoſite and expreſſive words that were ever formed. See the articles URIM and THUMMIM.

HECATOMBÆON, in chronology. See the article ECATOMBÆON.

HECATONSTYLON, ἑκατονστυλον, in the antient architecture, a porch with an hundred columns. This deſignation was peculiar to the great porch of Pompey's theatre at Rome. *Pitiſc.* Lex. Ant.

HECTIC *Fever* (*Cycl.*)—The ſymptoms of this diſeaſe diſtinctively from the febris lenta, which is often confounded with it, are theſe: A perpetual dry burning in the fleſh, which is moſt ſenſible in the hands after eating; a weak, low, and quick pulſe; a thick orange-coloured urine, with a pale red ſediment, with a thin fattiſh cuticle upon it, and a ſtrong ſmell; a languid habit of body, and a particular love of all cold meats; a dryneſs of the mouth, with continual thirſt, and a frothy or glutinous ſpittle, unſettled ſleep, not at all refreſhing to the patient; a ſucceſſive and continual waſting and emaciation of the body, a loſs of ſtrength, a languor of the mind, a ſenſe of a weight and pain in one of the hypocondria, a ſenſibility of the lighteſt changes in the weather, and a continnal growing worſe at the greater changes which happen at the equinoxes, a vertiginous and dozing ſwimming in the head when the patient gets up; and in the latter ſtages of the diſeaſe colliquative ſweats; and finally the ſcene is cloſed by a diarrhæa, and the facies hippocratica, which is ſeen in no other diſeaſe ſo remarkably as in this, and a conſumption. A cough is no neceſſary conſequence of a *Hectic*, but it uſually attends it, and ariſes from ſome conjunct cauſe. *Junker*'s Conſp. Med. p. 388.

Perſons ſubject to it.—Men are much more liable to fall into *Hectics* than women; and of thoſe principally ſuch as are of a tender conſtitution and dry habit, and are violently addicted to the paſſions, and live high, eating ſeaſon'd food and drinking large quantities of wine or other ſtrong liquors; and ſuch as have exhauſted their ſtrength and ſpirits by violent exerciſes, long watching, great ſtudy, or thoughtfulneſs, want of nouriſhment, exceſſive venery, or by the taking repeated doſes of ſtrong purgative medicines. Perſons often fall into this diſeaſe alſo by omitting habitual bleedings and other evacuations, and by ſtopping cuſtomary diſcharges of blood by the hæmorrhoidal veins, or other ways, by the taking of aſtringent medicines; but more perſons are thrown into *Hectics* by injudicious treatment in fevers, than fall into them by all theſe other ways together; and eſpecially by the bad treatment of intermittents.

Prognoſtics in it.—When a *Hectic* is confirmed and of ſome ſtanding, it is in vain to attempt the cure of it; for when one of the viſcera is ulcerated, nature will always bring on this fever to endeavour to abſterge it; and as the cauſe never can be removed, the ſymptom never will ceaſe. *Junker*'s Conſp. Med. p. 387.

All that can be expected from medicine in theſe caſes, is the mitigating the ſymptoms, and putting off the fatal period longer than it would naturally have happen'd. Younger people are much more ſuddenly deſtroyed by *Hectics*, and are much more ſubject to them, than thoſe more advanced in years; hence from eighteen to five and thirty may be accounted the period of life moſt ſubject to danger from this diſeaſe; it is uſually ſudden in its deſtruction between theſe periods, afterwards if people fall into it, it becomes chronical, and they bear it a long time. The changes of the ſeaſons are dangerous times for *Hectic* people, but moſt of all the autumnal equinox, and ſo alſo the climacteric years. Young perſons firſt ſeized with *Hectics* in ſpring uſually die in the autumn following; and thoſe who are firſt ſeized with it in the ſummer ſolſtice, uſually live till the ſame ſeaſon of the following year. A diſcharge of blood by the hæmorrhoidal veins in the laſt

laſt ſtages of a *Hectic* uſually haſtens the death of the perſon; but in the beginning of the diſeaſe the ſame evacuation often proves a cure.

Method of Treatment.—The viſcous humours collected in the primæ viæ are to be attenuated by tartarum vitriolatum and the neutral ſalts, and the bowels to be kept gently open by clyſters and ſmall doſes of manna and the other gentler cathartics; next the acrimony of the ulcerous matter is to be obtunded by the abſorbents ſated with vegetable acids, as by the crabs-eyes ſated with lemon juice; by coral, oiſterſhells, and the like teſtaceous ſubſtances, ſated in the ſame manner; decoctions of pimpernel and of hartſhorn with daiſy flowers are alſo very ſerviceable; a mixture of ſpirit of hartſhorn and tincture of antimony, and powders of coral and diaphoretic antimony, are to be given twice or oftener in a day. Small doſes of the ſtorax pill will mitigate the cough, and emulſions of almonds with a ſmall mixture of lemon juice will greatly abate the febrile heat. During the whole time the diet muſt be nouriſhing; and jellies, ſtrengthening ptiſans, and milk food are to be taken. *Junker*'s Conſp. Med. p. 390.

But theſe medicines are not to be continued in an uninterrupted courſe; nature is to be ſometimes eaſed of ſuch a burthen; and in fine, the more the diſeaſe increaſes, the fewer medicines are to be given, as there grows leſs and leſs hope of benefit from them.

If a cough attends a *Hectic*, great relief is uſually found from a linctus of oil of ſweet almonds and ſyrup of poppies; or liquid laudanum may be occaſionally given in ſmall doſes. The colliquative ſweats which attend this diſeaſe are not to be cured by ſuppreſſing them violently; but the patient is to keep himſelf moderately cool, and to take powders of coral, terra lemnia and the other abſorbents, and a grain of opium may be added to the quantity of three or four doſes. Whey and the cooling emulſions alſo have their good effects. Gum arabic added in moderate quantities to theſe emulſions alſo is of great uſe in checking the diarrhæa, which often attends *Hectics*; and conſerve of red roſes with chalybeated milk are to be taken conſtantly to mitigate this ſymptom; and when it is more violent, a doſe of diaſcordium diſſolved in cinnamon water often proves a very efficacious medicine; and when the violence of the purging is once ſtopped by this, it will be kept from returning by the other methods. *Heiſter*'s Comp. Med. p. 115.

The loſs of appetite which uſually attends theſe caſes is to be remedied by bitters, ſuch as tinctures of orange-peel, and cortex eleutherii, to which may be added a ſmall quantity of the jeſuits bark; and to theſe a ſmall quantity of ſpirit of ſulphur or of vitriol may be added, the more immediately to excite the appetite.

HEDERA, *Ivy*. See the article IVY.

Lacryma HEDERÆ. See the article IVY-*Reſin*.

HEDERALIS, in botany, a name uſed by Ruellius and ſome other authors for the plant called by others Aſclepias or ſwallow-wort. *Ger.* Emac. Ind. 2. See ASCLEPIAS.

HEDERARIUS *Plexus*, a ſort of reticular plexus formed by the ſpermatic vein and artery in their progreſs to the teſticles.

HEDGE (*Cycl.*)—The hawthorn is allowed the beſt of all the Engliſh ſhrubs for quick-ſet hedges. The beſt method of raiſing this for uſe, is to put the haws into the ground as ſoon as ripe, and cover them with earth; and by the ſpring twelvemonth the young ſhoots will be of a due ſize to tranſplant from the ſeed-plot into hedge-rows. The crab-tree is a common mixture with the hawthorn in hedges; but it grows faſter than the hawthorn, and requires cutting to keep the hedge even. The young hawthorns raiſed from ſeed always thrive better than thoſe picked up wild in the fields. *Moreton*'s Northamp. p. 485.

The great conſideration in making *quickſet hedges* is to bring the plants from a worſe ſoil than that in which it is intended to ſet them. They muſt be about the thickneſs of one's thumb, well rooted and ſtrong, and muſt be planted about four or five inches out of the ground. If there be a ditch to the hedge, it ſhould be three foot wide at the top, one at the bottom, and two deep; and if wider, then deeper in proportion.

If the bank be without a ditch, the plants ſhould be ſet in two rows at a foot diſtance below one another. The turf is to be laid with the graſs-ſide downward on that ſide of the ditch on which the bank is deſigned to be made, and ſome of the beſt mould muſt be laid upon it to bed the quick; then the quick is to be laid upon it a foot aſunder, ſo that the end of it may be inclining upwards; and at equal diſtances of thirty foot plant an aſh, oak, crab, or elm, to grow with the quick. When the firſt row of quick is laid it muſt be covered with mould, and the turf laid upon it as before, and ſome more mould upon that; ſo that when the bank is a foot high, another row of ſets may be laid againſt the ſpaces of the lower quick. Theſe muſt be then covered as the former, and the bank is to be then top'd with the bottom of the ditch, and a dry or dead *hedge* laid, to ſhade the under plantation. There ſhould then be ſtakes driven into the looſe earth quite down to the firm ground, at about two foot and a half diſtance from each other; oak-ſtakes are accounted the beſt of all for this uſe, and the next to this thoſe of black-thorn or ſallow. Small buſhes are to be laid below, but not too thick, only to cover the quick from being injur'd as it ſhoots. *Miller*'s Gardeners Dict.

To line a HEDGE, in military affairs, is to plant muſketteers along it, under cover; either to fire upon an enemy that is advancing, or to ſave themſelves from the horſe, or to defend a paſs or defile.

Holly-HEDGES. See HOLLY.

HEDYOSMOS, in botany, a name given by ſome writers to mint, becauſe of its ſweet ſmell.

HEDYPNOIS, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the ſemifloſcular kind, being compoſed of ſeveral ſemifloſcules ſtanding on the embryo fruit, and incloſed in a common cup, which finally becomes a fruit of the ſhape of a melon, and containing two ſeeds; the one of which ſtands in the middle of the flower, and has a ſort of head on it, and the other is umbilicated and ſtands at the edge, and is wrapped round in the leaves of the cup. *Tournef.* Inſt. p. 478.

There is only one known ſpecies of this plant, which is the *Hierachium ſemine adunco* of authors, the hawkweed with crooked ſeeds, and is called by others the hawkweed with the bending flower.

HEDYSARUM, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the papilionaceous kind, and from its cup there ariſes a piſtil which finally becomes a jointed undulated pod, which uſually contains in each joint one kidney-ſhaped ſeed. To this it is to be added, that the flowers are collected into denſe ſpikes.

The ſpecies of *Hedyſarum* enumerated by Mr. Tournefort, are theſe: 1. The clypeate *Hedyſarum* with bright red flowers. 2. The clypeate *Hedyſarum*, with white flowers. 3. The leſſer clypeate *Hedyſarum*, with purple flowers. 4. The annual *Hedyſarum*, with rough undulated and crooked pods. 5. The alpine *Hedyſarum*, with ſmooth pods and purpliſh blue flowers. 6. The alpine *Hedyſarum*, with ſmooth pods and white flowers. 7. The trifoliate canada *Hedyſarum*. 8. The Indian *Hedyſarum*, with ſingle painted leaves. 9. The Indian *Hedyſarum*, with ſingle roundiſh leaves. 10. The little two-leaved *Hedyſarum*, with yellow flowers. 11. The ſhrubby trifoliate *Hedyſarum*, with purple flowers and variouſly diſtorted pods. 12. The leſſer ſhrubby trifoliate *Hedyſarum*. 13. The procumbent trefoil *Hedyſarum*, with purple flowers. 14. The hairy procumbent African *Hedyſarum*. 15. The great annual *Hedyſarum* of Ceylon, with leaves like the ſenſitive plant. 16. The leſſer annual *Hedyſarum* of Ceylon, with leaves like the ſenſitive plant. *Tourn.* Inſt. p. 401.

HEISTERIA, in botany, the name given by Linnæus to a genus of plants, the characters of which are theſe: The perianthium conſiſts of five leaves, which are lanceolated, erect and pointed at the ends; theſe are a little ſhorter than the petals of the flower, and do not fall with it. The flower is of the gaping kind, and conſiſts of one petal divided almoſt to its baſe into two ſegments; the upper lip, which is the vexillum, is erect and ſlightly divided into two oval ſegments which gape aſunder; the carina, which is properly the nectarium of the flower, is hollow, almoſt ſhut, and of a cordated form, and forms the lower part of the under lip. The lower lip, which makes the alæ, is placed on the ſummit of the nectarium; it is divided into two ſegments, and hangs down. The ſtamina are eight filaments which grow at the bottom into an oval membrane, and are of the diadelphous kind: The antheræ are eight in number, and are placed within the nectarium: The germen of the piſtil is oval, and is terminated by four oval points, which cloſe together; among theſe ſtands the ſtyle, which is of the length of the ſtamina, and the ſtigma which terminates this is obtuſe, compreſſed, and obliquely bifid. The fruit is a roundiſh compreſſed capſule terminated by four briſtles, which ſtand at a diſtance from one another, and is compoſed of two cells, each containing a ſeed of an oval figure. *Linnæi* Gen. Plant. p. 341.

HELCOMA, a word uſed by the old writers in ſurgery, to ſignify an ulcer.

HELCYDRION, a word uſed by the old writers in medicine and ſurgery, to expreſs a ſmall exulceration, or ulcerous puſtule in any part of the body.

HELCYSMA, a word uſed by ſome of the old writers to ſignify the ſcoriæ of ſilver, called alſo by ſome encauma. Dioſcorides ſays this has the ſame virtues with the molybdæna, and that it was in his time uſed like that in plaſters.

HELCYSTER, in ſurgery, a hook uſed to extract the fœtus in difficult parturition.

HELEGUG, in zoology, a name by which the people in ſome parts of England call the Anas Aretica Cluſii, a web-footed fowl common on our ſhores. See the article DUCK.

HELENIUM—The Greek writers do not ſeem agreed about the ſenſe of this word. That in which we take it now is plainly no older than the days of Dioſcorides, or the time between that author and Theophraſtus. It is unqueſtionable but the *Helenium* of the laſt author is not what we call by that name. He ſays it was an herb uſed in the making of garlands, and the like, and that it had ſmall and ſhort leaves.

He ranges it among the verticillate aromatic plants; and mentioning it with mint, mother of thyme, and ſuch others, it ſeems to have been a plant of that claſs. But Dioſcorides plainly ſuits his deſcription of the *Helenium* to the plant we now call by that name. He ſays, it had large and hoary leaves reſembling thoſe of the verbaſcum or mullein, and that its root was of an aromatic ſmell, but the reſt of the plant not ſo. Pliny ſeems to have diſliked the account of Dioſcorides, and to have taken his deſcription of this plant from other Greek authors. He ſays, it was a ſmall aromatic herb ſpreading upon the ground with woody ſtalks of ſix or eight inches long, and with ſmall and ſhort leaves like the ſerpyllum, or mother of thyme; and that it grew all over Greece, and was uſed in the making of garlands. This ſmall plant ſeems therefore to have been the *Helenium* of all the antients, except Dioſcorides; and it appears very ſtrange, that he who lived in Greece ſhould depart from the common opinion of his countrymen, and miſtake the name of a plant which grew commonly wild, and was in daily uſe at that time, as Dioſcorides no where ſo much as mentions this common *Helenium* of the Greeks, but treats ſolely of our *Helenium*, or elecampane; under which name we find no error, in regard to its virtues, from him. But Pliny, who tho' he has rejected Dioſcorides's account of the figure of the plant called by this name, has adopted his deſcription of its qualities and virtues, and adding theſe to the liſt of thoſe given by others of the ſmall aromatic and verticillate *Helenium*, he has made many great errors, and given occaſion to many more in others. He ſays, that the herb *Helenium* was an aromatic, and good againſt the bites of ſerpents; and that the root of it was of a ſweet taſte, very full of juice, and good in aſthmas, *&c.* Theſe and the like virtues ſhew that he had copied the qualities of different plants, known to different authors, by the ſame name of *Helenium*; and between this and his falſe tranſlations of ſome of the Greeks, his account in general is by no means to be depended upon. *Pliny* l. 23. c. 8.

The root of the *Helenium*, or *Elecampane*, has been long famous in all diſorders of the breaſt and lungs. It is alſo recommended as a ſudorific and alexipharmic, and as ſuch has a place in moſt of the compoſitions of that intention. An ointment made of the freſh roots and leaves, with lard, is alſo much recommended in the itch and other cutaneous foulneſſes.

HELFING, in our old writers, a braſs coin among the Saxons, equivalent to our halfpenny. *Blount.*

HELIANTHEMUM, *ſmall Sun-flower*, in botany, the name of a genus of plants, called alſo *Ciſtus* and *Chamæciſtus* by authors; the characters of which are theſe: The flower is of the roſaceous kind, conſiſting of ſeveral leaves, diſpoſed in a circular form. The cup is alſo compoſed of ſeveral leaves, and from this ariſes the piſtil, which afterwards becomes a ſort of globoſe fruit, which ſplits open three ways, and is full of roundiſh ſeeds, affixed to ſlender filaments, or to placentæ.

The ſpecies of *Helianthemum*, enumerated by Mr. Tournefort, are theſe: 1. The yellow-flower'd common *Helianthemum*. 2. The common *Helianthemum*, with pale yellow flowers. 3. The common *Helianthemum*, with white flowers. 4. The large-leav'd white-flowered *Helianthemum*. 5. The white-flowered German *Helianthemum*. 6. The white-flowered *Helianthemum*, with narrow hairy leaves. 7. The white-flowered ſtone *Helianthemum*, with oblong narrow leaves, and hairy ſtalks. 8. The ſerpyllum-leav'd *Helianthemum*, with large gold yellow ſweet-ſcented flowers. 9. The narrow-leav'd yellow-flower'd *Helianthemum*. 10. The *Helianthemum*, with ſmall myrtle-like leaves, hoary underneath. 11. The narrow-leav'd ſmooth, erect, yellow-flower'd *Helianthemum*. 12. The procumbent, narrow-leav'd gold yellow-flower'd *Helianthemum*. 13. The cat's-foot-leav'd alpine *Helianthemum*. 14. The hoary thyme-leav'd *Helianthemum*. 15. The ſmooth thyme-leav'd *Helianthemum*. 16. The marjoram-leav'd *Helianthemum*, with very hairy heads. 17. The moneywort-leav'd *Helianthemum*. 18. The poley-leav'd *Helianthemum*. 19. The hoary ſhrub *Helianthemum*, with marjoram-leaves. 20. The *Helianthemum*, with ſhort obtuſe leaves like thoſe of the ſea purſelain. 21. The *Helianthemum*, with broader and pointed leaves like thoſe of ſea purſelain. 22. The annual *Helianthemum*, with ſedum leaves. 23. The lavender-leav'd *Helianthemum*. 24. The ſpotted-flower'd *Helianthemum*. 25. The thyme-leav'd *Helianthemum*, with umbellated flowers. 26. The *Helianthemum* with leaves like roſemary, ſhining on the upper ſide, and hairy underneath. 27. The hoary marjoram-leav'd *Helianthemum*, with ſpotted flowers. 28. The *Helianthemum*, with ſmooth ground pine leaves. 29. The Portugal *Helianthemum*, with large and broad leaves like thoſe of poley. 30. The Portugal *Helianthemum*, with narrower poley-like leaves. 31. The procumbent Portugal *Helianthemum*, with leaves like thoſe of the ſea purſelain, and large yellow flowers. 32. The Spaniſh ſea purſelain-like *Helianthemum*, with roundiſh leaves. 33. The Spaniſh ſea purſelain-like *Helianthemum*, with narrower leaves. 34. The Spaniſh ſea purſelain-leav'd *Helianthemum*, with very ſmall leaves. 35. The Portugal *Helianthemum*, with hoary marum-like leaves, and yellow flowers. 36. The Portugal *Helianthemum*, with hoary marum-like leaves, and very hairy heads. 37. The Portugal *Helianthemum*, with marjoram leaves, and a black ſpot in every flower. 38. The Spaniſh ſea purſelain-like *Helianthemum*, with large nervous and hoary leaves. 39. The alpine *Helianthemum*, with olive-like leaves, hoary underneath. 40. The narrow-leav'd Spaniſh *Helianthemum*, with narrow leaves, and fleſh-colour'd flowers. 41. The plantain-leav'd perennial *Helianthemum*. 42. The Portugal *Helianthemum*, with hares-ear-leaves, and ſpotted flowers. 43. The daiſy-leav'd Portugal *Helianthemum*. 44. The annual Portugal plantain-leav'd *Helianthemum*, with three colour'd flowers. 45. The Spaniſh *Helianthemum*, with very ſmall roundiſh leaves. 46. The Spaniſh *Helianthemum*, with origanum leaves, hoary underneath. 47. The Spaniſh *Helianthemum*, with baſil leaves, hoary underneath. 48. The dwarf *Helianthemum*, with purſelain like leaves of a ſilvery colour. *Tourn.* Inſt. p. 249, 250.

The root of *Helianthemum*, taken internally, is eſteemed good againſt the bites of ſerpents; and the tops are effectual for the ſame purpoſe. The plant is aſtringent, and a good demulcent, in the form of a decoction, particularly in diarrhœas, hæmorrhages, and diſeaſes of the fauces. J. Bauhine ſays, it is good in all diſorders attended with a flux of any kind. Vid. *James*, Dict. Med. in voc.

HELICE, or ELICE, the name given by the antient Greeks to the willow. Theophraſtus tells us that, in his time, many called the willow not *Hele* but *Helice*. Pliny has miſunderſtood this paſſage of Theophraſtus, and has repreſented the willow as being of three kinds, and tells us, that the loweſt, or ſmalleſt of theſe kinds, was called *Helice* by the Greeks. But this is a falſe diſtinction, the word *Helice* ſignifying no more nor leſs than the itea or ſalix, and expreſſing one ſpecies of ſalix as well as another: Nor is this the only miſtake he has fallen into in this place; he has ſaid that the Aſiatics uſed the word; whereas Theophraſtus, who was the author he took the account from, mentions the Arcadians, not the Aſiatics, as uſing it; and it appears from others, that Evander the Arcadian was the firſt who uſed the word.

HELICTERES, in botany, the name given by Linnæus to a genus of plants, called *Iſoria* by Plumier, and in the *Hortus Malabaricus*. The characters are theſe: The perianthium is one leav'd, of a ſemi-oval figure, narrow at the bottom, and obliquely open at the top, like the ear of ſome beaſt, tridentated at the apex, and unidentated at the ſides, and of a coriaceous texture. The flower is compoſed of five oblong petals, equal in breadth, of the ſame length with the cup, and fixed to it. The germen is compoſed of five little petals, which ſurround the germen, and cover it. The germen of the piſtil is roundiſh, and is carried on the top of a long, ſlender, and crooked ſtyle. The ſtigma is ſimple and acute. The ſtamina are ten very ſhort filaments, placed at the baſis of the germen. The antheræ are oblong and lateral. The fruit is compoſed of five oblong capſules, ſpirally twiſted, each containing only one cell. The ſeeds are numerous, and kidney ſhaped. *Linnæi* Gen. Plant. p. 439. *Plum.* Gen. 37. Hort. Mal. vol. 6. p. 30.

HELIOCARPUS, in botany, the name of a genus of plants, deſcribed by Houſton under the name of *Monſia*; the characters of which are theſe: The perianthium is colour'd, and conſiſts of four low and ſomewhat broad ſtrait leaves, which fall with the flower. The flower conſiſts of four ſtrait petals, which are much ſmaller than the leaves of the cup. The ſtamina are ſixteen pointed filaments, of the length of the cup. The antheræ are ſtrait, double, and incumbent. The germen of the piſtil is roundiſh. The ſtyles, which are two in number, are ſtrait, erect, and of the length of the ſtamina. The ſtigmata are acute, and ſtand diſtant from one another. The fruit is a turbinated and ſomewhat oval capſule, containing two cells, and ſurrounded with ramoſe radii. It contains two cells, in each of which is lodged one ſeed, which is of a ſomewhat oval figure. *Linnæi* Gen. Plant. p. 243.

HELIOCENTROS, in natural hiſtory, a name given to an inſect of the poiſonous kind, called by Ariſtotle phalangium dectícum, and by the Latins ſolipuga. Some have erroneouſly written this word ſolifuga, and then attempted to explain that name by the creature's cuſtom of burying itſelf in the ſand, to avoid the ſun, as they ſuppoſe; but it is really only to lie under cover, that it may the more eaſily catch flies and other inſects. The Greeks have in the ſame manner called it *holocentros*, by corruption from *heliocentros*; and their commentators have not been wanting to find proper explications of that word. Solinus tells us, that this creature is common in Sardinia; he ſays indeed, that it is particular to that country; but in that he contradicts the antients, who mention many other places for it. Pliny ſays it is found in Æthiopia, and Lucan mentions it among the poiſonous creatures of Africa.

HELIOTROPE, (*Cycl.*) *Heliotropium*, among the antients, an inſtrument or machine, for ſhewing when the ſun arrived at the tropics and the æquinoctial line. *Hofm.* Lex. in voc.

HELIOSTROPHUS, in the materia medica, a name given by ſome of the Greek writers of the later ages, to the gum ammoniacum of the antients, which ſeems to have been a very

different thing from what is called gum ammoniacum at this time, it being yellow and friable, ours whitiſh and tough.

HELIOTROPIUM, *Turnſole*, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a one leav'd tubular perianthium, remaining when the flower is fallen, and divided into five ſegments at the rim. The flower conſiſts of one petal, which is a tube of the length of the cup, the rim of which is ſlightly divided into five ſegments of different ſizes, the ſmaller being pointed and placed alternately with the larger, the opening of the flower being cloſed with five prominent ſcales, arranged into the form of a ſtar. The ſtamina are five extremely ſhort filaments, ſituated in the opening of the flower; the antheræ are ſmall and cover'd. The piſtillum has four germina. The ſtyle is ſlender, and of the length of the ſtamina; and the ſtigma is rimm'd round the edge. The cup remains unalter'd for the ripening of the ſeeds, and contains four, of an oval and pointed form. *Linnæi* Gen. Plant. p. 56. See HELIOTROPE, *Cycl.*

The characters of *Heliotropium*, according to Tournefort, are theſe: The flower conſiſts of one leaf, and is funnel ſhaped, and corrugated in the center into the ſhape of a ſtar, and divided into ten unequal ſegments at the rim. From the cup there ariſes a piſtil, which is fixed in the manner of a nail to the lower part of the flower, and is ſurrounded by four embryos, which afterwards ripen into ſo many ſeeds, angular on one ſide, and gibboſe on the other, and remaining in the cup till ripe.

The ſpecies of this plant, enumerated by Mr. Tournefort, are theſe: 1. The large white-flower'd *Heliotrope*. 2. The great Sicilian *Heliotrope*, with a large ſweet-ſcented flower. 3. The great autumnal *Heliotrope*, with the ſmell of jaſmine. 4. The middle ſized ſlender Italian *Heliotrope*. 5. The ſmaller creeping *Heliotrope*. 6. The clary-leav'd blue American *Heliotrope*. 7. The narrower-leav'd blue American *Heliotrope*. 8. The *Heliotrope* of Curaſſo, with leaves like the linum umbilicatum. 9. The woolly ſhrub ſea *Heliotrope*, with the appearance of the American cudweed. The *Heliotropium* tricoccum, uſually accounted one of this genus, is properly a ricinoides. *Tourn.* Inſt. p. 138. See RICINOIDES and TURNSOLE.

Dale ſays, that *Heliotrope* is uſed in medicine againſt cancers, gangrenous ulcers, and ſtrumous ſwellings.

HELIOTROPIUM is alſo a name given to the blood-ſtone, or *lapis hæmatitis*. See HÆMATITIS.

HELLEBORINE, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the polypetalous anomalous kind, conſiſting of ſix diſſimilar petals, five of which are placed in a ſort of orbicular figure; but the ſixth, which is the lower one, is imbricated. The cup finally becomes a ſeed-veſſel, which is pervious by three feneſtræ, to each of which adheres a valve. The ſeeds are extremely ſmall, and like duſt, and the roots are fibroſe.

The ſpecies of *Helleborine*, enumerated by Mr. Tournefort, are theſe: 1. The common broad-leav'd *Helleborine*. 2. The narrower-leav'd purple-flower'd mountain *Helleborine*. 3. The broad-leav'd white-flower'd mountain *Helleborine*. 4. The narrow-leav'd meadow or marſh *Helleborine*. 5. The narrow-leav'd meadow *Helleborine*, with green flowers. 6. The Engliſh wild marſh *Helleborine*. *Tourn.* Inſt. p. 436.

HELLEBORUS, *Black Hellebore*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of ſeveral petals or leaves, arranged in a circular form. From the middle of the flower there ariſes a piſtil which is compoſed of ſeveral horn-like capſules, and ſurrounded at its bottom by a vaſt number of ſtamina. The piſtil finally becomes a membranaceous fruit, compoſed of ſeveral thin capſules, collected into a head, each ending in a ſort of horn, and all, when ripe, opening lengthwiſe, and diſcovering roundiſh or oval ſeeds.

The ſpecies of black *Hellebore*, enumerated by Mr. Tournefort, are theſe: 1. The wild ſtinking black *Hellebore*. 2. The green-flower'd garden black *Hellebore*. 3. The larger garden black *Hellebore*. 4. The broader-leav'd garden black *Hellebore*. 5. The narrow-leav'd garden black *Hellebore*, or true roſe-flowered black *Hellebore*. 6. The large-flowered autumnal black *Hellebore*. 7. The ſmaller Dutch roſe-flowered black *Hellebore*. 8. The bloody-leav'd black *Hellebore*. 9. The deeply divided-leav'd black *Hellebore*, 10. The trifoliate black *Hellebore*. 11. The yellow-flower'd ranunculus-leav'd tuberoſe black *Hellebore*, commonly called the winter aconite. And 12. The crow-foot-leav'd black *Hellebore*, with ſmaller globoſe flowers. *Tourn.* Inſt. p. 271. See HELLEBORE, *Cycl.*

HELLENODICÆ, Ἑλλανοδικαι, in antiquity, the directors of the olympian games. They aſſembled in a place called Ἑλλανοδικαιον, in the Elean forum, where they were obliged to reſide ten months before the celebration of the games, to take care that ſuch as offered themſelves to contend, performed their προγυμνασματα, or preparatory exerciſes, and to be inſtructed in all the laws of the games by certain men called Νομοφυλακες, i. e. keepers of the laws. And the better to prevent all unjuſt practices, they were farther obliged to take an oath, that they would act impartially, would take no bribes, nor diſcover the reaſon, for which they diſliked, or approved of any of the contenders. At the ſolemnity they ſat naked, having before them the victorial crown, till the exerciſes were finiſhed, and then it was preſented to whomſoever they adjudged it. Nevertheleſs, there lay an appeal from the *Hellenodicæ* to the olympian ſenate. *Pott.* Archæol. Græc. l. 2. c. 22. T. 1. p. 448.

HELLENODICÆUM, Ἑλλανοδικαιον, in antiquity, the place where the *Hellenodicæ* were uſed to aſſemble. See HELLENODICÆ.

HELLENOTAMIÆ, Ἑλλανοταμιαι, in antiquity, Athenian officers appointed to receive the money due from the tributary cities. *Pott.* Archæol. Græc. l. 1. c. 14.

They were alſo called *Hellenotamiæi*, Ἑλλανοταμιαιοι.

HELLOTIA, Ἑλλωτια, in antiquity, two feſtivals, one of which was celebrated in Crete, in honour of Europa, called *Hellotia*; the other was celebrated by the Corinthians, with ſolemn games and races, wherein young men contended, running with lighted torches in their hands. See a farther account of theſe feſtivals in *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 393.

HELLOTIS, Ἑλλωτις, in antiquity, a myrtle garland, carried in proceſſion with Europa's bones at the feſtival called *Hellotia*. *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 393. See HELLOTIA.

This garland was no leſs than twenty cubits in circumference.

HELM, (*Cycl.*)—*Eaſe the* HELM, at ſea. See the article EASE.

HELMET *Pigeon*, the name given to a particular ſpecies of pigeon, called by Moore the *Columba galeata*. It has its name from its having its head cover'd with a plumage of a diſtinct colour from that of the reſt of the body, and appearing ſomewhat like a helmet covering the head. It is a moderate ſiz'd pigeon, a little bigger than the ſpecies called the nun. The head, tail, and flight feathers of the wings, are always of the ſame colour, which is either black, red, or yellow, and ſometimes, tho' rarely, blue. The reſt of the body is all white. They are red eyed, and have no hood like that of the nun, otherwiſe they approach much to that ſpecies. *Moore*'s Columbarium, p. 48.

HELMINTHAGOGA, medicines contriv'd to deſtroy and expel worms.

HELMINTHES, in the medicinal writers, a word uſed to ſignify the worms in human bodies.

HELMINTHOTHECA, in botany, a name given by Vaillant to a genus of plants, ſince deſcribed by Linnæus under the name *Picris*. See the article PICRIS.

HELMONTII *Ludus*. See the article LUDUS *Helmontii*.

HELODES, in natural hiſtory, a term applied to certain plants, to ſignify their place of growth to be in fens, bogs, or marſhy places; thus a kind of St. Peter's-wort, which is diſtinguiſhed from the others by being hairy, and growing always in boggy places, is called by Ray and others, aſcyrum villoſum *Helodes*.

In medicine the ſame word is uſed as a characteriſtic epithet in certain fevers. Theſe are ſuch as are attended, in their beginning, with profuſe ſweats, which afford no relief; and all the time the tongue is dry, and the ſkin hard, and, as if it were, parched. Theſe are uſually of dangerous conſequence.

HELOPS, in ichthyology, the name of a fiſh which often occurs in the old Greek and Latin writers. Ariſtotle, Ælian, Ovid, and others, mention it. It ſeems to have been the ſame with their oniſcus and accipeſius, which was our ſturgeon. Pliny's account of the *Helops* countenances this opinion.

HELOSIS, in medicine, the name of a diſorder of the eyes, attended with an everſion, or turning up of the eyelids.

HELOTIS, a name given by ſome authors to a diſeaſe called plica polonica. See the article PLICA, *Cycl.*

HELOTS, in antiquity, a kind of ſlaves, among the Lacedæmonians, on whom lay the whole care of ſupplying the city with proviſions; the ground was tilled, and all manner of trades managed by them; whilſt their maſters, gentlemen like, ſpent all their time in dancing and feaſting, in their exerciſes, hunting matches, and the λεσχαι, or places where good company uſed to meet. Notwithſtanding the great uſefulneſs of the *Helots*, they were treated in a moſt barbarous manner, and often murdered without committing any fault, and without any ſhew of juſtice. *Potter*, Archæol. Græc. l. 1. c. 10. The *Helots* were ſo called from *Helos*, a Laconian town, conquered by the Spartans, who made all the inhabitants priſoners of war, and reduced them and their poſterity to the condition above deſcribed.

HELPESED, in natural hiſtory, a name uſed by ſome writers for coral.

HELSEBON, an affected word, uſed by ſome of the chemical writers to expreſs common ſea ſalt, well purify'd by ſolution and recryſtalization.

HELSINGEGAAS, in zoology, the name given by Hoier, in his epiſtle to Cluſius, to a ſort of Gooſe, the head and neck of which are black, the neck having a ring of white round it. The breaſt is white, the wings are grey, the back blue, and the feet red. It is of the ſize of a common duck. Mr. Ray much ſuſpects this account. *Ray*'s Ornithol. p. 306.

HELSINGIC *Character*, a character inſcribed on ſome ſtones found in Helſingland, in the north parts of Sweden. It differs from the Runic; tho' one of theſe characters may eaſily be transformed into the other. See the article RUNIC.

HELVE, the handle of a hatchet, pick-ax, mattock, *&c.* And to *helve* theſe is to put handles to them.

HELXINE, in botany, a name uſed, by ſome authors, for the parietaria, or pellitory of the wall. *Ger.* Emac. Ind. 2.

HELXINE *Ciſſampelos*, in botany, a name given by ſome authors to a ſpecies of bindweed, called by Mr. Tournefort *convolvulus major albus craſſiori & auriculato folio maritimus*. The great white-flower'd ſea bindweed, with thick auriculated leaves. See the article CONVOLVULUS.

HEM, a partition in the ovens, wherein the *lapis calaminaris*, or *calamine*, is baked. Theſe ovens have a hearth made on one ſide, divided from the oven itſelf by a partition, or *Hem*, open at the top, by which the flame paſſes over, and ſo heats and bakes the *calamine*.

HEMANDIA, in botany, the name of a genus of plants, the characters of which, as collected by Linnæus from Plumier's deſcription, are theſe: The flowers are ſome male, others female. The male flower is divided into ſix ſegments, as is alſo the female, which is ſucceeded by an oval nut of a furrowed ſurface, with one cell, containing a globoſe kernel. This nut is encloſed in the cup, which becomes very large and inflated, and of a roundiſh figure, with an undivided edge. Linnæus laments that we have yet no better account than this of ſo ſingular a fructification. *Linnæi* Gen. Pl. 517. *Plumier*. 40.

HEMATOPUS, in zoology, a name uſed by Bellonius and ſome others, for the bird commonly known in England by the name of the ſea-pie, and called by Mr. Ray and ſome authors pica marina. See the article PICA *Marina*.

HEMEROTROPHIS, in antiquity, a meaſure of capacity, the ſame with the *chœnix*. See CHOENIX. It was ſo called from its holding one days food.

The word is compounded of ἡμερα, a day, and τροφη, food.

HEMERALOPIA, a diſtemperature of the eyes, by means of which perſons can only ſee in broad day-light, and not diſtinguiſh objects at all in the duſk of the evening. It is owing to a great contraction of the pupil.

HEMEROCALLIS, in botany, the name of a genus of plants, the characters of which are theſe: There is no cup, the flower is of a funnel ſhape, and is divided at the edge into ſix ſegments; the tube is ſhort, and the limb is wide, and ſomewhat bent back; the ſtamina are ſix tubulated filaments, of the length of the flower; they droop a little, and the upper ones are ſomewhat ſhorter than the others; the antheræ are oblong and aſſurgent; the germen of the piſtil is roundiſh and ſulcated; the ſtyle is capillary, and of the length and ſituation of the ſtamina; the ſtigma is aſſurgent, and obtuſely trigonal. The fruit is a trigonal and trilobated capſule, of a ſort of oval figure. It is compoſed of three valves, and contains a great number of ſmall ſeeds, which are roundiſh. *Dillen*. Hort. Elth. p. 118. *Linnæi* Gen. Pl. p. 148.

Linnæus makes this genus comprehend the *Lilio-aſphodelus* and the *Liliaſtrum* of Tournefort; the only difference between which he obſerves is, that the germen in the *Lilio-aſphodelus* is placed within the cup, and the flower is monopetalous; whereas in the *Liliaſtrum* the germen is in the ſame manner placed in the cup, but the flower is hexapetalous. *Tournefort*'s Inſt. p. 179, 194.

HEMICRANIA, (*Cycl.*) the name of a ſpecies of *head-ach* affecting only half the head, and owing to a congeſtion of blood in the veſſels of that half.

Phyſicians divide the *Hemicrania* into four kinds: 1. The idiopathic, when it is properly a diſeaſe of itſelf. 2. The ſymptomatic, where it is properly only the ſymptom of ſome other diſeaſe. 3. The continual or fixed, where it admits of no abſolute intermiſſions. And, 4. The periodic, where the patient is regularly free from it at certain ſtated periods.

Signs of it. Among theſe are vibrative and very acute pains: The pain occupies only one part of the head, while the other part is wholly free and at eaſe. The left ſide of the head is uſually the part in pain. In that ſide of the head where the pain is, it is not fixed to any one ſpot, but wanders up and down from one part to another; and ſometimes the eye on that ſide, ſometimes the jaw and teeth are affected by it. When the lower part of the head is in pain, the upper part is ſomewhat eaſy; and in ſome caſes the pain has been known to deſcend to the arm of that ſide. To this it is to be added, that the patient is uſually coſtive, and makes very little urine. Women are much more ſubject to this diſtemper than men, and among them principally ſuch as live high, and uſe little exerciſe; ſuch as are ſubject to violent paſſions of the mind; ſuch as have had frequent ſuppreſſions of the menſes; and ſuch as live in a married ſtate without having children.

The principal cauſe of the diſeaſe is a plethora, occaſioned uſually by a ſuppreſſion of the menſes, or hæmorrhoids, or ſome other natural evacuation, or the omiſſion of habitual bleedings at ſpring and fall. To theſe cauſes are to be added a diſtemperature of the primæ viæ, a change of the courſe of life from one full of exerciſe to a ſedentary one; over-great watchings or ſtudies; too great heat of the body, or too ſudden cooling of it; violent paſſions, as of anger, or the like, ſuppreſſed; and finally, too high living, and the free uſe of ſtrong liquors. *Junker*'s Conſp. Med. p. 118.

Prognoſtics. This ſpecies of *head-ach* not unfrequently brings on ſuffuſions, and other diſorders of the eyes, and often is a forerunner of the gout, eſpecially if it be imprudently treated during the fit; if the congeſtion of blood be driven by repellents at this time to the feet, it conſtitutes that painful diſtemper; but if it fall upon the viſcera, it uſually brings on an inflammatory fever. When it extends to the arm and ſide of the affected half of the head, there is danger of a palſy coming on. In itſelf it is not difficult of cure in young people; but in women advanced in years, after the ceſſation of the menſes, it is ſcarce ever perfectly cured ſo as not to return.

Method of cure. As the primæ viæ are almoſt always obſtructed in this complaint, the regular beginning of a cure is by emptying them; and a gentle vomit, and purging medicines are to be given. Stahl adviſes, to anſwer both theſe purpoſes at once, by rhubarb and tartar emetic mixed together. After this emollient clyſters are to be given; then the violent emotion of the blood is to be quieted, by giving powders compoſed of nitre, crabs-eyes, and cinnabar; and in caſes where the pain is violent and inſufferable, a gentle opiate may be given, ſuch as a ſmall doſe of the ſtorax pill, and at other times the quantity of the cinnabar may be encreaſed from five grains to ten or twenty in a doſe; and this will ſupply the place of the opiate, and produce the ſame effect in giving eaſe. Spirit of wine camphorated may alſo be uſed externally; and frequently bathing the feet in the decoctions of the warm and emollient herbs has often a great effect. In the abſence of the fit, the methods to be uſed, by way of prevention, are bleeding in the ankle to remove the plethora; and where the ſuppreſſion of the menſtrual, or any other diſcharge, has been the cauſe, this is to be reſtored if poſſible to its wonted periods; and in all caſes a ſedentary life is to be avoided. Bleeding is never proper in the time of the fit, unleſs the plethora be very great, or the congeſtion in the head ſo great, that worſe conſequences are to be feared.

HEMIOBOLON, a weight often mentioned by the antient writers in medicine, and expreſſing the half of their obolus, or the twelfth part of a dram, that is five grains.

HEMIONITIS, *Moon-fern*, in the linnæan ſyſtem of botany, the name of a genus of *ferns*, the character of which is, that the fructifications are diſpoſed in branched lines, or ſuch as intermix with and interſect one another.

The characters of *Hemionitis*, according to Tournefort, are theſe: The flowers are not diſcovered, but the ſeeds ſtand in cluſters on the back-part of the leaves. The leaves are all furniſhed with broad auricles at their baſe, and are in ſome ſpecies ſimple, and in others branched or compound. *Tourn.* Inſt. p. 546.

The ſpecies of *Hemionitis* enumerated by Mr. Tournefort, are theſe: 1. The common *Hemionitis*. 2. The exotic *Hemionitis*. 3. The beautiful Portugal *Hemionitis*. 4. The great cinquefoil *Hemionitis*. 5. The great trifoliate *Hemionitis*. 6. The hairy golden *Hemionitis*. 7. The deeply jagged *Hemionitis*, with duſty edges. 8. The laciniated curled *Hemionitis*. 9. The various leav'd pointed *Hemionitis*. 10. The trifoliate *Hemionitis*, with fimbriæ of fine reddiſh hairs. 11. The beautiful American cinquefoil *Hemionitis*. 12. The great harts-tongue leav'd *Hemionitis*; and, 13. The dwarf cinquefoil round dented *Hemionitis*.

HEMIPAGIA, a pain that affects only one half of the head: The ſame as HEMICRANIA.

HEMIXESTON, a meaſure among the antients, containing half a xeſtes. The xeſtes contained two cotyles, and therefore the *Hemixeſton* was a cotyle. *Caſtel.* & *Gorr.* in voc.

HEMLOCK, *Cicuta* (*Cycl.*) — Many poiſonous plants have had this word uſed in ſome manner as a part of their name; ſuch are the *Hemlock* dropwort, and the water *Hemlock*, both well known to be fatal in their effects. But the learned world ſeem'd divided about the effects of the common *Hemlock*, or *cicuta vulgaris*, for a long time; the true knowledge of which has been diſcovered by a very fatal late inſtance. This is a plant much more common than either of the before mentioned, growing every where in our hedges, and diſtinguiſhed by its painted ſtalks. Cardan mentions a man who was killed by eating a cake in which *Hemlock* was an ingredient; and Braſſavola affirms, that it is fatal not only to men, but to geeſe and ſwine; and Matthiolus, Scaliger, Kircher, Boccone, and others, all agree with the common opinion of its poiſonous qualities: Yet it has been much doubted whether this plant, growing in England, had this poiſonous quality or not: And ſo faithful a writer as Mr. Ray mentions, that his friend Mr. Petiver eat half an ounce of the root of it; and that Mr. Henly, a friend of Mr. Petiver's, eat in his preſence three or four ounces of it, without any hurt or inconvenience from it. From hence it has been generally believed with us, either that the root had different virtues from the ſtalks and leaves, or that the plant had very different effects in different countries, and was without that poiſonous quality in England which it had in hotter climates.

The

The German Ephemerides mention an inſtance alſo of its being eaten without injury; and the judicious Linnæus doubted of its malignity, and thence gave it the old name of coccium, reſerving that of *cicuta* for the water *Hemlock*, known to be a poiſon. Philoſ. Tranſ. N° 473. p. 18.

Whatever may be the effects of the roots, we have lately had a very fatal proof that the leaves are poiſonous. Four perſons having ignorantly boiled a large quantity of them with bacon, and after eating the broth with bread, eat the leaves with their bacon; of theſe, two of them grew convulſed, and died in a few hours, and the other two became comatoſe, and would probably have ſhar'd the ſame fate, had they not had large quantities of oil given them, and by that means voided by vomit what they had taken. The effects of this poiſon on them all, were obſerved in every particular to be the ſame with over large doſes of opium. Philoſ. Tranſ. N° 473. p. 20.

Water HEMLOCK. See the article PHELLANDRIUM.

HEMP, *Cannabis* (*Cycl.*)—This valuable plant delights in a ſtrong and rich mould, but it muſt be warm and dry. Lands where hay and woodſtacks have ſtood, are often found to yield very great crops of *Hemp*. A land that is gravelly, if rich and deep, will do very well; but if it be ſtiff or moiſt, it will by no means ſucceed. *Hemp* is a very good thing for deſtroying weeds, but it is what the farmers call a *peeler* of land, that is, it robs and exhauſts it very quick; therefore it is beſt to be ſown on very rank lands, and not repeated too often on the ſame piece.

The beſt *Hemp-ſeed* for ſowing, is that which looks brighteſt, and which will retain its brightneſs, and not break when rubbed. Three buſhels of ſeed is the general allowance for an acre; but the richer the land is, the thicker it ſhould be ſown; and the poorer, on the contrary, the thinner ſown. Some people only give the land one plowing for *Hemp*, which is juſt before they ſow it; but others prepare it as finely as the gardeners do their mould. The time for ſowing *Hemp* is from the beginning of April till the end. The ſeed muſt not be buried, but only juſt covered in the ground. If it be ſown in a dry time, it muſt be at firſt carefully preſerved from the birds, which are great devourers of the ſeed before it ſhoots.

The male *Hemp*, or ſummer *Hemp*, which bears no ſeeds, and is called by the farmers *Fimble-hemp*, will have its ſtalks turn white in July, and it is then to be gathered. The remaining plants, which are the female *Hemp*, called by the farmer *Karle-hemp*, are to be left till Michaelmas. When this is gathered, it is to be left as the other to dry a little, and then houſed. After this the *Karle-hemp* is to be threſhed for the ſeed. *Mortimer*'s Huſbandry, p. 153.

An acre of *Hemp* in the beſt land yields from two to three quarters of ſeed; and this ſeed, with the *Hemp* unwrought, is worth from five to eight pounds; and if the *Hemp* be wrought, from ten to twelve pounds, or more; but the male, or *Fimble-hemp*, is not worth more than half as much as the other. The growing of *Hemp* on proper lands, would not only be a great advantage to the farmers, but alſo to the poor, as it would give them a ſecond harveſt-work after the corn harveſt was over, and which would employ them even in wet ſeaſons; yet it is a piece of huſbandry too much neglected among us.

HEMP-*ſeeds* are uſed in medicine on many occaſions, but they are ſuſpected of being bad for the head. An emulſion made from them, is of great uſe in jaundices. They are ſaid alſo to abate the quantity of ſemen, if taken for a long time together.

HEN, *Gallina*, in zoology. See the article GALLINA.

HENBANE, in botany. See the article HYOSCIAMUS.

This plant has been always eſteemed poiſonous, and we have a late account of the manner of its affecting thoſe who have taken it, from Touey in France, which appears very ſingular. A working man of that place digging in his garden in ſpring, met with ſome roots of this plant, which being long and large he took for parſneps; he carried them as ſuch to his wife, who dreſſed them, and herſelf and eight children eat of them, the man accidentally not dining at home. The conſequence was that they were all ſeized with convulſions in a terrible manner; they were in general ſpeechleſs, but when they ſpoke they uttered abſolute madneſs; they had many of them the riſus ſardonicus, and all had their eyes ſtarting as it were out of their heads. The madneſs of all of them continued ſo compleat, that there could be no uſe in ſpeaking to them; and the convulſions ſo ſtrong, that five or ſix perſons were neceſſary to hold them while they had the medicines poured down their throats. One of the boys eſcaping while they were giving the medicines to the reſt, ran into a pond, where he would inevitably have been drowned, if he had not been followed and taken out. The medicines given theſe people, were tartarum ſtibiatum to the ſtrongeſt, in doſes of forty-five grains; and to the others theriaca with ſalt of rue. They all recovered, but with great difficulty, and with very odd ſymptoms at the going off of the heavier effects of the poiſon. The next day they had all recovered the uſe of their reaſon, but had not the leaſt remembrance of any thing that had happened; and all this day every object that they viewed appeared double to them. On the day following this ſymptom was removed, but in the place of this there came on another in the ſame organ, every thing they ſaw now appearing red as ſcarlet. This ſymptom gradually went off afterwards, and they found themſelves perfectly well. Phil. Tranſ. N° 450. p. 449.

HENBANE *Louſe*, in natural hiſtory, a name given by ſome to a peculiar inſect found very frequently on that plant in the ſummer months. It is one of the cimices of authors, and is very well deſcribed by Liſter in the Philoſophical Tranſactions. It is a very large cimex, of a fine red, ſpotted with black. It feeds on the juices of the *Henbane*, whoſe leaves and ſtalks it pierces with its trunk. It is very remarkable that the juices of this ſtinking plant become of a very agreeable and aromatic flavour in the body of this inſect, and on trial it may perhaps be found, that the miſchievous narcotic quality of the plant may be rendered wholeſome, and a good medicine, in the body of this inſect. Phil. Tranſ. N° 71.

In June and July it is common to ſee ſeveral ſeries of oblong orange-coloured bodies adhering to the upper ſides of the leaves of this plant; theſe are the eggs of this cimex. Theſe eggs are white in the belly of the inſect, and whitiſh when laid firſt, but they grow more deep coloured when the young ones come near the time of hatching. They are hatched into perfect cimices, not in that of worms. Theſe eggs yield a colour which is ſo fine, that it may be worth introducing into uſe in ſome manner; it is a fine lively carnation. There needs no more to obtain it, but the rubbing or cruſhing the eggs, while freſh, upon white paper. The inſects themſelves are ſo common, that from May to the end of June it is ſcarce poſſible to find a plant without them; and the eggs are not leſs frequent in their ſeaſon, in hot weather. They are ſometimes laid in May, but never later than June; their colour is apt to fade of itſelf; but this might probably be much aſſiſted as to holding, by alum or other additions.

HENBANE-*ſeed*. This is a ſeed uſed by many people in the tooth-ach, and in ſeveral other maladies, and is an ingredient in ſome of the officinal compoſitions, particularly in the philonium romanum; but it has been found, when taken alone, to be poiſonous. Sir Hans Sloane gives an account in the Philoſophical Tranſactions, of ſome children who, eating the ſeeds of the common *Henbane*, were affected with intenſe thirſt, ravings, dimneſs of ſight, and a profound ſleep, which in one of them laſted two days.

Theſe were all recovered by bleeding, bliſtering, purging, and vomiting. What Sir Hans obſerves particularly of the caſe is, that the delirium which was occaſioned by theſe ſeeds, was not of the common kind, but was of the nature of that produced by the dutroa, a ſpecies of ſtramonium, and by the baugue of the Eaſt-Indies, which is a plant with leaves like hemp. Philoſ. Tranſ. N° 430.

The virtues of this ſeed may compenſate for the miſchief it may do when taken in an improper manner; in the tooth-ach nothing is perhaps equal to it. Sir Hans Sloane mentions an account of a quack who cured this pain immediately by burning theſe ſeeds, and cauſing the vapour to be received into the tooth through a funnel. The empiric ſlily contrived to have ſome ſmall maggots conveyed at the ſame time into a pail of water placed under the perſon's head, which he pretended to have fallen out of the tooth, by the virtues of the medicine; but theſe being bred up to their change, became ſmall beetles, and were doubtleſs of the common kind.

HENED *Penny*, in our old writers, a cuſtomary payment of money inſtead of *Hens* at Chriſtmas. It is mentioned in a charter of king Edward III. Mon. Angl. Tom. 2. p. 327. Du Cange is of opinion it may be *Hen-penny*, *Gallinagium*, or a compoſition for eggs: But Cowel thinks it is miſprinted *Hened-penny* for *Heved-penny*, or *Head-penny*.

HEN-HARRIER, in zoology, the Engliſh name for the male ſubbuteo, the female of which is ſo very different, that it is called by another name, the ring-tail. See the article RING-TAIL.

The male ſubbuteo, or *Hen-harrier*, is ſmaller than the ring-tail; its head, neck, and back, are of a dove colour; its ſhoulder feathers, however, are ſomewhat browniſh; its rump is ſomewhat whitiſh, and its breaſt of a fine clean white, variegated with tranſverſe brown ſpots; its wings and tail are grey or dove-coloured, variegated with black, and its legs ſmaller and ſlenderer than is uſual in the hawk kind. *Ray*'s Ornithol. p. 40.

HENIECOE, in botany, a name given by the people of Guinea to a ſpecies of plant which we are unacquainted with, but which they give with very great ſucceſs in all kinds of the colic, boiled in water. Philoſ. Tranſ. N° 232.

HENIOCHAS, in aſtronomy, a northern conſtellation. See the article AURIGA.

HEN-MOULD *Soil*, in agriculture, a term uſed by the huſbandmen in Northamptonſhire, and other counties, to expreſs a black, hollow, ſpungy, and mouldering earth, uſually found at the bottoms of hills.

It is an earth much fitter for grazing than for corn, becauſe it will never ſettle cloſe enough to the grain to keep it ſufficiently ſteady while it is growing up, without which, the farmers obſerve, it either does not grow well; or if it ſeem to thrive,

thrive, as it will in ſome years, the growth is rank, and yields much ſtraw, but little ear.

It is over-moiſt, and to that is principally to be attributed this rankneſs of the crop in ſome years; and the occaſion of its retaining ſo much moiſture is, that it uſually has a bed of a ſtiff clay, which will not let the water run off into the under ſtrata.

In ſome places they alſo give this name to a black, rich, and denſe earth, with ſtreaks of a whitiſh mould in many parts. This ſort of *Hen-mould* is uſually found very rich and fertile. *Moreton*'s Northamp. p. 37.

HENNA, in botany, a name given by Ludwig to a genus of plants, called *alhen* by Dr. Shaw and others, and ſince named by Linnæus lawſonia. See the article LAWSONIA.

HENOTHRIX, in natural hiſtory, the name of a fly of the ſeticauda or hair-tail'd kind. This is diſtinguiſhed from the others by having only one hair, and is called alſo by ſome uniſeta. The whole body of this ſpecies is black, except the middle of the back and belly, which are red; the wings are ſilvery, and the antennæ very ſmall and black. It is very common in the warm climates, and is uſually found ſitting on the ammi, or biſhop's-weed; whence it is called by ſome the ammi-fly.

HENRICUS *rubens*, in the affected language of ſome chemiſts, a name given to vitriol when calcined to a redneſs.

HENTINGS, in agriculture, a term uſed by the farmers for a particular method of ſowing before the plough; the corn being caſt in a ſtrait line juſt where the plough is to come, is by this means preſently ploughed in. By this way of ſowing they think they ſave a great deal of ſeed and other charge, a dexterous boy being as capable of ſowing this way out of his hat, as the moſt dexterous ſeeds-man. *Plot*'s Oxfordſhire, p. 251.

HENTING is alſo a term uſed by the plowmen, and others, to ſignify the two furrows that are turned from one another at the bottom, in the plowing a ridge; the word ſeems to be a corruption of *ending*, becauſe thoſe furrows make an end of plowing the ridges. The tops of the ridges they call veerings.

HEORDPENNY, in our old writers, the ſame with what at firſt was called *Romeſcot*, and afterwards *Peter-pence*. See ROMESCOT, and PETER-PENCE, *Cycl.*

The word is Saxon, from *Heorth*, *focus*, a hearth, and *penning*, *denarius*, a penny.

HEPAR (*Cycl.*)—HEPAR *ſulphuris*, brimſtone melted with half the quantity of a fixed alkali. A like ſubſtance may alſo be produced by tartarum vitriolatum, ſandiver, or other of the neutral ſalts containing the vitriolic acid, if when they are red-hot in the fire there be added to them powder of charcoal, or any other more fixed phlogiſtic; but the *Hepar ſulphuris* is not ſo ſtrong, as otherwiſe, when it is made with nitre fixed with coals, or with the alkali compoſed of tartar and nitre, or with neutral ſalts with an addition of ſulphur already containing the vitriolic acid. The *Hepar ſulphuris* runs earths and ſtones into fuſion over the fire; and when melted with the metals it makes them eaſily fuſe, but renders them brittle, and in ſome degree ſoluble in water. *Hoffman*'s Obſerv. Phyſ. Chem.

HEPATICA, in botany, a name given by Micheli to certain ſpecies of the marchantia, a kind of lichen. Theſe have the male cup of a conic figure, and divided into five ſegments which wrap round the flowers; whereas thoſe which he calls marchantia have eight or ten ſegments in the cup, and thoſe plain, not curled or bent downwards *Micheli* Nov. Gen. Plant. 55. See the article MARCHANTIA.

HEPATIC *Flux*, *Fluxus Hepaticus*, a flux of the belly of a very ſingular kind, and ſo rarely met with, that many authors have confounded the accounts of it with thoſe of dyſenteries and hæmorrhoidal fluxes. The ſigns by which it is known, are theſe: The patient voids by the anus a liquid matter, reſembling water in which raw fleſh had been waſhed; this is attended with pains and a ſenſe of weight and tenſion in the abdomen, and ſpaſtic motions about the loins, which ſometimes extend themſelves to the right ſide toward the region of the liver. In ſome patients there is no ſenſation of any pain, or any particular ſymptom, and in ſome a teneſmus is joined continually with this voiding of a bloody fluid.

The perſons principally ſubject to this diſeaſe are men, and thoſe between the age of eighteen and forty for the moſt part, as alſo ſuch as are of a ſanguineo-phlegmatic habit, and of a ſedentary life. This diſeaſe is obviouſly diſtinguiſhed from a dyſentery, in that there is always in that diſeaſe blood mixed with a mucous matter voided, which is not at all the caſe in this. And in that there always is more or leſs of a fever attending, whereas in this there is none.

Cauſes of it. The antients ſuppoſed this to be owing to a debility of the liver, which was not able in this caſe properly to attract or retain the blood. But it ſeems rather to belong to the hæmorrhoidal diſcharges; and as in the menſes, when the pure and proper blood is not diſcharged, a bloody water is; ſo in theſe caſes when true blood is not voided, this fluid comes in its place. This flux is never dangerous at the time, but when it is long continued it will at length wear down the ſtrength, and bring on bad habits. *Junker*'s Conſp. Med. p. 50.

Method of Cure.—This is to be treated in the ſame manner as a hæmorrhoidal diſcharge when obſtructed, and attemperating and abſtergent medicines are to be given, with gentle purges. Rhubarb, in doſes from a ſcruple to two or more, is to be given every day for a long time; after this nitre, tartarum vitriolatum, the alkaline ſalts of plants, as of wormwood, with the abſorbent powders, ſuch as crabs-eyes; and to theſe may be added decoctions of ſmall centaury, and the like herbs. Id. ibid.

HEPATIS *Infarctus*, in medicine, the name of a diſeaſe conſiſting in a ſtagnatory congeſtion of the blood in the liver. This is of two kinds, the one owing to an inordinate contraction of the liver, which is uſually the caſe when this happens to adults; the other is owing to a too great expanſion of this viſcus, which is the caſe more frequently in youths. Either of theſe diſtemperatures of this organ prevent the free paſſage of the blood through it, and by that means lay the baſis of this infarction. *Junker*'s Conſp. Med. p. 204.

Signs of it.—Theſe are a ſtraitneſs of the precordia, eſpecially about the right hypocondrium, and a difficulty of breathing, a heavy and obtuſe pain in the ſame part, which ſometimes becomes pulſatile, an uncertain and irregular heat of the whole body, and frequent fluſhings of the face, a violent thirſt at times but not continual, a dryneſs of the mouth and often a bitter taſte in it, a glutinous texture of the ſpittle, a dry cough, a loſs of appetite, and laſſitude of the limbs; uneaſy and not ſound ſleep, frequent toſſing about while in bed, a flaccid habit of body; and to all theſe it is to be added, that the urine is thin and limpid at firſt, but as the hectic that always attends, increaſes, it becomes of a deep orange colour, and finally depoſits a deep red ſediment; and in caſe of an expanſion of the liver being the cauſe, the right hypochondrium is ſenſibly ſwelled.

Perſons ſubject to this diſorder are principally ſuch as are of a ſtudious and ſedentary, or idle life; ſuch as have omitted uſual bleedings, or have had ſuppreſſions of the natural diſcharges by the hæmorrhoids or menſes, and ſuch as uſe too thick a diet. *Junker*'s Conſp. Med. p. 204.

Cauſes of it.—Theſe are a plethora joined with a too great thickneſs of the blood, and this occaſionally increaſed by improper treatment in different diſeaſes, as in intermittents with too powerful aſtringents; and in acute fevers with too cooling a regimen, or the abuſe of the volatile ſalts in large doſes. To theſe may be added violent paſſions of the mind; and the ſudden chilling the body when very hot.

Prognoſtics.—This is a diſeaſe that when recent admits of a cure under the proper methods of treatment; but when neglected, it very eaſily degenerates into a ſchirrus, and finally into a hectic and a dropſy.

Method of Cure.—This differs greatly in regard to the different cauſes of the diſeaſe, which as before obſerved are exact contraries: It ſometimes ariſing from an over contraction, ſometimes from an over expanſion of the liver. In caſes ariſing from the expanſion, the ſame method is to be uſed as in infarctions of the ſpleen. See SPLEEN. But on the contrary, when it ariſes from a contraction of this viſcus, the method muſt be this: The primæ viæ muſt be firſt cleanſed and evacuated by gentle purges; after this bleeding in the foot is to be ordered, and then the matter impacted in the liver is to be incided and attenuated by decoctions of dandelion and pimpernel roots, with maiden hair, ſorrel, dodder, and daiſy flowers; after this the gums, as ammoniacum, and the reſt, are to be taken; and after theſe the digeſtive ſalts, as tartarum vitriolatum, nitre, and the like: And during the taking theſe, all the external medicines of the emollient kind are to be applied to the right hypocondrium; but this not continually, but at different intervals, leſt they ſhould bring on a ſuppuration in the liver. Id. ibid.

HEPATITIS, in medicine, the name of an acute continuous and inflammatory fever, in which nature frequently and forcibly propels the humours through the liver, ſeemingly with intent to reſolve and abſterge congeſtions and ſtaſes of the blood in that viſcus.

The *Hepatitis* is diſtinguiſhed from all other fevers by the ſeat of it in the liver, and by its being of all other fevers the moſt fatal. It differs however in degree, ſome caſes depending on a more ſuperficial, ſome on a deeper and more internal inflammation of the liver. *Junker*'s Conſp. Med. p. 283.

Signs of it.—This dangerous fever uſually ſeizes the patient with a chillneſs, which laſts a conſiderable time; this is at length ſucceeded by a violent heat, which is much more intenſe at ſome times than at others, and is attended with an inſupportable thirſt. The patient perceives a ſevere and heavy pain in the right ſide about the ſeventh or eighth rib, and is afflicted with a violent ſtraitneſs of the breaſt and difficulty of breathing, and the extremities are very apt to become cold. After drinking any thing they uſually belch, and the narrowneſs of the breaſt and difficulty of breathing always increaſe upon this, tho' not the pain. Often alſo there are nauſeas and reachings to vomit, and a bilious matter is thrown up, and ſometimes ſpaſtic motions of the throat are very

very frequent and painful. The one or the other of theſe ſymptoms occur as the gibbous ſide or the other part of the liver are affected. The cough attending this diſeaſe is dry, and not violent, and the ſweats are continual but moderate and eaſily ſtruck back, or often cold and clammy. The urine for the firſt days is reddiſh and thick, and about the fourth day it uſually begins to depoſit a ſediment, the remaining part of it being however ſtill turbid; the ſediment is mucous and of a pale fleſh colour; it has ſo much the appearance of putrid matter that many have ſuppoſed it to be ſuch, but the diſtinction between theſe ſediments and true pus is eaſily made, as the pus always ſubſides immediately on the making the water; but the other ſediment not till it has ſtood to be cold, and this ſediment becomes diſſolved and mixed again with the urine, if the veſſel containing it be ſet in hot water. This is one great proof of inflammation. Another very peculiar ſymptom in this diſeaſe is, that the patient frequently changes colour, being at times pale, and at times browniſh or yellowiſh; the yellowneſs principally affecting the eyes and face. In caſes where the matter in the liver comes to a ſuppuration all the ſymptoms become more ſevere, the heat is greater, the reſpiration more difficult, and the anxieties and ſenſe of pain in the part, and the coldneſs of the extremities all become greater. Finally the breaking of the tumor is known by a ſudden remiſſion of the pain, with a terrible faintneſs and lowneſs of ſpirits, and a hectic; and when the matter is diſcharged into the cavity of the abdomen, it is known by the ſwelling of that part.

Cauſes of it.—The general cauſes of the *Hepatites* are a plethora, and a derivation of blood into the liver, which there forms congeſtions and ſtaſes. This is brought on by violent motions of the body, ſuch as running, dancing, leaping, and the like, and by endeavouring to lift great weights, by ſuddenly cooling the body at times, when the blood is in a great heat; by taking aſtringent medicines in inflammatory fevers, and by driving back the matter of cutaneous eruptions, ſuch as the St. Anthony's fire, and the like, into the blood; and finally, by applying cold external medicines to the region of the liver, or by cupping upon the part.

Prognoſtics.—The *Hepatites* is one of the moſt dangerous kinds of inflammation, and the deeper it lies the more obſtinate it is, and the more difficult to be diſcuſſed, and the more liable to corruption, which muſt occaſion immediate death, or elſe to maturating and breaking, which would be attended with no leſs danger, though not ſo ſudden. A vehement and unaccuſtomed commotion of the humours immediately at the beginning of the diſeaſe, is a bad omen. The more violently inflammatory fevers attack perſons in the morning, and that without any particular cauſe, the greater always is the danger. The cure of this diſeaſe is very difficult, and its manner of going off very variable and uncertain. In ſome caſes it goes off by regular diſcuſſion in a longer time, ſometimes by copious hæmorrhages of the noſe, or by profuſe ſweats which come on on the regular critical days. Black matter reſembling the rob of elder, whether diſcharged by vomit or ſtool, is a very bad omen, in this and all other inflammatory diſeaſes of this kind; but when voided by vomit, the danger is greater than when by ſtool.

Method of treatment. Bleeding is very proper in the beginning of the diſeaſe, and after this the bowels are to be kept gently open, not by ſtimulating purges, but by emollient glyſters, and the mildeſt and gentleſt cathartics. The mixtura ſimplex is a very valuable medicine given ſeveral times a day; and in the intermediate hours the following powder is to be given: Take purified nitre, and tartarum vitriolatum, each two drams; crabs eyes, and the jaw of a pike, reduced to powder, and ſated with lemon juice, of each four ſcruples; diaphoretic antimony a dram. The doſe of this mixed powder is a ſcruple. While theſe things are given internally, the region of the liver ſhould be bathed externally with ſpirit of wine camphorated, impregnated with ſaffron. If the diſeaſe is very violent, a gentle anodyne may be mixed with one of the powders, to be taken at night; but this muſt only be done while the diſeaſe is in its encreaſe. And above all things, reſt, moderate warmth, and a placid regimen, are to be obſerved. With all theſe the diſeaſe is oftener fatal than curable. *Junker*'s Conſp. Med. p. 287.

HEPATITIS *Lapis*, in natural hiſtory, a name given by ſome of the antients to a ferrugineous ſtone of a yellowiſh red colour; others called a coarſe jaſper, and ſome a dirty kind of hyacinth, by this name: In ſhort, they ſeem to have called any thing *Hepatitis* that was of a liver colour. The ſtone moſt univerſally ſo called, however, ſeems to have been of the nature of ſome of our poor iron ores.

HEPATOSCOPIA, Ἡπατοσκοπια, in antiquity, a ſpecies of divination, wherein predictions were made by inſpecting the livers of animals.

HEPATOSCOPIA is alſo uſed as a general name for divination by intrails. See an account of the ſymptoms of the liver, whence good or evil were foretold, in *Potter*'s Archæol. Græc. l. 2. c. 14. T. 1. p. 316.

HEPATUS, in zoology, the name of a ſea fiſh caught in the Mediterranean, and remarkable for its colour, which is that of a liver, from whence it has its name. It is of a broad flat ſhape, and has very prominent eyes, and a remarkably broad tail, in which near the baſis there is a large black ſpot; its teeth are round and large, and ſomewhat pointed; and it has only one back fin, the anterior rays of which are prickly, the hinder ones ſoft to the touch. *Rondelet* de Piſc. l. 5. c. 21.

This name is given by Bellonius, Geſner, and others, to the fiſh more uſually called *Sachettas*, and by ſome *Channadella*. All theſe however are arbitrary and unexpreſſive names. Artedi has referr'd the fiſh to its proper genus, which is the labrus, and calls it the labrus with the lower jaw longer than the upper, with a forked tail, and with black tranſverſe lines on the ſides. See the article LABRUS.

HEPHÆSTIA, Ἡφαιστεια, in antiquity, an Athenian feſtival in honour of Ἡφαιστος, i. e. Vulcan. For an account of the ceremonies and games, on this occaſion, ſee *Potter*'s Archæol. Græc. l. 2. c. 20. T. 1. p. 399. See alſo the article LAMPADEPHORUS.

HEPHÆSTIAS, in the writings of the antients, a name of a plaſter uſed among the ſurgeons to induce a cicatrix: It was principally compoſed of burnt earth, or of the tiles that had been long burnt in the kilns, reduced to powder.

HEP, in the materia medica. See the article HIP.

HEPSETUS, in ichthyology, the name of a ſmall ſea-fiſh called alſo *anguella*, and by ſome *atherina*. It is long, ſlender, and almoſt pellucid; its tail is forked, and its back variegated with black ſpots. When the ſcales are taken off, theſe ſpots appear much plainer than before, and are placed in ſuch order, that four of them uſually make a ſort of rhombic figure. The ſcales are alſo divided into a ſort of rhombic figures by black lines. The ſides of this fiſh are of a ſilvery white; the mouth is large, and the teeth very ſmalll; its eyes are large, and it has two fins on the back. It is caught on the ſhores of the Mediterranean, and ſome other ſeas, and is of a delicate taſte, but very full of bones, whence it is not much valued. *Willughby*'s Hiſt. Piſc. p. 209.

HEPTAMERIS, in muſic, is uſed by Mr. Sauveur for the ſeventh part of the meris or $\frac{1}{42}$ of an octave.

Hence the *Heptameris* is $\frac{1}{301}$ of an octave.

HEPTANDRIA, in botany, a claſs of plants with hermaphrodite flowers, and ſeven male parts or ſtamina in each.

The word is formed of the Greek ἑπτὰ, ſeven; and ἀνὴρ, male. Of this claſs are the horſe-cheſnut, finitelis, &c.

HEPTANGULAR *figure*, in geometry, a figure with ſeven angles, or ſeven ſides.

HEPTAPHARMACUM, a relaxing, ſuppurating, and incarnating medicine, compoſed of ſeven ingredients. This is much talked of among the antient writers in medicine. The ingredients were, ceruſs, wax, pitch, litharge, colophony, bull's fat, and frankincenſe. It is deſcribed by Aetius in his Tetrab. Serm. 3. c. 27.

HEPTAPLEURON, *ſeptinervia*, having ſeven ribs; a word uſed in botany to expreſs a ſort of common plantain, every leaf of which has ſeven ribs belonging to it.

HERACANTHA, in botany, a term uſed by ſome authors to expreſs the common wild carline thiſtle. See the article CARLINA.

HERACLEON, in botany, a name given by ſome of the Greek writers to the lithoſpermum, or gromwell. It was originally called heracleon ſporon, ηρακλεον σπορον, the Herculean ſeed, from the remarkable hardneſs of the ſeed; but the latter word was drop'd, and the *Heracleon* only preſerved. There is great reaſon againſt uſing the word dioſpyros as a ſynonym for the gromwell, becauſe it is a name given by ſome of the Greeks to a very different kind of vegetable, a ſort of cherry. *Pliny*, l. 26. c. 11.

HERACLEUS *Lapis*, in the natural hiſtory of the antients, a name by which many have called the loadſtone. This was the name given to it by the antient Greeks from Heraclea, a city of Lydia, near which it uſed to be found; but after writers ſo far err'd from the origin and orthography of the word, as to call it *Herculeus lapis*, as if it had been named from Hercules.

The after ages of the Greeks called it alſo *magnetis lapis*, but this was a name by no means applied to it in the earlier times, but then was uſed to expreſs a very different ſubſtance, a white ſilvery-looking ſtone, which had no power of attraction, but was turned into beautiful veſſels for the uſe of the table: And the not attending to the ages in which the authors lived who uſe the word *magnetis*, has been the occaſion of great errors in their commentators, who did not conſider that in the ſucceſſion of a few ages, the ſame word became the name of two very different things. *Hill*'s Theoph. p. 79. See the article BASALTES.

HERACLIA, Ηρακλεια, in antiquity, an Athenian feſtival celebrated every fifth year in honour of Hercules.

The Thiſbians and Thebans in Bœotia obſerved a ſolemn feſtival in honour of Hercules, ſurnamed Μηλων, becauſe apples were offered to him. Beſides theſe there were other feſtivals kept in honour of Hercules; for a deſcription of all which, ſee *Potter*'s Archæol. Græc. l. 2. c. 20. T. 1. p. 398, ſeq.

HERÆA, Ἡραια, in antiquity, a feſtival celebrated at Argos in honour of Juno, called in Greek Ἡρη. See a deſcription of the ceremonies attending this ſolemnity, in *Potter*'s Archæol. Græc. l. 2. c. 20. T. 1. p. 397.

There

There was another feſtival of this name, celebrated every fifth year in Elis, where ſixteen matrons were appointed to weave a garment for the goddeſs. There were games alſo which are ſaid to have been inſtituted by Hippodamia, in honour of Juno, by whoſe aſſiſtance ſhe was married to Pelops. The preſidents were ſixteen matrons, every one of which was attended by a maid. The contenders were virgins, who being diſtinguiſhed into ſeveral claſſes, according to their ages, ran races in their order, beginning from the youngeſt. The habit of all was the ſame; their hair was diſhevelled, their right ſhoulders bare to their breaſts, and their garments reached no lower than their knees. They had a ſecond race in the olympic ſtadium, which was at that time ſhortened about a ſixth part. Such as obtained a victory, were rewarded with crowns of olive, and a ſhare of the ox that was offered in ſacrifice, and were permitted to dedicate their own picture to the goddeſs. There were other ſolemnities of this name. See *Potter*, loc. cit. ſeq.

HERBA *Lucis*, in botany, a name by which ſome authors have called the chelidonium majus, or great celandine. *Ger.* Emac. Ind. 2.

HERBA *Paris*, *Herb Truelove*, in botany, the name of a genus of plants, of which there is only one known ſpecies; the characters of which are theſe: The flower conſiſts of four leaves, and is of the cruciform kind, and contains four ſtamina; the piſtil ariſes from the cup, and finally becomes a round ſoft fruit or berry, divided into four cells, containing oblong ſeeds. *Tourn.* Inſt. p. 233.

HERBA *Roſſa*, in botany, a name given by Latin writers, to a plant uſed by the dyers in making their yellow colours, and by the women in tinging their hair yellow, which was the favourite colour of antient times. It is alſo by ſome called *Robia Herba*. It was from this ſimilitude with the word rubia, which ſignifies madder, a vegetable uſed alſo in the dying trade, ſuppoſed to be the ſame plant: But all the accounts we have of the robia or *Roſſa Herba*, ſhew it to be different in all reſpects from the madder. Paulus Ægineta, who calls it *Robia Herba*, takes pains to diſtinguiſh it from the rubia, and ſhews that it was the plant called œcomenium and cymene by the Greeks, and lutum, lutea *Herba*, and corniola by the Latins. It is the geniſta tinctoria, or dyers weed, at this time common both in England and Greece, and uſed in both places in dying yellow. Pliny tells us, that the lutum had the leaves of flax, and the flowers of broom: this ſufficiently ſhews, that it was the plant we have mentioned.

HERBA *Scythica*, in botany, a name by which ſome authors have called the common liquorice, the root and inſpiſſated juice of which are uſed in the ſhops. *Ger.* Emac. Ind. 2.

HERBA *Vulcani*, in botany, a name uſed by ſome writers for the ranunculus. *Ger.* Emac. Ind. 2.

HERBER, in the manege, is uſed by farriers to denote an application for ſome diſeaſes in horſes, particularly of the head and the anticor. It conſiſts only of a piece of Hellebore root, which, being put into the middle of a horſe's counter, makes it ſwell and ſuppurate. *Guill.* Gent. Dict. p. 1. in voc.

HERBIDÆ *Veſtes*, green habits. See the article EARINÆ *Veſtes*.

HERBIVOROUS, an epithet given to thoſe creatures which feed only on vegetables, to diſtinguiſh them from the carnivorous, or ſuch as feed on fleſh.

HERBOSUM *Marmor*, the name of a ſpecies of marble, much eſteemed and uſed by the antient architects and ſtatuaries. It was of a beautiful green colour, but had always with it ſome caſt of yellow. It was dug in the quarries of Taigetum, but was eſteemed by the workmen the ſame in all reſpects, except colour, with the black marble dug at Tænarus in Lacedæmonia, and thence called the Tænarian marble.

HERCULANIA, in botany, a name by which ſome authors have called the verbena or vervain. *Ger.* Emac. Ind. 2.

HERDS, among zoologiſts. See the article JUMENTA.

HERDING, among ſportſmen, is the reverſe of breaking herd. See the article BREAKING *Herd*.

HEREGELD, in our old writers, a tribute or tax levied for the maintenance of an army. See the article SUBSIDY, *Cycl.*

HERESY (*Cycl.*)—It ſeems difficult, in the law of England, preciſely to determine, what errors amount to *Hereſy*, and what not. The 1 Eliz. which erected the high commiſſion-court, having reſtrained it to ſuch as are either determined by ſcripture, or by one of the four firſt general councils, or by ſome other council, by expreſs words of ſcripture, or by parliament, with the aſſent of the convocation, theſe rules are, at preſent, generally thought the beſt directions concerning this matter. It is agreed that the convocation may and always might declare what opinions are *heretical*, and that a conviction before them was antiently a good foundation for the writ *De Heretico comburendo*; but 'tis doubted whether they can, at this day, convene and convict an *Heretic*. A biſhop, but no other ſpiritual judge, may puniſh an *Heretic* by church cenſures; and a conviction before him was, as ſome ſay, antiently a good foundation for the writ *De Heretico comburendo*. By the 24 H. 8. if the biſhop neglects to proceed againſt an *Heretic*, the archbiſhop may do it. But the temporal courts cannot puniſh an *Heretic*, as ſuch, but only as a diſturber of the public peace; yet ſuch courts may incidently take knowledge, whether a tenet be *heretical*, or not; as antiently, where biſhops grounded their commitment of a man, as an heretic, on 2 Hen. 4. which impowered them to impriſon for *Hereſy*; or even at this day, where a biſhop pleads to a *quare impedit*, that he refuſed the clerk for *Hereſy*; in both which caſes the temporal courts will relieve the party, unleſs the particular point, charged againſt him, be ſet forth, and ſuch point appear to be heretical. But regularly, the temporal courts cannot determine what is *Hereſy*; and therefore if a man thinks himſelf aggrieved by a ſuit in the ſpiritual court, *pro ſalute animæ*, for *Hereſy*, his moſt proper remedy is by appeal, not prohibition. Antiently an heretic convict, refuſing to abjure, or relapſing after abjuration, might be burnt by force of the writ *De Heretico comburendo*; but he forfeited neither lands nor goods. And by the common law, ſtill in force, an obſtinate heretic may be impriſoned by force of the writ *De Excommunicato Capiendo*. V. *Hawk.* P. C. B. 1.

HERMÆA, Ἑρμαια, in antiquity, a feſtival obſerved in honour of Mercury. There were ſeveral ſolemnities of this kind, ſome celebrated in Peloponneſus, others in Bæotia, Crete, &c. See *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 896.

In Crete, during the celebration of the *Hermæa*, the maſters ſerved their ſlaves at table. This cuſtom obtained likewiſe among the Athenians and Babylonians, as alſo among the Romans, witneſs the Saturnalia. *Hofm.* Lex. in voc. See SATURNALIA, *Cycl.*

HERMANNIA, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of ſeveral tubular and corniculate leaves, arranged in a circular form. The cup is compoſed of only one leaf, and is ſwoln like a bladder; and from it there ariſes a piſtil, which finally becomes a roundiſh fruit, which, when ripe, burſts into five parts at the top, and is found to be compoſed of five capſules, which contain very ſmall ſeeds, *Tourn.* Inſt. p. 656.

There is only one known ſpecies of this plant, which is the *Hermannia*, with oblong ſerrated leaves.

HERMAPHRODITE (*Cycl.*) It is diſputed, whether there be any *Hermaphrodites* among the human ſpecies, altho' many laws have been made in different parts of the world concerning them. Dr. Parſons has given us a treatiſe on this ſubject, where he endeavours to ſhew the notion of *Hermaphrodites* to be a vulgar error. And, in particular, that the Angola negro, ſhewn about this town ſome years ago, was a woman, whoſe clitoris was overgrown. See his Mechanical and Critical Enquiry into the nature of *Hermaphrodites*. Lond. 1741. 8°.

In vegetables, the male and female parts, or the apices and piſtillum, are uſually contained in the ſame flower; ſometimes in different flowers on the ſame plant, and ſometimes, though more rarely, on different plants of the ſame ſpecies. In this laſt caſe the ſexes are diſtinct, though the ſpecies is the ſame; and theſe moſt approach to the nature of the larger animals: But though theſe have the individuals of diſtinct ſexes, yet the ſmaller creatures of the animal kingdom, have often the two ſexes in the ſame individual, and are therefore what we call *Hermaphrodites*. Of this kind are the common earth-worms, the round worms found in the bowels of men, and other animals, and all the ſpecies of ſnails and leeches. And as all theſe are of the ſofter kinds of inſects, and have no bones, it is not improbable but that all the other inſects of the ſame kind may be alſo *Hermaphrodites*, as nature is uſually very ſimilar in all her works. Among the inſects of the ſoft or boneleſs kind, there are great numbers, indeed, which are ſo far from being *Hermaphrodites*, that they are of no ſex at all. Of this kind are all the caterpillars, maggots, and worms, produced of the eggs of flies of all kinds; but the reaſon of this is plain; theſe are not animals in a perfect ſtate, but diſguiſes under which animals lurk. They have no buſineſs with the propagating of their ſpecies, but are to be transformed into animals of another kind, by the putting off their ſeveral coverings, and then only they are in their perfect ſtate, and therefore then only ſhew the differences of ſex, which are always in the diſtinct animals, each being only male, or only female. Theſe copulate, and their eggs produce theſe creatures, which ſhew no ſex till they arrive at that perfect ſtate again. Mem. Acad. Par. 1707.

The common earth-worms eaſily ſhew their *Hermaphrodite* nature, and manner of copulation, if they are attended to in the ſpring ſeaſon, in the mornings. Theſe creatures meet one another, and, applying their bodies together, the head of one going toward the tail of the other, and their bodies being joined in right lines; and in this ſtate a little button or protuberant part of the one, formed in the ſhape of a ſmall line, is received into a little aperture in the body of the other; and this, at a little diſtance, has ſuch a protuberant part alſo, which is reciprocally received into an aperture in the body of the firſt. This is eaſily ſeen, if two worms in this ſtate are taken up, and examin'd in a good light, by pulling them aſunder. As theſe animals are males in one part of their body, and females in the other; and, being formed without bone, are capable of moving themſelves eaſily, and turning every way about, it is very probable that the ſame individual may be able to couple with itſelf, and be the father and mother of its progeny. This may ſeem a ſtrange ſort of generation; but we are to conſider that it only appears ſtrange to us, from our limited

limited knowledge of the general works of nature. Mem. Acad. Paris, 1707.

HERMESIA, a name given, by ſome authors, to hermetic chemiſtry. See CHEMISTRY.

HERMODACTYLS (*Cycl.*)—Theſe have been too generally ſuppoſed a fruit, but they are unqueſtionably a root, and ſeem to be the roots of that ſpecies of meadow-ſaffron, called by authors *Colchicum Chinenſe floribus frittillariæ inſtar variegatis, foliis undulatis*, or the Chineſe meadow-ſaffron, with undulated leaves, and with flowers chequer'd like thoſe of the fritillary. They were in great uſe among the antients as a purge; but their operation is very ſlow, tedious, and fatiguing. They are beſt corrected by being joined with aromatics, and are now ſometimes uſed, mixed with jalap, in rheumatiſms. The women of Egypt eat the freſh roots roaſted, to make them grow fat. *Pomet*'s Hiſt of Drugs.

HERNIA (*Cycl.*)—Old age is an advantage in performing the operations for *Herniæ*, becauſe old people's guts are not ſo liable to inflame or gangrene, as thoſe of young perſons. Medic. Eſſ. Edinb. from *Garengeot*.

Herniæ, where the omentum falls down with the inteſtines, are more dangerous than where the gut is alone, becauſe the omentum hinders the reduction of the gut, grows to the rings of the muſcles, ſwells, and forms a thick ring, which ſtrangulates the gut. See Phil. Tranſ. N°. 450. §. 2.

HERNIARIA, *Rupturewort*, in botany, the name of a genus of plants, the characters of which are theſe: The flower has no petals, but conſiſts of ſeveral ſtamina, ariſing from a cup. The piſtil finally becomes a ſeed, which is inveloped in a long ſtriated capſule, which was the cup of the flower.

The ſpecies of *Herniaria*, enumerated by Mr. Tournefort, are theſe: 1. The ſmooth *Herniaria*. 2. The hairy *Herniaria*. 3. The ſhrubby *Herniaria*, with woody twigs. And 4. The chickweed-leav'd *Herniaria*. *Tourn.* Inſt. p. 507.

This plant has been long celebrated for the virtues its name expreſſes in the curing of ruptures; but though the modern practice does not ſeem to allow all thoſe virtues to it, yet there is another caſe in which a German phyſician ſtrongly recommends it. It is in the diſorder of the eyes, which is brought on by reading or writing by candlelight, or by examining nice objects, or very fine work. This diſtemperature ſeems to be properly a diminution of ſight, without any apparent cauſe, or viſible alteration in the eye, and is probably owing to a viſcid matter obſtructing the optic nerves, and preventing a ſupply of their proper fluid. The *Herniaria*, being a gentle and mild attenuant, comes in admirably for the relief of this diſorder. *Gruhlman.* de novo Caliginis remedio.

The author gives many inſtances of the ſucceſs of this remedy, and mentions two methods of giving it; the one in powder, and the other in tincture: The former way is preferr'd, and the method is to gather the herb in its prime, and powder it after it has been dried in the ſhade; then to ſprinkle the quantity of a ſcruple of this powder on the bread and butter uſed for breakfaſt. If this is not liked, the tincture is to be made with ſpirit of wine, as ſtrong as the plant will make it, and forty drops are to be taken every morning and evening in any liquor. The diſtemperature this is propoſed to cure, is very common, yet this is almoſt the only thing that has been preſcribed by way of remedy, and deſerves to be fairly try'd.

HERODIUS *Avis*, in natural hiſtory, a name given by Aldrovand, and ſome others, to the chryſaëtos, or golden eagle. See the article AQUILA.

HERON, *Ardea*, in zoology, the name of a large genus of birds, the diſtinguiſhing character of which is, by Mr. Ray, fixed in their inteſtines, they having only one inteſtinum cæcum, or blind gut, as is the cuſtom of nature in quadrupeds, moſt other birds having two.

Of this bird there are many ſpecies. 1. The common *Heron*, well known to every one. 2. The *Ardea cinerea tertium genus* of Aldrovand, which has not been allotted any diſtinguiſhing name, either in Latin or Engliſh. This is diſtinguiſhed by having every one of its feathers, which are greyiſh and blackiſh, variegated with a ſpot of reddiſh brown at the extremity, and its leggs being of a greeniſh colour. 3. The *Ardea cinerea minor*, or ſmaller grey *Heron*, called the nycticorax, or night raven. See NYCTICORAX. 4. The great white *Heron*, called by the Venetians and others, gazza. See GAZZA. 5. The ſmall white *Heron*, called the *Gaza Giovane*. See GAZA *Giovane*. 6. The ſmall white *Heron*, called the *Ardea tertia minor* of Aldrovand. This is a ſmall, but a very fleſhy bird, its beak very ſhort, in compariſon of the other *Herons*, and all over yellow; its head and neck alſo are of a ſaffron colour, and its breaſt of a pale yellow. 7. The *Ardea hæmatopus*, or *cirris* of the antients. See CIRRIS. 8. The *Heron* called *Sguacco*. See SGUACCO. 9. The *Heron* called *Squaiotta*. See SQUAIOTTA. 10. The hooked-beak'd ſmall *Heron* of Aldrovand, which is a ſmall kind, with a beak more hooked at the end than any other ſpecies, and is white, variegated with ſtreaks of black on the belly, and grey on the back. 11. The *Ardea congener*, called the baſtard *Heron*, of the ſame author, which has ſo ſhort a beak, as not to be properly reducible to this genus. Its neck, legs, and toes, are all very long, and it is all over black, except that it has a white ring about the neck. 12. The *Ardea Stellaris*, or *Bittern*. See BITTERN. 13. The *Ardea Stellaris tertium genus* of Aldrovand, to which neither the Latins nor Engliſh have given any diſtinguiſhing name. This is all over of a reddiſh brown colour. Its beak is a hand's breadth long, ſtrait, pointed, and of a horn colour; the upper chap a little longer than the under one, and ſlightly hooked at the extremity. 14. The great red *Bittern* of Aldrovand, which ſeems a ſort of baſtard kind between the common *Heron* and the bittern, but comes neareſt the grey *Heron* kind, and has a grey back, and reddiſh breaſt and ſides. 15. The *American Heron*, called *Soco*. See SOCO. 16. The Braſilian *Heron*, called *Cocoi*. 17. The Braſilian *Heron*, with the ſerrated beak, which is the ſame ſize with our common tame duck, and reſembles the bittern in colour. 18. The *Heron* called *Guiratinga* by the Braſilians. See GUIRATINGA. And laſtly, the *Ardeola*, or ſmall *Heron*, a Braſilian kind, ſcarce ſo large as a pigeon. See ARDEOLA. *Ray*'s Ornithology, p. 203 to 210.

This bird is a very great devourer of fiſh, and is of more miſchief to a pond than even an otter. Some ſay that a *Heron* will deſtroy more fiſh in a week, than an otter will in three months; but that ſeems carrying it too far. People who have kept *Herons*, have had the curioſity to number out the fiſh they fed them with into a tub of water, and counting them again afterwards, it has been found that they will eat fifty moderate ſiz'd dace and roaches in a day. It has been found that in carp ponds, viſited by this bird, one *Heron* will eat up a thouſand ſtore carp in a year, and will hunt them ſo cloſe as to let very few eſcape. The readieſt method of deſtroying this miſchievous bird, is by fiſhing for him in the manner of pike, with a baited hook. When the haunt of the *Heron* is found out, three or four ſmall roach or dace are to be procured, and each of them is to be baited on a wire, with a ſtrong hook at the end, entering the wire juſt under the gills, and letting it run juſt under the ſkin to the tail, the fiſh will live in this manner five or ſix days, which is a very eſſential thing, for if it be dead, the *Heron* will not touch it. A ſtrong line is then to be prepared of ſilk and wire twiſted together, and is to be about two yards long; tie this to the wire that holds the hook, and to the other end of it there is to be tied a ſtone of about a pound weight; let three or four of theſe baits be ſunk in different ſhallow parts of the pond, and in a night or two's time, the *Heron* will not fail of being taken by one or other of them.

When hawking was more in uſe, the *Heron* afforded a great deal of ſport to the people who loved that diverſion. There is but very little art in this flight of the hawk; but as both the birds are large and courageous, the ſight is finer than in the flight of ſmaller birds that make no reſiſtance. At the beginning of March the *Herons* begin to make their paſſage: If therefore you will adapt your hawks to the *Heron*, they muſt be at this time uſed to fly at the rivers, and about waters; and they muſt be fed with light meats. Then the hawk is to be entered at the game by getting a living *Heron*, and cutting its wings, or diſabling it in ſuch a manner that it cannot fly. Then it is to be ſet on the ground, and the hawk unhooded and let go at her. If the hawk ſeize the *Heron*, the falconer muſt run in to her aſſiſtance, and kill the *Heron*, giving the hawk her reward, the heart, and letting her ſtand over the opened breaſt, and feed on other parts of the entrails. Then let her be hooded; and afterwards the bird is to be ſwung about the head, and the hawk taught to come and feed on it out of the falconer's hand.

When the hawk is thus fairly entered, another live *Heron* is to be procured, and let off in an open field undiſabled: As ſoon as ſhe is riſen to a conſiderable height in the air, the hawk is to be let out after her; if the hawk cloſe with her, and bring her down, the falconer is to run up to her aſſiſtance, and ſticking the *Heron*'s bill in the ground, and breaking her wings and legs, the hawk is to be left to feed and plume upon her. When ſhe is thus well managed, ſhe may be taken to the waters, and let at a wild *Heron*, in the following manner.

When a *Heron* is found, the falconer is to get as nigh her as he can, going under the wind with his hawk, which muſt be a gerfalcon, or jerkin, with a haggared falcon for the driver. Thus having the hoods looſe, as ſoon as ever the *Heron* is up, let off the driver, which makes up to her, and cauſes her to work in the wind; then let go the hawks that are to fly at her; but when they have worked above the *Heron* that they come through her, they will make her come to ſiege. When they have got her down, the falconer muſt make up to them as quick as poſſible, and aſſiſt them by breaking her legs and wings, and thruſting her bill into the ground. For this flight of the hawk there ſhould always be a dog trained up to the ſport, whoſe buſineſs it is to come up and kill the *Heron* the moment that he ſees her fall.

If the hawk cannot bring her down, or gives over the flight, then give her a train *Heron* or two, in a proper place, before ſhe is truſted at a wild *Heron* again, otherwiſe ſhe will be diſheartened and ſpoiled.

HEROS *Coagulationis*, the *Hero of Coagulations*, an affected name given by Paracelſus to the ſpirit of ſea ſalt; a menſtruum

um he was particularly fond of, and which ſeems to have been one great ingredient in his alcaheſt.

HERRING, in ichthyology. See the article HARENGUS.

HERRING *Gull*, in zoology, the name of a bird of the larus kind, called by authors *larus cinereus maximus*, or the great grey gull. It is of the ſize of our common duck, its beak is yellow, and is narrow, and two fingers breadth long, a little hooked at the end, and has on the lower chap a fine red ſpot. The eyes are encircled with yellow or red, perhaps in the different ſexes; its hinder toe is very ſmall; its head, neck, rump, and tail, and its whole upper ſurface is white, except that the back and ſhort feathers of the wings have a little greyiſhneſs; the long wing feathers are black and white; its wings, when folded, reach to the end of the tail. It feeds on herrings and other fiſh, and is a very voracious bird. *Ray*'s Onitholog. p. 262.

HERTHAMAN, in the materia medica, a name given by Aviſenna and Serapion to the grain called zea, uſed much in medicine in their time, and ſuppoſed to be of a middle nature between wheat and barley.

HESPERIS, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of four leaves, and is of the cruciform kind; the piſtil ariſes from the cup, and ripens into a long pod of a cylindric form, divided by an intermediate membrane into two cells, and containing roundiſh or oblong, and cylindric ſeeds, which are lodged in the depreſſions of the intermediate membrane.

The ſpecies of *Heſperis* enumerated by Mr. Tournefort, are theſe: 1. The purple-flowered garden *Heſperis*. 2. The white-flowered garden *Heſperis*. 3. The green-flowered garden *Heſperis*. 4. The double purple garden *Heſperis*. 5. The double white garden *Heſperis*. 6. The double garden *Heſperis*, with variegated flowers. 7. The ſweet-ſcented pale-flowered mountain *Heſperis*. 8. The wild ſcentleſs *Heſperis*. 9. The Syrian *Heſperis*, with articulated pods. 10. The wild *Heſperis*, ſmelling like garlic, commonly called alliaria, jack by the hedge, or ſauce alone. 11. The yellow flowered *Heſperis*, with very narrow pods. 12. The ſquare-podded *Heſperis*, with leaves like thoſe of leucoium. 13. The ſquare-podded *Heſperis*, with ſerrated leucoium leaves. 14. The duſky-flowered *Heſperis*, with horned pods. 15. The little procumbent ſea *Heſperis*. 16. The ſmall-flowered wild *Heſperis*. 17. The narrow-leaved hoary ſea *Heſperis*. 18. The blue-flowered hairy African *Heſperis*. 19. The cut-leaved *Heſperis*, with variegated flowers. 20. The narrow-leaved Portugal *Heſperis*, with dentated leaves and purple flowers. 21. The Spaniſh *Heſperis*, with divided leaves, and lunated pods. 22. The broad-leaved ſea *Heſperis*, with a three-pointed pod. 23. The ſhrub Sicilian *Heſperis*, with three-pointed pods. 24. The Sicilian *Heſperis*, with coronopus leaves, and with three-pointed pods. 25. The great African *Heſperis*, with coronopus leaves, and blue flowers. 26. The ſmaller African *Heſperis*, with coronopus leaves and blue flowers. The great diſtinction of the *Heſperis* from the leucoium, is that its pods are cylindric, not flatted; and its ſeeds tumid, and not marginated, and are received in certain hollows in the ſeptum of the pod. *Tourn.* Inſt. p. 322.

The *Heſperis* of Caſpar Bauhine, Ray, &c. is the *viola matronalis*, or dames violet. Vid. *Dale*'s Pharm. p. 200, 201.

HESYCIUS, in natural hiſtory, the name of a fly of the carnivorous kind, often found preying on the bodies of other flies, beetles, &c. and of ſerpents; whence it has been called alſo ophioboros. Its wings are of a ſhining pale yellow, or the colour of poliſhed braſs; whence it has alſo been called by ſome chalcomuia.

HETERODOX, *heterodoxi*, in botany, that ſet of ſyſtematical writers on this ſcience, who formed their diſtributions and claſſes of the plants on wrong foundations, not on the diviſions made by nature in the different ſtructure of the parts of fructification in the different claſſes, but on the ſhape of their leaves, or roots; or who rang'd them by their common names, according to the letters of the alphabet. *Linnæi* Fund. Bot. p. 2.

HETEROPHAGI, in natural hiſtory, a term uſed by ſome authors to expreſs a peculiar claſs of inſects diſtinguiſhed by their eating many different things, but not feeding on one another, as thoſe do which are of the claſs of the allelophagi, of which there are a great number of ſpecies.

HETEROSTROPHE, an epithet applied to certain ſhells, the wreaths of which turn a contrary way from thoſe of other ſhells of the ſame genera. We have in the Philoſophical Tranſactions an account of two very remarkable ſpecies of ſnail-ſhells of this kind, eaſily diſtinguiſhable from one another, and more eaſily from all other ſhells, becauſe the turn of the wreathes is from the right hand to the left, contrary to what is to be ſeen in other ſnails. Theſe are ſmall, and therefore eſcaped the obſervation of naturaliſts a long time; neither of them much exceeds an oat corn in thickneſs, and they are of the figure of the *turbines læves* of Aldrovand and other authors. The ſmaller of theſe is very thin and tender, the opening of the ſhell is pretty round, and the ſecond turn or wreathe is very large in proportion to the ſize of the creature; the other wreathes, which are about ſix in number, are ſtill leſſened to a point. The turben, or conical figure, is nearly a quarter of an inch, and the colour of the ſhell appears duſkiſh; but when the animal ſhrinks into it, and the ſhell is held up to the light, it appears of a pale yellowiſh hue. The larger ſort are twice as long as theſe, and are conſiderably thick-ſhelled: Theſe are very much of the figure of an oat corn, being pointed at the ends, and ſomewhat ſwelled in the middle. The opening of this ſpecies is not round, as in the other, but has a ſinus in the lower part; there are about ten ſpires, which all turn from the right hand to the left; the colour of this ſhell is a dark and reddiſh brown. When theſe ſmall ſnails creep, they lift up their ſhells ſo as to turn the point towards a perpendicular, and throw out two pair of horns, as moſt of the other ſnails do. Ariſtotle affirms all theſe creatures to be of ſpontaneous birth, not at all contributing to the generation of one another, and having no ſex; but later obſervation proves the error of this abundantly; and the author of the account of theſe two remarkable kind of ſnails obſerves, that they are always found in pairs in the month of March, and that about that time it is common to ſee them in the very act of venery. Philoſ. Tranſ. N° 56.

HEWHOLE, or, as it is pronounced in ſome places, the *high-hoo*, a name given by many to the common green woodpecker, from its making holes in trees.

HEXACHORD, (*Cycl.*) in muſic, is by ſome uſed for the ſixth. Hence we meet with *Hexachordum majus & minus*. In the table inſerted under the head INTERVAL, we have reſtrained the term *Hexachord* to ſignify the ſixth of the Greek ſcale, which is not a true ſixth major, but a comma more, being a tone major above the fifth. See the article INTERVAL.

HEXACONTALITHUS, in natural hiſtory, the name of a ſtone deſcribed by Pliny, and other of the antient writers, as being very ſmall, yet ſhewing an almoſt infinite variety of colours. It ſeems only another name for the opal.

HEXAEDROSTYLA, in natural hiſtory, the name of a genus of ſpars. The word is derived of the Greek ἕξ, ſix, ἕδρα, ſide, and στύλος, a column. The bodies of this genus are ſpars of a columnar form, adhering to ſome ſolid body at the baſe, and terminated at the point by a pyramid. The pyramid and column being both hexahedral, or compoſed each of ſix ſides. Of this genus there are three known ſpecies: 1. A ſlender one with a long pyramid; this is compoſed of ſo pure and clear a ſpar, that it reſembles cryſtal, and is found in Ookey Hole, on Mendip Hills, and in ſome other parts of England. 2. A ſomewhat thick one, with a long irregular pyramid, found in the mines of Cornwall and Devonſhire, and common alſo in thoſe of Germany. 3. One with a very ſhort pyramid; this is found in the Derbyſhire lead-mines, and in great plenty in thoſe of the Harts Foreſt in Germany. *Hill*'s Hiſt. of Foſſ. p. 218.

HEXANDRIA, in botany, a claſs of plants with hermaphrodite flowers, and ſix ſtamina or male parts in each, which are in ſome plants all of the ſame length, and in others are alternately one ſhorter and another longer.

The word is derived from the Greek ἕξ, ſix, and ἀνὴρ, male. The plants of this claſs are garlic, hyacinth, meadow-ſaffron, &c. See Tab. 1. of Botany, Claſs 1.

HEXAPYRAMIDES, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek ἕξ, ſix, and πύραμις, a pyramid. The bodies of this genus are ſpars formed into pyramids, compoſed of ſix ſides or planes, and affixed to no column, but adhering to ſome ſolid body by their baſes. Of this genus there are only two known ſpecies. 1. A ſhort one with a broad baſe; this is a very rare ſpecies, and found only, ſo far as is yet known, in the great mine at Goſſelar in Saxony. And, 2. A long-pointed one, with a narrow baſe; this is found in the fiſſures of the alabaſter quarries of the Harts Foreſt. *Hill*'s Hiſt. of Foſſ. p. 225.

HEXIS, in the writings of the Greek phyſicians, a word uſed to expreſs a firm and permanent habitude, in oppoſition to ſcheſis and diatheſis, importing a tranſient or eaſily removed diſpoſition.

HIÆNA, in zoology. See the article HYÆNA.

HIASTAOTOMTEHOM, a Chineſe name, expreſſing a plant, the root of which is ſaid to change, at a certain time, into a worm. Mr. Reaumur has given it the name of *plante-ver* in the French, but he has diſcovered the error of ſuppoſing ſuch a transformation; the whole truth of the caſe being, that a certain caterpillar, when about to change into the chryſalis ſtate, ſo nicely joins itſelf to the root of this plant, as to appear a part of it, See the article PLANTE-VER.

HIATICULA, in zoology, a name which many uſe for the bird called in Engliſh the *ſea-lark*, and by ſome authors *charadrius*. This laſt name being however given by different authors to other birds, it ſhould ſeem beſt to retain the word *hiaticula*, as the diſtinctive name of the ſea-lark. This bird is ſomewhat larger than the common lark; it has a black ſtreak above the beak, and a white one running from one eye to the other; its neck is variegated with two rings, the upper white, and reaching up to the beak, and the lower black, and covering part of the breaſt. Its back is grey, and its breaſt and belly white; its beak is ſhort, and part yellow, part black, and its legs of a pale yellow. It builds among the rocks on the ſea-ſhores, and lays greeniſh eggs ſpotted with brown, and altogether brown at the larger end. It is very

very common on the ſea-ſhores, and makes but ſhort flights, making a ſhrill noiſe all the while it is on the wing; it runs ſwiftly. *Ray*'s Ornitholog. p. 231.

This ſeems in all reſpects the ſame with the Braſilian bird deſcribed by Marggrave under the name *matuitui*; ſo that ſome birds are common to both theſe regions, however different the greater number of them are. See the articles MATUITUI and CHARADRIUS.

HIATULA, in ichthyology, a name given by ſome to the fiſh more uſually called the *channa*. It has this name from its opening its mouth to a great width, eſpecially when dying, which is owing to its under jaw, being much longer than the upper. *Willughby*'s Hiſt. Piſc. p. 327. See the article CHANNA.

HIATULA, is alſo a name by which Gaza, and ſome other authors, have called the ſhell-fiſh more uſually named *Chama*; a genus diſtinguiſhed from other kinds by its always keeping its ſhells in ſome degree open, and in many ſpecies having no power to ſhut them entirely; for this reaſon they defend their naked bodies by burying themſelves in the mud, or in other ſubſtances. See the article CHAMA.

HICCOUGH, (*Cycl.*) in medicine, a ſemiconvulſive motion of the diaphragm and meſentery with the inteſtines, by means of which nature attempts to eliminate and throw off ſomewhat that offends her in thoſe parts. This motion, when it happens in acute diſeaſes, is to be diſtinguiſhed from that which happens at other times; and there is yet another kind of it different from either of theſe, which is familiar to children in dying.

The chronic *Hiccough* is of two kinds; in its common ſtate it remains on a perſon but a very ſhort time, and in the other it remains long, and is attended with a febrile heat, and a difficulty of breathing, with a remarkable noiſe in exſpiration.

Signs of it. It is uſually preceded by a ſenſe of a heavy pain in the breaſt and abdomen, and this is followed by a more or leſs difficult breathing, with a ſound or noiſe in the exſpiration; and the *Hiccough* itſelf, which in chronic caſes is attended with a ſenſation of internal ulceration. *Junker*'s Conſp. Med. p. 638.

Perſons ſubject to it. Theſe are principally men who eat large meals, and load the ſtomach by drinking largely after them, and who eat large quantities of the ſummer fruits, eſpecially when unripe. In acute fevers a *Hiccough* is very familiar to thoſe perſons who have any internal inflammation; and it is very common in the fevers that attend women in their lying-in. The cauſes of the common *Hiccough* are an overloading the ſtomach with food, chiefly with ſuch as is hard of digeſtion; eſpecially if ſwallowed voraciouſly, and large draughts taken after it: Large draughts of cold liquors, or cooling internal medicines, alſo ſometimes bring it on; and it frequently happens when the periſtaltic motion of the bowels is diſturbed by violent purges or vomits. In acute diſeaſes it is principally owing to an inflammation either in the pylorus, the meſentery, or the ſinuous part of the liver; and in dyſenteries it ſometimes comes on from an inflammation of the ileum. Slow poiſons alſo ſometimes ſhew their firſt effects in a violent and unmitigable *Hiccough*.

Prognoſtics. The common *Hiccough* is uſually a diſtemper of little trouble, and attended with no danger; yet there have been inſtances of perſons dying of it without any other diſorder; but theſe fatal *Hiccoughs* will be found, when all circumſtances are conſidered, to have been very different in their nature and origin from the common kind, and uſually to have ariſen from ſome violent motion of the body. When the *Hiccough* comes on in acute fevers about the day of the criſis, it is always dangerous; for this, though in itſelf but a ſemiconvulſive motion, yet very eaſily degenerates into an univerſal convulſion of the whole body, under which the patient uſually ſoon expires. *Hiccoughs* attending colics in perſons who have not before been ſubject to them, are always a bad omen. See FEVER and COLIC.

Method of cure. The common *Hiccough* ſeldom requires any thing of medicine for its cure; it uſually goes off in a little time of itſelf, or if not, is eaſily thrown off by warm liquors, as tea, coffee, or the like. But when it remains on the perſon a long time, as it ſometimes will for ſeveral weeks, then the following method is proper for its cure. The crudities of the primæ viæ are to be carried off by gentle purges, as ſmall doſes of rhubarb, and the like; and by the aſſiſtance of the abſtergent and emollient clyſters. After this the ſtomach is to be ſtrengthened by bitters and mild chalybeats, and by wearing externally bags with camphor, and the aromatic roots and carminative ſeeds. Sometimes alſo it will be neceſſary to give abſorbents mixed with the calx of antimony, to correct the acrimony of the humours. When the fit has by theſe means been carried off, the return of it is to be prevented by taking now and then a doſe of ſome gentle purge, and after every meal ſwallowing two or three corns of pepper in a glaſs of hot wine. When the *Hiccough* comes on as a ſymptom in acute diſeaſes, reſpect is always to be had to the primary diſeaſe, and then the common alexipharmics are to be given, with ſpirit of nitre dulcified, and a gentle doſe of the nitrous and abſorbent medicines, ſuch as a powder prepared of purified nitre and crabs-eyes, or the like; and bags with aromatics may be worn externally. Caſtor, and the other nervous medicines externally have their uſe in this caſe, but internally taken they have no effect, either in this or any the like complaints in the lower belly. Caſſia fiſtula, ſena, and the other purges, which are apt to create flatulencies, are not to be given in theſe caſes. People who are ſubject to habitual *Hiccoughs*, will find relief by uſually wearing a belt round the abdomen, and ſuch ſhould always uſe moderate exerciſe, and avoid large draughts of cold liquors. *Junker*'s Conſp. Med. p. 639.

Dr. Hoyer informs us, that a moſt violent *Hiccough*, which had reſiſted a great number of medicines, was at laſt cured by ſucking womens milk. Act. Acad. Nat. Curioſ. vol. 4. Obſ. 3.

HICKWALL, in zoology, the name of a ſmall ſpecies of woodpecker, called by authors picus varius minor; a ſmall bird of not above an ounce weight, very beautifully variegated with black, white, and brown. The head in the female of this ſpecies has a white ſpot on the crown, and in the males a red one. It climbs trees like the common large woodpecker, and like it feeds on worms and other inſects which it finds there. *Ray*'s Ornithology, p. 93.

HIDE *and* GAIN, in our old writers, ſignified arable land; to gain the land being as much as to till it. Co. Litt. 85. *Blount*, *Cowel*.

HIDES—*Tanned Hides* are commonly carried along with the artillery of an army. They are uſed in the fire-workers ſtores, for covering powder, or charged bombs, from the rain, or from ſparks of fire. They are alſo uſed on batteries, or in a laboratory.

HIDROA, in the medicinal writings of the antients, a kind of puſtules ariſing from bilious, viſcid, and irritating humours, very troubleſome to the ſkin, and moſt ſo in ſummer time, when they make their eruption with the ſweat. They are reckoned by Hippocrates among the diſeaſes peculiar to the ſummer.

The word is Greek, ἱδρωα, from ἱδρως. *Sudor*.

HIDROCRITICA, a term uſed to expreſs the judgments paſſed by phyſicians on their patients, on obſerving the ſweats that have attended the diſeaſe.

HIDRONOSOS, a name given, by ſome authors, to that terrible diſeaſe the ſudor Anglicus. See SUDOR, *Cycl.*

HYDROPYRETOS, the ſweating fever, a name given by ſome to the ſudor Anglicus.

HIDROTICS, in medicine, ſuch things as ſerve to promote ſweating.

HIERACHIOIDES, in botany, a name given by Vaillant to a genus of plants, ſince called by Linnæus, crepis. See the article CREPIS.

HIEMALIA, in antiquity, the ſame with *Brumalia*. See the article BRUMALIA.

HIERACHIUM, *Hawkweed*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the ſemifloſculous kind, being compoſed of a number of ſmall ſemifloſcules, ſtanding each on its embryo ſeed, and all contained in one common cup. The embryo finally becomes a ſeed wing'd with down, and of which there are a large number collected in a head. To this it is to be added, that the ſtalks are branched, and that there is a general family face and appearance among all the *Hawkweeds*, by which they are eaſily diſtinguiſhed at ſight from the ſcorzoneras, &c. *Tourn.* Inſt. p. 469.

The ſpecies of *Hawkweed*, enumerated by Mr. Tournefort, are theſe: 1. The great upright narrow-leav'd *Hawkweed*, with ſmooth ſtalks. 2. The bright red-flower'd *Hawkweed*, with dandelion leaves. 3. The *Hawkweed*, ſmelling like bitter almonds, or like the red Apulian kind. 4. The yellow hairy *Hawkweed*. 5. The hairy rocket-leav'd *Hawkweed*. 6. The greateſt rocket-leav'd *Hawkweed*. 7. The great flowered rough *Hawkweed*, growing in the borders of corn fields. 8. The great obtuſe dandelion-leav'd *Hawkweed*. 9. The great bulboſe-rooted dandelion-leav'd *Hawkweed*. 10. The ſweet hairy dandelion-leav'd *Hawkweed*. 11. The ſmall ſmooth *Hawkweed*, with beautifully green leaves. 12. The dandelion-leav'd *Hawkweed*, with ſmall flowers. 13. The little *Hawkweed*, with rough dandelion-like leaves. 14. The ſmall *Hawkweed*, with long ſmooth dandelion-like leaves. 15. The ſmall *Hawkweed*, with reddiſh white flowers. 16. The great ſuccory-leav'd rough *Hawkweed*. 17. The hairy ſuccory-leav'd *Hawkweed*. 18. The ſmooth ſuccory-leav'd *Hawkweed*, with bitter roots, called by many the yellow devils-bit. 19. The common ſmooth ſuccory-leav'd *Hawkweed*. 20. The coronopus-leav'd *Hawkweed*. 21. The rough echioide *Hawkweed*, with carduus benedictus heads, commonly called *Langue de Bœuf*, or ox-tongue. 22. The great Arabian carduus benedictus-headed *Hawkweed*, with rough ſinuated leaves. 23. The common great ſuccory *Hawkweed*. 24. The great woolly *Hawkweed*, called by many, the woolly great ſow-thiſtle. 25. The hairy *Hawkweed*, called, by Dalechamp, the true ſuccory of Dioſcorides. 26. The endive-like *Hawkweed*, with large white flowers. 27. The wall *Hawkweed*, with leaves covered with very long hairs, called by ſome, lungwort. 28. The wall *Hawkweed*, with jagged and leſs hairy leaves. 29. The wall *Hawkweed*, with narrower jagged and leſs hairy leaves. 30. The wall *Hawkweed*, with leſs hairy and not ſpotted leaves. 31. The nar-

row-leav'd and wall *Hawkweed*, with leaves not ſinuated. 32. The ſmooth narrow-leav'd *Hawkweed*, or great ſmooth piloſella. 33. The *Hawkweed*, with deeply ſinuated hoary leaves. 34. The mountain woolly *Hawkweed*. 35. The great upright mouſe-ear-leav'd *Hawkweed*. 36. The woolly American *Hawkweed*, with the appearance of the French lungwort. 37. The ſmall upright mouſe-ear-leav'd *Hawkweed*. 38. The narrow-leav'd mountain *Hawkweed*, with umbellated flowers. 39. The garden *Hawkweed*, with blackiſh purple flowers. 40. The great flower'd branched *Hawkweed*. 41. The ſtatice-leav'd *Hawkweed*, with a leafy ſtalk. 42. The ſtatice-leav'd *Hawkweed*, with a naked ſtalk. 43. The bladder ſuccory *Hawkweed*. 44. The Sicilian *Hawkweed*, with ſhepherds-purſe leaves. 45. The common yellow-flower'd ſmooth, or but lightly hairy *Hawkweed*. 46. The ſmooth broad-leav'd mountain *Hawkweed*. 47. The leſſer ſmooth broad-leav'd mountain *Hawkweed*. 48. The turnep-leav'd mountain *Hawkweed*. 49. The rough alpine *Hierachium*, with the look of the conyza. 50. The great flower'd alpine *Hawkweed*, with broad hairy leaves. 51. The great flower'd alpine *Hawkeed*, with broad, hairy, and ſpotted leaves. 52. The great flower'd alpine *Hawkweed*, with broad very hairy leaves. 53. The dwarf ſuccory-leav'd alpine *Hawkweed*. 54. The ſmooth ſhrubby *Hawkweed*, with broad dentated leaves. 55. The common broad-leav'd hairy ſhrubby *Hawkweed*. 56. The hairy ſhrubby *Hawkweed*, with leaves much narrower and longer, a little dentated, and very hairy. 57. The ſhrubby *Hawkweed*, with roundiſh leaves. 58. The great narrow-leav'd ſhrubby *Hawkweed*. 59. The leſſer ſhrubby *Hawkweed*. 60. The ſhrubby *Hawkweed*, with very narrow and hairy leaves. 61. The Pyrenean ſhrubby *Hawkweed*, with woolly mullein-like leaves. 62. The tall Pyrenean *Hawkweed*, with the leaves and whole appearance of the doronicum. 63. The nipplewort-leav'd Pyrenean *Hawkweed*. 64. The hairy Pyrenean *Hawkweed*, with moth mullein leaves. 65. The moth mullein-leav'd leſs hairy Pyrenean *Hawkweed*. 66. The Pyrenean *Hawkweed*, with broad honeywort-like leaves. 67. The Pyrenean *Hawkweed*, with narrower honeywort leaves. 68. The round-leav'd Pyrenean *Hawkweed*, with leaves embracing the ſtalks. 69. The broad dandelion-leav'd Pyrenean *Hawkweed*. 70. The low Doronicum-leav'd alpine *Hawkweed*. 71. The alpine *Hawkweed*, with ſcorzonera-leaves. And 72. The dwarf woolly Portugal *Hawkweed*. *Tourn.* Inſt. p. 472.

HIEROBULBUM, in botany, a name given by the antients to the colchicum.

Some have wonder'd that the medical writers of thoſe times ſhould give this name, which ſignifies the ſacred root, to a thing that was generally allowed to be a poiſon; but Wedelius has proved that it may be given, under proper regulations, with ſafety and great ſucceſs in malignant and petechial fevers, and in the worſt kinds of the ſmall pox and meaſles. The manner he gave it was in a mixture with bezoar and plantain root, and this he called his *Arcanum Duplicatum Catholicum*, or peſtilential alexipharmic. The antients had a cuſtom of wearing this root about their necks, by way of an amulet, to prevent infection; and it was probably from this that it obtained the name of the ſacred bulb. Act. Eruditor. Ann. 1719.

HIEROMANTIA, Ἱερομαντεια, in antiquity, a general name for all the kinds of divination, made from the various things offered in ſacrifice to the gods. They firſt made conjectures from the external parts, and motions of the victim; then from its entrails; from the flame in which it was conſumed; from the cakes and flour; from the wine and water, &c. Vid. *Pott.* Archæol. Græc. l. 2. c. 14. T. 1. p. 314.

HIEROMENIA, Ἱερομηνια, in antient chronology, a name given to the month in which the Nemean games were celebrated. It was the ſame with the Athenian month Bœdromion, and likewiſe called *Panemos*. See PANEMOS.

HIEROMNEMON, Ἱερομνημων, among the antient Greeks, ſignified a delegate choſen by lot, and ſent to the great council of the amphyctyons, where he was to take care of what concerned religion. The *Hieromnemones* were reckoned more honourable than the other members of that aſſembly, the general meetings of which were always ſummoned by them; and their names were prefixed to the decrees made by that council. See Mem. Acad. Inſcript. vol. 4. p. 289. ſeq. and 306.

HIEROMNENON, in the writings of the antients, the name of a ſtone ſaid to have been uſed in divination, and called by others erotylos and amphicome. There is no deſcription left us of it by the antients, from which we might gueſs what ſtone it was, or from whence it was brought.

HIJABILA, in botany, a name given by ſome authors to the tamarind tree. *Herm.* Muſ. Zeyl. p. 27.

HILUM, a word uſed by botaniſts to expreſs the blackiſh ſpot in beans, commonly called by us the eye of the bean.

HIMANTOPUS, in zoology, the name of a water bird, very remarkable for the length and ſlenderneſs of its legs; it is all over white on the breaſt, belly, and throat, and blackiſh on the back and wings. Its beak is black, about a hand's breadth long, and very weak and ſlender, fit for nothing but to deſtroy the ſofter ſmall inſects. Its tail is of a whitiſh grey; its neck has ſeveral oblong black ſpots drawn downwards, and its wings are very long. Its feet are red, and have no hinder toe. *Aldrovand.* de Avib. L. 20. c. 30.

HIMAS. The proper ſignification of the word is a thong of leather. But in medicine it is uſed to ſignify a laxneſs of the uvula, when it becomes long and ſlender, and hangs pendulous. It differs from the cionis, in that under this latter diſorder the uvula is not extenuated, but ſeems to acquire a greater thickneſs, as well as length, than what it naturally has.

HINGWANG, in natural hiſtory, a name given, by the people of the Eaſt Indies, to a ſpecies of red arſenic, which they uſe in painting and in medicine. They find it in and about the copper mines. It is calcin'd ſeveral times in order to fit it for internal uſe. In painting it makes a very fine orange colour, but when mixed with ceruſs, it makes a lemon colour, and any other ſhade of yellow. It ſeems to contain ſome portion of ſilver, and ſome cinnabar.

HIOENA, in natural hiſtory. See the article HYÆNA.

HIP, in the manege. See the article HAUNCH.

HIP, in the materia medica, the fruit of the cynoſbatus ſhrub. *Hips* are eſteemed attenuant and diuretic, but little uſed in the ſhops, except in the conſerve, which is a very pleaſant one.

HIPPAGOGA, in antiquity, a veſſel uſed in tranſporting horſes. It was otherwiſe called *Hippago*. *Pitiſc.* Lex. Ant. in voc.

HIPPIA, in botany, a name uſed by ſome authors for the common chickweed. *Ger.* Emac. Ind. 2.

HIPPION, or HIPPIUM, in botany, a name by which John Bauhine, and ſome other authors, have called the larger ſpecies of the autumnal dwarf gentian. See the article GENTIANA.

HIPPIUM, in antiquity, that part or tract of the hippodrome which was beaten with the horſes feet. See the article HIPPODROME, *Cycl.*

HIPPOBOSCOS, in natural hiſtory, the name given by authors to the horſe fly. This is of the bigneſs of the common fly, and has a broad flat body, which is hard and ſmooth, and of ſo firm a ſtructure, that it can ſcarce be cruſh'd or broken by the fingers. It is remarkable for its flying ſideways.

HIPPOCAMPUS, the *Sea Horſe*, in zoology, the name of a ſmall ſea animal caught in the Mediterranean, and eſteemed uſeful in medicine among the antients, but at preſent not uſed.

It has its name from the Greek ἱππος, a horſe, and κάμπη, a caterpillar, from its reſembling a horſe in its head, and a caterpillar in the reſt of its body. It ſeldom exceeds the length of three inches, and is about as thick as a finger, or a little more; its ſnout is long and hollow like a pipe, and is not ſplit, as in other animals, in general; but it has an operculum from below, which opens or ſhuts up its aperture at the creature's pleaſure; its whole ſnout is perfectly like that of the acus or needle-fiſh; its eyes are round and prominent, and between the eyes there are two more prominent tubercles. The body, down to the anus, is heptaedral, or ſeven-ſided, and terminated at the angles with a ſort of thorny protuberances; from the anus to the tail the ſhape is only three or four ſided, and ends in a point, and is twiſted into a ſort of ſpiral line. In the place where the gills of other fiſhes are ſituated, this has two fins in the ſhape of ears, and above theſe there are two apertures opening upwards, but no gills are any way diſcoverable. It has two apertures on the belly, out of one of which the excrements are voided, and by the other the female depoſits her eggs. Its whole body is compoſed of a ſort of annular cartilages, from diſtinct parts of which are propagated a ſort of prickles; it is while freſh of a duſky green colour, and blackiſh toward the tail, and is ſpotted principally on the belly with bluiſh white ſpecks; it has a ſingle fin in the middle of its back of an equal height all the way. Into whatever poſture you turn the tail, while the creature is yet living, it will retain it when dead. Some of this ſpecies have a mane like that of a horſe, but moſt want this character; and naturaliſts are not yet determined whether it be the character of a diſtinct ſpecies of the animal, or be owing to the different age or ſex. It is hairy in many parts of the body, but principally about the head; but the hairs often fall off in drying the creature. *Willugh.* Hiſt. Piſc. p. 157.

HIPPOCASTANUM, *Horſe-cheſnut*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of ſeveral leaves diſpoſed in a circular form; the piſtil ariſes from the cup of the flower, and finally becomes a large fruit, which when ripe burſts open in many places, and is unicapſular, containing ſeeds of the ſhape of cheſnuts.

There is only one known ſpecies of *Hippocaſtanum*, which is the common one. *Tourn.* Inſt. p. 611.

Jo. Jac. Zannichelli [a] affirms, that after a great many trials, he has found the bark of the *Hippocaſtanum* to have the ſame effect as the Peruvian bark. [[a] Hippocaſtani facultatibus ap. Med. Eſſ. Edinb.]

HIPPOCEPHALOIDES, the *Horſe-head ſtone*. The word is derived from the Greek ἱππος, a horſe, and κεφαλη, the head, and is a name given by Dr. Plot to a ſtone found in Oxfordſhire and many other places, and ſuppoſed to reſemble the head of a

horſe in figure, though the truth is it requires a very warm imagination to make out the reſemblance.

The ſtone is compoſed of the matter of the common coarſer quarry-ſtone, and owes its figure to a ſhell of the cockle-kind, into which having been received at a time when it was moiſt and ſoft, it has taken the exact figure and lineaments of its inner parts. It is about the ſize of the larger bucarditæ, from an inch and half, to two inches and a half in length, and indeed very much reſembles that ſtone, having been formed wholly in the ſame manner, and that in a ſhell of the ſame genus. *Hill*'s Hiſt. of Foſſ. p. 646.

HIPPOCRATEA, in botany, the name of a genus of plants firſt deſcribed by Plumier under the name of *coa*. The characters are theſe: The cup is a one-leaved perianthium lightly divided into five ſegments, which are obtuſe, expanded, and larger than the flowers. The flower conſiſts of one leaf, and is of an oval form, with a truncated undivided edge. The fruit is a capſule of a flatted figure, expanded and divided into three parts, and each of theſe again divided into three ſegments. It contains three cells, each of them compoſed of two valves of a compreſſed and carniated figure. The ſeeds are oblong and edged with a membranaceous rim. Linnæus is very ſuſpicious that the author from whom he takes theſe characters, has deſcribed the plant too careleſsly, as the whole ſeems a very extraordinary fructification. *Linnæi* Gen. Pl. p. 518. *Plumier*. p. 35.

HIPPOCREPIS, in botany, the name given by Linnæus to the plant uſually called by authors *ferrum equinum*, or the horſe-ſhoe vetch. *Linnæi* Gen. Pl. p. 364. See the article FERRUM *Equinum*.

HIPPODROMUS, in chronology, the Bœotian name for the Athenian month Hecatombæon, which was the firſt of their year, and anſwered to the latter part of our June, and beginning of July. Vid. *Potter*'s Arch. Græc. l. 3. c. 26. See the article ECATOMBÆON.

HIPPOGLOSSUS, in zoology, the name of the holibut; a large flat fiſh caught in the Britiſh ſeas and elſewhere. It is the biggeſt of all the fiſh of this kind, and is ſomewhat of the ſhape of a turbot, but larger and longer bodied, and conſequently leſs ſquare; its back is of a duſky browniſh green, its ſcales extremely ſmall, and the whole ſurface of the fiſh very ſmooth, having no crooked prickles on the ſides. The eyes are on the right ſide, and the belly has ſix ſmall fins beſide the larger ſtrait ones. It is caught in the German and Britiſh ſeas, and its fleſh is very delicate. *Rondelet* de Piſc. p. 351. *Geſner*. p. 787.

HIPPOGLOSSUM, *Horſe-tongue*, in botany, the name of a plant of the *ruſcus*, or butcher's broom kind, called by others the Alexandrian bay, or *laurus Alexandrina*. See the article RUSCUS.

HIPPOLITHOS, a name given by ſome authors to the ſtones found in the ſtomachs and inteſtines of horſes: there are often a great number of theſe in one horſe, and they are frequently found in the colon, of a very large ſize.

HIPPOMANE, in botany, the name of a genus of plants firſt deſcribed by Plumier under the name of *mancanilla*. The characters are theſe: It produces ſeparate male and female flowers on different parts of the ſame plant; theſe are both very imperfectly deſcribed by Plumier, who only obſerves, that the male flower has no petals. The fruit ſucceeding the female flower is an extremely large round berry, lightly umbilicated, and containing only one cell, in which is encloſed a woody nut. *Plumier*. p. 30. *Linnæi* Gen. Plan. p. 517.

HIPPOMYRMEX, the *Horſe-ant*, the name of a ſpecies of ant much larger and nimbler than the common kind. This builds in woods, and makes its neſt of ſticks and ſtraws, and fragments of various parts of trees. The common ant builds only with earth.

HIPPOPHAE, in botany, the name given by Linnæus to a genus of plants called *Rhamnoides* by Tournefort and others. The characters of which are theſe: It produces ſeparate male and female flowers. In the male flowers the perianthium is whole at the baſe, but divided into two roundiſh, obtuſe, and hollow ſegments; theſe ſtand erect, and bend towards one another at the top, but ſeparate at the ſides. There are no petals; the ſtamina are four filaments, very ſhort, and bearing oblong and angular apices of the length of the cup. In the female flower the cup is compoſed of one leaf of an oval, oblong, and tubulated figure, and is ſlightly bifid at the mouth. There are no petals. The piſtil has a ſmall roundiſh germen; the ſtyle is ſingle, and very ſhort; the ſtigma is thick, oblong, and erect, and is twice as long as the cup; the fruit is a globoſe berry, having only one cell, and containing only one roundiſh ſeed. *Linnæi* Gen. Pl. p. 473. *Tournefort*, p. 481.

HIPPOPHEOS. This was a name given not only to the larger ſpecies of the pheos or ſteebe, but to a very different plant, a kind of dodder, more vulgarly called epipheos, from its growing upon the pheos, as the dodder of thyme is called epithymum from its growing upon that plant. It is poſſible indeed that it might be called originally *Hippopheos*, from its riding, as it were, on the pheos. But however this be, there is great reaſon to ſuſpect that Dioſcorides confounds this dodder with the plant itſelf, and gives its virtues as thoſe of the proper *Hippopheos*; which, according Theophraſtus, and all the other writers of credit in antiquity, is only a larger ſpecies of the pheos, a prickly ſhrub, not a plant, growing on it. See the article EPIPHEOS.

HIPPOPHTHALMIC *muſcles*, a name given by the ichthyologiſts to a pair of large muſcles found in the heads of fiſhes, one placed immediately under each eye; theſe ſerve to move the eyes; and with the two maxillary muſcles placed under the jaws, are the principal muſcular parts of the head of fiſhes.

HIPPOPOTAMUS, in zoology, the name of a very ſingular quadruped, called in Engliſh the river horſe, and by ſome, though leſs properly, the ſea horſe. It approaches in figure partly to the buffalo, and partly to the bear. It is larger than the buffalo, and its legs are very like the bear's. The full grown animal is thirteen foot long from its head to its tail, and four foot and a half in the diameter of its body, and its belly is rather flat than ridged; the circumference of its body is uſually equal to its whole length, and its legs three foot and a half long; its legs three foot round, and its feet a foot broad; its head is very large in proportion to its body, and its mouth is capable of opening a foot wide; its eyes are ſmall, its ears alſo ſmall and thin; its teeth are as hard as flint, and will readily give fire with ſteel; it is uſually very fat; its hoofs are black, much like thoſe of the common cloven-footed beaſts, but divided into four claws inſtead of two; its upper jaw is moveable in the manner of the crocodile's. Its tail is more like that of a bear or a tortoiſe, than a hog's, to which it has uſually been compared; it is very thick at its inſertion, and tapers away to the end; it is not above ſix inches long, and ſo thick that it cannot twiſt about. Its ſkin is extremely hard and tough, and in colour black; and its noſe is furniſhed with ſtiff hairs or whiſkers, in the manner of a cat's, ſeveral ſtiff hairs growing from the ſame hole; and theſe are the only hairs the creature has, its whole body being naked. It has two large teeth in the lower jaw, ſomewhat reſembling the tuſks of the boar, and a little crooked, but not ſtanding out of the mouth like the boar's tuſks; theſe are much larger than the other teeth, and ſometimes grow to a foot in length.

It is found in the Nile and Niger, and many other great rivers; it comes out of the water to bring forth its young, and feeds upon rice, herbs, and the roots of the colocaſia. Its feet being not web'd, ſhew that it is not intended for ſwimming, and probably it ſpends its time in walking about at the bottom of the rivers. It is very plainly proved by Bochart, that this is the creature mentioned under the name of the behemoth in the book of Job. *Ray*'s Syn. Quad. p. 124.

In the Linnæan ſyſtem of zoology, the *Hippopotamus* makes a diſtinct genus of animals of the jumenta kind, the characters of which are, that it has two paps ſituated in the groin; its dentes inciſores, or cutting teeth, are four on each ſide, the upper ones placed at diſtances by pairs, the lower ones prominent, with the middle two the largeſt; the dog-teeth are ſingle, and ſeem as if cut off obliquely. *Linnæi* Syſt. Naturæ, p. 48.

HIPPOSIS, in the writings of the antient phyſicians, ſignifies a reducing any part of the body into its natural ſituation, by means of compreſſion.

HIPPOSORCHIS, in ſome diſpenſatories, a name given to a powder of the teſticles of horſes.

HIPPOTAURUS, in natural hiſtory, the name given by authors to a creature generated between a bull and a mare. It ſeems a very unnatural copulation; but Wagner in his hiſtory of Swiſſerland aſſures us, that the creature produced by it is ſometimes found wild in the mountainous parts of that country.

HIPPURIS, in the Linnæan ſyſtem of botany, a genus of plants called by others *limnopeuce*. The characters of this genus are, an extremely ſmall calyx, made up of two very ſmall rims placed oppoſite to one another, and ſurrounding the germen. It has no viſible flower, and only one ſtamen fixed upon the calix, and furniſhed with a ſemibifid anthera; the piſtillum is compoſed of an oblong germen under the receptacle of ſeeds, and a ſingle, pointed, and erect ſtyle, contained in the ſtamen, but larger than it, and an angular ſtigma. The ſeed is ſingle, roundiſh, and naked, or ſurrounded with no ſort of pericarpium. *Linnæi* Gen. Pl. p. 1.

HIPPURIS, in ichthyography, the name of a large ſea fiſh, very much reſembling the dorado, or gold fiſh, and by many ſuſpected to be the ſame ſpecies. It is a very remarkable fiſh, having a ſort of creſt riſing immediately behind its head, which is continued in a long fin to the tail; and there is another in ſome meaſure anſwering this, and reaching from the anus to the tail; its gill-fins are ſhort and broad, and in ſome ſort reſemble ears; its belly-fins are longer, of a blackiſh colour, and reach nearly to the anus, which is ſituated in the middle of the belly; its mouth is of a moderate ſize, its teeth ſmall, but ſharp, and placed not only in the jaws, but on the palate and the tongue; its eyes are large, and its ſcales very ſmall. It is the quickeſt of all fiſh in its growth, which is an obſervation as old as the time of Ariſtotle, but is found true to this day. It is caught upon the coaſts of Spain, but that only at one time of the year in the month of Auguſt. It is a very delicate and well-taſted fiſh, and is much eſteemed at table.

table. *Willughby*'s Hiſt. Piſc. p. 273. *Geſn.* de Piſc. p. 501.

HIPPURITES, in natural hiſtory, a name given by ſome writers to a ſtone which they fancy to repreſent a ſaddle. It is deſcribed to be a ſoft argillaceous ſtone, owing its figure of a ſaddle to certain depreſſions. This is only a luſus naturæ, and is of the nature of the hand-ſtones and foot-ſtones, with ſeveral others, which fancy has aſſiſted in their reſemblances, but which have been very improperly called by particular names.

HIRA, a word uſed by the writers in medicine either for the inteſtinum jejunum, or for all the inteſtines, or in a yet larger ſenſe, for all the contents of the abdomen. *Caſtel.* Lex. in voc.

HIRNGRILL, a name given by ſome authors to the *Serinus*.

HIRQUUS, a name given by ſome authors to the great canthus of the eye.

HIRUDO, in zoology. See the article LEECH.

HIRUDELLA *Marina*, in natural hiſtory, the name of a very remarkable little animal of the leech kind. The body of this creature is roundiſh and oblong, and adorned with many longitudinal lines or furrows; it is about an inch in length, and is of a greyiſh colour, and ſomewhat tranſparent; the bowels are ſeen through the ſkin, and appear at firſt ſight like ſtreaks on its ſurface; in the middle of the belly there is a remarkable protuberance, which, when cloſely examined, is found to be a muſcular body in form of a ſpherical bladder; this, when moſt diſtended, has the appearance of a ſpherical air-pump, and has all the properties of that machine, to be employed for the ſervice of the animal, and at its pleaſure. It reſembles, in its common figure, the cup of an acorn, with the mouth a little contracted. The head of the animal is of the ſame figure with that of the common leech, and ſerves to ſuck the juices of other animals, in the ſame manner as in that inſect. That part of the body which reaches from the head to the middle protuberance is of a very irregular form, frequently in motion, and continually changing its figure; but the other part moves more ſlowly, and leſs frequently, and preſerves its ſhape unaltered. The protuberance has two motions, expanſion, and undulation.

When the creature has a mind to fix itſelf any where, it does it by means of this protuberance, which it applies cloſely down to the ſubſtance, and void of air. Hence the external air ſo firmly preſſes its ſides againſt the ſubſtance, that it is not eaſy to remove it. When the creature changes its place, it draws the head round to the protuberance, and looſens it ſo as to be able to change its place as it has occaſion.

When this creature is kept out of water, it dies in a few hours; and when after being thus kept out a few minutes, it is put into ſea water, it immediately darts out a fine green thread from its mouth; this it uſually makes of the length of its body, or thereabout, though it varies it occaſionally; and by means of this it ſuſpends its body at any length that it pleaſes in the water. It ſeems to be calculated only for living in the body of fiſhes, for the ſea water ſoon kills it; and it is obſerved to diminiſh in bulk very ſenſibly all the time that it is kept in it. Philoſ. Tranſ. N° 410.

HIRUNDO, the *Swallow*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of birds of the order of the *Paſſeres*. The characters of this are, that the beak is extremely ſmall, pointed, and depreſſed at the baſe, and the opening of the mouth larger than the very head of the bird. *Linnæi* Syſt. Nat. p. 49.

The characters of this genus, according to Ray, are theſe: They have very large heads, and very ſhort beaks, but very wide mouths, adapted to the ſwallowing large inſects, which are their food. Their tails are long and forked, their eggs are white, they are birds of paſſage, and with us are the foretellers of ſummer.

We have in England four ſpecies of ſwallows: 1. The *Hirundo domeſtica*, or houſe *Swallow*. 2. The *Hirundo agreſtis*, or martin. 3. The *Hirundo riparia*, called the ſand martin, or ſhoar bird. 4. The *Hirundo apus*, called the black martin, or ſwift. Beſide theſe, there are three other known ſpecies: 1. The *Hirundo marina*, or ſea *Swallow*. 2. The *Hirundo Americana*, called *tapera*. And 3. The Chineſe *Swallow*, whoſe neſt is eaten in ſoops, *&c.* *Ray*'s Ornithology, p. 154. See TAPERA.

The common houſe *Swallow* is well known every where with us, and is ſometimes ſeen all over of a fine white.

The martin, or martlett, has a very broad and flat head, and a very broad beak pointed at the end; its legs are very ſhort, and its claws white; its toes are all cover'd, to the very claws, with a white downy plumage, by which it is diſtinguiſhed from all the other ſwallows. *Ray*'s Ornithology, p. 155.

The ſand martin, or ſhore bird, is the ſmalleſt of all the *Swallow* kind. Its head, neck, and back, are of a mouſe colour; its breaſt and belly white; and it has a ring of brown round the lower part of its throat. It builds in the banks of rivers, and makes its neſt of ſtraw, the ſtalks of plants, *&c.* and covers it with feathers. It is not uncommon with us; but is extremely plentiful in Spain, in the ſummer months, where it is eaten, and is called by the common people, *papilion di montana*. *Ray*'s Ornithology, p. 156.

The black martin, or ſwift, by ſome called the diveling, is the largeſt of all the *Swallow* kind: Its head is remarkably broad and flat; its beak is very ſmall, ſhort, and weak; but its mouth opens to an immenſe width, like that of the goat-ſucker, or churn owl. It is all over of a brown colour, with a ſlight admixture of green, and has no other variegation, but a greyiſh white ſpot at the top of its throat. Its legs are extremely ſhort, and its feet remarkably ſmall. It feeds on beetles, and other inſects, and ſeldom alights on the ground, the ſhortneſs of its legs making it not eaſy for it to riſe again. *Ray*'s Ornithology, p. 156.

HIRUNDO *Aquatica*, the *Water Swallow*, a name very improperly given by Beſler, and ſome others, to the northern colymbus, commonly known by the name of the *Lumme*.

HIRUNDO *Marina*, the *Sea Swallow*, the name of a large bird of the *Swallow* kind. Its belly is all white; its head and back of a duſky brown; its wings and tail are very long and blackiſh, but ſomewhat brown underneath; its tail is forked; its beak very ſtrong, and its mouth very wide and red within. It has on each ſide a long line, reaching from the beak to the breaſt, and making a ſort of ring near the breaſt. Its legs are black, and longer than in the other *Swallows*. *Aldrovand.* de Avibus.

HIRUNDO *Piſcis*, the *Swallow Fiſh*, or, as it is called in Cornwall, the *Tub Fiſh*, a ſea fiſh of the cuculus kind, remarkable for the ſize of its gill-fins. Its head is very large and bony, of an angular figure, and armed with ſeveral prickles. It gradually diminiſhes in thickneſs from the head to the tail, and near that is very ſlender. Its ſcales are very ſmall; its back is of a greeniſh brown; its ſides of a pale red, and its belly whitiſh. Its lower pair of belly-fins, as alſo the ſingle fin behind the anus, and the tail, are of a reddiſh hue. The ſide lines run ſtrait and ſingly to the tail. The bony covering of the head runs out behind into two horns. Over the inſertion of the gill-fins, there is alſo a remarkable ſtrong ſcale, with a thorn or prickle at the end of it. The teeth are very ſmall. The back has two ridges of bony points, and the gill-fins are extremely large, and variouſly colour'd. Their outer edge is of a ſhining blue; and there are, near the baſe of the ſeventh or eighth nerve, fine black ſpots in a pale blue area. Under theſe fins there are, on each ſide, three filaments, called fingers, in theſe fiſhes, and theſe are gradually one longer than another. Its tail is a little forked. It is caught in the Mediterranean, and other ſeas, and feeds on ſmall fiſh. *Ray*'s Ichthyogr. p. 280.

HISPANICUM *Viride*, *Spaniſh green*, a name given by ſome to verdegreaſe.

HISPID *Leaf*, among botaniſts. See the article LEAF.

HISPID *Stalk*. See the article STALK.

HISTORICAL *Muſic*, *muſica hiſtorica*, is that branch of muſic which treats of the origin and invention of muſic, of modes, of notes, inſtruments, *&c.* as alſo the lives and writings of celebrated authors on that ſubject.

HISTORY (*Cycl.*) — *Natural* HISTORY. See NATURAL *Hiſtory*.

HISTRIX, the *Porcupine*, an animal well known in many parts of the world, and ſo common in the mountainous parts of Italy, that it is brought to market at Rome, and ſells but at a very low price, the fleſh not being greatly eſteemed. *Ray*'s Syn. Quad. p. 206.

It reſembles the badger in ſhape, but in its nature more reſembles the hare, and is properly of the leporine kind. It uſually weighs between twenty and thirty pounds. Its body is often two foot long, and is all over cover'd with a very ſingular and remarkable kind of briſtles. Its ſhoulders, legs, ſides, and belly, are wholly black; and its back variegated with black and white. Its briſtles more reſembles thoſe of the hog than of any other animal; its neck is ſhort and thick; its head alſo ſhort, and its noſe obtuſe; its noſtrils very large, opening tranſverſely, and its upper lip ſplit, as in the hare. All about and over its noſtrils, it has a number of black hairs, by way of whiſkers, as the rat and mouſe have; and it has, in each jaw, two large and long fore teeth, like thoſe of the hare. The eyes are ſmall and blue, and the ears of a very ſingular ſhape, repreſenting thoſe of the human ſpecies; and about theſe there is a grey down, very different from the covering of the reſt of the creature. It has the like down upon the lower jaw; and all along the head and neck, quite to the ſhoulders, it has a ſort of creſt of very long briſtles, ſometimes eight inches long; this looks like an erect mane, and the briſtles it is compoſed of are ſome white, ſome black, and others variegated with both theſe colours. Its legs are ſhort, and the fore feet have each five toes, the hinder ones only four, of which the outer one is the largeſt, as in the bear. The briſtles of the whole body are very thick, flatted at the bottom, and pointed at the extremity, and ſtanding each on a ſhort pedicle. Its briſtles are of two very different kinds; ſome of them are very ſharp, rigid, and ſhort; others longer, flexible, and flatted at the end; thoſe of the firſt ſort are white at the bottom, and cheſnut-colour'd at the top; the longer ones are white at both ends, and variegated with black and white in the middle.

The tail is a little more than a hand's breadth long, and is beſet with ſpines, in ſeveral annular ranges; and at the extremity, inſtead of ſpines, it has ten or twelve tubular bodies,

of

of the thickneſs of the ſpines, but of not more than half their length, very thin and tranſparent, open at the end, and placed on ſhort pedicles. *Ray*, Syn. Quad. p. 208.

HISTRIX, in ichthyography, the name of a fiſh of the orbis, or globe-fiſh kind, uſually called in Engliſh, the porcupine fiſh. Its uſual ſize is between twelve and twenty inches in length. It is very thick, and is covered, inſtead of ſcales, with a whitiſh coriaceous ſkin, every way beſet with ſtrong and ſharp thorns, the baſis of each of which has two other ſmaller ones buried under the ſkin. The opening of the mouth is very large, not leſs than three inches in the largeſt ſpecies. It has rough and rugged lips, and two broad bones in the place of teeth, one placed above, and the other below, and both arched, and a little prominent, as is alſo the whole mouth. The Eyes are large, the eye-lids elevated, and armed with four thorns. The thorns are from one to three inches in length; the ſides always have the longeſt, and they gradually ſhorten toward the back and belly. Its belly is white, and its back brown, ſpotted with black, as are alſo the ſides. *Cluſ.* Exot. L. 6. C. 21.

HITCH, on ſhip-board; a word uſed for catching hold of any thing with a hook or a rope, and to hold it faſt. Thus, when the boat is to be hoiſed in, they ſay, *hitch* the tackles into the rings of the boat: And when about to weigh anchor, *hitch* the fiſh-hook to the fluke of the anchor.

HIVE. *Bee-hives* in different places, and on different occaſions, are of very different materials. In ſome places the hollow trunk of a tree ſerves the purpoſe; in others they are made of four boards nailed together in the ſhape of a long box, and placed with one end upon the ground, or upon a frame of woodwork erected for that purpoſe. The moſt uſual form of them, however, is conic and bell-faſhion'd; and the common materials of which they are made are twiſted oſier, or ſtraw, nicely matted together, and made into a ſort of thick cords, bound round with oſier bark. The laſt is the moſt common kind, and ſerves perfectly well to all the purpoſes of the bees, and of the people who make their profits of the honey. The lodgment is ſufficiently warm and cloſe for the bees; and a thin frame of boards defends it from being injured by the wet. *Reaumur*, Hiſt. Inſect. vol. 9. p. 279.

People of ſpeculative diſpoſitions have at all times been deſirous of ſeeing what paſſed in the *Hive*, and of obſerving theſe induſtrious creatures at their work; for this purpoſe the antients contrived a way of placing certain ſquares or panes of a tranſparent matter, ſuch as horn, or the lapis ſpecularis, or iſinglaſs, in ſome parts of the ſides of the *Hive*, through which they might ſee all that paſſed within. This is mentioned by Ariſtotle, Pliny, and others; but it ſoon grew into diſuſe, and the later ages have ſuppoſed it an idle attempt. Mouffet, in particular, laughs at it, and ſays, that the bees within would immediately ſpoil the tranſparence of the materials, be they what they would.

Of late, however, this method of making a tranſparent ſort of *Bee-hive*, or leaving a tranſparent part in one, has been reviv'd, to the great amuſement and pleaſure of thoſe who have attempted it. The beſt method of doing this, is to leave certain ſquares in the common *Hive* empty, and afterwards putting clear glaſs to them; this is to be neatly faſtened in, and then a frame of wood to cover the whole, ſo that the light is not always let in upon the bees, but only the panes of glaſs opened by removing the covering, at the times when the obſerver is to look at them. By this means it is found that the ſquares of glaſs, when properly placed, will keep clean and tranſparent, and all that paſſes within may be ſeen, whenever the caſe that covers them is removed. The numbers of little animals, thus diſcover'd, all laborioufly employed in the ſame manner, is a wonderful and highly pleaſing ſight.

The revival of this invention of the antients is ſo late, that it is evident from the writings of Swammerdam, that in the year 1680 there was no ſuch thing known; and it is to this that we are to impute the great imperfections of that author's accounts of the bee; becauſe, though a moſt accurate and faithful writer, he had no opportunities of ſeeing what we have diſcovered by means of this advantage.

The ſquares of glaſs in the ſides of *Hives* will continue clear and unſullied for years together; and when they are fouled, there are eaſy means of cleaning them, by taking them out, and replacing them again when wiped.

When the obſerver places himſelf behind the *Hive*, and has one of theſe ſquares of glaſs before his eye, he ſees exactly all that paſſes within, and that without at all incommoding or interrupting the creatures at their work. The whole number of bees in the *Hive* are ſeen employed in different places, in their ſeveral works, and all with the moſt ſurprizing activity.

The honeycombs, or waxen receptacles for the honey, are begun as near the top as the form of the *Hive* will permit, and thence are carried down to the bottom, each being placed parallel to the former, but not touching it, ſuch a ſpace being left between, that the bees have room to walk about in it. Theſe are the public ſtreets, or places of reſort of the whole people; and it is by means of this ſpace between, that they are able to make uſe of every cell. Moreover, as the bees have frequent occaſions to paſs between one pair of combs, to the ſpace between another pair, there are a ſort of alleys cut between theſe larger ſtreets. Theſe are certain holes made through the ſubſtances of the ſeveral combs; and theſe without doing any conſiderable harm to the whole, give the bees a much ſhorter paſſage from place to place than they otherwiſe could have. Though the parallel diſpoſition of the ſeveral combs is the moſt frequent, it is not the only one in which they are found, for theſe creatures vary this according to the nature of the place they are lodged in. Frequently part of the combs which fill the *Hive* are thus placed, and part are arranged perpendicularly to them; and very often part of the combs are perpendicular, and the reſt oblique. There are alſo ſeveral other directions, in which they are found to be placed; but all theſe may be eaſily accounted for from the nature of the place, and will be always found to be the very beſt that could be uſed on that occaſion. *Reaumur*, Hiſt. Inſ. vol. 9. p. 282.

It has generally been ſuppoſed, that every bee of the ſwarm had its particular cell in ſome comb which was its own, and contained honey for its peculiar food; but this is by no means the caſe. The uſe of the glaſs *Hives* has ſhewn us, that all the cells are uſed in common; that ſome of them contain only honey, and are covered over with a lid of wax; others open at the top, and that the bees often viſit theſe laſt.

Common obſervation ſhewing, that a bee was often ſo lodged in one of theſe cells, that its hinder part only appeared, gave riſe to the opinion of each having, in this manner, its peculiar cell, the honey of which he eat in this manner; but, on viewing the whole through theſe glaſſes, we ſee the matter to be far otherwiſe. The covered cells, which contain only honey, are never touched at theſe times by any bee; and each of theſe open ones containing, at its bottom, the worm of a bee, which is the proper offſpring of the family. There are certain bees that are deputed to viſit theſe, and to ſee how the young ones thrive; and theſe are ſeen in this manner plunging their heads into the ſeveral cells, one after another, and not continuing thus immerſed in any one, as had been ſuppoſed.

Though all this is ſeen, it is not, however, ſeen ſo perfectly or diſtinctly as might be wiſhed; for in *Hives* well filled with inhabitants, every thing, though really done in the greateſt regularity and order in the world, yet ſeems done in tumult and confuſion; and on whatever bee the eye is fixed, in order to obſerve its operations, the ſight is hinder'd by numbers of others, which continually hide him, by coming over his head, or before him. The general ſquare figure of the glaſs *Hives* gives leſs opportunity of ſeeing what paſſes within than many other figures might, becauſe very little ſpace is under the eye at once. Reaumur, therefore having a great deſire to go through the whole operations of theſe little animals, and ſee every part of their work performed under his eye, had a great number of *Hives* made in different forms, in one or other of which he could ſee the whole work. Some he made ſo very narrow, that by having a glaſs on each ſide, he could ſee all that paſſed within from each ſide; but the principal of his diſcoveries were owing to ſome *Hives* of a pyramidal figure, which were compoſed of three parts, eaſily ſeparable from one another, and each armed with its glaſſes. The ſtructure of theſe ſeveral kinds is deſcribed at large in his work, to which we refer the reader.

By means of a glaſs *Hive*, it will be obſerved that, at moſt times, and thro' moſt ſeaſons of the year, we ſee only one kind of bees at work in the ſeveral parts of the *Hive*, or at leaſt ſuch as have very little difference from one another in ſize and colour. At other times there are ſeen among them a very different race; theſe were called by the Latins, *fuci*, in Engliſh, *drones*. The French confound theſe with the common humble bee, under the name of *bourdons*. Mr. Reaumur, however, has ſet this right, and called them *faux bourdons*, baſtard humble bees, by reaſon they make a humming noiſe with their wings, in the manner of the humble bee, but are very different from them in ſhape and ſtructure. *Reaumur*, Hiſt. Inſ. vol. 9. p. 293.

Theſe, indeed, are no other than the male bees, and are never found in the *Hives* but in the months of May, June, and July. There appear but a very few of them at firſt, but their number encreaſes every day afterwards. Their proportion to the other bees is but ſmall; and though they are differently numerous in different *Hives*, yet if they make ſo large a proportion as one to ſix, they are to be accounted very numerous.

This number, however, will appear very conſiderable, in proportion to the reſt, when we know that they are of no uſe in the work of the *Hive*; that they never go out like the reſt, or bring home wax or honey; but that their whole buſineſs is the doing the office of their ſex, and peopling the *Hive*.

The other bees, which we obſerve ſo very numerous, are by the French called, *les ouvriers*, or the working bees. Theſe, which are of no ſex at all, neither male nor female, perform all the drudgery of the work; they go out in ſearch of wax and honey, and afterwards build and fill the combs. They have, after this, the care of the whole *Hive*, and are deſtin'd for the looking after the young progeny, and taking care of

the little white worms which are depoſited in the bottoms of the cells, and are hereafter to be bees like themſelves.

It has been long ſince obſerved, that in every *Hive* there is always one bee, much larger than the reſt, to which they all pay obedience as their ſovereign. It was a very natural thought to call this the king of the bees; and the creature enjoyed that title in ſucceſſion for many centuries, till Butler, an Engliſh writer, publiſhed a book entitled *Monarchia feminina*, the female monarchy. In this he proved inconteſtibly, that this great bee was always a female, and that if any title was to be given to it, it was to be that of queen. He calls the whole a nation of amazons, and ſuppoſes all the common bees females. Swammerdam finally proved this queen of the bees to be properly the mother bee, and has clearly ſhewn that this creature is ſo prodigiouſly prolific, that ſhe is able to people a whole *Hive*, and that every one of theſe is the mother of the whole ſwarm, the common bees never either begetting or bringing forth any young ones, tho' both Butler, and all the writers before his time, had ſuppoſed it.

The great fecundity of this female is the leſs to be wondered at, when we conſider the number of males that ſhe has at her ſervice; the males, or drones, in any *Hive* being, at the proper ſeaſons, always ſeveral hundreds, and ſometimes even two or three thouſand. Theſe ſpend all their lives in the ſervice of one female, and are the joint fathers of this numerous offſpring. If they live with two or three, as it ſometimes happens, this is at the utmoſt only for a few days. At moſt ſeaſons of the year there is only one female in each *Hive*, which is eaſily diſtinguiſhed from the common bees by her ſize, and from the males, or drones, by the length of her body; her wings are alſo much ſhorter than thoſe of any of the other bees; thoſe both of the common bees, and of the drones, always are ſo long as to cover the whole body, but thoſe of the female cover but a part of hers. They reach only to the third ring of the body, all beyond that being left naked. Tho' there is one of theſe bees in every *Hive*, and tho' ſhe is thus eaſily diſtinguiſhed at ſight from the reſt, yet few have ever ſeen her. She is always cloſe cover'd in the *Hive*, and many people who make a trade of honey-making, tho' they annually open numbers of *Hives*, never ſaw a female in their lives.

The ſeveral accounts given by authors, of the deference and homage paid by the other bees to this queen and mother, appearing ſuſpicious, as to its truth, Mr. Reaumur was determined to try the experiment that might determine the truth of them. He cauſed a parcel of bees from among a large cluſter, which had gone out in manner of a colony from an old *Hive* to find a new habitation, to be ſwept down into a glaſs *Hive*; among theſe there happened to be a female bee. While they were all together in the *Hive*, it was eaſy to diſtinguiſh her from the reſt by her ſhape, and the ſhortneſs of her wings. In the firſt moments after this impriſonment, the female walked by herſelf in a ſolitary manner at the bottom of the *Hive*, the reſt being all in the utmoſt confuſion, and ſeeming to take no thought but for their own ſafety. The female, after going up the ſides of the *Hive* twice or thrice in vain to the top of it, where they were hung, at laſt going in among the cluſter, brought a dozen, or thereabouts down with her: Theſe attended her in the manner of a guard, as ſhe walked along ſlowly at the bottom of the *Hive*; but the reſt continuing at the top, ſhe went up among them again and again, till at length they all came down, and formed a circle about her, leaving a free paſſage wherever ſhe turned herſelf to walk, and feeding her with the honey they had collected for their own nouriſhment. It was a common ſight to ſee a bee that was near her put out its trunk to her, to ſuck the honey out of it; and often, as ſhe paſſed along, ſhe would put out her own trunk to any that ſhe paſſed by. And the bees always ſeemed pleaſed with an opportunity of thus ſupplying her.

The bees were kept ſome time in this *Hive*, which was a ſmall one, but large enough for more than their number; the female bee, however, ſeemed to find that it would not be large enough for the family ſhe was to raiſe; and conſequently after getting all the reſt about her, ſhe went out and flew to a tree in the neighbourhood, where ſhe ſettled; all the bees of the *Hive* followed her, and form'd a cluſter on the branch in the common way.

In this manner the bees will always follow their queen whereever ſhe goes; and Swammerdam obſerves, that if the female, or queen, as ſhe is called, be tied by one of the legs to a ſtick, all the bees of the ſwarm will gather in a cluſter about her, hanging by the legs one to another, and may be carried any where by removing the ſtick.

Nature ſeems to have informed the common bees, that it is their proper care to bring up and feed the offſpring of this female, and therefore it is no wonder that they always flock about her. Father Labbat, who has decorated his accounts of his voyages with many odd ſtories, has been ſuſpected of falſity in an inſtance, in which the knowledge of this ſecret in the nature of bees, would have wholly cleared his credit. *Reaumer*'s Hiſt. Inſ. v. 9. p. 323.

He ſays that he, ſomewhere in his travels met with a man who called himſelf the bee-maſter, for that wherever he went the bees always followed him in ſwarms, and that he was covered over with cluſters of them, in the ſame manner as they ſwarm upon a tree, his hat, head, and ſhoulders, nay, his whole body being covered with them, and whole troops of others following him in the air. It was ſuppoſed by thoſe who ſaw this man, that he had the ſecret of knowing certain plants which the bees loved, and of rubbing himſelf over with their juices; but it is plain that any man here might do the ſame thing, without any farther trouble than the getting a female bee tied by one leg to his hat, or ſome other part of his cloaths.

If the female of a ſwarm by any means be dirtied, the whole ſet of bees that are round her, try which ſhall be moſt ſerviceable in the cleaning of her; and in the cold weather they gather in cluſters about her to keep her warm. The reſpect thus paid to the queen, as ſhe is called, is not however peculiar to her, but the ſame is ſhewn to all other bees of that ſex, any female that happens to come into the *Hive* being received with as great reſpect as the peculiar one which belongs to it; and this even to a third or fourth. It is probably very ſeldom that theſe occaſions of courteſy happen; but Mr. Reaumur took ſeveral females, and put them at ſeveral times into the ſame ſwarm of bees, which he kept in a glaſs *Hive*, to ſee how they would be received. He took care to mark theſe ſo that they might be known from the proper female of the *Hive*, and painted the breaſt of one red, that of the others blue or yellow. Theſe he found were all as well received in the *Hive* as the proper female, which was the mother of the ſwarm.

HIVING, the placing a ſwarm of bees in a *Hive*, in order to have the profit of their labours. When the ſwarm of bees has left an old hive, and is placed in form of a cluſter hanging down from the branch of ſome ſhrub or low buſh, the *hiving* is extremely eaſy, and may be done in half an hour after the time of their being ſtill, and calm in the cluſter; or it may be let alone till an hour or two before ſunſet, provided that the ſun do not ſhine too vehemently upon the place where they are, for that would diſquiet them, and force them to riſe; and in that caſe they uſually take a long flight before they ſettle again, and are very often loſt; this however may at any time be prevented, by placing an artificial ſcreen before them, compoſed either of a coarſe cloth, or of a few branches of trees well covered with leaves.

Thoſe authors who ſpeak largely of the œconomy of bees, give the new queen a ſet of officers, whoſe buſineſs it is to ſettle the proper places of reſort; and they pretend that theſe bees go out of the hive a day or two before the ſwarm iſſues out, in order to fix upon a proper place. This however appears but a romantic conjecture, and we uſually find the bees buſied in ſearch of a place, while the whole ſwarm is in the air; nor is it much to their credit, that they chuſe ſuch places as they do, for they uſually fix in ſuch as they can by no means ſubſiſt in. *Reaumur*'s Hiſt. Inſ. v. 10. p. 299.

It is commonly the branch of ſome ſhrub or tree that they ſettle upon, and we always find that they mean this as their ſettled habitation; for however ſoon they are *hived*, the rudiments and beginnings of combs are found on it. It is true, they always leave theſe places, if left to themſelves, in five or ſix days; but this is not till they find them ſo inconvenient that they cannot keep them, either from their being too much ſcorched by the ſun, or expoſed to winds and rain. The quantity of wax and honey left in theſe places, when they have quitted them, abundantly proves however that they had meant them for their fixed abode.

When they are placed in a hive, they very ſoon find themſelves much better lodged than in the place they had provided for themſelves, and they uſually ſtay in it, and begin to work the next morning.

It might appear a very difficult taſk to get ſo large a number of bees into a hive, but it is much leſs ſo than it appears to be. They will often take poſſeſſion of the hive of their own accord when it is hung over them; but the ſhorteſt way is to hold the hive under the branch where they are, and then ſweep them down into it. This may be done with a branch of a tree with its leaves on it, or with the hand armed with a ſtrong glove, and the face covered. But there are country fellows who will go without any ſort of defence, and with their naked hand ſweep them carefully off the bough into the hive, which they hold in the other hand underneath.

It is not to be expected that the whole ſwarm will be thus ſwept peaceably into the hive, many will fly away, and many cluſters will fall beſide the hive to the ground. All this however creates no difficulty, for the hive being turned bottom upwards, and ſet on the ground near the tree, with its edges a little raiſed above the ſurface. Thoſe bees which fell in cluſters to the ground, will ſoon crawl to their companions in the hive; and ſoon after thoſe which flew off, will deſcend and follow their example. If it happen however that ſome bees will obſtinately keep to the place where they at firſt fix'd themſelves, the branch is to be rubb'd over with the juice of ſuch plants as theſe creatures hate the ſmell of, ſuch are elder, rue, and ſome others. And if this does not ſucceed, there muſt be linnen rags burnt under them, the ſmoak of which will ſoon drive them off, and make them join their companions, who find themſelves more at eaſe in the hive.

As it is neceſſary to render the places diſagreeable to the bees from which they are to be taken into the hive, ſo many people think it very proper to prepare the hive for their reception, by ſcenting it with ſuch things as they love the ſmell of. To this purpoſe they rub the inſide of it with baum and bean flowers, and daub a little honey in ſome parts of it. This however does not ſeem neceſſary, thoſe hives having been found to ſucceed full as well where it was not done, as thoſe where it was. *Reaumur*'s Hiſt. Inſ. vol. 10. p. 305.

If it be about noon that the ſwarm is taken into the hive, it muſt not be removed from the place before evening; and in the mean time it muſt be ſheltered from the too violent heat of the ſun, by the ſhade of the trees; or if that be not ſufficient, a ſort of ſkreen muſt be made for it, either of a coarſe cloth properly ſupported, or of branches of trees with their leaves on. In this manner it muſt remain till ſunſet, and then the hive muſt be gently lifted up, and carried to the place where it is to remain, and the next morning the bees will be ſeen as buſy in their work in it, as the old ſwarm in their hive. See HIVE.

It ſometimes happens that the ſwarm is not placed ſo favourably as in the inſtance before mentioned; they often hang themſelves in a long cluſter from the young ſhoots, or ſmall branches of high trees; and in this caſe many different expedients are to be uſed to hive them, according to the circumſtances of their poſition. The common method is for one man to climb the tree with a long ſtaff in his hand, and another to mount a ladder placed againſt the tree, and hold the hive under the ſwarm, while the other ſweeps them into it with the ſtaff; and when the bough on which they hang is ſo far from the body of the tree, that this is impracticable by the ladder, the hive is to be fixed to the end of a long pole, and by that means ſuſpended under the ſwarm while they are ſwept into it. When all this is impracticable, by reaſon of the great height of the branch on which the ſwarm hangs, a large cloth is to be ſpread on ſome of the lower branches, and the whole ſwarm ſwept down in a cluſter upon it; this is then to be thrown carefully to the ground, and another perſon is to be ready there to whelm the hive over the greater part of the cluſter, and the reſt will uſually ſoon creep into it, and join them. If they are ſlow in doing this, they are to be driven in by burning linnen rags about the places where they fly, the diſagreeable ſmell of which will ſend them towards the hive, where finding their companions not incommoded with it, they will naturally remain.

Another method of getting a ſwarm from a branch of a high tree, is to cut off the branch with a ſaw, as gently and with as little diſturbance to the bees as poſſible. In this caſe, when the branch is off, a man may carefully deſcend with it, and the bees will not quit their hold, but will be all carried where he pleaſes with it, and may by that means be very eaſily put into the hive.

Sometimes the bees which go out in a ſwarm, fix upon a hole in a wall, or a hollow in the trunk of a tree for the aſſembling themſelves in. This is a much better choice for them than the branch of a tree, but it is much worſe for the perſon who is to hive them, for they are very difficult to be got out of theſe places. The common way of the country people is to attack theſe ſwarms in the middle of a cold night, and they then enlarge the opening from without, and placing the hive under it, ſcoop the bees out of their neſt with a ladle, and put them into the hive.

It uſually happens that there are more than one young female in the hive at the time when the ſwarm goes out; and it is not uncommon for two of them go out with the ſwarm. In this caſe the ſwarm conſtantly divides into two bodies, and on whatever branch it fixes, there are ſeen two cluſters of bees, one placed near the other. Each of theſe is a compleat ſwarm, and has its female, but one of them is often much more numerous than the other; and as the bees always love to live in large communities, the bees of the ſmaller cluſter become tired of their condition, and by degrees join the larger; ſo that this is ſeen to encreaſe, and the other to decreaſe in ſize every moment, till at length there remains no more of the ſmaller ſwarm than a few faithful creatures, forming a ſort of guard about the female. In this caſe it is in vain for them to think of forming a community by themſelves; and they finally, with the female, join the other ſwarm; ſo that the new ſwarm has two females. *Reaumur*'s Hiſt. Inſ. v. 10. p. 309.

It ſeems to have been only accident that occaſioned one of theſe females, which came out of the hive with the ſwarm, to be more followed than the other; and it is very certain that which ever is moſt followed, will in the end have the whole ſwarm. All this ſeems mere accident at firſt, but thoſe authors who treat of bees as the model of government, and in other the like extravagancies, declare that only one of theſe is the true and proper queen, and that the other is an uſurper, and merits death. Ariſtotle has talked at this rate, and from him Virgil has been led into the diſtinction he makes between the two royal perſonages; the one of which he deſcribes as very beautiful, the other as very ugly, the true ſovereign being, according to his deſcription, covered with red ſcales ſpotted with gold colour, and the uſurper duſty, ill-favoured, and big-bellied. The general conſent of the writers on this ſubject devotes this unhappy creature to death; they call her an uſurper; and Butler ſays, that no ſooner is the right queen ſettled on her throne, than this uſurper is doomed to death, with her adherents; and the next morning her carcaſs, with theirs, is found under the hive. And not unfrequently, when each of the females has many adherents, the ſwarm is divided into parties, and there are bloody conflicts in the hive till one is the ſuperior.

All theſe, however, are imaginary notions, which have for their foundation real facts. It is very certain that the ſwarm which leaves an old hive, has not only two, but often three, and ſometimes more females: Theſe have their ſeveral followers; and were they in ſufficient number, each with her followers would form a diſtinct ſwarm. But as it is not ſo, they are in fine all received into the ſame hive, where it really happens that all the females except one are deſtroyed; and till this butchery is over, and the hive ſettled with only one female, the bees never go out to work. The reaſon of this ſeems, that the working bees of a hive have enough to do to prepare cells for the lodgment of the eggs of one female, and that it would be impoſſible for them to prepare twice or three times that number; in conſequence of which the ſupernumerary females, who muſt at a proper time depoſit their eggs ſomewhere, would lay them in cells already occupied by thoſe of another parent, and an endleſs confuſion and diſorder would enſue. *Reaumur*'s Hiſt. Inſ. v. 10. p. 315.

It is ſometimes found that in two parts of a ſwarm there are more than two mothers, or female bees, and in this caſe the event is the ſame; for as ſoon as they are lodged in the hive, all are killed but one. Nature ſeems plainly to have deſtined only one female to each ſwarm or hive; but as many accidents may deſtroy the egg or worm of this ſingle female, it is neceſſary that proviſion ſhould be made for accidents, and more than one egg laid by each female for the production of the female of a future ſwarm. Thus there are often twenty females which live to maturity with the bees of one ſwarm; but as the other bees are ſenſible that they can only provide for one of theſe in each hive, all the reſt are devoted to inevitable deſtruction. If only one or two of theſe go out with the ſwarm, the whole number that remain within fare no better with the old bees, than the ſupernumeraries among the young ones.

As ſoon as the ſwarm is gone out, the hive is reſtored to tranquillity; and the firſt ſtep taken by the bees to maintain this, is the deſtruction of the young females which are left of the new brood; theſe are all immediately killed, and carried out of the hive; and it is common on the morning after the going out of a ſwarm, to ſee ſix or eight, or more female bees, thrown out of the hive, and lying dead in a heap, at a ſmall diſtance from the mouth of it.

Alexander Montfort, who is for giving all the moral virtues in a very high degree to theſe little animals, will have it that thoſe females which are killed are uſurpers, and only the true queen is left alive; but this ſeems altogether the figment of imagination; and if there is any thing beyond mere chance in the preſervation of any one particular bee, it is that the ſwarm are careful to preſerve alive that particular female which is beſt furniſhed with eggs.

It is very probable however, that the birth-right takes place in this caſe, though by accident: For as the bees naturally follow that female which is moſt active, and is the firſt to place herſelf at their head and go out, it is probably the firſt-born female which arrives firſt at this neceſſary degree of vigour; and very often the departure of the ſwarm ſeems a work of mere accident as to the time of it, and the female that leads it.

A female who finds herſelf ill at eaſe from the number of eggs ſhe contains, and wants to find a place to lay them in, uſually keeps at or about the edge of the hive. In this caſe, if a warm hour calls out a ſcore or two of the bees at once, this female joins company with them; and then it is no ſooner perceived that a female is gone forth, but a vaſt number of the young brood follow, and a ſwarm is by degrees found in the air, which ſeeks a place to ſettle upon, and is from thence received into a hive in the method before deſcribed.

As ſoon as this ſwarm is gone, the old inhabitants of the hive finding a number of ſiſter females of that brood remaining among them, and well knowing they will be of no uſe to them, deſtroy them.

This is a caſe eaſily decided; but it appears ſomewhat more difficult for the bees to determine how to act when ſeveral females go out with them in the ſwarm. In this caſe there muſt be a choice made, and what is to influence and direct that choice? If there were all the gold about the proper queen that the poet deſcribes, and if bees were as fond of gold as men are, it would be then very eaſy to determine the motive of their chuſing her; but as it is in fact, there is a reaſon of this kind that has given foundation to the pleaſant fiction of the poet.

The eldeſt of the females of the young brood, is always the moſt proper to be choſen for the queen of the new ſwarm, as ſhe is in the propereſt ſtate to depoſit eggs for the hatching of a new progeny; and this female is eaſily diſtinguiſhed

from the others; for as her eggs are in a more advanced ſtate than theirs, her belly muſt be more diſtended; and as all the bees become of a brighter colour afterwards than they are at the firſt hatching from the nymph ſtate, this eldeſt will be eaſily diſtinguiſhed from the others by her colour.

Ariſtotle ſays, that the proper ſovereign is red, and the uſurpers black; but theſe expreſſions are to be underſtood with their proper reſtrictions, and then it will be only underſtood, that the younger females are yet of the duſky brown colour, of which they all are when firſt hatched, and that the eldeſt has begun to aſſume the reddiſh yellow colour, which they are all to have when of a certain age. Experience proves that the having the eggs in a ſtate almoſt ready to be hatched, is the great circumſtance that determines the bees in favour of one particular female, when they are brought to a choice; for if the bodies of the rejected females, which are murdered and thrown out of the hive, be opened and examined with glaſſes, there will be found in them either no eggs at all, or at the utmoſt ſuch extremely minute ones, that it muſt have been a long time before they could have been in a condition to lay them; whereas if the ſelected female, who is become their queen, be opened, ſhe is always found quite full of eggs, very near the time of their being laid.

It is a very miſchievous practice to murder a female in this circumſtance, and indeed the proof may be had without it, ſince if the works of the new ſwarm be examined, ſhe will be found the very next day to have laid eggs in ſeveral, if not all of the cells they have formed, and at the utmoſt in two or three days will be found to have laid a great number.

It is not however ſo ſtrictly limited by nature, that there can be only one happy female in every hive: There are often three or four, which ſucceed alike, and lead out, and become the ſovereigns of as many little colonies. It is only miſerable for thoſe females which are hatched all nearly at the ſame time, for of theſe all are doomed to periſh but one; but others which appear at more diſtant periods have a better fate, as there are produced alſo at theſe different times numerous ſwarms of the common bees. Thus it often happens that one hive ſends out three, four, or more ſwarms in one ſummer, at the diſtance of a fortnight or leſs from one another, each headed and led out by a queen produced at the ſame time with themſelves. *Reaumur*'s Hiſt. Inſ. v. 10. p. 321.

It is not at all times however that the bees are thus cruel to the ſupernumerary females, and neceſſity ſeems to compel them to it when they are ſo. It would be wrong in them to receive a plurality of females among them, at a time when they were newly eſtabliſhed in their habitation, and as yet in want of all things, ſo that they could be in no condition to bring up an additional family; but at other times they are as kind to ſtrange females brought into their hive as ſupernumeraries, as to their own: For Mr. Reaumur tried the experiment of giving a ſtrange female to a hive, the combs of which were perfect and well filled with honey, and the bees received her with all poſſible reſpect, and treated her as they did their proper ſovereign.

Some are of opinion that the females which are found killed and thrown out of the hives, are all murdered by the reigning female herſelf, and not by the other bees; and this is ſuppoſed to be the only uſe for which nature has given her a ſting, as ſhe never goes abroad, and has not the occaſion the common bees have for it as a defenſive weapon. But allowing this to be the caſe, there ſeems nothing ſtrange in the female of another hive being well received by the ſovereign in her own dominions, at a time when ſhe finds all the combs of a hive in a flouriſhing ſtate at her diſpoſal, and perceives that there is room for herſelf and another in the hive. Id. ibid.

HOACHE, in natural hiſtory, a name given by the Chineſe to a peculiar kind of earth, which they have found lately, very uſeful in the manufacture of their China ware.

It is called *Hoache* from the word *hoa*, which ſignifies ſoft and glutinous, and is deſcribed to us as being an earth approaching to the nature of chalk, but harder, and feeling like ſoap to the touch. There is great reaſon to believe that this is either the ſame earth with our ſoap-rock of Cornwall, or ſomething very like it. Ours has very much the appearance of the French chalk with which they take out ſpots of cloaths, and which marks white in the ſame manner as chalk.

The word chalk is ſo little determinate in its general ſenſe, and the white ſubſtance we commonly call by that name, is ſo little likely ever to be uſed in earthen-ware of any kind, that there is great reaſon to believe French chalk is the ſubſtance to which the *Hoache* is compared; and if ſo, all the characters agree ſo well, that it is probably the very ſame thing with our ſteatites. We have often attempted to make a porcelain ware with this, and that with good proſpects of ſucceſs. But we are to learn in regard to the Chineſe way of uſing it, that it is only one of the ingredients of their fine ware, not the whole matter of which it is made.

The Chineſe phyſicians had long uſed this earth as a medicine, giving it in diſorders of the lungs; but it is only of late times that the workmen in porcelane attempted to uſe it inſtead of kaolin. It ſucceeds, however, ſo well, that the porcelane made of it ſells dearer in the Indies than any other kind. The grain of this porcelane is remarkably fine and even, ſo that it is fitter for receiving the fineſt pencilling than any other, and it may be made ſurpriſingly light. But there is this diſadvantage, that the whole is more brittle than ordinary china, and the juſt degree of baking it is very difficult to hit; without which it is never ſtrong. The Chineſe ſometimes make the body of their veſſels of the common China ware, and dip them when dry into a thick liquor like cream, in which the *Hoache* is diſſolved. This gives a new and beautiful coat to the veſſel. They give the common varniſhing over this, and it ſucceeds to a very great perfection. Obſerv. ſur les Coutumes de l'Aſie, p. 300.

Suppoſing we could not, for want of the petunſe, or ſomething analogous to it, ever arrive at making the true porcelane in England, there is yet room to hope for great advantage in the making the varniſh or coating of other veſſels with this ſteatites or ſoap-rock. The manner in which the Chineſe uſe it is this: They firſt waſh it clean with river water to ſeparate a yellow ſort of earth, which lies near it in the mine where they dig it, and is often brought up with it. When it is thus cleaned, they beat it to powder, and mix it in large quantities of water; they ſtir the mixture well, and then letting the coarſer part ſettle, they pour off the thick liquor, and let it ſtand till a ſubſtance like cream ſubſides, which they keep moiſt and uſe, as before mentioned, to dip the veſſels in, or elſe they dry it, and uſe it with the petunſe inſtead of the kaolin in the common manufactures.

It is ſaid that a very good porcelane ware may be made with this earth alone, without any other mixture; but the workmen themſelves are unwilling to do this, and always chuſe, if they do not work in the common way, to add at leaſt two parts of the petunſe to eight of the *Hoache*, and with this mixture they make a very good ware, working it in the ſame manner as they do the petunſe and kaolin. Id. ibid.

The *Hoache*, though ever ſo proper to ſupply the place of the kaolin, could not be uſed in the common works, becauſe it coſts three times the price, it being much ſcarcer, and brought much farther.

There is another very elegant ſort of China ware which depends entirely on the *Hoache* for its beauty. It is all white; but though the ſurface is perfectly ſmooth and poliſhed, there are ſeen flowers and other ornaments on it in a very delicate manner. The method of making this is as follows: They make the veſſels of the common matter of the porcelane ware; they then diſſolve in a ſufficient quantity of clear water, as much of the refined *Hoache* as will give it the conſiſtence of a ſyrup. With this they pencil out the figures they intend on the ſurface of the veſſel while yet not quite dry. This penetrates the ſurface, and the lines and ſtrokes all appear very determinate. They let this dry thoroughly, and then cover the whole veſſel with the common varniſh of the porcelane. When it has been baked, the whole appears white, but the figures are very diſtinctly ſeen, and appear extremely beautiful. They are of a brighter white than any of the reſt, and ſeem formed of a thin white vapour, running with regularity juſt under the ſurface of the veſſel. They have a way of doing this with another ſort of earth, which they call *chekao*; but this requires more trouble, as it muſt be roaſted and powdered before it is fit for uſe. The white of this alſo is not ſo fine when done as the other.

HOACTLI, in zoology, the name of an American bird deſcribed by Nieremberg: It is of the ſize of a common hen, the legs and neck are long, its head is black, and is ornamented with a beautiful creſt of the ſame colour; its whole body is of a fine white, but its tail is grey, as are alſo the upper ſides of its wings. The wings have a greeniſh caſt, and the back ſometimes has many black feathers. Its feet are not web'd, its legs are of a pale whitiſh colour; it has a circle of white, beginning at the eyes, and going round the head. It is common on the lakes of Mexico, and builds among reeds and ſedge. It bites very deſperately. *Ray*'s Ornithol. p. 300.

HOACTON, in zoology, the name of a Mexican bird, deſcribed by Nieremberg, and ſeeming of the heron or bittern kind. Its neck and belly are white, ſlightly variegated with brown; the reſt of the body is brown variegated with white; its eyes are large, and have a pale iris. *Ray*'s Ornithol. p. 302.

HOACTZIN, in zoology, a name under which Nieremberg has deſcribed a ſpecies of American bird, which is of the ſize of an hen, and has a crooked beak; the breaſt is of a yellowiſh white, and its wings and tail are variegated with large ſpots of a pale grey and white colour; its neck and back are of a browniſh yellow, and it has on its head a creſt made of white feathers, which are black on their inſides. Its voice is very loud, and it feeds on ſnakes. It is ſeen in the autumn about Mexico, and generally frequents high trees near waters; its bones, feathers, and ſome other parts, are eſteemed by the natives ſpecific in the jaundice and other diſeaſes. *Ray*'s Append. p. 300.

HOANGICOYA, in natural hiſtory, an amphibious animal which in ſummer is a bird, and in winter a fiſh. See the article CROCEUS.

HOARHOUND, *Marubium*, in medicine. See the article MARUBIUM.

HOARSENESS, (*Cycl.*) in medicine. See the article RAUCEDO.

HOASTMEN, an antient fraternity of dealers in ſea coal, at Newcaſtle upon Tine. Vid. 21 Jac. 1. c. 3. *Blount.*

HOBBY, (*Cycl.*) in zoology, the Engliſh name of a hawk, of the long-winged kind, called, by many authors, by the name *ſubbuteo*, the name by which others expreſs the ringtail and hen-harrier. The *Hobby* has a prominent and crooked beak, covered at the baſe with a yellow ſkin, the beak is white near this membrane; elſewhere it is blue. Its tongue is a little bifid, and the iris of its eyes hazel-colour'd. It has a reddiſh brown line, mixed with white over the eyes, and its head feathers are black and brown; its neck feathers are of a whitiſh brown; its back and wings are of a blackiſh grey; its chin, and the upper part of its throat, are of a yellowiſh white, with a black ſpot on each ſide; its belly is brown; its tail is long, and pointed and variegated with brown and white. The legs and feet are yellow. It builds with us in high trees, but does not ſtay the winter with us; it feeds principally upon larks. See Tab. of Birds, N°. 3. and *Ray*'s Ornithology, p. 49.

HOCIAMSANUM, in botany, a name given by ſome writers to agrimony. See the article AGRIMONY.

HOCUB, in botany, a name given by Vaillant to a genus of plants, called by Tournefort, and other authors, gundelia. See the article GUNDELIA.

HODENSTEIN, in natural hiſtory, a name given by the Germans to the ſtone uſually called by authors *enorchis*. It is a kind of ætites, or eagle-ſtone; but the internal nucleus is not looſe, but fixed to one ſide.

HODOMETRICAL *Method of finding the Longitude at ſea*, is that of the computation of the meaſure of the way of a ſhip between place and place, *i. e.* of obſerving the ſeveral rhumbs or lines in which the ſhip ſails, and what way ſhe has made, or how many leagues, and parts of a league, ſhe has run. This method is liable to great errors.

HOG, in zoology. See the article SUS.

The dung of *Hogs* is one of the richeſt manures we are acquainted with; it ſeems to come next in value after ſheep's dung, and is found to be equal in virtue to twice the quantity of any other dung except this. The antients ſeem to have been diſpleaſed with it, on account of its breeding weeds, as they expreſs it; but this is only accuſing it of being too rich, for any dung will do this, when laid too thick. It is an excellent manure for paſture grounds, and excels all other kinds of dung for trees. The farmers who uſe the dung for their lands, generally take care to ſave it, by well paving the ſtyes, and encreaſe the quantity by throwing in bean-ſtalks, ſtubble, and many other things of a like kind; and, by good management of this kind, many farmers have procured fifty or ſixty load of excellent manure a year, out of a ſmall ſtye. The very beſt way of uſing this dung, is to mix it with horſe-dung, and, for this reaſon, it is beſt to have the ſtye near the ſtable, that the two cleanſings may be mixed in one heap, and uſed together.

They have, in many parts of Staffordſhire, a poor light ſhallow land, on which they ſow a kind of white pea. The land is neither able to bear this, nor any thing elſe to advantage, for their reaping. But when the peaſe are ripe, they turn in as many *Hogs* as the quantity of peaſe will fatten, ſuffering them to live at large and remain there day and night; and, in conſequence of this, the land will produce good crops of hay for ſeveral years afterwards, or, if too poor for that, it will, at worſt, raiſe graſs enough to make it a good paſture ground.

HOGI, in the eaſtern churches, as at Cairo, is an under-attendant on the moſque, who is the reader under the ſheik. *Pocock*'s Egypt. p. 171.

HOEING, according to Tull, is the breaking or dividing the ſoil by tillage, while the corn, or other plants, are growing thereon. It differs from common tillage, which is always performed before the corn or plants are ſown or planted, in the time of performing it; and it is much more beneficial to the crops than any other tillage. This ſort of tillage is performed various ways, and by means of different inſtruments.

Land which, before the tilling, would have yielded little, tho' the more it is tilled before ſowing, the more plenty of crop it yields, yet, if tilled only before the ſowing, will always have ſome weeds, and they will partake of the advantage of the tillage as well as the corn. This is one reaſon for an after tillage, ſuch as that by *Hoeing*. But there is another conſideration that yet more requires it; this is, that as ſoon as the ploughman has done his buſineſs, by plowing and harrowing the land, after ſowing, the ſoil, of its own accord, begins to undo it all again, by tending towards its original texture and ſpecific gravity again; the altering of which was the only buſineſs of all the former tillage. The breaking the particles of the earth, and making in it new pores, and new particles or new ſuperficies, is the great buſineſs of the plow and harrow; but as ſoon as their uſe is over, the earth begins to coaleſce again into its own form, the particles unite together, and the artificial pores in a great meaſure cloſe up. The ſeed is nouriſhed in a worſe ground than it was firſt put into, and the more the plant grows up, and requires a larger ſupply of food, the worſe the paſture becomes. While nouriſhment is thus denied the growing plants, they are at the ſame time choaked with weeds, which being of a hardier nature than they, will grow with leſs ſupplies, and therefore thrive more vigorouſly, and rob them of a great part of the little food the land before allowed them. *Tull*'s Horſehoeing Husbandry, p. 27.

Farmers in all ages have been acquainted, in ſome degree, with the uſe of tillage and dung to crops of uſeful plants, but they have ſo ill managed the time of giving theſe aſſiſtances to nature, that there is no doubt but one third part of the nouriſhment raiſed by dung and tillage, if it were given to plants and corn at many proper ſeaſons, and proportioned to the different times of their exigencies, would be of more benefit to the crop, than the whole is, when applied all together at the time of ſowing.

Nature, by what ſhe does in the animal œconomy, ſeems to point out to us ſomething like the remedying this by *Hoeing*; for when the teeth, as the plough, have tilled that ſoil or maſs which is earth altered; and when the ſaliva and the juices of the ſtomach have ſerved to divide and attenuate it, as the ſalts of dung and other manure do land; after all this, the bile and pancreatic juices are ordain'd to farther attenuate it, at the very time when it is ready to be exhauſted by the numerous mouths of the lacteals, ſituate in the inteſtines. This laſt operation of theſe juices ſeems analogous to the meliorating the ſoil by *Hoeing*, after the plants are grown, and are becoming fit for uſe.

Tranſplanting is nearly allied in its nature to *Hoeing*, but it is much inferior. The nature of this will not admit of its being a general thing; and even if it would, *Hoeing* is better: For, by tranſplanting, the plants can only be kept up to a certain period, after which they will not bear it; but *Hoeing* may be uſed to them with advantage, to their utmoſt ſtanding, and makes them vigorous all the while.

The roots of a plant are all neceſſarily broken off in tranſplanting, and it requires ſome time for it to ſtrike a whole ſet of new ones; and if the earth about it is not kept thoroughly moiſtened all this time, the new formed roots will not be able to ſhoot, and the plant will ſtarve in the midſt of plenty. But, on the contrary, in *Hoeing*, the ſame advantage of a new paſture for the plant is obtained, by the breaking the particles of the earth, and at the ſame time no more of the roots are broken off than can eaſily be ſupplied, and the reſt remaining in their places, the plant continues growing without that ſtop and decay, which muſt happen on tranſplanting, and which it recovers only by degrees. It is obſerved, that ſome plants are the worſe for tranſplanting: Lucerne and ſaintfoin are never ſo good after tranſplanting, as when they are left in their native places, at the ſame diſtances; and ſinochia removed, is never ſo good and tender as when it is not. This laſt plant receives ſuch a check from tranſplanting in its infancy, that it has afterwards a diſeaſe like the rickets, which cauſes knots and ſwellings in it, that ſpoil it as a delicacy. All the top-rooted plants ſuffer by tranſplanting, for it is neceſſary in this to cut off the main long root, which afterwards, however good the ſoil may be, never arrives at the length it otherwiſe would have had, and which was neceſſary for the ſucceſs of the plant.

One great benefit of *Hoeing* is, that it keeps plants moiſt in dry weather, the advantage of which to their growth is eaſily ſeen. This good office it performs on a double account. Firſt, as they are better nouriſhed by *Hoeing*, they require leſs moiſture, and conſequently carry off leſs; for thoſe plants which receive the greateſt encreaſe, having moſt terreſtrial nouriſhment, carry of the leaſt water, in proportion to their augment, as is proved by Woodward's experiments. Thus barley or oats being ſown on a piece of ground, well divided by tillage and dung, will come up and grow well without rains, when the ſame grains ſown on another part of the ſame land, not thus dunged or tilled, will ſcarce come up at all without rains, or if they do, will wait wholly for the rains for their growth and increaſe. *Tull*'s Huſbandry, p. 29.

The *Hoe* alſo, particularly the horſe-*Hoe*, for the other does not go deep enough, procures moiſture for the roots from the dews which fall moſt in dry weather; and theſe dews ſeem to be the moſt enriching of all moiſture, as it contains in it a fine black earth, which will ſubſide from it in ſtanding, and which ſeems fine enough to be the proper pabulum, or food for plants.

A demonſtration that the tilled earth receives an advantage from theſe dews, which the untilled does not, is this: Dig a hole in any piece of land, of ſuch a depth as the plough uſually goes to; fill this with powdered earth, and after a day or two, examine the place, and the bottom part of this earth, and bottom of the hole, will be found moiſt, while all the reſt of the ground, at the ſame depth, is dry. Or if a field be tilled in lands, and one land be made fine by frequent deep ploughings, while another is left rough by inſufficient tillage, and the whole field be then ploughed acroſs in the drieſt weather, which has continued long, every fine land will be turned up moiſt, and every rough land as dry as powder from top to bottom.

Altho' hard ground, when thoroughly ſoaked with rain, will continue wet longer than fine tilled land adjoining to it, yet this water ſerves rather to chill than to nouriſh the plants ſtanding in it, and to keep out the other benefits of the atmoſphere; it leaves the ground much harder alſo than before,

when

when it is finally exhaled out of it; and when, at length, the earth is thus hardened, it can receive no benefit from any thing leſs than a deluge of rain, which ſeldom falls till the ſeaſon of vegetation is over.

As fine *hoe'd* ground is not ſo long ſoaked with rain, ſo the dews never ſuffer it to become perfectly dry. This appears from the flouriſhing ſtate of plants in *hoe'd* ground, while others near them, but in ground not *hoe'd*, are ſtarved for want of nouriſhment. The common opinion is againſt this, but obſervation proves it to be true againſt the common opinion. The vulgar are guided by this, however, and will not *hoe* their ground in dry weather for fear of letting in the drought, as they call it; whereas *hoeing* this is the only method of keeping away the drought, and without either this, or watering, they muſt periſh in theſe ſeaſons. *Tull*'s Horſe-hoeing Huſbandry.

There is alſo another advantage given to plants by *Hoeing*, which animals are not capable of. Meat and drink, in a proper degree, is all they require, or can diſpenſe with, and unleſs new mouths could be made to them, they can uſe no more; but in plants, the *Hoeing* at once gives encreaſe of nouriſhment in abundant quantities, and encreaſe of mouths to receive it; for every time the *Hoe* is ſtruck into the ground, new particles of earth are made by breaking the old ones; the new pores made by theſe, afford a new ſupply of food to the plant, and every ſtroke of the *Hoe* at the ſame time cutting off ſome of the fibrous roots of the plant, great numbers are propagated in the places of every one that is cut, and the plant has at once more food, and more mouths to feed with.

HOISE, in the ſea language. See the article HOYSE, *Cycl.*

HOITLALLOTL, in zoology, the name of an America. bird, deſcribed by Nieremberg, and called by him *Avis longa*. It is very remarkable for the ſwiftneſs of its running, and is of a very long ſhape, having alſo a long tail. Its beak is alſo very long, black above, and grey underneath. Its tail is green, and has all the ſplendor and beauty of the peacock's. Its whole body is of a whitiſh yellow, and near the tail of a blackiſh yellow. But the ſhoulders are black, with white ſpots. It does not fly high, nor very well, but runs ſo ſwiftly as is ſcarce to be conceived. It is but an ill taſted bird. *Ray*'s Ornithol. p. 304.

HOITZILOTXITL, in botany, a name by which ſome authors have called the tree which affords the balſam of Peru. *Jonſ.* Dendr. p. 309.

HOITZITZIL, in zoology, the name by which ſome authors have called the guainumbi, or humming bird, the ſmalleſt of all birds. *Hernandez*, Nov. Hiſpan. L. 9. C. 11. See the article GUAINUMBI.

HOITZITZILLIN, in zoology, the name of a beautiful American bird, deſcribed by Nieremberg. The Indians prodigiouſly eſteem this bird, and uſe its feathers in ornamenting their images. It is not lawful to kill it, only to ſtrip it of its feathers, and then turn it looſe; and this no one may do but the principal perſon of the place. The method of getting their feathers, according to Hernandez, is the inviting them to ſome boiled Indian wheat, and placing lime twigs in their way. They fly in large flocks, and ſit together on trees, making a confuſed hiſſing noiſe. They breed in the holes of trees. *Ray*'s Ornithol. p. 303.

HOKE *Tide*, a ſolemn feſtival celebrated for many ages in England, in memory of the great ſlaughter of the Danes in the time of king Ethelred, they having been, in that reign, almoſt all deſtroyed in one day, in the different parts of the kingdom, and that principally by women. This is ſtill kept up in ſome counties, and the women bear the principal ſway in it, ſtopping all paſſengers with ropes and chains, and exacting ſome ſmall matter from them to make merry with. *Plot*'s Oxfordſhire, p. 206.

HOLCE, ὁλκη, a word uſed, by ſome of the Greek authors, as the name of a dram weight; and by others, as Dioſcorides, *&c.* to ſignify a weight in general.

HOLCUS, the name by which the antients called the common gramen ſecalinum, or rye graſs, commonly called by us barley graſs, or wild baſtard barley; a low graſs, with a large bearded ear, growing under old walls.

HOLD, in the manege. See the article RETAIN.

HOLD *Off*, on board a ſhip, a term uſed in heaving in the cable at the capſtan; for if it be very ſtiff and great, or have lain long in a ſlimy or oozy ground, unleſs that part which is heaved in be haled away hard from the capſtan, the cable will ſurge or ſlip back; therefore it muſt be haled away as faſt as it comes in, that the cable may keep cloſe about the whelps: And this work is called *Holding off*, and may be done by hand with a ſmall cable; but in all great ſhips they either *hold off* with nippers, or elſe bring the cable alſo to the jeer capſtan.

Predy the HOLD, in the ſea language. See the article PREDY.

To Rummage the HOLD, at ſea, is to remove and clear the goods and things therein.

HOLDS *its own*, at ſea. A ſhip is ſaid to *hold* its own, that keeps its courſe right forward.

Stowing the HOLD, a ſea phraſe for taking goods into the *Hold*.

HOLLOW *Toothed Horſe*, in the manege. See the article SHELL *Toothed*.

HOLLOWNESS *of Trees*. This is one of the moſt miſchievous diſtemperatures to which trees are ſubject. It is generally occaſioned by the lopping of them in an improper manner, and leaving the wet to fall in upon them, eſpecially on their heads. When this miſchief is found out in its beginning, the only method is to cut the trunk off to the quick, ſacrificing the whole *hollow* part; it is, in this caſe, to be cut off ſloping, that the wet may run off from it. All ſoft woods are liable to this miſchief, after the lopping, particularly the elm; and when it takes hold of any tree, it grows upon it daily, till the whole ſubſtance of the tree is at length eaten away, and only a coat of bark is left. The beſt way of preventing it in the elm, is never to cut off the head or top of the tree at all, but only to lop the ſide branches; theſe will yield a very large quantity, and the body of the tree will thrive the better for their being often cut off, and will be good timber at laſt. *Mortimer*'s Huſbandry, vol. 2. p. 79.

Theſe tall elms ſometimes grow *hollow* from another cauſe, that is, from the decay of ſome of the large roots; but the ſtarving condition of its branches will ſhew this, tho' there be no external mark of it. This ſort of *Hollowneſs* always begins at the bottom of the tree. Blaſted parts of trees are to be cut away to the quick, in the ſame manner as the hollow ones, and the wounds will heal in the ſame manner.

HOLLY, in botany. See the article AQUIFOLIUM.

The manner of propagating the fine ſtriped and variegated *Hollies*, is by budding or grafting them on plain *Holly* ſtocks. And the common *Holly* is very eaſily raiſed by ſowing the berries, as ſoon as they are ripe. They lie two years in the ground before they appear, therefore a good way is to mix them with dry ſand, and putting them into a large garden-pot, bury them in the ground till the next Auguſt or September; then take them out, and ſow them in a bed of common earth, covering the ſeeds a quarter of an inch thick with light mould, and the ſpring following the plants will appear above the ground. Theſe young trees make but a very ſlow progreſs for the three or four firſt years.

The beſt time for tranſplanting the *Holly* is in April, in moiſt weather, and, if the ſeaſon is good, there will be little danger of their growing. They may alſo be tranſplanted in Auguſt; and the roots, in this caſe, muſt be ſurrounded with mulch, to keep them from the injuries of the froſts. And if the ſeaſons prove dry, the new planted trees muſt be at times ſupplied with water for two years. *Miller*'s Gardener's Dict.

HOLLY *Hedges*, are a very beautiful ever-green and ſtrong fence, but liable to periſh in hard winters. It has been ſuppoſed, that the ſeverity of the cold in theſe ſeaſons, was the occaſion of this; but a cloſer obſervation has ſhewn, that the miſchief is owing to the field mice, which, in very ſevere ſeaſons, when they can get at nothing elſe, diſbark the roots of theſe ſhrubs. The method of preſerving theſe hedges, in ſuch ſeaſons, is found to be by clearing away the weeds which are a harbour to theſe little animals, and placing traps and boxes in proper places, with a paſte made of butter and ratſbane, daubed over their inſides, and holes made in their ſides no bigger than what the mice or rats, if there be any there, can creep into; and thus the vermin are deſtroyed, and the miſchief which might attend ratſbane being expoſed, are prevented. *Moreton*'s Northampt. p. 486.

HOLLYHOCK, or HOLY-OAK, in botany. See MALVA.

We have many ſpecies of this plant cultivated in our gardens, for the beauty of their flowers. They are all propagated from ſeeds, which are to be ſown in March, upon a bed of light rich earth. When the plants are come up pretty ſtrong, they ſhould be tranſplanted out into nurſery beds at about eight inches diſtance from one another. They muſt be watered till they have taken root, and will then require no farther care for the ſummer, but being kept clear of weeds. At the latter end of the September following, they ſhould be tranſplanted into the places where they are to remain, and ſet in rows of two foot diſtance, and at a foot from each other in the rows where they may flower: And when it is obſerved which roots produce the fineſt flowers, thoſe ſhould, the Michaelmas after, be tranſplanted into garden beds, where they will live four or five years; after which they grow weak, and ſhould be replaced by new ones. When the ſtalks of the plants begin to decay, they ſhould be cut down cloſe to the ground, otherwiſe they are apt to rot and deſtroy the roots.

HOLM *Oak*. See the article ILEX.

HOLOCAUTOMA, ὁλοκαύτωμα, among the antients, the ſame with *Holocauſt*. See the article HOLOCAUST, *Cycl.*

HOLOSCHÆNOS, in the materia medica, the name of the great bulruſh, or *Juncus lævis maximus*, common in rivers. *Dale*, Pharm. p. 258.

HOLOSERICA *Veſtis*, a garment entirely of ſilk, which were not uſed at Rome till the time of Heliogabalus. *Hofm.* Lex. in voc.

HOLOSTEUM, in zoology, a name by which Bellonius, and ſome others, call the oſtracion, a fiſh of the river Nile, covered with a hard ſhelly ſkin, and approaching, in its body, to a pentangular form. *Willughby*, Hiſt. Piſc. p. 148.

HOLOTONICOS, a word uſed by ſome authors to ſignify an univerſal convulſion or rigor over the whole body.

HOLQUAHVILT, in botany, a name by which ſome authors have called the tree which produces the jeſuits bark. *Hernand.* p. 50.

HOLT-*Waters*. Theſe have been found by experience to be of admirable efficacy in all ſcorbutic and ſcrophulous caſes: An account of ſome very remarkable cures performed by them in theſe caſes, was printed ſeveral years ago, and tho' known to be fact in the place, was diſbelieved by almoſt every body beſide.

Mr. Lewis, the late miniſter of the place, confirms their efficacy from his own obſervation, and obſerves, that they are of an attenuating, aſtringent, and drying nature. The firſt of theſe properties they poſſeſs in common with all waters, which dilute, attenuate, and fit the juices for paſſing the proper veſſels; their aſtringency they owe to the alum and iron which they contain, and their drying, abſorbing, and healing qualities, are probably owing to a quantity of ſulphur, and a fine light ochre, which they are impregnated with. Philoſ. Tranſ. N° 408.

HOMER, a Jewiſh meaſure. See the article CORUS.

HOMINE *eligendo ad cuſtodiendam peciam ſigilli pro mercatoribus editi*, in law, a writ directed to a corporation for the choice of a new perſon to keep one part of the ſeal appointed for *ſtatutes-merchant*, when a former is dead, according to the ſtatute of Acton Burnel. Reg. Orig. 178. *Blount*, *Cowel*.

HOMOCHROA, in natural hiſtory, the name of a genus of pebbles. See the article PEBBLE.

The word is derived from the Greek ὁμὸς, ſimilar, and χρῶα, colour, and expreſſes ſuch pebbles as are not veined, but all of one ſimple and ſimilar colour. Theſe are bodies compoſed of cryſtalline matter, conſiderably debaſed by earth, and this of various kinds in the different ſpecies, but only of one kind in the ſame ſpecies, which is thence always of one colour, and not ſubject to veins. Of this genus there are only five known ſpecies: 1. A whitiſh one, common in many parts of England, particularly in Northamptonſhire, and not unfrequently found in the ballaſt hill at Deptford. 2. A red one, very frequent in all our gravel-pits. 3. A yellow one, a very pure and bright ſtone, but leſs common than the two former, though ſometimes found on Hampſtead-heath. 4. A bluiſh one; this is uſually ſtreaked with ſmall irregular lines of white on the ſurface, and is very common among the gravel in St. James's Park. And, 5. A greeniſh one, a very foul and opake ſpecies, but remarkable for the ſingularity of its colour. This is a ſcarce ſpecies, and has not been found in the neighbourhood of London. All theſe are covered with external coats or cruſts, like thoſe of the common pebbles. *Hill*'s Hiſt. of Foſſ. p. 510.

HOMODROMUS *Vectis*, in mechanics, a leaver, in which the weight is in the middle between the power and fulcrum, or the power in the middle between the weight and fulcrum.

HOMOGRAMMI, Ὁμογραμμοι, among the antients, an appellation given to the Athletæ who drew the ſame letter, and on that account were to engage together: for when any number of Athletæ were to enter the liſts, in order to determine with whom every one ſhould contend, they threw into an urn a number of letters equal to that of the Athletæ, but ſo that there were always two letters of a ſort, as two a's, or two b's. After theſe had been ſhaken together, the Athletæ drew them out, and thoſe who got the ſame letter were to fight each other. *Hoffm.* Lex. in voc.

HOMOIOCATALECTON, Ὁμοιοκαταληκτον, in rhetoric, a figure wherein the different parts of a ſentence have the ſame termination.

Homoiocatalecton is uſed as the genus to denote ſimilar terminations of words; and *Homoioptoton* and *Homoioteleuton* are made its ſpecies. See *Voſſ.* Rhet. l. 5. p. 327.

HOMOLINON, a word uſed by ſome authors to expreſs crude flax, and by others for a coarſe ſort of flaxen linnen made of the rough threads unwhitened, which was uſed by the antients for towels to rub people after bathing.

HOMONOPAGIA, a word uſed by ſome medicinal authors for a head-ach. See the article HEAD-ACH.

HOMONYMIA, *Homonymy*, or equivocation, that is, the calling two or more things by the ſame name; a thing which has occaſioned great confuſion in the accounts of the materia medica of the antients; and to explain which, the learned Salmaſius has publiſhed a treatiſe expreſs, De homonymiis materiæ medicæ, vel Hyles Iatricæ.

HOMOPHONOUS, in muſic, is ſaid of two or more chords, ſtrings, or voices, that are of the ſame pitch of tune, or at uniſon. Vid. *Broſſ.* Muſ. Dict. in voc.

HOMOTONOS, in medicine, an epithet made the characteriſtic of a certain kind of fevers which continue from the beginning to the end in one equable and uniform tenor, without exacerbation, or relaxation.

HOMUNCIONALES, an appellation given by the Arians to the orthodox, who ſaid there were two natures and ſubſtances in Chriſt. *Hoffm.* Lex. in voc.

HONEY (*Cycl.*)—It is evidently from the flowers of plants that the bees collect their great ſtore of *Honey*, as well as their wax. The earlier writers knew this, but they had no diſtinct knowledge of the ſeveral parts of the flowers which furniſhed this induſtrious inſect with theſe two ſo different ſubſtances.

The wax we find is furniſhed by the farina contained in the apices of flowers, or the buttons that terminate their ſtamina; and the *Honey* is furniſhed by a part of the flowers which ſeem not to have been known to exiſt in them, till the diſcoveries of that great botaniſt Linnæus. This author has given the name of *nectaria* to theſe parts of flowers. They are certain veſicles or glands ſituated near the baſis of every petal, and continually ſecreting a nectareous or melleous juice. Theſe are ſo different in figure and ſituation in different flowers, that this author has made them a part of his generical diſtinctions. As it has been before obſerved, that the bees underſtood the ſtructure of the ſtamina of flowers better than we did till of very late times, ſo it muſt be acknowledged, that they alſo have always known the exiſtence, and the proper place and nature of theſe nectaria, though we were ignorant of them till within a few years paſt. The bee always ſeizes upon this part of the flower, and ſucks from thence either *Honey*, or a juice of that nature, which will become *Honey* under her management. She receives this into her body, and carries it then home to the hive, where ſhe unloads herſelf of it, and empties it into the cells ſhe had before prepared to receive it. *Reaumur*'s Hiſt. Inſ. v. 9. p. 386.

The manner in which bees procure this juice, will be beſt known by obſerving the ſtructure of their trunks. This inſtrument is of a very different ſtructure from that of the gnat, and ſuch other inſects as live on our blood, but it is of the ſame figure and make with that of the ſeveral humble-bees, and ſome other creatures of that kind. This trunk appears at different times more or leſs long. When the creature is in a ſtate of reſt, the trunk is ſhort; and, if examined at that time by holding the head of the bee between the fingers, it will be found to be a flattiſh, bright, and ſhining ſubſtance, of the conſiſtence of horn, and of a cheſnut colour. This ariſes from the under part of the head, and is carried in an equal breadth to the end of the teeth, and there bends and returns towards the breaſt, diminiſhing in ſize all the way, till it terminates in a point. When the creature pleaſes, it unbends this a little, and forms a ſort of hook with it under the head, and frequently it fully extends it, and it then ſtands out in a ſtrait line from the head; it very much reſembles the beak of a bird when in this ſituation, and the more ſo as it is pointed, hard, and gloſſy. The origin of this trunk is on the hinder part of the head, near the place where the neck is joined on, and it has a ſort of joint at the part where it reaches to the extremity of the teeth, and bends back again in its ſtate of reſt. Naturaliſts diſtinguiſh this trunk into two portions by means of this joint; they call that which reaches to the extremity the anterior; and that which has the inſertion with the head, the poſterior portion. *Reaumur*'s Hiſt. Inſ. v. 9. p. 391.

When the trunk is in a ſtate of reſt, we ſee no part of its real ſurface, but only a ſort of caſe or ſheath in which it is preſerved. This caſe, when nicely examined, is found to be compoſed of two parts, which may be called two ſeparate ſheaths, the one only covering a part of its length, and the other only a part of its ſuperficies. Each of theſe caſes is made of two hollow pieces which may be called half ſheaths, and theſe may always be ſeen on preſſing the trunk. The ſingle flat filament, which is the real organ of ſuction, or, in other words, the real trunk, will be ſeen extending itſelf along theſe pieces, which will ſtart from it on each ſide. The anterior portion of the trunk itſelf, when in a ſtate of inaction, is ſomewhat flatted, being three or four times as broad as thick, and having rounded edges; this grows all the way ſmaller from its origin to its extremity, where it is terminated by a little button or knob, which is ſeen to be pierced through its middle. The edges of this button are covered with hairs, and the whole anterior part of the trunk is alſo hairy. The upper ſurface of this part ſeems wholly cartilaginous, but the under ſurface appears to be only in part ſo, the reſt of it ſeeming compoſed of a folded membrane, which is capable of opening, upon occaſion, to a greater extent. This membrane runs all along the middle of the under part of the trunk, and is of the nature of the membrane which connects together the ſeveral rings of the body.

When the creature is ſucking the juices of any flower, this anterior part of the trunk ſwells and loſes its flatneſs. This is an obſervation of ſome difficulty, but may be made in this manner: Place the head of a bee before a candle, and while it is in the focus of a good glaſs, let the poſterior portion of the trunk be preſſed; this will force a drop of liquor into the anterior portion, which will by degrees make its way up to the button at the extremity. All the way that this paſſes, the trunk will be ſeen to ſwell and become rounder in ſhape. The ſwelling of the anterior or upper ſurface, which is complete horn or cartilage, will not be ſo eaſily ſeen, but the membrane which runs along the under part, and makes a ſort of white rib or ſtreak in the center, will be ſeen to extend, and become greatly wider than before; and by this means alone the cavity of the trunk will be made much greater than otherwiſe, even though the horny part did not ſwell out at all. The poſterior part of the trunk is much thicker, and appears to be much ſtronger than the other. Mr. Reaumur

has given excellent figures and deſcriptions at large of the ſeveral parts of this curious organ, to which we refer the reader. *Reaumur*'s Hiſt. Inſ. v. 9. p. 398.

Beſides this trunk, the bee has a very large mouth. This, however, is ſo frequently covered with the other parts, that it is not eaſy to ſee it. When the trunk is extended to its length, the mouth is to be ſought for immediately under the teeth, or grinders, and, in this caſe, it is often ſo perfectly covered with the tongue, that unleſs that be removed, it is not to be ſeen. This mouth, with this large and viſible kind of tongue, is not to be ſuppoſed peculiar to the bee; ſeveral other flies have it, and the large humble bees all have it very perfect. As their ſeveral parts are alſo larger than thoſe of the bee, it is better to examine the mouth and its tongue, in thoſe inſects, than in the bee itſelf. The tongue puts on many appearances at different times; ſometimes it is of the ſhape of the tongues of other animals, and at others it is more or leſs thin or narrow; ſometimes its point is ſingle, and ſometimes divided into three parts, which, on ſome occaſions, are diſpoſed in the manner of a flower de luce.

The mouth, though a part of great importance to the bee, is in general over-looked by authors; but its uſe is plainly to give paſſage to certain ſubſtances into the body. Thus if a bee, which has been collecting *Honey*, be held between the fingers, and ſqueezed a little, the *Honey* will be forced in drops out of the end of the trunk, and theſe will fall upon and be received into the aperture of the mouth.

When a bee enters into a flower which has the nectaria, or melleous glands, or veſicles at the baſe of the petals, it generally meets with ſome of this juice, which has been thrown out by theſe glands, and lies in form of a ſaccharine matter, in the bottom of the flower. The juices of vegetables are ſaccharine and melleous in other parts beſide the flowers, and there are certain times of the year in which we find the leaves of the maple, and ſome other trees, covered over with this juice, extravaſated from their leaves, and lying on their ſurface, in a form very much reſembling *Honey*, rendering them gloſſy to the eye, very ſticky when touched, and ſweet as honey or manna to the taſte. This only happens at ſome times to the leaves, but it is continually the caſe in the flowers of plants; we may always taſte honey in their bottoms, and theſe nectaria continually diſcharging it from their ſeveral veſſels, the bee needs only thruſt his trunk into the bottom of the flower to find it. If the creature be obſerved in this work, it will be wonderful to ſee how quickly ſhe executes it. The trunk, which is the only inſtrument that receives it, is thrown into a thouſand different motions, and is ſhortened or lengthened, ſhrunk up or diſtended, and bent a number of ways, in order to bring it to touch ſeverally every part of the bottom of the flower, and thus take up all the matter depoſited there.

The general opinion of the writers on inſects has been, that the trunk of the bee is a ſort of pump, and that the *Honey*-juices of flowers are received into it by ſuction. This ſhould ſeem not to render ſo many motions as theſe neceſſary for the purpoſe, ſince if the trunk acted as a pump, it would be only neceſſary to plunge it once into the liquor, and its common action muſt ſuck the whole up; but Mr. Reaumur, by repeated experiments, proves that this part of the bee is not a pump, but merely a tongue, proper to lap with, placed at the end of a proper conveyance, by which the matter lapped up is thrown into the body. If the inſide of a glaſs tube, of about half an inch diameter, be daubed over in certain places with *Honey*, the *Honey* being left in ſome places in drops, and in others ſpread thin upon the ſurface, the bees will be eaſily ſeen to perform their ſeveral actions in the taking it in.

If this tube be placed any where near the places of reſort of bees, two or three will ſoon enter into it, and the ends may be cloſed up to keep them there. They will then immediately forget that they are priſoners, and begin to devour the *Honey*; and in their doing this, the ſeveral motions of the trunk will be eaſily ſeen through the ſides of the tube. In places where the *Honey* is ſpread thin upon the ſurface, they will turn the end of the trunk every way about, and apply it ſeveral ways to the glaſs, as a dog would do to lap up the remains of any thing ſticking to the ſides of a diſh; and in the places where it lies in drops, the bee introduces its trunk into it; but then it does not let it quietly remain there, as if at work in pumping up the matter, but takes it out at times, and when it is in, gives it many contortions from ſide to ſide, and the whole appears ſtill like the motions of the head and tongue of a dog, not like any operation of ſucking. The whole intent of the bee ſeems to be the covering its tongue thoroughly with the liquor, and then drawing it back into the caſe or ſheath which makes the reſt of the trunk. The matter it had collected is there wiped off; and then, by the repeated diſtentions and contractions of the trunk, it is carried up to the head, and thence carried into the body. The nice art of the bee, in taking up into her body only ſuch ſubſtances as are proper for her purpoſe, was very finely ſeen accidentally by means of an experiment made by Mr. Reaumur, with a very different intent. He was deſirous of ſeeing the paſſage marked out, by which the bee conveyed the melleous juices into her body. With this intent he mixed ſome very fine powder blue with a quantity of *Honey*, and ſet it before the bee; expecting that the coloured liquor would mark the way by which it paſſed; but, on the contrary, he found that this little creature was able to ſeparate ſo extremely fine a powder as this from the *Honey*, and, in fine, eat up all the *Honey* pure, and left the blue behind. *Reaumur*, Hiſt. Inſ. vol. 9. p. 403.

It is very certain, that the *Honey* or melleous juice is received into the body of the bee by this kind of lapping, not by the method of ſucking, ſince the aperture at the end of the trunk, if there really be one, which is much to be doubted, is ſo very ſmall, that the liquor could be but very ſlowly received; whereas it is plain, that a drop of *Honey*, though conſiderably large, laid upon a plate of glaſs, or otherwiſe, is taken in almoſt momentarily by the bee. This is eaſily underſtood, by ſuppoſing the bee to lap it up, as we have before mentioned.

Honey has been ſuppoſed by many to be the only food of the bees who collect it; but this is evidently erroneous. The common food of the bee is the farina of flowers of different kinds, which, when it has ſerved their little bodies as nouriſhment, is again thrown out, in great part, at their mouths, in form of wax. With this wax they form combs, compoſed of cells, in which they rear their young offſpring, and in which they depoſit *Honey* to ſerve them in ſeaſons when they cannot go abroad in ſearch of their other food. There are many ſeaſons of this kind, in which they cannot go out; and in ſome of which there is no food for them if they could. In theſe hard times they remain within the hives, and feed on the *Honey* they had before hoarded up; and if this proves inſufficient in quantity, they are reduced to great diſtreſs, and whole ſwarms of them often periſh through famine. *Reaumur*, Hiſt. Inſ. vol. 10. p. 85.

The bee does not receive the *Honey*, in the firſt collecting it from the flowers, into the body by means of her trunk, as many have ſuppoſed; this trunk only ſerves to collect the ſweet juice, in ſmall drops, from the nectaria of flowers. When this trunk is loaded with this juice, or *Honey*, it depoſits it on the tongue, which is exerted for that purpoſe; and when that organ has received it, it immediately draws back into the mouth, and the *Honey* is ſwallowed into the œſophagus.

The œſophagus of the bee is a long and ſlender canal, paſſing from the mouth of the animal into the thorax. Towards its termination in that part, it is diſtended into a ſort of bag, which forms the firſt ſtomach of the bee.

The children in country places are well acquainted with this receptacle of the *Honey*, and frequently kill the great humble bees in order to get at this part, and ſuck the honey. But tho' theſe children are acquainted with the part, very great men have been much miſtaken as to its uſe. Maraldi took it to be a bag, cloſed at the lower end, and only deſtined to receive the *Honey*, and diſgorge it again upon occaſion; but Swammerdam, on more careful diſſections of the creature, found it to be a real ſtomach, opening into another or ſecond ventricle.

The firſt ſtomach, when empty, is no more than a white filament, which, being hollow, is capable of receiving the *Honey*; and when received, it becomes ſwelled and diſtended in proportion to the quantity it contains, and grows very narrow at its lower part, where it is joined to the ſecond ſtomach. This is a ſort of bladder, very white, but tranſparent, and is uſually much diſtended, and ſo covered with large and broad circular muſcles, that it reſembles, upon the whole, a tub with many hoops. This ſtomach becomes again very ſlender and narrow at its lower end, where it is joined to the inteſtines. The ſecond ſtomach, and the inteſtines of the bee, are often found to contain a great quantity of the rough wax; but the firſt ſtomach contains only *Honey*. *Reaumur*, Hiſt. Inſ. vol. 10. p. 89.

The quantity of *Honey* that each flower is able to afford the bee, is but very ſmall; and the creature is uſually forced to go to a great number before it can take in enough to fill this firſt ſtomach; but as ſoon as this is done, the creature immediately flies home and diſgorges the treaſure into a ſafe place, where it may ſerve for food at ſome other time, when there is leſs opportunity of feeding abroad. Ariſtotle, and ſome other of the antients, have obſerved, that the bee, in collecting one parcel of *Honey*, will only have recourſe to one ſpecies of flower: Thus if ſhe takes in the firſt parcel from a violet, ſhe will go only to violets for the remainder. But this is an error; ſince it is common to ſee a bee on a flower-bed in a garden, ſupplying herſelf from all the variety that are ſet there.

Swammerdam, who had no idea of the bees having any mouth, ſuppoſed that this creature diſcharged the *Honey* into the cell of the comb, by the ſmall orifice which he thought there was in the end of the trunk; but this muſt have been a very tedious operation, ſince the *Honey* is not diſgorged into the comb in the ſame ſtate in which it was received into the ſtomach, but is much thicker, having paſſed a ſort of concoction. The truth is, that the *Honey* is diſgorged through the ſame part through which it was taken in, and this is the mouth, which is ſufficiently large for the purpoſe. The manner in which bees fill the combs is very regular; they always begin with the very fartheſt cells of the uppermoſt comb, and,

filling theſe firſt, the reſt are filled as they follow in order of place.

The firſt ſtomach of the bee has all the neceſſary motions of contraction and diſtention, for the throwing out its contents. This is eaſily ſeen in the diſſecting a bee whoſe ſtomach is filled with *Honey*; and it is eaſy to conceive, that the conſequence of the contractions muſt be the forcing the *Honey* out. Id. ibid.

The method of the bee's diſgorging itſelf in the common cells cannot be ſeen, becauſe of the opakeneſs of their ſides; but there are cells in the glaſs hives, in which the whole operation is eaſily ſeen. It is no uncommon thing to have the extreme cells of a comb reach to the glaſs, and many of them, in this caſe, joining the glaſs, have only four ſides of wax, the glaſs ſupplying the other two; in theſe cells it is very pleaſant to ſee the whole operation. The bee, who comes loaded to the cell, thruſts its head very deep into it, and diſgorges the *Honey* from its ſtomach in a very little time, and ſeemingly with very little trouble, by the mouth. But as the quantity of *Honey*, collected by one bee, is very ſmall in proportion to the ſize of the cell, this cannot be filled but by a great number of repeated operations of the ſame kind. As theſe cannot be performed by the ſame bee, in any convenient time, and as all the labour of theſe creatures is carried on in common, the firſt bee is no ſooner gone, than another comes, and ſo on till the whole cell is filled. In the proceſs of this work, it is very eaſy to obſerve, that what appears to be the laſt quantity of *Honey* diſgorged into the cell, is always of a different appearance from the reſt. The whole quantity beſides is of one colour and conſiſtence; and this is of the nature of a cream, which is always much thicker than the reſt of the honey, and ſeems very uſeful in the œconomy of the work, ſerving at once to keep the *Honey* moiſt, and to prevent its running out by any accident. *Reaumur*, Hiſt. Inſ. vol. 10. p. 89.

Tho' this cream or cruſt appears to be the laſt voided quantity, it is not ſo in reality; for it ſeems to have been gathering together from the firſt; and every freſh quantity of *Honey* is added under, not upon its ſurface. To this purpoſe it is always obſerved, that the bee which comes loaded to the cell, does not at once diſcharge its *Honey* into it, but, entering into the cell as deep as may be, it puts forward the anterior pair of legs, and with them pierces a hole through the cruſt or cream. While this hole is kept open by the feet, the bee diſgorges the *Honey* in large drops from the mouth; theſe falling into the hole made by the feet, mix with the maſs below; and the bee, before it flies off, new models the cruſt, and cloſes up the hole it had before made; and this is regularly done by every bee that contributes to the general ſtore of the cell. Id. ibid.

Every bee that returns to the hive loaded with *Honey* does not, however, go to a cell to depoſit it, but they often ſtop and get rid of it by the way. The labour of the hive being carried on in common, the bee, who has been abroad in ſearch of *Honey*, inſtead of going to any cell, often makes her way to the places where others are at work, in erecting the combs, or upon any other neceſſary ſervice; there ſhe puts forth her head, and, forcing the *Honey* to her mouth, calls them about her to feed upon it, that they may not be obliged to leave their work on account of hunger. They feed on her ſtore by putting their trunk into her mouth, exactly as they do into the bottoms of the flowers; and often the loaded bee in this manner feeds ſingle and ſtraggling ones which ſhe meets with in her way, tired with the labour of their laſt employment.

The ſeveral cells of the combs in every hive are differently filled with *Honey*, and to different purpoſes; ſome is laid up for their immediate conſumption, on occaſions of bad weather, and the like accidents; and ſome is more carefully preſerved, and is deſtined for the ſupport of the ſwarm in the winter.

It often happens that, in the *Honey* ſeaſon, there are very rainy or very ſtormy and cold days, in which the bees cannot go out in ſearch of food; the whole ſwarm, on theſe occaſions, feed on the *Honey* in the cells, deſtined for immediate uſe; and even in good weather, thoſe bees which ſtay at home to work, and are not ſupplied by thoſe which have been abroad, have recourſe to theſe cells for their food.

The cells of *Honey*, deſtined for this neceſſary uſe, are eaſily diſtinguiſhed from thoſe which are to be the ſupply when the ſeaſon of gathering *Honey* is over, and when the whole ſwarm muſt neceſſarily ſubſiſt on the hoards of their former excurſions. The cells meant for immediate uſe are always open at the top, whereas thoſe intended for the winter's proviſion are all covered and cloſed down at the top with a thick and ſtrong lid, and may be compared to ſo many glaſſes of ſweetmeats, hermetically ſealed, the faſtening being of the ſame matter with the ſubſtance of the pot. *Reaumur*, Hiſt. Inſt. v. 10. p. 94.

In a bad ſeaſon for the collecting of *Honey*, the combs in all hives are found very abundant in the occaſional cells, moſt of which are emptied by the bees; but in the plentiful ſeaſons, when there has been great ſtore of food to be had abroad, it is common to find the whole combs compoſed of full cells, cloſed up at the top, for winter's ſtores.

The manner in which the bees make the lid or cover of the cells, is this: They form a circle, or ring of wax, juſt within the verge of the cell; to this they add another ſuch ring, and then another within that; by this means the aperture is rendered ſmaller and ſmaller, and, by a continuance of the ſame workmanſhip, is finally cloſed, the lid or cover being finiſhed, and being thus compoſed of a vaſt number of concentric circles.

The uſe of this covering is not to preſerve the *Honey* from running out of the cell, for its own thickneſs, and adherence to the ſides of the cell, together with the cruſt or cream with which it is covered at top, would prevent that; but it is by this means preſerved from a ſet of idle and gluttonous bees, which eat up more than thoſe which work, but are too lazy to work through the cover, to come at what is contained in theſe cells.

It has alſo another uſe, which is the preſerving the encloſed *Honey* in its proper conſiſtence; for it would, if left open, ſoon loſe its natural thickneſs; and it has been often obſerved, that the bees will not eat their honey, when any way altered in this reſpect.

The product of the labours of the bee, as well in *Honey* as in wax, is of very great ſervice to the world in general, and of the greateſt advantage to the places where bees ſucceed beſt. The value of *Honey* is indeed ſomewhat leſs at preſent than it was in former ages, when the world was not acquainted with ſugar; but though the uſe of that commodity has much taken off from the neceſſity of *Honey*, yet the other article, wax, has grown in value all the while; and as it has been found of uſe on many occaſions, at that time unknown, and as there has been no other ſubſtance found that will ſupply its place, it is become much more valuable than it was before.

It is very evident that the whole produce of the labours of theſe inſects, both wax and *Honey*, are matters collected from the flowers of plants; and as it is alſo evident that there are ten thouſand flowers that die untouch'd in the fields and woods, for one that grows near the places where bees are kept, and is in the way of being uſed to this purpoſe. It is an undeniable truth, that there are a thouſand times as many pounds of theſe ſubſtances annually let go to waſte, as there are worked up, and brought to market. This is ſo conſiderable an article in the riches of a kingdom, that Mr. Reaumur thought it worthy of a ſtrong recommendation to the court of France, to encourage the raiſing ſwarms of bees in all places, that greater quantities of ſuch uſeful commodities might be had in their own kingdom, than they have at preſent. And, indeed, as bees are a ſort of huſbandry ſo eaſily raiſed, and kept at ſo ſmall a ſhare of trouble and expence, it is a wonder that they are not more largely propagated with us, as well as with that nation.

The method propoſed, by Mr. Reaumur, of encouraging this branch of huſbandry, is a very good one; namely, that there ſhould be ſomething taken off from the taxes to be paid by every farmer, in proportion to every hive of bees he kept above a certain number.

The great article to be attempted, in order to the increaſe of theſe little inſects, muſt be the avoiding to kill or injure any of them ourſelves, and the preventing their mortality at certain times, when there naturally die great numbers of them. Theſe ſeaſons of mortality are the autumn and winter. One great means of preſerving and multiplying the bees, would be the aboliſhing that barbarous as well as prejudicial cuſtom, in many nations, of deſtroying the whole hive of bees, in order to get at the *Honey*.

The common method in France and England is this: When the farmer finds, by the weight, that a hive is full of combs and honey, he digs a hole in the ground, capable of receiving the baſe of the hive. Then putting into this hole a quantity of linnen rags dipped in melted ſulphur; he ſes them on fire, and immediately placing the hive upon them, covers the ſides up with earth, that neither the fume nor any of the bees can eſcape; in this manner the bees are all ſuffocated. Others uſe turff inſtead of ſulphur, and others other things; and they pretend that in England, and other cold countries, there is no way but this of getting any advantage from the hives; and that it is only in Greece and Italy, and ſuch other places as are ſtored with vaſt quantities of flowers all the year round, that they can make any profit of ſharing their produce with them, and leaving them alive.

In juſtification of this procedure, they ſay that they only deſtroy, by this means, a ſort of old bees which are incapable of either producing more *Honey*, or being the parents of a new ſwarm, and which would eat up in the ſucceeding winter the greateſt part of what they had ſtored up in the ſummer. *Reaumur*'s Hiſt. Inſ. v. 10. p. 358.

This laſt is indeed the true reaſon of the procedure, and they in reality, for the ſake of having a few pounds the more of wax and *Honey*, deſtroy a ſwarm of bees capable of collecting ſuch another parcel, and of producing other bees that ſhould ſupply their places when they periſhed naturally.

The

The deſtruction of theſe creatures has yet leſs to be ſaid for it in reality, than appears at firſt to be the caſe, for the wax would have ſuffered no diminution during the winter, and it would only have been the price of a few pounds of *Honey* that would have been loſt, for the preſerving a ſwarm much more uſeful than ſeems generally ſuppoſed. It may happen ſometimes indeed, that a ſwarm may periſh at the end of four or five years, but it much more frequently happens that they live eight or ten; nay, there are inſtances of ſome having lived more than thirty years. In this caſe, how vaſt a deſtruction is occaſioned by the killing that ſwarm at four years old, which would have lived ſix and twenty years longer, and ſent out three or four young ſwarms every year? It will be eaſily ſeen from this, how great the increaſe of bees would be in a few years, compared to what it is, if this one barbarous cuſtom only could be ſet aſide among us, which not only deſtroys, in this caſe, three times twenty-ſix ſwarms, but all thoſe ſwarms which, in the common courſe of things, would have been produced by each of theſe, a number much greater than can be at firſt imagined.

If inſtead of deſtroying the bees every time we take their *Honey*, we would try a little to preſerve their lives, the thing would not be found ſo difficult as many may think; it would be no great difficulty to get them all into another hive; and in ſome caſes they might be the means of preſerving another ſwarm. There are many weak ſwarms, as they are called, which all periſh during the winter. The true cauſe of the death of theſe, is their being ſo few in the ſwarm; and, if inſtead of deſtroying all the bees of a well-peopled hive, they ſhould be added to one of theſe weak ſwarms, both would in this caſe be preſerved, and their works, in the ſucceeding ſummer, would amply repay the ſmall quantity of *Honey* neceſſary to feed them with in the winter.

Montfort, in his treatiſe of bees, mentions a law made by the great duke of Tuſcany, inflicting a puniſhment on any perſon who was known to deſtroy a ſwarm of bees; and if the ſame law were in force among us, the conſequence would be, that we ſhould ſoon have a much larger quantity of wax and *Honey* annually produced from the vaſt encreaſe of thoſe bees, which an ill-placed avarice devotes every year to deſtruction. Beſide the great number of bees annually deſtroyed in this manner, there are a very great number that periſh every winter between the months of November and April; ſo that of large ſwarms that went into the hives in the beginning of winter, there are but ſmall remains in the beginning of the ſucceeding ſummer.

The authors who have written of bees, have ſaid much about the diſeaſes of bees, and their proper remedies; but Mr. Reaumur has reduced the whole to a much ſmaller compaſs, and affirms, that the two great deſtroyers of bees are hunger and cold, and that whoever will take care to guard them from theſe during the winter, will always find as many alive in the hives in ſpring as went into them in autumn. *Reaumur's* Hiſt. Inſ. v. 10. p. 357.

There is great nicety to be obſerved, however, in the management in order to the preſerving them; for it often happens that the carefully defending them from the cold, is the very occaſion of their dying of hunger. The wiſe author of nature has ſo provided for theſe animals, that at ſuch ſeaſons as the fields ceaſe to afford them a plentiful ſtore of food, they ceaſe to want ſo large a quantity of it; the ſame cold that nips the plants, and keeps them from flowering, nips alſo the bees, and puts them into a ſtate in which they perſpire very little, and therefore require very little nouriſhment. Nay, in the coldeſt time of the year they perſpire ſo very little, that their life is in no danger, even if they take in nothing at all to replace their loſs.

If the hives are examined in the time of ſevere froſts, which they may be without any danger, for the bees are in ſo torpid a ſtate, that the hive may be turned upſide-down, and moved any way, without putting any of them in motion; they are there always found in large cluſters near the center of the hive, between the combs. When a thaw comes on, and the ſun ſhines upon the hive, the warmth wakens the bees out of their lethargy, they begin to move about, and uſe their wings; but as the neceſſity of eating comes on with their livelineſs and motion, and the fields at that time afford them no food, they are obliged to have recourſe to the combs, and eat out of their cells the *Honey* and rough wax which they had ſtored up for that occaſion.

They always, on this occaſion, begin with the lower combs, and, as they have occaſion, they gradually advance to the upper. This might ſeem an odd procedure, as the *Honey* of the lower combs was laſt of all collected; but that is the very reaſon why it is the propereſt to be firſt eaten, for it is that *Honey* which was collected in the autumn, and which is always found to be leſs proper for keeping, than ſuch as is collected in the ſpring and ſummer months.

It ſhould ſeem, that as the winter is the ſeaſon that kills the bees, the more ſevere the winter proves, the more it ſhould deſtroy them. But this is found not to be the caſe; but on the contrary, the warmeſt winters are the moſt deſtructive of them, as they keep them in an eating ſtate, and do not ſupply them with any food abroad. It is always found alſo that thoſe ſwarms which were hived late, that is, ſuch as have had but a little time to collect their ſtores, during the time they have been together before the winter overtakes them, are moſt liable to periſh before the return of the ſpring, if they are not ſupplied with *Honey* to prevent it.

A certain degree of cold is therefore neceſſary in the winter for the preſerving theſe creatures; but on the other hand a too great degree of cold deſtroys them. The moderate winters therefore are the beſt for them, ſince in the extreme ſevere ones they die of cold, and in the extremely mild ones of hunger. It is certain that the bee is more able to bear the cold than others of our inſects, in a ſingle ſtate; but as theſe creatures are preſerved among the combs, in great cluſters together, and under the covert of a warm hive, the degree of cold is much ſmaller there than abroad, where any ſingle bee would inevitably periſh. This is eaſily underſtood by the familiar compariſon between one man's ſleeping on the open ground in a field, in a very ſevere night, and a number of men ſleeping together in the ſame night under a cloſe tent erected in the ſame field; in all probability the ſingle expoſed perſon would periſh, while the others received no injury. *Reaumur's* Hiſt. Inſ. v. 10. p. 360.

As the number of bees in the hive occaſion a warmth that preſerves them all, the obſervation of their periſhing in the winter, when they are but few in number in the hive, is very eaſily explained. It may ſeem ſtrange that an inſect, which is cold to the touch, ſhould be able to diffuſe a warmth of this kind; but it is proved by experiment to be ſo in the hives; and this warmth is obſerved to be much leſs during the time that they are ſtill and quiet, than at thoſe times when they flutter their wings about.

Varro and Columella are of the number of the old writers on huſbandry, who give that eaſy method of bringing the bees to life when they ſeem dead with the cold, which is now practiſed in many places. This is the laying hot aſhes about the hive, or ſprinkling them on cluſters of bees which lie ſeemingly dead at the bottom.

The bees, while they remain alive and in a good condition in the cold weather, are found in cluſters, which are compoſed of great numbers of them hanging to one another by the legs: When the cold becomes ſo intenſe as to prevent their motions, and deſtroy the uſe of their limbs, their legs loſe the hold, and they fall down in great numbers to the bottom of the hive, where they ſeem to be abſolutely dead. In this condition they may be taken into the hand without any danger of hurt from their ſtings; and yet in this ſtate they may be recovered to life by ſprinkling them over with warm aſhes. This, however, is but a ſlovenly method; and as the warmth is the only thing wanting, it may be much more conveniently given by bringing the hive into a warm room, and on this the bees will all be ſeen to revive. In ſeaſons of leſs ſevere cold, it will be ſufficient to take up the bees that lie as dead, and warm them on a diſh by the fire till they come to themſelves, and crawl about, and then put them under the hive again. But if the weather continue ſevere, the mouths of the hive muſt be ſtopped up, and it muſt be placed in a ſufficiently warm place, till ſome warmer weather come on.

This warming the motionleſs bees found at the bottoms of hives in winter, never fails to bring them to life if done in time; but if it be deferred till they have lain in this ſtate ſeveral days, it ſeldom ſucceeds. It is a very great number of bees that may be preſerved during the courſe of a winter, by watching the hives in this manner, and bringing all that are found at the bottom to the fire to recover them; and this is a much better method than the removing the hives into a warmer place; which though ſometimes abſolutely neceſſary, yet is never to be done when it can any way be avoided, as it always is attended with many ill conſequences; ſo that the beſt method ſeems to be, in very ſevere winters, the taking in only thoſe hives which have but few inhabitants, and the leaving out thoſe which are well peopled, where the number of the creatures will preſerve one another, and the few that fall down from the cluſters may be recovered by warmth from time to time. *Reaumur's* Hiſt. Inſ. v. 10. p. 382.

As it is much to be wiſhed, however, that a method could be found of preſerving all the hives from miſchief, and yet leaving them in their places where they ſtand in ſummer, Mr. Reaumur tried many things on this head: The firſt and moſt familiar method he attempted, was the covering them over with ſtraw, in order to keep out as much of the cold air as poſſible. This he did by ſetting up ſticks in the ground, at ſeven or eight inches every way from the baſe of the hive, and ſo tall that their points reached as many inches above the top of the hive; then putting ſtraw ſo as to fill up all the vacant ſpace between the ſticks and the ſides of the hive. Among ſeveral hives which he defended in this manner, the bees of ſeveral were all found dead in the ſpring, but on examining the hives it appeared that they had died of hunger, not of cold; for there was never any *Honey* found in the combs of theſe hives.

The antients mention a very extraordinary method of preſerving the bees in their hives, which was the filling up a conſiderable part of the vacancy of every hive with the bodies of

ſmall birds, which had been killed, gutted, and dried for that purpoſe; this was certainly a way of keeping out ſome of the cold air, but it is ſo odd a one, that probably no body ſince their time has tried it.

Another method of Reaumur's ſucceded better; which was the preſerving the hives in large tubs, with earth or hay. To this purpoſe he choſe ſome of the weakeſt and pooreſt hives he could get, and in the beginning of winter put each of theſe into a large tub, whoſe top was taken out for that purpoſe; they were not placed, however, immediately on the bottom of the tub, but a bed of earth or of hay, ſix inches deep, was placed at the bottom, and covered with the lid taken off from the top of the tub. When the hives were thus placed, all the remaining ſpace between the ſides of the hive and thoſe of the veſſel, were filled either with earth, or with hay chopped ſmall, and both the hay and the earth were put in till they reached the top of the tub, and ſtood in a heap over the verge.

Several of the country people have the contrivance to cover their hives with ſheaves of corn, or other things, during the winter; but in this caſe they often die in winter, as they do when taken into a chamber, by too much heat, or too confined a ſtate. To prevent this, the author contrived to give them a means of communication with the open air even in this ſtate, when it ſhould be neceſſary. In order to this he cauſed a hole to be cut in the ſide of each tub, capable of admitting a ſquare tube made of four thin pieces of board; this tube was of two inches in width, and about half an inch in depth; and it went in and lodged itſelf on the falſe bottom of the tub on which the hive was to ſtand, ſo as to reach the mouth of the hive, and was of ſuch a length as to reach out three or four inches from the ſides of the tub. The tube being introduced, and a pan full of *Honey* placed on the bottom, with a paper pricked full of holes lying over the ſurface of the *Honey*, ſo that the bees might eat it without daubing themſelves, the apparatus was ready for receiving the hive; which was then placed over the pan of *Honey*, with its mouth anſwering to that of the tube. When the hive was thus placed, the earth or hay was put in, and the tub filled up. *Reaumur*'s Hiſt. Inſ. vol. 10. p. 384.

The bees remained quiet in theſe habitations during the months of November, December, and January, and in the months of February and March, great numbers of them were ſeen coming out of the veſſels at the little tubes, and returning to the ſame place loaded in the manner of the common bees in ſummer. Though the hives appeared very well preſerved at this time, yet a ſevere ſeaſon coming on in the latter end of March, and continuing till April, the bees of two hives came out no more, and on examination were found to be all dead within; theſe had died however of mere hunger, for there was not the leaſt remains of *Honey* in the pots. The other hives had had ſome *Honey* in their combs at the time they were put into the tubs; and they had ſubſiſted on that, and the reſt that was given them in the pots, ſo that they lived during the whole time, and made a flouriſhing ſwarm for the ſucceeding ſummer.

This ſeems therefore an admirable method of preſerving all the hives of bees during the winter, and is to be done with very little trouble and expence. The earth ſeems to do better than the hay as a covering, but it muſt be perfectly dry when put in, and preſerved from rain afterwards, by a covering of ſtraw placed over the top of the tub. The hay ſeemed however not to be found fault with as a covering; for though it was the two hives covered with earth that ſucceded in this experiment, yet as the others had paſſed the whole winter in ſafety, and only became a ſacrifice to famine during ſome bad weather in the ſpring, there is no room to doubt of their doing as well as the others, if more *Honey* had been given them. *Reaumur*, ib.

There are many circumſtances neceſſary to the forming of good *Honey*, ſuch as a warm and clear air, a good ſtate of health in the bees, and a quantity of aromatic and ſweet flowers in the neighbourhood of their hives. The *Honey* taken out of the hives in the beginning of the ſummer, is alſo preferable greatly to that gathered in autumn, ſince the firſt is the ſeaſon in which the bees are in their beſt vigour, and the plants in their flowering ſtate.

Mr. Lemery, in his analyſis of *Honey*, obſerves, that two pound of fine *Honey* diſtilled in balneo mariæ, afford ſix ounces of clear water of an inſipid taſte, and of the ſmell of *Honey*. This is commonly called the dew of *Honey*. A larger quantity of phlegm may be procured by continuing the diſtillation, but it becomes foul. This liquor, though inſipid to the taſte, yet contains a latent acid, for it reddens the turnſole; but it neither ferments with the volatile nor fixed alkalies. The cucurbit being now placed in a ſand-heat, there comes over four ounces of a yellowiſh pellucid water, of an acrid taſte, of a ſtrong ſmell of *Honey*, and ſomewhat empyreumatic. This liquor reddens the turneſole colour more than the former. The fire being encreaſed, there ariſe white clouds, which fill the head of the cucurbit and the receiver, and theſe finally condenſe into a third liquor, which is called the ſpirit of *Honey*. This will be about three ounces in quantity, and of a red colour and empyreumatic ſmell, yet with an agreeable flavour, and of an acrid and burning taſte. This is a ſtronger acid than either of the former, and ferments with an alkali.

The fire being again encreaſed, more clouds ariſe, and in fine there is a fourth liquor produced; this is in quantity about two ounces, of an orange colour, and of an acid taſte, but leſs acrid than the third liquor, as it contains more oil, which ſoftens and ſweetens it. Like the former it ferments with alkalies, and reddens the colour of turnſole. When the diſtillation is thus finiſhed, there will remain in the cucurbit fifteen ounces and an half of a light ſpungy black coal. Mem. Acad. Par. 1706.

This is to be then put into a retort for a freſh diſtillation; and a ſtrong fire under this veſſel will raiſe from it ſeven ounces of a reddiſh brown liquor, which ſtains the fingers to an orange colour, of a burnt ſmell, yet with ſomething agreeable in it, and of an acid and very acrid pungent taſte. Beſides this, there comes over two drams of a thick black oil, looking like tar; this alſo was of an acrid taſte, which was owing to ſome of the ſalts of the *Honey* being blended with it. There is much more oil contained in the *Honey*, but it does not come over ſeparate, but blended with the other liquors; and after they have ſtood ſome days, precipitates itſelf from them, and is found ſticking to the ſides and bottom of the veſſel. The matter remaining in the retort is about ſeven ounces of a black coal, of a light ſpungy texture, and of a taſte almoſt inſipid, and only ſeeming to contain a little ſalt. We ſee by this proceſs, that thirty-two ounces of *Honey* yield twenty-four ounces and two drams of liquor, that being the difference in weight between the *Honey* when put in, and the laſt caput mortuum. Twenty-two ounces and ſix drams are the quantity here preſerved of the ſeveral liquors, the reſt having eſcaped through the junctures of the veſſels, as will always be the caſe in ſuch diſtillations. Id. ibid.

The caput mortuum of this and of ſeveral other diſtillations of *Honey*, the whole making three pound and a half, were put into an unglazed earthen pot, and calcined over the fire for ten hours; this readily took fire like common charcoal, and burnt till it loſt ten ounces in weight, but without falling into aſhes. The remaining coal had then a more ſaline taſte than before. Any acid liquor poured upon this, fermented as with the common alkalies; and when thrown into water to make a lixivium, it bubbled in the manner of quicklime thrown into water; and in the common way of making the lixivial ſalts, this yielded a dram and a half of an acrid alkaline one. It is remarkable that the calcined caput mortuum of *Honey* contains, like other vegetable aſhes, true particles of iron, which adhere to a knife touched with a magnet.

HONEY *Buzzard*, the Engliſh name of the buteo apivorus. See the article APIVORUS.

HONEY *of roſes*. See the article MEL *roſarum*.

HONEY-*Comb* (*Cycl.*)—The conſtruction of the *Honeycomb* ſeems one of the moſt ſurpriſing parts of the works of inſects, and the materials of which it is compoſed, which though evidently collected from flowers of plants, yet do not, that we know of, exiſt in them in that form, has given great cauſe of ſpeculation to the curious. The regular ſtructure of the comb is alſo equally wonderful. When the ſeveral cells in it are examined, it ſhould ſeem that the niceſt rules of geometry had been conſulted for its compoſition, and all the advantages that could be wiſhed or deſired in a thing of that kind, are evidently found in it. *Reaumur*'s Hiſt. Inſ. vol. 9. p. 410.

The bees in the ſtructure of this receptacle of their honey, ſeem to have reſolved a geometrical problem far from an eaſy one, and indeed clog'd with ſo many conditions, that it might have puzzled able proficients in that ſcience. This may be expreſſed in theſe words: A quantity of wax being given, to form it into a number of angular and equal cells, of a determinate capacity, but the greateſt that can be made with that quantity of wax, and at the ſame time, that theſe cells ſhall be ſo diſpoſed as to take up as little room as poſſible in the hive. In order to this laſt condition, it is neceſſary that the cells touch one another, in ſuch a manner, that there be no angular ſpace, nor cavity between them. The bees have effected all this by making the cells all hexangular, or tubes of ſix equal ſides: Triangular, quadrangular, and ſome other figures for the cells might have been indeed ſo diſpoſed between one another, as to leave no ſpace; but then an equal number of them could not be made with the ſame quantity of wax. The body of the bee being rounded, it will alſo be received into a hexangular cell, without leaving ſuch large ſpaces as it muſt if received into a triangular or ſquare one.

The method of making two ſets of cells in each comb, is alſo admirably contrived to ſave the expence of wax; ſince had they been made ſingle, every comb muſt have had its peculiar baſe, and every ſet of cells their bottom of wax; whereas one bottom now ſerves to two cells, and there is but one plate of wax in the center of a double comb. There is however this farther difficulty attending it, that the ſeveral cells are not ſo many hexagonal tubes with flat and broad baſes, or tubes of an equal breadth all the way; but they are truly pointed at the bottom,

bottom, being every one of them an hexangular cell, with a pyramidal baſe. Each of theſe baſes is compoſed of three equal rhombus's, and each baſe, in this manner, becomes the baſe of three other cells on the oppoſite ſide of the comb.

This is eaſily demonſtrated to thoſe who underſtand geometry, by means of the ſeveral figures and poſitions of the oppoſite baſes of the cells of the two ſides of the comb; but the moſt familiar explication of it to a common obſerver, is to ſtick three ſmall pins through the baſe of any one cell, each in the center of the rhomb that makes one ſide of that baſe: If after this the comb be turned, the three pins will be found in the centers of three different cells of the oppoſite ſide. This occaſions a very great ſparing of the wax or matter of the comb; but beſides this there is another great advantage, which is, that the angles reſulting from this combination of the baſes, greatly ſtrengthen the whole work.

The matter of which the comb is made, coſts the bees ſo great pains and labour in collecting, that it is no wonder they are careful and ſparing of it in the work. The ſides of the cells are all much thinner than the fineſt paper, and yet they are ſo ſtrengthened by their diſpoſition, that they are able to reſiſt all the motions of the bee when within them, as they are very frequently obliged to be. The effect of their thruſting their bodies into the cells, would be the burſting of thoſe cells at the top, were not this well guarded againſt. But to prevent this, the creatures extend a cord or roll of wax round the verge of every cell in ſuch a manner, that it is ſcarce poſſible they ſhould ſplit in that particular part. This cord or roll is at leaſt three times as thick as the ſides of the cell, and is even much thicker and ſtronger at the angles of the cells than elſewhere; ſo that the aperture of each cell is not regularly hexagonal, though its inner cavity be perfectly ſo. *Reaumer*'s Hiſt. Inſ. vol. 10. p. 21.

The baſes of the cells are not always perfectly trilateral; ſometimes inſtead of the three rhombs they ſhould be compoſed of, they conſiſt of four pieces, the bee having begun her work wrong; but then it is admirable to obſerve how nicely the two ſmaller pieces are afterwards joined, that the angle they make may be as nearly as poſſible equal to that of one of the rhombs, ſo that the baſe of the cell ſtill remains very nearly trilateral.

It would be a moſt deſirable thing to ſee the bees at work in their making theſe elegant and regular fabricks; but it is ſcarce poſſible to ſee any thing of this kind diſtinctly, even with the advantage of glaſs hives; for no bee ever works ſingly on this occaſion, but wherever the fabrick is erecting, there are numbers together all trying to aſſiſt one another; and their motions are ſo ſwift, and ſo hid by their ſtanding before one another, that very little is to be ſeen of them. New bees are every moment coming to the place, and old ones going away; and very frequently thoſe which arrive late are diſpatched away immediately after they arrive. There are only ſome very ſhort moments in which the glaſſes of the hives can give a view of the creatures regularly employed in their work, for the moment that one ſees a bee at work in building, that moment we ſee one either fly off, or ſome other bee get before her, ſo as to hinder the view.

Theſe momentary ſights, however, are ſufficient to make it plain, that the bee uſes her teeth in modelling and faſhioning the wax. The ſide of a cell is always received between the two teeth on this occaſion, and by means of repeated blows on each ſide from each tooth, the ſide is brought to a proper thinneſs, and the wax is by the ſame means wrought up to a proper conſiſtence and firmneſs.

It has been ſuppoſed by ſome, that all this talk of a geometrical exactneſs in the ſtructure of the combs is fancy; that the bee has leſs merit in it than is uſually ſuppoſed; and that the mere juxtapoſition of a number of round pieces or globules of wax, would produce a number of regular hexagonal figures when they were preſſed together. The bee, however, is indebted to no ſuch eaſy method in her ſtructures; ſhe regularly begins every cell by its baſe, which is not hexagonal but triangular; ſhe firſt erects one of the three rhombs which is to be the baſe of two of the ſides of the hexagon; on this they erect the two ſides of the cell of which it is to be the baſe. They then form the ſecond rhomb, and its ſides of the cell; and finally they make the third, which cloſes with the other two; and the two angular ſides erected upon that, cloſing in the ſame manner with the others, the whole cell is finiſhed.

While one ſet of bees are employed in thus erecting one cell, others are equally buſy in making the farther uſes of its parts in the ſtructure of other cells; and ſome finiſh the adjoining cells, of which its ſides make a part: Others again are at work at the baſe, laying the foundation for the other cells, the baſes of which are to be formed in part upon the ſeveral rhombs of theſe; for they always work upon both ſides of the comb at once. *Reaumur*'s Hiſt. Inſ. vol. 10, p. 30.

There are ſome occaſions on which the bees are much preſſed for time in the erecting their edifices; in this caſe they frequently only lay the foundations of the cells, and leave them to be finiſhed and carried to a proper height afterwards. In ſuch caſes a comb is frequently finiſhed on both ſides, as to the rhombic or triangular baſes of the cells, and only a ſmall height of their hexangular ſides added, which is all finiſhed at more leiſure afterwards. As in the ſeveral works of art there are many hands employed to the finiſhing any piece of workmanſhip, juſt ſo it is in the labour of the bees; no one of them ever brings a cell to perfection, but the firſt labourer only caſts the rough work, and leaves it to others to refine and finiſh.

In our works it is well known that the rough work is much the eaſieſt, and ſooneſt performed; and as one caſter of metals can furniſh employment for a great number of filers and poliſhers, ſo one bee will form the rough work of ſeveral cells in a very ſhort time, when a great number of others muſt be employed afterwards in the finiſhing of each. This is the more neceſſary, becauſe if the firſt former of the cell ſhould make its ſides of their deſtined thinneſs, they would break under the weight of the workers in the formation; they are therefore left thick and clumſy, and the bees that come after, faſhion it better with their teeth, and getting into it, may be ſeen to work it fine by degrees, till they come out and leave it perfect. This finiſhing is done by extremely quick repeated blows of the teeth againſt the ſides, and by frequent bringing them together, ſo as to make them cut. Theſe means ſeverally ſerve to flat the walls of wax that forms the ſides, and to cut off the inequalities in places where they are too thick.

The wax is a very precious commodity among theſe little workers, it coſts them too dear to be waſted, and accordingly the bee that has cut off a large quantity, does not leave it in the cell, but takes it carefully out, gathers it into a little globule as big as the head of a pin, and carries it to the places where others are at work in erecting new cells. The moment that the bee is flown out with its load, another takes its place, and getting into the cell, finiſhes the work it was about; while the former worker either gets into another cell, or helps thoſe which are employed in the erecting new ones. Thus the labour is jointly carried on by all, and each has its ſhare in the whole work, not in any particular part of it.

In the ſwarm of bees there are many males, or large bees, which are commonly called drones; theſe have their peculiar cells, as thoſe fitted for the ordinary or working bees, which are of no ſex, would not be ſufficient to hold them in the worm ſtate. As among the cells of the ſame comb ſome are deſtined to receive the honey, others to be the lodging of the worm, or young bee, ſo among theſe laſt there are a great number larger than the others fitted for theſe males. The uſual ſize of the cells is ſuch, that in a hive of fifteen inches high, and ten inches wide, there are commonly contained about nine thouſand of them. The larger cells deſtined for the male bees, are found not to be regular hexagons, two of their ſides placed oppoſite to each other being ſmaller than the others. The difference, however, is very trifling; and when the other cells are very ſtrictly examined, there will be found alſo the ſame difference in their ſides in proportion to their bigneſs, two of the ſides of the hexagon being always ſomething ſmaller than the other four. *Reaum.* Hiſt. Inſ. v. 10. p. 34.

The cells which have ſerved, or are to ſerve for the habitation of the worms of the common, and of the male bees, are often made alſo at other times the receptacles of honey; but though theſe are indifferently made to ſerve either uſe, there are others deſtined only to receive honey.

The celerity with which a ſwarm of bees received into a hive, where they find themſelves lodged to their minds, bring their works of the combs to perfection, is amazing. There are vaſt numbers at work all at once, and that they may not incommode one another, they do not work upon the firſt comb till it is finiſhed; but when the foundation of that is laid, they go to work upon another; ſo that there are often the beginnings of three or four ſtories made at once, and ſo many ſwarms alotted to the carrying on the work of each.

The ſeveral combs are all placed parallel one to another, and there is ſuch a ſpace left between them, that the bees can eaſily paſs between; and often they place a part of the combs in a contrary direction to the reſt; ſo that while the others are placed horizontally, theſe ſtand perpendicular.

Though the ſides of all the cells are extremely thin, yet the combs are very heavy when full of honey. This might endanger their breaking their hold, if only ſuſtained from the top; and for this reaſon the bees give them ſeveral additional ſupports in whatever places they can, often faſtening them in many places one to another, and often fixing them to the ſides of the edifice by large and ſolid lumps of wax.

HONEYCOMB-*Stone*, in natural hiſtory, the name given by many authors to a ſpecies of foſſile coral, which is uſually found in large maſſes, and thoſe full of large hexagonal cells, reſembling thoſe of a *Honeycomb*. Theſe are but lightly ſtriated, and uſually run deep into the ſtone.

HONEY-*Suckle*, *Caprifolium*, in botany, the name of a genus of plants, the characters of which are theſe: The flowers are generally placed many on the ſame ſtalk, and diſpoſed in a circular form. The ſingle flowers are compoſed of one leaf each, of a tubulated form, and divided at the end into two lips, the upper of which is divided into many ſegments, the lower whole, and of the ſhape of a tongue. The cup finally becomes a ſoft fruit or berry, containing a flatted and round ſhaped ſeed.

The ſpecies of *Caprifolium*, enumerated by Mr. Tournefort, are theſe: 1. The common German *Honeyſuckle*, or not perfoliate *Honeyſuckle*. 2. The common perfoliate, or Italian *Honeyſuckle*. 3. The late flowering German *Honeyſuckle*, with a very red flower. 4. The early flowering perfoliate Italian *Honeyſuckle*. 5. The perfoliate *Honeyſuckle*, with variegated and ſinuous leaves. And 6. The ſinuated-leav'd, not perfoliate *Honeyſuckle*. *Tonrn.* Inſt. p. 608.

The Virginian ſcarlet *Honeyſuckle*, called the trumpet *Honeyſuckle*, is a very beautiful flowering kind, and in great eſteem. It is propagated by laying down the tender branches in ſpring, obſerving, in dry weather, to refreſh them with water, and the ſpring following they will be ready to tranſplant, when they are to be cut off from the old plants, and carefully removed without diſturbing their roots. The beſt time to remove them is in March, juſt before they ſhoot out; but if the ſeaſon ſhould prove dry, they muſt be watered, and have a little mulch laid at their roots, to prevent the earth about them from drying too faſt. They ſhould be planted in a ſtrong ſoil, and expoſed to the ſouth eaſt ſun; but they muſt have a wall or pale behind them to ſupport the branches, otherwiſe they will trail upon the ground. It is a native of Virginia, but will thrive very well with us, bearing all the cold of our winters, but does not ſucceed well near London, where the ſmoak commonly deſtroys it. *Miller*'s Gardener's Dict.

The propagation of all the ſeveral ſorts of *Honeyſuckles* is by laying down their branches in the ſpring, which, if they are ſupplied with water, will by the Michaelmas following have taken root ſo well, as to be fit to remove. They ſhould at this time be tranſplanted into nurſery beds for a year or two, the better to train them up, either for headed plants, or for creepers, to plant againſt trees, walls, *&c.*

They may alſo be propagated by planting cuttings in September, or in ſpring; but they ſometimes fail this way, and always require much care and trouble. Their ſweetneſs, and long continuance in flower, make them of great value in ſmall quarters. Among flowering ſhrubs they are alſo very beautiful, when planted againſt the ſtems of old trees, where, if they are not too much ſhaded, they will flouriſh exceedingly.

The proper ſeaſon for cutting them, to keep them in a regular form, is about Michaelmas, ſoon after they have done flowering. This is to be done with a knife, obſerving always to cut behind a leaf bud; for how much ſoever the ſhoot is left longer, it will always die down to that part. They are moſt of them very hardy. *Miller*, Gard. Dict.

HONEY-*Wort*, *Cerinthe*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf only, tubular, and in the ſhape of a bell, with its edge divided into ſeveral ſegments; the mouth, in ſeveral ſpecies, being cloſed or ſhut, and in ſeveral others, open. From the cup of the flower there riſes a piſtil, which is fixed into the back part of the flower, in the manner of a nail. This is ſquare, and finally ripens into a fruit, conſiſting of two ſhells, and divided into two cells, filled uſually with long ſhaped ſeeds. *Tourn.* Inſt. p. 79.

The ſpecies of this plant are, 1. The large kind, with the changeable flower. 2. The large purpliſh red-flower'd one. 3. The prickly-leav'd yellow-flower'd one. 4. The ſmall yellow-flower'd one. 5. The ſmall white-flower'd one. 6. The plain green-leav'd one. 7. The perennial alpine kind, with ſtriated flowers. The ſpecies of *Cerinthe* may be known in general by their bluiſh green leaves, ſpotted with white, at ſuch times as they are not either in flower or ſeed. *Tourn.* Inſt. p. 80.

HONOUR, (*Cycl.*) among the antients, was worſhipped as a divinity, and had a temple erected to it; which had no entry but through the temple of virtue. See Hiſt. Acad. Inſcript. vol. 1. p. 144. ſeq.

HOOF (*Cycl.*)—*Brittle* HOOF, a name of an infirmity to which horſes are ſubject. It comes ſometimes naturally, and ſometimes artificially. When it comes naturally, it is generally hereditary, the ſire or dam having had the ſame complaint. When it comes on accidentally, it is ſometimes owing to a diſtemper falling down into the feet; ſometimes to the creature's being much founder'd.

The *Hoof*, in this diſtemper, is ſo friable and rotten, as it were, that it cracks and flakes off on every ſlight occaſion. The cure is to be attempted in this manner: Take wax, turpentine, ſuet, and hog's lard, of each four ounces; ſallad oil a quarter of a pint by meaſure, and of dog's greaſe half a pound; let the whole be melted together, and ſtrained thro' a piece of canvas into a gallypot. The *Hoof* is to be thoroughly anointed with this every day, morning and evening, eſpecially at the root; and if there are any large cracks, they muſt be filled up at every dreſſing with a mixture of equal parts of cow-dung and hog's lard.

HOOK (*Cycl.*)—HOOKS *of a Ship*, are all thoſe forked timbers which are placed directly upon the keel, as well in her run, as in her rake.

Boat-HOOK, in a ſhip, a hook uſed to fend off the boat from bruiſing.

Can-HOOKS, thoſe which being made faſt to the end of a rope, with a nooſe (like that which brewers uſe to ſling or carry their barrels on) are made uſe of for ſlings.

Foot-HOOKS, in a ſhip, the ſame with ſuttocks. See the article FUTTOCKS.

Loof-HOOKS, in a ſhip, a tackle with two hooks; one to hitch into a cringle of the main or fore ſail, in the bolt rope at the leetch of the ſail by the clew; and the other is to hitch into a ſtrap, which is ſpliced to the cheſs-tree. Their uſe is to pull down the ſail, and ſuccour the tackles in a large ſail, and ſtiff gale, that all the ſtreſs may not bear upon the tack. It is alſo uſed when the tack is to be ſeized more ſecure; and to take off or put on a bonnet or drabler.

Sheer-HOOKS, in a ſhip, thoſe *Hooks* like ſickles fixed in the ends of the yard-arms, that if a ſhip under ſail come to board her, thoſe *ſheers* may cut her ſhrowds, and ſo ſpoil her tackling. But as thoſe *Sheer-Hooks* are ſubject to break their own yards, and cut the ropes that come from the top ſails, they are now very ſeldom uſed.

Trill-HOOKS. See the article TRILL-*Hooks*.

Draught-HOOKS. See the article DRAUGHT-*Hooks*.

HOOP-*Wheel*. See the article DETENT-*Wheel*.

HOOPER, in zoology, a name by which ſeveral have called the cygnus ferus, or wild ſwan. See the article CYGNUS.

HOP. See the article HOPS.

HOPLITES *Lapis*, in natural hiſtory, a name given, by ſome of the writers among the antients, to a ſtone of a ſhining braſs-like appearance, looking like the ſurface of the poliſhed braſs armour worn in thoſe times. It is eaſy to conclude, from this account, that the *Hoplites* was one of our mundics.

HOPLITODROMOS, in the antient gymnaſtic ſports, a term applied to ſuch perſons as went through thoſe toilſome and robuſt exerciſes, in compleat armour; by which the exerciſe became much more violent, and the wearing of armour, in the time of battle, much more eaſy.

HOPLOCHRISMA, a term uſed, by the antient writers in medicine, for the anointing a ſword, or other weapon, with which a perſon had been wounded, in order to the curing of the wound. So early was the idle notion of curing by ſympathetic remedies received in the world. Some late authors have alſo uſed the word in a very different ſenſe, namely, for the anointing the points of darts or ſwords with poiſonous ingredients, in order to render the leaſt wound given with them fatal. A practice moſt known, as it is ſaid, among the ſavage inhabitants of America.

HOPS, in botany. See the article LUPULUS.

There are four kinds of *Hops*. 1. The wild or garlic *Hop*. 2. The long ſquare garlic *Hop*. 3. The long white; and 4. The oval *Hop*. The firſt of theſe is not worth cultivating. The ſecond is a good *Hop*, but generally looking red toward the ſtalk, it will not fetch ſo good a price at the market. The long white *Hop* is the moſt beautiful of all, and produces the greateſt quantity. This kind, and the oval, will grow very well together. They all delight in a deep rich garden mould; this may have ſand among it, but ſhould never have any clay. Moory black land is what they are generally planted in, in Eſſex, but any light land will do. The *Hop* ſends its roots four or five yards perpendicularly deep; and, for this reaſon, they thrive beſt of all in lands where there is a good bottom, below what is uſually ſtirred or manured in agriculture. If the *Hop* land be wet, it muſt be laid up in high ridges, and drained in winter, that the roots be not rotted or chilled. *Mortimer*'s Huſbandry, p. 70.

New land is found to ſucceed better with *Hops* than old, and on this principle they are very cautious in their plantations in Kent, and look forward for the after produce. When they make a new *Hop*-ground, they plant it with apple-trees, at a large diſtance aſunder, and with cherry-trees between; by this means, when the *Hops* have grown ten years, which they judge to be as much as they will do well for, they place their account in the cherry trees which bear large crops. Theſe they gather for about thirty years, and then they cut them up, and depend upon their apple trees only, which they find very large and ſtrong by that time.

The dry ſtalks of the *Hops* ſhould be burnt on the ground in winter, covering them with a little freſh earth as they burn. This makes together an excellent compoſt to make the hills of. And if a piece of land can be obtained that lies low, and warm, expoſed to the ſouth, and defended by hills or trees, and where there is depth of ground, and ſufficient water, there is no doubt of a *Hop*-ground ſucceeding well in it.

The land muſt be dug, or ploughed well, and laid very even, and then the places for the hills marked out by a line, and a ſtick put in every place where one is to be. A thouſand hills may be made in an acre of ground, and ſix or ſeven plants ſet on every hill. The young plants are ſold at about ninepence a hundred. From ſix to nine foot diſtance ſhould be allowed between hill and hill, and the ground in the hills ſhould be better and richer than the common earth, and laid in a foot deep under the ſurface.

If the ground is too thick planted, it is beſt to uſe fewer poles than the number of plants may ſeem to require; and if it is under planted, it will be proper to enlarge the hills, and make them

them contain plants enough for twenty poles to each. Too great a number of poles, and too high ones, are equally injurious to the growth of the *Hops*. It is much better to err in having them too ſhort, or too few in number. *Mortimer*'s Huſbandry, p. 173.

Some plant *Hops* in March and April; but the moſt experienced people prefer the month of October, becauſe they will then ſtrike firm roots, and be very ſtrong and vigorous againſt ſpring. The largeſt plants are to be choſen, and it is beſt to procure them from ſome rich ground, where the hills have been laid high; they ſhould be about eight or ten inches long, and have three or four joints or buds a-piece. The holes for planting them are to be dug eight or ten inches deep, and about a foot over; and in each of theſe holes four plants are to be ſet, one in each corner. They may be covered an inch deep over the top, if planted in October; but if in ſpring, when they have ſhot from the joints, then they muſt not be buried. After this the ground muſt be kept carefully clear of weeds.

If the *Hop*-ground be poor and exhauſted, it ſhould be dreſſed in winter, and the earth about the hills dug away, and freſh and well manured ſoil put in its place; but if the ground be in good heart, it is better to dreſs it in ſpring; and if this be done as late as in April, it is ſtill the better, as it kills the weeds beſt of all, and prevents the too early ſhooting of the *Hops*, which often proves a very great miſchief to them.

Dreſſing of HOPS. This is preparing the ground in winter and ſpring, for the making a good ſummer crop. In doing this, the hills upon which the plants ſtand, muſt be all pulled down, and undermined on every ſide, till the ſpade comes near the principal root; then ſhake off, or remove with the hand, the looſe mould from the upper or younger roots, that you may ſee where the new roots grow out of the old ſets. The old ſets are to be carefully preſerved, but the other roots may be cut away. Whatever time the hills are pulled down, the roots muſt not be cut till March.

When the young *Hops* are dreſſed for the firſt time, all the roots are to be cut away that grew the year before; and the ſets are to be cut off within one inch of the ſame, and every year after they muſt be cut as cloſe as can be to the old roots: but to a weak *Hop*, ſome of the ſhoots are to be left at the dreſſing. The not obſerving this ſingle article has been the ruin of many a *Hop*-garden, that might elſe have flouriſhed. Thoſe roots of the plants which grow downward are never to to be injured, but only thoſe which run horizontally are to be cut. The old roots and the young ones may be eaſily diſtinguiſhed, in that the old ones are always red, and the young white. If there are, by accident, any wild *Hops* got among the reſt, the places where they grow are to be marked with ſticks, or otherwiſe, at the time of their being gathered, and after this, at the time of dreſſing the ground, that whole hill is to be deſtroyed, and a new one made with new plants, in the room of the old ones. When the roots are cut and dreſſed, the rich compoſt is to be put to them, and the hills muſt not be made too high at firſt, leſt they hinder the young ſhoots. If the *Hops* are ſpringing out of the hills, it is always proper to cut them off in the dreſſing; and one very neceſſary caution to the owner, is, that all poultry, but eſpecially geeſe, are to be kept off the ground.

In a dry ſpring, where there is water near the ground, the hills ſhould be well watered ſeveral times; and if the ſummer prove very dry and ſcorching, it may be proper to water them once or twice, at diſtant times, and to lay parings of the earth on the hills, and dead weeds over that, to keep the roots of the plants moiſt. The *Hops* blow in the latter end of July, and in the beginning of Auguſt they bell, and they are ſometimes ripe at the beginning of September, ſometimes later. When they begin to change colour, and are eaſily pulled to pieces, and their ſeeds look brown within them, they are ripe, and they are then to be gathered as quick as poſſible, for the leaſt blaſt of wind will hurt them at this time, and one ſtormy day may do vaſt miſchief. *Mortimer*'s Huſbandry, p. 179.

The manner of gathering *Hops*, is to take down four hills ſtanding together in the midſt of the garden, and to cut the roots even with the ground; then lay the ground level, and when it is ſwept clean, it makes a kind of floors, on which the *Hops* may be laid and picked. The *Hop* plants are firſt unwound from the poles, and then the people ſit round the clear place, and pick off the *Hops* into baſkets. Another way yet more expeditious, is to make a frame with four ſhort poles, or ſticks, laid on four forks driven into the ground, of ſuch a bigneſs as to be covered with a hair cloth of the kiln, or a blanket tacked about the edges. On theſe the poles are laid, with the plants on them, and the people pick the *Hops* into the blanket. This blanket is removed when full, and the whole frame is eaſily removed from one part of the ground to another, as they clear away the plants. When the ground is large, it is proper to erect a little ſhed to ſhelter the people employed in picking, and to keep the cut *Hops* in, for them to work upon in a morning before the dew is off from the others. The *Hops* ſhould never be gathered wet; but if any dew hangs upon them, the poles are to be ſhaken to throw it, in part, off; but if the *Hops* are ever ſo little too ripe, there is danger of their ſhedding their ſeeds by this ſhaking, and it is very well known, that their principal ſtrength is in their ſeeds. They will alſo loſe their green colour, and look browniſh, which will take off from their value in the market. Some of the people who raiſe them, bear with this inconvenience, however, to prevent a greater; and as *Hops* waſte much more in the drying, when gathered green, than when more fully ripe, they let them hang on the plants till brown; in this caſe four pound of *Hops* yield one pound dry, whereas, when gathered green, five pound make only one when dried; and they get more by the advantage in weight, than they loſe by the colour. Some leave pieces of the ſtalks, and fragments of the leaves, among them, in the picking; but this is very bad policy, for much more is loſt by this, in the price, than is gained in the quantity. Care ſhould be taken to dry the *Hops* as faſt as they are picked, for in lying undried they are apt to heat and change colour very quickly. If the quantity picked be ſo large, that the kiln in which they are to be dried is over ſtocked, they muſt be ſpread thin upon a floor, and they will keep two or three days in that manner without any harm. Indeed, where the quantity is but ſmall, there is no need to have recourſe to the kiln at all, for they will dry much better than any other way, by being ſpread thin upon a floor, and often turned. The drying of *Hops* is the moſt material part of their manufacture, for if they be ill dried, they loſe all their agreeable flavour; and great caution muſt be uſed, that they be all equally dried, for one pound of ill dried *Hops*, mixed among a large parcel of thoſe which are ever ſo well dried, will ſpoil all the reſt.

Bagging of HOPS, a term uſed by our farmers, who cultivate *Hops*, for the laſt thing they have to do with them, in order to bring them to market; that is, the putting them up in large bags of coarſe cloth for carriage. When the *Hops* have been picked, and dried in the ooſt or tin floor, they are ſo brittle that they would break to pieces, and be ſpoiled, if they were immediately put up; they are therefore to lie together three weeks, or thereabouts, that they may become tough. If they are covered from the air with blankets, in the heap, they may be bagg'd much ſooner than if left open.

The manner of bagging them is this: A hole is made in an upper floor, ſo large that a man may eaſily go up and down it, then a hoop is fitted to the mouth of the bag, and ſo firmly ſewed on, that it cannot be torn off. The bag is then let down thro' the hole, and the hoop remaining above, ſtops it from being pulled quite through, being larger than the hole. A few *Hops* are to be thrown firſt into the bag, and a perſon below is to take up a parcel of theſe in each corner of the bag, tying it up with packthread. This makes a ſort of toſſel, by which the bags are afterwards the eaſier managed, and turned about. When this is done, one man muſt go down into the bag, and while another caſts in the *Hops*, he muſt tread them down equally every way with his feet. When the bag is in this manner filled, the top is to be unripped from the hoop, and ſown up, leaving two toſſels at the corners, as at the bottom. A bag of *Hops*, thus prepared, may be kept ſeveral years, in a dry place, only taking care that the mice do not get into it. Theſe creatures will not eat the *Hops*, but they make their neſts in them, and ſpoil them. Many a fair bag has been deſtroyed this way.

The harder the *Hops* are trodden in the bag, the better they will keep. The bags in which they are packed are made of a coarſe linnen cloth; four ells and a half of that which is ell wide, makes a bag to contain about two hundred and a half of *Hops*, or ſomething more.

HOP *Poles*. See the article POLES.

HORÆA, Ὡραια, in antiquity, ſolemn ſacrifices, conſiſting of fruits, *&c.* offered in ſpring, ſummer, autumn, and winter, that heaven might grant mild and temperate weather. Theſe, according to Meurſius, were offered to the goddeſſes, called Ὧραι, *i. e.* hours, who were three in number, attended upon the ſun, preſided over the four ſeaſons of the year, and had divine worſhip paid them at Athens. *Potter.* Archæol. Græc. l. 2. c. 20. T. 1. p. 439.

HORCUS *Lapis*, the name of a ſtone, mentioned by the writers of the middle ages as uſeful in ſoldering ſilver and other metals. All the deſcription they give of it, is, that it was black, and was eaſily reduced to powder. It was called alſo catemia.

HORDEUM, *Barley*. In the Linnæan ſyſtem of botany, this is ſhewn to be a diſtinct genus of plants, the characters of which are theſe: The calix, or cup, is a partial covering, made up of ſix leaves, and containing three flowers. The leaves are ſtrait, pointed, and erect, and are two of them placed under every flower. There is, in this genus, no glume. The flower is compoſed of two valves; the under one is bellied, angular, and ovally pointed; this is longer than the cup, and is terminated by a very long beard or awn; the other is ſmaller, and is flat and pointed. The ſtamina are three capillary filaments, ſhorter than the flower; the antheræ are oblong; the germen of the piſtil is oval, and ſomewhat turbinated;

tubrinated; the ſtyles are two in number, hairy, and bent back. The ſtigmata are alſo hairy. The flower cloſely ſurrounds the ſeed, and falls with it. The ſeed is oblong, bellied, and angular, pointed at both ends, and marked with a longitudinal furrow. *Linnæi* Gen. Plant. p. 16.

HOREHOUND. See the article MARUBIUM.

HORIZONTAL (*Cycl.*)—HORIZONTAL *Line*, or baſe of a hill, in ſurveying, a line drawn on the *horizontal* plane of the hill, or that on which it ſtands.

HORIZONTAL *Roots*. See the article FIBROSE *Roots*.

HORMEZION, or HORMESION, in natural hiſtory, the name of a gem deſcribed by Pliny, and ſeeming to have been a ſpecies of hyacinth; he ſays it was very bright, and of a yellowiſh red or flame colour, with a whitiſh caſt at the edges.

HORMINODES, in natural hiſtory, the name of a gem deſcribed by Pliny, and others of the antient writers. The ſtone itſelf, they tell us, was either black or white, but had in it a green ſpeck, ſurrounded by a circle of a bright yellow. It ſeems to have been no other than one of the oculus beli's of our jewellers.

HORMINUM, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind. The upper lip is ſmall and galeated, the under one is large, and divided into three ſegments, the middle one being hollowed like a ſpoon. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower; this is ſurrounded by four embryo's, which afterwards become four ſeeds, and ripen in the cup of the flower.

The ſpecies of *Horminum*, enumerated by Mr. Tournefort, are theſe: 1. The garden *Horminum*, with purple ſpikes. 2. The red ſpiked *Horminum*. 3. The green ſpiked *Horminum*. 4. The broad-leav'd wild verticillate *Horminum*. 5. The napus-leav'd *Horminum*. 6. The leſſer *Horminum*, with ſinuated leaves, and a ſmall blue flower. 7. The meadow *Horminum*, with very ſmall flowers. 8. The lavender-flower'd wild *Horminum*. 9. The lavender-flower'd wild *Horminum*, ſmelling alſo like lavender.

The Engliſh name of this genus of plants is *Clary*, but it is an indeterminate one, becauſe it is alſo uſed as the name for the *ſclareæ*, a different genus of plants, though by many authors confounded with the other under the name *Horminum*. *Tourn.* Inſt. p. 178.

Horminum has been much celebrated as a cardiac, but is now leſs uſed than formerly. The dried herb, given in infuſion or decoction, is good in the fluor albus, but ſhould be given with other medicines. It is alſo commended in colics, flatulencies, and hyſteric complaints; alſo as an antiſpaſmodic, and in epilepſies.

HORN (*Cycl.*)—The *Horns* of many animals, particularly of the deer kind, are caſt every year, and new ones grow up in their places. With us the deer drop them in March, and the new *Horns* are full grown by the July following. Voſſius very juſtly ranks this among the moſt wonderful phænomena of nature; he ſays, that we have nothing analogous to the growth of ſuch hard and ſolid bodies of ſo great a bulk, in ſo ſhort a time.

Many idle opinions have been formed of the cauſe of the falling of theſe parts of the animal; and worms in the head, and many other things, have been ſuppoſed inſtrumental to it, which have no ſhare in it. The true reaſon ſeems, that theſe are a ſort of vegetables growing on the animal, as our nails and hair have by many been ſaid alſo to be; and there appears a great analogy between them and the ſprouting of the leaves and branches in trees and plants. Trees commonly caſt their ripe fruit in ſummer, and drop their leaves in autumn, becauſe the ſap, or nouriſhing juice flows into them no longer; and in the ſame manner, at certain ſtated periods, the blood and juices ceaſe to flow into theſe parts of the animal, and they drop off. The cavernous part, at the root of the *Horns*, probably grows hard, and the pores through which the veſſels paſs, grow up at this time, and then, as no juices can be carried through them to the *Horn*, it is not at all wonderful that it decays, and falls off, for want of nouriſhment.

It is probable that this ſtoppage of the pores, and denying of the paſſage of any juices, happen in the *Horns* as ſoon as they are arrived at their full growth in July; but they are ſo firmly fixed to the head, that it takes a long time for them to looſen and fall, whereas in the leaves of plants the pedicles are ſo tender, that they wither and fall immediately on the juices ceaſing to flow into them. This analogy between the operations of nature, in the caſting the *Horns* of deer, and the falling off of ripe fruit and leaves from vegetables, will gather great ſtrength from obſervation of the orange and other trees. If the ſtalk, from which a ripe orange has fallen, be compared with that part of the forehead of a deer from which a *Horn* is juſt fallen, there will be ſeen ſuch a ſimilarity between the one and the other, that it will appear very obvious, that nature has operated by the ſame laws in both. Philoſ. Tranſ. N°. 227. p. 494.

The growth, and caſting of the *Horns* of deer, is a very ſingular circumſtance in the animal world. The ſtag puts out its firſt *Horns* in the ſecond year of it age, and after this they caſt them every year in March. The luſty and well fed ones caſt their *Horns* firſt; the ſickly or weak ones ſometimes keep the old ones till the end of April. Theſe *Horns* are faſtened to the bones of the ſkull, not to the ſkin of the head only, as ſome people would have it thought, who are for making the caſting of them the leſs wonderful. About ten days after the *Horns* are caſt, the new or young *Horns* begin to appear; they are ſoft and hairy at firſt, but they grow hard in about three months, and the ſtag then rubs off their hairy ſkin.

The number of branches in the *Horns* is proportioned to the age of the animal, the young ones always having but few, the old ones moſt. Six or ſeven branches are the common number, and in Tuſcany they have ſometimes eight or nine. But in Saxony, where theſe creatures are very long lived, they are ſometimes ſeen with fourteen or fifteen branches, and ſometimes more. The young *Horns*, while yet ſoft, are full of blood-veſſels, and if cut off, eſpecially if near the head, they are found to bleed very violently, and the creature will ſometimes even bleed to death at the wound. This blood was found by Redi to coagulate alſo like the other blood of the ſtag, let out of the other parts of the body; though this is contrary to the accounts of Ariſtotle and Galen. Blood-veſſels are ſent in large numbers into all *Horns*, while young, to furniſh them with nouriſhment for their increaſe and growth; but when they are arrived at their full growth, theſe veſſels dry up, there being no farther occaſion for them; and hence it is that no ill ſymptoms attend the falling off of theſe parts, when full grown. If a ſtag be caſtrated while he is ſo young as not to have *Horns*, he will never have any at all, and if caſtrated afterwards, while his *Horns* are on, he will never caſt them, but always retain the ſame pair which he had at the time of the operation. *Redi*, Exper. See the articles CASTRATION, STAG, *&c.*

HORN, in the manege: To give a ſtroke with the *Horn*, is to blood a horſe in the roof of the mouth, with the *Horn* of a ſtag or roebuck, the tip or end of which is ſo ſharp and pointed, as to produce the ſame effect as a lancet. We ſtrike with the *Horn* in the middle of the fourth notch or ridge of the upper jaw.

HORN *Coot*, a name given by fowlers to the great *Horn* owl. A ſportſman who has got one of theſe birds, has a conſtant lure to draw together almoſt what numbers of others he pleaſes. The method of taking other birds by it, is thus: The ſportſman fixes upon ſome ſingle tree which ſtands in the middle of an open field, and cutting the boughs of this into a regularity, he ſpreads nets all about it, and then places his owl within them, with a ſtring faſtened to its leg, by means of which the bird may be put in motion by the ſportſman as he ſtands at a diſtance under covert. There are to be two perches placed near one another, ſo that the owl can eaſily go from the one to the other. It is the nature of this bird to fly only by night, and therefore whenever it is ſeen by daylight, all the other birds quarrel with it, and abuſe it; even the hawks will make at it wherever it comes in their way. The ſportſman depends upon this, and as ſoon as he ſees any bird approach, or as ſoon as the owl, who ſees farther than he can, gives him the ſignal that ſome bird is in ſight, he pulls the ſtring, on which the owl, being diſturbed, flys from one perch to the other. This draws the ſtrange bird to her, and flying violently at her, it is entangled in the net placed with that intent, and the ſportſman muſt immediately run up and take it out, and replace the net for the next.

HORN-*Fiſh*, an Engliſh name for the fiſh which we alſo call the garfiſh. It is by ſome accounted a ſpecies of the acus or tobacco-pipe fiſh; but the only reaſon for this opinion, ſeems to have been, that it is as long and ſlender as that fiſh. It is properly a ſpecies of pike or eſox. See the articles ACUS and ESOX.

HORN-*Fiſh*, in zoology. See the article CORNUTUS *Piſcis*.

HORN-*Owl*, in zoology, the name of a ſort of owl diſtinguiſhed by two cluſters of feathers ſtanding up over its ears, and reſembling horns. There are two kinds of this bird, a larger and a ſmaller; the firſt diſtinguiſhed by the name of the bubo, the great *Horn-owl*, or eagle-owl; and the other called the *otus*, or *noctua aurita*. *Ray*'s Ornithol. p. 63. See the articles BUBO and OTUS.

HORNET, *Crabro*, in zoology; this inſect is very bold and venomous; and wholly reſembles the waſp, only it is twice as large, and that the head is of a longer and ſlenderer ſhape, and the eyes formed ſomewhat like a half moon. They build under ground, and in winter hide themſelves in hollow trees. They feed on fleſh, and, when very hungry, will ſeize upon a ſmall bird. Mouffett relates, that they have been ſeen ſingly to purſue and kill a ſparrow, and afterwards feed on its fleſh. See the article WASP.

HORNET *Fly*, in natural hiſtory, a very large two-winged fly, which has the ſhape and colours of the *Hornet*, and is, at firſt ſight, ſcarce to be diſtinguiſhed from it. The principal colour of the body of this fly is yellow; but it has two long and large black lines placed tranſverſely on it, and has a black corcelet, and a yellow head. *Reaumur*, Hiſt. Inſ. vol. 4. p. 481.

These lay, at a proper season, a large number of oblong white eggs, which hatch into large and long worms, whose chief food is the worms and nymphs of the humble bees. The worm of this fly is continually found in the nests of these bees, where it never meddles either with the wax or honey, but preys only on the young offspring of the creature. Ibid. p. 482.

These worms grow to a very considerable size; they have no legs, their body is pointed at the anterior part, but grows larger all the way toward the posterior. This part of its body is of the radiated figure of this whole class of fly worms; on it there are placed six fleshy bodies, in form of rays, disposed in a semi-circular form, the upper part of the body marking its diameter. Near the center of this semi-circle are placed two pipes or tubes, placed close to one another, which are shorter than the rays, and their use much more important to the animal, at least their importance is much better known to us: These are the two posterior stigmata. Ibid. p. 483.

The anterior stigmata, in the worm of this fly, are not so very plain to the eye as these, but may be distinguished when carefully looked for; they are placed one on each side of the second ring of the body, near its junction with the third. The body seems composed of a vast number of rings, or full of almost innumerable fine small furrows; the upper part of the body, where it joins the under part, is all the way round adorned with a series of fine small prickles; and when it moves, it shews two very short horns. The head is of the variable kind, and is furnished like the rest of that class, with two hooks; but these in this species may properly enough be called teeth; each is also split at the end, and supplies the place of two strong teeth. Ibid. p. 484.

HOROMETRY, the art of measuring, or dividing the hours, and keeping an account of time.

HOROPTER, (*Cycl.*) in optics, an imaginary line drawn through the intersection of the optic axes, parallel to a line drawn through the center of both eyes; so that the space comprehended between these two lines forms a plane, in which the two optic axes are always found. All the objects seen in this plane have a relation to the *Horopter*, or to the line which terminates it. The *Horopter* has several properties in optics, which are described at large in *Aguillonius*, Opt. lib. 2. Diff. 10.

HORSE, in zoology. See the article EQUUS.

Mettled HORSE, a term used by our dealers in *Horses* to express a creature of that species, which has a great deal of vigour and heart, as they call it otherwise. There is great difference between a *mettled Horse*, a *Horse* of vigour, and a fiery *Horse*; but as this is not sufficiently attended to by gentlemen in their purchases of this animal, some general rules for the distinguishing real vigour in a *Horse*, may be acceptable in a work of this general kind.

When a *Horse* is standing still, the rider who has a mind to try whether he has vigour in him, should keep him fast with the bridle-hand, and apply the spurs to the hair of his sides; this is called by horsemen pinching. If the *Horse* is impatient under this, gathering himself up, and endeavouring to go forwards, and champs upon the bit, without thrusting out his nose, it is a sign of vigour and right mettle in him. Some caution is to be used, however, in judging by this, to distinguish between a *Horse* that has vigour really in him, and one that has only a fine skin, and is rather tickliſh than mettled. This is the case with a great many *Horses*, and is found by their being very sensible of the touch of the spur, and shewing the appearance of a great deal of mettle and vigour when touched, but immediately losing the apprehension of it. These are of a dull disposition, but only have a tender skin.

The *mettled Horse* is to be highly valued, but the fiery one is good for nothing; a *Horse* that is truly vigorous, should be calm and cool, he should in general move on patiently, and only shew his mettle when it is required of him.

The surest method is to chuse such *Horses* as are extremely apprehensive of strokes, and are afraid at the least appearance of their coming. These, at the only closing of the legs and thighs, seem to be seized with fear, and alarmed, but that without fretting or fierceness. A *Horse* that walks deliberately and securely, and that without requiring the whip too often will go on briskly and without fretting, will go from the walk to the gallop, and as easily from the gallop to the walk again, and continually champs upon the bit, and trots with glibness, upon the shoulders easily, and snorting a little thro' his nostrils. This is generally a creature of true mettle and vigour, though it does not rise to such a fierceness as is troublesome or dangerous. If to these good qualities a *Horse* be well upon his haunches, and have a light and easy stop, his head well placed and firm, and the feeling of his bit equal and just, the gentleman who loves riding will seldom need to complain of the price. All the good qualities of a *Horse* should, however, never recommend him, unless he has a good mouth, and a sensible obedience to the spur.

Backing of HORSES. The first backing of a *Horse* is a thing of great consequence, as his value afterwards very much depends on it. After a colt has been exercised some time morning and evening, and becomes somewhat obedient, he is to be taken to some ploughed lands, the lighter the better; he must be made to trot over these in the hand, by that means to tire him and abate his wantonness. When this is done, care must be taken that all the tackling be good and firm, and every thing in its due and proper place; then a person is to hold his head, and another to mount him; but this must not be done suddenly, or at a jerk, but very gradually and slowly, by several half risings and heavings. If he bears this patiently, the person is to seat himself firmly on his back; but if he be troublesome, and not tamed enough, the person is to forbear the attempt to mount, and he is to be trotted hard in the hand over the same ploughed lands again, till he is willing to receive the rider quietly on his back. When this is done, the person who is on his back must cherish him, and the man who has his head must lead him a few paces forward; then he is to be cherished again. The feet are to be fitted well in the stirrups, and the toes turned out; afterwards the rider is to shrink and move himself in the saddle, and the person who holds his head, is to withdraw his hand a little farther from the mouth. As the rider moves his toes forward, the holder must move him forward with the rein, till he is made to apprehend the rider's motion of body and foot, which must always go together, and with spirit, and will go forward without the other's assistance, and stay upon the restraint of the rider's hands.

When this is accomplished, let him be cherished, and have grass and bread to eat; and then let the rider mount and alight several times, cherishing him between each time; and thus he is to be managed till he will go on, or stand still at pleasure. This being done, the long rein may be laid aside, and the band about the neck, which are always used on this occasion, and nothing will be necessary but the trenches and caveson, with the martingal. A groom must lead the way before; or another *Horse* going only strait forwards, and making him stand still when desired. In this manner, by sometimes following, and sometimes going before another *Horse* on the trot, the creature will by degrees be brought to know that it is his business to be quiet and governable.

Breeding of HORSES. In order to have a good and beautiful race of *Horses*, it is necessary to chuse for a stallion a fine barb, free from hereditary infirmities, such as weak eyes, bad feet, spavins, pursiness, or the like: Disorders that arise from accidents are of no consequence, nor is the *Horse* to be at all the less valued for them as a stallion. Three months before this *Horse* is to cover a mare, he should be fed with sound oats, pease, or beans, or with coarse bread, and a little hay, but a good quantity of wheat straw; he should be led out twice a day to water all this time, and after every watering walked about an hour, but not over-heated. If he be not prepared and put in heart in this manner, the colts will be weakly, and the *Horse* himself will be spoiled, growing pursy and broken-winded.

If he is put to too many mares, he will not last long, his main and tail will begin to fall off through weakness, and it will be difficult to get up his flesh again by the next year. The number of mares should be proportioned to his strength, and twelve, fifteen, or at the most twenty, are as many as a *Horse* will well serve for in a season. Mares go with foal eleven months, and as many days over as they are years old. This being certainly known, it is easy to contrive so that all the foals may be brought forth at a time when there is plenty of grass. About the end of May the mares are to be put into an enclosure capable of feeding them as long as the stallion is to be with them, or that they are in season. In this enclosure all the mares are to be put together, as well those which are barren as others. The stallion's hind-shoes are to be taken off, but the fore-shoes should be left on to preserve his feet; then lead him forth, and let him cover a mare twice in hand, to render him more tame and gentle. After this take off the bridle, and turn him loose among the rest, where he will become familiar with them, and not one of them will be horsed but when they are in season. There should be a little lodge built up in some part of the enclosure, and pease, beans, oats, bread, and other good food, put into the manger in it, that the *Horse* may retire into it in the scorching heats, and eat what he likes best. He must be thus entertained during the whole time he is with the mares, which is to be about six or seven weeks.

Mares that are very fat and gross do not hold well, but those which are moderately fat conceive with the greatest success and ease. To bring a mare in season, it is a common thing to give her a quart of hempseed, or twice that quantity, night and morning, for eight days before she is brought to the *Horse*. If she refuse it alone, it may be mixed with beans or oats, and will go down; and if the stallion eat of it also, it will make him the better.

The stallion should not cover before he is six years old, nor after he is fifteen. A mare should never be covered before she is three years old; they should be always sound and healthful, and of a good breed; such as these will bring forth better and finer foals than any others. The colts produced from these, are not to be used for stallions, for they will degenerate, and the race will soon become exactly our own country breed. If a barb is not to be had, a Spanish *Horse* is to be chosen.

Gelding of HORSES. See the article GELDING.

Fattening

Fattening of HORSES. See the article FATTENING.

Watering of HORSES. See the article WATERING.

HORSES *of draught*. See the article DRAUGHT *Horſes*.

River-HORSE, in zoology. See the article HIPPOPOTAMUS.

Sea-HORSE. See the article HIPPOCAMPUS.

War-HORSE. See the article WAR.

HORSE, in a ſhip, that rope which is made faſt to the ſhrowds to preſerve him that heaves the lead there, from falling into the ſea.

HORSES is alſo an appellation ſometimes given to the waps, as alſo to thoſe ſhort waps that are ſeized to the middle of the top-maſt and top-gallant maſt ſtays, wherein are reeved the top-ſail, and top-gallant ſail bow-lines.

HORSE-*Bean*. The *Horſe-bean* is the only kind propagated by the plough; it delights chiefly in a ſtiff and moiſt clay; three buſhels will ſow an acre, and this is to be done in February. The common produce is about twenty buſhels from an acre. They muſt lie ſome time upon the ground after they are cut, before they are carried in. Some farmers ſow tares and *Horſe-beans* together, which is a very good way, for the ſeeds are eaſily ſeparated by a riddle. *Mortimer*'s Huſbandry, p. 139.

HORSE-*Block*, in the manege. See the article MONTOIR.

HORSE-*Bread*. Bread of a proper kind is often given *Horſes* to hearten and ſtrengthen them when they have gone through great fatigues, or are to prepare for ſuch. Common houſe-hold-bread will anſwer the purpoſe, but the more common way is to prepare a kind of bread on purpoſe. There are two different receipts for making this ſort of bread, each of which has its admirers. The firſt method is this: Take wheat-meal, oat-meal, and beans ground fine, of each half a peck, aniſeed two ounces, gentian and fenugreek-ſeed, of each an ounce, liquorice two ounces; let all theſe be made into a a fine powder, and ſifted together, that they may be perfectly mixed. Then add the whites of twenty new-laid eggs, and as much fine-ale as will knead the whole into dough. This is to be made into loaves, and well baked, but not burnt; and the *Horſe* is to have a good quantity of it every morning for five or ſix days, without any other provender.

The other method is much nicer, but perhaps does not any way better anſwer the intended purpoſe of heartening up the creature. It is this: Take wheat-meal, rye-meal, bean-meal, and oat-meal, of each half a peck; aniſeed and liquorice, of each an ounce; white ſugar-candy, four ounces: Beat all theſe to powder, and ſift them together; then add the whites and yolks of twenty new-laid eggs, and as much white-wine as will make the whole into a dough. Let this be made into great loaves, and well baked; it muſt not be given the *Horſe* too new, but when it has ſtood about three days, it may begin to be uſed; the outſide is always to be chipp'd off when any of it is given. Theſe are the two ſorts of bread uſually given to prepare *Horſes* for long journies. But there are three other receipts for making bread for race *Horſes*, which are as much eſteemed, and are given by our expert jockies for the ſecond, third, and fourth fortnight's feed. The firſt kind is made in this manner:

Take three pecks of clean beans, and one peck of fine wheat; let theſe be ground together, and kneaded into dough, with a large quantity of freſh barm or yeaſt, but with as little water as may be. When this has heaved and worked up a little, let it be kneaded again, and then made into large loaves and carefully baked; when three days old, it may be given to the *Horſe*, but not ſooner.

The ſecond ſort is to be made as the other, only with equal quantities of beans and wheat, and the cruſt of this is to be cut quite away before it is eat. This is to be given to the *Horſe* at his uſual meals, either alone, or mixed with oats and ſplit beans.

The third ſort of bread is ſtronger than either of the others, and is to be made thus: Take three pecks of wheat, and one of beans; let them be ground together, and made into very fine flour; knead this up into dough with a good quantity of yeaſt diſſolved in as much ſtrong ale as is neceſſary; add the whites of twenty eggs, and make the whole into large loaves. Theſe muſt be thoroughly baked, and when they have ſtood three days, the cruſt muſt be cut off, and the crumb only given, either alone, or mixed with oats or ſplit beans. This is to be the food for the laſt fortnight.

Animated HORSE-*Hairs*, a term uſed to expreſs a ſort of long and ſlender water-worm, of a blackiſh colour, and ſo much reſembling a *Horſe-hair*, that it is generally, by the vulgar, ſuppoſed to be the hair fallen from a *Horſe*'s mane into the water as he drinks, and there animated by ſome ſtrange power. Dr. Lifter has at large confuted this abſurd opinion, in the Philoſophical Tranſactions. See the article SETACEOUS *Worms*.

HORSE-*Hair Worms*. See the article AMPHISBÆNA.

HORSE-*Mackrel*, in ichthyology, a name given by us to a pecular ſpecies of mackrel, called alſo in Cornwall a *ſcad*. It is the trachurus of authors in general. Bellonius calls it the *lacertus*, and the old Greek writers, as Ariſtotle and the reſt, the *ſaurus*. Artedi diſtinguiſhes it by the name of the *ſcomber*, or mackrel, with the lateral lines aculeated, and with thirty rays in the pinna ani. See the article SCOMBER.

HORSE-*man*, the name given to a particular ſpecies of pigeon, called by Moore the *columba tabellaria minor*. It very much reſembles in ſhape the carrier-pigeon, but it is ſmaller, and ſhorter necked; the protuberant fleſh on the beak, and round the eye, is alſo leſs in quantity; it is more barrel-headed alſo, and the eye is ſomewhat pinched. It is matter of diſpute whether this be an original ſpecies of pigeon, or a baſtard between the carrier and tumbler pigeons. *Moore*'s Columbarium, p. 31.

There are of this ſpecies of all ſorts of feathers, but the blue and blue-pieds are the moſt valued. Theſe are one of the ſorts of pigeons made uſe of in England for carrying letters, and flying for wagers; for the true original carriers are now very ſcarce, and not riſk'd on every trifling occaſion.

HORSE-*Muſcle*, a common Engliſh name for the freſh-water muſcle, a large ſpecies of ſhell-fiſh, very common in our fiſh-ponds. Mr. Mery, of the Paris academy, has been at the pains of making a number of curious obſervations on this animal. He obſerves, that they are all hermaphrodites, and that, by a ſtrange and before unheard-of method of generation, each individual is in itſelf capable of propagating its ſpecies, and annually does it without the intercourſe of any other. This is extremely ſingular, becauſe tho' we know many animals which are hermaphrodites, or in which each individual contains the parts of both ſexes, yet in ſnails, earth-worms, and all the reſt of theſe kinds, there is always a congreſs of two animals for the propagation of the ſpecies.

The ſhell of the freſh-water muſcle is compoſed of ſeveral laminæ or beds of matter, in the manner of many of the ſea-ſhells, and is lined within with an extremely delicate and thin membrane, which is not eaſily diſtinguiſhed while the ſhell is recent, but when it becomes dry it uſually ſeparates from it, and peels wholly off. This fiſh opens and ſhuts its ſhell by a very ſtrong hinge, aſſiſted by two ſtrong muſcles; the contraction of theſe ſhuts the ſhells firmly together, and a powerful ſpring or force in the animal opens them at pleaſure. The part which performs this office, is diſtinctly ſeen on the back of the fiſh, and is an inch and half long, and about a ſixth of an inch broad. Mem. Acad. Par. 1710.

The muſcles act ſo ſtrongly, as to keep the ſhells always firmly cloſed in their natural ſtate; and this power ſubſiſts in them even after the death of the animal, till it begins to rot, and at that time the ſhells naturally open. This creature is capable of a progreſſive motion of two kinds; it can either creep along the bottom, or crawl up the ſides of a pond at the banks, or at pleaſure raiſe itſelf up to the ſurface of the water and ſwim. This laſt is a motion it performs but rarely; but whatever movement it is employed in, all that is ſeen to aſſiſt in it, is, the belly of the fiſh hanging an inch or two out beyond the edges of the ſhells. The belly of this fiſh repreſents very well the hulk of a ſhip, and is larger toward the head, and ſmaller toward the anus. This large part of the body, however, is the lighteſt, and in ſwimming is always carried uppermoſt, for in this part the lungs are ſituated, by means of which it is capable of a great dilatation of its bulk, in proportion to its weight, a thing of the firſt conſequence in ſwimming. When it is to move along upon the mud, which is its common buſineſs, it does this by means of five muſcles which the belly is furniſhed with, which by their contractions and relaxations eaſily give a force able to pull along the whole fiſh. The mouth of this fiſh is ſo placed within the body, that it cannot extend or exert it in the common way of animals in ſearch of food; it muſt neceſſarily be that the water brings always nouriſhment with it to the mouth; which may well be ſuppoſed, when we conſider what numbers of minute animals inhabit every drop of it. As the ſhells of this fiſh are, however, uſually kept ſhut, it might be ſuppoſed that the animal would want food; but it has a power of retaining a quantity of water a long time in the ſhell, and ſeems to ſlowly collect from that all the nouriſhment it contains, before it diſcharges it to take in more. This water is kept in four large reſervoirs, and thence paſſes by the parts of generation to a large glandular ſubſtance, which this gentleman takes to be properly the head of the fiſh, though it wants the characters of the more perfect animals; and the mouth being placed in this part, the nouriſhment is received from the water here. It is ſoon conveyed from the mouth into the inteſtine, whoſe courſe in this fiſh is very extraordinary; it begins directly behind the creature's mouth, it thence paſſes through the ſubſtance of the brain, enters the liver, and makes ſeveral convolutions there; hence it paſſes in a ſtrait line to the heart, which it alſo enters and paſſes through, and thence makes its way immediately to the anus, the orifice of which has its rim beſet with ſeveral pyramidal points, and its inner part with ſeveral glands, of which two are particularly diſtinguiſhable; they are of the ſhape of an almond, and ſtand one on each ſide; theſe diſcharge a glutinous liquor. The ovaries of this creature are always found empty in ſummer, and full in winter, the eggs being always laid in the ſpring for the production of the young progeny, and the internal copulation of the parts of both ſexes not furniſhing others till toward autumn. Mem. Acad. Par. 1710.

HORSE-*Tail*, in botany. See the article EQUISETUM.

HORSE-*Worm*, in natural hiſtory, a ſpecies of fly-worm produced of eggs depoſited by a two-winged fly of the ſhape and ſize of the humble-bee, in the inteſtines of *Horſes*.

It is indeed a very ſtrange place this little creature chuſes for the depoſiting its eggs; but as noble a creature as the *Horſe* ſeems, and as much as we may ſuppoſe him created for our uſe, we are to conſider, that the ſame great hand made both him and this little fly, and that he ſeems indeed more created for the fly than for us; he is uſeful to us, but to the fly he is abſolutely neceſſary, ſince without him ſhe could not propagate her ſpecies.

The worms of the human bowels have not been longer known to the world than thoſe of the *Horſe*; and the farriers in all ages, who have undertaken the care of theſe valuable animals, have had their remedies for the long worms bred in their inteſtines, and alſo for the ſhort ones. The ſhort ones are the creatures here to be deſcribed. But though the world has ſo long been acquainted with their exiſtence, it never knew their origin till Mr. Valliſnieri diſcovered of late that they were produced from one of the humble-bee flies. *Reaumur*'s Hiſt. Inſ. vol. 4. p. 542.

Theſe flies always live in the open fields, and are never found about towns and houſes, and this is the reaſon that thoſe *Horſes* which are kept up in the ſtable in the ſummer and autumn, are never found to be ſubject to theſe worms.

In the latter end of ſummer, and toward autumn, theſe flies are found continually buzing about the backs of *Horſes* in the open fields, and their whole buſineſs there is to depoſit their eggs, where nature has inſtructed them to do it.

Horſes at this ſeaſon are ſenſible of the buſineſs of this little annoyer, and have been ſeen from the moſt quiet ſtate to jump, run about, and kick, only at the ſound of the wings of one of theſe flies, which has been at that time ſearching for an opportunity to depoſit its eggs in them.

A fly has been ſeen, when it has not ſucceeded in its attempt in this manner, to fly with leſs noiſe toward a ſingle *Horſe* in another part of the field, ſlily to creep under his tail, to uſe ſome gentle titillation in order to make the creature open his fundament, and, when a little open, has ventured to crawl in, and without doubt then only found herſelf in a proper place for the depoſiting her eggs for a few moments. After this the *Horſe* has jump'd, kick'd, and caper'd as if mad, and continued ſo for a quarter of an hour.

The worms hatched from theſe eggs, or perhaps living worms there depoſited, if the fly be of the viviparous kind, ſoon find their way farther up the inteſtines, and often penetrate even into the ſtomach.

After a ſufficient time for theſe worms to acquire their deſtin'd growth, they naturally quit their old place of abode; in order to this they all get toward the lower part of the inteſtines, and are either voided by the creature with its dung, or of themſelves crawl out.

There is nothing ſingular in the figure of theſe worms, they are larger than thoſe of the common fleſh fly, and ſmaller than thoſe of the ox-fly; they are ſomewhat of a conic figure, their head being pointed, and their poſterior part much larger; they are of different colours, ſome greeniſh, and others yellowiſh, and ſome brown; they are provided with each two cruſtaceous hooks, by which they lay hold of things, and pull themſelves along by that means.

The great danger of theſe worms would be, that they might be forced out of their habitation by the fæces of the *Horſes*, and with them carried out of its body, but theſe hooks prevent that, for by means of theſe the creature is able to lay ſo faſt hold of the fleſh of one's hand, as not to be eaſily removed. But beſides theſe, nature has given to theſe worms, a multitude of ſmall triangular points, like ſo many prickles, placed all over its body, and by means of theſe it is able to hold itſelf faſt againſt the ſides of the guts.

The body of this ſpecies of worm is compoſed of eleven rings; the mouth is placed below the two hooks, and juſt above them the worm, when it pleaſes, thruſts out two ſhort fleſhy horns. The hinder part of the worm, however, is much more obſervable; this is drawn up and wrinkled like a purſe, but is continually opening from time to time, and when open, one diſcovers in it a deep cavity, at the bottom of which are placed ſix double furrows; theſe are the poſterior ſtigmata of the worm, and the fleſhy purſe, drawn over them, is evidently intended to defend them from being ſtopped up by liquid ſubſtances running over them.

It is ſuppoſed that clyſters of oil are a remedy for this diſorder in *Horſes*; but it probably is of no effect, ſince the oiling over the whole body of the worm, nay, the introducing drops of oil into the cavity where the great ſtigmata are, has not been found to kill the animal.

When theſe worms are only in ſmall numbers in a *Horſe*, they are of no harm to the animal; but there are ſeaſons in which they increaſe to ſuch vaſt numbers, that they are a very fatal malady; and, in ſome years, when *Horſes* have died of a ſort of epidemic malady, after they have been opened, prodigious numbers of theſe worms have been found living in their ſtomachs, each having eat itſelf a ſort of cell in the membrane of the ſtomach, and all being lodged there as cloſe together as the ſeeds in a pomegranate.

We are not to wonder at all how ſuch immenſe numbers of worms come into one *Horſe*, ſince one female is able to depoſit more than ſeven hundred, as Mr. Valliſnieri has obſerved.

When theſe worms are fallen from the inteſtines of the *Horſe*, they crawl about till they find ſome place of ſafety, where they make a ſhell of their ſkin, and paſs all their changes, and from whence they finally come out in form of the parent fly.

The males of theſe flies have ſhorter bodies, and have, for that reaſon, more of the appearance of the humble-bees than the females. They are all very hairy; they are two-winged flies, and of the ſecond claſs of thoſe, having a mouth without either teeth or trunk. Their antennæ are ſhort and ſhining, and each has a ſingle long hair growing from it.

There is no ſpecies of fly which varies ſo much in the colours and marks of the individuals as this; the colours are black, yellow, white, and brown; but in the different flies they are differently placed, and mixed with one another.

The wings of theſe are alſo leſs tranſparent than thoſe of moſt other flies, and uſually appear irregularly ſmoaked as it were in different places. The male is alſo eaſily known from the female, by his having two ſtrong brown hooks on his hinder parts, turned one towards the other, and laid cloſely againſt his belly. Theſe ſerve him in the time of his congreſſes with the female, to lay faſt hold of her. See *Reaumur*, Hiſt. Inſ. vol. 4. p. 540. ſeq. See alſo *Valliſnieri*.

HORTATOR, in the Roman navigation, an officer whoſe buſineſs it was to give the word of command to the rowers, and to direct them when to ſtop, and when to ply their oars.

The Greeks gave the name of *celeuſtes* to this officer.

HORTULANUS, in zoology, the name of a genus of birds, of the ſmaller kind, the general character of which is, that they have a tubercle, or hard eminence, on the upper chap of the beak. Of this genus are the bunting, the yellow-hammer, the cirlus, the reed ſparrow, the berluccio, and the cirlus ſtultus. See Tab. of Botany, N° 32.

HORTUS, a name uſed by ſome authors for the female genital parts of animals.

HOSPITAL (*Cycl.*) — *Foundling* HOSPITAL. See the article FOUNDLING.

HOSTILERS, in our old writers, is uſed for inn-keepers; and in ſome old books the word *Hoſters* is taken in the ſame ſenſe, 31 Ed. 3. c. 2. *Blount*.

The word is French, *Hoſteliers*, of the ſame import.

HOT (*Cycl.*) — HOT-*Beds*, in gardening, are of general uſe in the northern parts of Europe, without which we could not enjoy ſo many of the products of the warmer climes as we now do, nor have our tables furniſhed with the various products of the ſummer ſo early in the ſpring.

The common *Hot-beds*, uſed in kitchen gardens, are made with horſe-dung in the following manner: A large quantity of new dung from the ſtable, with the litter among it, ſhould be mixed with ſome ſea coal-aſhes, and when it has ſtood a week, it will have acquired a conſiderable heat. This dung is then to be placed in a ſhallow trench, made in a ſhelter'd part of the garden, and if it be intended for the planting out of melons or cucumbers, there muſt be made, at proper diſtances, where the middle of the light of the glaſs they are to be covered with will come, holes of ten inches over, and ſix deep, which muſt be filled with freſh earth, thruſting a ſtick in the middle, to ſhew the place where the hole is. The whole bed is then to be covered about four inches thick, with the earth taken out of the trench. When this is done, the beds are to be covered with frames of wood, fitted with lights of glaſs, and after about two days the earth will be of a proper degree of warmth to receive the plants to be ſet in it. *Miller*'s Gardener's Dict.

In the making theſe beds, great care muſt be taken to lay the dung cloſe and even; and if it be full of long litter, it ſhould be trod down, otherwiſe it will heat too violently, and the warmth be ſoon diſſipated. For the firſt ten days the glaſſes muſt be but ſlightly covered in the night, and in the day-time carefully raiſed to let out the ſteam, which is ſubject to riſe very copiouſly while the dung is freſh. Afterwards the covering muſt be encreaſed, and if the bed cools too faſt, new dung muſt be laid about its ſides, which will give it a great warmth throughout, and by that time this is diſſipated, the ſun's rays will have power enough to ſupply the place of artificial heat. Only, at this time, if the nights happen to be cold, as is indeed often the caſe, it will be neceſſary to lay ſome mowings of graſs about the ſides of the bed.

This is the ſort of *Hot-bed* moſt in uſe in kitchen gardens; but thoſe made with tanners bark are much properer for the tender exotic plants and fruits, which require a ſteady and equal degree of warmth to be kept up for ſeveral months. In order to the making of theſe, a trench muſt be dug in the earth, about three feet deep, if the ſoil be dry; but if it be wet, it muſt be only dug one foot, and the bed raiſed two foot above ground. The length muſt be proportioned to the number of frames it is intended to be covered with, but it ſhould never be leſs than eleven or twelve feet, nor its breadth leſs than ſix, this being abſolutely neceſſary to their being a body

body of bark enough to keep up the heat. This trench is to be bricked up to the height above-mentioned, and in the ſpring ſhould be filled with freſh tanners bark, that is, ſuch as the tanners have lately drawn out of their vats, after having tanned leather with it. This ſhould be laid in a round heap for two or three days before it is put into the trench, that the moiſture may run off. It is then to be put into the trench, and gently beat down with a dung-fork. It muſt then be covered with a wooden frame and glaſſes, and in about ten days it will begin to heat, and is then fit to have the pots of plants and ſeeds plunged into it. *Miller*'s Gardener's Dict.

A bed of this kind will continue in a good temper for warmth, ſix months; and when the heat declines, if it be ſtirred up thoroughly from the bottom, with a fork, and a load or two of freſh bark added to it, will recover its heat, and keep it for two or three months longer.

The frames that cover theſe beds ſhould be proportioned to the plants they are to contain; if for the pine-apple, the back ſhould be three foot high, and the lower part fifteen inches. If the bed be intended for taller plants, the frame muſt be higher in proportion; but if meant only for ſowing of ſeeds, it need not be more than fourteen inches high at the back, and about ſeven inches deep at the front.

HOT-*Houſe*, in the ſalt works, the place where they dry the ſalt after it is taken out of the boiling pan. In the Cheſhire ſalt-works, this is ſituated between the furnace, and the funnels of the chimney which convey up the ſmoak. Along the floor of this room there run two funnels, nearly in an horizontal direction. From the furnace, after this courſe along the floor, they riſe perpendicularly. In theſe the flame and ſmoak running along, heat the room by the way. *Ray*'s Engliſh Words, p. 176.

HOTAMBÆIA, in zoology, the name of a ſpecies of ſerpent found in the Eaſt Indies, of a greyiſh yellow colour, and very rank ſmell.

HOTTONIA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a perianthium, compoſed of one leaf, divided at the extremity into ſtrait, erect, and open ſegments. The flower is a ſingle petal, of the length of the cup, formed into a tube, and divided into five oval rimmed ſegments. The ſtamina are five tapering, ſhort, erect filaments, placed oppoſite to the ſegments of the flower. The antheræ are oblong. The germen of the piſtillum is globoſe and pointed. The ſtyle is ſhort and ſlender. The ſtigma is globoſe. The fruit is a rounded capſule, but pointed at one end, containing only one cell, and ſtanding on the cup. The ſeeds are numerous, and of a globoſe figure. The receptacle is round and looſe. *Linnæi* Genera Plantarum. p. 64.

HOTTS, or HUTS, among cock-fighters, are the pounces, or round balls of ſtuffed leather, which are tied on the ſharp end of fighting-cocks ſpurs, to keep them from hurting one another in ſparring or breathing. Ruſt. Dict. in voc. See the article SPARRING.

HOUGHING, or HOEING, in gardening, the cutting up with a ſmall iron inſtrument, called a *Hough*, all the weeds from among the plants of more value. This is done by digging up the ſurface of the earth about the beds, and has this double advantage, that, beſide deſtroying the weeds, it breaks the hardened ſurface of the ground, and makes it much more fitted to imbibe the night dews, which are extremely beneficial to plants. *Miller*'s Gardener's Dict. See the article HOEING.

HOUND (*Cycl.*)—*Grey*-HOUND. See the article GREY-*Hound*.

Entrance of HOUNDS. See the article ENTRANCE.

HOUND-*Fiſh*, in ichthyology, an Engliſh name given to two different fiſh of the ſqualus kind, the one called the ſmooth, and the other the prickly *Hound*. The firſt is the ſpecies deſcribed by Artedi under the name of the ſqualus, with obtuſe or granulous teeth. This is the galeus lævis and muſtelus lævis of authors. The other is diſtinguiſhed by the name of the ſqualus, with a rounded body, and with no anus fin. This is the galeus acanthias and muſtelus ſpinax of authors. We find in Willughby, and almoſt all the other writers on fiſhes, the name of another ſpecies of *Hound*-fiſh beſide theſe, call the ſtarry *Hound*, or galeus aſterias, and muſtelus aſterias, or ſtellaris; but this has been found by Artedi to be no other than a variety of the firſt ſpecies, or ſmooth *Hound*-fiſh. See the articles SQUALUS, GALEUS, and MUSTELUS.

There is alſo another fiſh of the ſqualus kind, ſometimes called by this name, with the addition of the epithet rough. This is the morgay, or rough *Hound*-fiſh. It is the peſce gotto of the Italians, andthe catulus minor of authors; and the muſtelus ſtellaris tertius, or the third ſpecies of ſtarry *Hound*-fiſh of Bellonius. Artedi diſtinguiſhes it from the others, and from all the other ſquali, by the name of the ſqualus, with a variegated back, and with the belly-fins concreted together. See the articles SQUALUS and CATULUS.

HOUND's *Tongue*, *Cynogloſſum*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, is funnel ſhaped, and divided into ſegments at the edges. From the cup of the flower there riſes a piſtil, which is fixed in manner of a nail to the hinder part of the flower, and is ſurrounded by four capſules, which are rough in moſt ſpecies, and contain a flat ſeed, fixed to a pyramidal quadrilateral placenta.

The ſpecies of *Hounds-tongue*, enumerated by Mr. Tournefort, are theſe: 1. The common great *Hounds-tongue*. 2. The great white-flowered *Hounds-tongue*. 3. The largeſt Dutch *Hounds-tongue*. 4. The large-flowered green-leav'd mountain *Hounds-tongue*. 5. The ſmaller-flower'd green-leav'd mountain *Hounds-tongue*. 6. The hoary mountain *Hounds-tongue*, with globular flowers. 7. The *Hounds-tongue*, with umbilicated fruit. 8. The broad-leav'd cretic ſtinking *Hounds-tongue*. 9. The cretic *Hounds-tongue*, with a narrow ſilvery leaf. 10. The Spaniſh gromwel-leav'd *Hounds-tongue*.

The plants called by Caſpar Bauhine, and others, the middle and the leſſer *Hounds-tongue*, are to be excluded from this genus, being properly ſpecies of bugloſs. *Tourn.* Inſt. p. 139.

The characters of *Hounds-tongue*, according to Linnæus, are theſe: The cup is an oblong acute perianthium, divided into five ſegments, and remaining when the flower is fallen. The flower conſiſts of a ſingle petal, of the length of the cup; this has a ſhort cylindric tube, and its end or edge is divided into five ſegments, and obtuſe. The opening of the flower is covered with five ſmall ſcales, which are convex, prominent, and converging one toward the other. The ſtamina are five very ſhort filaments, placed in the mouth of the flower. The antheræ are roundiſh and naked. The piſtillum has four germina. The ſtyle is tapering, of the length of the ſtamina, and remains when the flower is fallen. The ſtigma is rimmed round the edge. The fruit is compoſed of four capſules, of a flatted and roundiſh form, more obtuſe externally than within, and very rough, and not ſplitting open. The ſeeds are ſingle, or one in each capſule, and are ſmooth, of an oval figure, but gibboſe and pointed. The eſſential character of this genus is, that there are four capſules, each containing one ſeed, affixed to the ſtyle. *Linnæi* Gen. Plant. p. 58.

The common *Hounds-tongue* is eaſily known by the whitiſh colour, and ſoftneſs of its leaves, the beautiful purple of its flowers, and its diſagreeable ſmell. It is an excellent remedy in catarrhs, and will alone often cure a gonorrhœa ſimplex. The root is the part in which its virtues principally reſide. Externally it is uſed as a vulnerary, and is ſaid to cure even in ſcrophulous caſes.

HOUNDS, in a ſhip, are holes in the cheeks at the top of the maſts, through which the ties run to hoiſe the yards. A top-maſt hath but one *Hound*.

HOUR (*Cycl.*)—HOUR *Scale*, a divided line on the edge of Collins's quadrant, being only of tangents of forty-five degrees each, ſet together in the middle. Its uſe, together with the lines of latitudes, is to draw the *Hour*-lines of dials that have centers, by means of an equilateral triangle, drawn on the dial planes.

HOUSE (*Cycl.*)—HOUSE *of Lords*. Towards the latter end of the reign of king Charles the firſt, the *Houſe of Lords* aſſerted their juriſdiction of hearing appeals from the chancery, which they do, upon a paper petition, without any writ directed from the king; and for this their foundation is, that they are the great court of the king, and that therefore the chancery is derived out of it, and by conſequence, that a petition will bring the cauſe and the record before them. This was much controverted by the commons, in the reign of Charles the ſecond, but is now pretty well ſubmitted to, becauſe it has been thought too much, that the chancellor ſhould bind the whole property of the kingdom without appeal. New Abr. of Law, vol. 1. p. 584.

HOUSE *of Commons*. See the article COMMONS.

Hot-HOUSE. See the article HOT.

Green-HOUSE. See the article GREEN.

HOUSE-*Leek*. See the article SEDUM.

HOUSE *Painter*. See the article PAINTER.

HOUSED-*In*, in ſhip-building. The ſeamen ſay of a ſhip, which, after the breadth of her bearing is brought in too narrow to her upper works, that ſhe is *Houſed-in*, or pinched in too much.

HOUSSÉE, in the manege. See the article HOUSING, *Cycl.*

HOUSTONIA, in the Linnæan ſyſtem of botany, the name of a plant called *paronychiæ affinis* by Moriſon and ſome others. This makes alſo a diſtinct genus of plants, the characters of which are, that the calyx is an extremely ſmall erect perianthium, divided into four ſegments, and remaining after the flower is fallen. The flower conſiſts of one petal, in the ſhape of a funnel, with a long cylindric tube, and an open mouth, divided into four ſegments, which are roundiſh at their ends. The ſtamina are four extremely ſmall filaments, ſituated in the neck of the flower. The antheræ are ſimple. The germen of the piſtillum is roundiſh, and flatted. The ſtyle is ſingle, and ſhorter than the ſtamina; and the ſtigma bifid and acute. The fruit is a roundiſh double capſule, containing two cells, with two valves. The ſeeds are ſingle; and the valves placed oppoſite to the partition of the cells. *Linnæi* Gen. Plant. p. 26.

HOWLE, in ſhip-building. When the foot-hooks of a ſhip are ſcarfed into the ground timbers, and bolted, and then the plank laid on them up to the orlop, the carpenters ſay, they begin to make the ſhip *Howle*.

HOYACHU, in botany, the name given by the Chineſe to the acacia tree. They make great uſe of this tree in arts and medicine. They have a way of ſtriking a fine yellow upon paper with its flowers. And they give the ſeeds in ſeveral diſeaſes, in ſome of which, as in the dyſentery and hæmorrhages, they are of great ſervice. But, beſide theſe, they make an odd medicine of them, which they take with great readineſs for purpoſes it can never anſwer. They pick out the ſeeds carefully from the pods, as ſoon as ripe; they put theſe into a flat veſſel, and cover them with ox's gall; this is to be ſet for a hundred days to dry, in a place where the ſun does not come. After this, one of theſe ſeeds is to be ſwallowed every day before the firſt meal; and, by continuing this a proper time, they ſay the eye-ſight, if loſt, is reſtored, and their grey hairs become black. Obſerv. ſur les Coutumes de l'Aſie. p. 240.

HUBARI, in natural hiſtory, the name of a bird very often mentioned in the Arabian authors. It is deſcribed to be a bird ſomewhat larger than a gooſe, having very ſhort wings in proportion to its bulk, ſo that it cannot fly well, and therefore affording great ſport to the Syrian hunters. It is ſaid to be common about Damaſcus. By this place of its frequenting, and by the deſcription, it appears to be the buſtard, that bird being very plentifully found about Damaſcus, and being hunted with ſwift dogs on the ſandy plains thereabout.

HUCK, in ichthyography, a name uſed by ſome authors for the German river trout. It much reſembles the common river trout in ſhape, but is covered all over the back with innumerable black ſpots. The ſides are red, and have alſo ſome black ſpots, tho' they are not very numerous, on them. The under jaw has alſo ſome ſpots; but there are none on any other part of the head. The fins are red, and it differs from the common trout in having no teeth on the middle of its palate. It alſo grows to a much larger ſize than our trout, and has none of the red ſpots which are ſo plentiful on that fiſh. *Aldrovand.* de Piſc. L. 5. c. 14.

HUDSON'*s-Bay Porcupine*. See Tab. of Quadrupeds, N°. 15. and the articles HYSTRIX and PORCUPINE.

HUGONIA, in botany, the name of a genus of plants, the characters of which are theſe: The perianthium is ſmall, narrow, acute, and divided into five ſegments. The flower is compoſed of five large, round, and expanded petals. The ſtamina are ten ſubulated filaments, ſhorter than the flower. The antheræ are ſimple. The germen of the piſtil is roundiſh. The ſtyles are five in number, and are very ſlender. The ſtigmata are capitated. The fruit is a globoſe berry, affixed upon the cup. The ſeed is ſingle, ſtriated, and hard. *Linnæi* Gent. Plant. p. 203. Hort. Mal. vol. 2. p. 19.

HUITINGO *Pollachius*, in zoology, the fiſh we commonly call in Engliſh, the whiting pollack. It is a fiſh very like the common whiting in ſhape, but much larger, and is ſomething broader, and leſs thick. The back is either black, or of a very deep and duſky green; and its ſides, below the lines that run longitudinally through them, are variegated with ſhort lines of a duſky yellow. It is covered with extremely ſmall ſcales; and the longitudinal lines, on the ſides, riſe into an arch under the firſt back fin. The mouth is large, and the lower jaw projects a little beyond the upper. The teeth are ſmall, and very numerous in both jaws. The eyes are large, and its back prominent or arched up. It is common in the northern ſeas, and is a good fiſh for the table. Its food is other ſmaller fiſh, and particularly the ammodytæ or ſand eels, numbers of which are uſually found in its ſtomach. It is diſtinguiſhed from the cod by its head, being ſmaller, and its body broader and thinner; by its having no beard; and its loweſt pair of fins is much ſmaller than in that fiſh. *Willughby*, Hiſt. Piſc. p. 167.

HULLOCK *of a Sail*, at ſea, is when, in a great ſtorm, ſome ſmall part of a ſail is cut and left looſe: It is chiefly uſed in the mizzen-ſail, to keep the ſhip's head to the ſea; then all the reſt of the ſail is made up, except a little at the mizzen-yard-arm: Alſo when a ſhip will not *weather coyle*, to lay her head the other way, they looſe a *Hullock* of her fore-ſails; and then changing the helm to the weather ſide, ſhe is made to fall off, and to lay her head where her ſtern lay.

HUMATION, *Humatio*. The moſt antient way of diſpoſing of the dead was by *Humation*, or interrment. *Pitiſc.* See the articles BURYING and BURIAL.

HUMBLE-*Bee*, in the hiſtory of inſects. See the article BOMBYLIUS.

Baſtard HUMBLE-*Bee*. See the article FAUX *Bourdon*.

HUMBLE-*Bee Flies*, in natural hiſtory, the name of a claſs of flies of different ſizes, but all agreeing in the great reſemblance they bear to the *Humble* bees, of the ſmaller or middle-ſized ſpecies. Theſe might, at firſt ſight, very naturally paſs for real *Humble* bees; but a cloſer examination will ſhew them not to be ſuch, as they have not the trunk of the *Humble* bee, and have only two wings. The ſpecies of the *Humble* bee fly are many of them of abſolutely different genera one from another, ſome of them having trunks, and others having a diſtinguiſhable mouth. *Reaumur*, Hiſt. Inſ. vol. 4. p. 497.

If the figure of theſe flies, in their winged ſtate, attracts our curioſity and attention, their prior ſtate, that of the fly worm of moſt of them, ought ſurely much more to do ſo. The place nature has aſſigned the worms of theſe flies for their habitation, is indeed a moſt ſtrange one; there is no other place for them to live in under this form, to begin their deſtin'd growth, and be fitted for their transformations, but in the inteſtines of horſes, or under the thick and firm ſkin of oxen. In the latter caſe, the worm hatched from the egg of its parent fly, depoſited there, makes a tumour in the place, which alone furniſhes it with food and habitation, and in the middle of which it has a place to breathe. Ibid. p. 498. See the article HORSE-*Worm*.

It is not an invariable law of nature, however, that all the worms of the *Humble*-bee flies are to feed on animal ſubſtances, for we find ſome delighted with vegetable food, and particularly one which loves none but the bulbous roots of flowers. Ibid.

HUMERUS (*Cycl.*)—HUMERI *Octavus*, in anatomy, a name given by Fallopius, and others, to a muſcle called by Cowper, and ſince by Albinus and others, *teres minor*, and by the French anatomiſts, *la petit ronde*. Se the article TERES.

HUMERI *Os*. See the article Os *Humeri*.

HUMERUM *attollens*, in anatomy, a name given by Spigelius, and others, to a muſcle now generally known by the name of the *deltoides*.

HUMERI *primus*, in anatomy, a name given by ſome anatomical writers, to a muſcle generally known under the name of the *pectoralis*. See the article PECTORALIS.

Luxated HUMERUS. The *Humerus*, from the length and laxity of its ligaments, the largeneſs of its motion, and the ſhallowneſs of its cavity in the ſcapula, into which it is articulated, is rendered, of all the bones, the moſt ſubject and eaſy to be luxated. The head of this bone may often be diſlocated, under the arm-pit; ſometimes forward, ſometimes backward, and even below the ſcapula; but ſeldom perpendicularly downwards, and never directly upwards, unleſs the acromion and coracoide proceſſes of the ſcapula ſhould chance to be fractured at the ſame time; beſide, as long as the ſtrong deltoide and bicipital muſcle of the *Humerus* remain entire, they greatly reſiſt and keep down the *Humerus* from being luxated upwards. As ſoon as a luxation is diſcovered in the *Humerus*, the ſafeſt way to attempt the reduction of it, is to place the patient on the floor, or on a low ſtool; two ſtrong aſſiſtants are then to be placed on each ſide of him, one to keep firmly hold of his body, that it may not give way to the extenſion, while the other lays hold of the luxated arm with both his hands, a little above the cubitus, gradually and ſtrongly extending it. But before that extenſion be made, the ſurgeon himſelf ſhould have a large and ſtrong napkin, of a ſufficient length, tied at the ends, and hung about his neck, ſo that the knot may hang behind, but the other part of the napkin over his breaſt. The patient's arm muſt then be put through this napkin, up to the ſhoulder, and the ſurgeon muſt lay hold of the head of the *Humerus* with both his hands. This done, the aſſiſtant, who has hold of the arm, is to extend it ſufficiently, and the ſurgeon is to elevate the head of the *Humerus*, by means of the napkin through which the arm is put, directing it with his hands, till it ſlips into its former cavity in the ſcapula.

This ſeems the moſt ſafe, ready, and commodious of all methods, for reducing luxations of the *Humerus*; but it is to be acknowledged, that the extenſion cannot, by this means, be made ſufficiently ſtrong, in ſome caſes, particularly when the patient is very robuſt, or when the caſe has been delayed a conſiderable time without aſſiſtance. When one or two aſſiſtants therefore are not ſufficient to make a proper extenſion, it is eaſy to employ more, by means of napkins tied about the limb, and a proper number of aſſiſtants to hold the patient's body ſteady againſt that force. And when all this is not ſufficient, the ſurgeon is forced to have recourſe to machines with ropes and pullies; which, though the patient is uſually terrified a little at them, yet make an eaſier, and a more equal and regular extenſion, than can be done by the hands of ever ſo many aſſiſtants. *Heiſter*, p. 160.

HUMILIS *Muſculus*, (*Cycl.*) in anatomy, a name mentioned by Caſſerius, as given by ſome people of his time to one of the muſcles of the eye, the rectus inferior of Fabricius, and deprimens of Riolan: It is the depreſſor oculi of Albinus, being one of the quatuor recti muſculi oculorum of that author.

HUMILIATI, a congregation of religious in the church of Rome, which was aboliſhed by pope Pius the fifth, for their luxury and cruelty. *Hofm.* Lex. in voc.

HUMISUGA, the *Ground-Sucker*, in natural hiſtory, the name of a fly, ſo called, becauſe it is ſuppoſed to live by ſucking the juices of the earth, without taking in any ſolid food. It has a browniſh or dun body; a white ſpot at the inſertion of the wings, and another at the head; the legs are black; the back is grey, with four ſullied white lines running longitudinally. The wings are ſilvery, and, if put into water, they ſhine with a bright light like that of the glow-worm. This creature is common with us about path-ways, and on mole-hills, and other places where the ground is newly turned up. We call it the *path-fly*.

HUMMING *Bird*, the name of a very beautiful genus of American birds, the ſmalleſt of all birds; which make a *humming* like a bee as they fly. See Tab. of Birds, N°. 34. and the article GUAINUMBI.

HUMOR (*Cycl.*) — *Chryſtalline* HUMOR. See the article CHRYSTALLINE.

HUMP-*back*. See the article GIBBOUS.

HUNDRED (*Cycl.*)—*Docimaſtic* HUNDRED, or *Centner*, in metallurgy and aſſaying, is a weight diviſible, firſt into an *hundred*, and thence into a great number of other ſmaller parts; but though the word is the ſame, both with the aſſayers and metallurgiſts, yet is to be underſtood as expreſſing a very different quantity in their different acceptation of it. The weights of the metallurgiſts are eaſily underſtood, as being of the common proportion, but thoſe of the aſſayers are a thouſand times ſmaller than theſe, as the portions of metals or ores examined by the aſſayers are uſually very ſmall.

The metallurgiſts, who extract metals out of their ores, uſe a weight divided into an *hundred* equal parts, each part a pound; the whole they call a *centner* or *hundred* weight; the pound is divided into thirty-two parts, or half ounces; and the half ounce into two quarters of ounces, and theſe each into two drams.

Theſe diviſions and denominations of the metallurgiſts are eaſily underſtood; but the ſame words, though they are are equally uſed by aſſayers, with them expreſs very different quantities; for as the *centner* of the metallurgiſts contains an *hundred* pounds, the *centner* of the aſſayers is really no more than one dram, to which the other parts are proportioned.

As the aſſayers weights are divided into ſuch an extreme degree of minuteneſs, and are ſo very different from all the common weights, the aſſayers uſually make them themſelves in the following manner, out of ſmall ſilver, or fine ſolder plates, of ſuch a ſize, that the mark of their weight, according to the diviſion of the dram, which is the *docimaſtic*, or aſſaying *centner*, may be put upon them. They firſt take for a baſis one weight, being about two-thirds of a common dram: This they mark (64 lb.) Then having at hand ſome granulated lead, waſhed clean, well dried, and ſifted very fine, they put as much of it in one of the ſmall diſhes of a fine ballance, as will equipoiſe the (64 lb.) as it is called, juſt mentioned: Then dividing this granulated lead into very nice halves, in the two ſcales, after taking out the firſt ſilver weight, they obtain a perfect equilibrium between the two ſcales; they then pour the granulated lead out of one diſh of the ſcales, and inſtead of it put in another ſilver weight, which they make exactly equiponderant with the lead in the other ſcale, and mark it (32 lb.). If this ſecond weight, when firſt put into the ſcale, exceed by much the weight of the lead, they take a little from it by a very fine file, but when it comes very near, they uſe only a whetſtone to wear off an extremely ſmall portion at a time. When it is brought to be perfectly even and equal to the lead, they change the ſcales to ſee that no error has been committed, and then go on in the ſame manner till they have made all the diviſions, and all the ſmall weights. Then to have an entire *centner*, or *hundred* weight, they add to the (64 lb.) as they call it a 32 lb. and a 4 lb. and weighing againſt them one ſmall weight, they make it equal to them, and mark it (100 lb.). This is the docimaſtical or aſſaying *centner*, and is really one dram. *Cramer*, Art. Aſſ. p. 108.

HUNEN, in the materia medica, a name given by ſome writers to the jujube. *Ger.* Emac. Ind. 2.

HUNGARICA *Bolus*, in the materia medica, a medicinal earth, commonly known by the name of *bolus toccavienſis*. *Hill*'s Hiſt. of Foſſ. p. 7. See the article TOCCAVIENSIS.

HUNGER (*Cycl.*)—See the articles BULIMY and OREXIS.

HUNGRY *Evil*, a term uſed among the farriers for the ſame diſtemperature in horſes, which in men we call a canine appetite. It manifeſts itſelf ſufficiently in an inordinate deſire to eat, and is ſometimes the effect of long ſtarving, ſometimes of cold, or ſome other internal or external cauſe. In the latter caſe the horſe not only eats a large quantity, but he devours it in a very remarkable manner, chopping it up as if he would eat the very manger. The method of cure is to give him large toaſts of bread ſteeped in ſack, or ſome other ſweet wine; or give him a quantity of wheat flower in wine, or in milk, a quart or more at a time. Theſe are very good remedies in caſe of extremity, but otherwiſe he may be cured by feeding him moderately with bean bread ſeveral times a day, allowing no other food.

HUNTER, a name given to a horſe qualified to carry a perſon in the chaſe. The ſhape of the horſe deſigned for this ſervice, ſhould be ſtrong and well knit together, as the jockies expreſs it. Irregular or unequal ſhapes in theſe creatures, are always a token of weakneſs. The inequalities in ſhape which ſhew a horſe improper for the chace, are the having a large head and a ſmall neck, a large leg and a ſmall foot, and the like. The head of the *Hunter* ſhould indeed always be large, but the neck ſhould alſo be thick and ſtrong to ſupport it. The head ſhould be lean, the noſtrils wide, and the wind pipe ſtrait.

The *Hunter* in order to his behaving well in the field, ought to have great care and indulgence in the ſtable, he ought to have as much reſt and quiet as may be, to be kept well ſupplied with good meat, clean litter, and freſh water by him; he ſhould be often dreſſed, and ſuffered to ſleep as much as he pleaſes. He ſhould be ſo fed that his dung may be rather ſoft than hard, and it muſt be of a bright and clean colour. All this may be eaſily managed by the continual obſervance and change of his food, as occaſion requires. After his uſual ſcowerings he ſhould have exerciſes and maſhes of ſweet malt, or bread and beans, or wheat and beans mixed together, are to be his beſt food, and beans and oats his worſt.

Some very great ſportſmen are for keeping their horſes out at graſs all the buck-hunting ſeaſon, never taking them up into the ſtable at all, but allowing them in the field as much oats with their graſs as they will eat. The horſe may be thus rid three days in the week for the whole ſeaſon, and never damaged by it, nor ever ſhewing any marks of harm afterwards.

The whole ſhape of a horſe intended for a *Hunter*, ſhould be this: The ears ſhould be ſmall, open, and pricked; or tho' they be ſomewhat long, yet if they ſtand up erect, and bold like thoſe of a fox, it is a ſign of toughneſs or hardineſs. The forehead ſhould be long and broad, not flat; or, as it is uſually termed, mare-faced, but riſing in the middle like that of an hare; the feather ſhould be placed above the eye, the contrary being thought by ſome to threaten blindneſs. The eyes ſhould be full, large, and bright; the noſtrils not only large, but looking red and freſh within, for an open and freſh noſtril is always eſteemed a ſign of a good wind. The mouth ſhould be large, deep in the wicks and hairy. The wind-pipe ſhould be large, and appear ſtrait when he bridles his head; for if, on the contrary, it bends like a bow on his bridling, it is not formed for a free paſſage of the breath. This defect in a horſe is expreſſed among the dealers by the phraſe cock-throppled. The head ſhould be ſo ſet on to the neck, that a ſpace may be felt between the neck and the chine; when there is no ſuch ſpace, the horſe is ſaid to be bull-necked, and this is not only a blemiſh in the beauty of the horſe, but it alſo occaſions his wind not to be ſo good. The creſt ſhould be ſtrong, firm, and well riſen; the neck ſhould be ſtrait and firm, not looſe and pliant; the breaſt ſhould be ſtrong and broad, the ribs round like a barrel, the fillets large, the buttocks rather oval than broad, the legs clean, flat, and ſtrait; and, finally, the mane and tail ought to be long and thin, not ſhort and buſhy, the laſt being counted a mark of dullneſs.

When a *Hunter* is thus choſen, and has been taught ſuch obedience, that he will readily anſwer to the rider's ſignals both of the bridle and hand, the voice, the calf of the leg, and the ſpurs; that he knows how to make his way forward, and has gained a true temper of mouth, and a right placing of his head, and has learned to ſtop and to turn readily, if his age be ſufficiently advanced he is ready for the field. It is a rule with all ſtaunch ſportſmen, that no horſe ſhould be uſed in hunting till he is full five years old; ſome will hunt them at four, but the horſe at this time is not come up to his true ſtrength and courage, and will not only fail at very tough trials, but will be ſubject to ſtrains and accidents of that kind, much more than if he were to be kept another year firſt, when his ſtrength would be more confirmed.

When the *Hunter* is five years old, he may be put to graſs from the middle of May till Bartholomew-tide; for the weather between theſe is ſo hot, that it will be very proper to ſpare him from work. At Bartholomew-tide the ſtrength of the graſs beginning to be nipp'd by froſts and cold dews, ſo that it is apt to engender crudities in the horſe, he ſhould be taken up, while his coat is yet ſmooth and ſleek, and put into the ſtable. When he is firſt brought home, he ſhould be put in ſome ſecure and ſpacious place, where he may evacuate his body by degrees, and be brought not all at once to the warm keeping; the next night he may be ſtabled up. It is a general rule with many not to cloath and ſtable up their horſes till two or three days after they are taken from graſs, and others who put them in the ſtable after the firſt night, yet will not dreſs and cloath them till three or four days afterward; but all this, except the keeping the horſe one day in a large and cool place, is needleſs caution.

There is a general practice among the grooms, in many places, of giving their *Hunters* wheat ſtraw as ſoon as they take them up from graſs. They ſay they do this to take up his belly; but there ſeems much reaſon to diſapprove of this. The change is very violent, and the nature of the ſtraw ſo heating and drying, that there ſeems great reaſon to fear that the aſtringent nature of it would be prejudicial, more than is at firſt perceived. It is always found that the dung is hard after this food, and is voided with pain and difficulty, which is in general very wrong for this ſort of horſe. It is better therefore to avoid this ſtraw-feeding, and to depend upon moderate airing, warm cloathing, and good old hay, and old corn, than to have recourſe to any thing of this kind.

When the horſe has evacuated all his graſs, and has been properly ſhod, and the ſhoes have had time to ſettle to his feet, he may be ridden abroad, and treated in this manner: The groom ought to viſit him early in the morning, at five o'clock in the long days, and at ſix in the ſhort ones; he muſt then clean out the ſtable, and feel the horſe's neck, flank, and belly, to find the ſtate of his health. If the flank feels ſoft and flabby, there is neceſſity of good diet to harden it, otherwiſe any great exerciſe will occaſion ſwellings and goutineſs in the heels. After this examination, a handful or

two of good old oats well ſifted ſhould be given him; this will make him have more inclination to water, and will alſo make the water ſit better on his ſtomach, than if he drank faſting. After this he is to be tied up and dreſſed. If in the doing of this he opens his mouth, as if he would bite, or attempts to kick at the perſon, it is a proof that the teeth of the currycomb are too ſharp, and muſt be filed blunter. If after this he continues the ſame tricks, it is through wantonneſs, and he ſhould be corrected for it with the whip. The intent of currying being only to raiſe the duſt, this is to be bruſhed off afterwards with a horſe-tail nailed to a handle, or any other light bruſh. Then he is to be rubbed down with the bruſh, and duſted a ſecond time; he ſhould then be rubbed over with a wet hand, and all the looſe hairs, and whatever foulneſs there is, ſhould be picked off. When this is done, and he is wiped dry as at firſt, a large ſaddle-cloth is to be put on, reaching down to the ſpurring place; then the ſaddle is to be put on, and a cloth thrown over it that he may not take cold: Then rub down his legs, and pick his feet with an iron picker, and let the mane and tail be combed with a wet mane-comb. Laſtly, it is a cuſtom to ſpurt ſome beer in his mouth juſt before the leading him out of the ſtable. He ſhould then be mounted, and walked a mile at leaſt to ſome running water, and there watered; but he muſt only be ſuffered to take about half his water at one drinking.

It is the cuſtom of many to gallop the horſe at a violent rate as ſoon as he comes out of the water, but this is extremely wrong for many reaſons. It endangers the breaking a horſe's wind more than any other practice, and often has been the occaſion of burſting very good horſes. It uſes them alſo to the diſagreeable trick we find in many horſes, of running away as ſoon as ever they come out of the water; and with ſome it makes them averſe to drinking, ſo that they will rather endure thirſt, and hurt themſelves greatly by it, than bring on the violent exerciſe which they remember always follows it. The better way is to walk him a little after he is out of the water, then put him to a gentle gallop for a little while, and after this to bring him to the water again. This ſhould be done three or four times, till he will not drink any more. If there is a hilly place near the watering place, it is always well to ride up to it; if otherwiſe, any place is to be choſen where there is free air and ſun. That the creature may enjoy the benefit of this, he is not to be galloped, but walked about in this place an hour, and then taken home to the ſtable. The pleaſure the horſe himſelf takes in theſe airings when well managed, is very evident, for he will gape, yawn, and ſhrug up his body; and in theſe, whenever he would ſtand ſtill to ſtale, dung, or liſten to any noiſe, he is not to be hindered from it, but encouraged in every thing of this kind.

The advantages of theſe airings are very evident, they purify the blood, teach the creature how to make his breathing agree with the reſt of the motions of his body, and give him an appetite to his food, which *Hunters* and racers, that are kept ſtalled up, are otherwiſe very apt to loſe. On returning from airing the litter in the ſtable ſhould be freſh, and by ſtirring this, and whiſtling, he will be brought to ſtale. Then he is to be led to his ſtall, and tied up, and again carefully rubbed down; then he ſhould be covered with a linnen cloth next his body, and a canvas one over that, made to fit him, and reaching down to his legs. This, as the duke of Newcaſtle obſerves, is a cuſtom which we learnt of the Turks, who are of all people the moſt nice and careful of their horſes. Over this covering there ſhould be put a body-cloth of ſix or eight ſtraps; this keeps his belly in ſhape, and does not hurt him. This cloathing will be ſufficient while the weather is not very ſharp, but in ſevere ſeaſons, when the hair begins to riſe and ſtart in the uncovered parts, a woollen cloth is to be added, and this will always prove fully ſufficient.

Different horſes, and different ſeaſons, make variety of the degree of cloathing neceſſary; but there always is an obvious rule to point out the neceſſary changes, the roughneſs of the coat being a mark of the want of cloathing, and the ſmoothneſs of it a proof that the cloathing is ſufficient. Therefore if at any time the hair is found to ſtart, it is a notice that ſome farther cloathing is to be added.

If the horſe ſweat much in the night, it is a ſign that he is over fed, and wants exerciſe, this therefore is eaſily remedied. An hour or more after the horſe is come in from his airing, the groom ſhould give him a wiſp of clean hay, making him eat it out of his hand; after this let the manger be well cleaned out, and a quartern of oats clean ſifted be given him. If he eats up this with an appetite, he ſhould have more given him; but if he is ſlow and indifferent about it, he muſt have no more. The buſineſs is to give him enough, but not to cloy him with food.

If the horſe gets fleſh too faſt on this home feeding, he is not to be ſtinted to prevent it, but only his exerciſe encreaſed; this will take down his fleſh, and at the ſame time give him ſtrength and wind. After the feeding in the morning is over, the ſtable is to be ſhut up, only leaving him a little hay on his litter. He need be no more looked at till one o'clock, and then only rubbed down, and left again to the time of his evening watering, which is four o'clock in the ſummer, and three in the winter. When he has been watered, he muſt be kept out an hour or two, or more if neceſſary, and then taken home and rubbed as after the morning watering. Then he is to have a feed of corn at ſix o'clock, and another at nine at night; and being then cleaned, and his litter put in order, and hay enough left for the night, he is to be left till morning. This is the direction for one day, and in this manner he is to be treated every day for a fortnight, at the end of which time his fleſh will be ſo hardened, his wind ſo improved, and his mouth ſo quickened, and his gallop brought to ſo good a ſtroke, that he will be fit to be put to moderate hunting. During the time that he is uſed in hunting, he muſt be ordered on his days of reſt exactly as is directed for the fortnight when he is in preparation; but as his exerciſe is now greatly increaſed, he muſt be allowed a more ſtrengthning food, mixing ſome old ſplit beans at every feeding with his oats.

And if this is not found to be ſufficient, the following bread muſt be given: Let two pecks of old beans, and one peck of wheat be ground together, and made into an indifferently fine meal; then knead it into dough with ſome warm water, and a good quantity of yeaſt; let it lie a time that it may riſe and ſwell, which will make the bread the lighter; then make it into loaves of a peck each, and let it be baked in a ſlow oven that it may be thoroughly done without being burnt; when it is taken out of the oven, it muſt be ſet bottom upwards to cool; when it is one day old the cruſt is to be chipp'd off, and the crumb given him as food. When this is ready, he ſhould have ſome of it at leaſt once in the day; but it is not to be made the only food, but ſome feeds are to be of oats alone, ſome of oats and this bread, and ſome of oats and beans mixed together. The making a variety in this manner, being the beſt of all methods of keeping up the appetite, which is often apt to fail.

The day before the horſe is to hunt, he muſt have no beans, becauſe they are hard of digeſtion, but only ſome oats with this bread; or if he will be brought to eat the bread alone, that will be beſt of all. His evening feed ſhould, on this day, be ſomewhat earlier than uſual; and after this he is only to have a wiſp of hay out of the groom's hand till he return from hunting. See the article HUNTING, *Cycl.*

HUNTING *Saddle.* See the article SADDLE.

HURRERS, in our old writers. The cappers and hat-makers of London, formerly one company of the haberdaſhers were called by this name. *Stow*'s Survey of London, p. 312.

HURRICANES (*Cycl.*)—Great miſchiefs are done to our veſſels about the Caribbee Iſlands and elſewhere by means of the *Hurricanes*, and at the time of year when they are moſt frequent, which is in the midſt of ſummer. It has been uſual with our captains to ſend to the negroes to know whether there would be any within a week or ten days, in which they were very rarely diſappointed, the natives having, by long obſervation, acquired a way of prognoſticating them, which ſeldoms fails. The method of thus foretelling them, as communicated by one of the natives to captain Langford, depended on theſe obſervations: All *Hurricanes* come on either on the day of full moon, or at the change, or on ſome of the quarters. If the *Hurricane* is to come on at the full moon, the ſigns are to be obſerved at the change, and they are theſe: The ſky will appear very turbulent, and the ſun will look more red than at other times; a great calm alſo, with no clouds or fogs about the hills, is another ſign; for the highlands ſeldom are ſeen to be ſo, unleſs by this accident of an enſuing *Hurricane* at ſuch a time. Alſo there will be heard a great murmuring noiſe in wells, or other hollows of the earth; and at night the ſtars will look very bright, but they will have barrs about them. The north-weſt ſky will look very black and foul; the ſea ſwelling ſtronger than at other times; and ſometimes that day the winds will blow very ſtrong weſterly for about two hours. At the full moon there happen the ſame ſigns, if the *Hurricane* is to be about the quarters, and there is ſeen a hazy circle about the moon, and ſometimes the ſame day about the ſun. The like ſigns muſt be taken notice of on the quarter days of the moon, in the months of July, Auguſt, and September.

All the *Hurricanes* about Jamaica begin with a north wind, and on the wind's coming about eaſt they ceaſe. It is obſervable, that the air is much colder during theſe *Hurricanes* than at other times; but Ligon, and ſome others, fond of relating ſtrange ſtories, make it much more ſo than it really is, the ſailors who have been in theſe ſtorms, declaring that they have felt no ſuch chilline's as thoſe authors relate. The wind during the *Hurricane* is ſo ſtrong, and varies ſo faſt between the north and north-eaſt point, that it is impoſſible for any ſhip to anſwer the veerings of it; it is hence that all the art of the ſailors often cannot prevent the backs of the veſſels from being broken, and the maſts carried by the board. The main-maſt of a ſhip of four hundred tun, will be in an inſtant wreathed like a wyth, and borne by the board before they can hand a ſail. Phil. Tranſ. N° 36.

Swiſſerland is ſubject to very violent *Hurricanes*, which do great miſchief, and that in a very ſingular manner. Thunder and lightening are frequent with them in winter as well as in ſummer; and the more violent ſtorms of theſe, are ſometimes attended

attended with whirlwinds and *Hurricanes*, which will raiſe up the water of ſome lakes in form of a thick pillar up to the cloud, and carrying on before the wind this vaſt body of water, will ſometimes fall in other places on dry land, and drown the houſes and gardens where it chances to fall.

HURST, or HYRST, in our old writers, denotes a wood or grove of trees. Hence ſuch places as have this word for part of their names, have been ſituate near a wood. In Kent, Suſſex, and Hampſhire, there are many ſuch, becauſe formerly the great wood called *Andreſwald*, extended itſelf thro' theſe counties.

HUSBAND (*Cycl.*)—HUSBAND-*land*, a term uſed in Scotland for a portion of land containing ſix acres of ſock and ſcythe land; that is, of land that may be tilled with a plough, and mowen with a ſcythe. Tr. Pract. Geom. p. 86.

HUSBANDRY. The new method of *Huſbandry*, called by Tull the horſehoeing *Huſbandry*, has many evident advantages over the other, or old way; but the difference between them in regard to the former, is beſt explained by a fair compariſon. In order to do this juſtly, there are four things to be carefully conſidered: 1. The expence of a crop. 2. The goodneſs of the crop. 3. The certainty of it. And, 4. The condition in which the land is left after the crop.

The profit or loſs ariſing from land, is not to be computed only from the value of the crop it produces, but from its value after all expences of ſeed, tillage, &c. are deducted. Thus when an acre of land produces a crop worth four pounds, and the expences of it amount to five pounds, the loſs of the farmer is one pound upon it; whereas, when as much land produces a crop only of the value of thirty ſhillings, and the expences are only ten ſhillings, the owner receives one pound advantage. The common expence of an acre of ſowed wheat, in the uſual way, is four pounds ten ſhillings, and the common expence of an acre of wheat, in the horſe-hoeing *Huſbandry*, is only ten ſhillings, including all the expences that can attend it. Thus this method of *Huſbandry* is but a ninth part of the charge of the common way; and as no ſheep are required, as there are in the other way, the leſs ſtock will do to begin with.

The goodneſs of a crop conſiſts in the quality of it as well as in the quantity, and wheat being the moſt uſeful of all grain, a crop of this is more valuable than a crop of any other corn. Add to this, that a crop of hoed wheat has always larger ears, and a fuller body, than a crop when ſown in the common way. More wheat may alſo be obtained this way than any other, becauſe the ſame land will thus produce crops every year; and even the land which has been exhauſted by the common *Huſbandry*, will produce wheat in plenty this way, without fallowing or dunging, both which would otherwiſe be neceſſary. So that, in many places, this *Huſbandry* can raiſe ten acres of wheat for one that the old way could produce, becauſe where land is poor, they ſow but a tenth part of it in wheat. *Tull*'s Horſe-hoeing Huſbandry, p. 124.

The largeſt produce of an acre of wheat land, ſo far as has yet been experienced, ſeems to be ten quarters, or eighty buſhels to an acre. This is leſs indeed than the produce of an acre in the common way, according to *Houghton*'s computation; but to compare the different profits to the farmer, we proceed thus: The rent and expences of a drilled acre being one pound, and that of a ſowed acre in the common way being five pounds, one quarter of corn produced by the drilled, bears an equal proportion to one pound in profit, as five quarters produced in the common way do to five pounds. As ſuppoſe it to be of wheat at two ſhillings and ſix-pence a buſhel, there is neither gain nor loſs in the one nor the other acre, tho' the drilled produce only one quarter, and the other five quarters.

But if the drilled acre yield two quarters, and the ſown acre yield only four quarters at the ſame price, the drilled acre brings the farmer one pound profit, while the other has one pound loſs. Likewiſe ſuppoſe the drilling farmer to have his five pounds laid out in five acres of wheat, and the other to have his five pounds laid out in one dunged acre, then let the price be what it will for the wheat, if the five acres have an equal crop to the one acre, the gain and loſs muſt be equal. But if the price of wheat be at two ſhillings and ſix-pence, the farmer in the common way, if he have five quarters on his acre, muſt ſell it all to pay his rent; whereas if he who drills the land have five quarters on each acre, the produce of one acre will pay for all five. Or ſuppoſe a drilled acre to produce no more than one third of the ſown acre, which is rating it very low indeed, the expence of the ſown acre being five times as much as that of the drilled one, it is much more profitable to the owner to have the drilled acre; becauſe a third part of five pound is one pound thirteen and four-pence, and a fifth of the rent and expence, which is all his charge, being only one pound, ſuch a drilled acre brings the owner thirteen and four-pence profit more than the ſown acre, tho' that brings three times as great a crop. Id. ibid. p. 130.

The certainty of a crop is greater this way than in the old way of ſowing; for moſt of the accidents attending wheat crops, are owing to their being late ſown, which is neceſſary to the farmer in the old way; but in the horſe-hoeing method the farmer may plough two furrows whereon the next crop is to ſtand, immediately after the firſt crop is off. In this manner of *Huſbandry* the land may be ploughed dry and drilled wet, without any inconvenience; and the ſeed is never planted under the furrow, but placed juſt at the depth which is moſt proper, that is at about two inches, in which caſe it is eaſy to preſerve it, and there is no danger of burying it. Thus the ſeed has all the advantage of early ſowing, and none of the diſadvantages that may attend it in the other way, and the crop is much more certain than by any other means that can be uſed.

The condition in which the land is left after the crop, is no leſs in favour of the horſe-hoeing *Huſbandry*, than all the other articles. The number of plants is the great principle of the exhauſting of land. In the common *Huſbandry*, the number is vaſtly greater than in the drilling way, and three plants in four often come to nothing, after having exhauſted the ground as much as profitable plants; and the weeds which live to the time of harveſt in the common way, exhauſt the land no leſs than ſo many plants of corn, often much more. The horſe-hoeing method deſtroys all the weeds in the far greater part of the land, and leaves that part unexhauſted and perfectly freſh for another crop. The wheat plants being alſo but a third part of the number at the utmoſt of thoſe in the ſowing way, the land is ſo much the leſs exhauſted by them; and it is very evident from the whole, that it muſt be, as experience proves that it is, left in a much better condition after this than after the common *Huſbandry*.

The farmers who are againſt this method, object that it makes the plants too ſtrong, and that they are more liable to the blacks, or blights of inſects for that reaſon; but as this allows that the hoeing can, without the uſe of dung, give too much nouriſhment, it is very plain that it can give enough; and it is the farmer's fault if he do not proportion his pains ſo as to have the advantage of the nouriſhment without the diſadvantages. It is alſo objected, that as hoeing can make poor land rich enough to bear good crops of wheat, it may make good land too rich for it. But if this ſhould happen, the ſowing of wheat on it may be let alone a while, and in the place of it the farmer may have a crop of turneps, carrots, cabbages, and the like, which are excellent food for cattle, and cannot be over-nouriſhed: Or if this is not choſen, the land, when thus made too rich, may ſoon be ſufficiently impoveriſhed by ſowing corn upon it in the common old way. See HOEING.

Virgilian HUSBANDRY, a term uſed by authors to expreſs that ſort of *Huſbandry*, the precepts of which are ſo beautifully delivered in Virgil's georgics. The *Huſbandry* in England is *virgilian* in general, as is ſeen by the method of paring and burning the ſurface, of raftering or croſs-plowing, and of the care in deſtroying weeds upon the ſame principle, and by much the ſame means. In thoſe parts of England along the ſouthern coaſt, where the Romans principally inhabited, not only the practice, but the expreſſions are in many reſpects the ſame with thoſe of the antient Romans, many of the terms uſed by the plowmen being of Latin origin, and the ſame with thoſe uſed by thoſe people on the like occaſions. And on a ſtrict obſervation, more of Virgil's *Huſbandry* is at this time practiſed in England than in Italy itſelf. This change in the Italian *Huſbandry*, is, however, much more to the credit of that people, than the retaining the *virgilian* ſcheme is to ours.

Tull, who has eſtabliſhed a new method of *Huſbandry*, obſerves, that it is upon the whole ſo contradictory to this old plan, that it may be called the *antivirgilian Huſbandry*; and adds, that no practice can be worſe than the *virgilian*.

Antivirgilian HUSBANDRY, a term uſed by Mr. Tull to expreſs a new ſyſtem of *Huſbandry* which he has introduced, founded upon principles ſo different from the common *Huſbandry* of England, which in general is the ſame with that delivered in Virgil, that it deſerves this contrary title. See the articles HOEING and HUSBANDRY, ſupra.

HUSBRECE, in our old writers, an offence now called *Burglary*. See BURGLARY, *Cycl.*

The word is Saxon from *hus*, a houſe; and *brice*, a breaking. *Blount*, in voc.

HUSCANS, in our old writers, a ſort of boot or buſkin made of coarſe cloth, and worn over the ſtockings: We find them mentioned in the Stat. 4 Edw. 4. c. 7. *Blount*.

HUSGABLE, *Huſgablum*, in our old writers, denotes houſe-rents, or ſome tax or tribute laid upon houſes. *Blount*.

HUSKS (*Cycl.*)—The *Huſks* or cup of the flowers of plants are not ſo much regarded with a view to their medicinal virtues as they deſerve. Petiver, in the Philoſophical Tranſactions, ſpeaking of the virtues of the verticellate claſs of plants, among which are included the ſage, roſemary, and the like, obſerves that it is an erroneous, though general opinion, that the flowers of theſe plants contain their principal virtues, for that the *Huſks* are the part in which this is lodged. For inſtance in the roſemary, the fine ſcent of the Hungary-water is not in the flowers, but *Huſks*; and the flowers alone, when clean pick'd from them, yield very little odour. The cups in this and other plants of the ſame claſs, is the only part in which their viſcous and ſulphureous qualities are lodged, and that ſomething of this kind is depoſited particularly there, may be perceived by the touch and ſmell; for they appear moiſt, and feel

feel clammy; and this clammy matter, when received upon the fingers, is of a very ſtrong and agreeable ſmell, much more ſo than the reſt of the plant.

HUSO *Germanorum*, in zoology, the name of a large fiſh of the ſturgeon kind, caught in the Danube, Boriſthenes, and other large rivers, and paſſing at times into the ſea. It has a very long ſnout, and under it either four or eight beards. It has one back-fin, which is placed near the tail, and two pair under the belly; its general ſhape ſomewhat reſembles that of the pike, and its back is black, and its belly yellow; it has no ſcales, and has cartilages in the ſtead of bones. It is caught in October and November, and in ſome places till January; and great numbers of them are uſually brought to market together in thoſe months in the countries where they are caught. They always ſwim in ſhoals. It grows to twenty four feet long, and weighs one, two, three, or even four hundred pounds. The drug called iſinglaſs is prepared from this fiſh. *Ray*'s Ichthyograp. p. 243. See Tab. of Fiſhes, N° 42. and the article ISINGLASS.

HUTZOCHITL, in botany, a name by which ſome authors have called the tree which affords the black balſam of Peru. *De Laet.* Ind. Occ. p. 224.

HYACINTH, ὑάκινθος, (*Cycl.*) in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the liliaceous kind, but conſiſts only of one petal divided into ſix ſegments at the end, and is of the tubular ſhape of many of the bell-faſhioned flowers. The piſtil ariſes from the bottom of the flower, and finally becomes a roundiſh ſeed veſſel, lightly ridged into a ſort of three-cornered ſhape, and divided into three cells, each of which contains a number of roundiſh or flatted ſeeds.

The ſpecies of *Hyacinth* enumerated by Mr. Tournefort are theſe: 1. The great blue *Hyacinth* with oblong flowers. 2. The great amethyſtine *Hyacinth* with oblong flowers. 3. The fleſh-coloured Engliſh *Hyacinth*. 4. The grey Engliſh *Hyacinth*. 5. The white *Hyacinth* of Dodonæus. 6. The *Hyacinth* with oblong flowers of blue and white. 7. The *Hyacinth* with oblong brown flowers. 8. The duſky-flowered *Hyacinth*. 9. The duſky greeniſh-flowered *Hyacinth*. 10. The late flowering duſky *Hyacinth*. 11. The late flowering white *Hyacinth*. 12. The *Hyacinth* with greeniſh yellow flowers. 13. The *Hyacinth* with ſmall oblong blue flowers. 14. The *Hyacinth* with ſmall oblong white flowers. 15. The ſmall Spaniſh *Hyacinth* with mixed flowers, and with the appearance of the oriental kinds. 16. The *Hyacinth* with oblong bright red flowers. 17. The *Hyacinth* with bell-faſhioned flowers, ſtanding all on one ſide of the ſtalk. 18. The bell-flowered *Hyacinth* with flowers on both ſides the ſtalk. 19. The oriental, or Conſtantinople *Hyacinth*, with ſpotted ſtalks. 20. The ſpotted-ſtalked oriental *Hyacinth*, with violet-coloured flowers. 21. The purple oriental *Hyacinth*. 22. The many flowered oriental *Hyacinth*, with blue flowers and very ſhort cups. 23. The purpliſh-white oriental *Hyacinth*. 24. The duſky-white oriental *Hyacinth*. 25. The ſnow-white oriental winter *Hyacinth*. 26. The ſilver-coloured oriental *Hyacinth*. 27. The winter oriental *Hyacinth*, with blue flowers, and with leaves ſtained toward their bottoms, with purple ſpots. 28. The large white oriental winter *Hyacinth*. 29. The largeſt oriental *Hyacinth*. 30. The largeſt oriental *Hyacinth*, with white flowers. 31. The largeſt oriental *Hyacinth*, with bright red flower cups. 32. The many flowered oriental *Hyacinth*, with blue flowers. 33. The many flowered oriental *Hyacinth*, with white flowers. 34. The many flowered oriental *Hyacinth*, with grey flowers. 35. The oriental *Hyacinth*, with very ſweet-ſcented blue flowers. 36. The great oriental *Hyacinth*, with fleſh-coloured flowers. 37. The amethyſtine *Hyacinth*, with large double bell-faſhioned flowers. 38. The early white *Hyacinth*. 39. The broad-leaved oriental *Hyacinth*. 40. The red cup variegated flowered oriental *Hyacinth*. 41. The great many flowered white *Hyacinth*. 42. The great many-flowered oriental *Hyacinth*, with beautiful blue flowers. 43. The branched oriental *Hyacinth*. 44. The oriental *Hyacinth*, with variegated reflex petals. 45. The violet-flowered oriental *Hyacinth*, with ſtreaks of white. 46. The oriental *Hyacinth*, with leafy ſtalks. 47. The late flowering oriental *Hyacinth*. 48. The late flowering oriental *Hyacinth*, with erect white flowers. 49. The late flowering oriental *Hyacinth*, with erect blue flowers. 50. The late flowering oriental *Hyacinth*, with ſtriated flowers. 51. The double flowered white oriental *Hyacinth*. 52. The double flowered blue oriental *Hyacinth*. 53. The double flowered blue Roman *Hyacinth*. 54. The double pale-blue oriental *Hyacinth*. 55. The double purple oriental *Hyacinth*. 56. The great whitiſh blue, double oriental *Hyacinth*. 57. The oriental *Hyacinth*, with violet purple flowers, and turgid cups. 58. The ſnow-white double oriental *Hyacinth*. 59. The double pale fleſh-coloured oriental *Hyacinth*. 60. The great double-flowered white oriental *Hyacinth*, with roſe-like flowers, called by ſome the Italian *Hyacinth*. 61. The double oriental *Hyacinth*, called the Capucine *Hyacinth*. 62. The more elegant flowered Capucine *Hyacinth*. 63. The tuberoſe Indian *Hyacinth*, with the oriental *Hyacinth* flowers. *Tournefort*'s Inſt. p. 346.

All the kinds of this beautiful flower may be propagated either by ſowing their ſeeds, or by parting their bulbous roots. The latter has been the method moſt practiſed among us, tho' the former is evidently the way to procure the fineſt varieties of the flowers, and has been always practiſed in Holland. The diſcouragement in this, is the long time the plants take from the ſowing, which is uſually four years before they flower; but then if they are ſowed every year, after the firſt four years there is always a yearly ſucceſſion of flowers from ſeed.

The ſeed ſhould be carefully ſaved either from ſemi-double, or the fineſt ſingle flowers, and ſown on a freſh, light, and ſomewhat ſandy ſoil, in ſhallow pots or boxes, covering them with half an inch of the ſame earth. This ſhould be done in the beginning of Auguſt, and the pots ſhould be placed where they may have the morning ſun till the middle of September; they ſhould then be removed to a ſomewhat warmer ſituation, and toward the end of October, be put under a common hot-bed frame.

In February the young plants will appear above ground, and muſt be carefully ſcreened from froſts; but they muſt not be cloſe covered, except at nights. In March they muſt be taken out of the frames, and ſet in a warm place, and when the weather is dry, they muſt be gently watered at times, and always kept carefully clear from weeds.

Toward the latter end of April, or beginning of May, they muſt be removed into a cooler ſituation, as the heat of the ſun would then be too much for them. After their blades are decayed, they muſt have no more watering; but toward the latter end of auguſt, about half an inch of freſh earth ſhould be ſifted over the pots; after this they muſt be preſerved and managed as the former ſeaſon, and in the auguſt following, a bed of a light, rich, ſandy ſoil, ſhould be prepared. Then the earth is to be taken out of the pots and boxes, and the roots, which will at this time be about the bigneſs of a quill, muſt be ſeparated, and carefully placed upon the bed, at two or three inches aſunder. They are to be ſet with the bottom part downwards, and covered two inches thick, with the ſame fine earth ſifted over them. Theſe beds muſt be arched over, and in froſty weather covered with mats. In ſpring, if the weather prove dry, they muſt be watered ſparingly. In ſummer they muſt be carefully kept clear of weeds, and in autumn have an inch more of light earth ſtrewed over them. This management muſt be continued till they flower, which is uſually not till four or five years after they were ſown.

When they are in flower, the finer ſorts ſhould be marked with a ſtick, that they may be taken up and planted ſeparate.

When the green leaves of theſe plants begin to decay, their roots muſt be taken up, and the earth of the bed being raiſed into a ridge to ſhoot off the moiſture, they ſhould be laid into the earth again in an horizontal poſition, leaving the green leaves hanging down from the roots, to prevent their moiſture from running into the roots, which often rots them. When the leaves are quite dried off, the roots are to be taken up and cleared of filth, and laid up in boxes till September, which is the time of planting them again. The proper ſoil for planting theſe in is this: Take one half freſh earth from a common, or paſture, which is of a ſandy loam; this ſhould not be got beyond nine inches deep; to this add a fourth part of ſea ſand, and a fourth part of rotten cow-dung.

This ſhould be mixed a long while before it is uſed, and often turned; and ſhould be ſpread ten inches deep on the beds, with a little rotten cow-dung, or old tanners bark, at the bottom. Theſe beds ſhould be raiſed from three to ſix inches above the ſurface of the earth, and be a little riſing or rounded in the middle. When the flowers are about to blow, the ſtalks ſhould be faſtened by a loop of wire to a ſmall ſtick, to prevent their bending down, and they muſt be ſheltered from the great heat of the ſun in the middle of the day, by which means they will continue in flower a month or longer. *Miller*'s Gardener's Dict.

HYACINTH, is alſo a name given by the moderns to a gem, the diſtinguiſhing character of which is, that it is red, with an admixture of yellow. This is a very different gem from that known by the antients under the name of the *Hyacinth*, which was a variety of the amethyſt, with a larger admixture of a deep blue, a ſtone ſeldom ſeen among us. The antients knew this gem, called the *Hyacinth* by us, under the name of *lapis lyncurius*.

The common opinions of authors have been, that the *lapis lyncurius* of the antients was either amber, or the ſtone we now call belemnites. Theophraſtus's account of it is this; that it was of a very ſolid texture; that it was uſed to engrave ſeals upon, and that it had the attractive power of amber, and was in colour of a yellowiſh red, or flame colour. It need not be obſerved, that of all the antients, this is the author moſt to be depended upon for his accounts of foſſils; and it is plain, from his accounts, that the *lapis lyncurius* could not be the belemnites, becauſe that foſſil is neither hard, nor fit to cut ſeals on, but very ſoft, and of a ſtriated texture; nor could it be amber, ſince no author would have compared a body to itſelf.

It is hence evident, therefore, that a new foſſil is to be looked

for to anſwer the name of the *lincurius* of the antients; and it is alſo equally plain, that the gem we now call the *Hyacinth* was known to them by no other name, though we cannot but believe that a gem, always ſo common, muſt have been known to them: And it is equally plain, that our *Hyacinth*, and no other known gem, anſwers to all the characters they have given of the *lapis lyncurius*; and it appears hence reaſonable to conclude, that this is the gem known to them by that name.

Pliny's account wholly confirms this opinion, and the deſcription of the *lyncurius* given by Theophraſtus; though Pliny ſeems evidently to have taken it from ſome other author. He ſays it was a gem reſembling the carbuncle, that is, reſembling the generality of red gems; for at his time they called all thoſe by the common name carbuncle; and differing from them, in that it was of a flame colour; words which could never have been ſpoken of the belemnites, but which very happily expreſs our *Hyacinth*.

It is a leſs gaudy looking gem than any other of the red ones; but is not without its beauty, which in the fineſt ſpecimens is great, though not glaring; and is as ſeldom found blemiſhed or faulty as almoſt any other gem. It is of various ſizes, but is ſeldom found ſmaller than a hempſeed, or larger than a nutmeg. We have had accounts, indeed, of ſome of a much larger ſize; but they ſeem not much to be depended upon. It is not leſs irregular in ſhape than ſize, being found ſometimes in the figure of a regularly hexangular column, terminated by an hexangular pyramid, and in all reſpects, except colour and hardneſs, reſembling ſprig cryſtal; and at other times it is found in form of a ſmall roundiſh or oblong pebble, generally flatted on one ſide. It makes much the beſt external appearance in its cryſtalliform ſtate; but the pebble-ſhap'd maſſes are much the harder, and of the finer luſtre. It is leſs hard than the ruby or ſapphire, but greatly more ſo than cryſtal. *Hill's* Hiſt. of Foſſils, p. 592.

It is found of various degrees of deepneſs or paleneſs, but its colour is always a deadiſh red, with a conſiderable admixture of yellow, ſometimes indeed ſo much, that the laſt ſeems the predominant colour. It is ſometimes ſo deep as to ſeem almoſt black, till held up againſt a ſtrong light, and at others is almoſt colourleſs; and probably, not unfrequently is wholly ſo, though in that caſe, wanting its true character, which is taken from its colour, it is not to be diſtinguiſhed from pebble cryſtal on the one hand, nor from the white ſapphire on the other, without the aſſiſtance of the wheel to aſcertain its hardneſs. Its moſt uſual ſtate, however, is its having that colour mixed of red and yellow, which we uſually call flame colour.

Theſe are the characters by which the *lyncurius* of the antients, or *Hyacinth* of our times, is to be diſtinguiſhed from all other gems; and our jewellers and lapidaries, according to its different degrees of colour, diſtinguiſh it into three kinds, which they call by its own name, with different epithets, and a fourth, which uſually, but improperly, is accounted by authors a ruby.

The firſt kind is the *la bella Hyacintha*. This is the name given to the *Hyacinth*, in its moſt perfect and beautiful ſtate, when it is of a pure and bright flame colour, ſeemingly made of a mixture of cinnabarine red, and a moderate proportion of a fine amber yellow.

The ſecond is the ſaffron *Hyacinth*. This is the name they give this gem, when it has more of the red, and that of a deeper and duſkier colour, and is tinged with an admixture of a dead and browniſh yellow.

The third is the amber *Hyacinth*. This is the name they give thoſe *Hyacinths* which are tinged with a fainter red, in a ſmall proportion, and a dead whitiſh yellow.

The fourth is the *Rubacelle*, a name given to the *Hyacinth* when of a very deep and ſtrong red, blended with a very deep but duſky yellow. The ſtrong colour of the red, in this ſtone, has generally made it have a place among the rubies, in the accounts of authors; but a compariſon of it with the two gems will evidently ſhew, that it belongs not to the ruby, but to the *Hyacinth* kind.

The firſt of theſe are the finer *Hyacinths*, and are of conſiderable value. They are brought to us both from the Eaſt and Weſt Indies. The *Rubacelle* is only found in the Eaſt Indies, but is of very little value; and the other two varieties are common both to the Eaſt and Weſt Indies, and to Sileſia and Bohemia, and ſeveral other parts of Europe. Theſe are, indeed, ſometimes brought over to us from the Eaſt Indies, among the finer kind; as is alſo the *la bella Hyacintha*, ſometimes found in Bohemia, though poor in compariſon of the oriental. It is no wonder, indeed, that they ſhould be all found equally in both places, being all, in reality, only varieties of the ſame gem; but the oriental are in general greatly the finer and better colour'd.

HYÆNA, or HIÆNA, in natural hiſtory. The animal which is known to us by this name is a quadruped almoſt as large as a wolf, excepting that its legs are not ſo long. The hair of it is rough, and its ſkin ſpotted with divers colours. *Hiæna's* were formerly produced at Rome in the public games, and they have been repreſented on ſome medals, on account of their rarity. It is an uncommon creature, ſcarce to be ſeen any where but in Egypt. Spanheim, who had copies of it engraved from medals, deſcribes it with the head of a maſtiff, with ſhort triangular ears, a lion's tail and feet, and hair ſpotted all over like a tyger's.

Bochart and Ludolphus [a], in his hiſtory of Ethiopia, maintain, that the *Hyæna* is in the Hebrew called *Tzeboa*. Jeremiah ſpeaks of it in chap. xii. 9. Pliny [b] ſpeaks of the *Hyæna*, and deſcribes it in a manner which ſeems fabulous. He ſays, that it changes its ſex every year, being one year male, and the next female; and that from its eyes are taken precious ſtones, from the name of this creature called *Hyæna*. Ariſtotle and Ælian ſay, that it makes dogs dumb with its ſhadow; that it imitates the ſpeech of mankind, and deceives them, in order to draw them out of their houſes, and devour them. They add, that it has feet like a man's, and no vertebræ in the neck. — [a See *Bochart's* Hierozoicon, P. 1. l. 3. c. 11. and *Ludolph.* Comment. in Hiſt. Ethiop. l. 1. n. 81. b Plin. l. 8. c. 30. & l. 28. c. 8.]

Buſbequius, in his travels to Amaſia, relates ſeveral particulars of this animal. He ſays it is almoſt of the ſhape of a wolf, but not ſo tall. That its hair is like that of a wolf, except its being more briſtly, and marked at certain diſtances with great black ſpots. It has no neck, but its head is faſtened to the vertebræ of the back, ſo that it is forced to turn itſelf quite round, whenever it would look behind. It is very cruel and voracious; it drags dead bodies out of graves, and carries them to its den. Inſtead of teeth, it has one continued bone in the jaw. It is ſaid to imitate the voice of a man, and that by this means it often deceives travellers.

The daughter of the *Hyæna* is a bird, the uſe whereof is forbidden by Moſes. *Calm.* Dict. *Buſbeq.* Iter. Amaſian. p. 76.

HYALINÆ, in natural hiſtory, the name of a genus of foſſils, of the claſs of the talcs, the characters of which are, that they are compoſed of ſeparate plates of conſiderable thickneſs, and thoſe not fiſſile into any thinner.

The word is derived from the Greek ὕαλη, glaſs. The ſeveral plates which compoſe theſe bodies being very much of the appearance of the finer glaſs, and uſually about the thickneſs of that uſed for faſh windows. See Tab. of Foſſils, Claſs 1. and *Hill's* Hiſt. of Foſſils, p. 75.

There is but one ſpecies known of this genus, which is found lodged in the clay, in the ſteep banks of the river Aube in Champaigne, near the town of Bar, and in ſome other places along that river; but ſo far as is yet known, in no other part of the world.

HYALOIDES, in the natural hiſtory of the antients, the name of a tranſparent ſtone fit to engrave ſeals on, which was the great uſe they made of the gems, and very bright and readily reflecting the images of things. Different authors have had different gueſſes about this ſtone; but it ſeems to be the ſame gem which Pliny calls *aſtrios*, which, he ſays, was of the nature of cryſtal, and was brought from the Indies. We have this ſtone to this day in many parts of America, particularly about the river of the amazons, from whence many fair ſtones of it have at times been brought, and have been by ſome miſtaken for diamonds; they are a ſort of pebble cryſtal, approaching to what the jewellers call the white ſapphire. *Hill's* Theophraſt. p. 80.

HYALOIDES, in anatomy, is ſometimes applied to the vitreous humour of the eye, contained betwixt the tunica-retina and the uvea.

HYANCHE, a word uſed by the old medicinal writers to ſignify a quinſy, attended with a ſwelling on each ſide of the throat.

HYARITH, a word uſed, by ſome of the affected chemical writers, for ſilver.

HYBERNAL *Occident.* See the article OCCIDENT.

HYBERNAL *Orient.* See the article ORIENT.

HYBERNICUS *Lapis.* See the article LAPIS *Hybernicus.*

HYBOMA, a word uſed by the old medicinal writers for a gibboſity of the ſpine.

HYDARTHROS, a word uſed by the antient writers in medicine to expreſs a clear water running from the joints when wounded or ulcerated; it is a very common ſymptom in horſes, and our farriers call it *joint-water.*

HYDATIDES, in natural hiſtory, a name given, by ſome writers, to a ſpecies of aſtroites, the lineations of which reſemble waves. It is by others uſed as a name of the enhydros. See the articles ASTROITES and ENHYDROS.

HYDATIDES, in medicine (*Cycl.*)— Theſe tumours are ſometimes voided by the vagina. Of this Mr. Watſon has given a remarkable inſtance in a gentlewoman of about forty-eight years of age, the mother of ſeveral children, and who, after a reſpite of ſix years, had again the ſigns of conception for three months, after which time they left her, and from that time ſhe diſcharged every night, for a month together, large quantities of blood by the vagina, and not perceiving any increaſe in her belly, nor in the ſize of her breaſts, ſhe concluded that the menſes were leaving her at their uſual period. But ſome weeks after this, ſhe was taken with pains like thoſe of labour, and there came away a vaſt number of *Hydatides*, of all the ſizes between a nutmeg and a pin's head, ſome filled with clear water, ſome with a bloody lymph, all of them growing in the manner of a cluſter of grapes, from a ſpungy ſubſtance, ſerving as

a placenta. After the diſcharge of theſe, ſhe in a few days recovered her accuſtomed health. Upon boiling theſe *Hydatides*, they appeared like the boiled ovary of a hen, only with this difference, that as the eggs in the ovary of the hen concrete and grow hard, theſe continued to contain a fluid matter only. It was leſs tranſparent, and appeared of a faint yellowiſh colour. Philoſ. Tranſ. N°. 461. p. 770.

HYDATINON, in the medical writings of the antients, the name of a collyrium made principally of rain water.

HYDATISM, a word uſed, by ſome writers in ſurgery, to expreſs the noiſe or ſound made by the fluctuating humours contained in abſceſſes.

HYDATOCHOLOS, an epithet uſed by the old writers on medicine, for ſtools more than ordinary liquid or bilious.

HYDNOPHYLLUM, or HYDNOPHYLLON, in botany, a name given by the antient Greeks to a plant which they tell us grew on thoſe places where the tubera or truffles lay underneath.

They have left us no deſcription of this plant, ſo that it is not eaſy to gueſs what it was; and the whole account ſeems ſo contrary both to their own opinions delivered in other places, and to truth, that there is reaſon to ſuſpect ſome error in the caſe. They tell us, that they were led by this plant to look for the truffles, and knew by it where they were. But we obſerve, that in places where truffles are, there grows no plant at all upon the ſurface: They alſo tell us the ſame thing in other places.

It is probable that ſome of the writers of that age confounded the truffle and the bulbocaſtanum, or earth-nut. In this caſe, the leaves of the latter would, indeed, ſerve as a certain indication; and the udnophyllon would then be only another name for the bulbocaſtanum. See the article UDNON.

HYDNUM, in botany, the name of a genus of funguſes, called by Dillenius and Micheli, *Erinacei*. Theſe are a ſort of horizontal fungus's, which always grow by the ſide to trees, *&c.* having no pedicle. There are three of this kind; the agaric, which is lamellated underneath; the boletus, which is porous underneath; and the *Hydnum*, which is echinated, or beſet with pointed fibres on its under part. See the articles AGARICUS, BOLETUS, and FUNGUS.

HYDRANGEA, in botany, the name of a genus of plants, the characters of which are theſe: The perianthium is ſmall and permanent, and is compoſed of one leaf, divided into five ſegments at the edge. The flower is compoſed of five roundiſh petals, equal in ſize, and larger than the ſegments of the cup. The ſtamina are ten filaments, five of which are ſhorter than the other five, but all longer than the flower. The antheræ are roundiſh and double. The germen of the piſtil is roundiſh, and ſtands under the cup. The ſtyles are two; they ſtand diſtant from one another, and are ſhort. The ſtigmata are obtuſe and permanent. The fruit is a roundiſh double capſule; it has two beaks, which are owing to the double ſtyle, and is rendered angular by ſeveral ridges; it is crowned at the extremity with the cup, and is divided into two cells by a tranſverſe membrane, and opens at a foramen between the two horns. The ſeeds are very numerous, and very ſmall, and are of an angular figure, and pointed at the end. *Linnæi* Gen. Pl. p. 193.

HYDRARGYROSIS, a term uſed by the chirurgical writers to expreſs the anointing the body with a mercurial unction, in order to the raiſing a ſalivation.

HYDRINUS, a name given by ſome authors to the ophites, or ſerpent ſtone.

HYDRIAPHORÆ, ὑδριαφοραι, among the Athenians, a deſignation given to wives of ſtrangers, reſiding at Athens.

They were thus called, as being obliged, during the proceſſion of the feſtival *Panathenæa*, to carry veſſels of water. *Potter*, T. 1. p. 56, and 421.

The word is Greek, compounded of ὑδωρ, water, and φερω, I carry.

HYDROCARDIA, a term invented by Hildanus to expreſs a ſerous, ſanious, or purulent tumour of the pericardium.

HYDROCEPHALUS, (*Cycl.*)—We owe to Mr. Hunauld, of the royal academy of Paris, ſome very ſingular and valuable obſervations on this remarkable ſubject. This gentleman, examining the head of a child which had died at ſeven months old of a *Hydrocephalus*, found it larger, in all parts, except before, than that of an adult. Toward the face the ſkull was no larger than is natural at that age; but ſideways and behind it had ſwelled to this monſtrous bulk. The water was encloſed in the ventricles, and was in quantity a pint.

On conſidering what could be the time when this unhappy diſorder began, it appeared to that gentleman, that it did not happen till after the bones of the ſkull began to be joined to one another by the ſutures; for otherwiſe the head muſt have been in the ſame ſtate with thoſe in which the *Hydrocephalus* has begun earlier; in which caſe, the bones of the ſkull ſeparate themſelves to a great diſtance one from another, and the membrane which unites them to one another is extremely extended. The beginning of this *Hydrocephalus* muſt have been at a time when the bones of the ſkull, united by their ſutures, had already had time conſiderably to extend themſelves; and the action of the water on the ſides of the ventricles, and on the brain, forced the bones of the ſkull to take this unnatural growth. And from the whole, it is eaſy to conclude that thoſe children in whom a *Hydrocephalus* begins, before the bones of the ſkull are ſtrongly united, may live a conſiderable time. Memoirs Acad. Scienc. Par. 1740.

The effect which the water, contained in the head, had had on the brain, in the caſe under conſideration, deſerves to be remarked. The ſides of the ventricles are, in a natural ſtate, applied cloſely on one another, and ſcarce leave any ſenſible cavity; whereas in this head, theſe ſides were ſo far ſeparated from one another, as to contain a pint of water. It muſt therefore have happened, that the ſubſtance of the brain, which compoſes theſe ſides, muſt have been conſiderably elongated, and the cortical ſubſtance muſt alſo have been greatly extended beyond its natural dimenſions. And, in order to be capable of this extenſion, it was found without any circumvolutions, and made only a flat even ſurface, regularly of that extent and ſize that would reſult from the expanding all its circumvolutions. The medullary ſubſtance formed a ſecond even ſurface like the former. This was very thin, and lay under the former. The reaſon of this diſpoſition of the parts of the brain, in this caſe, is obvious; for the pia mater not having, in this caſe, the circumvolutions of the brain to follow, as in a natural ſtate, formed of itſelf a flat ſubſtance upon the cortical part.

It is evident, from theſe obſervations, and from others in Veſalius and other authors, that the brain may, from accidental cauſes, become of a growth and figure very different from what it naturally would have had; and that the very bones of the ſkull are in like manner capable of aſſuming a different figure and growth, and that even after they have acquired a great deal of their natural thickneſs and hardneſs, and are capable of reſiſting, with conſiderable force, the accidents which tend to determine this unnatural growth in them: And applying this to the caſe of a tender fœtus, in which the parts have yet ſcarce any degree of ſolidity or hardneſs, we ſhall ſee an eaſy account for all the unnatural configurations which anatomiſts ſometimes meet with in the ſkull of adults. Memoirs de l'Acad. de Scien. Par. 1740.

In the internal *Hydrocephalus*, when the water is collected in the inſide of the cranium, there is little hope of relief, for if a paracenteſis be made to diſcharge the lymph, the infant dies as ſoon as the operation is over. But in the external *Hydrocephalus*, where the water is retained between the common integuments and the cranium, there is ſome hopes of a cure, eſpecially if it be not of very long ſtanding. Internal medicines muſt be given. Theſe muſt be cathartics, diuretics, and diaphoretics; and at the ſame time externally large compreſſes, covering the whole head, muſt be applied, dipped in lime-water and ſpirit of lavender, or Hungary water. Bags of the dried herbs of lavender, marjoram, penny-royal, and the like herbs, may be wetted in the ſame liquors, and applied; and the frequent uſe of an errhine made of marjoram, lilly of the valley, marum, and the like, ſhould be recommended, as alſo the chewing of tobacco, to diſcharge the ſeroſities in form of ſaliva. If theſe do not ſucceed, a bliſter muſt be tried behind the ears, on the occiput and neck, and cupping on the parts. Iſſues and ſetons alſo are of great uſe. And, in the cupping, the ſcarification may be made very deep, and afterwards dreſſed with digeſtive ointments and precipitate, to keep up the diſcharge. *Heiſter's* Surgery, p. 355.

HYDROCERATOPHYLLON, in botany, the name given by Vaillant, and many others, to a genus of plants called by Dillenius, dichotophyllum; and by Linnæus in his genera plantarum, ceratophyllum. *Vaillant*, Act. Germ. 1719. See the article CERATOPHYLLUM.

HYDROCHARIS, in botany, the name of a genus of plants in Linnæus's ſyſtem, which comprehends the *ſtratiotes*, the *morſus ranæ*, and the *microleuco-nymphæa* of other authors. The characters of the genus are theſe: The flowers are ſome male, others female. In the male the cup is a two-leav'd oblong ſpatha, containing two flowers. The peculiar perianthium of each flower is compoſed of three leaves, of an oblong oval figure, hollow, and with membranaceous edges. The flower conſiſts of three large petals, flat, and of a roundiſh figure. The ſtamina are nine erect pointed filaments, diſpoſed in three orders. The antheræ are ſimple. The piſtil is a ſort of rudiment of a germen in the center of the flower. In the female flowers there is no ſpatha, but the flowers grow each by itſelf. The perianthium and petals are the ſame as in the male. The piſtil has a roundiſh germen placed under the cup, and from this ariſe ſix ſtyles of the length of the cup; theſe are compreſſed and furrowed. The ſtigmata are bifid and pointed. The fruit is a coriaceous capſule of a roundiſh figure, containing ſix cells. The ſeeds are very numerous, and are ſmall and roundiſh. *Linnæi* Gen. Plant. p. 482.

HYDROCOTYLE, *Marſh Pennywort*, in botany, the name of a genus of plants, the characters of which are theſe: The flowers are diſpoſed into ſmall umbels, and are of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular order upon a cup, which afterwards becomes a fruit compoſed of two plain and ſemi-orbicular ſeeds.

The ſpecies of *Hydrocotyle*, enumerated by Mr. Tournefort, are theſe: 1. The common marſh *Hydrocotyle*. 2. The *Hydrocotyle* of Ceylon, with aſarabacca leaves. 3. The Ameri-

can *Hydrocotyle*, with leaves like the little water lily. 4. The great American *Hydrocotyle*, with umbilicated leaves, and flowers growing in radiated umbels. *Tourn.* Inſt. p. 328.

HYDRODES *Febris*, a fever, in which the patient is from the beginning afflicted with very copious and weakening ſweats, and great weakneſs.

HYDROGARON, a word uſed by ſome of the old authors for garum, or brine diluted with water, and uſed as a purge, taken in large quantities.

HYDROMELON, a name given by the antients to a liquor prepared with one part of honey, impregnated with the juice of quinces, and two parts of boiled water ſet in the ſun during the dog days.

HYDROPHANÆ, in natural hiſtory, the name of a genus of the ſemi-pellucid gems. The word is derived from ὕδωρ, water, and φάινεσκω, to ſhine; the diſtinguiſhing character of theſe ſtones being, that they become lucid on being plunged into water. They are ſemi-tranſparent ſtones, compoſed of cryſtal and earth, the latter ingredient being in large proportion, and mixed but imperfectly, as in the chalcedony, and giving a general miſty or cloudy look to the maſs, but conſiderably opake, and not capable of a fine poliſh; but appearing of a duſky and foul ſurface, till thrown into water, in which they become lucid, and in ſome degree tranſparent, and either in part or wholly change their colour, which returns to them again when taken out and dried. Of this genus we know only two ſpecies, one a whitiſh grey, without veins, called *lapis mutabilis*, and *oculus mundi*; and the other a whitiſh-grey one, variegated with yellow, and with a black central nucleus, called by authors the *oculus beli*. *Hill*'s Hiſt. of Foſſ. See the article OCULUS.

HYDROPHTHALMIA, a name by which ſome have called the *prolapſus oculi*, when owing to a quantity of aqueous humours. *Heiſter*'s Surgery, p. 437. See the article PROLAPSUS *Oculi*.

HYDROPHYLACIA, a word uſed by Kircher, and ſome others who have written in the ſame ſyſtem, to expreſs thoſe great reſervoirs of water which he places in the Alps, and other mountains, for the ſupply of the rivers which run through the ſeveral lower countries. This he makes to be one of the great uſes of mountains in the œconomy of the univerſe.

HYDROPHYLLUM, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is ſhaped like a bell, and divided into ſeveral ſegments at the edges. From the baſe of the cup of the flower there riſes a piſtil, which perforates the bottom of the flower, and is fixed in its hinder part like a nail. This ripens into a roundiſh bivalve fruit, full of roundiſh ſeeds.

Of this genus of plants there is only one known ſpecies, which, before it had this generical name, uſed to be diſtinguiſhed by authors by the name *Dentariæ affinis echii flore*, a plant reſembling the toothwort, with flowers like viper's bugloſs. *Tourn.* Inſt. p. 81.

HYDROPHYLLUM, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a perianthium, divided into five ſegments, and almoſt as long as the flower. The ſegments are tapering in ſhape, and the cup remains after the flower is fallen. The flower conſiſts of a ſingle petal, in form of a bell, ſlightly divided into five obtuſe emarginated ſegments. The flower has alſo five nectaria; theſe are in each ſegment of the flower, or cavity, or cleft, with two longitudinal lamellæ, which converge and ſhut over it. The nectaria are in the lower half of the petals. The ſtamina are five tapering filaments, longer than the flower. The antheræ are oblong, and lean on theſe. The germen of the piſtillum is oval and pointed. The ſtyle is tapering, and of the length of the ſtamina: And the ſtigma is bifid and open. The fruit is a globoſe capſule, containing one cell, with two valves. The ſeed is ſingle, round, and large. *Linnæi* Gen. Plant. p. 65.

HYDROPHYSOCELE, a term uſed by ſome authors for a ſort of hernia, or rupture, occaſioned by a mixture of water and flatulencies.

HYDROPNEUMOSARCA, a word uſed, by ſome writers in ſurgery, to expreſs a tumour filled partly with water, partly with flatulencies, and partly with fleſh.

HYDROPS (*Cycl.*)—HYDROPS *Pulmonum*, a *dropſy of the lungs*. This is a very uncommon diſtemper; but it has been ſometimes obſerved by the phyſicians of our own nation. The moſt perfect account, however, any where given of this diſeaſe, is that of Mr. Maloet, of the Paris academy, in the caſe of a poor invalide ſoldier, whom he had attended through all the ſtages of it. He had a very great difficulty of reſpiration, accompanied with a flow fever. When in bed he could neither lie with eaſe on either ſide, nor on his back; but was forced to lie upon his belly, and conſequently, as that was a very troubleſome poſture, he uſually took his reſt in a chair. His hands and arms were much ſwelled, as were alſo his legs and feet, and his urine was of a brick colour. Mr. Maloet, from all theſe circumſtances, ſuſpected water in the breaſt, but was never able to perceive any fluctuation, into whatever change of poſture he made the patient go, nor could he find that the man himſelf ever perceived any ſuch ſenſation within him. The unhappy creature died, after two years illneſs; and his body being opened, there was no water found looſe in the breaſt, but on each ſide of the lungs there was obſerved an oval tumour of ſix inches long, and four inches broad; they were both of the ſame ſize, and on touching them with the hand, there was a very ſenſible fluctuation obſerved. On opening theſe, water run out in a large quantity, and on examining their ſtructure, they were found encyſted tumours, with conſiderably thick membranes, compoſed of ſeveral beds, or coats of matter, but with no blood veſſels diſtinguiſhable in them. Examining the liver, there was found another encyſted tumour there, the contents of which were a lymph, tinged to a yellowiſh green by gall. Mem. Acad. Par. 1732.

HYDROPYRETOS, a word uſed by ſome authors to expreſs a malignant fever, attended with very copious ſweats. Some make it the ſame with the ſudor anglicus.

HYDRORHODINON, a name given by the antients to a mixture of water and oil of roſes; this, as it was at once cooling and emetic, was very much uſed by the antients, to provoke vomiting after the taking of poiſons.

HYDROROSATON, in the writings of the antient phyſicians, a name given to a drink made of water, honey, and the juice of roſes. The proportions were four pound of roſes, five pints of water, and two pints of honey.

HYDROSARCA, in the writers of ſurgery, a word uſed to expreſs a tumour, compoſed partly of water, and partly of fleſh.

HYDROSELINUM, in botany, a name given by ſome authors to ſmallage. *Ger.* Emac. Ind. 2.

HYEMAL *Solſtice*. The ſame with *winter-ſolſtice*. See the article SOLSTICE, *Cycl.*

HYEMANTES, in the primitive church, offenders who had been guilty of ſuch enormities, that they were not allowed to enter the porch of the churches with the other penitents, but were obliged to ſtand without, expoſed to all the inclemency of the weather. *Hofm.* Lex. in voc.

HYÆNIUS *Lapis*, in natural hiſtory, the name of a ſtone ſaid to be found in the eyes of the *Hyæna*. Pliny tells us, that thoſe creatures were, in old times, hunted and deſtroyed for the ſake of theſe ſtones, and that it was ſuppoſed that they gave a man the gift of propheſy, on being put under his tongue.

HYGRA, a name given by the antients to what they called liquid plaſters, in oppoſition to thoſe called xeria, or dry ones. Theſe firſt were a ſort of liniments.

HYGROMETER. See the article HYGROSCOPE.

HYGROSCOPE (*Cycl.*)—The following *Hygroſcope* is recommended in the philoſophical tranſactions, N°. 479. where a figure of it given.

It conſiſts of a thin piece of ſponge, ſo cut as to contain as large a ſuperficies as poſſible. This hangs by a fine thread of ſilk, upon the beam of a ballance, and is exactly ballanced on the other ſide by another thread of ſilk, ſtrung with the ſmalleſt lead ſhot, at equal diſtances, and ſo adjuſted as to cauſe an index to point at the middle of a graduated arch, when the air is in a middle ſtate, between the greateſt moiſture and the greateſt dryneſs. Under this ſilk ſo ſtrung with ſhot, is placed a little table or ſhelf, for that part of the ſilk and ſhot, which is not ſuſpended, to reſt upon. When the moiſture imbibed by the ſponge increaſes its weight, it will raiſe the index, and alſo part of the ſhot, from the table; and *vice verſa* when the air is dry. N°. cit. p. 76.

In the philoſophical tranſactions, N°. 480. we have the deſcription of an *Hygroſcope*, or *Hygrometer*, made of deal rods, ſaid to be very ſerviceable.

HYLARCHIUS, a word by which ſome authors expreſs what they call a ruling and preſiding ſpirit, which governs and actuates all matter.

HYMENÆA, in botany, the name of a genus of plants, firſt deſcribed by Plumier under the name of *courbaril*. The characters are theſe: The cup is a one leaved perianthium divided into five unequal ſegments; the flower is of the papilionaceous kind, the vexillum is large and reflex, the wings ſmall, and lanceolated, and the carina pointed; longer than the wings, and pointing upwards, the germen of the piſtil is oblong. The fruit is a very large pod of an oval oblong figure, obtuſe, and containing only one cell; the ſeeds are very numerous, and of an oval figure, and are ſurrounded in the pod with duſt and fibres. *Linnæi* Gen. Plan. p. 521. *Plumier*, p. 36.

HYMENODES, an epithet applied by the old authors to ſuch urine as is found to be full of little films and pellicles. Hippocrates alſo applies it to the menſtrual diſcharges when they are mixed with a tough viſcid phlegm.

HYMETTIUM *Marmor*, a name given by many of the old writers to a ſort of white marble, ſometimes variegated with other colours, but remarkable for its great gloſs, and the high poliſh it was capable of; this was greatly uſed among the Romans for the columns of their public buildings.

HYOSCIAMUS, *Henbane*, in botany, the name of a large genus of plants, the characters of which are theſe: The flower is of the infundibuliform kind, conſiſting of one leaf, and divided into ſeveral ſegments at the end. From the cup there ariſes a piſtil, which is fixed in the manner of a nail to the hinder part of the flower. This afterwards becomes a fruit, which is encloſed within the cup, and is like a pot or other veſſel with its cover, and is divided by an intermediate ſeptum into two cells, which contain ſmall ſeeds.

The ſpecies of *Henbane* enumerated by Tournefort, are theſe: 1. The

1. The common black *Henbane*. 2. The common white *Henbane*. 3. The ſmaller white *Henbane*. 4. The ſmall yellow *Henbane* of Crete. 5. The red flowered *Henbane*. 6. The white flowered Egyptian *Henbane*. 7. The little golden *Henbane* of America, with ſmooth narrow leaves. 8. The ſmall yellow flowered annual exotic *Henbane*. *Tournef.* Inſt. p. 117.

There are two kinds of *Henbane* ſeed uſed in medicine, which poſſeſs the ſame narcotic virtues, but in a different degree; the white is the milder of the two, and therefore generally preſcribed; many, however, look upon them as poiſonous, while others recommend them in many caſes, particularly in ſpitting of blood.

HYOSCIAMUS *Peruvianus*, *Henbane of Peru*, a name by which Dodonæus and many other authors have called the tobacco plants, more uſually known by the name *nicotiana*. See the article NICOTIANA.

HYOSYRIS, in botany, a name given by Pliny and ſome other authors to the common knapweed, or *jacea nigra*.

HYPACTIC *medicines*, a term uſed by ſome authors for cathartic medicines.

HYPATE, in the antient muſic, an appellation given to the loweſt chord or ſound of a tetrachord.

The word is Greek, ὑπατη, which ſome Latin interpreters tranſlate by *ſuprema*; as they tranſlate νητη by *ultima* or *ima* [a]. Dr. Wallis [b] ſays, that the firſt contrivers of theſe names, took, contrary to our cuſtom, the grave for the higheſt place, and the acute for the loweſt of their ſchemes. This was the practice of Bœthius; and Nichomachus, in the heptachord lyre, aſcribes the *Hypate* to Saturn, and the *neate*, or *nete*, to the Moon. Some however interpret ὑπατος as if it were ὑποατος, but erroneouſly, according to the learned doctor juſt quoted, who obſerves, that Homer calls Jove ὑπατον κρειοντων, as if ὑπατον were derived from ὑπερτατον. Afterwards it is ſaid, the grave was taken for the loweſt, and the acute for the higheſt place, agreeably to our notions. Some think that the *Hypate* might obtain its name from being placed higheſt in the lyre [c]. Martianus Capella and Bœthius tranſlate *Hypate*, *principalis*; and *parypate*, *ſubprincipalis*. Alſo Ariſtides Quintilianus chuſes to call the *Hypate* firſt, rather than ſupreme or higheſt, and calls the *nete*, laſt, inſtead of loweſt [d]. Perhaps the truth of the matter is, that the *Hypate* was called higheſt or loweſt, according as muſicians conſidered the deſcending or the aſcending ſcale [e]. The moveable chord next the *Hypate*, was called *parypate*; and that next the *nete* was called *paranete* [f]. [[a] *Hen. Steph.* Theſ. in voc. νητη, ap. *Wallis*, append. ad Ptolem. Harm. p. 159. [b] *Wallis*, ibid. [c] *Malcolm's* Treat. of Muſic, p. 519. [d] *Wallis*, ubi ſupra. [e] Vid. Phil. Tranſ. N° 481. p. 269. [f] *Wallis*, ibid.] See the articles TETRACHORD and INTERVAL.

HYPATE *Hypaton*, in the antient Greek ſcale, was the note next to the proſlambanomenos, and anſwers to the loweſt *mi* of Guido's ſcale. *Wallis*, Append. ad Ptolem. Harmon. p. 157. See the articles DIAGRAM and INTERVAL.

HYPATE *Meſon*, in the Greek ſcale of muſic, was the firſt note of the meſon, and the laſt of the hypaton tetrachord. It anſwers to *Elami* of the Guidonian Scale. Id. ibid. See the articles DIAGRAM and INTERVAL.

HYPECOUM, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a ſmall perianthium compoſed of two leaves, placed oppoſite to one another, of an oval figure, pointed, and ſtanding erect, and falling with the flower. The flower is compoſed of four petals, the two outer of which are placed oppoſite to one another, and are broad, divided into three lobes, and obtuſe. The two interior petals are placed alternately with the outer, and are ſlightly trifid, the middle ſegment being flatted, but ſomewhat hollow, and placed erect. The ſtamina are four erect tapering filaments, ariſing from the jaggs or ſegments of the inner petals; the antheræ are erect and oblong; the germen of the piſtillum is oblong, and of a cylindric form; the ſtyles are two in number, and are very ſhort; the ſtigmata are acute. The fruit is a long, crooked, flatted, and jointed pod; the ſeeds are of a roundiſh compreſſed form, and placed ſingly one in each joint of the pod. *Linnæi* Gen. Plan. p. 54.

The characters of *Hypecoum*, according to Tournefort, are theſe: The flower conſiſts of four leaves, diſpoſed in form of a croſs, and each of them is uſually trifid at the edge; the piſtil ariſes from the cup, and finally becomes a flatted and jointed pod, containing in every joint or knot one reniform ſeed.

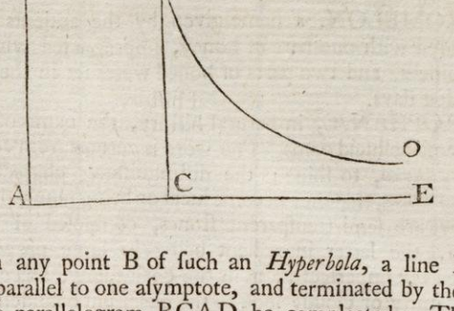
The ſpecies of *Hypecoum* enumerated by Mr. Tournefort, are two: 1. The broader leaved *Hypecoum*. And, 2. The narrower leaved kind.

Theſe have been uſed to be called *cuminum ſiliquoſum*, or podded cummin, by the old writers in botany. *Tournefort's* Inſt. p. 230.

HYPENEMIUS, an epithet applied by authors to barren eggs, or ſuch as a hen lays before ſhe has been trod by the cock. They are alſo called *zephyria ova*, and had both theſe names from the winds being ſuppoſed to generate them.

HYPERBIBASMUS, Ὑπερβιβασμος, in rhetoric, a figure which inverts the order of conſtruction. Cornelius Nepos gives an inſtance of it in his life of Chabrias: *Athenienſes diem certam Chabriæ præſtituerunt, quam ante domum niſi rediſſet*, &c. for *ante quam*. *Voſſ.* Rhet. l. 4. p. 36.

HYPERBOLA (*Cycl.*)—*Hyperbolas* of all degrees may be expreſſed by the equalion $x^m y^n = a^{m+n}$ where a is a given quantity, x an abſciſſa taken on the aſymptote, and y an ordinate to the aſymptote.



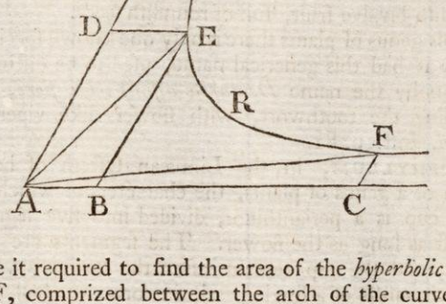
If from any point B of ſuch an *Hyperbola*, a line BC be drawn parallel to one aſymptote, and terminated by the other, and the parallelogram BCAD be compleated: Then will this parallelogram be to the *hyperbolic* ſpace BCEO infinitely produced, as m—n to n. *L'Hopital.* Sect. Coniq. Art. 240. Hence, 1°. When m—n is poſitive; that is, when m is greater than n, we may always find the quadrature of ſuch *hyperbolic* ſpaces.

2°. When $m = n$, then $m - n = o$, and the ratio of the parallelogram is to the *hyperbolic* area as o to n. In which caſe this area becomes infinite.

3°. When m is leſs than n, $m - n$ is negative; and in this caſe the parallelogram is to the *hyperbolic* ſpace as a negative number is to a poſitive; which led Dr. Wallis and others to ſay, that theſe *hyperbolic* areas were more than infinite. See *L'Hopital.* Sect. Coniq. Art. 242.

But the truth is, this ratio of a negative number to a poſitive only ſhews, that the ſpace bounded by DB (the other ſide of the parallelogram) by the curve and aſymptote infinitely produced, is to CBDA as m to $n - m$. *L'Hopital*, ibid. See alſo *Maclaurin's* Fluxions, Art. 294.

Although the area comprehended between the Apollonian *Hyperbola* and its aſymptote, be infinite, yet any ſegment, or ſector of this curve, may be ſquared by means of logarithms. For inſtance:



Suppoſe it required to find the area of the *hyperbolic* ſegment EBCF, comprized between the arch of the curve ERF, the lines EB, FC parallel to the aſymptote AD, and BC, the portion of the other aſymptote intercepted between them. Then if ABED, the parallelogram of the *Hyperbola*, be taken as unity, the ſpace EBCF will be Napier's logarithm of the ratio of AC to AB, or of BE to FC. Hence if we had tables of ſuch logarithms, we might find the area of EBCF by ſubducting the logarithm of FC from that of BE, and the difference would expreſs the ratio of the ſegment to the parallelogram ABED or 1. But as ſuch tables are not extant, ſome farther trouble is requiſite to convert the common or Briggs's logarithm into Napier's. Take therefore from the common tables the logarithm of the ratio of BE to FC, that is, the difference of their logarithms, and multiply this difference by 2.3025851, the *hyperbolic* logarithm of 10, the product will give the ratio of the ſegment to the parallelogram ABED or 1. Thus ſuppoſing BE = 36, and CF = 5, and the parallelogram ABED = 1.

From 1.5563025 = log. of 36.
Subduct 0.6989700 = log. of 5.
Difference 0.8573325 = log. of $\frac{36}{5}$.

Then 0.8573325 × 2.3025851 = 1.9740810 for the area of the ſegment BEFC. This multiplication may be performed in Oughtred's contracted way.

Huygens, to avoid the multiplication by 2.302, &c. finds its logarithm = 0.3622156887, and always adds this to the logarithm of the difference before found, and then finds the number correſponding to this ſum. See *Horol.* Oſcillat. and *Grandi*, Dem. Theor. *Huygen.* in fine.

If it were propoſed to find the area of the ſector AERF; as this is equal to the ſegment EBCF, the ſame method may ſerve. But it may alſo be done by ſeveral other analogies; for which ſee *Cotes*, Harm. Menſur. p. 12, 13. See alſo p. 25, 26, of the ſame book.

HYPERBOLIC (*Cycl.*)—HYPERBOLIC *Logarithm*. See the article LOGARITHM.

HYPERBOLIC *Space*, in the higher geometry, the area or ſpace contained between the curve of the hyperbola, the aſymptote, and the ordinate.

HYPERBOLICUM *Acutum*, a ſolid made by the revolution of the infinite area of the ſpace contained between the curve of the hyperbola and its aſymptote. This produces a ſolid infinitely long, and yet is demonſtrated to be equal to a finite ſolid or body. For the true ſenſe of ſuch expreſſions ſee the article LOGARITHMIC.

HYPERICUM, *St. John's Wort*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, conſiſting of ſeveral leaves diſpoſed in a circular form; the cup conſiſts alſo of ſeveral leaves, and from this there ariſes a piſtil, which finally becomes a trigonal, three pointed, and tricapſular ſeed veſſel, filled with ſmall ſeeds. To theſe marks it may alſo be added, that the leaves of the *Hypericum* grow two at every joint. The ſpecies of *Hypericum*, enumerated by Mr. Tournefort, are theſe:

1. The common yellow-flowered *Hypericum*. 2. The common *Hypericum*, with blood-coloured ſpots. 3. The moneywort leaved *Hypericum*. 4. The ſhort leaved *Hypericum*, called the Syrian and Alexandrian St. John's wort. 5. The curled *Hypericum*, with triangular pointed leaves. 6. The ſmaller upright *Hypericum*. 7. The ſmall procumbent ſmooth *Hypericum*. 8. The larger woolly procumbent Spaniſh *Hypericum*. 9. The ſmaller woolly procumhent French *Hypericum*. 10. The woolly procumbent marſh *Hypericum*, commonly called the marſh *aſcyron*, or *St. Peter's wort*, with hoary leaves. 11. The round ſtalked upright hairy *Hypericum*. 12. The *Hypericum* of mount Olympus, with leaves hairy about the edges. 13. The beautiful, not branched, broad-leaved *Hypericum*. 14. The large leaved perfoliate *Hypericum*. 15. The ſquare-ſtalked *Hypericum*, commonly called *aſcyron*, and *St. Peter's wort*. 16. The ſtone *Hypericum*, with very fine bluiſh-green leaves. 17. The ſtinking ſhrubby *Hypericum*. 18. The perfoliated and perforated leaved *Hypericum*. 19. The great flowered low Alpine *Hypericum*, with ſpotted flowers. 20. The broad leaved Portugal *Hypericum*, with myrtle-like leaves. 21. The toad-flax leaved Portugal *Hypericum*. And, 22. The ſmalleſt woolly Portugal *Hypericum*. *Tourn.* Inſt. p. 254.

Hypericum is a good vulnerary, detergent, and nervous medicine: it is given with ſucceſs in ſpitting of blood, or voiding it by urine; it reſolves coagulated blood, promotes the menſes and urine, deſtroys worms, and ſtands recommended in all nervous caſes.

HYPERINESIS, a word uſed by Hippocrates for any exceſſive evacuation, but moſt frequently in the ſame ſenſe as hypercatharſis, an over-purging.

HYPEROA, a word applied by authors to the upper part, or palate of the mouth, and the baſis cerebri. It properly ſignifies any upper place.

HYPEROCHE, in muſic, is the difference between the enharmonic and chromatic dieſes. It is expreſſed by the proportion of 3125 to 3072: For, $\frac{3125}{3072} = \frac{25}{24} : \frac{128}{125}$. Mr. Henſling has made uſe of this term. Miſc. Berol. v. 1. p. 279, 280.

HYPNOTICUS *Serpens*, the *ſleep-ſnake*, in zoology, the name of an Eaſt Indian ſpecies of ſerpent, called by the Ceyloneſe *nintipolong*, a word importing the ſame ſenſe. It is of a deep blackiſh brown, variegated with ſpots of white, and is a very fatal kind in its poiſon, its bite always bringing on a ſleep which ends in death. *Ray*'s Syn. Anim. p. 332.

HYPNUM, in botany, the name of a genus of moſſes, the characters of which are theſe: The capſules or heads are uniform, and covered with a calyptra and operculum; they are uſually of an oval or oblong figure, and commonly ſtand on long pedicles which ariſe from the alæ of the leaves, and are ſurrounded at the bottom with a foliaceous or lanuginous bed different from the leaves. This covering of the bottom of the ſtalk, is called by authors perichætium, and is itſelf a ſufficient diſtinction of the *Hypna* from all other moſſes, the brya, mnia, ſphagna, &c. having none of them any ſuch thing. To this it is to be added, that the branches of the *Hypnums* are uſually ſpread about upon the ground, and are perennial; and that there is what Botaniſts call a *facies propria*, or peculiar look of the plant, which at firſt ſight diſtinguiſhes the genus to an obſerver uſed to ſuch things. *Dillen.* Hiſt. Muſc. p. 270.

As the family of the *Hypna* is very numerous, they are uſually divided into ſeveral orders. Of the firſt order are thoſe *Hypna* which have erect heads, or at leaſt ſuch as are but a little bent; and of this order the firſt ſeries comprehends ſuch as are pennated, or whoſe pinnæ are placed in two, ſometimes in three rows on each ſtalk, or in the ſame plane. The firſt diviſion of this ſeries comprehends thoſe which have flat and ſmooth pinnæ: Of theſe the following are all the known ſpecies: 1. The ſmalleſt yew-leaved *Hypnum*; this produces its capſules always toward the ſummits of the ſtalks. 2. The ſmall procumbent yew-leaved *Hypnum*; this produces capſules at the baſis of the ſtalk. 3. The great branched, upright, and yew-leaved bog *Hypnum*; this grows in wet places, and is much larger than the two former, and branched, they being only ſingle leaves of half an inch or a little more in height. 4. The Acacia leaved *Hypnum*, with ſhort pedicles; the branches of this are ſhort, ſometimes ſimple, ſometimes branched. 5. The double-rowed *Hypnum*, with crooked fins; this is compoſed of numerous branches of about an inch long, ſpread every way about upon the ground. 6. The ſingle rowed *Hypnum*, with ſtraiter fins; the pinnulæ on this ſtand looſely together, and the ſtalks are branched. 7. The glittering feather-leaved *Hypnum*, with oval heads; this grows to two or three inches long, and uſually fixes itſelf on the branches of trees. 8. The trichomanes-like gliſtering feathered *Hypnum*; this alſo grows on the barks of trees, but it adheres leſs firmly to them than the former. 9. The tranſparent bird's-foot leaved *Hypnum*; this is found in Patagonia. 10. The large ſhining membranaceous water *Hypnum*; this grows in watery places, and is uſually two or three inches long, and the heads grow uſually from the lower part of the ſtalk, though ſometimes higher. Id. ibid. p. 271.

The ſecond diviſion of this ſeries of the *Hypnums*, contains thoſe which have undulated and curled leaves; of theſe the following are all the known genera: 1. The trailing *Hypnum* with waved fins; this is remarkably diſtinguiſhed from the other *Hypna*, by its ſpreading on the ground in the manner of the lycopodium. 2. The wavey feathered *Hypnum* with ſhort ſhanks; this grows from two inches to ſix or ſeven in length, and is a very beautiful kind; it is found on the chalk-hills about Graveſend. Id. ibid. p. 274.

The ſecond ſeries of the *Hypnums* is that of the fern-like kinds, called by many fern-moſſes; theſe have their ſtalks every way ſurrounded with leaves, and their ramifications all placed in the ſame plane, ſo that they reſemble the ferns. Of theſe the following are all the known ſpecies: 1. The large ſhining fern *Hypnum* with tamariſk leaves; this is a very beautiful moſs, it grows erect, and is ſix inches high; it is common in our woods. 2. The leſſer fern *Hypnum* with tamariſk leaves; the branches of this are as long as thoſe of the former, but they are more flexuous, and bent in ſeveral parts. 3. The fine dented trailing fern *Hypnum*; it grows ſometimes on the ground, and ſometimes on the trunks of old trees, and is diſtinguiſhed by the remarkable ſmallneſs of its leaves. 4. The ſhining plume fern *Hypnum*; this is a fine ſilky kind, found not unfrequently on walls and old trees. 5. The tough thready hill *Hypnum*; this is of a yellowiſh colour, and its branches are remarkably pointed. 6. The yellow thready *Hypnum*; this is a very ſmall ſpecies, but uſually grows in large tufts, and is found on old trees in Virginia. 7. The curled fern *Hypnum*; this grows to three or four inches in length, and is common in wet places in Suſſex and ſome other counties. 8. The plume creſted *Hypnum*; this is a very elegant plant, and varies much in its ſize in different ſoils, being very ſhort, and in thick tufts in dry places; and longer, and growing more looſely, in wet ones. 9. The fine leaved bog *Hypnum*; the leaves of this kind are of a very beautiful yellowiſh green, and are in moſt parts of the plant reflected at their points; this is frequent in boggy places about London, as on Hampſtead-heath, &c. 10. The ſoft and pale glittering fern-like *Hypnum*; this is common about the ſtumps of trees, but very rarely produces its capſules. Id. ibid. p. 293.

The third ſeries comprehends the ſquammoſe *Hypnums*; that is, ſuch as have their leaves every way ſurrounding the ſtalks in the manner of ſcales. Of theſe the firſt diviſion contains ſuch as have their leaves and the ends of the branches bent downwards. The following are all the known ſpecies of theſe: 1. The curled cypreſs-like *Hypnum*; this has crooked leaves, and does not creep, but grows in large tufts, in which the ſeveral branches lie over one another; it is very common in woods about the roots of trees. 2. The yellow, wolf's-claw *Hypnum*; this ſeldom grows to more than three inches in length, yet has very much of the appearance of the lycopodium. 3. The great ſcorpioide creeping bog *Hypnum*; this alſo ſpreads itſelf in the manner of the lycopodium, and is found in watery places in Shropſhire and elſewhere. 4. The leſſer upright ſcorpioide bog *Hypnum*; this is a very elegant moſs, and is very frequent in boggy places in moſt parts of England. 5. The creeping many-headed water *Hypnum*; the branches of this ſpecies are long and trailing, and uſually deſtitute of leaves, but from their ſides and extremities there iſſue young ſhoots covered with thick-ſet and deep green ones; it is common on the Thames ſhore, but ſeldom produces any capſules. Id. ibid. p. 292.

The ſecond diviſion of this ſeries of the *Hypnums*, takes in thoſe which are ſquammoſe and dentated; a firſt ſubdiviſion of theſe alſo is eſtabliſhed, to comprehend ſuch as have their leaves ſtanding out, whether broad or narrow. Of this ſubdiviſion are the following ſpecies: 1. The great triangular pale-green *Hypnum*; this grows to ſix or ſeven inches long, and is not unfrequent in woods and under hedges. 2. The moſt common dented ground *Hypnum* with obtuſe heads; this is very frequent at the roots of old trees, and in dry paſtures, and produces a great number of heads. 3. The common dented ground *Hypnum* with ſharp beaked heads; this alſo is very common about the ſtumps of trees in woods and hedges. 4. The knee-holly leaved *Hypnum*; this is ſmaller and ſhorter than the former, and grows in wet places upon ſtones,

ſtones. 5. The long water *Hypnum* with oval ſhining leaves; the ſtalks of this are eight inches or more in length, and the leaves ſmall and arranged cloſely together. 6. The long-leaved floating *Hypnum*; this is very common in watery places in Ireland. 7. The ſpear-pointed bog *Hypnum*; this is an elegant moſs, very common on Hampſtead-heath; the leaves are ſo convoluted at the ends of all the branches, that they form points which appear prickly. 8. The yellow ſtarry bog *Hypnum*; this is ſmaller than the former, and the leaves, inſtead of being convoluted into points at the ends of the branches, are expanded ſo as to form a ſort of radicated ſtar at the end of each. 9. The yellow woolly bog *Hypnum*; this is a beautiful erect bog moſs, with a yellow tufted head, and a black baſis, the bottom part of every ſtalk being black and deſtitute of leaves. 10. The larger *Hypnum*, with reflex or drooping leaves; this is a very elegant moſs, every leaf appearing in ſhape of a hook from the ſtalk. 11. The leſſer drooping leaved *Hypnum*; this is of a paler colour than the former, and the leaves are more bent and ſhorter; both theſe are very common in our woods. 12. The rambling round-headed mountain *Hypnum*; the heads of this ſpecies are remarkably round in ſhape; it is common in Ireland, but leſs frequent with us. 13. The fox-tail *Hypnum*; the name carries a ſufficient deſcription of this remarkable ſpecies, which is not found with us, and no where, ſo far as is yet known, except in the Canary Iſlands. 14. The rambling ſlender-headed ſtone *Hypnum*; this is a native of Germany, and is common there about the rocks, whence ſprings iſſue. 15. The upright ſlender *Hypnum*, with cylindrical heads; this is moſt frequently found on the ſtumps of trees, but ſometimes on the ground in dry hilly places. Id. ibid. p. 302.

The ſecond ſubdiviſion of theſe *Hypnums*, comprehends thoſe whoſe leaves being cloſely applied to the ſtalks, give them a cylindric figure; of this kind are the following ſpecies: 1. The water *Hypnum*, with round and feathered branches; that part of this plant which grows out of the water, has cylindric branches; but that which is under water, has the leaves ſtanding out in the manner of the *Hypna* of the former ſubdiviſion; it is common in the Thames and other rivers. 2. The blunt cypreſs-like *Hypnum*; this is ſometimes ſingle, ſometimes branched, and is common in woods and on large ſtones. 3. The round cypreſs or ſtone crop-like *Hypnum*; the ſtalks and branches in this are more erect than in the former, and more rounded; it grows on the ground in dry places. 4. The finer cypreſs-like *Hypnum*; this has the ſtalks of the young ſhoots covered with ſmaller and more pointed leaves; the branches are long and trailing, it grows on the ground in dry places, but rarely produces its capſules. 5. The long-ſhanked ſhining ſhrub *Hypnum* with upright heads; this is a very elegant moſs, it grows to three inches in height, the ſtalks are hard and woody, and naked from the ground to two-thirds of the height, it grows in woods. 6. The larger mouſe-tail *Hypnum* with upright heads; this is of a pale green, and is common on rocks, and at the roots of old trees. 7. The ſhort ſhanked dark-green ſhrub *Hypnum* with bowing heads; this is taller than the common ſhrub *Hypnum*, and more branched; it grows in thick woods. 8. The ſlender mouſe-tail *Hypnum* with ſtooping heads; this is of a very beautiful green, and is common under hedges at the ſtumps of trees. 9. The leſſer thick mouſe-tail *Hypnum* with ſtooping heads; the ſtalks of this are about an inch long, and the young ſhoots very ſhort and ſmall, the leaves are oval and obtuſe; it is of a yellowiſh-green, and is frequently found on old walls. 10. The fine ſhining mouſe-tail *Hypnum* with upright heads; this is leſs branched than the former, and of a darker green, it grows on old walls. 11. The ſquirrel-tail tree *Hypnum*; the ſtalks of this are long and variouſly interwoven, and the leaves are of a deep green; it grows on the trunks of trees. 12. The ſlender crooked *Hypnum*, reſembling the pods of the ſmooth-podded bird's-foot; this is a very elegant ſpecies; it is of a ſilky yellowiſh-green, and the branches are ſhort and crooked, bending into the ſhape of the pods of that plant; it grows on the ſtumps of trees, and on rocks. 13. The catkin *Hypnum* with long hoſes; the leaves are oval and obtuſe, and the young ſhoots much reſemble the juli or catkins of the hazel; the perichætia, or coats ſurrounding the baſes of the pedicles of the capſules, are remarkably long. 14. The creeping catkin *Hypnum* with ſoft ſhining branches and ſlender heads; it is ſmall, and of a yellowiſh green, and grows on the ground; and is common in Virginia and Penſylvania. 15. The catkin *Hypnum* reſembling the ſilver bryum; this grows in thick tufts unmixed with other moſſes, and is common on the ſtumps of trees in Maryland and Virginia. Ibid. p. 307.

The third diviſion of this order of *Hypna*, comprehends thoſe called the trichoide and ſilky ones; theſe have extremely fine and ſmall leaves, placed in the manner of ſcales one over another. The following are the known ſpecies of this kind: 1. The common bending ſilk *Hypnum* with ſtrait-pointed heads; this is ſmall and very ſilky; it grows on the ground, and on walls and trees, in great plenty, in moſt places. 2. The trailing ſilk *Hypnum* with bending heads; the branches of this are longer and more erect than thoſe of the former; it grows uſually upon the ground in dry places. 3. The velvet *Hypnum* with ſtooping oval heads; this grows in thick tufts about the roots of trees, and is of a yellowiſh-green. 4. The ſlender ſilk *Hypnum* with pointed heads; this is very much branched, and its ſtalks are uſually entangled one within another; this is very frequent on old trees, ſtones, bones, and other things, and is what is generally found on the human ſkull, after being long expoſed to the weather. 5. The ſlender ſilk *Hypnum* with roundiſh heads; this is a ſmall moſs, and grows tolerably erect, and ſeldom in thick tufts; it is of a mixed colour of green and yellow, and grows in heaths where there is little graſs. 6. The long red-ſhanked capillary trailing *Hypnum* with long heads; the branches of this are long, the young ſhoots very ſmall and ſhort; it grows on the earth, and ſpreads itſelf over ſtones, ſticks, or whatever lies in its way. 7. The ſhort-ſhanked capillary *Hypnum* with long heads; the leaves of this are broader and ſhorter than thoſe of the precedent, and it produces a great number of heads; it is common in the woods of Germany, and in North America. 8. The branched hairy tree *Hypnum*; this is a large moſs, and the ſtalks are very much branched; it is common in the woods of Germany. *Dillen.* Hiſt. Muſc. p. 331.

The ſecond order of the *Hypnums* contains thoſe with pendulous heads; of theſe there are only three known ſpecies: 1. The ſmall dented black *Hypnum* with ſtooping heads; the ſtalks are very ſhort and ſlender, the leaves of an oval figure, and ſet looſely one by another; they are of a deep dead green, and become black in drying; it is a remarkably ſmall moſs, and grows in Patagonia on the ſtumps of trees. 2. The herring-bone *Hypnum*; this is an upright moſs not branched, and its leaves are very long and ſlender, and ſo diſpoſed as to reſemble the ſpine of a ſmall fiſh; it was found by Sir Hans Sloane on the mountains of Jamaica. 3. The ſtiff-branched ſhort-ſhanked *Hypnum* with pendulous heads; this is a procumbent moſs, and has its branches uſually interwoven variouſly together; it is of a deep green, and grows on the ſtumps of old trees. Ibid. p. 333.

The third order of the *Hypna* contains a number of ſpecies leſs known than the others, and about which there is ſome doubt among authors, whether they are truly *Hypna*, and regularly diſtinct from the others. Theſe are, 1. The black water *Hypnum* with hooked leaves; this is deſcribed by Pontedera, Micheli, and other writers, and is wholly different from all the other *Hypna*, and indeed from all other moſſes; but it ſomewhat approaches to the character of the bryums. 2. The elegant ſcaly *Water-moſs* deſcribed by Feuillée; the branches of this are long, the leaves are of a pleaſant green, and placed like ſcales over one another; it grows in the rivers of Peru. 3. The ſquare-branched *Hypnum* of Jamaica; this is a ſmall moſs, and its leaves are very numerous, and very little, but are ſo diſpoſed in four ſeries, as to make the ſtalks appear ſquare. Sir Hans Sloane found this in the woods on the mountains of Jamaica. 4. The great creeping *Ground-moſs*, with branches conglobated at the extremities, and with ſmall leaves every way ſurrounding and hiding the ſtalk. This alſo was found by Sir Hans Sloane in Jamaica. 5. The ſmaller creeping *Earth-moſs*, with ſtalks conglomerated at their extremities, and with capillaceous leaves. 6. The ſubterranean *Water-moſs*, found in Pruſſia at a great depth under ground, in a watery place, digging for a well. 7. The black ſcaly middle-ſized *Water-moſs*. 8. The greater black-branched *Water-moſs*. 9. The ſcaly *Earth-moſs* with ſmall leaves and a little red head. 10. The creeping ſcaly *Earth-moſs*, with ſmall deep green leaves ſet very cloſely together, 11. The white leaved ſcaly *Earth-moſs*. 12. The ſcaly *Earth-moſs*, with long pale-green ſhoots. 13. The *Earth-moſs*, with conglobated heads, and very few leaves upon the ſtalks. 14. The common ſmall creeping *Earth-moſs*. 15. The little ſcaly *Moſs*, with heads growing on long pedicles at the ends of the branches. All theſe laſt are deſcribed by Pontedera, but imperfectly; and both they, and many of Micheli's, probably belong to ſome of the before-mentioned ſpecies; but as they want in the deſcriptions and figures the diſtinguiſhing characters of the ſpecies, Dillenius has prudently avoided determining any thing about them. Ibid. p. 342.

HYPOCAUSTUM (*Cycl.*)—The remains of a Roman *Hypocauſtum*, or ſweating-room, were diſcovered under ground at Lincoln, in 1739. We have an account of theſe remains in the Phil. Tranſ. N°. 461. Sect. 29.

HYPOCHÆRIS, in botany, the name of a genus of plants, the characters of which are theſe: The common cup is of an imbricated figure, and is ſwelled at the baſe, and compoſed of ſharp-pointed ſcales. The flower is of the compound kind; it is imbricated and uniform. The ſeparate flowers of which this is compoſed are numerous, and equal in ſize; each is compoſed of one leaf, and is narrow, of a ligulated ſhape, truncated, and divided into five ſegments at the edge. The ſtamina are five very ſhort and capillary filaments. The antheræ are cylindric and tubular. The germen of the piſtil ſtands under the flower. The ſtyle is capillary, and of the length of the ſtamina. The ſtigmata are two in number, and are reflex. The cup, after the flower is fallen, ſerves as a ſeed veſſel; it ſcales cloſe at the top, and it becomes of a roundiſh but pointed figure. The ſeeds are ſingle and oblong,

long, and terminate in a ſubulated and pappoſe ſtalk. The receptacle is beſet all over with little chaffy ſubſtances. Theſe are of the length of the ſeeds, and are placed between them. Linnæus makes this genus comprehend the *Hypochæris* and the achyrophorus of Vaillant. The only difference between which is, that the *Hypochæris* has a roundiſh cup all over imbricated, and a plumoſe down upon the ſeeds, whereas the achyrophorus has an oblong cup, which is imbricated only at the baſe, and a ſimple down on the ſeed. *Linnæi* Gen. Pl. p. 377.

HYPOCHONDRIAC *Malady* (*Cycl.*)—It is obſervable that perſons, ſubject to this diſorder, very rarely fall into continued, epidemic, or contagious fevers, and even eſcape the plague, and remain free from many other diſorders. *Hofm.* Oper. T. 3. p. 65.

This diſorder is confounded by Sydenham and others, with *hyſterics*; but Hofman inſiſts that the difference is conſiderable, and deſerves to be attended to in practice. See Oper. T. 3. p. 50. ſeq. See the article HYSTERICS.

HYPOCRATERIFORMIS, *faucer-ſhaped*, in botany, the name given by Mr. Tournefort to a peculiar ſort of flowers of plants, of the general order of the infundibuliform, but not ſo deep and narrow at the mouth as thoſe ſimply ſo called, but expanded into the figure of a ſaucer. *Tourn.* Inſt. p. 116. See the article INFUNDIBULIFORMIS.

HYPODIACONORUM *Feſtum.* See the article CALENDARIUM *Feſtum.*

HYPODORIAN, in antient muſic, a name for the ſeventh ſpecies of the diapaſon, otherwiſe called *locrian*, and *common*. See the article DIAPASON.

HYPOLYDIAN, in antient muſic, the fifth ſpecies of the diapaſon. See DIAPASON.

HYPOMNEMATOGRAPHUS, ὑπομνηματογραφος, in the primitive church, an officer who attended on the biſhop, and kept a regiſter of his conſecrations. *Hofm.* Lex. in voc.

HYPONITIS, in botany, a name given by Dillenius to a genus of plants, called by Tournefort, *orobanchoides*. See the article OROBANCHOIDES.

HYPOPHORA, Ὑποφορά, in rhetoric, the firſt part of the *prolepſis*: Thus, in the inſtance mentioned in the cyclopædia, *but ſome men will ſay, How are the dead raiſed, or with what body do they come?* is the *Hypophora*. And, *thou fool, that which thou ſoweſt*, &c. is the *Anthypophora*, or ſolution of the objection. *Voſſ.* Rhet. l. 5. p. 393. See the article PROLEPSIS, *Cycl.*

HYPOPHRYGIAN, in antient muſic, the ſixth ſpecies of the diapaſon. See the article DIAPASON.

HYPOPHTHALMUM, in botany, a name uſed by ſome authors for the aſter atticus. *Ger.* Emac. Ind. 2.

HYPOPODIUM, in antiquity, a piece of furniture belonging to the baths; its uſe was to ſet or reſt the feet on. *Pitiſc.* Lex. in voc.

HYPOPROSLAMBANOMENOS, in muſic, the name of the chord added by Guido Aretine, below the *Proſlambanomenos* of the Grecian ſcale, anſwering to our 6. See DIAGRAM.

HYPOPYON (*Cycl.*)—The cure of this diſtemperature of the eyes is ſometimes effected by violently ſhaking the head. The antients uſed this practice as an approved remedy; and accident has ſhewn it to be often ſucceſsful ſtill. The jolting of a chariot, in a long journey, having been known to remove the diſorder, by making the purulent matter ſubſide behind the uvea. This method of ſhaking ought, therefore, always to be made the firſt attempt, to give relief in this caſe, diſpoſing the patient's head in a ſupine poſture, and preſſing the eye before-hand with the fingers, in order to remove, or at leaſt looſen the matter. *Heiſter*'s Surgery, p. 425.

But if this attempt proves unſucceſsful, the neceſſary operation muſt be performed. The patient muſt be ſeated againſt the light, with his head and hands firmly ſecured by an aſſiſtant. The ſurgeon is then to depreſs the lower eyelid, while the aſſiſtant elevates the upper; and the ſurgeon is then with a lancet to incide cautiouſly through the cornea, below the pupil, making the opening large enough to diſcharge the matter, with the aqueous humour; but taking great care not to wound the uvea behind the matter. About three or four hours afterward the eye muſt be dreſſed with a compreſs, dipped in a collyrium of roſe-water, white of eggs, mucilage of quince ſeeds, and a little camphor; and by this means the wound in the cornea will be healed, the aqueous humour will be reſtored, and if none of the interval parts are injured, the patient will recover his ſight.

HYPOSCENIUM, Ὑποσκηνιον, in antiquity, a partition under the pulpit or logeum of the Greek theatre, appointed for the muſic. *Potter*, Archæol. Græc. l. 1. c. 8. p. 42. See the article LOGEUM.

HYPOSCHESIS, Ὑποσχεσις, in rhetoric, the ſame with *diviſion*. See the article DIVISION.

HYSSOP, *Hyſſopus*, (*Cycl.*) in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of one leaf, and is of the labiated kind; the upper lip is erect, roundiſh, and bifid; the lower is divided into three ſegments, the middle one being hollowed in the manner of a ſpoon, and double pointed, and as it were elated. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower, and ſurrounded by four embryo's, which afterwards become ſo many ſeeds, ripening in the cup of the flower.

The ſpecies of *Hyſſop*, enumerated by Mr. Tournefort, are theſe: 1. The common blue flower'd *Hyſſop*. 2. The *Hyſſop*, with flowers all round the ſtalks. 3. The ſweet ſmelling or muſk *Hyſſop*. 4. The curl'd-leav'd *Hyſſop*. 5. The *Hyſſop* with deeply divided leaves. 6. The ſhort round ſpiked *Hyſſop*. 7. The variegated or golden *Hyſſop*. 8. The common *Hyſſop*, with white flowers. 9. The common *Hyſſop*, with purple flowers. 10. The hairy *Hyſſop*. 11. The white-flower'd hairy *Hyſſop*. And, 12. The low myrtle-leav'd *Hyſſop*. *Tourn.* Inſt. p. 200.

The ſeveral ſpecies of *Hyſſop*, when not in flower, may be known by their long narrow leaves, and their peculiar agreeable ſmell.

All the ſorts of this plant, the common, as well as the more ſcarce, are propagated by ſowing or by cuttings. The ſeeds muſt be ſown in March, on beds of a light ſandy ſoil, and when the plants are come up, they muſt be cleared to a foot aſunder every way; or if they are intended to remain many years, they ſhould be left at two foot diſtance, for they grow quick, and ſpread very much. They thrive beſt on a poor dry ſoil, and will bear the ſeverities of winter much better on ſuch a ſoil, than on a richer. When they are to be propagated from cuttings, it is to be done in April or May, in a border where they may be defended from the violent heat of the ſun, and, being frequently watered, they will take root in two months, after which they may be tranſplanted to the places where they are to remain, managing them as the ſeedling plants. *Miller*'s Gardener's Dict.

Hyſſop is greatly commended is caſes of bruiſes from falls, blows, &c. uſed externally by way of cataplaſm, or only a little bundle of the plant ſewed up in a linnen rag, and applied to the part. Ray gives an account from Mr. Boyle, of a violent contuſion of the thigh, from a kick of a horſe; which was happily cured by this herb, boiled and applied as a cataplaſm. He tells us, the violent pain was almoſt inſtantly removed, and the very mark and blackneſs taken off in a few hours.

HYSSOP, among the antient Jews. A bunch of *Hyſſop* could only be uſed to ſprinkle the door-poſts and threſholds of their houſes with the blood of the paſſover-lamb. See the article PASSOVER, *Cycl.*

Hedge HYSSOP. See the article GRATIOLA.

HYSTERA, a term uſed by ſome of the old writers in medicine to expreſs the ſecundines.

HYSTERICS, (*Cycl.*) *Hyſterica Paſſio*, in medicine, the name of a diſtemper attending women, which is, in many reſpects, of the ſame nature with the hypochondriac paſſion in men: But as they are uſually of more tender conſtitutions than men, it afflicts them more violently, and often brings on a terrible ſenſation of ſtricture of the breaſt, and a ſort of ſuffocation, whence it is called by ſome *ſuffocatio uterina*, together with convulſions and ſpaſms of violent kinds. Hence ſome have alſo called it an uterine epilepſy; violent anxieties, with nauſeas, reaching to vomit, and other painful and often dangerous complaints uſually alſo attend it, which are unknown to men in their hypochondriac diſorders.

This diſtemper ſeems to ariſe from congeſtions of blood in the abdomen, and in the viſcera, ſituated there, which ſhould find paſſage by the uterus, or the hæmorrhoidal veins, but is impeded. And as this is alſo the cauſe of the hypocondriac affections in men, it is no wonder that the generality of ſymptoms are the ſame in both, and that the method of cure muſt be nearly the ſame. It is to be obſerved, however, that tho' obſtructions are the common cauſe of theſe diſeaſes in both ſexes, yet women are ſometimes found afflicted with this while the menſes flow properly, in due quantity, and at their regular periods. In this caſe, the diſorder ſeems owing to acrid humours in the primæ viæ, exciting ſpaſms wherever they come. *Heiſter*'s Comp. Med. p. 184.

In the time of the fit, when the ſenſation of ſtrangulation is violent, or there are convulſive motions, or faintings, the fœtid and volatile medicines ſerve to recover the patient; ſuch are ſpirit of hartſhorn, oil of amber, tincture of caſtor, and the volatile ſalts held to the noſe, or taken internally, as alſo the burning of feathers, horn, or leather, or any other ſubſtance, which has a very diſagreeable ſmell while in the fire; rubbing the hands and feet alſo are of great ſervice, and ſome recommend the pulling off of the hairs ſingly, and other methods which give pain, to bring the patients to themſelves.

Theſe are the methods to be uſed in the time of the fit; but when the patient is reſtored from that, the ſame method is to be uſed as in the hypochondriac paſſion; only that, in this caſe, a little caſtor is to be added to the ſaline and cinnabarine medicines. After this, care is to be taken to reſtore the menſes to their proper order, if the patient be at a time of life when they ought to flow; but if that period is paſt, the evacuation muſt be, in ſome meaſure, ſupplied by bleeding in the foot, and repeating this every year at the ſpring and fall, and with this ſome doſes of a gentle purge, with a proper regimen.

Vomits are always found very hurtful in theſe caſes, and when violent,

violent, are dangerous in the higheſt degree. Strong purges are alſo liable to the ſame objections, and are never to be meddled with. All hot medicines are alſo prejudicial, and the common uterine elixirs, with the diſtilled oils, and volatile ſalts, are liable to the ſame objections. Some give the common terreſtrial alkalies and abſorbents, but they give no relief in theſe caſes; becauſe an acid either is no cauſe, or, at the utmoſt, is not the eſſential cauſe of theſe diſorders.

Steel medicines are alſo given by many; but they are to be uſed with great caution; and, in general, they ſeldom do any good, but very often a great deal of harm. As there are, however, ſome caſes of this kind in which they excel all other medicines, it is always proper to give them a fair trial, under the proper regulations.

The common chalybeate waters often prove of more ſervice in this diſeaſe than all the medicines in the world; but they are to be taken with the proper cautions, and a due regimen. It is neceſſary to bleed in the foot before entering on a courſe of them, and then they are to be drank in moderate quantities, and always a little warmed, uſing a moderate exerciſe during the time of drinking them. See the article MINERAL *Waters*.

HYSTERICUS *Lapis*, in natural hiſtory, a name given to an American ſtone, called alſo *lapis uterinus*, famous for it virtues againſt diſorders of the womb, externally applied. It is black, and capable of a fine poliſh.

HYSTERICUS *Clavus*. See the article CLAVUS.

HYSTEROPHORUS, in botany, the name of a genus of plants, deſcribed by Vaillant in the Acta Germanica, the characters of which are the ſame with thoſe of the common parthenium. *Vaillant*, A. G. 1720. See the article PARTHENIUM.

HYSTEROPOTMI, ὑστεροπότμοι, in antiquity, perſons who had returned ſafe to their own homes, after having ſtaid ſo long in foreign countries that they were believed to be dead. Theſe were not allowed to be preſent at the celebration of any religious rites, till they had been purified by being let thro' the lap of a woman's gown, that ſo they might ſeem to be new born. *Potter*, Archæol. Græc. l. 2. c. 4. T. 1. p. 223.

HYSTRIX, the *Porcupine*. In the Linnæan ſyſtem of zoology, this makes a diſtinct genus of animals; the characters of which are, that the creatures of it have ears reſembling thoſe of the human ſpecies, and their body armed with thorns. *Linnæi* Syſtem. Natur. p. 38.



J.

JABIRU, in zoology, the name of a large water bird approaching to the crane kind, and called by ſome the *Negro*. It is larger than our ſwan, its neck is as thick as a man's arm, and its head very large; its beak is ſtrait, eleven fingers breadth long, pointed and a little hooked at the end: Its legs are two feet long, and thick and as it were ſcaly. It is all over on the body white, as the ſwan or gooſe. Its neck is naked, and for a long way below the head, is covered, as is alſo the head with a tough black ſkin: It is poſſible however, that there naturally may be feathers on this part; but that only dead birds having been ſeen of this ſpecies the feathers may have fallen off. Its tail is broad and ſhort. *Margrave*'s Hiſt. Braſil.

JABIRUGUACU, in zoology, the name of a Braſilian bird, called by others nanduapoa, and by the Dutch ſcurvogel. See the article SCURVOGEL.

JABOTAPITA, in botany, the name given by Plumier to a genus of plants; ſince characteriſed by Linnæus under the name of ochna. See the article OCHNA.

JABOTI, in zoology, the name of a remarkable ſpecies of tortoiſe found in America. The ſhell of this ſpecies is black, and has many hexangular figures marked upon it: The head and legs are brown variegated with ſpots of a duſky greeniſh hue. The liver of this ſpecies is accounted a very delicate food. *Ray*'s Syn. Quad. p. 254.

JACA, in natural hiſtory, the name of a kind of nut, very common in China, which is reckoned the largeſt of all yet known. It is produced from the trunk of the tree, as if the branches however large and ſtrong were not able to bear it. Its ſhell is ſo ſtrong, that there is occaſion for an ax or hatchet to open it; and within are innumerable cells or veſicles containing a pulp of a yellow colour, which ſurrounds a kernel like the cheſnut, that is exceeding ſweet when ripe. *Hoffm.* Lex. in voc.

JACAMACIRI, in zoology, the name of a very remarkable Braſilian bird, approaching to the nature of the woodpecker, and having feet of the ſame ſort with the birds of that genus, the toes ſtanding two before and two behind. It is of the ſize of a lark. Its feet are yellow, its head, back and wings, are all of a very lively green, variegated with yellow and red; and its breaſt and belly of a duſky yellow. It is a very ſplendid and beautiful bird, its colours glowing very brightly in the ſun. *Margrave*'s Hiſt. Braſil.

JACANA, in zoology, the name of a Braſilian bird, a ſpecies of moor-hen. It is a very elegant and beautiful kind, it is of the ſize of a pigeon, but its legs are much longer, and are of a greeniſh yellow, and all its toes eſpecially the hinder one, are of a very remarkable length. Its tail is ſhort, its colour on the back, belly and wings, is a mixt green and black: Its neck and breaſt are of the changeable colours they are in the peacock, and in ſome pigeons: Its head is ſmall, and is covered with a membrane of the colour of the oriental turquoiſe ſtone: The beak is ſhaped like that of the gallinaceous kind, and is about a finger's breadth long, and is partly of a greeniſh yellow, partly of a very elegant red. It is very common in watery places in Braſil, and is eaten, but not eſteemed a fine fowl. *Margrave*'s Hiſt. Braſil.

JACAPU, in zoology, the name of a bird of the merula or blackbird kind, and of the ſize and ſhape of the common blackbird. Its upper part is all of a deep black, except that the tips of the feathers on the rump are ſlightly greyiſh. Its breaſt is of a very fine red, and its tail long and like that of the common blackbird; as are alſo its beak and feet. *Ray*'s Ornitholog. p. 143.

JACARANDA, in botany, a name given by ſome authors to the tree the wood of which is the logwood, uſed in dying and in medicine. *Piſo*, p. 11.

JACARE, in zoology, the name of an animal found in the Braſils, and very little differing from the crocodile of the other parts of the world, if at all ſpecifically, which Mr. Ray doubts. It has no tongue, but only a ſort of membrane which reſembles the ſhape of one, and which it cannot lift up or move: Its eyes are large, round, clear, and very bright, the iris blue, and the pupil of a fine black: The forelegs are very ſlender and weak; the hinder ones longer, and more robuſt. The forefeet have each five toes; three in the middle, which are long, and armed with very ſharp claws; and two at the ſides, which have none. The hinder feet have only four toes each; one of which only on each foot wants a claw, and is the outer one. The farther half of the tail has a ſtrong erect fin upon it, which is of great uſe to the creature when in the water, ſerving as the fins of fiſhes to aſſiſt it in ſwimming. *Ray*'s Syn. Quad. p. 262.

JACARECATINGA, in the materia medica, the name by which ſome authors have called the Acorus Aſiaticus, or Aſiatic ſweet flag. *Piſo*, p. 24.

JACARINI, in zoology, the name of a Braſilian bird of the goldfinch kind, and of the ſize of our common goldfinch. Its beak is thick and grey, as are alſo its legs and feet; it is all over of a fine ſhining black, like poliſhed ſteel; its wings are white underneath. *Margrave*'s Hiſtor. Braſil.

JACCHAGOGI, Ἰακχαγωγοι, in antiquity, thoſe who carried the ſtatue of the hero Jacchus in proceſſion at the celebration of the Athenian feſtival, called *Eleuſinia*. They had their heads crowned with myrtle. See ELEUSINIA, *Cycl.*

JACEA, *Knapweed*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the floſculous kind, or compoſed of numbers of ſmall floſcules, each divided into ſeveral ſegments at the end, and ſtanding upon an embryo ſeed: Theſe are all contained in one general cup, which is of a ſcaly ſtructure, but not prickly. The embryos finally become each a ſeed winged with down.

The ſpecies of *Jacea* enumerated by Mr. Tournefort, are theſe: 1. The common broad-leav'd field *Knapweed*. 2. The common broad-leav'd field *Jacea*, with white flowers. 3. The black *Jacea*, with jagged leaves. 4. The narrow-leav'd black *Jacea*, with wild gromwel leaves, and a rough ſtalk. 5. The narrow-leav'd black *Jacea*, with wild gromwel leaves and a ſmooth ſtalk. 6. The low *Jacea*, with undivided leaves. 7. The *Jacea*, with hairy ſcales of the cup. 8. The *Jacea*, with pennated ſcales and a hairy head. 9. The great black *Jacea*, with a ſcaly head. 10. The leſſer black *Jacea*, with a ſcaly head. 11. The narrow-leav'd *Jacea*, with hairy heads. 12. The white flower'd hairy headed *Jacea*. 13. The common *Jacea*, with jagged leaves and purple flowers. 14. The common *Jacea*, with jagged leaves and white flowers. 15. The jagged-leav'd *Jacea*, with ſcaly heads. 16. The broad-leav'd *Jacea*, with jagged leaves. 17. The ſoft hoary mountain *Jacea*, with rough heads. 18. The white mountain *Jacea*, with heads like the ſteebe. 19. The purple flowered grey-leav'd jagged *Jacea*. 20. The degenerate grey-leav'd *Jacea*. 21. The tall purple-flowered *Jacea*, with hairy ſuccory-like leaves. 22. The tall white-flowered *Jacea*, with hairy ſuccory-like leaves. 23. The *Jacea*, with woolly rocket-like leaves. 24. The *Jacea*, with white jagged leaves, and not ſhining huſks. 25. The great jagged-leav'd *Jacea*, with ſilvery cups. 26. The greater *Jacea*, with ſilvery huſks. 27. The leſſer *Jacea*, with ſilvery huſks. 28. The jagged and ſerrated-leav'd annual *Jacea*, with purple flowers. 29. The wood *Jacea*, commonly called ſerratula, or ſawwort. 30. The white-flower'd wood *Jacea*, or ſawwort. 31. The tall peach-leav'd wood *Jacea*, or ſawwort. 32. The tall centaury-like wood *Jacea*, or ſawwort. 33. The Virginian wood *Jacea*, or ſawwort with rigid leaves. 34. The blue-flower'd alpine *Jacea*, with calcitrapa leaves. 35. The white-flowered alpine *Jacea*, with calcitrapa leaves. 36. The evergreen Portugal *Jacea*. 37. The Portugal marſh elecampane-like *Jacea*. 38. The dwarf Portugal *Jacea*, with ſawwort leaves and large flowers. 39. The alpine *Jacea*, with the leaves of devils-bit. 40. The honeywort-leav'd *Jacea*. 41. The broad-leav'd Spaniſh *Jacea*, with the nerves of the leaves hoary. 42. The ſilvery white woolly *Jacea*. 43. The ſtorax-leav'd tree *Jacea*. 44. The hoary and prickly cretic *Jacea*. 45. The woolly *Jacea*, with undulated leaves. 46. The dwarf Spaniſh *Jacea*, with toadflax-leaves. 47. The roſemary-leav'd headed *Jacea*. 48. The ſtone *Jacea*, with long narrow hoary leaves. *Tourn.* Inſt. p. 444.

The *Jaceas* are diſtinguiſhed from the thiſtles by their flower cups not being prickly, and from the cirſiums by their leaves not being ſo.

JACENT, in medicine, a term uſed to expreſs the ſtate of the body in a perſon who is lying down, and has a ceſſation of the actions and motions proper to the muſcles and tendons. The ears are called *jacent* alſo in ſome newly brought forth animals, as the hind, *&c.* when they lie flat to the head, and have never yet been erected; and finally Helmont has apply'd the term to nature, which, he ſays, is *jacent* when a diſeaſe is riſen to a head, and the morbific cauſe ſtrives to ſuppreſs the vital flame.

JACK (*Cycl.*)—JACK *Wambaſium*, in our old writers, a kind of defenſive coat-armour, worn by horſemen in war, not made of ſolid iron, but of many plates faſtened together; which ſome perſons by tenure were bound to find upon any invaſion. *Walſingham*, *Blount*.

JACK, in zoology. See the article LUCIUS.

JACK-*Daw*, the Engliſh name of a ſpecies of the corvus. See the article CORVUS.

This bird is very miſchievous to the farmer and gardener, and

and is of ſuch a thieviſh diſpoſition, that he will carry away much more than he can make any uſe of. There is a method of deſtroying this bird by a particular ſort of ſpringe, which is much practiſed in ſome parts of England, and is ſo uſeful, that it ought to be made univerſal. The method is this: A ſtake of about five foot long is to be driven firmly into the ground, and made ſo faſt that it cannot move, and ſo ſharp pointed at the top that the *Jack-daw* cannot reſt upon it: Within a foot of the top there muſt be a hole bored through it, of three quarters of an inch in diameter; through this hole is to be put a ſtick of about eight inches long, then a horſe-hair ſpringe or nooſe is to be faſtned to a thin hazel wand, and this brought up to the place where the ſhort ſtick is placed and carried with it thro' the hole: The remainder being left open under that ſtick. The other end of the hazel rod is to be put through a hole in the ſtake near the ground, and faſtned there. The ſtake is to be planted among the *Jack-daws* food, and he will naturally be led to ſettle on it; but finding the point too ſharp he will deſcend to the little croſs ſtick; this will ſink with his weight, and the ſpringe will receive his leg and hold him faſt.

JACKALL, in zoology, the name of a creature of the dog-kind, called by authors *lupus aureus*, the gold-coloured wolf, and by the modern Greeks *Squilachi*. It is ſmaller than the wolf, and of a very beautiful yellow colour. Theſe animals are always ſeen in large flocks together, not unfrequently to the number of two hundred in a flock. It is a very thieviſh animal, and will ſteal people's things away while they ſleep, even in the day-time, not ſparing ſuch as can be of no uſe to it, as their hats, ſhoes, or the like. It is a very common creature in Cilicia, and is heard barking all night long. *Ray*'s Syn. Quad. p. 174. *Bellon.* Obſ. l. 2. c. 108.

JACOBÆA, *Ragwort*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is radiated, and its diſk is wholly made up of floſcules, its outer circle of ſemi-floſcules. Theſe all ſtand upon the embryo ſeeds, and are contained in a tubular cup, divided into many ſegments at the edge. The embryos finally ripen into ſeeds, which are winged with down, and remain affixed to the thalamus of the flower. *Tourn.* Inſt. p. 485.

The ſpecies of *Ragwort* enumerated by Mr. Tournefort, are theſe: 1. The common jagged-leav'd *Ragwort*. 2. The common *Ragwort*, with leaves divided like thoſe of the rocket. 3. The common *Ragwort*, with leaves like thoſe of the raddiſh. 4. The tall Portugal *Ragwort*, with finely divided leaves. 5. The broad-leav'd marſh or water *Ragwort*. 6. The alpine *Jacobæa*, with roundiſh ſerrated leaves. 7. The mountain *Ragwort*, with roundiſh undivided leaves. 8. The mountain *Jacobæa*, with longiſh undivided leaves. 9. The betony-leav'd mountain *Jacobæa*. 10. The mountain *Jacobæa*, with oblong ſerrated leaves. 11. The tall marſh *Jacobæa*, with ſerrated leaves. 12. The tall marſh *Jacobæa*, with leaves like the limonium. 13. The tall limonium-leav'd marſh *Jacobæa*, with thick-ſet flowers. 14. The woad-leav'd Sicilian *Jacobæa*. 15. The *Jacobæa*, with bluiſh green leaves like the cretic corn-marygold. 16. The ox-eye flower'd *Ragwort*, with deeply divided leaves. 17. The roſemary-leav'd Spaniſh *Jacobæa*. 18. The umbellated annual *Jacobæa*, with deeply divided leaves. 19. The perennial *Ragwort*, with hoary groundſel like leaves. 20. The common groundſel-leav'd *Jacobæa*. 21. The ſea *Ragwort*, with thick ſhining groundſel like leaves. 22. The Spaniſh *Jacobæa*, with ſlightly divided leaves and very ſhort petals. 23. The Pannonian *Jacobæa*, called the hoary ſtinking and viſcid groundſel. 24. The mountain lanuginous *Jacobæa*, with narrow and not divided leaves. 25. The woolly ſea *Jacobæa*, with broad undivided leaves. 26. The *Jacobæa*, with very large woolly leaves. 27. The common ſea *Jacobæa*. 28. The hoary grey-leav'd ſea *Jacobæa*. 29. The degenerate ſea *Jacobæa*. 30. The dwarf wormwood-leav'd alpine *Jacobæa*. 31. The broad leav'd hoary ſtone Pyrenæan *Jacobæa*. 32. The *Jacobæa*, with thick undivided hawkweed leaves. 33. The peach-leav'd Pyrenæan *Jacobæa*. 34. The large flowered fennel-leav'd *Jacobæa*. 35. The ſmall flowered fennel-leav'd *Jacobæa*. 36. The ſouthern-wood-leav'd ſhrubby African *Jacobæa*. 37. The clary-leav'd ſhrub African *Jacobæa*. 38. The ſonchus-leav'd African *Jacobæa*. 39. The dandelion-leav'd African *Jacobæa*. 40. The wormwood-leav'd African *Jacobæa*. 41. The African *Jacobæa*, with undivided undulated and curled leaves. 42. The purple-flowered, broad-leav'd, jagged African *Jacobæa*. 43. The purple-flowered, narrow-leav'd, jagged African *Jacobæa*. 44. The tuberoſe-rooted African *Jacobæa*. 45. The American-tree *Jacobæa*, with large ſhining leaves like the elecampane. 46. The willow-leav'd *Jacobæa*, with hairy edges. 47. The hypericum-leav'd procumbent American *Jacobæa*. *Tourn.* Inſt. p. 486. See RAGWORT.

JACOBINE, the name of a particular ſpecies of pigeon, called by Moore the *Columba Cypria cucullata*. It is generally called the jack, for ſhortneſs. It is, when genuine and of the true breed, the ſmalleſt of all pigeons. It has a range of feathers inverted quite over the hinder part of its head, and reaching down on each ſide of the neck to the ſhoulders of the wings, which forms a kind of friars-hood, from whence the bird has its name. The upper part of theſe feathers is called the hood, and the more compact theſe feathers are and the cloſer to the head, ſo much the more the bird is eſteemed. The lower part of this range of feathers we call the chain, the Dutch call it the cravat: This ſpecies has alſo a ſhort bill, and a pearly eye. The colour is various in the feathers; there are reds, yellows, blues, blacks, and mottles; but whatever is the general colour, th head, tail, and flight are white. Some pigeons of this ſpecies are feather-legg'd, others are not. *Moore*'s Columbarium, p. 46.

JACULUM, in zoology, the name of a ſpecies of ſerpent found in Rhodes, and ſome other places, and more uſually called acontias. See the article ACONTIAS.

JACUPEMA, in zoology, the name of a Braſilian bird of the pheaſant kind, nearly as large as the common European hen. Its tail is very broad, and uſually a foot long. Its legs are long, and it is all over covered with browniſh black feathers. It can raiſe its head feathers into a ſort of creſt, which is bordered with white; the tips of the feathers which compoſe it, being of that colour. Its throat near the head is naked, and has a red appendage like the wattles of a cock; and its belly is lightly variegated with white ſpots. Its feet are of a fine red. It is a very well taſted fowl, and is eaſily kept tame. It has its name from the noiſe it makes, which is *Jacu*, *Jacu*, *Jacu*. *Marggrave*'s Hiſt. Braſil.

JACUT, in the natural hiſtory of the Arabians, is generally ſuppoſed to be the name of the ruby only; and it is owing to this, that among the gems uſed by the Arabian phyſicians in medicine, the ruby is ſuppoſed to have been moſt of all in eſteem, as the name *Jacut* oftener occurs in their writings than that of any other of the gems. The precious ſtones owe their colours to tinges from metalline particles; and it has been found, that as the emerald owes its colour to copper, and the amethyſt to iron, ſo the ruby owes its colour to gold; nay there are ſome places in the Eaſt-Indies, where rubies are found in conſiderable plenty, too ſmall for uſe as gems, and theſe being wrought for the gold they contain, yield a very conſiderable quantity of it. The chemical writers on this account extol the ſagacity of the Arabians, who could find out the virtues of gold in this gem, and therefore uſed it as a cordial, *&c.* preferably to all the other gems; but the merit of all this diſcernment is cancelled by obſerving, that tho' the word *Jacut* among the Indians, is the name of this peculiar gem only, yet the Arabians did not uſe it in this determinate ſenſe; but, according to the obſervations of the beſt critics and commentators, they uſed it as a general name for the ruby, the ſapphire, and the hyacinth. It ſhould ſeem that if the knowledge of the peculiar metals from which the gems received their colours influenced theſe writers in the direction of them in medicines, the copper from which the ſapphire is coloured, ſhould have as much deterred them from its uſe, as the gold in the ruby could have invited them to preſcribe that gem. All this ſcheme of preference ſeems therefore to be merely imaginary, and the Arabians as well as other of the antient writers in medicine, ſeem to have preſcribed all the gems in common, partly as pompous names in their preſcriptions, and partly from idle rumours of their virtues founded on no principles at all. *Garcias ab Orto.*

JAGRA, a name given to a peculiar ſpecies of ſugar, prepared from the cocoa nut.

JAGUACATI-*Guacu*, in zoology, the name of a Braſilian bird of the kingfiſher kind, called by the Portugueſe *Papa pẽẽxe*. It is of the ſize of a thruſh, and in ſhape much reſembles the European kingfiſher. Its beak is black, long, and ſharp; its legs very ſhort, and the toes placed one behind, not ſo as in the woodpecker kind, to which this bird otherwiſe has ſome affinity. Its back, head, tail, and wings, are of a duſky ferrugineous hue; its neck has a tranſverſe circular ſtreak of perfectly white feathers; and its throat, breaſt, and belly, are perfectly white. It has a white ſpot over each eye, and its tail and wings have a few white variegations; but theſe are not eaſily diſtinguiſhed, except when it is flying. *Marggrave*'s Hiſt. Braſil.

JAGUARA, in natural hiſtory, the name of a Braſilian animal, accounted by Marggrave a ſpecies of tyger; but differing from that creature, and approaching to the leopard in the ſhape of its variegations, which are ſo many round ſpots. The Portugueſe call this creature *Onça*, the ounce; whence it ſhould ſeem ally'd at leaſt to the lynx or ounce, properly ſo called. Its head, ears, feet, and all its other parts agree with the cat kind; as do thoſe of the lynx: Its claws are hooked like a half moon, and are very ſharp; its eyes are blue, and ſhine in the dark; and its tail is long like that of a cat, in which particular it varies from the common lynx. It is all over of a yellowiſh colour, beautifully variegated with black ſpots differently diſpos'd. It is a very fierce animal, and as ravenous of human fleſh as of that of beaſts. *Ray*'s Syn. Quad. p. 163.

JAGUARACA, in zoology, the name of a Braſilian fiſh in many things reſembling the ſcorpius of the Mediterranean.

It is of the ſize of the freſh-water perch, and its mouth is very large, but without teeth. It has only one back fin, which has eleven rigid and prickly rays. The tail is forked. Its gills are armed with ſeveral prickles, with which it wounds thoſe who take it. Its ſcales are ſmall, elegantly arranged, and ſerrated at their edges. It is of a ſilvery brightneſs all over, except on the belly, where it is of a dead white; the head is red, and covered with a ſort of hairy cruſt; the fins alſo are all of a pale red. It is caught among the rocks, and is a very well taſted fiſh. *Marggrave*'s Hiſt. Braſil.

JAGUARETE, in natural hiſtory, the name of a Braſilian beaſt of prey, accounted by Marggrave a ſpecies of tyger, but improperly; its roundiſh ſpots arguing it of the lynx or leopard kind. It is of the ſize of a young heifer, of a yelloviſh colour, variegated with black and brown ſpots, and is a very fierce and deſtructive animal. It much reſembles the creature called Jaguara, but is larger; and the ſpots which in that are all round, are in this ſome round, and ſome of other figures. The Portugueſe call both by the ſame name onça. *Ray*'s Syn. Quad. p. 169. See the article JAGUARA.

JALAP, *Jalapa*, in botany, the name of a genus of plants: The characters of which are theſe: The flower conſiſts only of one leaf which is of the ſhape of a funnel, with a broad opening, and uſually lightly crenated round the edge. The flower has a double calyx, or cup; on one of theſe it ſtands, and is incloſed at its bottom in the other. The lower of theſe finally becomes a fruit of a roundiſh figure, and containing roundiſh ſeeds.

The ſpecies of *Jalap*, enumerated by Mr. Tournefort, are theſe: 1. The purple-flowered *Jalap*. 2. The yellow-flowered *Jalap*. 3. The deep red-flowered *Jalap*. 4. The whitiſh-flowered *Jalap*. 5. The variegated *Jalap*, with flowers of a mixt purple and yellow. 6. The variegated *Jalap*, with flowers mixed of red, yellow, and white. 7. The variegated *Jalap*, with flowers half white half purple. 8. The variegated *Jalap*, with a white flower ſpotted, and ſtreaked with a deep purple. 9. The variegated *Jalap*, with flowers ſtreaked with yellow. 10. The ſmall flowered *Jalap*. 11. The rough-fruited *Jalap*. The root of the laſt is the drug called *Jalap*, in the ſhops. *Tourn.* Inſt. p. 129.

After all the preparations the chemiſts have invented for this root, the beſt way of giving it is in ſubſtance. Mr. Bolduc in his analyſis of it found, that when he ſeparated its ſaline and its reſinous parts, by making extracts of it firſt with ſpirits of wine, and then with water, that the ſaline or watery extract was much larger in quantity than the other, but that it purged weakly; and that the reſinous extract, tho' it operated in a ſmall doſe, was yet a very rough medicine; ſo that the beſt way of uſing them was together, and that nature gave us the medicine ready prepared. Mem. Acad. Par. 1701.

JALEMUS, Ἰαλεμος, in antiquity, a kind of mournful ſong, uſed upon occaſion of death, or any other afflicting accident. Hence the Greek proverbs had their original, Ἰαλεμω οικροτερος, or ψυχροτερος, *i. e.* more ſad or colder than a *Jalemus*, εις της Ἰαλεμως εγγραπτος, worthy to be ranked among *Jalemus*'s. Mem. Acad. Inſcrip. T. 13. p. 554.

JAM, or JAMB, in the language of our lead-miners in Mendip, a thick bed of ſtone, which hinders their work when they are purſuing the veins of oar.

JAMACAII, in zoology, the name of a Braſilian bird, of the ſize of a lark; its head is ſmall, its beak a little bent downwards. Its head is black, its throat alſo black; but the upper part of its neck yellow. Its back, breaſt and belly, are alſo yellow. Its wings are black, but have each one white ſpot. Its tail alſo is black, and its legs and feet brown. It is an extremely beautiful bird, and has ſo long a tail that it ſeems to belong to the wagtail or motacilla kind. *Marggrave*'s Hiſt. Braſil.

JAMAICA *Pepper-tree*. See the article PIMIENTA.

JAMAICA-*Wood*. See the article BRAZIL, *Cycl.*

JAMBEAUX, in our old writers, armour for the legs. The word is French, from *Jambe*, *tibia*, the leg. *Blount.*

JAMBLICI *Sal*, in medicine, a kind of ſalt prepared with ſal ammoniac, and ſeveral aromatic ingredients, ſuch as pepper, ginger, thyme, origanum, and the like; it has its name from its reputed author Jamblichus, and is ſuppoſed by many old writers to be an excellent medicine for concocting the crude humours, and gently producing ſtools. It was taken faſting in the quantity of half a ſpoonful, either alone or in a poach'd egg, or mix'd with any liquor. *Gorræi* Med. Defin. in voc.

JAMBON, in natural hiſtory, a name given by authors to a kind of ſea-ſhell, reſembling a ham of bacon. It is a ſpecies of pinna marina. See the article MYTULUS.

JAMBU, in zoology, the name of a Braſilian ſpecies of partridge, of which there are two ſpecies. They are of a duſky yellow colour, and are equal to the European partridges in the delicacy of their taſte. *Marggrave*'s Hiſt. Braſil.

JAMPNUM, in our old writers, furze or gorſe, and gorſy ground. This word is uſed in fines of lands, &c. and ſeems to come from the French *Jaune*, i. e. yellow; becauſe the bloſſoms of furze or gorſe are of that colour. 1 *Croke* 179. *Blount.*

JANA, among the Romans, a name given to the moon. *Hoffm.* Lex. in voc. See the article LUNA.

JANITOR, an affected name given by ſome writers to the Pylorus.

JANITORES, door-keepers, among the Romans, the meaneſt of their ſlaves, who were commonly chained to their poſts. *Hoffm.* Lex. in voc.

JANITRIX, an affected name given by ſome writers to the vena portæ.

JANSENISTS, in the church of Rome, the followers of Janſenius biſhop of Ipres, in Flanders. See the article JANSENISM, *Cycl.*

JANUA-*Plaſter*, a name given by ſome to the emplaſtrum de betonia, or betony plaſter, preſcribed in Lemery's pharmacopœia, and by other authors.

JAPACANI, in zoology, the name of a Braſilian bird of the ſmaller ſort; its beak is black, long, and pointed, and a little bent downward; its head is black, and its back, neck, and wings, are of a greeniſh brown mixed with black; the tail is black above, and is ſpotted with white underneath. Its breaſt is of a mixture of white and yellow, as are alſo its belly and thighs; and theſe are variegated with tranſverſe black ſtreaks. *Marggrave*'s Hiſt. Brail.

JAPANNING (*Cycl.*)—The varniſh made and uſed in China and Japan, is compoſed of turpentine and a curious ſort of oil they have. This they mix and boil up to a proper conſiſtence, and this never cauſes any ſwelling in the hands or face of the people who uſe it. The ſwellings in theſe parts which often happen to thoſe who work the lacquer'd ware, and ſometimes to thoſe who only paſs by the ſhops of theſe people, is from the lack and not the varniſh. This lack is the ſap or juice of a tree, which runs ſlowly out on cutting the lower part of the trunk of the tree, and is received in pots ſet on purpoſe under the inciſions. This juice as it flows from the tree is of the colour and conſiſtence of cream, and as it comes in contact with the external air its ſurface becomes black. As they only uſe it when black, their method of preparing it is to ſet it out in the open air, in large flat bowls, in which it looks all ſurface; but that the whole may be of the ſame uniform colour, they continually ſtir it for twenty-four hours together, with a ſmooth piece of iron: By this means the whole becomes thicker than it was before, and of a fine deep black. When it is in this ſtate they powder ſome burnt boughs of trees, and mix them throughly with it, and then ſpreading it thin over any board which they intend to japan, it is ſoon dried in the ſun, and is then abſolutely harder than the board it is laid on. When this is throughly dry they poliſh it over with a ſmooth ſtone and water, till it is as ſmooth as glaſs; and then wiping it very dry, they lay on the varniſh made of oil and turpentine, and boil'd to a proper conſiſtence for this kind of work.

If the work is to be of any other colour than black, that colour is to be mixed with the varniſh, and then the whole ſpread on very thinly and evenly; for in this laying it on depends the principal art of varniſhing. When there are to be figures in gold or ſilver, theſe muſt be trac'd out with a pencil in the varniſh over the reſt of the work, and when this varniſh is almoſt dry the leaf-gold or leaf-ſilver is to be laid on, and poliſh'd afterwards with any ſmooth ſubſtance.

JAPU, in zoology, the name of a Braſilian bird, of the woodpecker kind, called alſo *Jupujuba*. It is all over of a fine ſhining black colour, but that it has a large yellow ſpot on the middle of each wing, and a broad yellow ſtreak near the rump. This bird hangs its neſt very nicely from the extreme boughs of trees; and from the ſeeing theſe neſts, and not knowing to what bird they belonged, has ariſen the error of ſuppoſing that the parrots hang their neſts in this manner. *Ray*'s Ornitholog. p. 98.

JARARA-*Coaypitinga*, in zoology, the name of a ſpecies of ſerpent found in America, not much unlike the common viper, and equally venomous. Its tail is of a paler colour than the reſt of the body, and thence it has its name; which in the language of the natives expreſſes this property.

JARARA-*Epeba*, in zoology, the name of a ſpecies of American ſerpent, of a brown colour, but variegated by a very beautiful undulated red line, running all along the back like a chain. *Ray*'s Syn. An. p. 330.

JARARACA, in zoology, the name of a ſpecies of ſerpent, common in America. It is a very ſhort ſerpent, ſeldom exceeding a foot and a half in length. It has ſome prominent veins on its head, and is of a duſky browniſh colour, variegated with red and black ſpots. It is a very poiſonous ſpecies. The natives uſe for a remedy the root of a plant called Caatia, and by the Portugueſe Herva de Cobros. *Ray*, ibid. De Laët has deſcribed four different ſpecies of this ſerpent.

JARARACUCU, in zoology, the name of an American ſpecies of ſerpent. It is of the viviparous kind, and produces a great number of young; thirteen having been found perfectly formed in the body of a female of this kind. It grows to between two and three foot long, and has like the other poiſonous ſerpents very large and long teeth, which are hid in the gums, and contain a yellow poiſonous liquor. Theſe

it only exerts at the time of biting, and its poiſon is ſo fatal that it will deſtroy a man within four and twenty hours. *Ray*'s Syn. An. p. 330.

JARDES, or JARDONS, in the manege, are callous and hard ſwellings in the hinder legs of a horſe, ſeated on the outſide of the hough, as the ſpavin is on the inſide. *Jardons* lame a horſe, unleſs you give the fire dextrouſly and betimes. *Guillet.* See the article FIRE.

JARIBOLUS, Ιαριβωλος, in antiquity, one of the Palmyrenian gods. This deity in all appearance had the ſame attributes with the god Lunus; for *Jari* ſignifies the month over which the moon preſides. Mem. Acad. Inſcrip. T. 3. p. 177. See the article LUNUS.

JARRETIER, in the manege, an obſolete French word, ſignifying a horſe, whoſe houghs are too cloſe together; which is now expreſſed in French by *Crochu*, i. e. crooked or hooked.

JARUS, in botany, a name by which ſome authors have called the arum, or wake-robin. *Ger.* Emac. Ind. 2.

JASINE, in botany, a name uſed by the antients to expreſs a ſmall kind of climbing plant, much reſembling that from which they obtained the drug called ſcammony. They therefore called this ſometimes the ſmall ſcammony, or *ſcammonia parva*. It climb'd upon trees, and had ſmall ivy-like leaves. Pliny has deſcribed ſuch a plant as this under the name of *Langini*; and it ſeems very probable that this was only a corruption of the word *Jaſine*, that author having taken moſt of his accounts from the Greeks, and having frequently miſtaken their names.

JASIONE, in botany, a name given by Linnæus to a genus of plants; the characters of which are theſe: The common perianthium of the flowers is compoſed of ten leaves, which ſtand alternately one below another: This contains a great number of flowers which are affixed to ſhort pedicles. The peculiar perianthium of each flower is indented in five places, and is placed upon the germen of the piſtil. The ſeparate flowers are each compoſed of five leaves, which are joined at the baſe: The ſtamina are five very ſhort filaments; the apices are oblong, of the ſame number, and are joined alſo at the baſe. The piſtil has a roundiſh germen placed under the cup of the flower. The ſtyle is very ſlender, and of the length of the flower, and the ſtigma is bifid. The fruit is a roundiſh capſule crowned with its proper cup, and contains numerous ſmall ſeeds lodged in two cells. *Linnæi* Gen. Plant. p. 427.

JASMELÆUM, a medicinal oil, called alſo by the Perſians *Jaſme:* It is made by putting two ounces of the white flowers of violets into a pint of oil of ſeſamum. It is uſed to anoint the body after bathing, and is in great eſteem among the Perſians for its fragrancy, tho' it is a ſort of ſmell which many would rather think offenſive.

JASMINE, *Jaſminum*, in the Linnæan ſyſtem of botany, a ſhrub which makes a peculiar genus of plants; the characters of which are, that the perianthium or cup of the flower is oblong, tabular, and compoſed of one leaf, with an erect extremity divided into five ſegments. The flower is compoſed of one petal which makes a long cylindraceous tube; the extremity or mouth of the flower is flat and parted into five ſegments; the ſtamina are two ſhort filaments; the antheræ are ſmall and hid in the tube of the flower; the piſtillum is compoſed of a roundiſh germen; the ſtyle which is ſingle, and like a thread of the ſame length with the ſtamina, and a bifid ſtigma. The fruit is a ſmooth oval berry, with one cell within it, which contains two large oval but ſomewhat long ſeeds covered with a membrane, and convex on one ſide and plain on the other. *Linnæi* Gen. Plant. p. 3.

The characters of this genus, according to Tournefort, are theſe: The flower conſiſts of one leaf, and is of a funnel-like ſhape, and divided into ſeveral ſegments at the edges. The piſtil ariſes from the cup, and is fixed in the manner of a nail into the hinder part of the flower. This finally becomes a ſoft fruit or berry, which contains one or two ſeeds. *Tournef.* Inſt. p. 597.

The ſpecies of *Jaſmine* enumerated by Mr. Tournefort, are theſe: 1. The common white-flowered *Jaſmine*, or *Jeſſamy*. 2. The great Spaniſh *Jaſmine*, with the flowers red on the outſide. 3. The Spaniſh *Jaſmine*, with proliferous flowers. 4. The white-flowered ſweet-ſcented trifoliate *Jaſmine*. 5. The trifoliate *Jaſmine*, with yellow flowers. 6. The common berry-bearing trifoliate yellow *Jaſmine*. 7. The broad-leav'd double-fruited Indian *Jaſmine*. 8. The narrow-leav'd double-fruited Indian *Jaſmine*. 9. The broad-leav'd Indian *Jaſmine*, with double-belly'd fruit. 10. The broad-leav'd ſingle-ſeeded Indian *Jaſmine*. 11. The white-flowered tree *Jaſmine*, with ſweet-ſcented bay-like leaves. 12. The white-flowered tobacco-leav'd tree *Jaſmine*. 13. The nightſhade-leav'd tree *Jaſmine*, with bluiſh-black berries. 14. The violet-leav'd ſcentleſs creeping *Jaſmine*.

JASPACHATES, in the natural hiſtory of the antients, a name given to a ſpecies of agate, variegated with the matter of the jaſper, and therefore being properly diſtinguiſhed by this name. It is found at this time very plentifully both in the Eaſt and Weſt-Indies, and in many parts of Italy, Germany, and other parts of Europe; and is a very elegant ſtone. Its colouring is always compoſed of a brown and green, but it is very irregular in the admixture of theſe. Sometimes it is one equally coloured maſs, and is only diſtinguiſhable from the green jaſpers by its ſuperior hardneſs and brightneſs; but it is much more frequently found of a browniſh green ground, variegated with irregular concentric circles of a fairer green; and often with ſome of a beautiful red, or with a browniſh green ground, irregularly clouded and ſpotted with thoſe colours; it often has alſo an admixture of white and yellow.

Our lapidaries eſteem the oriental pieces of this ſtone very valuable, and work them into many ſorts of toys. The German are ſofter, and of little value. *Hill*'s Hiſt. of Foſſils, p. 489.

JASPER (*Cycl.*)—The curious Beccher having a mind to melt a *Jaſper*, powdered it, and putting it into a crucible, luted down the lid on it, and giving it an intenſe fire melted it, and found this very remarkable truth, that the colour of this ſtone tho' no more permanent in the fire than that of other gems, yet may be ſaved after its being raiſed in vapour as other ſublimed ſubſtances are; accident, and not any plan of operation, afforded this; but the fact is worth farther conſideration. *Beccher*'s Phyſ. Subter.

On unluting the crucible and opening it, the *Jaſper* was found melted into one lump, nearly as hard as before; but milk-white and ſemiopake, reſembling in all reſpects a natural white agate. The cover and the upper parts of the crucible which were unfilled, and which could not be touched by the *Jaſper* in ſubſtance, were tinged with the colours that the *Jaſper* had loſt. Theſe had the appearance of the fineſt *Jaſpers*, but the colours were ſuperficial only, not penetrating into the ſubſtance of the matter. The ground was green, as in the natural *Jaſper*, and the variegations red and yellow, and as beautifully diſpos'd as in the ſtone itſelf; the colours were ſo evenly laid alſo that they had a fine poliſh, and might have paſſed for wrought *Jaſpers* of the ſame ſpecies with the melted one, if cunningly ſet, and not ſuffered to be handled. Id. ibid.

Dr. Brown, in his travels thro' Germany, gives an account of a maſs of *Jaſper* dug out of a quarry at Saltſburg, and now making a part of the pavement of one of the emperor's courts at his palace at Vienna, which is of nine foot diameter.

JASPICAMEO, in natural hiſtory, the name of one of the ſemipellucid gems of the camea kind, very well known among the Italian lapidaries, but very ſeldom ſeen among us. It is ſeldom found of any conſiderable ſize, and is compoſed of broad zones of a pure and elegant white, and a very delicate green, much reſembling the matter of ſome of the green jaſpers. It is found in the Eaſt-Indies, and in ſome parts of America. The Italians are very fond of it, and uſe it as the common camea for cutting heads and other figures on, either in relief or creux. *Hill*'s Hiſt. of Foſſ. p. 501.

JASPONYX, in natural hiſtory, the name of a ſpecies of onyx, called by Dr. Hill *Onyx puriſſima cornea zonis læte virentibus*, or the pureſt horn-coloured onyx with green zones. It is an extremely beautiful ſtone. It is uſually found in the ſhape of a ſmall pebble, compoſed of a nucleus of a ſhattered or flaw'd cryſtal of an irregularly angular figure, round which are alternately diſpoſed zones of a fine pure cryſtalline matter lightly tinged to a horn-colour, and green ones little inferior to the emerald in beauty, being truly compoſed of the matter of the fineſt oriental Jaſper; and ſometimes between and among theſe there are fine ſlender zones of a pure white, which add greatly to the beauty of the ſtone. It is found in the Eaſt-Indies, and in New Spain; but in neither of thoſe places very frequently. It is greatly eſteemed among all the European nations, and cut into toys; but its ſcarcity has given occaſion to our jewellers very frequently to put off a green-vein'd German agate under its name. *Hill*'s Hiſt. of Foſſ. p. 492.

JASSENSE-*Marmor*, a name given by the antients to a very beautiful ſpecies of marble. It was remarkably hard, capable of a very fine poliſh, and was of a beautiful red approaching to what we call blood-colour, elegantly variegated with veins and clouds of a bluiſh white.

JATRALIPTES, Ιατραλειπτης, in antiquity, in its original ſignification was uſed for an officer in the Gymnaſia, whoſe employment was to anoint the Athletæ. The *Jatraliptes* was alſo called *Aliptes*; both which terms were ſometimes alſo uſed to denote the maſters of the exerciſe, ſuch as the *Gymnaſtes* and *Pædotriba*.

JATRALIPTES is alſo a term uſed by the antient writers in medicine, to denote ſuch phyſicians as pretended to cure all diſeaſes by external unctions. This method of cure was called *Jatroliptice*, and was firſt introduced into practice among the antients by Prodicus, a native of Selymbria, and diſciple of Æſculapius.

JATROCHEMIA, a term uſed by ſome writers, to expreſs the method of curing diſeaſes by chemical remedies.

JATROPHA, in botany, the name given by Linnæus to a genus of plants, firſt called by Houſton *Juſſievia*. The characters are theſe: It produces male and female flowers on the ſame plant. In the male flowers, the cup is ſo ſmall

as to be ſcarce viſible; the flower conſiſts of one leaf, and is of the ſaucer-ſhaped kind; the tube is extremely ſhort, and the mouth is divided into five ſegments; theſe are of a roundiſh figure; they ſtand expanded, and are convex above, and concave underneath. The ſtamina are ten pointed filaments, they ſtand cloſe to one another in the middle, five of them are ſhorter than the others, and they all ſtand erect, and are of the length of the cup: The antheræ are roundiſh, and turn about upon the ſtamina, There is a faint rudiment of a piſtil in the bottom of theſe flowers. The female flowers ſtand in the ſame umbel with the male ones; in theſe the cup is wholly wanting. The flower conſiſts of five petals diſpoſed in a roſaceous form: The germen of the piſtil is roundiſh and triſulcated. There are three ſtyles, each divided into two at the end, and the ſtigmata are ſimple. The fruit is a round capſule, compoſed of three cells, each compoſed of two valves; the ſeeds are ſolitary and roundiſh. *Linnæi* Gen. Plant. p. 457. *Tournefort*, 438. *Dill.* Elth. 173.

JAUNDICE (*Cycl.*)—Medical writers diſtinguiſh the *Jaundice* into idiopathic and ſymptomatic. The idiopathic *Jaundice* is that which ariſes of itſelf, and has no dependance on any other diſeaſe; the ſymptomatic is that which ariſes in the courſe of fevers and other diſtempers, in which the gall is affected.

The yellowneſs of the ſkin in ſome infants as ſoon as born, is by no means to be ſuppoſed a *Jaundice*, as it is a thing of no conſequence, and uſually goes off of itſelf after the voiding of the firſt ſtools.

Signs of the JAUNDICE. This diſeaſe always attacks people with a remarkable laſſitude, which laſts for ſome time; and this is more particularly the caſe, where violent paſſions of the mind have given riſe to the diſeaſe: This ſymptom is ſucceeded by a ſenſe of a ſtricture and compreſſion at the pit of the ſtomach; hence ariſe anxieties and ſtraitneſs of the præcordia, with difficulty of breathing, which is often ſo violent as to threaten ſuffocation; and uſually there is a ſenſe of weight and uneaſineſs in the right hypochondrium. The patient is always eaſier while ſitting, than while lying, or walking. There is a ſlight fever joined with the other ſymptoms, the patient being hotter than at other times, and uſually feeling a ſlight chilneſs or ſhivering before this. The bowels are ſometimes coſtive, but ſometimes more lax than uſual, and the ſtools are always whitiſh. Theſe ſymptoms are very ſoon ſucceeded by a yellowneſs beginning in and about the eyes, and by degrees ſpreading itſelf over the whole ſurface of the body. The urine is of a fine yellow colour, tinging the veſſels in which it ſtands; and if only a few drops of it are poured over a linnen cloth, they immediately tinge it like ſaffron. The appetite is always bad; and when any thing is eaten, the uneaſy ſenſation always returns with more violence at the pit of the ſtomach. The ſleep is uſually troubled, and there is ever a great languor of the mind attending the diſeaſe through all its periods. Theſe are the ſymptoms of the yellow *Jaundice*.

The black *Jaundice* is diſtinguiſhed by a more violent and uneaſy dejection and languor of the mind, and the colour brought on by the diſeaſe is blackiſh; and this is not only in the eyes and ſkin of the whole body, but alſo in the urine and ſpittle, or at leaſt the laſt is of a duſky and deep yellow. To theſe ſymptoms there is joined in this caſe a hectic heat, with great reſtleſſneſs, waſting of the fleſh, and a ſingular and terrible dejection of the ſtrength; and as there is uſually a ſenſation of a preſſure and weight in the right ſide in the yellow *Jaundice*, the ſame ſenſation is felt in this on the left. Perſons of all ages, and of both ſexes, are ſubject to this diſeaſe, but particularly ſuch as are of a choleric habit; and the extremes of life, youth and old age, are more frequently ſubject to it than the middle ſtage. *Junker*'s Conſp. Med. p. 440.

Cauſes of it. Theſe are a coarſe and thick diet, and an immoderate ſtomach for food, a ſudden obſtruction or repreſſion of hæmorrhages, particularly of the diſcharges of the menſes and hæmorrhoidal veins. In theſe caſes this diſeaſe is alſo too often either the forerunner, or the attendant of an hepatitis. It is alſo ſometimes brought on by a ſuppreſſion of intermittent fevers, particularly of quartans by aſtringents, and by violent paſſions of the mind, eſpecially when they are ſuppreſſed. Violent emetics will ſometimes alſo bring on this diſeaſe, as will alſo a ſudden draught of cold water when the body is very hot. A ſchirrus in the liver, or a ſtone in the gall bladder, are alſo known too often to occaſion it. Theſe are the cauſes of the yellow *Jaundice*; but the black uſually takes its riſe from obſtinate and habitual obſtructions of the ſpleen, which is properly the ſeat of this diſorder.

Prognoſtics. Young people are ſeldom ſo violently attacked with the *Jaundice* as thoſe advanced in years, and are always more eaſily cured of it. When this diſeaſe comes on with more than ordinary violence, there is reaſon to ſuſpect a hectic or ſlow fever at the bottom, or ſometimes an acute one. And when a *Jaundice* attacks perſons on the fourth day of an acute fever, or before that time, and comes on with great violence, there is always danger of the death of the patient. The greater the obſtructions of the viſcera are from the ſuppreſſion of intermittent fevers, the greater is the danger that attends the *Jaundice* ariſing from ſuch obſtructions. People who have had the *Jaundice* two or three times fall into a ſort of habitual tendency to it on different occaſions, and are uſually ſubject afterwards to frequent returns of it. When the *Jaundice* is attended with great difficulty of reſpiration, anxiety, and oppreſſion about the præcordia, and with a ſort of aſthmatic oppletion of the breaſt, a hectic or aſcites, and an atrophy, too frequently follow. If at any time the yellow colour of the ſkin in this diſeaſe changes ſuddenly to white, it is a very fatal preſage; ſhewing that there is a ſchirrous conſtitution in the liver. A diſcharge of blood by the hæmorrhoidal veins happening in the time of this diſeaſe, is a preſage of a ſpeedy cure, and copious yellow ſweats which ſtain the linnen, are alſo a very favourable ſymptom. A *Jaundice* which happens to perſons advanced in years, from the too free uſe of ſpirituous liquors, is a much more difficult one to cure than the common kind, as there is always in this caſe a remarkable dryneſs of the liver. A *Jaundice* not unfrequently ariſes from a ſuppreſſion of a quartan by the bark alone, or given in an injudicious manner; and when this proves obſtinate and difficult of cure, it gives a very bad preſage of a hectic, and obſtruction of the liver. On the whole, a ſimple *Jaundice* of the common ſlighter kind is eaſily cured, and is of no danger; but when this diſeaſe is complicated with others, and is obſtinate of cure, it uſually proves fatal either in itſelf, or in its conſequences.

The black *Jaundice* is always more difficult of cure than the yellow; and where it attacks old people, and is of long ſtanding, it generally proves fatal either in itſelf, or by bringing on hectics and other incurable diſorders. *Junker's* Conſp. Med. p. 442.

Method of Cure. When the diſeaſe is recent, the patient ſhould take three or four times a day powders of nitre and tartar vitriolated; and in caſes where violent paſſions have been in the cauſe of it, the abſorbent powders are to be added, as crabs-eyes, and the like. At times there muſt be given with theſe, ſmall doſes of rhubarb or other gentle purgatives, and decoctions of turmeric, celandine, and a little ſaffron. By theſe means a recent *Jaundice* is often happily taken off in a very little time, or as it were nipped in the very bud. A few grains of diaphoretic antimony may be added to that powder, which is to be taken going to reſt; and this will be very efficacious in carrying off the yellowneſs of the ſkin. When the diſeaſe is going off by theſe gentle means, ſome gentle chalybeate is to be given twice a day, and after this the purging by rhubarb is to be repeated. *Junker*'s Conſp. Med. p. 445.

When the diſeaſe is more ſtubborn, a gentle ſweat is to be kept up continually, and powder of turmeric to be given at a ſcruple for a doſe, and powders of diaphoretic antimony and the digeſtive ſalts, ſuch as tartar vitriolated, are to be given frequently. In young people, there needs little more to cure the *Jaundice*, than the keeping up a gentle perſpiration, and a few doſes of rhubarb. And in general, as the *Jaundice* is a diſeaſe very ſubject to return upon perſons who have once had it, gentle evacuations ſhould be uſed at times to keep it off, and a medicated drink with rhubarb, ſenna, and the like, ſhould be taken for ſome days once in a quarter of a year. The *Jaundice* is a diſeaſe which will not bear any rough methods; vomits and ſtrong purges always do harm, and ſweats forced by the hot medicines make the diſeaſe worſe, inſtead of giving the relief in it which is always had from perſpiration brought on by gentler means.

Horſes are ſubject to this diſtemper, as well as men. The farriers commonly call it the yellows, and divide it as we do the *Jaundice* into two kinds, the yellow and the black. The yellow kind is known by the creature's white of his eyes turning to a yellowiſh colour, and his tongue and lips alſo partaking of the ſame tinge, but in a ſmaller degree. In the black kind all theſe parts are tinged with a duſkiſh or blackiſh colour. The common cure among the farriers is by means of an ounce of mithridate diſſolved in two quarts of ſtrong beer, and given to the horſe warm; and repeating this doſe once in twelve hours, as long as the diſtemper continues.

JAUNDICE-*Bird.* See the article ICTERUS.

JAU-RAIA, in botany, a name given by Plumier to a genus of plants; another ſpecies of which he afterwards deſcribes under the name of Bryoniæ ſpecies. Theſe are included by Linnæus under one genus: The characters of which are delivered in his Genera Plantarum, p. 479. under the name *Raiania*. *Plum.* Gen. p. 29. Species rar. See the article RAIANIA.

JAW (*Cycl.*)—*Diſlocated* JAW. The lower *Jaw* is ſeldom luxated, becauſe it is held very firmly by ſtrong ligaments and muſcles in two ſinus's in the baſis of the cranium; but when it is by accident forced from thence, whether it be on one ſide only, or on both; it is in this caſe thruſt directly forward. This accident is ſometimes brought on by a blow, or fall, but moſt frequently it happens from the opening the mouth too wide in yawning. If it be luxated on both ſides, the chin will incline downward, and the *Jaw* will be thruſt very forward; but if only on one ſide, the chin will be inclined

clined towards the oppoſite ſide; the elapſed little head of the *Jaw* not being capable of diſlocation otherwiſe than forward, and inward. When the *Jaw* is out only on one ſide, the cure is uſually not very difficult; but when both heads are diſlocated, and not preſently reſtored to their place, it always occaſions the worſt of ſymptoms, as pains, inflammations, convulſions, fevers, vomitings, and even death at length; and theſe ſymptoms are the more violent, as the adjacent nerves, tendons, and ligaments ſuffer a greater extenſion; but if an expert ſurgeon is applied to in time, all theſe are prevented by the ends being reduced.

The patient is to be ſeated on a low ſtool, ſo that an aſſiſtant may hold his head firm back againſt his breaſt; then the ſurgeon is to thruſt his two thumbs as far back into the patient's mouth as he well can, but they are to be firſt wrap'd round in an handkerchief, to prevent them either from ſlipping, or from being hurt; his other fingers are at the ſame time to be applied to the *Jaw*, externally. When he has thus got firmly hold of the *Jaw*, it is to be ſtrongly preſſed firſt downwards, and then backwards, and laſtly upwards. Theſe different directions of the force are however to be given all in one inſtant; and by theſe means the elapſed heads of the *Jaw*, are at once reſtored into their former cavities; but the ſurgeon muſt alſo be very careful always to ſnatch his thumbs very ſwiftly out of the patient's mouth, leſt they ſhould be compreſſed, bruiſed, or bit by reducing the *Jaw*.

If the *Jaw* be out on one ſide only, the method of reducing it muſt be exactly the ſame, only that the luxated ſide muſt be forced more ſtrongly downward and backward, than the ſound one. As to bandages, there is no occaſion for them in this caſe, unleſs the luxation has remained ſome time before it was reduc'd; for in that caſe, it may not be improper to apply for ſeveral days, the four-headed bandage, with ſome ſtrengthning ſpirit; which may be taken off, when the patient intends to eat. *Heiſter*'s Surg. p. 152.

We have a method by Mr. Monro, of reducing the *Jaw*-bone when luxated. Who ſays, he has more than once found Mr. Petit's method of reducing the luxated *Jaw*-bone ineffectual, after the muſcles have been ſwelled by unartful attempts of reduction, but that he ſucceeded by a ſmall improvement; for the particulars of which we refer to the Medic. Eſſ. Edinb. Vol. I. Art. 11.

This learned profeſſor thinks the common opinion, that the *Jaw* is brought down by the force of the digaſtric muſcles ſolely, not ſufficiently founded.

Fractures of the JAW. The lower *Jaw* is not ſo liable to fractures as the reſt of the bones; but when it is broke, whether it be on one ſide or both, the divided parts do not recede to any diſtance from one another. For the reſtoring the bones in a fractur'd *Jaw* to their proper ſituation, the patient muſt be commodiouſly ſeated over-againſt the light, and his head held firm by an aſſiſtant. The ſurgeon is then to introduce the thumb or fore-finger of one hand into the mouth, applying the other externally; and by this means he is to preſs the fragments of the *Jaw* on each ſide, till they have regained their former ſituation; which may be always known by the regular diſpoſition of the teeth. And if any of the teeth be found looſe or ſlip'd out, it may not be improper, if nothing hinders, to reſtore them afterwards to their proper places; faſtening them by a ſilver wire to ſuch as are next them. After the bones are thus properly reduced, they muſt be covered firſt with a plaſter, and then a compreſs dipt in ſpirit of wine, and applied internally; and another compreſs ſewed to a piece of paſteboard of the form of a half *Jaw*, is to be laid on externally; theſe are to be kept on by a four-headed bandage, perforated in the middle to let in the chin. But when the *Jaw* is found to be fractured on both ſides, it is uſual to introduce and apply internally, after the compreſs dipt in ſpirit of wine, another made of thin paſteboard; perforated in its middle, and accommodated to the figure of the chin in this manner. Its middle that is perforated is to be applied to the chin, and its two extremities towards the ears. But fractures of this part may often be well enough cured without plaſters and ſplints, where we can conveniently apply a proper bandage; for theſe bones are not eaſily diſplaced again, when they are once reduced. The patient muſt for ſome days live upon liquids, avoiding chewing and talking; and the fracture generally is well in twenty or thirty days. *Heiſter*'s Surg. p. 119.

IBERAPITANGA, in botany, a name by which ſome authors have called arbor braſilia, or lignum braſilianum. *Piſo*, p. 164. See the article BRAZIL, *Cycl.* and *Suppl.*

IBERIS, in botany, is with ſome authors the name of the common cardamine, the lady's ſmock or cuckow flower. *J. Bauhin*, V. II. p. 887.

IBEX, in natural hiſtory, the name of an animal of the goat kind. It is found in the mountains, and is extremely ſwift; but carries on its head a pair of horns, which one would think were ſufficient to weigh it down. Bellonius obſerves, that he ſaw ſome whoſe horns were four cubits long: They are bent down upon the back, and are wreathed and knotty, one knot growing every year. The head is ſmall, and the legs very ſlender; ſo that this creature, tho' properly of the goat kind, much reſembles a ſtag; the male has a very long black beard. It is not uncommon in ſome parts of Germany. *Ray*'s Syn. Quadr. p. 77. *Grew*, Muſ. p. 24.

Bochart, from ſome Arabian authors, ſays that this animal bends its horns back as far as its buttocks, and thereby leaps from the higheſt precipices, and falls upon its back without hurting itſelf; becauſe its horns receive and break the blow. *Calmet*, Dict. Bibl.

IBIBOBOCA, in zoology, the name of a ſpecies of ſerpent called by the Portugueſe *Cobra de Coral*. It is about two foot in length, and of the thickneſs of a man's thumb; and tapers off at the tail to a thinneſs, till at laſt it ends in a ſharp point. Its belly is all over white, and very bright and gloſſy; and its head is covered with white ſcales of a cubic figure, and with ſome black ones towards the edges. Its body is variegated with black, white and red. It is a very ſlow mover; but is of a very terrible and poiſonous kind. *Ray*'s Syn. Anim. p. 327.

IBIGA, in botany, a name uſed by ſome authors for the chamæpitys, or ground pine. *Ger.* Emac. Ind. p. 2.

IBIJARA, in zoology, the name of an American ſpecies of ſperent, called alſo *Bodty*, and by the Portugueſe, *Cega*, *Cobre Vega*, and *Cobra de las Cabeças*. It is of the amphiſbena kind, and is generally ſaid to have two heads, one at each end; but that is wholly erroneous. The head and tail are of the ſame ſhape, and of equal thickneſs, and the creature will ſtrike equally with either; and as it is ſaid its poiſon is equally contained at both. It is a ſnake of the ſmaller kind, being of about a foot long, and as thick as one's finger. It is white in colour, and as ſhining and gloſſy as glaſs; and is very elegantly marked with rings and ſtreaks of a brown or copper colour. Its eyes are ſmall, and ſcarce conſpicuous, looking only like dots made by the point of a needle; it lives under ground, and feeds on ants and other ſmall inſects. It is often thrown up in digging; and the Portugueſe ſay, it is a creature whoſe poiſon is beyond the reach of all the known remedies. *Ray*'s Syn. Anim. p. 289.

IBIJAU, in zoology, the name of a Braſilian bird, of the capri mulgus, or goat-ſucker kind. It is a very beautiful little owl, not larger than a ſwallow. Its head is large, broad and flat, and its eyes black and very lively; its beak is extremely ſmall, not exceeding the ſize of the large phang of a ſpider; but at the top of this, the noſtrils are very diſtinguiſhable. Its mouth is monſtrouſly large; when ſhut this is not perceived, but when it is open, it reaches each way to the eyes. Its legs are very ſhort, and its tail broad. It is all over of a blackiſh colour, ſpotted and variegated with white and yellow. *Marggrave*'s Hiſt. Braſ.

IBIRA, in botany, a name given by ſome authors to the tree which produces the cubebæ, or cubebs of the Shops. *Piſo*, p. 144. See the article CUBEBS, *Cycl.* and *Suppl.*

IBIRACOA, in zoology, the name of a ſpecies of ſerpent, found in the Weſt Indies; whoſe bite is poiſonous, and always attended with very terrible effects. It is of a variegated colour, mottled with black, white, and red.

IBIS, in zoology, the name of an Egyptian bird, approaching to the ſtork kind; and by ſome confounded very erroneouſly with the hæmatopus, or red-legged heron. It is all over of a fine ſhining black; its beak is long, ſomewhat hooked, and all over of a fine red, as are alſo its legs, which are as long as thoſe of the bittern. Its neck is as long as that of the common heron. It is ſaid to be peculiar to Egypt, and incapable of living in any other region; and is there very ſerviceable in deſtroying the ſerpents, locuſts, and other devouring inſects; and hence it was, that in early ages they had divine honours paid them. *Bellonius* de Avib.

It is remarkable in this bird, that altho' it lives principally about the *Nile*, yet it never enters the water, nor can it ſwim. The uſe of glyſters is ſaid to have been learned from the *Ibis*, and not from the ſtork. It generally builds its neſt upon palm-trees, to avoid the cats. The antients aſſerted in their writings, that it conceived at its beak, and even laid its eggs that way; but theſe are miſtakes. Aldrovandus relates, that the fleſh of the *Ibis* is red, like a ſalmon's; that it is ſweet; that its ſkin is very hard, and ſmells like wild-fowl. *Calm.* Dict. Bibl. *Salmaſ.* in Solin. p. 418. *Solin.* c. 34.

IBUM. The Rabbins give this name to the ceremony of a brother's marrying his ſiſter-in-law, the widow of his brother deceaſed without children, by virtue of the *Moſaic* law mentioned in Deut. xxv. *Calmet*, Dict. Bibl.

ICAN *Setany*, in zoology, a name by which Bontius has called the piſcis triangularis. *Willughby*'s Hiſt. Piſc. p. 156. See the article TRIANGULARIS *Piſcis*.

ICE *(Cycl.)*—*Ice* may be preſerved in a dry place under ground, by covering it well with chaff, ſtraw, or reeds. Phil. Tranſ. N°. 8. p. 140. See the article SNOW.

The ſpecific gravity of *Ice* to water, is as eight to nine: hence being lighter than water, it floats upon it. This rarefaction of *Ice* is owing to the air-bubbles produced in *Ice* while freezing; theſe being conſiderably large in proportion to the water frozen, render the *Ice* ſo much ſpecifically lighter. It is well known, that a conſiderable quantity of air is lodged in the interſtices of water, tho' it has not there any elaſtic property,

on account of the diſunion of its particles; but theſe particles coming cloſer together, and uniting as the water freezes, light, expanſive, and elaſtic air-bubbles are thus generated, and increaſe in bulk as the cold grows ſtronger; whence of courſe the *Ice* grows lighter, and theſe air-bubbles acquiring an elaſtic force burſt to pieces any veſſel in which the water is cloſely contained. But ſnow-water, or any water long boiled over the fire, affords an *Ice* more ſolid than ordinary, and with fewer bubbles. This alſo freezes much ſlower than common water; whereas, on the contrary, pure water long kept in vacuo and frozen afterwards there, freezes much ſooner, on being expoſed to the ſame degree of cold, than water unpurged of its air and ſet in the open atmoſphere. And the *Ice* made of water thus diveſted of its air, is much harder, more ſolid and tranſparent, and more ponderous than common *Ice*. *Boerh.* Chem. P. I. p. 376.

To make the moſt perfect *Ice* we ſhould take the pureſt water, and perfectly purge it of its air by the air-pump; then freeze it in the ſevereſt froſt, by means of Mr. Farenheit's contrivance. Thus we obtain an *Ice* of the greateſt hardneſs, denſity, purity, tranſparence, and gravity.

In the mountains of Swiſſerland there are immenſe maſſes of *Ice*, which by the tradition and hiſtories of the country muſt have lain there for many centuries. At certain times there happen cracks in theſe, and by theſe cracks the vaſt thickneſs of the maſſes may in ſome meaſure be gueſſed at; ſome of them being three or four hundred ells deep, and yet none of them ever having gone through the whole thickneſs. *Wagner*'s Hiſt. Nat. Helv.

The vaſt bodies of *Ice* met with in the northern ſeas near Hudſon's-Bay, are ſurpriſing; ſome of them being immerſed an hundred fathoms or more under the the ſurface of the ocean, and a fifth or ſixth part above, and three or four miles in circumference. See Phil. Tranſ. N° 465. Sect. 2.

Theſe floating mountains of *Ice* owe their vaſt bigneſs and durable nature to a cauſe not conſidered by many; that is, to their not being common *Ice*, but the *Ice* of ſea-water; many experiments proving, that in acid and ſpirituous liquors, when the froſt has power over them, the watery parts only are affected, and the *Ice* is taſteleſs, while the liquor remains concentrated, and much ſtronger than before at the bottom, or in the center. It was generally ſuppoſed that the ſaline liquors, and conſequently ſea-water, were affected by freezing in the ſame manner; that is, its watery part alone was frozen, and the ſalt ſeparated from the part ſo congealed; but Dr. Liſter has proved, that the *Ice* formed of ſea-water is really ſalt, and does contain ſea-ſalt, and finally that it is, by means of this ſalt contained in it, rendered more durable than common *Ice*. If a vial of ſalt-water be expoſed to the air in froſty weather till flakes of *Ice* are found in it, and then brought into a warm room, thoſe flakes will remain even in that place a long time undiſſolved; and if they are taken out and expoſed at a ſmall diſtance to the fire, they will not run into water as common *Ice* would, but they will by degrees evaporate, and there will be left only a little white ſalt.

Since ſea-water when frozen thus forms a very durable *Ice*, it appears eaſy to conceive, that the immenſe maſſes of ſuch *Ice* found in the northern ſeas ſhould continue undiſſolved through the whole year, and at the return of the freezing ſeaſon remaining of the ſame bigneſs as at firſt, they muſt of conſequence then become much bigger by the freezing of more *Ice* about them; and thus continuing to loſe very little, and that only by accidents, and annually to increaſe a great deal, it is not wonderful that they become ſo large. Philoſ. Tranſ. N° 167. p. 836.

ICE-*Plant*, a very ſingular and beautiful plant of the *Ficoides* kind, called by Mr. Tournefort, *Ficoides africana folio plantagenis undulato micis argenteis adſperſo*, or the African Ficoides with a wav'd plantain-like leaf, and covered with ſilver drops. It is alſo commonly called with us the diamond-plant, and the froſt-plant, from its leaves and ſtalks being all over beſet with tranſparent cryſtal-like drops, as if covered over with ſmall icicles. The ſeeds of this plant are to be ſown very early in the ſpring upon a good hot bed; when the plants are come up they are to be tranſplanted into ſmall pots filled with freſh light ſandy earth, and plunged into another hot bed; as that hot bed declines in heat they ſhould be moved into a third, and this will bring them forward toward flowering. In July theſe plants may be expoſed by degrees to the open air, and ſoon after this their flowers will appear. If it is deſired to have theſe plants very large, they ſhould be ſhook out of their pots into an old hot bed of tanners bark, in which their roots will extend every way, and the branches in proportion; ſo that a ſingle plant will ſometimes ſpread to a yard ſquare, and its leaves and branches grow to a very ſurpriſing ſize. The flowers of this ſpecies are of no great beauty, but its *Ice-like* appearance in the midſt of ſummer is ſo ſingular, as to make it very univerſally admired.

ICHNEUMON, in zoology, the name of an animal, of which there have been a multitude of idle and fabulous things aſſerted. It is a creature of the weaſel kind, with a longer and narrower body than a cat, and ſomething approaching both in ſhape and colour to the badger. Its noſe is black and ſharp, like that of a ferret. It has no beard, or whiſkers: Its noſe is prominent, and its ears ſhort and round. Its colour is a yellowiſh grey, much like that of ſome of the monkey claſs. This is its appearance when in a good humour; but when frighted or provoked, it raiſes its hairs upright, and ſhews them variegated at intervals with grey and yellow in diſtinct portions. Its legs are ſhort, and its feet have all five toes. Its tail is very long, and thick at the inſertion; its teeth, and its tongue, like thoſe of the cat. And what is very ſingular, is, that in both ſexes it has a large aperture ſituated below the anus, which it dilates and contracts at pleaſure. Hence came the old opinion, that both male and female conceived, and brought forth young in this animal. It is naturally a very cleanly animal, and is very briſk and nimble, and of great courage. It will engage a large dog, and if it have a quarrel with a cat, will deſtroy that creature by three bites on the throat. Its noſe is ſo ſharp and narrow, that it can very hardly lay hold of any thing large with its teeth, and ſcarce can bite a man's clenched fiſt. It is very expert in ſeizing its prey; it ſtands erect on its hinder legs to deſcry where it is, then throwing itſelf flat on its belly, crawls very ſlyly towards it, and when within reach, darts violently upon it. It feeds indifferently on all animals that it can get at. Its common food are the ſnail, the lizard, the chameleon, ſuch ſerpents as it can manage, and frogs and mice; it is alſo very fond of birds, and of none ſo much as the hen and chicken. *Ray*'s Syn. Quad. p. 201.

It is much valued in Ægypt for deſtroying ſerpents, and is kept tame in the houſes, as the cat with us. The people call it Pharaoh's rat, and the peaſants frequently bring its young to market. *Bellonius* de Animal.

ICHNEUMON-*Waſp*, the name given by the old writers on inſects to the ſmall ſlender-bodied waſp, which is frequently found about mud-walls and dry banks of earth. It is very different from the fly ſimply called the *Ichneumon*; of which there are numerous ſpecies. This is a true waſp, and is mottled with black and yellow in the manner of the common waſp.

ICHNEUMON-*Fly*. Theſe flies ſometimes are at great pains to deſtroy and carry the caterpillars, in whoſe bodies they intend to lay their eggs, to places where it is proper thoſe eggs ſhould be hatched. There is one ſpecies whoſe worm produced from the egg can never ſucceed, unleſs it be both bred in the body of a caterpillar, and alſo have that habitation bury'd under ground. To this purpoſe the parent-fly, when the time of her laying her eggs is come, forms a hole in the ground, which ſhe covers with a little clod of earth, that no duſt may fall in to fill it up; when this is prepared ſhe goes out in ſearch of a caterpillar, proper for her purpoſe. Dr. Liſter aſſures us, that he has often ſeen one of theſe flies ſeize a caterpillar much larger than herſelf for this intent, and tho' this has been at a conſiderable diſtance from her hole, ſhe has with great labour dragged the creature to it; as ſoon as ſhe arrives with this load ſhe takes off the little pellet of earth from the mouth of the hole, and going down into it to ſee that all is right and ready for the reception of the new gueſt, ſhe returns out of it and draws in the caterpillar, which ſhe leaves there, after giving it ſuch wounds as tho' they will not cauſe immediate death, yet will diſable the creature ſo far as to make an eſcape impracticable. When the creature is thus lodged, ſhe depoſits her eggs in its fleſh. And this great buſineſs being done, ſhe ſtops up the orifice of the hole very firmly with ſeveral pellets of dirt, and with duſt carefully rammed in between, and will even fly up into gummy and reſinous trees to get a cement to hold all firmly together. When the hole is thus filled up, even to the ſurface of the reſt of the ground, ſhe draws a leaf or two to the place, and laying them over the mouth, flies away. There is after this no more care taken, but the young worms are hatched from the eggs, and feed on the fleſh of the caterpillar till they are full grown. They then change into the nymph ſtate, and come out of that in form of their parent flies, in which ſtate they eaſily make their way out of the ground. Some of theſe *Ichneumons* make the bodies of other ſmaller flies the places of hatching their eggs. They may be often met with flying with one of theſe ſmall flies in their legs, the head of it being held cloſe to their bellies. If they be watched on this occaſion, they will be found uſually to carry theſe flies to certain holes in the ground reſembling worm-holes. The firſt that they carry ſerves as the nidus for their eggs, the reſt are for food for their young while in the ſtate of worms; theſe being too voracious to be long ſubſiſted on the body of one fly, and therefore their parents carry them more every day. The old ones on this occaſion crawl backwards into the hole, dragging in the flies after them. When their young worms have fed ſufficiently they are converted into nymphæ; the caſes of which are made up of the wings, legs, and other hard parts of the flies they had been feeding on. Phil. Tranſ. N° 76.

ICHTHYOCOLLA (*Cycl.*)—*Iſing-glaſs*, a very valuable glue is to be made of this drug. See the article GLUE.

It is valuable, in that it will keep alſo, and is a very proper form to keep iſing-glaſs in, for readineſs for the wine-cooper's uſe; beſides this it ſerves alſo very elegantly for the taking off the impreſſions of medals, coins, &c. *Shaw*'s Lectures, p. 430. See the article MEDAL.

ICHTHYOCOLLA *Piſcis*, in zoology, the name of a large fiſh of the ſturgeon kind; from which, as alſo from the *Huſo Germanorum*, the drug called iſinglaſs or *Ichthyocolla* is made. It is a fiſh of very great ſize, and is cartilaginous, having no bones nor ſcales. Its head is large and thick, and its mouth ſtands very forward. The upper jaw has four fleſhy apophyſes hanging from it. Its eyes are ſmall: Its fleſh is very well taſted, but glutinous. It is of a yellowiſh colour, and its tail is large and forked. *Willughby*'s Hiſt. Piſc. p, 244.

ICHTHYOLOGY, the ſcience which treats of fiſhes. The proper objects of this ſtudy are aquatic animals, which have fins, and have no feet. The buſineſs of *Ichthyology* is, firſt to diſtinguiſh all the parts of fiſhes, by their ſeveral proper names; then to adapt to each fiſh its proper generical and ſpecific names; and finally, to commemorate ſome of its peculiar qualities. The naturaliſt who ſtudies fiſhes, is firſt to examine the ſeveral parts, as well internal as external of the animal under conſideration, and be able to treat of each under its proper denomination; then to refer whatever ſtrange and unknown fiſh is brought before him, to its proper family; and on examining its near characters to bring it to the genus of that family to which it is found to belong; and by conſidering its parts, with the deſcriptions authors have given of the ſeveral ſpecies of that genus, to find by compariſon which it moſt ſuits, and therefore of which ſpecies it is. This done, the fiſh is known. After this, by ſubſequent obſervations, he is to find out its place of habitation, whether in ſalt or freſh, in running or ſtanding waters. Its food whether animal or vegetable, and of what kinds; and its time and manner of propagating its ſpecies, and bringing forth its young. Theſe laſt particulars are to be added to the deſcription of the parts of the fiſh, in few words, for long and diffuſe narrations of this kind ſerve rather as a load than an inſtruction to the judicious reader; and the true and natural method in the genera and ſpecies of created things, is the true intent and end of natural hiſtory. *Artedi* Ichthyol. p. 3. See GENERICAL *Name*.

The general diviſion of fiſhes is into three claſſes; the cetaceous, the cartilaginous, and the ſpinoſe. The cetaceous fiſhes are thoſe whoſe tail is ſo placed that when the fiſh is in its natural poſture, it ſtands parallel to the horizon. The cartilaginous fiſhes are thoſe whoſe fins ſerving for ſwimming are ſuſtained by cartilages in the place of the bony rays which ſupport them in the other, and which have alſo cartilages in the whole body, inſtead of bones. Theſe are the characters of the two firſt claſſes; and all thoſe fiſh which have their fins ſupported by bony rays, which have their tails placed perpendicularly, not horizontally, and which have bones not cartilages in their bodies, are called the ſpinoſe fiſhes.

Theſe are the diviſions of the fiſh in general among authors. The cetaceous fiſhes are arranged together, by the later writers on natural hiſtory, under the name of Plagiuri. Theſe agree in many things with the land animals, and are diſtinguiſhed from one another by the ſame characters which ſerve for the diſtinction of the quadrupeds, particularly by the teeth. The general ſtructure of theſe fiſhes is alike in all; and their only differences are in the teeth, and the number of fins. From the teeth and fins alone therefore, are to be properly taken the generical characters of the Plagiuri. *Artedi* Ichthyolog.

The cartilaginous fiſhes differ from each other only in the form of their body, and in the number of the foramina of the bronchia. For the number of the fins, and figure and poſition of the teeth, which in the former claſs make the only characters of generical diſtinctions, in theſe are ſo variable, that they frequently differ in the different ſpecies of the ſame genus. The characters for the diſtinction of the cartilaginous fiſhes into genera, can therefore only be taken from the ſhape and foramina. Thus all the rays have flat or depreſſed bodies, and five foramina at the bronchia. All the petromyzæ have, on the contrary, rounded bodies, and ſeven foramina at the bronchia. The chonepterus and mola have roundiſh bodies, and only one foramen or hole for the bronchia; and ſo of the reſt. The ſeveral ſpecies of the rays, tho' all properly belonging to the ſame natural genus, yet differ greatly in their number of fins, and in the ſhape and diſpoſition of their teeth.

The true characters of theſe two great claſſes of fiſhes, the cetaceous and cartilaginous, are thus eaſily found; but the characters of the ſpinoſe kinds are to be ſought for deeper, and do not offer themſelves ſo readily. The multitude of theſe, and the great likeneſs between ſeveral of the different genera, render it no eaſy taſk to diſtinguiſh them one from another. Though it be a general rule that the generical characters of fiſhes are to be taken from their external parts; yet in caſes where theſe external parts differ in themſelves in number, figure, and proportion, it is neceſſary that the primary character of the genus ſhould be taken from thoſe parts which are the leaſt variable of all others; and which are the moſt peculiar to the fiſh under conſideration, and the leaſt common to other genera. The utmoſt care and ſkill of the *Ichthyologiſt* is neceſſary to the diſtinguiſhing theſe characters; and on a ſtrict enquiry he will find, that thoſe parts which ſeem at firſt moſt proper to found diſtinctions on, are in reality leaſt of all ſo. The figure of the fins and tail in fiſh might ſeem one of the moſt eſſential characters for a generical diſtinction, yet a farther ſearch into their nature will ſhew that they can be of no uſe at all in this ſenſe. Almoſt all the ſpecies of the cyprini, a genus conſtituted on eſſential and invariable characters, and a truly natural one, have fins acute at the end, and have forked tails; yet had theſe been made characters of the genus, they would have excluded fiſh that are properly of it. Thus the tench and the caraſſius have both obtuſe fins, and tails ſtrait or plain, not forked at the end. There are indeed many natural genera of fiſhes in which the fins and tail are alike in all, as the pearch, the mackrel, the conger. Theſe allow the fins and tail as very good collateral circumſtances of the diſtinction; but even theſe could not well be diſtinguiſhed by ſuch marks alone, as they are common to many other genera beſides.

The figure of the breaſt, the belly, and the back, and the whole figure of the body in regard to length and breadth, are all very obvious characters; but they are not eſſential enough to be of any uſe in the diſtinctions of the genera. The back in ſome of the cyprini is ſubacute, as in the common bream; whereas in almoſt all the others, it is only moderately convex. This ſets aſide the uſe of the figure of the back as a generical character, ſince the bream, notwithſtanding this difference from the reſt of the cyprini, is truly of that genus. The belly, in the far greater number of the cyprini, alſo is plane in the anterior part, and between the pinnæ ventrales and the anus is raiſed into a ridge; but in the tench, the whole belly from the head to the tail is flat. And to this it may be added, that the general figure of the body, as to length or breadth, is extremely different in the cyprini of various ſpecies, as witneſs the bream, the alburnus, the rutilus, &c. ſome of which are properly flat, and others almoſt round.

The figure of the head, the mouth, the eyes, the noſtrils, and other parts belonging to the head, are very different from theſe variable parts; they are in general fixed and permanent, and are of the utmoſt conſequence in the diſtinctions; but as this figure is too common, and belongs to too many ſpecies equally, they are rather of uſe in the diſtinguiſhing the orders, claſſes, and families of fiſhes, than their genera. Thus the clupeæ, the cotti, the coregones, and ſcorpænæ of authors have a plain general reſemblance in the form of their heads, and yet they are of very different genera.

The figure of the ſcales is generally always the ſame in the ſame genus, and therefore may be made a good collateral circumſtance in the diſtinctions; but as the ſame form is common to the ſcales of many genera, it is impoſſible to bring them to any great uſe in the conſtituting the characters of the genera. As to the ſituation of the external parts, as that of the eyes, noſtrils, mouth and anus, they are generally regular and alike in all the ſpecies of the ſame genus, regard being had to the proportion; but as their ſituation tho' alike in theſe genera is not peculiar to each, the marks are too common to be uſed as diſtinctive characters for genera. The ſituation of the fins alſo is uſually very regularly the ſame in all the ſpecies of the ſame genus; but the ſame objection lies againſt this as againſt the others, in regard to making generical characters from it. The clupeæ, the coregones, the ſalmons, and cobitides, every body muſt allow to be very different genera of fiſhes; yet in all theſe the fins are placed in the ſame ſituation. The pectoral fins in all theſe ſtand neareſt the head, the neareſt next to theſe is the back-fin; after this come the ventral fins, and behind all the reſt the pinna ani. The ſame obſervation will alſo hold good in ſeveral other genera, which have theſe and other marks in common. The ſituation of the ſcales of fiſhes, in regard to their denſity or rarity, always holds the ſame in the ſeveral ſpecies of the ſame genus; but this alſo is a mark common to many genera. The ſituation of the teeth agrees in the ſame manner in all of the ſame genus, and in many genera. All the cyprini have their teeth placed in the ſame order and manner; they all ſtand in the fauces at the orifice of the ſtomach. The ſalmons and pike have their teeth in four places, the jaws, palate, tongue, and fauces. The pearch, the cotti, and clariæ have them in three places, the jaws, palate, and fauces; but not on the tongue. But among the coregones, one ſpecies, the albula nobilis of Schonfield, has the teeth in three places, in the upper jaw, the palate, and the fauces. Another ſpecies, called by the Swedes the ſilk-joia, has them only in one place, which is on the tongue; and another ſpecies of the ſame genus, the thymallus of authors, has them in both jaws, in the palate, and on the tongue. Therefore it is evident, that no generical character can be eſtabliſhed on them. The number of the teeth can be of no uſe in the making characters of genera; for this very often varies in the ſame ſpecies in different individuals, as in the pikes, ſalmons, &c. The

number of the fins is no more proper than that of the teeth for this purpoſe; for this is the ſame in many genera, and is ſometimes different in the ſeveral ſpecies of the ſame genus. The aſellus longus of authors is evidently of the ſame genus with the reſt of the aſelli, yet they have all three fins on the back, and this has only two; and on the belly it has only one, whereas they have two there. The ſcomber has ſeventeen fins, and the thynnus or tunny has twenty-five, or thereabouts; yet no one can call theſe two genera of fiſhes, when they agree in all other particulars. The perca, the lucioperca, and the cernua fluviatilis, are all of the ſame genus, and have all the ſame internal and external characters; but that the two firſt have two fins each on the back, and the laſt has only one. The number of the rays in the fins of fiſh, particularly in thoſe of the back and anus, are very different even in the ſeveral ſpecies of the ſame genus: Hence they are very uſeful in diſtinguiſhing the ſpecies, but not at all in the genera. We have very evident examples of this, in the ſeveral ſpecies of pearch, cyprini, and many other fiſh.

In regard to the other external parts of fiſhes, there are none which are found in all the ſpinoſe fiſhes, and differ in all the ſeveral genera, except thoſe little bones which are found on each ſide in the membrane of the head, which covers the gills. Theſe bones are found in almoſt all the fiſhes that have any bones, tho' in ſome kinds the thickneſs of this membrane makes them leſs conſpicuous than in others. The number of theſe bones is much more regularly and conſtantly the ſame in the ſame genera, than that of the fins, as we may find by many obſervations. The four genera of the ſcombri, gadi, percæ, and ſyngnathi, have the number of the fins very various in the ſeveral ſpecies of each genus; but in all theſe genera the number of the bones in the membrane that covers the gills, is regularly the ſame in every ſpecies. All the gadi have regularly ſeven bones on each ſide, and ſo on of the reſt. All the cyprini have three of theſe bones on each ſide: All the cotti have ſix on each ſide: All the clariæ ſeven: All the clupeæ eight: All the eſoces fourteen; and ſo of the reſt. There are only two known genera of fiſh, that do not agree in all the ſpecies in the number of theſe bones; theſe are the ſalmons and the coregoni. In the firſt of theſe the number of the bones is in the ſeveral ſpecies ten, eleven, or twelve; and in the ſeveral ſpecies of the other, there are eight, nine, or ten, and ſometimes but ſeven. It is an obſervation, however, worthy the naturaliſt's conſideration, that nature has given this difference in the number of theſe bones in the ſeveral ſpecies only to thoſe genera in which all the ſpecies have ſuch a ſtrong external reſemblance in all parts, that ſcarce any thing more than the facies externa, was neceſſary for the knowing that they belonged to one another; for beſide that all the ſalmons and coregoni have a membranous appendage reſembling a fin on the hinder part of the back, the ſeveral ſpecies of each genus are ſo very remarkably like one another, that it is not eaſy to diſtinguiſh them in many caſes.

As to the number of the fins on fiſh, there are a vaſt number of genera which have all the ſame general number, as the cyprini, clupeæ, coregoni, oſmeri, ſalmons, cobitides, eſoces, pleuronecti, ſpari, labri, gobii, and gaſteroſtei; all have ſeven fins radiated with bony ribs: The ſame number of ſeven fins, and thoſe of the ſame kind, is common alſo to the ſeveral other genera; but on the contrary, tho' all the ſpecies of the ſame genus have conſtantly the ſame number of bones in the membrane that covers the gills, yet it is very rare that the different genera have the ſame number. The pearch, the gadi, the ammodytes, and the ſcombri, have indeed all ſeven on each ſide. The cyprini and the gaſteroſtei have each of them three on each ſide. The cotti, the pleuronecti, and the mugil, have ſix each: Theſe however are genera ſo very different in their other characters, and in their facies externa, that there is not the leaſt danger of their being confounded one with another.

From this it appears very evidently, that the number of theſe bones in the membrana branchioſtega, affords the firſt and moſt eſſential of all characters for the diſtinction of the genera of the catheturous and oſteopterygious, or bony-fin'd fiſhes. This however is not ſufficient alone, tho' it is a great aſſiſtant in determining the genera; but in order to bring fiſh to their proper genera, it is neceſſary firſt, that all of the ſame genus ſhould have the ſame number of bones in the gills; then, that they ſhould have in the genera the ſame external form and figure; after this, that they muſt have the ſame ſituation of the fins, provided that the number does not differ, which ſometimes will be found to vary in ſpecies truly of the ſame genus; but in general it is, and ought to be the ſame in all.

The ſituation of the teeth alſo ſhould be the ſame, and this generally holds right in the different genera of fiſhes, all the ſpecies having in each natural genus the ſame orders of teeth. After this, the ſcales are to be examined, and theſe ought to be of the ſame ſort, and to have the ſame ſituation. Theſe are the circumſtances neceſſary to be enquired into, in regard to the eſtabliſhing juſt and natural genera. If all theſe agree in all the ſpecies; and added to this agreement there be an analogy in the ſituation and form of the other internal and external parts, particularly in the ſtomach, and its appendices, in the inteſtines, and in the air-bladder, there will remain no doubt of the genus eſtabliſhed on ſuch foundations being perfectly juſt and natural.

It is not to be expected however, that every one of theſe characters ſhould be found regularly in every ſpecies of the ſame genus in the ſame perfection; ſome will ſhew them more, others leſs, and others will want ſomething of them: But the three grand things that are eſſential to the ſameneſs of the genus, are the ſame number of bones in the branchioſtege membrane, and the ſame general external face or figure, and the ſame ſituation of the fins. The other circumſtances are additional and confirmative.

Upon the whole it appears, the number of certain parts is the firſt great foundation of generical diſtinctions in fiſhes; and that no one note or generical character can be ſo extenſive as to take in the whole at once, but that other characters leſs eſſential but more numerous muſt be in ſome caſes taken in for the eſtabliſhing the whole ſeries of *Ichthyological* diſtinctions. *Artedi* Ichthyolog.

ICHTHYOLOGISTS, authors, who have written concerning fiſhes. The authors who have left us treatiſes on this ſubject, are very numerous; and are ranged by Artedi into their ſeveral proper claſſes, with great care and candor.

The ſyſtematical *Ichthyologiſts* are Ariſtotle, Pliny, Iſidore, Albertus Magnus, Gaza the interpreter of Ariſtotle, Marſchall, Wootton, Bellonius, Rondeletius, Salvian, Geſner, Aldrovand, Johnſton, Charlton, Willughby, Ray.

The *Ichthyologiſts* who have written of the fiſhes only of ſome particular places, are theſe: Ovid, of the fiſhes of the Euxine; Oppian, of thoſe of the Adriatic; Auſonius, of thoſe of the Moſelle; Mangolt, of thoſe of the Podamic lake; Paulus Jovius, of thoſe of the Tyrrhene ſea; Bened. Jovius, of thoſe of the lake Larius; Petrus Gillius, of thoſe of the Maſſilian ſea; Figulus, of thoſe of the Moſelle; Salvian, of thoſe of the Tyrrhene ſea; Schwenkfeldt, of thoſe of Sileſia; Schonfeldt, of thoſe of Hamburgh; Marggrave, of the Braſilian fiſhes; Ruyſel, of thoſe of Amboina; and Francis Valentine, of thoſe of the ſame place. Of theſe authors, Ovid, Auſonius, Oppian, and Bened. Jovius wrote in verſe, the reſt in proſe.

The *Ichthyologiſts* who have copied all they have written from the works of other writers, and therefore leaſt deſerve the name, are the following: Pliny, Ælian, Athæneus, Iſidore, the author of the Libri de natura rerum, Albertus Magnus, Joannes Cuba, Marſchall, Geſner in great part, Aldrovand in great part, Johnſton, Charlton, and perhaps ſome others.

In regard to method, ſome have written of fiſhes without any method at all; ſome have treated of them in the alphabetical order of their names, and ſome have followed a method more or leſs perfect throughout their works.

Thoſe *Ichthyologiſts* who have attended to no method at all, are Ovid, Ælian, Athenæus, Auſonius, Hildegarde de Pinguia, Paulus, and Bened. Jovius, Figulus, Salvian in his hiſtory of the Roman fiſhes, and Ruyſch.

Thoſe who have written alphabetically, are Cuba, Marſchall, Salvian in his Tabula Piſcatoria, Geſner, Schonfeldt, Johnſton.

Among the authors who have uſed ſome ſort of method, thoſe come firſt who have treated of fiſhes, according to the places where they are uſually caught. Of theſe are Oppian, Rondeletius, Aldrovand, Johnſton, and Charlton.

Thoſe who have treated of fiſhes, according to the general diviſion of them into cetaceous, ſpinoſe, and cartilaginous, are Ariſtotle who was author of the method, Wootton, Willughby, Ray; the laſt two authors have added to this the numbering the rays of the fins on the back, which is one ſtep toward the Artedian method.

The principal and beſt authors in this ſtudy, and who have reformed and amended it, are Ariſtotle, Bellonius, Rondeletius, Salvian, Geſner, Willughby and Ray. To theſe are to be added ſuch as have deſcribed only new or particular fiſhes, who have merited greatly of the world by the new lights they have thrown in upon this part of natural hiſtory. Theſe are Paul Jovius, Petrus Gillius, Schonfeldt, Sibbald, Marſigli, Hebenſtreit, and our countryman Mark Cateſby: All the reſt, except Pliny, Athenæus, Aldrovand, and Johnſton, are of no uſe or value. Willughby is allowed by Artedi to be by far the beſt author on the ſubject; but the world will now give that character to Artedi himſelf. *Artedi* de Script. Ichthyol.

ICHTHYOMANTIA, Ιχθυομαντεια, in antiquity, a ſpecies of divination by means of the entrails of fiſhes. *Potter*, Archæol. Græc. l. 2. c. 14. T. 1. p. 319.

ICHTHYPERIA, in natural hiſtory, the name given by Dr. Hill to the bony palates of fiſhes, which are frequently found foſſile at great depths in the earth, and uſually immerſed in the ſtrata of ſtone; and in this ſtate had been named by Mr. Lhuyd, from their reſemblance in ſhape to the pods of lupines, and ſome of the other leguminous plants, *ſiliquaſtra*. Many from this name, and this caſual reſemblance to the pods of plants, have been miſ-led into the believing them

foſſils of vegetable origin. But they have plainly all of them been the bony coverings of different parts of the mouths of certain fiſh of the cartilagineous, and perhaps other kinds, whoſe principal food being ſhell-fiſh, theſe bony palates were neceſſary to the eating them. Many of the *Ichthyperia* are found indeed plainly worn and rounded by uſe.

They are ſometimes found in their foſſile ſtate in congeries joined one to another, as they originally ſtood in the mouth of the fiſh, but this is more rare; the great quantities that are found being either in ſingle pieces or joints as they may be called, or in fragments of ſuch. They are all of the ſame ſubſtance with the bufonitæ, and are of very various figures according to the different ſpecies of fiſh, or different part of the mouth they have belonged to, the ſame fiſh very probably having furniſhed from the middle and the ſides of its mouth very differently ſhaped *Ichthyperia*.

The moſt uſual figure of theſe bodies is that of half the ſhell of the pod of a lupine, or other leguminous plant, according to the ſeveral ſpecies, and this has uſually its inner part filled up with the matter of the ſtratum, in which it is depoſited. The principal differences of their figure are theſe: The moſt common are thoſe reſembling the half lupine pod; next to theſe, are thoſe which more reſemble that of the field pea; and there are ſome found, which reſemble that of a kidney-bean, or a part of ſuch a pod. Some of them are very broad and ſhort, others as remarkably long and ſlender; ſome are very gibboſe on the back, others are plainly arched; and the ſeveral kinds are at times found more or leſs flat. Some of them are crooked at one end; others are wreathed or twiſted, as it were; ſome approach to a triangular, and others to a rhomboidal form; ſome are roundiſh and flatted, and others are remarkably prominent in the middle; and many of them reſemble in ſome degree the bufonitæ.

They are found of various ſizes from the tenth of an inch to two inches in length, and an inch in breadth; and are ſometimes of a perfectly ſmooth even and poliſhed ſurface; but more frequently they are finely ſtriated or ſinuated, and ſometimes they are wholly covered with tubercles. Their colour is not leſs various, than their ſhape. They are moſt frequently either black, or of dark and blackiſh cheſnut colour; but they are ſometimes found greeniſh, bluiſh, yellowiſh, or whitiſh; and ſometimes, tho' rarely, they are ſpotted with different colours. *Hill*'s Hiſt. of Foſſ. p. 645.

They are found lodged and bedded in the ſtrata of ſtone, in Germany, Italy, and France, and in the iſlands of the Archipelago, and in Syria among the ſpines of the echini; but they are no where ſo frequent as in England, there being with us very few quarries of ſtone which do not afford more or leſs of them. See Tab. of Foſſils, Claſs 8.

ICHTHYS, Ιχθυς, a famous acroſtic of the Erythræan ſibyl, mentioned by Euſebius and St. Auſtin; the firſt words of every verſe of which make up Ιησους χριστος θεου υιος σωτηρ, *Jeſus Chriſtus, Dei filius, ſervator*. The initial letters of which compoſe the word *Ichthys*, Ιχθυς. See *Hoffm.* Lex. in voc.

ICICA, in the materia medica, a name given by ſome to the gum elemi. *Piſo*, p. 59.

ICICARIBA, in botany, a name uſed by ſome authors for the tree which affords us the gum elemi, uſed in medicine. *Piſo*, p. 59.

ICOCA, in botany, the name of a genus of plants, deſcribed by Plumier; ſince called by Linnæus, Chryſobalanus. *Plumier* Gen. 3. See the article CHRYSOBALANUS.

ICON, Εικων, in rhetoric, the ſame with image. See the article IMAGE, *Cycl.*

ICOSANDRIA, in botany, a claſs of plants with hermaphrodite flowers, and a large number of ſtamina or male parts in each. The word is derived from the Greek εικοσι, twenty, and ανηρ, male. See Tab. 1. of Botany, Claſs 1.

It ſhould therefore ſtrictly ſignify a flower with twenty ſtamina, but it is only underſtood in an indefinite ſenſe, and made to expreſs ſuch plants as have any large number, or more than twelve ſtamina in each flower, and thoſe growing to the inner ſide of the cup of the flower, not to the receptacle of the future ſeeds. Of this claſs are the torch thiſtle, the myrtle, the ſtorax, the almond, &c.

ICTERIAS *Lapis*, in natural hiſtory, a name given by the antients to a ſtone, famous for the cure of the jaundice. Pliny deſcribes four ſpecies of this ſtone. The firſt of a greyiſh yellow; the ſecond of a paler colour, and more pellucid; the third uſually found in flat pieces, of a greeniſh colour with duſky veins; and the fourth with black veins in the ſame greeniſh colours. The third was alſo diſtinguiſhed from all the others, by its remarkable lightneſs. Theſe deſcriptions are ſo ſhort, that we cannot determine from them which of the ſtones of thoſe known at preſent, were intended by them.

ICTERUS, the *jaundice-bird*, in zoology, a name by which ſeveral of the old authors have called the Galbula, a bird of the turdus kind, very beautifully coloured all over with a gold yellow, but with black wings. *Aldrovand.* de Avib. See the article GALBULA.

ICTIAR, in the Eaſtern military orders, an officer who has gone through all the degrees of poſts in his reſpective body; and has a right to be a member of the divan. *Poſock*'s Egypt. p. 166.

ICTIS, in zoology, a name originally Greek, by which ſome authors call the ferret. See the article VIVERRA.

IDÆÆ *Radix*, in botany, a name uſed by Columna and ſome other authors for the large narrow-leav'd kind of ruſcus, or butcher's broom; called by others *Biſlingua*. See the article RUSCUS.

IDEA (*Cycl.*)—The term *Idea* has, by Mr. Locke, been extended to every thing we know or have any notion of, any thing about which the mind is employed in thinking. But this extenſive uſe of the term *Idea* is thought improper by a very ingenious and acute writer [a], who obſerves that we may be ſaid to have ſome knowledge or notion of our own minds, of ſpirits and active beings, whereof in a ſtrict ſenſe we have not *Ideas*. In like manner, we know and have a notion of relations between things or *Ideas*, which relations are diſtinct from the *Ideas* or things related, inaſmuch as the latter may be perceived by us, without our perceiving the former. The ſame author elſewhere obſerves [b], that by *mind*, *ſpirit*, *ſoul*, or *ſelf*, he does not denote any one of his *Ideas*, but a thing entirely diſtinct from them; wherein they exiſt, or which is the ſame thing, whereby they are perceived; for the exiſtence of an *Idea* conſiſts, as he ſays, in being perceived. He alſo obſerves [c] the word *thing* or *being*, is the moſt general name of all, and comprehends under it two kinds entirely diſtinct and heterogeneous; having nothing common but the name, to wit, *ſpirits* and *Ideas*. And in another part of his treatiſe, he expreſsly affirms [d], there can be no *Idea* formed of a ſoul or ſpirit.—[[a] *Berkley* Princip. of Human Knowledge, 2d edit. ſect. 89. p. 112. [b] Ibid. ſect. 2. p. 36. [c] Ibid. ſect. 89. p. 111. [d] Ibid. ſect. 27. p. 57. See alſo ſect. 142. p. 160.]

Another author, has alſo blamed Mr. Locke, for confounding *Ideas* and notions. He obſerves, that by *Idea*, according to the common and moſt uſual ſignification of the word is meant, the image, picture, or repreſentation in the mind of a ſenſible appearance, or of an object which hath before been perceived by ſenſe. To which ſenſible appearance therefore the *Idea* neceſſarily refers, for whatever is in it, or upon any account can be aſcribed to it: And it ſerves, or is made uſe of in its ſtead, for the mind to contemplate or employ itſelf about in thinking, at ſuch time when the object it repreſents is not immediately perceived, as in the act of ſenſe.—*Vid.* pag. 105, & 106. of a book intitled Two Diſſertations concerning Senſe and the Imagination, with an Eſſay on Conſciouſneſs, Lond. 1728. 8°.

This author farther aſſerts in oppoſition to Mr. Locke, that the perception of an *Idea* is not an act of underſtanding. He urges, that an *Idea* by Mr. Locke's own account of it, is an object or ſomething perceived, and about which the mind is employed in thinking. Wherefore if perception (ſuppoſe) which is an operation or act of the mind, ſhould itſelf be conſidered as an *Idea*, (and under this very title Mr. Locke treats of perception) then one *Idea* would be the object of another *Idea*, and ſo there would be an *Idea* of an *Idea*, or an object of an object; and one *Idea* would perceive another *Idea*, which there is no making any tolerable ſenſe of. And indeed in explaining or declaring the operation of any faculty, to give it the ſame name and appellation, with the object itſelf about which it is employed, and which there is a neceſſity of conſidering in order to ſet forth the particular quality and nature of the operation, and the preciſe manner of its concerning and having to do with the object, ſeems very inconſiſtent with ſuch a purpoſe or deſign.

This author has been very elaborate in proving and inforcing the diſtinction between notions and *Ideas*. In another treatiſe, he obſerves that Mr. Locke in his eſſay on Human Underſtanding, takes no notice of rational notions, and thereby has not only given a partial and imperfect account of his ſubject, but made an unjuſt and unfair repreſentation of it. —*Vid.* an eſſay concerning rational notions, printed at London, 1723.

That ſome confuſion may have ariſen from giving the ſame name to theſe heterogeneous things, cannot be queſtioned. However Mr. Locke is in this reſpect no more guilty than Malebranche and the Carteſians, who uſe the term *Idea* in the ſame extenſive ſenſe with him, and from whom indeed he ſeems to have taken it. But then the Carteſians ſeem to have been more ſollicitous to diſtinguiſh between the *Ideas* of the imagination, and thoſe of the intellect, underſtanding, or *de l'eſprit pur*, as they ſometimes expreſs themſelves, and have thereby guarded againſt the inconveniencies ariſing from the too general ſignification of the term *Idea*. See the article NOTION.

The origin of our *Ideas* and notions is a perplexed queſtion, and not at all cleared up by the labours of metaphyſicians. As to *Ideas* of ſenſe, ſome philoſophers have pretended that bodies acting or preſſing upon our nerves, or putting the animal ſpirits in motion produce ſenſations: But as the motion communicated to the nerves or ſpirits has nothing in common either with the thing or body moving, or with the *Idea* excited in the mind, and that we do not conceive the leaſt relation between the motion of the nerve or ſpirits and the production of an *Idea*, to ſay that the motion of, or impreſſion upon the nerves or animal ſpirits, is the cauſe of *Ideas*, is explaining nothing at all. The

The ſpecies emitted by objects, and the formation of *Ideas* by the ſoul itſelf, mentioned in the Cyclopœdia, are not more clear. As to innate *Ideas*, it is true indeed, that the arguments of thoſe who maintain them, have been refuted by Locke; but when he goes farther, and denies innate *Ideas*, his arguments are not concluſive. An opinion may be true, tho' ill defended.

Upon the whole, the queſtion about innate *Ideas*, is as much undecided as ever. Nor has any one difficulty or obſcurity attending this ſubject, been cleared up.

The opinion of Leibnitz concerning the origin of *Ideas*, ſeems to have ſome affinity with innate *Ideas*. He aſſerts the ſoul to be ſimple, and without parts or compoſition; hence he concludes, that no created thing can act internally upon it, but that all the changes it undergoes, depend upon ſome internal principle.

God has formed every ſoul, ſo as to have different perceptions; ſome diſtinct, many confuſed; and a great number ſo obſcure, as hardly to be perceived. All theſe *Ideas* together, repreſent the univerſe; underſtanding by this term, every thing that has been, is, or ſhall be. According to the different relations that each particular ſoul has with the univerſe, ſome of its *Ideas* are diſtinct, and diſtinctly repreſent a certain part of the univerſe. The foundation of this opinion is, that as each part of the univerſe diſtinctly repreſented, has a neceſſary relation with every thing that exiſts, with every thing that has been, or ſhall be, all things being connected, ſo that the one is the conſequence of another; in like manner, the repreſentation of a certain part of the univerſe, has a neceſſary and inſeparable relation to the repreſentation of the whole.

From whence it follows, that all diſtinct perceptions of the ſoul being connected with the *Ideas* of all other things, theſe muſt likewiſe be in the ſoul, tho' obſcurely. In this ſenſe Mr. Leibnitz aſſerted, that the ſoul is the mirror of the univerſe.

Now all things that happen in the univerſe, ſucceed each other according to certain laws: In like manner in the ſoul, *Ideas* become ſucceſſively diſtinct according to other laws; which, though they have a relation to the former, are yet conſiſtent with the nature of intelligence.

All human ſouls have the ſame *Ideas*, taking the *Ideas* of each individual collectively. But diſtinct *Ideas* are not the ſame in each; theſe depending upon the relation which each ſoul has to the univerſe; and this relation is different, according to the ſtation which God has pleaſed to aſſign to each.

This ſeems a fair repreſentation of Mr. Leibnitz's ſyſtem, relating to the origin of *Ideas*; upon which we may remark, that the foundation of this ſyſtem, is, that all the parts of the univerſe, have a neceſſary connexion: But to make juſt concluſions from this propoſition, the connexion muſt be ſuch, that things being conſidered in themſelves, no one thing can be ſuppoſed, without all others being ſo neceſſary a conſequence thereof, that the *Idea* of another univerſe, in which there ſhould be any thing belonging to our actual univerſe, muſt be contradictory.

If ſuch a connexion took place, what is ſuppoſed concerning obſcure *Ideas*, would be true in a certain ſenſe; to wit, that it might be ſaid, that a man who has a diſtinct *Idea* of a triangle, has thereby obſcure *Ideas* of all the properties of this figure, becauſe of the neceſſary connexion between theſe laſt *Ideas* and the former.

But no ſuch connexion between *Ideas* ſucceeding each other in the ſoul is perceivable. For if paſſing from a dark place to one that is enlightened, I thereby ſuddenly acquire the *Ideas* of ſeveral objects, never before ſeen, it does not appear that the previous perception of darkneſs muſt neceſſarily lead me to theſe new *Ideas*.

Theſe and other difficulties may be urged againſt Mr. Leibnitz's ſyſtem; nor is Mallebranche's more fortunate. This philoſopher ſuppoſes there can be no cauſe of an *Idea*, but this *Idea* itſelf in another intelligent being; and from hence he concludes, that we acquire our *Ideas* while our ſoul perceives them in God.

To prove his opinion, he enumerates all the ways in which the origin of *Ideas* is explicable; and concludes after having refuted all others, that his own is the only true one. But his reaſoning labours under two defects. Firſt, who can pretend, in a ſubject ſo obſcure, to enumerate all the poſſible ways of the ſoul's acquiring its *Ideas*. He did not know Leibnitz's opinion, very different from that of the Carteſians; and other ſolutions might perhaps be found out. Secondly, the falſity of other opinions is not ſufficiently demonſtrated. So that upon the whole, nothing is yet clear about the origin of *Ideas*.

The conſideration of the memory does not a little encreaſe the difficulties concerning our *Ideas*. Many *Ideas* not preſent may be recalled to mind. Theſe *Ideas* are certainly ſome how differently related to the ſoul, than thoſe it never did perceive, or thoſe which it cannot recollect. But what is an *Idea* in the ſoul, which the ſoul does not perceive? Yet ſuch there are. If to explain this we recur to the conſtitution of the brain, new difficulties ariſe. What memory can ſpirits ſeparated from bodies have? if no memory, what intelligence? See *s'Graveſande* Introduct. à la Philoſophie, p. 134.

As to Mallebranche's notion, ſee alſo *Locke*'s poſthumous works, where this opinion is particularly examined; and *Berkeley*'s Dialogues, 2d. Edit. p. 257, 258, &c.

IDEOT. See the article LUNATIC.

IDOL *(Cycl.)* in antiquity, the *Idol* or image, whatever materials it conſiſted of, was by certain ceremonies, called conſecration, converted into a god. While under the artificer's hands, it was only a mere ſtatue.

Three things were neceſſary in order to turn it into a god; proper ornaments, conſecration, and oration. The ornaments were various, and wholly deſigned to blind the eyes of the ignorant and ſtupid multitude, who are chiefly taken with ſhow and pageantry. Then followed the conſecration and oration, which were performed with great ſolemnity among the Romans. *Pitiſc.* Lex. Ant. in voc.

IDOLOPŒIA, Εἰδωλοποιΐα, in rhetoric, a ſpecies of Proſopopœia, where dead perſons are ſuppoſed to ſpeak. *Voſſ.* Rhet. l. 5. p. 358. See the article PROSOPOPOEIA, *Cycl.*

IDOLOTHYTA, Εἰδωλοθυτα, things offered in ſacrifice to idols; concerning the uſe of which, the apoſtle Paul lays down rules in 1 Corinth. c. viii. v. 4, 7 and 10. *Hofm.* Lex. in voc.

IDULIA, in antiquity, certain eggs offered to Jupiter on the ides of every month. They were ſo called, from their being offered on the ides.

IDYLLION *(Cycl.)*—According to Mr. Fraguier, the uncertain and indeterminate meaning of *Idyllion*, as well as of eclogue, is owing to this, that neither of theſe words, originally and of themſelves, ſignify what they are uſed for. The word *Idyllion*, tho' generally uſed for a paſtoral poem, is notwithſtanding leſs appropriated to ſuch a compoſition, than the word *Eclogue*; for, as the ſame author obſerves, Pindar's odes had the title of Εἶδος, of which Εἰδυλλιον, *Idyllion*, is only a diminutive; and properly ſignifies a work of moderate extent, without conſidering the ſubject. However, Theocritus's paſtoral poems, to which he gave originally the title of *Bucolics*, being afterwards collected into one body with his other poems, which were called Εἰδυλλια, *Idyllia*, the antient grammarians, who are noted for having made great changes in the titles of books, gave the common titles of *Idyllia* to the whole collection. And as the bucolics or paſtoral poems were by far the fineſt pieces of the collection, and as the whole works of that poet are now only known by the name of *Idyllia*; common uſe ſeems to have appropriated this word to bucolics or paſtoral poems, tho' in a leſs degree than eclogue, which is entirely reſtrained to this acceptation: Thus, only the ten bucolics of Theocritus can be called eclogues; tho' the term *Idyllia* may with equal propriety be given to his other pieces. Mem. Acad. Inſcrip. T. 2. p. 159. ſeq. See the article ECLOGUE, *Cycl.*

The modern *Idyllions* differ from thoſe of the antients, by introducing none but allegorical ſhepherds or courtiers diſguiſed in their dreſs; whereas thoſe of the antients repreſent true ſhepherds. Mr. Hardion obſerves, that the taſte of the preſent age is ſo very different from that of the antients in this reſpect, that he would not take upon him to give a literal tranſlation of Theocritus's *Idyllions*; not that he reckons them bad in themſelves, nor that he condemns the rules followed in their compoſition; but becauſe the rules that were good at the time thoſe poems were written, would, in the preſent age, be reliſhed but by very few.

There is a great variety of characters obſervable among the ſhepherds, in the antient *Idyllions*; the reaſon of which is, that there were four kinds of ſhepherds, differing from one another, in manners, opinions, and in language. The firſt and chief of theſe was the *Bucoli*, Βουκολοι, herdſmen; whoſe buſineſs it was to feed and bring up cattle. We muſt not ſuppoſe that theſe were ſtupid and groſs clowns, void of all politeneſs and underſtanding. On the contrary, they were all rich and well educated, and were the principal perſons in the villages and countries where they lived. The ſecond kind of ſhepherds, who came very near the former, were called *Poimenes*, Ποιμενες, ſhepherds properly ſo called, or feeders of ſheep. Theſe are, by Theocritus, no-wiſe diſtinguiſhed from the *Bucoli*, as to politeneſs; but both are introduced diverting themſelves with paſtoral ſongs, much of the ſame taſte. The third kind was the Αιπολοι, who were employed in feeding goats; theſe were in all reſpects much inferior to the former two. The fourth and laſt kind was the mercenary ſhepherds, who had no herds or flocks of their own, but were hired by others. The actors in the fourth *Idyllion* of Theocritus are of this laſt kind. And it muſt be obſerved to the honour of that poet, that he never fails, in every *Idyllion*, to inform his readers of the quality and condition of the ſhepherds he introduces on the ſcene. A rule, the importance of which in dramatic poetry no body can be ignorant of. Mem. Acad. Inſcrip. T. 6. p. 251. ſeq. See the articles BUCOLI, POIMENES, &c.

The ſubject of *Idyllions*, as being low of itſelf, requires the greateſt elegance of diction to ſet it off. Mr. Hardion is of opinion, that Theocritus has the advantage of Virgil in this reſpect; obſerving always the ſtructure peculiar to paſtoral poems, which conſtitutes one of its chief beauties. This ſtructure requires that the fourth foot of every verſe ſhould

be a dactylus, and ſometimes alſo the firſt, when it can be done without affectation. Beſides 'tis alſo neceſſary theſe dactyli ſhould be made without any cæſura following; and if poſſible there ſhould be a reſt in the ſenſe after each dactyle, which would add greatly to the regularity and perfection of the verſe. Such are the following verſes of Theocritus and Virgil:

Ειπέ μοι, ὦ Κορυδῶν, τινος αἱ βοες; ἢ ῥα Φιλωνδα; *Theoc.* Idyl. 4. v. 1.
Dic mihi, Damœta, cujum pecus? An Melibœi? Virg. Ecl. 3. v. 1.

This ſtructure in paſtoral poems gives a vivacity, which is wonderfully pleaſing in the mouth of a ſhepherd. Theſe rules are obſerved by Theocritus, with all the exactneſs poſſible; but by Virgil ſeldom; which is rather to be imputed to the genius of the Latin tongue, than his want of ability; it being leſs copious, bold and pliant, than the Greek. Mem. Acad. Inſcrip. T. 6. p. 255, 256.

The invention of the *Idyllion* is aſcribed to Daphnis, who by his extraordinary genius, ſays Diodorus Siculus, "invented "the bucolic poem and ſong, in the form it continues to ap- "pear in at preſent, in Sicily [a]". This paſſage is conſiderable, as it fully aſcertains the origin of the *Idyllion*, ſuch as it appears in Theocritus, and thoſe that have imitated him. A fate that paſtoral poetry in general cannot pretend to; for tho' much pains has been taken to diſcover its origin, and ſeveral nations diſpute that honour one with another; yet the reſult of the whole ſerves only to convince us, that ſhepherds have for many ages amuſed themſelves in their leiſure hours with ſinging, without our being able to determine exactly when, or in what country they began to do ſo. After Daphnis, another Sicilian ſhepherd, called *Diomus*, made himſelf famous for his paſtoral poems. Next came Steſichorus, who, according to Ælian, was the firſt that made the misfortunes of Daphnis the ſubject of his ſongs. He lived, as ſome chronologers will have it, in the time of *Phalaris*, about 550 years before the vulgar æra. And laſtly, ſome ages after this Theocritus appeared, who forming himſelf on theſe firſt models, ſo far excelled as to give paſtoral poetry all the perfection it was capable of receiving [b].—[a L. 4. c. 16. b Mem. Acad. Inſcrip. T. 9. p. 101. ſeq.]

JECARINUS *Piſcis*, in ichthyology, a name given by Gaza, and many other writers, to the fiſh more commonly called *Hepatus piſcis*, by ſome *Jecur marinum*. See the article HEPATUS.

JECUR *Marinum*, in ichthyology, is uſed by Hermolaus and ſome other writers in the ſame ſenſe for hepatus. See the article HEPATUS.

JEER (*Cycl.*)—JEER, or JEER-*Rope*, in a ſhip, a piece of a hawſer faſtened to the main-yard and fore-yard (in great ſhips only) cloſe to the ties; it is then reeved through a block, which is ſeized cloſe to the top, and ſo comes down again, and is reeved through another block at the bottom of the maſt cloſe by the deck. There are uſually two of theſe, one on each ſide the ties. Its uſe is to help to hoiſe up the yard, but more eſpecially to ſuccour the ties, and to keep the yards from falling, if they ſhould break.

JEERS, in a ſhip. They ſay a man is brought to the *Jeers*, when going to be puniſhed at the *Jeer-capſtan*. This is done in the following manner: A capſtan bar being thruſt through the hole of the barrel, the offender's arms are extended at full length croſs-wiſe, and ſo tied to the bar; having ſometimes a baſket of bullets, or ſome other like weight, hanging by his neck. In this poſture he continues till he be either brought to confeſs ſome plot or crime, whereof he is ſuſpected; or that he has ſuffered what he is cenſured to undergo, at the diſcretion of the captain.

JENDAYA, in zoology, the name of a Braſilian ſpecies of peroquette. It is of the ſize of a black-bird; its beak and legs are black, and its back, wings, and tail, are of a bluiſh green; the tips of its wings are blackiſh, and its head, neck, and breaſt are of a pale yellow, with an admixture of a deeper yellow in ſome places. *Marggrave*'s Hiſt. Braſil.

JENNY-*Wren*, a name given by the writers on ſong-birds to the wren.

This bird tho' very ſmall is of a very chearful diſpoſition, and has a very agreeable voice, which he throws out with great chearfulneſs and ſprightlineſs, uſually cocking up his tail all the time he is ſinging. The female breeds twice in the year, firſt in the latter end of April, and afterwards in the middle of June. The neſt is uſually placed among cluſters of moſs and ivy, in ſuch a manner, that it is very hard to diſcover it. It is made of dry moſs and leaves put together in a very artificial manner, being cloſed all round except for a ſmall hole left to go in and out at; they lay a great number of eggs, not leſs than eighteen; and it has been often found that they all hatch, except one or two; and thus ſixteen young ones have been found together in one neſt. Theſe are brought up ſo well as to ſhift for themſelves by the end of May; and then another brood is provided for by the middle of the month following. The young ones may be eaſily raiſed: They ſhould for this purpoſe be taken out of the neſt at about fourteen days old, and fed with ſheep's, calf's, or ox's heart cut ſmall, with eggs minced among it. When they are able to peck this meat for themſelves, they may be put into cages; but they muſt ſtill be fed for ſome days, leſt they ſhould neglect themſelves and die of hunger after the greateſt part of the trouble is thus over.

When they are grown up they may be fed with paſte, and will need no more heart. Afterwards it will be a great feaſt to them to give each a ſpider or two once in two or three days; and after they are grown up, they may either be left to ſing their own wild notes which are very agreeable, or if it be deſired that they ſhould whiſtle tunes, they will eaſily be taught it.

JENTLING, in zoology, the name of a river-fiſh caught in the Danube, and moſt of the great rivers in Germany, and called by the Germans *Schead*, *Scheat*, *Jent*, and *Koppen*; and by Geſner *Capito cæruleus*, the blue chub. *Willughby* Hiſt. Piſc. p. 256.

Its figure is broader than the chub, and narrower than the rudd or finſeal; its head is broad and flat, from the noſe to occiput; but from thence to the back it riſes conſiderably. Its mouth is conſiderably large, its tail forked, and its back of a duſky bluiſh black, and its belly and ſides white and ſilvery. Its belly-fins are ſomewhat reddiſh, and the belly itſelf in the larger fiſh becomes yellowiſh. It has no teeth in the jaws, but near the orifice of the ſtomach has two dentated bones. It lives on worms and other ſmall animals, and ſpawns in April. When very fat it will be yellow on the ſides, and is then better taſted, but leſs wholeſome food.

JERFALCON, the Engliſh name of the Gyrfalco, a very fierce bold and large bird, the largeſt of all the falcon kind. *Ray*'s Ornithol. p. 44. See the article GYRFALCO.

JERKIN, a name given by ſome to the male of the Jerfalcon. See the article GYRFALCO.

JERTH, in the materia medica, a name given to a certain kind of moſs, according to Scheffer, growing very plentifully in Lapland, and other cold countries. The root of this is the part uſed in medicine, and the method of giving it is in decoction. They boil a large quantity of it in the whey made of raindeer's milk, and give the patient large draughts of it warm every hour or two; by that means keeping up a good perſpiration, which they increaſe or diminiſh according to the nature of the caſe. The principal diſeaſes to which they are ſubject, are plurifies, and the ſmall-pox; and it is wonderful to find how well they get thro' theſe two dangerous complaints by this regimen alone. And upon the whole, the virtues of ſo much warm and diluting liquor ſeem the principal thing to be depended upon by them; for if they cannot readily get the *Jerth*-root, they ſcruple not to ſupply its place with the ſtalks of angelica, and the medicine ſeems to ſucceed as well this way as the other, both in the ſmall-pox and other caſes. *Scheffer*'s Lapland.

JERUSALEM-*Artichoke*. See the article ARTICHOKE.

JESEN, in zoology, a name given by ſome to the fiſh more uſually called the jentliny; a fiſh common in the Danube, and moſt of the larger rivers of Germany, and called the blue chubb, capito cæruleus, by Aldrovand, Geſner, &c. *Ray*'s Ichthyogr. p. 256. See the article JENTLINY.

JESSE, a large braſs candleſtick, with many ſconces hanging down in the middle of a church or choir. This invention was firſt called *Jeſſe*, from the ſimilitude of the branches to thoſe of the *arbor Jeſſæ*. This uſeful ornament of churches was firſt brought over into this kingdom by Hugh de Flory, abbot of St. Auſtin's in Canterbury, about the year 1100. Chron. Will. Thorn. ap. *Blount*.

JESUITISSÆ, in the Romiſh church, an order of nuns which was ſuppreſſed by pope Urban VIII. See *Hoffm.* Lex. in voc.

JESUS, in ichthyology, a name given by the people of Dantzick to the fiſh called by Geſner the blue chubb, or capito cæruleus. It is called alſo *Jeſe*, *Jeſen*, and *Jeſitz*.

JET, *Gagates*, in natural hiſtory. See the article GAGATES.

JET-*Rings*, annular pieces of jet of large dimenſions, found in many parts of England, and eſteemed Roman antiquities. They are of different kinds; ſome being plain, others wrought, but all of them are greatly too large for rings. The ſmalleſt of them are three inches in diameter; yet the bore is not above an inch and half, which makes them as much too ſmall for the wriſt, as they are too large for the fingers. *Hook*'s Philoſ. Col. p. 90.

IGASUR, in the materia medica, a name given by ſome authors to the *faba ſancti Ignatii*, or ſaint Ignatius's bean. *Ray*'s Dendr. p. 118.

IGNATIUS'*s-Bean*, *faba ſancti Ignatii*, in the materia medica, the fruit of a plant deſcribed by father Camilli, in the Philoſophical Tranſactions, under the name of *Catalongay*, and *Cantara*; and by Pluknet, under that of *Cucurbitifera malabathri foliis ſcandens, cujus nuclei faba ſancti Ignatii nuncupati*. The Spaniards call it *Cathalogon*.

It is a dry and hard fruit, or kernel of a fruit, of the ſize of a large hazel nut; and is much celebrated for its medicinal virtues, being recommended in vertigoes, lethargies, epilepſies, aſthma's, quartan agues, and worms. It is alſo given againſt

againſt diſtemperatures of the ſtomach, and as an alexipharmic. See a farther account of it in *Hill*'s Hiſt. Mat. Med. p. 506, ſeq.

IGNAVUS, in natural hiſtory, a name given to the animal called in Engliſh the *Sloath*, from his ſlow motion. *Grew* Muſ. p. 11. See the article SLOATH.

IGNIARIUS *Lapis*, in natural hiſtory, a name given by ſome to the pyrites, or fire-ſtone, from its yielding a great quantity of ſparks when ſtruck againſt a ſteel. *Boet.* de Boot. de Lap. See the article PYRITES.

IGNIS *Aqua*, *Fire-water*, a name by which Helmont in ſome of his writings calls the alkaheſt, or univerſal diſſolvent, ſo much talked of by him and Paracelſus.

IGNIS *Gehennæ*, in chemiſtry, a name given by Paracelſus to a certain menſtruum, capable of diſſolving all bodies, and remaining itſelf unaltered by them.

Van Helmont ſeems to make this the ſame with the alkaheſt, ſo celebrated in his writings, and ſo ardently ſought after by all the chemiſts ſince his time.

IGNIS *Judicii*. See the articles JUDICIUM *Dei*, and ORDEAL, *Cycl.*

IGNISPICIUM, among the Romans, a ſpecies of divination taken from the fire uſed in ſacrifices. *Pitiſc.* See the article PYROMANCY, *Cycl.*

IGUANA, in zoology, the name of a ſpecies of lizard, very frequent in the Weſt-Indies. It is an amphibious animal, of the lizard ſhape, and in colour partly brown and partly grey, in ſome of the animals; and in others of a beautiful green, variegated with black and white ſpots. From its neck to the extremity of its tail, it has a continued ſeries of flat-pointed and ſerrated ſcales, of a fine green colour. Theſe are largeſt at the neck.

JIYA, in zoology, the name of an American animal of the otter kind, called alſo *Carigueibeiu*. It is an amphibious creature, of the ſize of a middle-ſiz'd dog. Its head is round, and like a cat's; but its noſe is ſomewhat pointed. Its eyes are black; its ears roundiſh, and placed very low as in the otter; and it has a ſort of beard or whiſkers compoſed of a few ſtiff hairs. The feet have all five toes, the inner one being ſmaller than any of the others. The hair is ſoft, not long, and all black, except thoſe on the head, which are brown, and ſome which compoſe a yelloviſh ſpot under the throat. Its note is much like that of a young puppy. It feeds on fiſh, and other animals. *Ray*'s Syn. Quad. p. 189.

ILEX, the *holm-oak*, in the Linnæan ſyſtem of botany, the name of a genus of trees, the characters of which are theſe: The calyx is a ſmall perianthium, divided into four ſegments, and remaining after the flower is fallen. The flower is compoſed of one petal, divided into four roundiſh hollow open ſegments, cohering only at their bottoms. The ſtamina are four tapering filaments, ſhorter than the flower; the antheræ are ſmall; the germen of the piſtillum is roundiſh; there is no ſtyle, but only four obtuſe ſtigmata. The fruit is a roundiſh berry, containing four cells; the ſeeds are placed one in each cell, and are very hard, oblong and obtuſe, and gibbous on one ſide and angular on the other. See Tab. 1. of Botany, Claſſ. 19. and *Linnæi* Gen. Plant. p. 54.

The characters of this genus, according to Mr. Tournefort, are theſe: The flower is of the amentaceous kind, and is compoſed of a great number of ſtamina, ariſing from a hollow or funnel-faſhioned cup affixed by a ſlender capillament. The embryo fruit appear in other parts of the tree, and finally become acorns ſurrounded by their proper cups, and containing a kernel which eaſily ſeparates into two parts. To this it is to be added, that the leaves are uſually denticulated, but not ſinuated in the manner of the common oak. *Tourn.* Inſt. p. 583.

The ſpecies of *Ilex*, enumerated by Mr. Tournefort, are theſe.

1. The *Ilex*, with oblong ſerrated leaves. 2. The *Ilex*, with long and narrow, not ſerrated leaves. 3. The *Ilex*, with roundiſh ſoft and moderately ſinuated leaves, called the *ſmilax* by many of the old authors. 4. The holly-leav'd *Ilex*. 5. The Montpelier *Ilex*, with leaves woolly on both ſides. 6. The prickly *Ilex*, on which the kermes are found, called *Ilex cocciglandifera*.

There are ſeveral ſpecies of this tree propagated for gardens. They are to be raiſed by ſowing the acorns in March; in order to which they ſhould be gathered in Auguſt as ſoon as ripe, and kept in dry earth or ſand till ſpring. The ground on which they are to be ſown muſt be well dug, and cleans'd from all noxious weeds; then levelled even, and the great clods broken; after this ſeveral rills are to be drawn along it with a hoe of about two inches deep, and from one foot to two diſtant. In theſe the acorns are to be laid two or three inches aſunder, and the ground then drawn over them with a rake. In the middle of April the young plants will appear; but for the firſt year they will make but very little progreſs in ſize, and are to be kept clear of weeds; the year following they will grow very quick, and in the March after their ſowing, the ground between the rows muſt be carefully and lightly dug up, which will greatly facilitate their taking root. In the April after their ſowing, the plants which ſtand too cloſe muſt be taken up, and tranſplanted to the places where they are to ſtand. There is much care to be taken in the tranſplanting them, for having a long top-root they are not ſo quick in taking root in a new ground, as thoſe which have more ſtringy ones. They uſually ſucceed better when of four or five years growth, than while ſmaller; but they require a great deal of watering, and when firſt planted ſhould have the earth all about them made ſoft as pap. They do beſt in a loamy ſoil, and are much in eſteem for hedges in wilderneſs quarters. *Miller*'s Gardeners Dict.

ILIVILIHU, in natural hiſtory, a name given by the inhabitants of the Philippine iſlands to a very remarkable ſpecies of bird, common in that country. It is called by ſome writers *Coturnix parvula montana*, the ſmall mountain quail, and it is indeed a quail in all the characters; but it is very beautifully variegated in its colours, and is ſmaller than a ſparrow. It lives in hilly places, and is a very well taſted bird. See the articles COTURNIX, and QUAIL.

ILIUM *Os* (*Cycl.*)—This bone was ſo called by the antients, becauſe it ſupports the parts they called the *Ilia*. It is the largeſt of the three bones of the pelvis. It is flat, very broad, unequally convex, and concave; partly round, and partly of an irregular ſquare figure. It is divided commodiouſly enough into the criſta, baſis, anterior and poſterior edge; and two ſides, one external, the other internal. The criſta is the upper part, and is a pretty thick arched border, the circumference of it is a little more than a quadrant of a circle; the anterior and middle part is convex outward, the poſterior part a little convex inward. Anatomiſts, for the ſake of regularity in their deſcriptions, diſtinguiſh in it two labia and a middle ſpace or interſtice between them. It is originally an epiphyſis, of which we ſometimes ſee plain marks in a very advanced age. The poſterior portion of the criſta, which is convex inward, is much thicker than the anterior; and, for that reaſon, may be called the tuberculum of the criſta. The whole criſta appears to be covered over with a cartilage; but this in reality is no more than the dried tendinous expanſion of the muſcles. The anterior edge of this bone has two eminences or tubercles, called the anterior ſpines, one ſuperior, the other inferior; and likewiſe two notches, one between the ſpines, the other below the inferior ſpine. The poſterior edge is ſhorter and thicker than the anterior; it terminates likewiſe in two eminences or ſpines, between which there is a conſiderable notch. The baſis or inferior part of the bone, is the thickeſt and narroweſt of all; it forms anteriorly a portion of the acetabulum, and poſteriorly almoſt all the iſchiatic ſinus. The outſide is convex on the fore-part, and concave on the back-part; we obſerve on it the remains of a long ſemicircular line, which reaches from the upper anterior ſpine to the great iſchiatic ſinus, being a muſcular mark; and above, and behind this impreſſion, there are ſeveral other muſcular marks. A little above the edge of the acetabulum, we ſee likewiſe many inequalities, which ſurround part of the edge in a ſemicircular form, being a collection of muſcular and ligamentary marks. The inſide of this bone is unequally concave, and has ſeveral inequalities toward the back part. The chief of theſe is that large cartilaginous ſurface of the figure of a great S, or of a bird's head; which anſwers to the lateral ſurface of the os ſacrum, with which it is connected by a cartilaginous ſymphyſis. The other inequalities are much of the ſame kind with thoſe in the lateral part of the os ſacrum, with which they form ſeveral rough and irregular cavities. From the upper part of the cartilaginous ſurface or ſymphyſis, all the way to the oblique eminence runs a prominent line, which bounds the concavity of the inſide of this bone, and diſtinguiſhes the margin of the pelvis from the bottom. *Winſlow*'s Anat. p. 69.

IMAGINARY (*Cycl.*)—IMAGINARY *Quantity*, in algebra See the article ROOT.

IMAGINIFER, among the Romans, an enſign-bearer, who carried the ſtandard on which was repreſented the image of the reigning emperor. *Danet* in voc. See the article SIGNA.

IMAMIA, a name given to that ſect of the Mahometans, to which the Perſians adhere. *Hoſm.* Lex. in voc. See the article IMAM, *Cycl.*

IMBANKING. See the article BANKING.

IMBLOCATION, in middle age writers, a particular method of diſpoſing of the dead bodies of excommunicated perſons, by raiſing over them a heap of ſtones, or earth. This was done in the fields, or near high-ways; it being unlawful to bury them in holy ground, or even inter them at all. See the article BURIAL.

The word is derived from *bloc*, tumulus. Vid. *Du Cange*, Gloſſ. Lat. T. 3. p. 22. voc. *imblocatus*.

IMBRICATED-*Leaves*, *imbricata folia*, among botaniſts. See the article LEAF.

IMBRICATED *Shell*, *imbricata concha*, in natural hiſtory, a term uſed in general to expreſs any ſpecies of ſhell-fiſh, whoſe ſhells are elevated into tranſverſe ridges, lying over one another

ther at the base, in the manner of the tiles on a house-top. It has also been used as the name of a peculiar species of shell: This is a *cordiformis* or heart-shell, whose sides are remarkably ridg'd in this transverse manner, and at the same time so divided longitudinally by seven high ribs running from the apex to the edge, that the whole represents a roof of a house with the beams and rastors, before covered by the tiling. Hence the French call it *Faitiere*.

IMBRICATED-*Cup*, *Imbricatus calyx*, in botany, a term used by authors to express the cups of some of the plants which have compound flowers; in which the common perianthium, surrounding the whole cluster of flowers, is composed of several series of squammæ, the exterior of which are short, and the interior longer, but in great part hid under these upper ones.

IMITATION *of antient Gems*. See the article GEM.

IMMERSUS *Scapulæ*, in anatomy, a name given by Riolanus and some other authors, to a muscle since called the *subscapularis*. See the article SUBSCAPULARIS.

IMMOBILITY *of infants*. See the article INFANT.

IMPARSONEE, in law, is applied to a parson that is inducted, and in possession of a benefice. *Blount*.

IMPECCABILES, in church history, a name given to those heretics, who boasted that they were *impeccable*, and that there was no need of repentance: Such were the Gnostics, Priscillianists, &c. *Hofm.* Lex. in voc.

IMPERATOR, among the Romans, a title of honour given to generals after a victory; first by the acclamations of the soldiers, and afterwards confirmed by the senate. *Hofm.* Lex. in voc. See the article ACCLAMATION.

IMPERATORIA, in botany, the name of a genus of plants, the characters of which are these. The flowers stand in umbels, and are of the rosaceous kind, being composed of several petals, in some bifid at the ends, and in others whole. These petals are disposed in a circular order on a cup, which afterwards becomes a fruit, composed of two flattish and oval seeds, lightly striated and marginated, and usually casting off their coats. To this it may be added, that the leaves are large and alated.

The species of *Imperatoria* enumerated by Mr. Tournefort, are these: 1. The common large *Imperatoria*. 2. The greatest alpine *Imperatoria*. 3. The common cultivated *Imperatoria*, called garden angelica. 4. The great *Imperatoria*, called arch-angelica. 5. The greater marsh *Imperatoria*, commonly called the great wild angelica. 6. The Canada *Imperatoria*, with shining leaves, called the shining Canada angelica. And 7. The fine leav'd Pyrenean *Imperatoria*. *Tourn.* Inst. p. 316.

IMPERATORIÆ *radix*, in the materia medica, the root of the common masterwort, or *Imperatoria major*; a plant kept in gardens with us, but very commonly wild in France, Italy, and Germany. The leaves are large, indented, and of a fine green; and the flowers small and white, and disposed in umbels, which are succeeded by seeds, much resembling those of angelica. The root should be chosen very fair and clean, fresh dried, hard to break; of a brown colour without, and a somewhat greenish one within; and of a strong smell, and aromatic taste. It is usually long, and of the thickness of one's thumb, wrinkled on the surface, and entangled with fibres. It is esteemed cordiac, sudorific and alexipharmic, good against pestilential and malignant diseases, and against poisons. A decoction of it in wine, used as a gargle, is said to cure the tooch-ach; and externally it is much commended for the itch, and other scabs and ulcers. It is also an ingredient in some of the officinal compositions. *Pomet*'s Hist. of Drugs, p. 44.

This root is likewise good in flatulences; and if *Hoffman*'s authority may be depended on, it is one of the greatest medicines in the world in colics arising from windy causes. The seeds are reckoned by many among the provocatives, and are said by some, to be of the very first class of those medicines. The roots dried, and given in powder, are a powerful remedy in obstructions of the menses; and are of great service in asthmatic cases, tooth-ach, and in many disorders in the head. Simon Pauli tells us, that an ointment made of the fresh roots of this plant boiled in lard, is one of the best remedies known for ring-worms.

IMPERATRIX, in botany, a name given by some authors to the meum or spignel. *Ger.* Emac. Ind. See the article MEUM.

IMPERFECT *(Cycl.)*—IMPERFECT *concord*, in music. See the article CONCORD.

IMPERFORATE *Anus*. See the articles ANUS and INFANT.

IMPERIAL *(Cycl.)*—IMPERIAL *table*, in surveying, an instrument made of brass, with a box and needle, staff, &c. used in measuring land.

IMPERIAL *Salt*, *imperiale sal*, a term used by some of the old writers to express the common sal gemmæ; and used by others for the *sal ammoniacum*.

IMPOSSIBLE *(Cycl.)*—IMPOSSIBLE *quantity*, in algebra. See the article ROOT.

IMPOSTHUME, or ABSCESS. See the article ABSCESS.

In opening of *Abscesses*, and discharging their matter, the first great caution is, that it be not done too soon, that is, before the matter is arrived at a perfect maturity. *Abscesses* are known to be mature and ripe, when the swelling that was before hard and firm, feels soft and pliant, turns pale, or of a yellowish colour, and upon applying the finger, a fluid may be perceived to be lodged within; and when the pain, redness, heat, and pulsation of the swelling are gone off, either wholly or in part, and the sensation of a weight or heaviness siezes the part, instead of the former symptoms.

When these signs appear, the *Abscess* is to be opened in the most prominent, or the most depending part, without delay. For the opening a tumor too soon, is of bad consequence, yet delaying to open it when really ripe, is always of much worse; for when the matter is detained longer than it should be, especially in a large suppuration, and on a nervous part, the corrupted matter may corrode the adjacent parts, and produce fistulæ, or a caries of the bones; or by insinuating itself into the small vessels, and corrupting such parts of the blood as it mixes with, it may excite ill-conditioned fevers; or lastly, by disturbing the functions of the brains, lungs, liver, or kidneys, it may bring on inflammations and suppurations in those parts, and lastly death itself. Sometimes it happens in *Abscesses*, that the more fine and subtile part of the matter perspires, and only the grosser particles are left behind; and this gives rise to hard tumors, especially in the glandular parts. Since these therefore are the consequences if *Abscesses* are not timely opened, the great care is to make use of the first proper opportunity of opening the maturated tumor, either by the knife or caustic. If by incision, the surgeon is to grasp the basis of the tumor with one hand, pressing the contained matter outward towards the skin, that he may avoid hurting any vessels or nerves in the subjacent parts; he is then to make the incision by the sharp scalpel, in the softest and most depending part of the tumor, that the matter may have the freer exit. When the *Abscess* is large, the scalpel is not to be taken out as soon as the opening is made, but the incision in the skin is to be farther enlarged with it, but with great caution, to avoid the nerves and larger vessels, with the muscles of the subjacent parts.

The *Abscess* being thus opened, the putrid matter is to be let out; and when it is glutinous and thick, must be gently press'd forth with the hands. If the quantity of matter contained however be very large, and the patient tremble at the thoughts of the knife, or faints away, which is sometimes the case, the best way is then to discharge the matter only in part, and fill up the cavity with lint; and after the patient has been recovered by some cordial, to compleat the dressing with a plaster, compress, and bandage, leaving the perfect discharge and cleansing of it to the next dressing. When the whole of the matter is discharg'd, the wound is to be cleansed, and afterwards sarcotic medicines applied till it is incarned, and then it will cicatrize and close externally. Hard tents are on these occasions very carefully to be avoided, as they often produce very troublesome ulcers; soft dossils of lint are much better for use; the cavity should be lightly filled with these, and they may be taken out once or twice a day, as the discharge shall require. If the patient be of a tender frame, and cannot bear the knife, the *Abscess* may be opened by a caustic: Among these the most valuable are those made of pot-ashes and lime, or of soap-boilers lees. This is to be applied to the *Abscess*, either whole or in powder; but a defensative plaster must first be applied to the *Abscess*, perforated with an oblong narrow hole, that the caustic may not spread itself upon the skin, but only make an opening of a proper size, and in a proper place. Over the caustic is to be applied a compress of lint or linnen, and over that a plaster with a still larger compress of linnen over it; and the whole must be kept firm by a proper bandage.

Things being thus managed, the patient is to be advised to rest; and the caustic must be suffered to lie on three, four, five, or sometimes six hours, in proportion to the thickness of the skin on the part, and the strength of the medicine. When this is taken off, if the opening be not large enough, it may be easily enlarged a little with the scalpel, or even with a probe, without pain to the patient, and all the matter may have a free passage. As soon as the eschar is formed by the caustic, it must be softened by applying fresh butter, or the common digestive ointment or basilicon, retaining these on by a plaster and proper bandage; and when this is loose or separated, the cure of the wound is to be carried on exactly as in the *Abscesses* opened by the knife. The knife however is always greatly preferable to the caustic, as it is neater, more safe, and more expeditious; and the aperture made by it heals much more evenly, and with a smaller cicatrix than that made by a caustic. *Heister*'s Surgery, p. 183.

Bartholine, in his observations, gives us a very remarkable account of the termination of a pleurisy by an *Abscess* situated in the thigh, which when the matter was perfectly formed, discharged itself by urine.

In *Abscesses in ano*, Mr. Faget advises to slit open the intestinum rectum, whenever it is laid bare by an *Abscess*; and gives an example of a cure he made, by cutting away the extremity of this gut, which had been laid bare all round by *Abscesses*. See Mem. de L'Acad. de Chirurg. Tom. I.

Mr,

Mr. Queſnay encourages ſurgeons to open *Abſceſſes*, when they form in the brain; and even to puſh a lancet into the brain, when the ſymptoms indicate a ſuppuration, tho' the pus be neither felt nor ſeen. Mem. de L'Acad. de Chirurg. Tom. I.

IMPOTENCE, or IMPOTENCY *(Cycl.)*—We have inſtances of unfitneſs for generation in men, by an impediment to the ejection of the ſemen in coition from a wrong direction, which the orifices at the verumontanum got, whereby the ſeed was thrown up into the bladder. Mr. Petit cured one patient under ſuch a difficulty of emiſſion, by making an inciſion like to that commonly made in the great operation for the ſtone. See Mem. de L'Acad. de Chirurg. Tom. I.

Impotence may be cauſed by various accidents, but moſt frequently takes its riſe from early and immoderate venery; and often from the venereal diſeaſe. See the article VENEREAL *Diſeaſe*.

IMPRACTICABLE *Caſe*, in algebra. See the article IRREDUCIBLE.

IMPREST, in the ſea language. See the article MANNING *the fleet*.

IMPURE, in the *Moſaic* law. There were ſeveral ſorts of *Impurity* contracted under the law of *Moſes*. Some were voluntary, as the touching of a dead body [a], or of any animal that died of itſelf, or of any creeping things, or unlean creature [b]; or the touching things holy by one who was not clean, or was not a prieſt; or the touching one who had a leproſy, one who had a gonorrhœa, or was polluted by a dead carcaſs; a woman who had lately lain in [c], or was in the condition which her ſex is every month liable to [d], or was incommoded with an extraordinary iſſue of blood. Other kinds of *Impurity* there were, of an involuntary nature; for which we muſt refer the reader to Calmet, who ſhews what kind of purification was preſcribed for each ſpecies of pollution [e]. —[Vid. [a] Numb. xix. 11, 14. [b] Levit. xi. 24, 43. [c] Levit. xii. 23, 45. [d] Id. xv. 25. [e] *Calm.* Dict. Bibl. in voc.]

IN, in the manege,—*To put a horſe* IN, is an expreſſion that ſignifies to breed and dreſs him, by putting him right upon the hand and the heels.

IN-*Penny and Out-penny*, in our old writers, money paid by the cuſtom of ſome manors on the alienation of tenants, &c.— In-penny and out-penny *conſuetudo talis eſt in villa de* Eaſt Radham, *de omnibus terris quæ infra Burgagium tenentur, viz. quod ipſe, qui vendiderit vel dederit dictam tenuram alicui, dabit pro exitu ſuo de eadem tenura unum denarium, & ſimile de ingreſſu alterius; et ſi prædicti denarij a retro fuerint, Ballivus domini diſtringet pro eiſdem denariis in eadem tenura.* Regiſt. Prior. de Cokesford, p. 25. *Blount.*

INACHIA, Ἰναχία, in antiquity, a feſtival in Crete, celebrated in honour of Leucothea, or Ino.

The word is compounded of Ino, and ἄχος, *i. e.* Grief; being perhaps a commemoration of Ino's misfortunes. *Pott.* Archæol. Græc. l. 2. c. 20.

INAJA *Guacuiba*, in botany, a name by which ſome authors have called the cocoa-nut tree, or *palma indica nucifera* of other writers. *Marggrave*, p. 138.

INAMBLUCIA, in natural hiſtory, the name of a genus of foſſils of the claſs of the ſelenitæ; but of the number of the columnar, not the rhomboidal kinds, and compoſed merely of parallel fibres. See the article SELENITES.

The word is derived from the Greek ἶς, a filament, ἀμβλύς, blunt, and κίων, a column; and expreſſes a body in form of a blunt column, and compoſed of ſeveral filaments.

The ſelenitæ of this genus conſiſt of ſix equal ſides or planes, and have much of the appearance of ſprigs of rock-cryſtal in their external form, but are not compoſed of flat tables or flakes, but of a number of long parallel filaments, extended thro' the whole length of the body, and as aptly reſemble the fibraria, commonly called fibroſe tubes, as the common ſelenitæ do the foliaceous. *Hill*'s Hiſt. of Foſſ. p. 122.

Of this genus there are only two known ſpecies. The firſt compoſed of very fine thin and ſlender filaments; this is found in the clay-pits of Northamptonſhire, but is not common there. The other is compoſed of thick coarſe and whitiſh filaments; and is found in the ſtrata of clay, in the cliffs of Sheppey iſland. Id. ibid. p. 142, 143.

INANITY, the ſchool-term for emptineſs or abſolute vacuity, and implies the abſence of all body and matter whatſoever, ſo that nothing remains but bare ſpace.

INARCHING, in gardening, a particular ſort of grafting, called alſo by ſome grafting by approach. It is uſed when the ſtock intended to be grafted on, and the tree from which the graft is to be taken, ſtand ſo near one another, that they may be brought to touch. The branch to be *inarched* is to be fitted to that part of the ſtock where it is to be joined, the rind and wood are to be pared away on one ſide for the length of three inches, and the ſtock or branch where the graft is to be united is to be ſerved in the ſame manner, ſo that the two may join equally together, and the ſap meet; a little tongue is then to be cut upwards in the graft, and a notch made in the ſtock to admit it, ſo that when they are joined, the tongue will prevent their ſlipping, and the graft will more cloſely unite to the ſtock. Having thus brought them exactly together, they muſt be tied with ſome boſs or worſted, or other ſoft tying, and then the place muſt be covered with ſome grafting clay, to prevent the air from drying the wound, and the wet from rotting the ſtock; a ſtake muſt be fixed in the ground, to which both the ſtock and the graft muſt be tied, to prevent the winds diſplacing them. When they have remained in this ſtate four months, they will be ſufficiently united, and the graft may then be cut off from the mother tree, obſerving to ſlope it cloſe to the ſtock, and at this time there ſhould be freſh clay laid all round the part. This operation ſhould be performed in April or May, that the graft may be perfectly united to the ſtock, before the enſuing winter. It is principally practiſed upon oranges, myrtles, jeſamines, walnuts, and firs, and ſome other trees, which do not ſucceed well in the common way of grafting. But it is a wrong practice when orange-trees are deſigned to grow large, for theſe are ſeldom long liv'd after the operation. *Miller*'s Gardeners Dict. See the article GRAFTING.

INCALESCENT *Mercury*, a name given by Mr. Boyle to ſome mercuries of an uncommon preparation; which, by being mingled with a due proportion of gold leaves, or ſmall filings, would amalgamate and grow hot with the gold.

INCERATION, among apothecaries, the mixing of liquids with ſomething that is dry, by a gentle ſoaking, till the compoſition be brought to a ſubſtance of the conſiſtence of ſoft wax. *Caſt.* Lex. Med. in voc.

INCIDENT *(Cycl.)*—*Incident*, in law, is a thing appertaining to, or following another, that is more worthy or principal. A court-baron is inſeparably *incident* to a manor; and a court of pie-powders to a fair. Kitch. 36. 1 Inſt. 151.

INCIDENTS, or ATTENUANTS, in the materia medica. Theſe medicines are of the utmoſt importance in the practice of phyſic, as a little reflection upon their natures, qualities, and manners of operation, will eaſily convince us. To this claſs belong the roots of arum, aſarabacca, acorus, elecampane, and florentine orris; the leaves of brook-lime, ſcurvy-graſs, water-creſs, Indian creſſes, dittander, fumitory, marſh-trefoil, ſmall centaury; all the ſpecies of garlick, onion, and leek, and the wood and bark of guaiacum; among the ſpices, pepper, and ginger; among the ſeeds, thoſe of muſtard, ſcurvy-graſs, and creſſes; among the gums, galbanum, ammoniacum, myrrh, and benjamin. Among the chemical preparations, the moſt powerful *Attenuants* are calomel, æthiops, flower of brimſtone, the fix'd alcaline ſalts, the ſalts of the purging waters, vitriolated tartar, regenerated tartar, and a ſolution of crabs eyes, nitre, and ſal armoniac; the volatile ſalt and urinous ſpirit of ſal armoniac alſo; to which may be added oxymel of ſquills, and the acrid tincture of antimony. Medicated ſprings alſo belong to this claſs of medicines, becauſe they, beſide their diluting and aperient natures, are alſo highly *attenuating*. Infuſions in form of tea, from the quantity of warm water they conſiſt of, are alſo very efficacious *Attenuants*, and are very powerful in the diſuniting coaleſcent molecules. Of this claſs alſo are ſweet whey, and a multitude of other leſs us'd and leſs powerful medicines.

Of theſe, ſome act upon the fluid, and others upon the ſolid parts of the human body. Thoſe which act upon the fluids, by mere contact, are very few in number, being only the watery diluents, which are of ſingular efficacy in colliquating the viſcid and glutinous humours. The alcaline, fix'd, volatile, and nitrous ſalts, if mixed with the inſpiſſated blood and humours, eſpecially if in a liquid form, colliquate and *attenuate* them in ſo powerful a manner, as to be perceptible even to the naked eye. All the other medicines mentioned as *Attenuants* act only on the ſolids, by encreaſing their tone, augmenting their ſtrength, heightening their contractile force, and adding to the elaſticity and ſyſtolic motion of the veſſels; by which means they preſs and impel more vigorouſly their contain'd fluids, and by that means divide and break them, by driving them forcibly thro' ſmall paſſages. *Hoffman.* Oper. Vol. I. ſect. 2. c. 4.

Among the *attenuating* medicines which act upon the ſolids, ſome produce their effects by means of a conſiderable fix'd and acrid ſalt; ſuch are the roots of arum, aſarabacca, as alſo lepidium, pepper, and ginger; all which, tho' of a pungent taſte, yet neither yield an acrid volatil oil, nor a water of an acrid taſte, when diſtilled with water, which ſufficiently proves their fix'd nature. Others, which act upon the ſolids, produce their effects by means of an acrid volatile ſalt, ſuch are the creſſes, ſcurvy-graſs, muſtard, and the like. Some alſo act by means of a neutral ſalt, which is very ſtimulating. Of which kind are thoſe neutral ſalts whoſe acrimony and irritating quality are not only diſcovered by the taſte, but alſo by their proving purging, or diuretic, when given in large doſes. Others operate by means of an acrid ſalt impregnated with a large quantity of ſulphureous particles, which is evidently the caſe with gum ammoniacum and the reſt; as alſo guaiacum and its reſin, which beſide their acrid ſalt, contain alſo an oil which they yield in great plenty by diſtillation with water. And finally, ſome *Attenuants* act by means of a ſubtle penetrating metallic ſalt; ſuch is mercury in its ſeveral forms.

Attenuating and *inciding* medicines are of very extenſive uſe in phyſic, and come under different denominations, according to the different effects they produce. Thus, when tenacious and viſcid juices not only ſtagnate on the cavities of

the veſſels, but obſtruct the minute ducts of the viſcera and emunctories, theſe medicines by their *inciding* and *attenuating* quality diſcharge the humors, and remove the obſtructions; for which reaſon they are not improperly called *aperients*; and they deſerve alſo, in theſe caſes, the names of antiſcorbutics, and ſweetners of the blood: For ſince the purity and proper temperament of the vital juices depend upon the due ſecretion and excretion of every thing ſuperfluous and recrementitious in the conſtitution; and ſince the neceſſary degrees of ſecretion and excretion are intercepted, by the minute glands of the emunctories being blocked up by thick and viſcid juices, 'tis therefore obvious that ſuch medicines as *attenuate* the inſpiſſated humors, and remove the obſtructions, muſt be ſweetners of the blood, and excellent remedies againſt the ſcurvy; in which the humors have evidently loſt their due temperament, and are become impregnated with heterogeneous, viſcid, ſaline, ſulphureous, and acrid particles. *Hoffman.* Oper. Vol. 1. Sect. 2. c. 4.

Attenuants produce ſo great a variety of effects, that 'tis proper we ſhould be well acquainted with their ſeveral kinds as appropriated to the ſeveral diſorders, and know which will prove moſt ſerviceable in each. The diſſolving and attenuating viſcid crudities in the ſtomach and primæ viæ, is well anſwered by the roots of arum, acorus, pepper, ginger, and the like; as alſo by ſal armoniac, vitriolated tartar, the fixed alcaline ſalts, and the ſimple or dulcifyed ſpirit of ſalt. When crude and unconcocted humours are to be evacuated by ſtool, this intention is very well anſwered by the neutral ſalts, as the ſalts of the purging waters, and the ſal polycreſtum, with a ſufficient quantity of a watery vehicle.

When viſcid humors occaſioning diſorders of the breaſt, are to be *attenuated* and expectorated; the intention is moſt effectually anſwered by elecampane and orrice roots; and by gum ammoniacum, myrrh, or benjamin, and balſam of Peru, or by regenerated tartar, oxymel of ſquills, a ſolution of crabs-eyes in diſtilled vinegar, and the ſyrups of tobacco, and the like.

When the maſs of blood is tainted by thick and tenacious ſordes, and the emunctories are by that means obſtructed and the humors contaminated by a ſaline ſulphurous and ſcorbutic dyſcracy, the moſt efficacious of the *Attenuants* are the horſe-radiſh, ſcurvy-graſs, water and garden-creſſes, muſtard, gum-ammoniacum, benjamin, myrrh, the oil of fixed nitre, oil of tartar per deliquium, ſolutions of nitre, ſpirit of ſal armoniac, ſalt of wormwood with lemon-juice, and the ſalts of the medicinal waters.

When grumous or coagulated blood, occaſioned by contuſions or blows, is to be *attenuated*, and again diſſolved, the intention is admirably anſwered by the roots of Solomon's-ſeal, vinegar, and crabs-eyes, the regenerated tartar, and nitre prepared with antimony.

And in caſes where the lymph has acquired a preternatural thickneſs and viſcidity, eſpecially if from a venereal taint, the curative intention is moſt effectually anſwered by guaiacum, the acrid tincture of antimony, calomel, æthiops mineral, and the like; which, when ſkilfully uſed, are of ſingular efficacy in diſſolving and attenuating the viſcid juices impacted on the glands of the liver. *Hoffman.* Oper. Vol. 1. ſect. 2. c. 4.

INCISIVE (*Cycl.*)—Incisivus *lateralis*, in anatomy, a name given by authors to a muſcle of the face, called by Albinus *Levator labii ſuperioris alæque naſi.*

INCISORIUS *Muſculus*, in anatomy, a name given by Santorini to the muſcle called by Albinus *Levator labii ſuperioris*; and *Elevator labii ſuperioris*, by Cowper.

INCLAVE, a term uſed by Morgan, to expreſs an irregular line in heraldry, differing from the indented, invected, and all the others. It is called by ſome patee, and by others the dovetail line, from its reſemblance to that joint, known among our joiners by this name. It is alſo called by ſome, the labelled line. It has theſe names from the figure of the points, as they proceed from the ordinary, ſuch as a chef or feſs reſembling the ends of labels. *Morgan*'s Sphere of Gentry.

INCLINATION (*Cycl.*)—Inclination *of Meridians*, in dialling, the angle that the hour-line on the globe, which is perpendicular to the dial-plane, makes with the meridian.

INCLOSING *of Land.* The *incloſing* land into fields and paſtures, lays the foundation for all the induſtry and good huſbandry of the farmer, as it ſecures him of the advantages of his labour. Many have pleaded indeed for the leaving land in open fields, but experience ſhews the profit to be on the other ſide; ſince vaſt quantities of land have been of late years *incloſed*, which before lay open; and rent every where increaſes, as lands are more and more *incloſed.* The advantage of *incloſing* land is more neglected in the north of England, than in any other part of it. It is a very unlucky miſtake in the farmers in that part; becauſe one ſignal advantage of *incloſures* is, that the lands are kept warmer by them than they otherwiſe would be; and this warmth is wanted much more in thoſe northern cold parts, than in the more ſouthern parts of the iſland, which are much warmer. Land is *incloſed* in different parts of England by fences of different kinds, according to the nature of the country, and its produce. The moſt common *Incloſure* is by a ditch and a bank raiſed by its ſide, ſet with quick: This takes place in almoſt any ground; but as this is expenſive, and ſtone or water are more plentiful in particular places, they are uſed in its ſtead. In marſhy lands they only cut ditches, by way of fence between ground and ground; and theſe when wide and deep enough, are a very good fence in all places where there is water to keep them full. *Mortimer*'s Huſbandry.

In Cornwal, and Devonſhire, and ſome other of the weſtern counties, they uſe a ſtone-fence; which is the beſt kind both for the lands and for the cattle. Flat ſtones are very plentiful in theſe counties, and to be had at little or no expence. They build round the land that is to be *incloſed*, two walls of theſe ſtones near one another, laying the ſtones one upon another, firſt two and then one all the way up, and as it riſes they fill up the ſpace with earth, which brings it together; and ſo they continue the ſtone-work filling it to what height and breadth they pleaſe, beating the ſtones in flat to the ſides, which makes the whole very firm. On the top of theſe walls they plant quick and even timber-trees, which thrive extremely well.

In the northern counties of England, and ſome others where there is plenty of ſtone of a large and rough kind, they make their fences with the rough and unhewn ſtones, piling them up into a wall with no ſort of cement or mortar, only laying on large ones at the top in a bed of clay, which keep all the reſt together. They make theſe walls about five foot high; and in the north they dig the ſtones for eighteen-pence a rood, and make the walls for the ſame price, reckoning twenty-one foot to the rood or pole. To dig the ſtones for fences-building, or lime, in Suſſex, they reckon three ſhillings the cart load. See the article Fences.

INCLOSURE, a word uſed ſometimes to expreſs an *incloſed* piece of ground, and ſometimes for the fence or hedge made to incloſe it. Theſe hedges are uſually made of white-thorn, ſometimes of black-thorn, of crab, or of holly. See the article Fence.

A very good *Incloſure* for gardens may be made of the common elder. Where the ground is good, this ſucceeds extremely well. Elder ſticks or truncheons ten or twelve foot long are to be cut and ſtuck in the bank ſlope-wiſe each way, ſo as to make a chequer-work. This makes the ſpeedieſt ſhelter of any. When the trees grow old, they are alſo ſtill of value, their wood is a very fine one for turning, and is at leaſt equal to box, if not ſurpaſſing it. *Mortimer's* Huſbandry.

The elder-tree makes an extremely good fence in watery places, and when planted on the banks of rivers is of great uſe in preventing them from being undermined by the current; the roots being very numerous, ſtrong, and compact. It is always ſending ſuckers alſo from its loweſt roots, which makes it very uſeful where ſtreams wear away their banks, and are widening their courſe.

The furze-buſh, tho' an irregular grower, makes an excellent fence on dry banks, where nothing elſe will grow. It may be raiſed either by ſeeds, or by ſets; but the ſeeds are the beſt, eſpecially thoſe of the French furze, which grows to the height of fifteen or ſixteen foot, and is not ſubject to ſpread with its roots and get into the good ground, as our common heath furze will always do. This has the advantage of being a very ſpeedy grower. It will make a very good hedge in three years, if taken care of. It muſt be kept well weeded while young; and the ſheep muſt be kept away from it, for they are very fond of its young ſhoots. But it only requires this care for a little while, for when grown up to any conſiderable height, nothing can hurt it. If a furze hedge be clipped, it will grow large and thick; but if left to itſelf, it will run up to a conſiderable height, and afford good ſhelter, and yield an excellent fuel. They ſow much of the poor land in Devonſhire with furze, and make very conſiderable advantage of it.

INCOMBUSTIBLE (*Cycl.*)—Incombustible *Cloth*, a kind of cloth made of the aſbeſtus, and therefore not to be conſumed by fire. The manufacture of this cloth is loſt in Europe; but in ſome parts of Tartary they have a very long and fine kind of aſbeſtus, and have the way of manufacturing it, ſo as to make a ſort of handkerchiefs, and ſome larger things of it. They tell the people there, that it is made of the root of a tree; but this is only a pretence invented to keep the Chineſe in the dark about it; for they are very fond in ſome places of the cloth, and purchaſe it of the few Tartars who have the ſecret, at a very great price. See the article Asbestus.

All the antient authors talk of this cloth, but many among the moderns have doubted whether any ſuch was ever actually made. Dalechamp ſeems to think it impoſſible, becauſe of the ſhortneſs of the fibres of the aſbeſtus. And Schildius, in his commentaries on Suetonius, abſolutely denies it. Boxhornius ſeems to think, that the Indians might have ſuch a cloth in the time of the Romans, becauſe the materials of it were found among them; but he is of opinion, that no ſuch cloth was ever made by the Romans themſelves. Cauſabon is of the ſame opinion; and indeed there ſeems great probability in it, as we ſtill find

the beſt materials are of the produce of that part of the world, and the ſecret of weaving and working them is only among that people. Philoſ. Tranſ. N° 172. p. 1050.

Thoſe who ſuppoſe that no ſuch cloth was ever made at all, found their opinion, like Daleſchamp, on the ſhortneſs of the fibres of the aſbeſtus; but tho' what they may have ſeen was ſhort, there is enough that is ſufficiently long, and that very fine alſo, and fit for working, even in Europe. Mr. Monteſquieu having collected very lately, and ſent into England, ſome aſbeſtus from the rocks near Barege, which any common hand might work into cloth.

The Eaſt-Indies ſeems to have been always the principal place of its manufacture. Cælius Rhodoginus ſays, it was only made there, and that the beſt materials of it were not found elſewhere. And Paulus Venetus ſays, that Tartary was the place where it was made for many ages, and in no other place: He mentions alſo a fine piece of it ſent to pope Alexander, by the then emperor of that country. Agricola tells us of a mantle of this linnen, at Vereburg in Saxony. And Simon Majolus ſays, he ſaw one at Lovain expoſed to the fire: And Mr. Ray ſaw a purſe of it at Heidelberg, which bore being made red hot, without any hurt. By theſe accounts it is plain, that in all ages, and in many places, this cloth has been preſerved; and all experiments made on it agree in confirming the truth of the accounts given of its bearing fire unhurt. Paper is more eaſily made of it than cloth, and has the ſame qualities.

INCOMBUSTIBLE *Lint*, a name given by authors to a peculiar kind of aſbeſtus or earth flax, which never is formed into compact maſſes as the other ſpecies are, but is always found in looſe filaments, and thoſe of a very flexible nature, and extremely fit to work.

This is a kind of aſbeſtus, wholly different from the ſpecies known to the antients, and is found, ſo far as is yet known, only in the county of Aberdeen in Scotland, in the neighbourhood of Achintore near the Highlands. In this place there are found many very elegant pieces of foſſile wood petrified in a beautiful manner. On the ſide of a hill near this place in a heathy and ſomewhat boggy ſoil, and about the edges of a ſmall brook that runs down there, there is a ſpace of about ten or twelve yards ſquare, in which pieces of this foſſile wood lie very thick. Near this place, if the ground be only dug into with a knife, there is found a ſort of fibrous matter lying near the ſurface among the roots of the graſs; the knife will not cut this, and on examining it, it proves to be a ſubſtance of the aſbeſtus kind, tho' not in lumps. It is very ſoft and flexile, and is not injured by the fire.

Tho' this matter generally lies in theſe looſe filaments, yet it is ſometimes collected into parcels, and ſeems to form a tolerably compact body. When this, however, is more nearly examined, it is found not to be a real lump, but a congeries reſembling a ſurgeon's pledgit of preſſed lint, and on being put into water it ſeparates into its natural looſe threads, which no other ſpecies of aſbeſtus will do. All the aſbeſtus of this kind lies within an inch of the ſurface, parallel to it, and ſo interwoven among the roots of the graſs and ſmall plants, that it is not eaſily ſeparated from them.

The petrified wood found in the ſame place very much reſembles the texture of this aſbeſtus, and probably, whether this be really not petrified wood, but only an aſbeſtus with the appearance of the veins of trees, or whether foſſile wood in ſome places gives origin to aſbeſtus, theſe maſſes and the looſe lint are very nearly allied to one another. The ſtones or pieces of petrified wood are of different kinds; ſome are white of the colour of lint, and of ſo ſoft a ſubſtance, that a knife eaſily cuts through them without being blunted by it; others are mixt with a kind of greyiſh talc, and are very hard.

The looſe lint is always abrupt at both ends, as if cut off with a knife; and the ground in which it lies is a grey ſoil, of about two inches deep, covering a ſtratum of vegetable mould of two foot. In ſome places in the neighbourhood, there are found large quantities of a glittering talcky ſand; and near this there always is more or leſs of the lint. Sometimes alſo in theſe places there are pieces of the petrified wood, which degenerate more than the reſt from the nature of wood, and appear very white, bright, and talcky. It appears hence, that talc may have ſome ſhare in its origin, and this is the more probable, as talc as well as aſbeſtus is not to be injured by the fire. The antient Romans ſpun pieces of their aſbeſtus's into cloths, and uſed them in the funeral rites of the dead, preſerving the aſhes ſafe from thoſe of the wood, by firſt wrapping up the body in a winding ſheet of this cloth. What they had for this purpoſe, ſeem by the accounts of Pliny and others to have been all very ſhort; but this here mentioned would be much more eaſily wrought, as it is ſeven or eight inches long in ſome pieces. The fabricating a cloth of this ſubſtance, has not yet been attempted; but Mr. Wilſon, who firſt diſcovered it, had ſome of it ſpun into yarn, which gives proof that the other is practicable. Phil. Tranſ. N° 276. p. 1005.

INCREMENT, *Incrementum*, in rhetoric, a ſpecies of climax, which riſes from the loweſt to the higheſt: Such is that of Seneca, *turpiſſima tamen eſt jactura, quæ per negligentiam venit: et, ſi volueris attendere*, magna *vitæ pars elabitur male agentibus*, maxima *nihil agentibus*, tota *aliud agentibus*. *Voſſ.* Rhet. l. 5. p. 374. ſeq. See the article CLIMAX, *Cycl.*

INCUBUS, (*Cycl.*) in medicine, the name of a diſeaſe, which conſiſts in a ſpaſmodic contraction of the muſcles of the breaſt uſually happening in the night-time, and attended with a very painful difficulty of reſpiration, and great anxiety.

Signs of it. The moſt obvious ſymptom of this diſeaſe, is a ſenſation like that of ſome great weight laid upon the breaſt; this is attended with ſo violent a cohibition of reſpiration, that the perſon becomes unable to move any part of his body, or to utter any diſtinct or articulate ſound. This whole complaint goes off as ſoon as any one limb is moved, but there is often an univerſal laſſitude of the whole body left behind it, which remains for ſome ſpace of time. This diſeaſe generally attacks people in the night-time, in a ſort of middle ſtate between ſleep and waking.

Perſons ſubject to it. Thoſe of plethoric habits are moſt ſubject to fall into this diſeaſe, and among them ſuch particularly as have a great thickneſs of the blood. Perſons who are ſubject to hypocondriac complaints, and to diſorders of the ſpleen, are alſo much affected with it; and it is uſually brought on by eating large ſuppers, and afterwards ſleeping upon the back.

Cauſes of it. Theſe are a ſtagnation of the blood in plethoric habits, where it is thick about the vena portæ, which nature is endeavouring to throw off by means of thoſe ſpaſmodic motions, which conſtitute this diſeaſe; and very often crudities in the primæ viæ become additional cauſes, and exaſperate the complaint.

Prognoſtics in it. This is uſually eſteemed a trifling complaint, and at the utmoſt if it does not go off of itſelf, to be cured by bleeding. Phyſicians eſteem it a diſeaſe of no danger; but it is much to be ſuſpected, that many of thoſe people who are found dead in their beds periſh by it.

Method of Cure. When this diſtemper returns ſo often as to occaſion the patient to call in the aſſiſtance of a phyſician, the method is to give gentle purges three or four times, with the digeſtive medicines, ſuch as gum ammoniacum or the tartarum vitriolatum on the intermediate days; after this, bleeding in the foot is proper; and when this has been done, powders of nitre and cinnabar uſually compleat the cure: If they fail, the common method in hypocondriac caſes is to be uſed. When there are crudities in the primæ viæ which exaſperate this diſeaſe, then after the purges, gentle bitters and other medicines which will reſtore the tone of the ſtomach, are to be given. Gentian and orange-peel in infuſion, are very good for this purpoſe. When it happens almoſt wholly from a load on the ſtomach, a gentle vomit alone will perform a cure; but in this caſe great care is to be taken, that there is not a miſtake in the nature of the diſeaſe, for ſome hypocondriac caſes much reſemble this; and in all theſe, vomits are extremely hurtful. To prevent returns, the patients muſt accuſtom themſelves to lie on one or the other ſide, never on the back. *Junker*'s Conſp. Med. p. 631.

INCUS (*Cycl.*)—The *Incus* or anvil contained in the barrel of the ear, reſembles in ſome meaſure one of the anterior grinders, with its roots at a great diſtance from each other; at leaſt it comes nearer to this than to the ſhape of an anvil. Anatomiſts divide it into the body, and the branches: The body is a ſomewhat large ſubſtance; the branches or legs are two, one long and one ſhort. The body is turned forward, the ſhort leg backward, and the long leg downward. The body of the *Incus* is broader than it is thick; it has two eminences, and two cavities between them, much as we ſee in the crown of the firſt grinders. The ſhort leg is thick at its origin, and from thence decreaſing gradually it ends in a point. It is ſituated horizontally, its point being turned backward, and joined to the edge of the maſtoide opening of the tympanum. The long leg viewed through the external auditory paſſage appears to be ſituated vertically, but if we look upon it either on the fore or back-ſide we ſee it is inclined, the extremity of it being turned much more inward than the root or origin. The point of the extremity is a little flatted, and bent back like a hook, and ſometimes a little hollow'd like a kind of ear-picker. By this the *Incus* of one ear may be diſtinguiſhed from that of the other, when out of their places; for turning the ſhort leg backward and the long leg downward, if the curvature of this long leg be toward the left hand, the bone belongs to the right ear, if toward the right it belongs to the left ear. *Winſlow*'s Anat. p. 48.

INDECIMABLE, *Indecimabilis*, in law, is applied to things not tythable, or which by law ought not to pay tythe. 2 Inſt. 490. *Blount.*

INDENTED (*Cycl.*)—INDENTED *Line*, in fortification, a line running out and in, like the teeth of a ſaw, forming ſeveral angles, ſo that one ſide defends another. They are uſed on the banks of rivers, where they enter a town; likewiſe the parapet of the covert way is often indented. This is by the French engineers called *Redents*. Small places are ſometimes fortified with ſuch a line. But the fault of ſuch fortifications is, that the beſiegers from one battery may ruin both the ſides of the tenaille or front of a place, and make an aſ-

fault, without fear of being enfiladed, ſince the defences are ruined.

INDEX (*Cycl.*)—INDEX { *of the variation* / *of the inequability* } *of Curvature.*

See the article VARIATION *of Curvature.*

INDIAN, in a general ſenſe, denotes any thing belonging to the Indies, eaſt or weſt.

INDIAN-*Bread*, INDIAN-*Corn*, INDIAN-*Creſs*, INDIAN-*Gem*, INDIAN-*Ink*, INDIAN-*Red*, } See the article { CASSADA-*Bread*. CORN. CRESS. GEM. INK. RED.

INDICATOR, (*Cycl.*) in anatomy, a name given by Albinus, and ſome other authors, to a muſcle called by the generality of writers *Indicis abductor*, and *Extenſor Indicis*.

INDICAVIT, in law, a writ or prohibition that lies for a patron of a church, whoſe clerk is ſued in the ſpiritual court by another clerk for tythes, which do amount to a fourth part of the profits of the advowſon; then the ſuit belongs to the king's court, by the ſtat. Weſtm. 2. c. 5. And the patron of the defendant being like to be prejudiced in his church and advowſon, if the plaintiff recovers in the ſpiritual court, hath this means to remove it to the king's court. Reg. Orig. 35. Old Nat. Br. 31. Terms of Law, *Blount*, *Cowel*.

INDICTOR, in law, he that indicteth another for an offence; and *Indictee* is the party who is indicted. 1 Ed. 3. c. 11. 21 Jac. 1. c. 8. *Blount*.

INDICUM. In the writings of the antients we find this word very frequently uſed, as the name of a blue colour, or pigment uſed in dying, and imported to Rome, Greece, and other parts of the world from the Eaſt-Indies. The greater number of writers make this the ſame with our indigo, or anil fæculæ; and ſome ſay it was the ſame with our woad; but the former opinion ſeems moſt probable. The antient Greeks ſometimes wrote this ſimply ἰνδικον, *Indicum*, and ſometimes ἰνδικον μελαν, *nigrum Indicum*, or Indian black. We are not to be ſurpriſed at this name for a blue colour, ſince it is plain that the Greeks and Romans often uſed the words generally underſtood to expreſs black, for a blue colour. Thus Theophraſtus calls the fine deep blue ſapphires, μελανες; and Virgil talks of the nigra viola, which is our fine deep blue violet.

Pliny however did not diſtinguiſh this; but finding his Greek authors, from whom he borrowed the greater part of his natural hiſtory, ſometimes ſpeaking of *Indicum*, and ſometimes of *Indicum nigrum*, he ſuppoſed the uſe of this epithet to denote a different ſubſtance; miſtaking it for a ſubſtantive, and taking it to mean *atramentum*, or ink. Hence he deſcribes in two places the *Indicum*, and the *Indicum atramentum*. And hence, ſome have not only ſuppoſed two ſubſtances to have been known to the antients under this name, but that the *Indian-ink*, uſed at this time by our limners and deſigners, was known to Pliny. This author, according to the tradition of the times, ſuppoſed that the *Indicum* or blue colour, which came over to them in large cakes, in the manner of what our dealers in that commodity call rock blue at this time, was the mud gathered from about the roots of a kind of Indian reeds. The greater part of the authors of antiquity give us the ſame account of it; but this was only owing to their ignorance of its true nature. For, by their own accounts of its nature and effects, it appears plainly to have been the ſame kind of thing with our indigo, that is, the fæculæ or ſubſidence of a vegetable juice. The antients were in this manner ignorant of the true hiſtory of many things which they had in common uſe among them, ſuch as ſilk, &c. and our rock blue, which is the indigo in the firſt ſtate before it is formed into regular cakes, looks ſo like dry'd mud that any one who examines it in that condition will readily pardon the antients for ſuppoſing it to be ſuch. Pliny gives this account of the *Indicum*; but he ſays, that as to the *Indicum atramentum*, he could no were find any account of the making it, which is not very wonderful; ſince himſelf was the firſt who ſuppoſed that the antients from whom he expected to have taken ſuch an account ever thought of any ſuch ſubſtance ſeparate from the common blue indigo.

This ſubſtance, which the Greeks called *Indicum*, the Arabian writers, Aviſenna, Serapion, and others have called *Nil*. Tho' the ſame word is alſo ſometimes uſed by them for the pigment made from woad. The author of the Periplus maris Erythræi mentions the common *Indicum* under the name of *Indicum nigrum*, and ſays that it was one of thoſe merchandiſes in his time bought up at ſome of the markets of the ſavage Indians. Leo Africanus tells us, that the *Indicum* plant grows frequently about Dara in Africa; and that the colour is there made from it, in the ſame manner that the woad is prepared from that plant with us. Linſcot and Paludanus deſcribe the herb as being like roſemary; and this, tho' no exact deſcription, yet conveys an idea of their having known the plant, and of what they deſcribe being the ſame with our anil of America, of which we prepare indigo; that being a low ſhrubby plant, and being uſually cut when three or four foot high, which is the common height of roſemary. It is called in ſome places *Gali*; and Garcias, among others, gives us this name for it; but Cluſius has much perplexed this account, by telling us, that the gali is like the ocimum or baſil, which has not the leaſt reſemblance either to the plant anil or to roſemary, the other ſhrub to which it was compared. Advardus Barboſa, when he enumerates all the merchandiſes of the Indies, and gives their price, mentions the anil and the *Indicum*, as two different things; but he allots them both exactly the ſame price, and it appears therefore an error to have ſeparated them. The Arabians call it *nil*, but they alſo call the ſeed of a blue-flowered campanula by the ſame name, which has occaſioned ſome errors in the tranſlating thoſe parts of their works, when this word occurs.

INDICUS *Color*, a term uſed by ſeveral of the antient writers to expreſs black. The generality of the Greek and Roman phyſicians of old times have called the black lignum aloes, *Agollochum Indicum*; and the only black kind of myrobalan they were acquainted with was in the ſame manner called the *Indicum*; not that theſe were ſuppoſed peculiarly the product of the Indies, in diſtinction from the paler lignum aloes, or the other myrobalan; but that they were of that colour which they called *Indicus Color*.

INDIGNATORIUS (*Cycl.*)—This muſcle is called by others the *rectus exterior*, and *abducens*; and by Albinus, the *abductor*. It is one of his quatuor *recti oculi*.

INDIVISUM *Folium* among botaniſts. See the article LEAF.

INFALISTATIO, an antient puniſhment of felons, by throwing them among the rocks and ſands, cuſtomarily uſed in port-towns. It is the opinion of ſome writers, that *Infaliſtatus* did imply ſome capital puniſhment, by expoſing the malefactor upon the ſands till the next tide carried him away; of which cuſtom, 'tis ſaid, there is an old tradition. However the penalty ſeems to take its name from the Norman *Faleſe*, or *Faleſia*, which ſignified not the ſands, but the rocks and cliffs adjoining, or impending on the ſea ſhore. Mon. Angl. T. 2. p. 165.— *Commiſit feloniam ob quam fuit ſuſpenſus, utlagatus vel alio modo morti damnatus*, &c. *vel apud Dover* Infaliſtatus, *apud Southampton ſubmerſus*, &c. *Blount*.

INFANT (*Cycl.*)—*Diſtemperatures of* INFANTS. It is to be obſerved in general, that all *Infants* are not equally expoſed to diſtemperatures of many kinds, but that the children of perſons of tender conſtitutions and idle lives are moſt ſubject to them. The children of poorer people, which are uſually hardly brought up from the firſt, are alſo leſs troubled with diſorders, in general, than thoſe which are taken more care of; and all their lives afterwards are much abler to bear external injuries, and are much leſs affected by them.

The ſeveral diſtempers of *Infants* are theſe: *Immobility at the birth*, called by authors *Anaiſtheſia*. In this caſe the *Infant* as ſoon as born remains immoveable in its poſition, as if dead. It is to be brought to life and motion in this caſe, by breathing into its mouth, and burning ſaffron under its noſtrils, letting it receive the fume of it, and ſprinkling cold water or wine upon it. When the caſe is leſs violent, the *Infant* is often brought to itſelf by applying it immediately to the breaſt and letting it ſuck: And in the other caſes, this is very proper after the before-mentioned means have been uſed. *Junker's* Conſp. Med. p. 739.

A yellow colour of the ſkin is another very common complaint in new-born *Infants*, ſo that they look as if they had the jaundice. This is an accident of no ill conſequence. It often goes off of itſelf, after voiding the firſt ſtools; and if it does not, is eaſily removed by giving the *Infant* a ſmall quantity of ſyrup of rhubarb, and of the common abſorbent powders, with antimonium diaphoreticum. In this caſe the child is to be kept warm, ſo that it may ſweat moderately while it takes theſe medicines.

Difficulty of ſwallowing is alſo a common complaint in *Infants*. If this happens from that fault of the frenulum of the tongue, which renders the child tongue-tied, as the good women expreſs it; this is to be removed by cutting it. If it be cauſed by aphthæ, or little ulcers in the mouth; theſe are to be treated as below. If it proceed from a tumor of the tongue, the diſcutient waters are to be put in ſmall quantities into the mouth every two or three hours; and if there be ulcerations upon the tongue, the beſt of all applications is the oil of eggs. But before any thing is done for the child, it is neceſſary to ſee, whether the fault be not in the mother from her having no milk, or from the nipples being ſo depreſſed that the child cannot uſe them.

Imperforations of the neceſſary parts. Theſe ſometimes happen in *Infants*, ſo that there is either no paſſage for the ſtools, or for the urine; ſometimes for neither. This caſe is rare; but when it happens, ſpeedy help muſt be had, or the *Infant* periſhes. In caſes where the paſſage is regularly formed, but is only ſtopt up by mucous matter, which ſometimes happens; the gentle abſtergents are to be given, as the crabs-eyes or ſome other abſorbent half fated with an acid, and the uſe of a ſmall catheter or glyſter-pipe muſt be called in.

But

But when there is a preternatural membrane formed, which ſtops the paſſages, this muſt be cut through by a ſurgeon. *Junker*'s Conſp. Med. p. 742.

Retention of the firſt ſtools, or meconium, which is in the bowels at the time of the birth. This diſtemperature in the body occaſions the *Infant* many ſevere pains, and throws it into great danger; difficulty of breathing, pains in the abdomen, inquietude and convulſions, are the conſequences of it. Nature often cures theſe by a diſcharge of bilious acrid ſtools, which are ſometimes green, ſometimes yellow like the yolk of an egg. When nature is not able to do this in time, ſhe is to be aſſiſted by giving ſyrup of rhubarb, or a very ſmall quantity of oxymel of ſquills; ſyrup of roſes may alſo be given, and oil of ſweet almonds with fine ſugar. When this goes off in a diarrhœa with acrid ſtools, the common abſorbents and attemperating medicines are to be given. Powder of calcined cryſtal is much recommended for this purpoſe; to which ſome propoſe the adding half a grain of aurum fulminans; and the mucilaginous ſubſtances, ſuch as gum-arabic, and tragacanth diſſolved in barley-water, are of great ſervice.

Stuffings of the breaſt attend ſome *Infants* in ſuch a degree, that they ſeem aſthmatic. In theſe caſes the ſolutive ſyrups of rhubarb and roſes are to be given; and afterwards the pectorals, as the ſyrup of eryſimum and maidenhair, or ſyrup of liquorice. An emetic may alſo be given of the ſyrup or conſerve of peach-bloſſoms, and a ſingle grain of calomel or two at the utmoſt may be given, and often have great ſucceſs. If theſe fail, ſmall doſes may be given of powders prepared of diaphoretic antimony with twice its weight of detonated nitre; and the common reſolvents, ſuch as the orrice-root and ſperma-ceti, may be added; and ſometimes it is neceſſary to add a ſmall doſe of tartarum vitriolatum, with ſome of the common abſorbent powders.

Coughs ſometimes attend *Infants*, but they are ſeldom obſtinate, uſually giving way to the common pectoral ſyrups, or a little ſpermaceti, after the bowels have been unloaded by the laxative ſyrups, or other gentle cathartics.

Coryza's and Gravedo's happen alſo ſometimes to *Infants*; in theſe caſes the common ſyrups before preſcribed are to be given; and if they fail of effect, the nurſe muſt take the medicines proper in theſe caſes; which, ſee under their proper heads.

Running of the eyes and ears. This is a very common complaint, and is to be cured by ſmall doſes of decoctions of pimpernel root, ſaſſafras, and the other ſweetning woods, and by gentle laxatives on the intermediate days, in which calomel in ſmall doſes of a grain or two ought always to have its part; and the more acrid the matter diſcharged is, the more neceſſary is it to add to theſe things the mucilaginous medicines, ſuch as ſolutions of gum-arabic and tragacanth in water, and mucilage of the ſeeds of quinces made by gently boiling them.

Chaffings of the fleſh are very common in *Infants*, and uſually ariſe from the ſweats, urine, or acrid ſtools diſcharged upon the parts, eſpecially when their nurſes are ſo careleſs as to keep them dirty, and ſuffer theſe things to remain long on the parts. In this caſe common flour, or powder, will often prove a cure; or, when that fails, a little camphor and ceruſs mixed among it, uſually proves effectual. But if internal cauſes concur, ſuch as a ſharpneſs of the blood, and humors in the child, then the common abſorbent and ſweetning powders are to be given internally, at the ſame time that the others are applied externally to the parts.

Vomitings, in *Infants*, are rather ſalutary than hurtful, provided they are moderate; but when they are violent, they are to be remedied by giving gentle glyſters, to give a derivation to the mucous matter downward, and at the ſame time applying externally the common ſtrengthening and ſtomachic plaiſters, as oil of mace, and the like, and repeating theſe applications as often as found neceſſary.

Diarrhœas in *Infants* are uſually attended with pain, and the ſtools are either green or of the colour of the yolk of an egg; it is not ſafe to uſe aſtringents to them, but they may generally be cured by abſorbents, ſuch as powder of cryſtal, or crabs-eyes. *Junker*'s Conſp. Med. p. 743.

Coſtiveneſs in *Infants* is a much more dangerous complaint, ſubjecting them to many diſorders. The common purgative ſyrups of roſes and peach-flowers are to be given in this caſe, as alſo emollient clyſters; and ſuppoſitories are to be applied, for which purpoſe nothing is ſo proper as a piece of parſley-root cut into a proper ſhape, and introduced after rubbing it over with butter. It is neceſſary, however, to diſtinguiſh this coſtiveneſs from a natural firmneſs of the ſtools when they are voided at moderate diſtances of time, and that without pain; for this is a very ſalutary habit in children, after the meconium is voided in the firſt ſtools: It ſhews a ſtrength in the child, and is to be accounted a good ſymptom.

Cutaneous eruptions. Theſe attend children in various forms, and are of very different kinds; but in all the ſame method of cure is to be uſed: The nurſe and child ſhould both take decoctions of ſaſſafras, and in the intermediate days laxatives with ſmall doſes of calomel. External applications to them muſt be very mild and innocent, ſuch are the oil of eggs mixed with an equal quantity of the oleum philoſophorum, and oils in which wall-flowers have been inſolated.

Aphthæ. In this complaint *Infants* are found to have their tongues covered over with a white ſkin or film, and much ſwelled or inflated, and the internal part of the mouth ſore. This diſorder ſometimes ariſes from internal heat, ſometimes from the frequency and eagerneſs of the child's ſucking. The mouth in this caſe is to be wiped and cleanſed frequently with a rag dipped in wine and honey, or with a coarſer cloth dipped in ſyrup of mulberries; and if there be any febrile heat attending it, gentle alexipharmics and laxative ſyrups are to be given internally, and repeated as often as is found neceſſary.

Convulſions. Theſe are cauſed in children by ſeveral different means, and therefore require a different treatment. If they ariſe from a repreſſion of ſweats, the common alexipharmics are to be given, and in the intermediate times ſmall doſes of mercurius dulcis. If they are owing to acrimonious humors in the bowels, they are to be cured by gentle doſes of ſyrup of rhubarb, and powders of calcined cryſtal, and other abſorbents, with a little of ſweet almonds. When they are cauſed by abundant ſeroſities, valerian roots and aurum fulminans, are greatly recommended. When they are epileptic, and return very frequently, cinnabar is to be given freely in powders; and when they are owing to worms, mercurius dulcis is the beſt of all remedies.

It is to be obſerved in general, that of the diſeaſes of children the far greater number are wholly owing to external cauſes, very few of them to any internal fault in the conſtitution. The principal of theſe external cauſes, are the following:

1. Changes of the temperature of the air. Theſe are brought on in regard to *Infants* at the nurſe's pleaſure, and it is often thrown into too profuſe ſweats by a cloſe room and too warm covering, and perhaps in the midſt of this ſweat is immediately taken from under that covering, and expoſed to the open air. To this are owing moſt of the catarrhal affections to which *Infants* are ſubject, and their fevers and cutaneous eruptions of the ſeveral kinds.

2. Improper food and drink are another great ſource of the diſeaſes of *Infants*. Nurſes frequently ſtarve children, and more frequently cram them with much more food than is neceſſary; and beſides theſe irregularities in regard to quantity, errors in the quality are not leſs fatal. A thin and bilious milk throws them into gripings of the bowels, and bilious diarrhœas; and milk when too thick gives them ſtuffings or ſtoppages at the breaſt, and ſometimes ſuffocative catarrhs. And finally, the milk of a perſon, who has a remaining taint of the venereal diſeaſe, ſubjects the child to breakings-out, and ulcers of many kinds. *Junker*'s Conſp. Med. p. 747.

3. Motion and reſt improperly managed are alſo the ſources of many of the complaints of children. Nothing is more prejudicial to the health of a child, than that frequent cuſtom of idle nurſes of rocking a child to ſleep, whether it will or not; the violent and continual motion in this caſe often gives the child a vertigo, which it never afterwards gets rid of.

The binding children too tight in their dreſs, is alſo another great cauſe of diſorders, by obſtructing the due motions of nature in the circulation of the blood. The ſetting children too early on their feet, and compelling them to walk too early, is alſo the cauſe of many miſchiefs. And nothing is more miſchievous than the frequent diſturbing them out of their ſleep: This makes them peeviſh, and torpid, and ſleepy at other times.

4. The ſuppreſſion of the natural excretions is alſo the origin of many diſorders; and though this may ſometimes happen from an innate cauſe in the *Infant*, it much oftner is owing to the perverſeneſs of the nurſe in feeding on acid foods, or ſuch as are hard of digeſtion; and expoſing the child, as well as her own breaſts to the cold air, when they are hot.

Infants, from the great tenderneſs of their parts, are much more ſubject to the ſeverity of diſeaſes, than grown perſons; yet experience ſhews us, that they uſually get through them with leſs danger. An inſtance of this is evident in the ſmall-pox, from which people in general eſcape much better when young, than at any other time. Convulſions, violent hiccoughs, and ſevere and almoſt continual crying, are obſerved very often to be fatal to children in the firſt ſix weeks; but are much leſs dangerous afterwards: And convulſions become habitual to children, tho' they are often very frequent in their returns upon every ſlight occaſion, yet they are found much leſs dangerous than in other caſes. In general, all diſeaſes come to a ſhorter period in *Infants*, than in grown perſons.

Moſt of the diſtemperatures of children are to be cured by gentle correctives and evacuants; and of theſe, the very mildeſt in their operation are always to be choſen. Vomits are very ſeldom neceſſary to be given to children; but when it is neceſſary to provoke their ſtomachs to throw up their contents, the putting the finger to the throat will uſually prove ſufficient to ſet them to reaching; or if this fail, a little ſyrup or conſerve of peach-bloſſoms will take effect.

Mercurius

Mercurius dulcis, or calomel, is an extremely ſafe and valuable purge for children, provided that they have no fever; it is to be given from one grain, to three or four. In caſes of diſorders from the retropulſion of cutaneous humors, this does more good than could well be expected from any medicine. *Junker*'s Conſp. Med. p. 751.

Manna, infuſions of ſena, and ſmall doſes of ſyrup of buckthorn, may alſo be given as purges to children, where there is no fever joined with their complaints; but where there is a feveriſh diſpoſition, rhubarb is to be preferred to all other things. In violent gripings, and pains attended with crying out, terrors and tremblings, and acrid ſtools, mucilaginous medicines often prove of more ſervice than the common abſorbents. Worms in *Infants*, when alive in the bowels, often bring on atrophies and convulſions; and when dead and putrified, they occaſion many malignant effects, with convulſions, and often unaccountable ſymptoms. When alexipharmic or diuretic medicines are found neceſſary, it is always much better to give them to the nurſe than to the child; but antimony-diaphoretic, when faithfully prepared, is a medicine of great power, and yet ſo ſafe that it may be given to the *Infant*. Narcotic medicines are to be given with the utmoſt caution; a ſingle grain of theriaca ſeems as proper as any thing for this purpoſe. Cinnabar in ſmall doſes is found to be an excellent remedy in convulſions; but if it be given too freely, it generally loads the ſtomach.

INFANT, in law, if it appear that an *Infant*, under the age of diſcretion could diſtinguiſh between good and evil, as if one of nine or ten years of age ſhould kill another, and hide the body, or himſelf, *&c.* by the law of England he may be convicted, and condemned, *&c.* But the judge in prudence will reſpite the execution. *Hawk*, P. C. b. 1. c. 1.

INFERIÆ, in antiquity, ſacrifices offered to the Dii manes, or the ſouls of deceaſed heroes and illuſtrious perſons; or even any relation or perſon whoſe memory was held in veneration. *Pitiſc.* Lex. Ant. in voc.

INFERIOR (*Cycl.*)—INFERIOR *Courts of Record*, in Engliſh law-writers, is uſed as a general name for corporation-courts, courts-leet, and ſheriffs-torns. *Hale*, Analyſ. p. 36. 2 Inſt. 143. 4 Inſt. 263. See the article *Inferior* COURTS.

Moſt courts are ſubordinate to ſome other; but for diſtinction ſake the term *Inferior-court* is by Sir Matthew Hale, and others, applied in the manner here mentioned. *Hale*, ibid.

INFERIOR *Penis*, in anatomy, a name given by Spigelius to one of the muſcles of the penis, generally called the *Accelerator* by the moderns; and by Veſalius, and others of his time, *Primus penis*. See the article ACCELERATOR, *Cycl.*

INFERNAL-*Salt*, a name given by Hoffman, and ſome other of the chemical writers, to nitre; they have alſo called it *cerberus chemicus*.

INFERTILITY. See the article FERTILITY.

INFIBULATION, *Infibulatio*, in medicine. See the article ANCTERIASMUS.

INFINITESIMALS. In the method of *Infiniteſimals*, or of infinitely ſmall quantites, the element by which any quantity increaſes or decreaſes is ſuppoſed to be infinitely ſmall, and is generally expreſt by two or more terms; ſome of which are infinitely leſs than the reſt, which being neglected as of no importance, the remaining terms form what is called the difference of the propoſed quantity. The terms that are neglected in this manner, as infinitely leſs than the other terms of the element, are the very ſame which ariſe in conſequence of the acceleration, or retardation, of the generating motion, during the infinitely ſmall time in which the element is generated; ſo that the remaining terms expreſs the element that would have been produced in that time, if the generating motion had continued uniform, as is farther explained in the article FLUXION.

Therefore thoſe differences are accurately in the ſame ratio to each other, as the generating motions or fluxions. And hence, though *infiniteſimal* parts of the elements are neglected, the concluſions are accurately true, without even an infinitely ſmall error, and agree preciſely with thoſe that are deduced by the method of fluxions.

In order to render the application of this method eaſy, ſome analogous principles are admitted, as that the infinitely ſmall elements of a curve are right lines, or that a curve is a polygon of an infinite number of ſides, which being produced give the tangents of the curve, and by their inclination to each other meaſure the curvature. This is as if we ſhould ſuppoſe that when the baſe flows uniformly, the ordinate flows with a motion which is uniform for every infinitely ſmall part of time; and increaſes or decreaſes, by infinitely ſmall differences at the end of every ſuch time.

But however convenient this principle may be, it muſt be applied with caution and art, on various occaſions. It is uſual therefore, in many caſes, to reſolve the element of the curve into two or more infinitely ſmall right-lines; and ſometimes it is neceſſary (if we would avoid error) to reſolve it into an infinite number of ſuch right-lines, which are *Infiniteſimals* of the ſecond order. In general, it is a *poſtulatum* in this method, that we may deſcend to *Infiniteſimals* of any order whatever, as we find it neceſſary; by which means any error that might ariſe in the application of it, may be diſcovered and corrected by a proper uſe of this method itſelf. See *Maclaurin*'s FLUXIONS, Art. 495—502.

It is alſo to be obſerved, that when the value of a quantity that is required in a philoſophical problem becomes in certain particular caſes infinitely great, or infinitely little, the ſolution would not be always juſt, tho' ſuch magnitudes were admitted. As when it is required, to find by what centripetal force a curve could be deſcribed about a fixed point that is either in the curve, or is ſo ſituated that a tangent may be drawn from it to the curve. The value of the force is found infinite at the center of the forces in the former caſe, and at the point of contact in the latter; yet it is obvious, that an infinite force could not inflect the line deſcribed by a body that ſhould proceed from either of theſe points, into a curve; becauſe the direction of its motion in either caſe paſſes through the center of the forces, and no force how great ſoever that tends towards the center could cauſe it to change that direction. But it is to be obſerved, that the geometrical magnitude by which the force is meaſured is no more imaginary in this than in other caſes, where it becomes infinite; and philoſophical problems have limitations that enter not always into the general ſolution given by geometry.

But altho' by proper care errors may be avoided in the method of *Infiniteſimals*, yet it muſt be owned that to ſuch who have been accuſtomed to a more ſtrict and rigid kind of demonſtration in the elementary parts of geometry, it may not ſeem to be conſiſtent with perfect accuracy, that, in determining the firſt differences, any part of the element of the variable quantity ſhould be rejected, merely becauſe it is infinitely leſs than the reſt; and that the ſame part ſhould be afterwards employed for determining the ſecond and higher differences, and reſolving ſome of the moſt important problems. Nor can we ſuppoſe, that their ſcruples will be removed, but rather confirmed, when they come to conſider what has been advanced by ſome of the moſt celebrated writers on this method, who have expreſſed their ſentiments concerning infinitely ſmall quantities in the preciſeſt terms; while ſome of them deny their reality, and conſider them only as incomparably leſs than finite quantities, in the ſame manner as a grain of ſand is incomparably leſs than the whole earth; and others repreſent them, in all their orders, as no leſs real than finite quantities. And altho' it appears from what has been ſaid in this article, that a ſatisfactory account may be given for the brief way of reaſoning that is uſed in the method of *Infiniteſimals*; while nothing is neglected without accounting for it; and that the harmony between the method of fluxions and that of *Infiniteſimals*, thus appears more perfect.

And however ſafe and convenient this method may be, yet ſome will always ſcruple to admit infinitely little quantities, and infinite orders of *Infiniteſimals*, into a ſcience that boaſts of the moſt evident and accurate principles, as well as of the moſt rigid demonſtrations. It is therefore proper, that this extenſive and uſeful doctrine ſhould be eſtabliſhed on unexceptionable principles. See the articles FLUXION, and LIMIT. See alſo Mr. *Maclaurin*'s Treat. of Fluxions in the Introduction, pag. 39, 40, *&c.* and Book 1. Art. 495, to 502.

INFINITO, in the Italian muſic, is uſed for ſuch canons or fugues, as may be begun again and again: Whence they are alſo called *perpetual fugues*. See the article FUGUE, *Cycl.* & *Suppl.*

IFFLAMMABILITY *of Oils with Acids*. Among the many ſurpriſing phænomena which the world owes to the late improvements in chemiſtry, there is none which has more attracted the admiration of the generality of mankind than that remarkable one of the producing actual flame, by mixing two liquors both cold to the touch; the acid ſpirits of minerals, and the chemical oil of vegetables.

Becher is the firſt author who has publiſhed an account of this phænomenon. He obſerves, in his phyſica ſubterranea, that oil of vitriol which is a very ſtrong acid liquor, with oil of turpentine which is a very ſulphureous one, produces a violent heat, and actual fire or flame. Becher giving no farther account of the proceſs than this, ſeveral of the ſucceeding chemiſts tried the experiment, but all without ſucceſs. At length Borrichius explained it, with all the neceſſary particulars, and the effect according to his directions has been ſometimes produced; tho' the great uncertainty of a thouſand little accidents, all of which muſt neceſſarily concur to the producing the flame, has made it often miſs even in the moſt careful hands. The method of Borrichius is this, mix in a glaſs veſſel four ounces of freſh drawn and highly rectified oil of turpentine, with ſix ounces of aqua fortis newly made and carefully prepared; cover the veſſel, and ſhake the two liquors well together. After they have ſtood together half an hour, open the veſſel, and there will proceed out of the mouth of it large quantities of flame mixed with great clouds of ſmoke. The experiment will not ſucceed however unleſs the liquors are freſh made, and the veſſel be expoſed to the heat of the ſun. And many who

have ſucceeded amiſs in trying the experiment from their neglect of certain circumſtances which appeared trifling to them, have cenſured both authors as relating untruths. But Mr. Geoffroy, by repeated experiments, at length found the truth of the aſſertion, and became able at any time to enflame ſuch mixtures, but found that ſpirit of nitre was the acid which ſucceeded beſt; and that of all oils thoſe of the foreign exotic vegetables, which are thick and heavy, were moſt readily inflamed by it. Mr. Tournefort produced actual flame, and that of a ſtrong red colour, by mixing ſpirit of nitre and oil of ſaſſafras in equal quantities; but he try'd without ſucceſs the ſame experiment with many of our European oils, and indeed with the foreign oil of cloves. After this, however, Mr. Homberg ſucceeded in the attempt with oil of cloves, and with all the aromatic oils of the Indian vegetables. Mem. Acad. Par. 1702.

After this, Mr. Rouviere found the means of ſucceeding in it with the ſpirit of nitre and the fœtid oil of guaiacum, in which experiment the ſpirit not only ſet fire to the oil, but made a ſort of volcano in it, raiſing up a maſs of ſpungy matter to the height of two inches above the ſurface of the veſſel, in which it was made. All theſe experiments however do not prove the truth of Borrichius's experiment in the literal words, ſince none of theſe gentlemen were ever able to produce fire with oil of turpentine, with the aſſiſtance of any acid whatever; there required for this an aqua fortis deflegmated in the higheſt degree. Mem. Acad. Par. 1726.

Mr. Geoffroy at length prepared a ſpirit of nitre ſo perfectly deflegmated, that it would always give flame with oil of ſaſſafras or oil of cloves; this he prepared by mixing four parts of clay with one of nitre. The clay and the nitre for this proceſs muſt be both perfectly dried, and muſt be mixed while yet hot and put into the retort; after this, the ſpirit which comes firſt over muſt be ſeparated, as it yet contains ſome phlegm; the ſucceeding ſpirit muſt be kept alone, for this purpoſe. This is too ſtrong for the common uſes in the metallic ſolutions, but it always ſucceeds in giving fire with the oils. Another acid which the ſame author has deſcribed as capable of producing the ſame effect, is an aqua fortis made too ſtrong for the ſolution of metals: This is prepared by mixing equal quantities of vitriol calcined to a redneſs, while it is yet hot with an equal quantity of nitre dried and reduced to powder.

As this operation however is attended with its difficulties, the fumes ariſing on the mixture of the two ſalts greatly incommoding the artiſt, the ſame author deſcribes a third liquor, made by adding powdered nitre to concentrated oil of vitriol, and giving a conſiderable heat to the mixture. This without diſtillation yields a ſort of aqua fortis, which, tho' inferior in ſtrength to the former, yet will produce flame on mixing with the oil of guaiacum. Tho' this however will do without diſtillation, yet a diſtilled ſpirit prepared from three parts of dried and powdered ſalt-petre mixed with one part of oil of vitriol, with the help of a reverberatory fire is greatly ſuperior to it. This is a liquor ſo fuming, that it is ſcarce poſſible to keep it even in glaſſes ever ſo well ſtopped; and it very readily takes fire with all the aromatic oils of the Eaſt-Indian plants; but even this will not produce the ſame effect with oil of turpentine.

The firſt experiment which ſucceeded with Mr. Geoffroy in this particular, was this: He mixed in a ſmall retort an ounce of oil of vitriol with an ounce of fuming ſpirit of nitre, and pouring on this mixture two ounces of oil of turpentine, a thick ſmoke and a large quantity of flame were immediately produced, and this continued a long time till all the liquid matter of the mixture was conſumed; and there remained nothing but a ſmall quantity of a black light matter, reſembling a coal.

This ſucceſs and the ſimilitude of this mixture of acids, with the liquor diſtilled by the ſame author from vitriol and nitre, gave the hint for the following compound acid, which, more conſtantly and happily than any other, produces this wonderful effect.

Take two pounds of nitre dried and powdered, mix it with one pound of concentrated oil of vitriol, or of common oil of vitriol of a ſufficient ſtrength; diſtil this mixture in a retort with a reverberatory fire, and the liquor raiſed from it will be an aqua fortis capable of giving fire and flame with oil of turpentine, without any farther aſſiſtance.

Mr. Hoffman has alſo given the proceſs for another acid ſpirit, which produces the ſame effect; and which, though founded on the ſame baſis with the former, differs in ſome particulars. This is made by mixing in a retort equal quantities of purified nitre and oil of vitriol, and diſtilling the whole in a mild ſand heat. Mr. Geoffroy tried this and found it anſwer in every particular, and give fire with oil of turpentine even more readily than the inventor had declared; for he orders the ſhaking of the veſſel in which they are mixed, and then ſtanding ſome time; whereas Mr. Geoffroy on carefully repeating every article of his proceſs, found there was no occaſion for ſhaking the veſſel, nor that any time was required; but that the flame appeared inſtantaneouſly on making the mixture, and that in a more violent manner than could have been expected from ſuch an operation. In order to the ſucceſs of this ſurpriſing operation, however, no more is neceſſary than that the acids of nitre and vitriol ſhould be mixed; the manner of doing it is of no conſequence. But without the trouble of making either of theſe ſpirits, if common ſpirit of nitre well dephlegmated be mixed with a ſufficient quantity of oil of vitriol, it will give fire, and that very violently with oil of turpentine, or any other of the European oils of vegetables. The beſt veſſel to perform the experiment in, is that ſort of glaſs uſed for preſerving fruits in brandy, which is about a foot high, and three inches in diameter. Mem. Acad. Par. 1726.

Mr. Geoffroy ſucceeded in this manner in giving flame with oil of juniper, mint, fennel, the vulnerary herbs, and eſſence of lemons, notwithſtanding that they are much thinner fluids than the oils of the aromatic plants of the Indies. And this ſeems indeed a better method than the relying on any ſpirit of nitre by a particular diſtillation, ſince in that way there are a great many accidents which may prevent the ſucceſs of the experiments, and in this all is familiar and eaſy.

As all theſe experiments are attended with ſome expence, Mr. Geoffroy has endeavoured to reduce them to the cheapeſt and eaſieſt method that may be. Mr. Hoffman ſays, there muſt be at leaſt an ounce of the acid, and an ounce of the oil, to produce the effect; but Mr. Geoffrey has found it ſucceed very well with a dram of ſpirit of nitre, a dram of oil of vitriol, and three drams of oil of turpentine. The heavy oriental oils ſucceed with a ſmaller portion of acid; and it ſeems a general rule, that the lighter the oil is, the larger portion of the acid is required. Petroleum and naphtha, with the other inflammable mineral oils, might be ſuppoſed very fit for theſe experiments; but none of them ſucceed on the trial.

It is not only the oils of our European plants, as well as the Indian ones, that are to be ſet on fire by mixture with theſe acids; but the very natural balſams perform the operation in the ſame manner, and afford the ſame ſurpriſing phænomenon.

An ounce of common Venice turpentine will be immediately ſet on fire, by pouring on it a mixture of an ounce of ſpirit of nitre, and half an ounce of well rectified oil of vitriol. This is a very fine experiment, for the flame continues longer than that from any of the oils, and is rendered a more pleaſing ſpectacle by a great number of exploſions, which ſucceed one another at different diſtances of time.

Balſam of capivi and balm of Gilead, ſucceed in the ſame manner in the ſame doſes; and the balm of Gilead yields its flame with a very remarkable exploſion, and probably all the natural balſams will produce the ſame effect; but in order to ſucceed in the experiment, it is neceſſary to have them perfectly genuine and unadulterated.

The ſmoke and vapours that attend the flame in theſe experiments always diffuſe a very ſtrong ſmell of the ſubſtance that is employed; and the petroleum, tho' it will not yield a flame in this ſort of mixture, yet diffuſes a very remarkable ſmell of ambergreaſe; and the leaſt touch of the matter while fuming will give a ſmell of that perfume, which will laſt a very long time. Mem. Acad. Par. 1726.

INFLAMMATION (*Cycl.*)—A late author is of opinion, that the ophthalmia, angina, phrenitis, peripneumonia, pleuritis, hepatitis, nephritis, and rheumatiſmus, have all the ſame characteriſtic, and differ in nothing but the part affected; ſo that if one has a right knowledge of an *Inflammation* on an external part, its progreſs and proper remedies, and at the ſame time is throughly acquainted with anatomy and the animal œconomy, he cannot be at a loſs to diſtinguiſh and treat any of the diſeaſes belonging to this claſs. Medic. Eſſ. Edinb. Vol. I. p. 265.

Diſperſion of INFLAMMATIONS. See the article DISPERSION.

INFLEX-*Leaf*, *Inflexum Folium*, among botaniſts. See the article LEAF.

INFLUENT (*Cycl.*)—INFLUENT *Fever* is ſometimes uſed for a nervous fever. In this the warm regimen is thought uſeful by ſome, as low cooling drinks are in the effluent or in flammatory fever.

INFORMER, *Informator*, in law, a perſon that informs againſt, or proſecutes in any of the king's courts thoſe that offend againſt any law or penal ſtatute. *Blount*, *Cowel.*

INFRASPINATUS (*Cycl.*)—This is a triangular fleſhy and pretty broad muſcle, in ſome meaſure penniform, filling the whole *infraſpinal* cavity, or foſſa of the ſcapula. It is fixed in the poſterior half of the *infraſpinal* cavity, or foſſa, and to the correſponding part of the baſis of the ſcapula. From thence ariſe a great number of ſhort fleſhy fibres, which run more or leſs obliquely, and end in a middle tendinous plane, which terminates a little below the broadeſt part of the ſpine of the ſcapula, under the root of the acromium. The fleſhy fibres then leaving the bone, unite in one fleſhy maſs, which paſſing under the acromium over the articulation of the head of the os humeri, and adhering to the capſular ligament, terminates there in a broad flat tendon, which

which adhering alſo to the capſula, is afterwards inſerted in the greater middle ſurface of the great tuberoſity of the head of the os humeri. At the place where the fibres leave the *infraſpinal* foſſa under the acromium, there is a great quantity of fat, or adiſpoſe cells between the bones and the looſe portion of the fleſhy maſs. This muſcle appears double a little below the ſpine, and toward the baſis of the ſcapula, becauſe of the middle tendinous plane already mentioned. It ſeems likewiſe to be confounded with the teres minor, to which it is very cloſely joined; and its tendon is united on one ſide with that of the teres major; and on the other ſide with that of the ſupraſpinatus, and it is covered by the poſterior portion of the deltoides. *Winſlow*'s Anat. p. 183.

INFRIGIDANS, a term uſed by ſome of the writers in medicine, to expreſs the cerate of roſes.

INFUNDIBULIFORM (*Cycl.*)—INFUNDIBULIFORM *Flowers*, or *funnel-faſhioned flower*, in botany, a term uſed to expreſs one of the kinds of monopetalous or one-leav'd flowers. The reaſon of the name is their reſembling a funnel in ſhape, that is, having a narrow tube at one end, and a wide mouth at the other. There are properly two ſpecies of the funnel-ſhaped flowers: The one repreſents an inverted cone at its mouth, and the other being more wide and ſhallow looks more like a ſmall ſaucer. The firſt of theſe are more properly called funnel-ſhaped flowers, the others ſaucer-ſhaped ones, from their reſembling a ſaucer in their figure. See Tab. 1. of Botany, Claſs 1. *Tourn.* Inſt. p. 116.

INFUSION (*Cycl.*)—INFUSION *of laurel leaves*. See the article LAUROCERASUS.

INFUSION *of Sena*, *Infuſum Senæ*, a purging medicine in great uſe, but of a very diſagreeable flavour. The London Diſpenſatory orders however two methods of preparing it, by which it loſes at leaſt a great part of its nauſeouſneſs. The one is by diſſolving three drams of cryſtals of tartar in a pint of water, and pouring this boiling hot upon an ounce and half of ſena, and two drams of cardamum-ſeeds, and ſtraining it off when cold. This is a much better way than the common one, with ſalt of tartar. But the other is more elegant; it is this; take ſena an ounce and half, lemon-peel freſh an ounce, lemon-juice an ounce, boiling-water a pint; let it ſtand till cold, and then ſtrain it off. *Pemberton*'s Lond. Diſp. p. 257.

INGANNO, in the Italian muſic, is uſed when the compoſer, after having done every thing proper for making a cloſe or cadence, inſtead of ſo doing places a mark of ſilence in the place of the final note. This word is Italian, ſignifying deceit.

INGESTA, is uſed by ſome authors to expreſs all ſorts of aliment taken into the body.

INGROSSING *of a Fine*, is the making of the indentures by the chirographer, and delivery of them to the party to whom the fine is levied. F. N. B. 147. *Blount*.

INGUINAL *Ligament*. This, which has been alſo called from its diſcoverer *Ligamentum Fallopii*, is an aponeurotic, or ligamentary band, faſtened by one end to the anterior and ſuperior part of the os ilium, and by the other to the ſpine of the os pubis. The middle portion of it is very narrow, but it expands conſiderably towards both its extremities. It is cloſely joined to the muſcles of the abdomen, and to the aponeurotic faſcia of the thigh, but ſeems to be often wanting. *Winſlow*'s Anat. p. 124.

INGUINALIS, in botany, a name given by ſome to the plant more commonly called *aſter atticus*. See the article ASTER *Atticus*.

INHOC, or INHOKE, in our old writers, is uſed for any corner or part of a common field ploughed up and ſowed with oats, &c. and ſometimes fenced in with a dry hedge, in that year wherein the reſt of the ſame field lies fallow and common. It is called in the north of England an *Intock*, and in Oxfordſhire a *Hitchin*. And no ſuch *Inhoke* is now made without the joint conſent of all the commoners, who in moſt places have their ſhare by lot in the benefit of it, except in ſome manors where the lord has a ſpecial privilege of ſo doing. *Kennet*'s Paroch. Antiq. 297, &c. and his Gloſſary. The word is Saxon, compounded of *In*, within, and *hoke*, a corner.

INHUMATION, (*Cycl.*) in chemiſtry, a method of digeſting ſubſtances together, by burying the veſſel in which they are put in horſe-dung, or in a dry ſandy earth expoſed to the ſun.

INJECTION, or INJECTING, (*Cycl.*) in ſurgery, the throwing in ſome liquor or medicine into a vein opened by inciſion. This practice, and that of tranſfuſion, or the conveying the arterial blood of one man, or other animal, into another, were once greatly practiſed, but are now laid aſide.

The method of *injecting* is this: A vein is to be opened in the arm with a lancet as in bleeding, and the ſmall pipe of a ſyringe being introduced at the oriſice, the liquor intended to be mixed with the blood and contained for that purpoſe in the body of the ſyringe, is to be forcibly *injected* or thrown into the vein upwards or toward the heart; which done the oriſice is to be ſecured with compreſſes and bandage as in bleeding. *Heiſter*'s Surgery, p. 304.

Whether this practice of *injecting* proper medicines into the blood may not be found of uſe in apoplexies, quinſies, hydrophobia, &c. is worthy to be tried by repeated experiments. Purman performed it upon himſelf with great ſucceſs, once curing himſelf of an itch, and once of a fever by it. And Elſholtz has written a treatiſe profeſſedly on the ſubject.

The method of *injecting* liquors into the blood of living animals, is ſaid to be the invention of Sir Chriſtopher Wren. His method was by making ligatures on the veins, and opening them on the ſide of the ligature towards the heart; then putting into them ſmall ſyringes or quills faſtened to bladders, in the manner of clyſter-pipes, containing the matter to be *injected*. Mr. Boyle ſoon made the experiment upon dogs, with infuſions of opium and crocus metallorum. All which he circumſtantially deſcribed, in his Uſefulneſs of Experimental Philoſophy, part. 2, eſſ. 2. Phil. Tranſ. N° 7. p. 128, 129.

Many diſorders of particular parts are no way curable, unleſs the parts affected are *injected* with a proper liquor, by means of a ſyringe and a proper tube. The method of performing this, is too obvious to need any directions; but theſe general cautions are neceſſary in regard to it, that the ſyringe or tube be applied tenderly and carefully to the parts, eſpecially in very ſenſible or nervous parts, to avoid giving the patient any pain; and that the liquor to be *injected*, be neither too hot nor too cold.

In ulcerations and inflammations of the uvula, tonſils, and fauces, *Injections* are generally uſeful; but care muſt be taken to preſs down the tongue with a ſpatula, or with the flat end of a ſpoon, and having introduced the ſyringe two or three fingers breadth into the mouth, the *Injection* is to be carefully and gently thrown in at ſeveral times. In gonorrhœas, *Injections* are often neceſſary, to allay the heat and ſoreneſs of the urethra, and to waſh out the matter. The ſafeſt and beſt *Injections* on this occaſion, are warm milk, and barley-water ſweetned with ſugar, honey, or ſyrup of marſhmallows; and towards the end a little ſaccharum ſaturni diſſolved in plantane-water. *Heiſter*'s Surgery, p. 317.

Anatomical INJECTIONS. Theſe are coloured in order to make the parts more conſpicuous. Mr. Monro uſes red and green chiefly. For the red, vermillion finely levigated muſt be got. For the green, diſtilled verdigreaſe is beſt; becauſe its colour is brighter than that of the common ſort, and it never runs into knots, and alſo diſſolves in oily liquors.

To make the fine *Injection*, pour a pint of the oil of turpentine on three ounces of vermillion, or verdigreaſe; ſtir them well with a wooden ſpatula till they be thoroughly mixed, and then ſtrain all through a fine linnen rag.

The coarſer *Injection* is thus made; take tallow *lb.* i. white-wax *oz.* v. oil of olives *oz.* iii. melt them over a gentle fire, then add of Venice turpentine *oz.* ij. when this is diſſolved, ſprinkle in of vermillion or verdigreaſe *oz.* iii. then paſs all through a warm linnen cloth. When you deſign to make it run far in the veſſels, add ſome oil of turpentine immediately before you uſe it.

As to the practice of *Injections*, we refer to the Medic. Eſſ. Edinb. Vol. 1. art. 9.

INIMBOY, in botany, a name by which ſome authors have called the Acacia Glorioſa, the tree which produces the bonduch or bezoar nuts. *Marggr.* p. 12.

INK (*Cycl.*)—Writing *Ink* is commonly made of copperas and galls; but other aſtringent plants may ſerve the ſame purpoſe, ſuch as oak-bark, red-roſes, log-wood, or ſumach. Mr. Boyle ſeems to doubt whether all aſtringent vegetables will do the ſame. *Boyle*'s Works abr. Vol. 1. p. 57.

Filings of iron put into ſeveral of the common vegetable juices turn them inſtantly as black as *Ink*; and hence it ſhould ſeem that vitriol only acts in the making *Ink* as a ſubſtance containing iron; which always gives a black colour to an infuſion of galls, or the like vegetable ſubſtances, and that the more deep, as it is more divided in its particles by acids. According to this rule, all thoſe vitriols which have iron for their baſis, and all ſolutions of iron in vitriolic, ſulphureous, or aluminous acids, muſt make *Ink* with galls, or a like infuſion; and the blue vitriol of Cyprus, and ſuch others as have copper for their baſis, muſt have no ſuch effect on theſe infuſions; and both theſe deductions are confirmed by experience.

In examining ſeparately the two principles of which the atramentitious vitriols are compoſed, that is, their vitriolic acid, and their baſis of the matter of iron, it appears, that the acid alone being mixed with an infuſion of galls, will never make *Ink*; whereas the baſis alone, that is filings of iron, will always do it in a little time. Hence it appears, that the acid has no ſhare in the effect, and that the whole is owing to the ferrugineous matter in the vitriol reviving again into iron. The manner in which this revivification of iron is ſo ſuddenly performed, on the mixing vitriol and the infuſion of galls, ſeems to be, that this infuſion acts as an abſorbent on the acid which had before reduced the iron to vitriol, and the ferrugineous particles being thus freed from the acid by which they were transformed into vitriol, appear again in their native form, and have the ſame effect upon the infuſion that ſimple or pure iron would have. Mem. Acad. Par. 1707.

A proof that the acids of the vitriol leave the particles of the iron in the pores of the moleculæ of the galls ſuſpended in the infuſion, and that to this reviving of the iron alone is owing the black colour of the liquor, is this; that if after the *Ink* is thus made a little freſh acid or ſpirit of vitriol be added, the particles of iron immediately receive it, which could not be, if the acid they had before poſſeſſed were not taken from them. The conſequence of their receiving this new acid is their being again diſſolved and reduced to the form of vitriol, ſo that their revivification is deſtroyed; and as this alone occaſioned the black colour of the *Ink*, this alſo diſappears, and the liquor becomes limpid and clear; vitriol in the ſtate of vitriol not being able to make a ſolution of galls black, nor that ſolution to turn vitriol into iron a ſecond time, when it has already abſorbed as much of the acid which reduced it to that ſtate as it could.

It is on this principle that verjuice, lemon-juice, and other vegetable acids take out ſtains of *Ink* from linnen; thoſe ſtains depending on the effect of plain iron, and theſe acids converting that iron into vitriol again.

It is plain from what has been advanced, that galls act as abſorbents in the making *Ink* with vitriol; nor is this the only inſtance in which they are able to act in the ſame manner; for they ſupply the place of the common abſorbents, ſuch as ſalt of tartar, lime-water, ſpirit of ſal ammoniac, and the like, in precipitating metallic ſolutions. So alſo are all the other vegetable infuſions which will make *Ink* with vitriol; but as galls make a better *Ink* than any other of the vegetable infuſions, ſo they alſo act much more powerfully than any other in the precipitating metals from their ſolutions.

It might be expected, that as galls act in the metalline ſolutions like ſalt of tartar, lime-water, and the like, ſalt of tartar and thoſe other ſubſtances ſhould act like galls in a ſolution of vitriol, and turn it into *Ink*; but the difference is, that while theſe act as mere abſorbents, and only take up the particles of acids in the vitriol, the galls act as abſorbents and ſulphureous bodies at once, taking up the acid particles and carrying them out of the ferrugineous ones, and by this means decompounding the vitriol, and leaving the iron of it revived and in the ſtate of iron. Mem. Acad. Par. 1707.

Any abſorbent or alkali, loaded with ſulphureous particles, will make *Ink* with a ſolution of vitriol in the manner of the infuſion of galls, tho' no ſimple abſorbent can. Thus the ſcoriæ of the regulus of antimony, without iron, diſſolved in a large quantity of water, give a liquor charged at once with an alkali, and with the ſulphur of antimony; and this liquor makes *Ink*, with a ſolution of vitriol, as well as galls.

In the ſame manner hot water poured upon quick-lime and orpiment, after ſtanding five or ſix hours, becomes a lime-water highly impregnated with the ſulphur of the orpiment; and this being like the other, at once an abſorbent and a ſulphureous body, acts like the former in the manner of galls, and turns a ſolution of vitriol into *Ink*. The nature of iron alſo confirms theſe opinions; we know it to be a very ſulphureous metal, and thence very ready to receive acids; and it is eaſy to conceive, that when it has once received them, and is converted into vitriol, nothing can diveſt it of them perfectly, and reſtore it to the ſtate of iron again, but a liquor equally ſulphureous, and equally ready to receive them.

Tho' many vegetable ſubſtances are able to ſupply the place of galls in the making of *Ink* with a ſolution of vitriol, yet all are not ſo; and the reaſon why the galls do it better than all the others that are ſo, is, that they are the greateſt and moſt powerful of all the vegetable abſorbents. The galls have alſo a glutinous property, which renders an infuſion of them capable of ſuſtaining the revived particles of iron. This is wanting in many of the other vegetables uſed on this occaſion; and ſuch tho' they immediately make *Ink* with a ſolution of vitriol by reviving the particles of iron, yet not being able to ſuſtain them when revived, they ſoon after ſink to the bottom, and the liquor becomes clear and limpid over them. A little gum arabic, or any thing of the like nature, added to the mixture, remedies this fault by giving them the glutinous quality of the galls; and after this the iron no more ſubſides, and the *Ink* remains good.

All vegetables are more or leſs proper to make *Ink* with a ſolution of vitriol, as they more or leſs approach to the nature of the galls, and are abſorbent and agglutinating. Of all the vegetable ſubſtances, none appear ſo good for the making *Ink* as that claſs of aſtringents, which act by thickening the humors, ſtrengthening the parts, and deſtroying the acids which irritate them. Of this kind are the cortex granatorum, balauſtines, ſumach, red roſes, acorns, and the leaves and wood of the oak; and finally, the galls. The virtues of all theſe ſubſtances in medicine depend wholly upon their being abſorbents and ſulphureous bodies, as the galls have been proved to be. The purging remedies on the other hand, produce no ſimilar effect. Infuſions of ſena, agaric, jalap, colocynth, tobacco, and white and black hellebore, have all been ſeverally tried in mixture with a ſolution of vitriol, and not one of them give the liquor any blackneſs, nor ſeem to have any tendency toward it. This confirms what has been already obſerved; for theſe purging medicines have no abſorbent quality, but, on the contrary, they all contain active and pungent ſalts, on which their purgative virtue depends. Mem Acad. Par. 1707.

On the other hand, rhubarb and myrobalans which have an aſtringent virtue, which they exert after their purging, muſt conſequently contain ſome abſorbent and agglutinating particles, and accordingly infuſions of theſe turn the ſolutions of vitriol into *Ink*.

Theſe experiments are not limited in their uſe to the making of *Ink* alone, but may be extended much farther; for if, as it appears very certain, no vitriol can make *Ink*, but ſuch as contains iron; and no vegetable can make *Ink* with that vitriol, but ſuch as poſſeſſes an aſtringent virtue; theſe two ſubſtances become teſts to one another, and may ſerve to find out the virtues of unknown ſubſtances. For inſtance, any unknown vegetable may be tried by its infuſion in mixture with a ſolution of vitriol; if it make it black, it will be known to be an aſtringent; if not, otherwiſe. And in any vitriol the teſt may be eaſily made whether it contains iron; ſince if it does, it will become black in ſolution with galls; if otherwiſe, it will not. All the vitriols of copper, or the common blue kind, and the reſt, having no power of changing an infuſion of galls into *Ink*. Mixtures of blue and green vitriol make a reddiſh *Ink*; and probably all thoſe native vitriols which make an *Ink* of the ſame reddiſh colour, contain a quantity of copper, which is the baſis of blue vitriol, mixed with their iron.

Sympathetic INKS. Every ſort of liquor with which a perſon may write ſo that the letters do not appear till there is ſome particular means uſed to give them a colour different from that of the paper, are called by the name of *ſympathetic Inks*; and of theſe there are a great many kinds deſcribed in the writings of Baptiſta Porta, Lemery, and other authors.

All theſe *Inks* may be regularly diſtributed into different claſſes, according to the different means which are to be uſed to make them appear; and theſe are in general the four following: 1. By giving a new liquor or the vapour of a new liquor a place on the paper, on which the letters are written with the naturally inviſible *Ink*. 2. By expoſing the paper to the air, by which means the letters at firſt inviſible will appear. 3. By paſſing gently over the letters a matter of ſome remarkable colour reduced to a fine powder. And 4. By expoſing the paper to the fire.

This laſt is by much the beſt method, and is ſo general, that it may be prudently uſed to all papers ſuſpected of containing any ſecret writing, as it ſeldom fails to diſcover it. All the common *Inks* of this kind however, when they have been once made to appear, either by fire or by any other method, can never be made to diſappear again; but there is one kind deſcribed by Mr. Heliot, in the Memoirs of the Academy of Sciences of Paris, and ſince tried many times with us, and elſewhere, which, tho' the letters it gives are in themſelves inviſible, and appear like thoſe of ſome other of theſe *Inks*, on their being held to the fire, yet they after that will fade and diſappear on the paper again, and may be re-produced in this manner ſeveral times. This therefore is the firſt known *Ink* of a fifth general claſs, of which future reſearches may diſcover perhaps more.

Of the firſt claſs of *ſympathetic Inks*, or thoſe which do not appear till the paper on which they are written be made to imbibe another liquor, or the vapour of another liquor, are the following kinds:

1. Mr. Lemery's orpiment kind. This is compoſed of different liquors; the letters are to be written with a ſolution of lead or litharge in diſtilled vinegar. This being dried in the air, not at the fire, does not appear at all upon the paper; if this be rubbed over with a pencil dipped in a ſolution of orpiment in lime-water, or if the paper be only made to receive the vapour of that water, the letters immediately appear and are at firſt yellow, and afterwards become black. Theſe may be made to diſappear again, if the paper be rubbed over with an acid liquor, ſuch as aqua fortis or ſpirit of nitre, and may be again made to appear, if before the paper be dried a ſolution of orpiment be again rubbed over them. It is eaſy to perceive, that all theſe effects are produced by ſucceeding ſolutions and precipitations.

2. The golden *ſympathetic Ink*. This is made by diſſolving in aqua regia as much gold as that menſtruum can take up, and then adding to the liquor five or ſix times as much water; in another veſſel there muſt be ſome tin diſſolved in aqua regia, and when that menſtruum has alſo taken up as much of the metal as it can, there is to be added to it an equal quantity of common water. The letters muſt be written on white paper with the ſolution of gold, and the writing being dried in the ſhade the letters will not appear, at leaſt not for ſeven or eight hours afterwards; dip a pencil in the ſolution of tin, and rub that over the ſolution of gold with which the letters were written, and they will appear of a beautiful purple.

It might be ſuppoſed, that any other metals which were ſoluble in the ſame acid menſtruum would equally produce this effect; but experiment ſhews, that this is not the caſe,

and

and ſilver and copper, tho' both ſoluble in aqua fortis, yet produce no change of colour by theſe precipitations made by mixing the ſolutions of them on paper; and this example of ſuch an effect in the ſolutions of gold and tin, is an exception to the general rules in the ſolutions of metals, and their effects on one another.

The purple colour of theſe letters may be again effaced by rubbing ſome ſimple aqua-regia over the paper, and may be made to appear again by rubbing over that the ſolution of tin. Kunkel, Caſſius, and Orſchal, with ſome other writers, made the firſt ſteps toward this diſcovery, by their attempt to give cryſtal, by means of gold, the colour of the oriental rubies. There are beſide theſe mineral preparations, ſome vegetable ones, which give the ſame phænomena, but theſe are the more certain.

Of the ſecond-kind of *ſympathetic Inks*, or thoſe which appear on being expoſed only to the air, is the golden *Ink* made by adding to a ſolution of gold in aqua regia, ſo much water that the liquor ſhall not ſtain a white paper; letters written with this will not appear till the paper has been expoſed ſome hours to the open air, and they will then begin to acquire a colour by degrees till they at length become of a deep violet colour tending to black.

If, inſtead of expoſing the paper to the air, it be kept in a box cloſe ſhut up, or cloſely folded in other paper, it will remain inviſible two or three months; but at the end of that time it will begin to appear, and will by degrees become of a deep violet colour. So long as the gold remains united to its diſſolvent, it is yellow; but the acid that diſſolves it being of a volatile nature, the greater part of it evaporates, and leaves no more than is juſt neceſſary to colour the calx of gold which remains upon the paper.

The ſecond of theſe is the ſilver *Ink*, made by a ſolution of ſilver in aqua-fortis, weakned by diſtilled water till it will not ſtain the paper. Letters written with this will be inviſible for three or four months, if ſhut up in a box; but if it be expoſed to the ſun it becomes legible in about an hour, becauſe by this means the evaporation of the acid is accelerated. The letters written with this *Ink* are of a ſlate colour; and that from the ſulphureous nature of the aqua fortis, every thing that is ſulphureous blackening ſilver. This blackiſh colour, however, is not permanent; for the ſulphureous part finally evaporating, the letters are left to their natural appearance, and are of a true ſilver colour, if the ſilver that was uſed was fine, and the place open.

In this claſs there may alſo be placed ſeveral metallic diſſolutions; as that of lead in vinegar, and of copper in aqua fortis, which give at length a browniſh colour upon the paper; as alſo the ſolution of tin in aqua regia, of mercury in aqua fortis, of iron in vinegar, of emery and ſeveral of the pyritæ in ſpirit of ſalt. But all theſe, tho' they give letters which are after ſome time legible on being expoſed to the air, are alſo made to appear inſtantly on the paper, on holding them to the fire. Each of theſe ſolutions gives its own particular colour; but they have all this diſadvantage, that in time they eat away the paper, and the letters are ſeen in the ſhape of ſo many holes.

Of the third claſs of *Ink*, or that which appears on rubbing over the paper with a brown or black powder, are almoſt all the glutinous expreſſed juices of plants, which are themſelves of no remarkable colours, the milk of animals, or any other thick and viſcous fluids. To uſe theſe, the letters muſt be written on a white paper, and when dry there is to be thrown over them the fine powder of any coloured earth, or other ſuch ſubſtance; and the writing will afterwards appear coloured, becauſe its viſcous quality remains ſufficiently in it for the entangling and retaining this fine powder, tho' it falls eaſily off from every other part of the paper. Mem. Acad. Scienc. Par. 1737.

Of the fourth claſs, or thoſe *Inks* which become viſible on holding them to the fire, there are a vaſt number, and indeed all infuſions, the matter of which is readily burnt to a ſort of charcoal by a little fire, will anſwer this purpoſe. The neceſt of this kind is the ſal armoniac *Ink*, made by diſſolving a ſcruple of ſal armoniac in two ounces of fair water. Letters written with this ſolution are inviſible on the paper till it is held before the fire, or has an iron a little heated paſſed over it. The rationale of this is, that the inflammable part of the ſal armoniac is burnt to a charcoal by a heat which is not ſufficient to ſcorch the paper; and this is the caſe with all the reſt of this claſs. The letters written with this ſolution are, however, of no great duration; for the ſalt being apt to moiſten in the air, the letters ſoon ſpread, and run together in a confuſed manner.

The fifth claſs of *ſympathetic Ink*, contains only one yet known kind.

This, tho' in itſelf inviſible, becomes of a bluiſh green when held to the fire, and this colour diſappears again as the paper cools, and is to be produced again on holding it again to the fire; and this for a long time, and a repeated ſeries of trying; it may alſo, according to the different manner of treating it, be made to appear blue, green, yellow, red, and of ſome other colours.

A certain German chemiſt ſhewed the Academy at Paris a ſalt of a roſe-colour, which became blue on holding it to the fire, and at the ſame time ſhewed the ore from which he procured the ſalt, which he called an ore of marcaſite, a name given by many to the biſmuth ore. He added, that this was the mineral from which the fine blue ſmalt of Sneeberg was prepared, and that no other ore but this afforded it, and that he made the tincture from this mineral with aqua fortis, which he fixed with ſea-ſalt.

This was the ſubſtance of what the German declared, and from which Mr. Heliot took the hint for his diſcovery of this remarkable *Ink*. The ſalt was after many experiments at length found to be produced from an arſenic ore; and it was found, that all the cobalts and ores of biſmuth afford a tincture capable of theſe changes by fire.

The method of preparing it is this; pour upon two ounces of arſenic ore groſsly powdered, a mixture of five ounces of aqua fortis, and five ounces of common water; after the firſt ebullition is over, place the veſſel in a gentle ſand-heat, and let it ſtand there till no more air-bubbles ſeem to aſcend; after this increaſe the fire, ſo as to make the liquor boil for about a quarter of an hour; after this the liquor will become of a reddiſh colour, and when cold it is to be decanted clear off from the ſediment into a phial; and after ſtanding in that ſome time, is to be again decanted off from what is precipitated there; and ſo on for three or four times, till it is quite clear; for it muſt not be filtered leſt the acid ſhould take ſomething from the paper that might ſpoil the effects. When the liquor is clear, there muſt be added to it two ounces of white ſea-ſalt; this mixture is to be evaporated over a gentle ſand heat, till there remains only a dry ſaline maſs. When the liquor is grown hot, it changes from its orange colour to a fair red; and when the aqueous humidity is evaporated, it becomes of a beautiful emerald colour, and from this, as it dries up, it changes by degrees to a dirty green like that of verdigreaſe in the cake. As it becomes nearly dry, it muſt be ſtirred about with a glaſs-rod or peſtle, to keep it from uniting into a maſs; and it moſt not be kept over the fire till perfectly dry, becauſe by that means the colour is often loſt, and the ſalt from green becomes of a duſky yellow; but if it be taken from the fire while it is green, it gradually becomes reddiſh as it cools, and finally is of a beautiful roſe-colour.

This is the ſalt the German produced before the Academy of Paris. This ſalt is to be put into another veſſel with a quantity of ſimple diſtilled water, and this is to be ſet alſo in a warm digeſtion, till there remains nothing but a white powder precipitated to the botom, which is the ſtony part of the ore uſed in the preparation, the ſalt having been all taken up by the water. If the firſt quantity of water does not take up all the ſalt, but leaves the precipitate coloured, it muſt be poured off and more put on, till all the ſalt is diſſolved. Eight or nine ounces of water is the uſual proportion to the ſalt made from an ounce of the tincture; and if the ore that was uſed has been a good one, this quantity of liquor will be of the colour of the lilac flowers. If the ore has contained copper, which is the caſe in a great many of the biſmuth ores, the liquor will ſtill produce its effects as a *ſympathetic Ink*; bnt it will be of a bad colour; and if look'd on in the bottle it will appear of different colours according as it is held with regard to the light, like the infuſion of the nephritic wood. This liquor does not retain its virtue ſo long upon the paper as that which has been made from a purer ore, and which in the bottle appears the ſame in all lights.

The manner of uſing this *ſympathetic Ink*, is this: Write with it on a fine and ſmooth paper, or draw with a black lead pencil the figure of a plant or tree on the paper, then trace over the ſame lines with this liquor; let it dry in the open air, and then rub off the black lines with bread, and the paper will appear altogether fair, tho' the lines made by the *Ink* are in reality ſunk deep into it. On holding this paper to the fire the lines will all appear, and the figure of the plant or the letters will be painted in a beautiful bluiſh green, which will continue ſo long as the paper is warm; but when it is cold again, they will wholly diſappear. The lines therefore diſappear much ſooner in winter than in ſummer; and in very hot weather it is often neceſſary to lay the paper on a marble, or other very cold body, in order to produce this effect. At any time if the paper be ſcorched in the experiment, the colour of the lines will not diſappear again, even if ice be laid upon them. If the writing be expoſed for three or four days to a humid air, the lines will appear of a fine pale red. If the impregnation of the ore of biſmuth, inſtead of ſea-ſalt, have alum added to it, and the whole proceſs be continued as before deſcribed; and if letters be written with the red liquor as it is taken out of the veſſel, the letters will not appear even on holding it to the fire; but if the paper be wetted over with a clear ſolution of marine ſalt, and then left to dry, and afterwards held to the fire, the letters will appear blue. The ſame alſo will be the effect, if the writing be expoſed to the vapour of hot ſpirit of ſalt. When this preparation is thus made with alum, inſtead of common ſalt, the liquor never becomes green, but continues red, and never changes colour in the drying,

drying, or afterwards. The green colour ſeems to be wholly the effect of the ſea ſalt; for not only this aluminate impregnation, but others in which other ſalts had been employed, were always found to be of a different colour.

Glauber's ſalt uſed inſtead of common ſea ſalt, left the maſs red in the ſame manner as alum did. Nitre added inſtead of ſea ſalt, gave the precipitate or dried ſalt of a beautiful purple colour, which became white on the inſtant that water was poured upon it, and a roſe coloured tincture was drawn from it, which gave lines or letters on paper, which continued inviſible as long as they were cold, but aſſumed a beautiful red on holding the paper to the fire; which colour they retained no longer than while the paper continued warm, diſappearing afterwards in the ſame manner with the green colours made by the ſea ſalt; and if a ſimple ſolution of ſea ſalt be rubbed over the paper, and ſuffered to dry, and the paper be afterwards heated, the lines appear blue. Borax has the ſame effect in this preparation with the nitre. All theſe experiments were made with the neutral ſalts; but in order to try what would be the effects of alkalies in the mixture, Mr. Heliot added to three ounces of the impregnation of the ore in aqua fortis, pure ſalt of tartar, till the ebullition ceaſed; but the conſequence of this was no great precipitation, but merely the ſubſiding of a ſmall white ſediment; this mixture being evaporated nearly to a dryneſs, the remaining maſs, ſo long as it was warm, appeared of a beautiful purple; but this became paler as it dried, and turned white in an inſtant on pouring water upon it. This, diſſolved in water in the manner of the others, gave lines on paper of a faint roſe colour, which appear'd or diſappear'd in the manner of thoſe made by the other ſolutions, according as the paper was hot or cold; and the wetting the paper with a ſolution of ſea ſalt, had the ſame effects on this as on the others, making the lines appear blue on holding to the fire. Mem. Acad. Par. 1737.

Indian INK. The Chineſe have often attempted to uſe this in their porcelain, to give the colour of black to the figures traced on white veſſels, but it has been a vain attempt; for however beautiful and ſtrong the figures might appear when firſt laid on, and even when the veſſels were dried, it all diſappear'd on the baking, and they came out quite white as they were put in. The colours for this uſe muſt be ſuch as can penetrate the varniſh, and endure the fire. Mineral colours alone are found to have theſe qualities, and theſe alone therefore are to be employed; ſuch light ones as this black burning off from the ſurface, and wholly diſappearing. Obſ. de les Coutumes de l'Aſie. p. 329.

INLAGATION, *Inlagatio*, a reſtoring of one out-lawed to the protection of the law, and benefit of a ſubject. *Bract.* lib. 3. tract. 2. c. 14. Leg. Canut. par. 1. c. 2.

The word comes from the Saxon *In-lagiam*, i. e. *inlagare*. Terms of law. *Blount*, *Cowel*.

INLAGH, *Inlagatus*, he that is of ſome *frank-pledge*, and not out-lawed. It ſeems to be the contrary to *Utlagh*. *Bract.* tract. 2. lib. 3. c. 11. Terms of law.

INLEASED, in our old writers, ſignifies entangled or enſnared; it is uſed in the champion's oath. 2 Inſt. 247. *Blount*.

INN, or INNER, in the manege, is applied differently, according as the horſe works to the right or left upon the volts, or as he works along, by a wall, a hedge, or the like. For along or by a wall, the leg that is of a ſide with, or next the wall is the outer, and the other the *in* or *inner* leg. And if upon volts, the horſe works to the right, the right heel is the *inner*, and the left the outer heel, and ſo of the other parts of the body, furniture, &c. The direct contrary of this will happen, if the horſe works to the left.

INNOMINATA *Oſſa*. See the article OSSA *innominata*.

INOCULATION, or INOCULATING, *(Cycl.)* in gardening, an operation in the propagation of trees, uſually practiſed on all ſtone fruit, and commonly known by the name of *budding*. Peaches, nectarines, cherries, plums, &c. as alſo oranges and jeſamines, ſucceed very well this way, and it is indeed preferable to any other for fruit trees in general.

The method of performing it is this: The operator muſt be provided with a ſharp penknife having a flat haft, the uſe of which is to raiſe the bark of the ſtock to admit the bud, and ſome ſound baſſinat, which ſhould be ſoaked in water to encreaſe its ſtrength, and make it more pliable. Then having taken off cuttings from the trees to be propagated, a ſmooth part of the ſtock muſt be choſen, which if intended for dwarfs, muſt be about five or ſix inches above the ground, but if for ſtandards, it ſhould be as many feet high. A horizontal cut is then to be made croſs the rind of the ſtock, and from the middle of that another ſlit muſt be made ſtrait downward of two inches in length, that the whole may have the figure of the letter T, but theſe muſt not be cut too deep. Then cutting off the leaf from the bud, but leaving its foot-ſtalk remaining, a croſs-cut is to be made on it about half an inch below the eye, and the bud is to be ſlit off with part of the bark to it, in form of an eſcutcheon. The wood then muſt be taken out of the ſlip of the bud, without pulling the eye of the bud out with it, for if this happens, the bud muſt be thrown away as uncapable of ſucceeding. When the bud is thus prepared, the bark of the ſtock is to be gently raiſed with the flat haft of the penknife, and the eſcutcheon of the bud muſt be ſlipp'd in, and placed very evenly between the bark and the wood, cutting off any part of the rind of the bud which may be too long for the ſlit made in the ſtock. The whole is then to be gently tied up, beginning at the lower part of the ſlit, and taking great care not to injure the eye of the bud, which is to be left out at the ſlit. In three weeks or a month the bud will ſhew that it is joined, and then the tying round the ſtock muſt be looſened; and in the March following, the ſtock muſt be cut off about three inches above the bud, ſloping it that the wet may run off. To this part of the ſtock the ſhoot proceeding from the bud is to be tied, leſt the winds ſhould looſen or diſplace it; and when the tree has ſtood one year in this ſtate, the ſtock muſt be cut down cloſe to the bud.

The ſeaſon for *inoculating* is from the middle of June to the middle of Auguſt, according to the forwardneſs of the trees. When the buds are formed at the ends of the ſhoots of the ſame year, it is a proof that the tree is fit for the purpoſe; the firſt tree that comes in ſeaſon to be *inoculated* is the apricot, and the laſt the orange tree: And in doing this, choice ſhould always be made of a cloudy day, that the ſun may not dry up the buds too quick; and in ſome very tender plants, a part of the wood in the ſcutcheon of the bud ſhould be left in. *Miller*'s Gardener's Dict.

It is ſaid by many, that ſuch trees as are *inoculated* in the month of February, will continue always free from worms, both themſelves and their fruit; but this is a thing not confirm'd by experience. Another error in theſe things is, the opinion that a cyon taken from a young tree which has never yet bloſſomed, will never bear fruit; experience proves that it will; but our gardeners chooſe rather to take their cyons from ſuch trees as have already borne. Phil. Tranſ. N°. 2.

In the *Inoculations* made upon fruit trees, it is obſervable, that a little vegetable bud, often not ſo big as a pea, is able ſo to tranſmute all the ſap which arrives at it; that tho' this ſap be already in the root, and in its paſſage upwards, determined by nature's intention, as is ſaid, to the production of fruit natural to the ſtock, it ſhould yet, by ſo ſmall a vegetable ſubſtance, be ſo far changed, as to conſtitute a fruit quite otherwiſe qualified than the genuine product of the tree; which at the ſame time, is actually produced by thoſe other portions of the like ſap, that happened to nouriſh ſuch prolific buds, as are the genuine offſpring of the ſtock; ſo that the ſame ſap, which in one part of a branch conſtitutes a cluſter of haws, in another part of the ſame branch may conſtitute a pear. And what is farther remarkable, not only the fruits made of the ſame ſap often differ from one another in ſhape, bigneſs, colour, odour, taſte, and other obvious qualities, but tho' the ſap itſelf be a wateriſh and almoſt inſipid liquor, yet it is not only convertible by buds of ſeveral natures into different fruits, but in one and the ſame fruit, the tranſmuted ſap ſhall by different textures, be made to exhibit very different, and ſometimes contrary qualities. As when a peach-bud not only changes the ſap which comes to it, into a fruit very different from that which the ſtock naturally produces, but into parts very different from one another in the ſame fruit.

From *Inoculations* therefore we learn, that a liquor ſeemingly homogeneous, may, by being variouſly ſtrained, be tranſmuted into bodies endowed with new ſcents, colours, taſtes, ſolidity, medicinal virtues, and many other qualities, manifeſt and occult. *Boyle*'s Works abr. Vol. I. p. 250.

INOCULATION, in medicine *(Cycl.)*—The Chineſe ſeem to have had the method of *inoculating* the ſmall-pox, long before it was introduced into this part of Europe. Their method of proceeding is this; they gather the ſcabs which come off from an healthy child, who has had the ſmall-pox in a favourable way, and keep them well ſhut up in a china-cup, till there is occaſion for them; then taking four ſmall ones, or two large ones, and putting a grain of muſk between them, they roll them in a little cotton, and thruſt this tent into the child's noſe, where it remains till the ſymptoms of infection begin to appear. The child is to be more than a year old. If the puſtules appear on the firſt day of the fever, the child almoſt certainly dies; if on the ſecond, the event is uncertain; if they do not ſhew themſelves till the third day, the patient probably recovers. Letr. Edif. & Cur. Tom. 20.

INOSARCION, in natural hiſtory, a name given by the old Greek and Roman authors to a peculiar ſpecies of emerald, called alſo by ſome the Chalcedonian emerald. The great diſtinction of this from all the other kinds of this gem, was its not being of the pure, clear, and unvarying colours of the others, but having thick veins in it, which gave peculiar refractions and reflexions to the light; and tho' the ſtone was in itſelf wholly green, yet when viewed in ſide-lights, theſe veins gave all thoſe changeable colours that ornament the feathers of a peacock's tail, or the neck of a pigeon.

INSAG, in natural hiſtory, a name given by the people of the Philippine iſlands, to one of the ſeveral ſpecies of Parrots, common in their woods. The *Inſag* is a very beautiful bird; its body is of a very bright green, and its head of a fine florid red.

INSCHI, or INSCHI *Kna*, in the materia medica, a name given by ſome authors to the common ginger.

INSECTS (*Cycl.*) make one of the claſſes of animals, the characters of which are, that their body is covered with a ſort of bony ſubſtance inſtead of ſkin, and their heads are furniſhed with antennæ, called horns. *Linnæi* Syſtem Nat. p. 83.

Eyes of INSECTS. The bounty of nature in giving eyes to theſe ſmall animals is amazing; they have often beſide the reticular large eyes, which make ſo conſiderable a part of the bigneſs of the head, other ſmall ones placed triangularly above or below them. Theſe reticulated eyes however are the moſt amazing of all, and are in a manner common to the whole *Inſect* world. Many authors have deſcribed them, but none ſo accurately as Reaumur in his hiſtory of *Inſects*. He has given his deſcriptions from the eyes of the butterfly kind, but they equally ſerve as the general deſcriptions of all the reſt. *Reaumur*'s Hiſt. Inſect. vol. 1. P. 1. p. 261.

Theſe reticulated eyes always form a part of a ſphere: This in ſome ſpecies is a larger, and in others a ſmaller portion; and conſequently ſome are more, and others leſs prominent, and they are larger or ſmaller in proportion to the ſize of the head in the different ſpecies. The external covering of theſe eyes, which by its poſition and uſes may be called the cornea, has a ſort of gloſs on it, which often ſhews all the rainbow colours, as it is differently turned to the light: And the colour that makes the baſis of theſe, and appears the general colour of the eye in a common light, is black in ſome ſpecies, brown in others, and in others grey. Sometimes a changeable aſſemblage of ſeveral colours ſerves in the place of a ſimple one, even in this view. A view of theſe eyes by the naked eye ſhews us that their ſurface is not even or ſmooth, but dotted all over; but when we bring them before the microſcope, the ſtructure is found to be truly wonderful. The whole ſurface then appears to be reticulated, and the ſeveral meſhes of the net all regularly of the ſame ſize. The middle of each meſh is not empty but filled with a globular body, the ſurface of which ſtands up above the level of the reſt, ſo that the whole cornea or external ſurface of the eye, appears no other than a multitude of little globular bodies, ſtuck into a ſubſtance proper to retain them in their proper places; and the matter in which they are placed forms a rectilinear figure ſurrounding them, which is ſquare in ſome ſpecies, and hexangular in others. The whole cornea may be therefore compared to a glaſs cut into a number of convex faces; or in properer terms, the cornea may be ſaid to be compoſed of a prodigious number of cryſtallines, arrang'd in a beautiful order cloſe together. The number of cryſtallines that go to the formation of one of theſe eyes, is ſcarce to be conceiv'd; but as different authors have been at the pains of counting them in different *Inſects*, and as our own obſervations may at any time evince the truth of each calculation, there is no doubt of the reality of them. Lewenhoeck counted 3181 in the ſingle eye of a beetle, and 8000 in the eye of a fly. Mr. Puget, an author of great accuracy, counted 17325 in the eye of a butterfly; and Malpighi, from the moſt careful obſervations, and analogy with the parts of other animals, declares each of theſe to be a diſtinct and ſeparate eye; ſo that inſtead of the vulgar opinion of a butterfly's having no eyes, we find it has in reality no leſs than 34650. And the ſucceeding obſervations of the curious in microſcopes, have found that every one of theſe eminences in the cornea of *Inſects*, has all the neceſſary parts, and performs all the offices of an eye.

The accuracy of the Abbé Catalan, and after him of ſeveral others, has yet gone farther in the obſervation of theſe eyes. They have pick'd out a ſingle one from the net, and making it clean, have examined and found it to have all the properties of an eye. The whole cornea may alſo be cut off, and waſh'd clean on the inſide by means of a ſoft pencil and warm water; and when perfectly clean'd in that manner, it becomes beautifully tranſparent, and if held up in the apparatus of a microſcope, and pointed againſt any object, it multiplies and diminiſhes it in ſize in a manner not to be deſcribed, and with a beauty not eaſily conceiv'd. A ſingle ſoldier viewed thro' it, gives the appearance of an army of pigmies; and the arches of a bridge are ſo multiplied in number, and appear ſo elegantly diſpos'd over and about one another, as that they make an object of beauty ſcarce to be deſcrib'd. The light of a candle viewed thro' it, is ſeen elegantly multiplied into an immenſe number of candles; and indeed none of the common multiplying glaſſes, nor any that can be made by art, can ever ſhew ſuch a number of faces. *Reaumur*'s Hiſt. Inſ. vol. 1. P. 1. p. 267.

The exiſtence of theſe numerous cryſtallines is then a point no longer to be doubted, and authors have gone yet farther in their obſervations and gueſſes concerning them. Lewenhock diſcovered the bundles of optic nerves which ſerve theſe ſmall lenſes; and Reaumur ſuppoſes theſe nerves to ſupply the place of all that is wanting behind the lenſes, for the organiſation of an eye compleat for viſion; and he thinks that the tunica choroides being of different colours in different *Inſects*, is the reaſon why we ſee their eyes of different colours.

We ourſelves ſee objects with two eyes at once, and yet thoſe objects appear ſingle to us; and the ſame mechaniſm that makes us ſee them ſo, may make the *Inſect* claſs ſee them ſingle alſo, tho' they ſee them thro' many thouſands of eyes at once.

The uſes of theſe numerous eyes to theſe ſmall animals are obvious; and as they are in continual want of food, and in continual fear of enemies, it is extremely proper that they ſhould be well prepared to be aware when either the one or the other is near. It has been ſuppoſed by many naturaliſts, that the eyes in theſe corneæ are ſo ſmall and convex, that they can only ſerve the creature to ſee very near objects, and muſt magnify them extremely; but obſervation ſhews that a ſingle eye of theſe held in the focus of a microſcope, ſerves with the lens in that apparatus to ſee diſtant objects diminiſhed. We alſo know, that two convex lenſes of great power, may be ſo combin'd as to ſhew diſtant objects very diſtinct, and diminiſhed in ſize, not magnified; ſo that we find ſuch eyes may be made to ſerve ſuch purpoſes, and we have no reaſon to doubt, but that what we are able to do by art, is much better done in them by nature.

Among all the naturaliſts who have been converſant in microſcopes, none could miſs obſerving and admiring ſuch a wonderful ſtructure and organiſation as that of theſe parts; all have obſerv'd them, but ſome have been of opinion that they are not really eyes; there is however no doubt, but that parts ſo beautifully and nicely organis'd, muſt ſerve to ſome ſenſation, and to what other ſenſe except that of ſeeing, can their frame and ſtructure ſeem to point? Mr. De la Hire was one of the firſt who doubted whether theſe reticulated parts were eyes; for obſerving that flies had beſide theſe three lucid points in the front of their heads, he concluded that thoſe points were eyes, as indeed they certainly are; and taking it for granted that three eyes of this kind were enough for ſuch an *Inſect*, he concluded that the other reticular bodies were not eyes; but it having been ſince obſerved, that all *Inſects* have not theſe other ſmaller eyes diſcovered by Mr. De la Hire, and particularly that the whole butterfly claſs wanted them, and therefore that ſomething elſe certainly ſupplied their place, and what ſhould do that but theſe reticular eyes?

A fly is indeed ſurprizingly furniſhed by nature with the organs of ſight; it has two large and reticulated bodies, each of which contains many thouſands of eyes; and beſide theſe, has not barely three, but has twelve, fifteen, or more of theſe ſingle brilliant eyes, placed in ſeveral parts of its head.

The ſpider has alſo a great number of theſe lucid or brilliant ſingle eyes, and they are placed in different parts of the head, and are of different ſizes, ſo that it ſhould ſeem as if nature has furniſhed them with different eyes, ſuited to different purpoſes, ſome being of uſe to ſee near objects, and others the more diſtant; and that theſe creatures inſtead of eyes deſtined like ours for the ſame purpoſes, had microſcopes and teleſcopes always in readineſs for their ſeveral occaſions.

In the butterfly claſs, there are ſeveral which have a great number of hairs growing on the reticulated bodies, placed on the ſides of the head; theſe hairs have been urged by thoſe who were unwilling to allow the reticulated bodies to be eyes, as a great objection to the received opinion of their being ſo: But the anſwer is eaſy, that tho' if each of theſe reticulated bodies was a ſingle eye, the viſion muſt neceſſarily be troubled by ſuch a number of hairs growing in the midſt of them; yet as they appear to be in reality each compos'd of a vaſt multitude of eyes, theſe hairs may perhaps ſerve only in the office of eyelids to them, and that their breaking off a part of the rays of light may be no injury to viſion, but even neceſſary to eyes of ſo tender a ſtructure. *Reaumur*'s Hiſt. Inſect. vol. 1. P. 1. p. 273.

Anatomical uſe of INSECTS. The *Inſect* world affords us numerous uſes, and thoſe many of them ſuch as no one would at firſt thought imagine, and which no other operations or operators could ſo well effect. In the minutiæ of anatomy, where knives cannot be introduced, the maggot or the ant may be employed with great ſucceſs. Skeletons of fœtus's have been prepared by burying them in an ant-hill, and that in ſo accurate and perfect a manner, that all who have ſeen them, have admired by what means they could be ſo nicely finiſhed; and the ſecret of the great Ruyſch, by which he cleared away the parenchymatous ſubſtance from his vaſcular preparations, was of this kind. After injecting the veſſels of any part with wax, all that remained to the compleating theſe preparations, was the taking off the parenchymatous or fleſhy matter from between and among them. Other anatomiſts of his time did this by the knife, or by maceration in water, and other liquors; but it appeared a ſort of magic to them, that his were always not only much ſooner executed, but to a greater nicety and perfection than theirs ever poſſibly could be. His method was only to put a number of the common fleſh-eating maggots, to the ſubſtance; and theſe regularly eat away all the fleſh, their heads getting into crevices which no inſtrument could reach, and the whole ſubſtance of the injection remained unhurt, as their ſoft bodies could glide between its niceſt parts without injuring them; and the wax being no food for them, was in no danger of being eroded, even in its ſmalleſt pieces. The ſeveral

ſizes of the worms or maggots bred from the eggs of different flies were of great uſe in the perfecting the preparations; for while the larger ſort eat the more fleſhy parts, where the veſſels are large and but few in number, the middle-ſiz'd maggots got into the interſtices of the more vaſcular parts, and the moſt minute of all, which are uſually alſo the moſt numerous, kept about the ſurface, and eat away between and among the capillary veſſels. *Hebenſtreit* de Vermibus Anatomicor. adminiſtris.

The maggots produced from flies are not the only animals fit for this kind of buſineſs. There are ſeveral ſpecies of beetles of the ſmaller kinds, whoſe eggs hatch into a ſix-leg'd worm, which eats as much and as nicely as the fly-maggots. All theſe may be employed very ſucceſsfully to the preparations of the parts of animals.

Theſe nice anatomiſts are not confined to animal ſubſtances: They often exert their power alſo on vegetables. Many of them feed on the leaves and fruits of plants; and ſome ſpecies of theſe work ſo nicely, that they eat away all the outer membrane and internal parenchymatous ſubſtance of the leaves, ſo as only to leave the net-like plexus of veſſels ſtanding. Yet theſe being unhurt ſhew the true figure of the leaf, and are a ſort of vegetable ſkeletons, but very poorly imitated by art in the common way, by long macerations in water; this method uſually deſtroying and waſhing away many of the ſmaller veſſels, which the tender mouths of theſe creatures ſpare. If they exert their ſkill often upon leaves in this manner, they do it alſo ſometimes with equal if not greater ſucceſs upon fruits. As in the leaves, thoſe which have the tendereſt parenchyma and the firmeſt ribs, ſucceed beſt; ſo alſo it is in fruits. The leaves of the ruſcus or butcher's-broom, are often found thus beautifully anatomis'd; and of all fruits, none ſucceeds ſo well as that of the ſtramonium, or thorn-apple. Where-ever this plant grows in any plenty, the fruit toward autumn while it is yet full of juice is attacked by a ſmall worm, which eats away all the parenchyma, and leaves every veſſel ſtanding in its place; and this not only in the outer coat of the fruit, but in the very inner cells of the ſeeds. Theſe veſſels remain exactly in the ſhape of the fruit, and, growing white with the air, exhibit the moſt elegant and beautiful ſkeletons imaginable, while yet ſtanding on the plant. The animal which effects this, is a hexapode worm produced from the egg of a ſmall beetle; and differs very little from ſome of thoſe which ſo elegantly eat away the fleſhy parts from the injected anatomical preparations. Theſe are gregarious animals like ſome ſpecies of the ſmaller caterpillars, and numbers of them are always at work together on the ſame leaf or fruit, ſo that the ſkeleton is ſoon made. They begin by piercing a number of little holes into the ſubſtance of the leaf, and thence burrow under the integument till they meet one another; and this being done all over the leaf, they leave it, and go to work upon another.

Transformation of INSECTS. See the article TRANSFORMATION.

INSECTS *in Amber*. Scarce any thing in natural hiſtory has more perplexed the writers on that ſubject, than the finding *Inſects* intombed in amber. Naturaliſts were, for a long time not well acquainted with the true nature and origin of the ſubſtance itſelf; and while they made erroneous conjectures about it, there was no great hope of their falling into the true account of its receiving theſe creatures. Pliny mentions a lizard, and Martial a whole viper buried in amber; and Mercatus in the Metallotheca Vaticana, and ſome other writers, have deſcribed and figured ſmall fiſhes in it. The account of a whole viper muſt needs be a mere chimera; and the other large animals, which are pretended to be buried in it, the effect of fraud. Some artful perſon finding means to ſplit the amber, and making a hollow to receive the creature, cloſed it together again, perhaps by means of heat, and then poliſhed over the ſurface to conceal the cheat.

Tho' the larger animals are not to be expected to be found naturally included in amber, yet we have daily and inconteſtible proofs, that *Inſects*, and thoſe of ſeveral kinds, continually are ſo. *Hartman*'s Hiſt. Succin.

There is one very eaſy way of diſtinguiſhing alſo whether theſe are real and natural curioſities, or whether art has been concerned in them; which is by examining at what depth in the maſs the creature lies. *Inſects* naturally embedded in amber, are always found near its ſurface, or at leaſt, there are few found otherwiſe. The artificially buried creatures are always lodged in or near the center. The reaſon of this is plain; for the artiſt knows that the deeper the creature lies, the better his art will be concealed; and that if he had lodged it near the ſurface, the natural tranſparence of the thin plate of amber which lay over it, would have ſhewn the fallacy by bringing the artificial hollow too near the eye. Phil. Tranſ. N° 248. p. 21.

The too great beauty, ſolidity, and perfection of the piece of amber, in which an *Inſect* lies, is alſo a very great reaſon to ſuſpect that there is fallacy in the caſe. When the artiſt is at the pains of introducing a fly into a piece of amber, it is moſt worth his while to chuſe out a fine ſolid and tranſparent piece for it; becauſe it will ſell beſt when done, and will bear his working on it better than a coarſe and ſhattery one. But nature who has not quite ſo much conſulted the fancy of the purchaſer, generally has lodged theſe animals, or parts of them, in the leſs ſolid pieces of amber, and ſuch as have flaws and cracks. A perfectly uniform and ſolid piece of amber with an inſect in it, may generally therefore be condemned as artificial; for the natural amber that has theſe creatures embodied in it, is uſually compoſed of a number of cruſts or coats, but imperfectly cohering together, and has often cracks and clefts in it reaching to the ſurface, and the legs or wings or ſome part of the included *Inſect* often hangs out from the ſurface. When a piece of coarſe amber is found with an *Inſect* thus bedded in it, the whole may be concluded the work of nature alone, and the ſpecimen a truly valuable curioſity. There are ſome finer that are natural, but they are very ſcarce. The *Inſects* really buried by nature in amber make a very different appearance, in regard to the manner of their preſervation; for ſome of them are ſeen in all their beauty and natural ſplendor; others have nothing of this, but have a coat of ſhining amber thinly ſpread over them, and the whole maſs covering that, they reſemble amber-flies in other amber; but a great many are foul and imperfect. Phil. Tranſ. N° 248. p. 21.

Their poſtures alſo, are as various as their appearance; ſome ſeem as if they had been torpid or dead, when taken into the amber; others have the appearance of having been taken in alive, their limbs being extended, and the whole creature appearing as if ſtruggling hard to get out of the priſon. Some pieces of amber contain a ſingle and perfect *Inſect*, others have a mutilated *Inſect* or a part of one only, and the ſingle leg or wing of a fly is more common than any thing elſe; but on the other hand, there have been found pieces of amber, containing each a large number of *Inſects*, and thoſe ſometimes all of the ſame ſpecies, ſometimes different. *Hartman*'s Hiſtoria Succini.

Theſe are the general appearances of the real and of the fictitious curioſities of the amber kind. The reality of many is unqueſtionable; and many authors in order to account for their coming there, had recourſe to the ſuppoſition of amber's being the reſin of ſome ſpecies of tree. They thought, that as this reſin ran down the trunk, the fly might be taken and included in it; but this is not only a falſe account of the origin of amber, but if it were true, it would not clear up the point: for of all the reſins which we know, and which are continually dropping from trees, where *Inſects* in abundance are alſo found, we never ſee any of them thus intomb'd. Philoſ. Tranſ. N° 248. p. 23.

Others, who ſaw the weakneſs of this argument, have aſſerted, that thoſe things which appear to be *Inſects* in amber, are not really ſuch, but that we miſtake the cracks and flaws in the amber for real bodies. But this ſuppoſition is eaſily proved to be equally erroneous, by examining the bodies themſelves in broken pieces of the amber; in which they will be found really and truly animal remains, and in every part of the ſame internal ſtructure with that of the animal itſelf. The true account of the matter is, that the amber itſelf is a foſſile ſubſtance and bitumen condenſated into a ſolid body, and that this is done in the earth.

We often find, that flies, bees, ants, and other *Inſects*, in bad weather betake themſelves to the ground, and bury themſelves alive remaining in a torpid ſtate, perhaps during the whole winter, perhaps for a ſhorter period of time. During this time amber is formed by the condenſing a fluid bitumen into a ſolid ſubſtance; and if while fluid it falls on the places where the *Inſects* lie, it muſt needs incorporate them into itſelf, and ſhew them in its hardned ſtate. The greater part of the *Inſects* found naturally included in amber, are of thoſe kinds which we know do thus hide themſelves in the earth in winter. And it is from hence, that the generality of *Inſects* in amber are found in a contracted poſture, ſuch as they lie in during their ſtate of reſt. Some few indeed ſeem as if they had ſtruggled in order to ſet themſelves at liberty; theſe are probably ſuch as were entangled in the tough bitumen, either at the time of their firſt coming into the earth, or near the period of their ſtay there, when they either had not yet fallen into the torpid ſtate of the others, or were rouſing out of it. Some pieces of amber are ſhewn indeed in the cabinets of the curious, containing flies in very lively poſtures, and ſome with the male and female in coition. The firſt of theſe are to be greatly ſuſpected as impoſtors, and the latter wholly condemned as ſuch. For the time during which the creatures are buried under ground, and half dead with the cold, is certainly not the ſeaſon for propagation. See the article SUCCINUM.

Aquatic INSECTS. There is an *Inſect* of a very peculiarly amphibious kind, which Mr. Reaumur has accurately deſcribed in the Memoirs of the Paris Academy. Many animals are aquatic for a part of their lives, and paſs the reſt on dry land; but this ſingular creature always contrives to have its head and tail both in the water, and the intermediate part of its body out. To conceive the manner in which this is effected, we muſt conſider its figure. It is compoſed, like

many other of these small animals, of several rings or joints; it has eleven of these between its head and its tail; they are all roundish, and very well resemble a string of beads. The creature is almost always in a bending figure representing a syphon; its head and tail are always placed near one another, while the body is elevated and forms an arch above them. The head, the tail, and the ring joining to the tail, are the parts constantly kept in the water; and the nine other rings, or at least seven of them, lie upon dry land. The constant habitation of the animal, is at the edges of standing waters. It constantly draws back if more of the body is wetted, and plunges in deeper if less than the allotted portion is so. The animal is not more than two thirds of an inch long: it is therefore much better distinguished when kept in a vessel of water, than while it is in a pond. The uneasiness of the creature at being too much or too little immersed, is easily seen; for if the vessel be sloped so as to drain the water from it, it very speedily follows it down the side of the vessel; and if it be sloped the contrary way, so as to make the water cover it too far, it as readily climbs up to get in part out of the reach of the water. Its manner of moving is very particular; for neither the head nor the tail seem concerned in it, but the highest part or sixth ring of the body, which in its crooked state makes the summit of the arch, is what moves first, and draws all the other parts to follow it, the creature continuing in its bended posture while it moves. It does not move by vermicular progression, as some animals do; but has regular feet. These indeed are so small as not to be distinguishable without the assistance of glasses; but when seen, they are found to be one of the great singularities of the animal. Mem. Acad. Par. 1714.

The feet, contrary to their position in all other animals, are in this creature placed upon its back. Hence the creature naturally lies down upon its back as other creatures do upon their bellies, and as it lies the mouth and the anus turn upwards. But this is not peculiar to this animal, for there are some flies, and other water *Insects*, which always swim upon their backs, and have their mouths pointed upwards, that they may take their food, which is usually placed above them; and the same reason is to be given in regard to this *Insect*. Its feet are ten in number, placed on the separate rings, two on a ring. There are only four between the sixth ring and the head; but these are larger than the other six. They are very short, and much resemble the slender legs of silk-worms, or other caterpillars; and their extremities are in the same manner flatted, and armed with numbers of little hooks. The four first legs are bent towards the head, and the other six are bent the contrary way, or towards the tail. There is great providence in this disposition of them; for as the creature is usually in an arched posture and moves in that figure, the ten legs tho' they are placed contrary ways in regard to the head, are all placed in the same direction in regard to the sixth ring, which is as the head to other animals, the part which begins all motion. By this disposition of the legs the animal has a greater variety of motion, than any other creature; for in an extended posture it can run with equal swiftness backwards or forwards, by using the one or the other set of its legs; and in its arched position it can, beside the common motion forwards, move sideways either to the right or left with great facility, which is of great use to it when it wants to change its place, by moving only a little way. Beside all those motions, it has also the power of swimming like other worms, which it exerts by turning and twisting its body about when it is by any accident plunged all over in the water. This, however, seems an unnatural position to it, and it never seems to get into it but by constraint, and then always gets out of it again as soon as it can, by swimming to the side. It is almost continually feeding, tho' its morsels are but small, being only such animalcules as microscopes discover in waters.

The belly of this *Insect* is of a deeper brown than its back, and the rings have on this side certain spots surrounded with short hairs, in the manner of the tracheæ of several *Insects*, and probably they serve the animal for the same purpose of respiration. The back is white and transparent, and its rings have none of these marks; but they beautifully shew by their transparence what passes in the body of the animal. There may be observed near the anus a pipe, or circular canal, like the piston of a syringe, which is continually playing, and approaching to or receding from the anus. The same sort of motion is also perceived within the third ring of the body, in a pipe or canal, which seems only a continuation of the former, and possibly the heart of the creature is situated there. Mem. Acad. Par. 1714.

Musk-INSECT. See the article MUSK.

Hearts of INSECTS. See the article HEART.

INSIDIANT *Diseases*, a term used by some authors, to express such diseases as shew no evident symptom, but remain latent a long time in the body, and are ready to break forth in an unexpected manner, and as it were by surprize.

INSTEP, in the manege, is that part of the hinder leg of a horse, that corresponds to the shank in the fore-leg, extending from the ham to the pastern joint.

INSTITA, a word used by the chirurgical writers, for a fillet or other bandage of that kind; and by medicinal writers, for that sort of flat worms bred in the intestines, called by many the tape-worm, or flat-worm. *Cast.* Lex. Med. in voc.

INSTITUTORES, in botany, that set of authors in this science who have laid down certain settled rules, axioms, and institutions in it. *Linnæi* Fund. Bot. p. 2.

INSTRUMENT (*Cycl.*)—*Pocket*-INSTRUMENTS, in surgery. See the article POCKET.

INSUFFLATIO, a term used by some writers in medicine, to express the blowing into any part, in order to convey the fumes of medicines into it.

INSULTUS, a word used by the writers in medicine to signify the access of the paroxysm in intermittent diseases; or sometimes the first invasion of a disease.

INTEGRANT *Parts*, in philosophy, the similar parts of a body, or parts the same and of the same nature with the whole; as filings of iron are the *integrant* parts of iron, and have the same nature and properties with the bar they were filed off from. The chemists distinguish in their resolutions of bodies between the dividing or resolving them into *integrant* parts like these; and what they call constituent parts, that is, dissimilar parts, or the principles of the bodies they work upon. Thus when crude mercury is dissolved in aqua-fortis, tho' held imperceptibly in the menstruum, yet when that menstruum is diluted with water and a copper plate is suspended in it, the menstruum leaves the mercury to work upon the copper, and the mercury subsides unaltered and in its own natural form; the mercury therefore, in this operation, was only divided into its *integrant* parts, or small parcels of the same nature and properties of the whole; but when artificial cinnabar is resolv'd or divided into crude mercury and sulphur, neither of these are of the same nature and properties with the cinnabar, and are not its *integrant* but its constituent parts. This therefore is the dividing a body into its constituent parts or principles. *Shaw*'s Lectures, p. 15.

INTEGRUM *Folium*, among botanists. See the article LEAF.

INTENSUM *Diatonum*. See the articles DIATONIC, and GENUS.

INTENTION, (*Cycl.*) *intentio*, ἐπίτασις, in the antient music, was used to denote the passage of the voice from grave to acute. *Aristoxen.* p. 10—13. *Aristid.* Quint. p. 8, 9. *Gaudent.* p. 2, 3. *Euclid.* p. 2. Edit. Meimbom.

INTER *Canem & Lupum*, in law, words used formerly in appeals, to signify that a crime was committed in the twilight, i. e. *inter diem & noctem*, &c. This part of a day has divers other denominations: Thus, in some parts of England they call it *mock-shadow*, corruptly *muck-shade*; and in the north, *day-light's gate*; others say, *betwixt hawk and buzzard*. *Cowel*, *Blount*.

INTERCAPSULARIA, in anatomy, a name given by some writers to the cavities between the scapulæ and the vertebræ.

INTERCEPTED *Axis*, in conic sections, is the same with what is otherwise called the *Abscissa*. See the article ABSCISSA, *Cycl.*

INTERCESSION, *Intercessio*, was used in antient Rome, for the act of a tribune of the people, or other magistrate, by which he inhibited the acts of other magistrates; or even in case of the tribunes, the decrees of the senate. *Veto* was the solemn word used by the tribunes when they inhibited any decree of the senate, or law proposed to the people[a]. The general law of these *Intercessions* was, that any magistrate might inhibit the acts of his equal, or inferior; but the tribunes had the sole prerogative of controuling the acts of every other magistrate, yet could not be controuled themselves by any[b].—[[a] *Middlet.* of Rom. sen. p. 160. [b] *Middlet.* ibid.]

INTERCIDENT *Pulse*, a term used by medical writers, to express a sort of pulse, in which between two regular strokes there is perceived a third irregular.

INTERCOSTAL (*Cycl.*)—INTERCOSTAL *Muscles*. These muscles are so many thin fleshy plates, two between every two ribs, an external and an internal, closely joined together with only a thin cellular web between them. The fibres of the external *Intercostals* are very oblique near the vertebræ; but this obliquity decreases insensibly as they approach the anterior extremities of the ribs. Their insertions begin at the ligaments, by which the ribs are fastened to the transverse apophyses. They are a little tendinous, and run a small space beyond the edge, on the outside of each rib. The fibres of the internal *Intercostals* are in general shorter and less oblique than the former; they fill almost entirely the interstices between the cartilaginous portions, and they are covered on the outside by a ligamentary membrane, the fibres of which running in an opposite direction to those of the muscles, have been mistaken for continuations of the external *Intercostals*, over which this membrane is also spread, only a little diminished in thickness.

Any portion of the breast of an animal may be boiled so much that the flesh easily parting from the bones, the ribs

may be drawn out, without disordering either the muscles or the membranes; but we are not for this reason to conclude, that all the *Intercostals* on one side of the breast make but one muscle; because the same reasoning might prove, that all the muscles which immediately surround the os femoris are but one; since by a like experiment, they together with the periosteum may be entirely separated from the bone, without breaking their fibres. *Winslow*'s Anatomy, p. 231. For the use of these in respiration, see the article RESPIRATION.

INTERCOSTAL *Nerves*. Dr. Walther has given a very minute description of the *Intercostal nerves*, and eighth pair. See Nov. Act. Erud. Lipsi. 1734. Feb. & ibid. 1736 Sept.

INTERCUS, a word used by some medical writers, to express that sort of dropsy more usually called an anasarca. See the articles DROPSY and ANASARCA.

INTEREST *(Cycl.)*—INTEREST, *Interesse*, in law, is commonly taken for a chattel real, as a lease for years, &c. and more particularly for a future term; in which case it is said in pleading, that one is possessed *de Interesse termini*: Therefore an estate in lands, is better than a right or *Interest* in them. But in legal understanding, an *Interest* extends to estates, rights, and titles, that a man hath in or out of lands, &c. so as by grant of his whole *Interest* in such land, a reversion therein, as well as possession in fee-simple shall pass. Co. Litt. 345. *Blount*.

INTERFERE, in the manege. A horse *interferes*, when the side of one of his shoes strikes against, and hurts one of the fetlocks. See the article FETLOCK.

INTERFEMINEUM, a word used by some to express the perinæum.

INTERLUNIUS *Morbus*, a name by which some authors have called the epilepsy, a disease often affected remarkably by the changes of the moon.

INTERMITTENT, or INTERMITTING *Fever (Cycl.)*—See the article FEVER.

INTERNUS *(Cycl.)*—INTERNUS *mallei*, in anatomy, a name given by some authors to one of the muscles of the ear. It is the *musculus Internus auris* of Cowper, and is very properly called by Albinus *tensor tympani* from its use. Spigelius calls it simply the *Internus*.

INTEROSSEUS, in anatomy, a name given by Spigelius in his account of the muscles of the foot, to a muscle called by Albinus the *flexor brevis pollicis pedis*, and by Winslow the *thenar* and *flexor brevis*.

INTERRING, or INTERMENT *(Cycl.)*—See the articles BURIAL and BURYING.

INTERSEPTUM, a word used by some writers to express the uvula, and by others the septum narium.

INTERSPINALES *(Cycl.)*—INTERSPINALES *dorsi*, in anatomy, a name given by Albinus to certain muscles of the back, not mentioned by the old writers in anatomy, but called by Winslow and other of the modern French writers, *les petits epineux du dos*; as the *Interspinales* lumborum of the same author, are the *epineux des lombes*.

INTERSPINALES *lumborum*, in anatomy, a name given by Albinus to some muscles not mentioned by the generality of writers, but called by Winslow the *epineux des lombes*, or *spinales lumborum*.

INTERTRANSVERSARII *dorsi*, in anatomy, a name given by Albinus and others of the late anatomists, to certain small muscles of the back, not observed by the old writers on these subjects, but called by the French *les petits transversaires du dos*.

INTERTRANSVERSARII *lumborum*, in anatomy, a name given by Albinus to those muscles of the loins, which Douglas also calls the *Intertransversales*, and Winslow and the other French writers *transversaires des lombes*.

INTERVAL, in music *(Cycl.)*—*Intervals* are founded on certain ratio's or proportions expressible in numbers, which may all be analysed into the prime numbers 2, 3, and 5. And all *Intervals* may be found from the octave, fifth and third major, which respectively correspond to those numbers. These are the musicians elements, from the various combinations of which, all the agreeable variety of relations of sounds result. This is the modern system, and a late author[a] assures us, it may be looked on as the standard of truth; and that every *Interval* that occurs in music is good or bad, as it approaches to, or deviates from what it ought to be, on these principles. He observes, that the doctrine of some of the antients seems different. Ptolemy, for instance, introduces not only the primes 2, 3, 4, 5, but also 7 and 11, &c. Nay, he seems to think all fourths good, provided their component *Intervals* may be expressed by super-particular ratio's. But these are justly exploded conceits; and it seems not improbable, that the contradictions of different numerical hypotheses, even in the age of Aristoxenus, and their inconsistency with experience, might lead him to reject numbers altogether[b].—[a Dr. *Pepusch*. ap. Phil. Trans. N°. 481. p. 267, 268. b Id. Ibid.]

Mr. Euler defines an *Interval*, the measure of the difference of an acute and grave sound. Tentam. Nov. Theor. Music. p. 72. and p. 103.

Suppose three sounds *a*, *b*, *c*, of which *c* is the most acute, *a* the most grave, and *b* the intermediate sound. From the preceding definition, it appears that the *Interval* between the sounds *a* and *c*, is the aggregate of the *Intervals* between *a* and *b*, and between *b* and *c*. Therefore if the *Interval* between *a* and *b*, be equal to that between *b* and *c*, which happens when $a : b :: c : d$, the *Interval* between *a* to *c*, will be double the *Interval a* to *b*, or *b* to *c*. This being considered, it will appear that *Intervals* ought to be expressed by the measures of the ratio's, constituting the sounds forming those *Intervals*: But ratio's are measured by the logarithms of fractions, the numerators of which denote the acute sounds, and the denominators the grave. Hence the *Interval* between the sounds *a* and *b*, will be expressed by the logarithm of the fraction $\frac{b}{a}$, which is usually denoted by $l\frac{b}{a}$, or, which comes to the same, $lb - la$. The *Interval* therefore of equal sounds, *a* to *a*, will be null, as $la - la = o$. The *Interval* called an octave or diapason, will be expressed by the logarithm of 2; and the *Interval* of the fifth or diapente, will be $l\frac{3}{2} = l3 - l2$. From whence it appears, that these *Intervals* are incommensurable; so that no *Interval*, however small, can be an aliquot part, both of the octave and fifth. The like may be said of the *Intervals* $l\frac{3}{2}$ and $l\frac{5}{4}$, and others whose logarithms are dissimilar. But *Intervals* expounded by logarithms of numbers, which are powers of the same root, may be compared—Thus, the *Interval* of the sounds 27 : 8, will be to the *Interval* of the sounds 9 : 4, as 3 is to 2: For $l\frac{27}{8} = 3l\frac{3}{2}$, and $l\frac{9}{4} = 2l\frac{3}{2}$. *Euler*, ibid. p. 74.

But tho' the logarithms of numbers, which are not powers of the same root, be incommensurable, yet an approximating ratio of such may be found. Thus the measure of the octave is $l2 = 0.3010300$, and the measure of the fifth is $l3 - l2 = 0.1760913$. Hence the *Interval* of the octave will be to that of the fifth, nearly as 3010300 to 1760913; which ratio being reduced to smaller terms, in the method explained under the head RATIO, will give us these simpler expressions for the ratio of the octave and fifth, 2 : 1, 3 : 2, 5 : 3, 7 : 4, 12 : 7, 17 : 10, 29 : 17, 41 : 24, 53 : 31, which last is very near the truth. *Euler*, ibid. p. 75.

In like manner *Intervals* may be divided into any number of equal parts: for this purpose we need only divide the logarithm of the proposed *Interval* into the same number of parts, and then find its correspondent number by the tables. The ratio of the number so found, to unity, will give the required ratio of the divided *Interval* to its proposed part. Thus let the third part of an octave be required; its logarithm will be $= 0.1003433 = \frac{1}{3}l2$: The ratio corresponding nearly to this will be, 63 : 50, or less accurately, 29 : 23, or 5 : 4, which last expresses the third major; and this is by the less knowing taken for the third part of an octave, and seems to be such on our harpsichords and organs, where from C to E is a third, from E to G♯ another, and from G♯ or A♭ to *c* another third. But the more intelligent know, that G♯ and A♭ ought not to be reputed the same sound, since they differ by a diesis enharmonica, which is nearly equal to two commas. *Euler*, ibid.

Mr. Euler has inserted a table of *Intervals* in his *Tentamen Novæ Theoriæ Musicæ*: He supposes the logarithm or measure of the octave to be 1.000000, whence the logarithm of the fifth will be 0.584962, and the logarithm of the third major will be 0.321928; from these the measures of all other *Intervals* may be found. But as it has been customary for musicians to measure their *Intervals* by commas, we shall here insert a table of *Intervals* with their measures in commas; where we suppose the logarithm or measure of the comma $\frac{81}{80}$ to be 1.00000: hence the logarithm of the octave $\frac{2}{1}$ will be 55.79763, that of the fifth 32.63952, and lastly that of the third major 17.96282. From these all the other *Intervals* may be found in the manner expressed in the table; where the first column shews the names of the several *Intervals*; the second the proportions of sounds forming these *Intervals*; the third the composition of these proportions from the primes 2, 3, and 5. The smaller figures marked above, and somewhat to the right of the larger, indicate the power to which the number expressed by the larger figures is raised. Thus $\frac{2^{17}\,3}{5^8}$ shews that the seventeenth power of 2 multiplied by 3, and divided by the eighth power of 5, will produce $\frac{393216}{390625}$ in the second column, and that this is the proportion expressing the *Interval* called *eschaton* in the first column. The fourth column of the table contains some simple signs of some of the *Intervals*, as *h* for *hyperoche*, *d* for *diesis*, &c. and the fifth column shews how the *Intervals* arise from others: Thus, over-against semitone major, I find in the fourth column *S*, which is here only an arbitrary mark for this semitone; and in the fifth column I find $s + d = \text{IV} - \text{III}$, which signifies that the semitone major is equal to the sum of the semitone minor and diesis, or to the difference between the fourth and third major. Observe, that the comma is marked by a dot (.); when this is placed over the letter or other symbol, it signifies that the *Interval* is supposed to be heightened by a comma; and on the contrary, when the point is placed below, it signifies that the *Interval* must be diminished by a comma: Thus $\dot{t} = T$ signifies that the

the tone-minor increaſed by a comma is equal to a tone-major, and vice verſa, T = *t* ſhews that the tone-major diminiſhed by a comma is equal to the tone-minor. The ſigns +, —, =, are here taken in the ſame ſenſe, as in algebra, to ſignify addition, ſubſtraction, and equality. So likewiſe the dot placed between two numbers, or between a number and the ſymbol of an *Interval*, ſignifies that the *Interval* is to be multiplied by the number. Thus 2. IV ſhews that the fourth is doubled; and thus, 7^b = VI + S = 2. IV = VIII — T, ſhews, that the leſſer flat ſeventh is equal to the ſixth major and ſemitone-major, or alſo to two fourths, or to the octave when the tone-major has been taken from it. Laſtly, the ſixth column of the table ſhews the meaſures, or logarithms of the ratios in the ſecond column. Theſe are not the common logarithms of the tables where 1.0000000 is the logarithm of 10. But here 1.00000 is aſſumed as the logarithm of $\frac{81}{80}$ or of the comma, as before mentioned. Theſe logarithms are eaſily derived from the common, of the larger tables of Vlacq. or Briggs. Thus the logarithm of 2, or the octave = 0.3010299957; the logarithm of $\frac{3}{2}$, or of the fifth = 0.1760912590; and laſtly, the logarithm of $\frac{5}{4}$, or of the third major = 0.0969100130. Now theſe logarithms being ſeverally divided by the logarithm of $\frac{81}{80}$, or of the comma = 0.0053950319; the quotients will give the number of commas in an octave = 55.79763; in a fifth = 32.63952; and in a third major = 17.96282. Hence all the reſt may be found by addition and ſubſtraction only. Here follows the Table.

A TABLE of Muſical *Intervals*, with their Meaſures.

Names of the *Intervals*.	Proportions expreſſing the *Intervals*.	Compoſition of the Proportions from 2, 3, and 5.	Simple Signs.	Complex Signs to ſhew the Compoſition of *Intervals*.	Meaſures by Commas.
Eſchaton	$\frac{393216}{390625}$	$\frac{2^{17}3}{5^8}$		$d-b=2d-s=3d-S$	0.53222
Diaſchiſma	$\frac{2048}{2025}$	$\frac{2^{11}5}{3^45^2}$		d	0.90917
Comma	$\frac{81}{80}$	$\frac{3^4}{2^45}$	.	$T-t$	1.00000
Comma of Pythagoras	$\frac{531441}{524288}$	$\frac{3^{12}}{2^{19}}$		$6T-VIII$	1.09083
Hyperoche	$\frac{3125}{3072}$	$\frac{5^5}{2^{10}3}$	b	$s-d=S-2d$	1.37695
Enharmonic Dieſis, or diminiſhed ſecond	$\frac{128}{125}$	$\frac{2^7}{5^3}$	d	$S-s$	1.90917
Semi-tone Minor, or leaſt Chromatic Dieſis	$\frac{25}{24}$	$\frac{5^2}{2^33}$	s	$t-S=d+b=III-3^b$	3.28612
Limma of the Greek Scale, or deficient Semi-tone Major	$\frac{256}{243}$	$\frac{2^8}{3^5}$		$S=IV-2\dot{T}$	4.19529
Leſſer Limma, or redundant Semi-tone Minor	$\frac{135}{128}$	$\frac{3^35}{27}$		$\dot{s}=T-S$	4.28612
Semi-tone Major	$\frac{16}{15}$	$\frac{2^4}{3\cdot5}$	S	$s+d=IV-III$	5.19529
Apotome of the Greek Scale	$\frac{2187}{2048}$	$\frac{3^7}{2^{11}}$		$T-S=\ddot{s}$	5.28612
Greater Limma, or redundant Semi-tone Major	$\frac{27}{25}$	$\frac{3^3}{5^2}$		$\dot{S}=T-s$	6.19529
Double Semi-tone Minor	$\frac{625}{576}$	$\frac{5^4}{2^63^2}$		$2s=t-\dot{d}$	6.57224
Greateſt Limma, or redundant double Semi-tone Minor	$\frac{1125}{1024}$	$\frac{3^25^3}{2^{10}}$		$s+\dot{s}=T-d$	7.57224
Tone-Minor	$\frac{10}{9}$	$\frac{2\cdot5}{3^2}$	t	$S+s=T=IV-3^b=III-T$	8.48141
Tone-Major	$\frac{9}{8}$	$\frac{3^2}{2^3}$	T	$\dot{t}=V-IV$	9.48141
Diminiſhed Third	$\frac{256}{225}$	$\frac{2^8}{3^25^2}$		$t+d=2S$	10.39058
	$\frac{144}{125}$	$\frac{2^43^2}{5^3}$		$T+d=3^b-s$	11.39058
Superfluous Second	$\frac{125}{108}$	$\frac{5^3}{2^23^3}$		$t+s$	11.76753
	$\frac{75}{64}$	$\frac{3\cdot5^2}{2^6}$		$T+s=3^b-d$	12.76753
Trihemitone of the Greek Scale, or deficient third Minor	$\frac{32}{27}$	$\frac{2^5}{3^3}$		$3^b=t+S=IV-T$	13.67670
Third Minor	$\frac{6}{5}$	$\frac{2\cdot3}{5}$	3^b	$T+S=V-III$	14.67670
Trihemitone Major	$\frac{4096}{3375}$	$\frac{2^{12}}{3^35^3}$		$3S=T+S+\dot{d}$	15.58587
Extreme diminiſhed Fourth	$\frac{768}{625}$	$\frac{2^83}{5^4}$		$3^b+d=IV-2s$	16.58587
Third Major	$\frac{5}{4}$	$\frac{5}{2^2}$	III	$III=V-3^b$	17.96282
Ditonus of the Greek Scale, or redundant third Major	$\frac{81}{64}$	$\frac{3^4}{2^6}$		$\dot{III}=2T$	18.96282
Diminiſhed fourth	$\frac{32}{25}$	$\frac{2^5}{5^2}$		$III+d=IV-s$	19.87199
Superfluous third	$\frac{125}{96}$	$\frac{5^3}{2^53}$		$III+s$	21.24894
Fourth	$\frac{4}{3}$	$\frac{2^2}{3}$	IV	$III+S=VIII-V$	23.15811
Redundant fourth	$\frac{27}{20}$	$\frac{3^3}{2^25}$		$\dot{IV}=3^b+T$	24.15811
Superfluous fourth	$\frac{25}{18}$	$\frac{5^2}{2\cdot3^2}$		$IV+s$	26.44423
Semidiapente of the Greek Scale	$\frac{1024}{729}$	$\frac{2^{10}}{3^6}$		$IV+S$	27.35340

Tritonus,

Tritonus, or falſe fourth	$\frac{45}{32}$	$\frac{3^2 5}{2^5}$		IV + ṡ = V − S	27.44423
Semidiapente, or falſe fifth	$\frac{64}{45}$	$\frac{2^6}{3^2 5}$		IV + S = V − ṡ	28.35340
Tritonus of the Greek Scale	$\frac{723}{512}$	$\frac{3^6}{2^9}$		3T = V − S = IV + s̈	28.44423
Diminiſhed fifth	$\frac{36}{25}$	$\frac{2^2 3^2}{5^2}$		V − s = 2.3^b	29.35340
Deficient fifth	$\frac{40}{27}$	$\frac{2^3 5}{3^3}$		V̇ = IV + t	31.63952
Fifth	$\frac{3}{2}$	$\frac{3}{2}$	V	IV + T = III + 3^b	32.63952
Superfluous fifth	$\frac{25}{16}$	$\frac{5^2}{4^2}$		V + s = 2. III	35.92564
Sixth Minor	$\frac{8}{5}$	$\frac{2^3}{5}$	6^b	V + S = VIII − III	37.83481
Sixth Major	$\frac{5}{3}$	$\frac{5}{3}$	VI	V + t = VIII − 3^b	41.12093
Hexachord of the Greek Scale, or redundant ſixth Major	$\frac{27}{16}$	$\frac{3^3}{2^4}$		V̇I = V + T = VIII − 3̇	42.12093
Leſſer / Greater diminiſhed ſeventh	$\frac{128}{75}$	$\frac{2^7}{3 \cdot 5^2}$		6^b + S = 2.IV − s = 7^b − s	43.03010
	$\frac{216}{125}$	$\frac{2^3 3^3}{5^3}$		6^b + Ṡ = 7̇^{b} − s	44.03010
Leſſer / Greater ſuperfluous ſixth	$\frac{125}{72}$	$\frac{5^3}{2^3 3^2}$		VI + s	44.40705
	$\frac{225}{128}$	$\frac{3^2 5^2}{2^7}$		VI + ṡ = VIII − 2S	45.40705
Leſſer / Greater ſeventh Minor	$\frac{16}{9}$	$\frac{2^4}{3^2}$	7^b	VI + S = 2.IV = VIII − T	46.31622
	$\frac{9}{5}$	$\frac{3^2}{5}$	7̇^{b}	VI + Ṡ = V + 3^b = VIII − t	47.31622
Seventh Major	$\frac{15}{8}$	$\frac{3 \cdot 5}{2^3}$	VII	VI + T = VIII − S	50.60234
Diminiſhed Octave	$\frac{48}{25}$	$\frac{2^4 3}{5^2}$		VII + d = VIII − s	52.51151
Superfluous Seventh	$\frac{125}{64}$	$\frac{5^3}{2^6}$		VII + s = VIII − d	53.88846
Octave	$\frac{2}{1}$	$\frac{2}{1}$	VIII	VIII = V + IV	55.79763

The limma, apotome, trihemitone, ditonus, ſemidiapente, and tritonus, mentioned in this Table, by the names of limma, apotome, &c. of the Greek ſcale, are ſuch as are either mentioned by the antients, or at leaſt occur in their ſcale, where fourths are divided into two tones and a limma, and where the octave conſiſted of five tones and two limmas.

The term *redundant* in the Table, is applied to ſuch *Intervals* as exceed the truth by a comma; and ſuch as fall ſhort of the truth by a like quantity, are called *deficient*. *Intervals* that exceed true diatonic *Intervals*, by a ſemitone-minor, are ſaid to be *ſuperfluous*; and thoſe which fall ſhort by the ſame quantity, are ſaid to be *diminiſhed*. Where an *Interval* exceeds a true diatonic *Interval* by the quantity of two ſemi-tones minor, we have called it an *extreme ſuperfluous* Interval: And if it falls ſhort by the ſame quantity the appellation of *extreme diminiſhed* Interval is given it. Thus, if from A to D aſcending be a true fourth, and from D to *a* a true fifth, then, if D be ſuppoſed raiſed by a comma, from A to Ḋ will be a redundant fourth, and from Ḋ to *a* a deficient fifth. From A to D♯ will be a ſuperfluous fourth, and from D♯ to *a* will be a diminiſhed fifth. In like manner, from A to D^b, will be a diminiſhed fourth; and from D^b to *a*, a ſuperfluous fifth. From A to D♯♯ (D double ſharp) will be an extreme ſuperfluous fourth, and from A to D^{bb} (D double flat) will be an extreme diminiſhed fourth. In like manner, from D♯♯ to *a* will be an extreme diminiſhed, and from D^{bb} to *a*, an extreme ſuperfluous fifth. Such *Intervals* are not to be met with in the practice of muſic; but if the diviſion of the octave into 31 parts were once eſtabliſhed, as it ought for the perfection of muſic, ſuch *Intervals* as theſe here mentioned will neceſſarily occur in the ſcale. Vid. Phil. Tranſ. N° 481. p. 273, 274. See the article GENUS.

This Table, among other uſes, will facilitate the examination of any propoſed ſcale, or *Interval*. Suppoſe, for inſtance, it were required to examine ſome of Ptolemy's diviſions of the fourth, as his Diatonicum molle, which he makes $\frac{8}{7} \times \frac{10}{9} \times \frac{21}{20} = \frac{4}{3}$. Take the logarithm of $\frac{8}{7}$ from the common tables, and divide it by the logarithm of $\frac{81}{80}$, the quotient will be 10.75, which gives the meaſure or number of commas, and its parts contained in an *Interval* expreſſed by $\frac{8}{7}$. Look for the neareſt meaſure of *Intervals* to 10.75 in the table, it will be found to be 10.39058, which anſwers to the *Interval* of two ſemitones major, or of the diminiſhed third as practitioners call it. But Ptolemy's exceeds this by 0.36, or about $\frac{1}{3}$ of a comma. The next *Interval* in Ptolemy's diviſion is $\frac{10}{9}$, which is a true tone-minor. The third is $\frac{21}{20}$, which will be found to be 3.93 commas, that is a ſemi-tone minor and 0.64 of a comma, or a ſemi-tone minor redundant by near $\frac{2}{3}$ of a comma. But this is much out of tune. In the common, and in Huygens's temperatures the ſemi-tone minor is increaſed only by about $\frac{1}{4}$ of a comma. Vid. *Ptolem.* Harmon. p. 92. ap. *Wallis* Oper. Tom. 3.

Diminiſhed INTERVAL, in muſic. See the article DIMINISHED *Interval*.

INTERVALS, in huſbandry, a term uſed to expreſs the ſpaces left between the ſeveral rows of plants ſown or ſet in a garden or field. The method of horſe-hoeing huſbandry, ſo ſtrongly recommended by Mr. Tull, is objected to by many, on account of the largeneſs of the *Intervals* which are to be left between the rows of corn. Theſe are required to be about five foot wide; and it is thought that ſuch wide ſpaces are ſo much loſt earth, and that the crop is to be ſo much the leſs for it. But it is to be obſerved, that the rows of corn ſeparated by theſe *Intervals* need not be ſingle, they may be double, triple, or quadruple, at the pleaſure of the farmer; and four rows thus ſtanding as one will have the five foot *Interval* but one fourth of its bigneſs as to the whole quantity, and it will be but as fifteen inch *Intervals* to plants in ſingle rows. Corn that is ſown irregularly in the common way, ſeems indeed to cover the ground better than that in rows; but this is a mere *deceptio viſus*, for the ſtalks of corn are never ſo thick as when they come out of one plant, or as when they ſtand in a row, and a horſe-hoed plant of corn will have twenty or thirty ſtalks in a piece of ground of the ſame quantity, where an unhoed plant will have only two or three ſtalks. If theſe ſtalks of the hoed plant were ſeparated and planted over the *Intervals*, the whole land would be better covered than it is in the common way; and the truth is, that tho' theſe hoed fields ſeem to contain a much leſs crop than the common ſown fields, yet they in reality do contain a much greater. It is only the different placing that makes the ſown crop ſeem the larger, and even this is only while both crops are young. *Tull*'s Horſehoeing Huſbandry.

The *Intervals* are not loſt ground, as is uſually ſuppoſed, but when well horſehoed they are all employed in the nouriſhment of the crop, the roots of the plants in the adjoining rows ſpreading themſelves thro' the whole *Interval*, and drawing ſuch nouriſhment from it, that they increaſe accordingly. When the plants ſtand in the ſcattered way, as in common ſowing, they are too cloſe to one another; each robs its neighbours of part of their nouriſhment, and conſequently the earth is ſoon exhauſted, and all the plants half ſtarved. The cloſe ſtanding of them alſo prevents the benefit of after-

tilling,

tilling, as the hoe cannot be brought in, nor the ground by any means ſtirred between them to give it a new breaking, and conſequently afford them new food.

Experiments have abundantly proved, that in large grounds of wheat where the different methods have been tried, thoſe parts where the *Intervals* were largeſt have produced the greateſt crops, and thoſe where hoeing was uſed without dung have been much richer, than thoſe where dung was uſed without hoeing. If it were poſſible that plants could ſtand as thick, and thrive as well over the whole ſurface of the ground, as they do in the rows ſeparated by theſe large *Intervals*, the crops of corn ſo produced would be vaſtly greater than any that have been heard of; but the truth is, that plants receive their growth not according to the ground they ſtand on, but to the ground they can extend their roots into; and therefore a ſingle row may contain more plants than a large *Interval* can nouriſh, and therefore the ſame number that ſtand in that row, and no more than theſe could be nouriſh'd if ſcattered over the whole *Interval*; and they would be much worſe nouriſhed in that way, becauſe while the *Interval* is void, the earth may be ſtirred about them, and new roots will be formed in great numbers from every one broken by the inſtruments, and new nouriſhment laid before theſe roots by the breaking the particles of earth, by which the plants will have ſupplies that they cannot have when ſcattered over the whole ſurface, becauſe the ground is then all occupied, and cannot be moved between the plants.

The horſe-hoeing which takes place in theſe large *Intervals*, and is to be repeated ſeveral times: once or twice are of great advantage, but the oftner it is repeated the better the crop will ſucceed. In the beginning, or while the plants are young, it is to be done only in the middle of the *Interval*, that the roots of the tender plants may not be injured by coming too near them; but in the grown plants the hoe may be brought very near their roots without any fear of harm from it; and tho' the larger roots are many of them broken off by it, they are ſo ſoon ſupplied with new ones, that no ill conſequence was ever known to attend it. Poor land tho' it be ever ſo light, ſhould have many hoeings; for the plants receive but little nouriſhment from its natural poſture, and it is therefore neceſſary to make a continual ſupply of the artificial. The young roots multiplied by the breaking of the old ones with the hoe, are fuller of lacteal mouths for receiving of nouriſhment, than the old ones; and it is therefore no wonder, that the faſter theſe are propagated the better the plant thrives. And there is a diſadvantage in the plants of corn ſown in the common way, which is, that their ſtalks being as numerous, or nearly ſo at firſt as afterwards, they very quickly exhauſt the ground, while the plants in rows with *Intervals* between have much fewer ſtalks at firſt, and only increaſe in number as their roots are increaſed by the cutting, and the nouriſhment increaſed alſo by the ſame operation. *Tull*'s Horſehoeing Huſbandry, p. 36.

The earth about the ſown plants in the common way ſoon hardens and ſhuts out the benefits of the atmoſphere, whereas in the other way the hoe keeps it ſoft and open, ready to receive all the benefits of rains and dews; and tho' the crop of corn from the hoed *Interval* way ſhould be twice as large as the other, the land is yet left twice as rich for the next crop.

It is impoſſible to bring theſe calculations to mathematical rules, but it is very certain that a ſown crop ſucceeding a large undung'd hoed crop, is much better than a ſown crop that ſucceeds a ſmall dung'd ſown crop; and experience ſhews that poor worn-out heath-ground will produce four ſucceſſive good hoed crops, the latter all better and better till the whole is become at length good ground by the benefit of the hoeing, in ſpite of the nouriſhment drained out by the potatoes.

The wider the *Intervals* are, the more earth may be divided; for the row takes up the ſame room with a wide or a narrow *Interval*; and therefore with the wide the unhoed part bears a leſs proportion to the hoed part than in the narrow.

There are many ways of hoeing with the hoe-plow, but there is not room to turn two deep and clean furrows in an *Interval* that is narrower than four foot eight inches; for if it want much of this breadth, one at leaſt of theſe furrows will reach and fall upon the next row, which will be very injurious to the plants, except of grown ſaint-foin or ſome other ſuch plants, which can bear to have the earth pulled over them with a harrow.

All ſoils and all ſituations are not equally proper for this method of planting in rows, with large *Intervals* and hoeing between. The lighteſt ſoils ſeem the beſt for it, and the tough and wet clays the worſt.

Such grounds as lie on the ſides of hills are alſo leſs proper than others, for this work.

This method is not ſo proper in common fields, but that not in reſpect of the ſoil, but of the huſbandry of the owners, who are uſually in the old way, and change the ſpecies of corn, and make it neceſſary to fallow every ſecond, third, or fourth year.

INTESTINES (*Cycl.*)—*Wounds of the* INTESTINES. When a large wound is made in the cavity of the abdomen, which not only lets out the *Inteſtines*, but alſo divides ſome part of them; the wounded part of the *Inteſtines* are always to be ſtitched up before they are returned, by which means the wound heals the more readily; and the diſcharge of chyle and fæces into the cavity of the abdomen is prevented, from which dangerous ſymptoms would otherwiſe have enſued. And altho' wounds of the *Inteſtines*, eſpecially of the ſmall guts, admit of little or no hopes of a cure; yet as the great guts ſometimes admit of the ſuture with advantage, it is better to uſe a doubtful remedy, than none. Small wounds of the *Inteſtines*, however, or ſuch as do not exceed the diameter of a gooſe-quill, are by no means to be ſtitched, but left to nature; by which means there is much greater hopes of ſucceſs, than from irritating them with the ſuture; but large wounds of the *Inteſtines*, tho' they ſeldom admit of cure, yet it is always to be attempted by means of the glovers ſuture, before the *Inteſtine* is returned. To perform this, you are to be provided with a ſmall needle threaded with ſilk, an aſſiſtant ſhould take hold of one part of the gut by a fine piece of linnen well air'd; while the ſurgeon ſhould hold the other part in his left hand, and ſew up the whole wound after the glover's manner, leaving very ſmall ſpaces, not more than the twelfth of an inch each between each of the ſtitches. The laſt ſtitch in this operation muſt be faſtned with a knot, but the other end muſt hang out about a foot out of the abdomen, by means of which the ſilk may be drawn out when the *Inteſtine* is healed. After this is performed, the wound of the abdomen is next to be taken care of, and ſtitched up, keeping the lower or depending part of the wound open with a tent, till all the preternatural fluids are diſcharged out of the cavity of the abdomen, and till the union of the wound in the *Inteſtine* ſhall give leave to draw away the ſilk with which the ſuture was performed on it.

As the modern ſurgeons, however, have found that few are ſaved who have received any large wound in the *Inteſtines*, and that in thoſe few who do recover, the wounded parts, from the fineneſs of the coat of the gut do not properly unite, but rather adhere to the inner part of the peritoneum, or to the omentum, or to ſome other of the *Inteſtines*, they rather chuſe now to let alone the operation of the ſuture of the gut, and ſubſtitute a gentler method of cure. They paſs a waxed thread thro' a fine needle, and with this they faſten the wounded part of the *Inteſtine* to the internal orifice of the wound in the abdomen. The thread that in this caſe hangs out of the abdomen, is to be ſo firmly fixed by the application of ſticking plaiſters to the wound, that the *Inteſtine* cannot recede from the part to which it was faſtened, nor can it evacuate any of its contents into the cavity of the abdomen. When this operation is well performed, the *Inteſtine* eaſily adheres to the internal part of the abdomen, and the patient ſuffers infinitely leſs pain and hazard, than from the former way of making the ſuture. The ſame method of cure alſo is the proper one for wounds of the ſtomach, where they are within the reach of the hand, and it is ſometimes crowned with ſucceſs. *Heiſter*'s Surgery, p. 56.

Loſs of Subſtance in the INTESTINES. Where any part of the *Inteſtines* is carry'd away, the caſe is plainly deſperate, and 'tis indeed wonderful that perſons thus wounded have not all died upon the ſpot, or in the operation of making the ſuture, till ſome of the late eminent ſurgeons obſerved that the lips of the *Inteſtines* ſo wounded, would ſometimes unexpectedly adhere to the wound in the abdomen, and took this hint from nature toward a cure in ſuch deſperate caſes. Whenever a ſurgeon therefore is called in a caſe of this kind, after diligently examining the ſtate of the upper part of the *Inteſtine* which has ſuffered the loſs of ſubſtance, he ſhould ſtitch it to the external wound; for by this means the patient may not only be ſaved from inſtant death, but there have been inſtances where the wounded *Inteſtine* has been ſo far healed, that the fæces which uſed to be voided by the anus, have been voided by the wound in the abdomen. And this, tho' from the neceſſity of wearing a tin or ſilver pipe, or keeping cloths conſtantly upon the part to receive the excrement, may ſeem to be very troubleſome; yet it is ſurely far better to part with one of the conveniencies of life, than to part with life itſelf; beſide the excrements that are voided by this paſſage, are not ſo offenſive in ſmell, as thoſe voided per anum.

The ſame method of cure may conveniently alſo be put in practice, where any part of the *Inteſtine* is mortify'd, by having been thruſt out of the abdomen; for in this caſe if you tie up the meſenteric arteries, the corrupted or mortify'd part of the *Inteſtine* may be cut off, and the remaining ſound part made to adhere to the wound of the abdomen. And it is ſurely better to try this method and ſave if it be only a few by it, than to leave all in this unhappy ſituation to periſh without help. *Heiſter*, p. 65.

We have inſtances of mortified pieces of the *Inteſtines* in the Herniæ cut away, and a cure made by keeping the extremities of the gut near to each other, and near to the rings of the muſcles, with a ſtitch through the meſentery. The

ends of the *Inteſtines* grew to the peritoneum, new fleſh was extended along this membrane, and joined the extremities together. The ſoldered part of the gut is always ſtraitned, and therefore thoſe who are cured in this caſe ought to guard againſt too full meals and indigeſtion. See Mem. de l'Acad. de Chirurg. Tom. 1.

INTESTINES *of Fiſhes*. The guts in fiſhes are very different in the ſeveral kinds in length, proportion, and figure; in ſome fiſh the *Inteſtine* is ſtrait and ſimple, and is carried directly from the ſtomach to the anus, as in the conger, ſyngnathus and petromyzon; in others it is only once returned upwards, as in the cyprini, ſalmons, pearch, and many others. In others it is variouſly contorted and revoluted, in the ſame manner as in land animals. We have inſtances of this in the ſparus, dolphin, mullet, and ſword-fiſh. *Artedi* Ichthyolog.

In length there are many very eminent differences. In the petromyza, *&c.* the whole *Inteſtinal* canal is not ſo long as the body of the fiſh. In the cyprini of many kinds it is about the ſame length with the body of the fiſh; and in others it is greatly longer, as in the ſpari, mullets, *&c.*

INTESTINAL *Fever*, *Febris Inteſtinalis*, in medicine, a name given by Heiſter to a peculiar ſpecies of acute fever paſſed over in ſilence by the generality of authors; but by ſome called the meſenteric fever, and by our Sydenham the new fever, *nova febris*. This differs from other acute fevers, in that it is attended always with a diarrhœa, which however is ſalutary, and which it is very dangerous to ſtop, and in that it is not relieved by the attemperating or diaphoretic medicines uſeful in other fevers, much leſs by the hot ſudorifics; all theſe things exaſperate and make it worſe, and the only things that give relief in it, are gentle cathartics, and vomits that operate without violence. This fever, therefore, evidently ſhews the error of thoſe haſty reaſoners, who declare, that all acute fevers are to be cured by diaphoretics.

This peculiar ſpecies of fever, tho' unknown to many of the late writers, and called by Sydenham a new diſtemper, was not unknown to the antients. Hippocrates has left many things concerning it; as have alſo the later Greeks, and Celſus: And among the moderns, Duret, Sennertus, Foreſtus, Riverius, Etmuller, Baglivi, Stahl, Hoffman, and Lanciſci, have all met with it, tho' they have given but very ſhort and imperfect deſcriptions of it in their writings.

The generality of thoſe who have written of this fever have refer'd it to the malignant kinds, from its being uſually attended with ſevere and uncommon ſymptoms from the beginning, or from ſuch being brought on in the courſe of an irregular treatment. The common method of curing fevers by diaphoretic medicines bringing on in this, anxieties and ſtraitneſs of the præcordia, with pains about the ſtomach, loſs of appetite and deliriums, with efflorescences of various kinds, particularly petechial ſpots; and theſe ſymptoms are not unfrequently attended with death. But it is to be obſerved, that diſeaſes are to be carefully diſtinguiſhed in their own ſymptoms, thoſe which the phyſician brings on being often very different from what nature would offer.

Theſe fevers have their ſeat in the ſtomach and *Inteſtines*; or if they have it any where elſe, it appears at leaſt that their origin, which is in a putrid colluvies, is always much more eaſily educed and evacuated by theſe, than by any other paſſages. Many of the diſtempers mentioned by authors under peculiar names, are properly to be refer'd as to their cauſes to this ſpecies of fever. The dyſenteric fever is abſolutely of this kind, and many of the petechial ones. The catarrhal fevers alſo, are referable to this kind; and the continual quotidian and tertian, with the fevers deſcribed by the antients under the names of *hemitritæus*, *aſſodes*, *elodes*, *epiala*, and *lipyria*, with the *tritophyæ* nearly allied to the *hemitritæi*, and by ſome authors confounded together, the words being uſed as ſynonymous. *Heiſter*'s Compend. Med. p. 83. ſeq.

Symptoms of INTESTINAL *Fevers*. Theſe are frequent ſhiverings when the patient is firſt ſeized with the diſtemper, which return at different and irregular intervals. After theſe the tongue, teeth, and fauces are covered with a foul and viſcid phlegm, the tongue in particular often looking yellowiſh, and blackiſh with it; the patient perceives a continual diſagreeable taſte in his mouth from this, and the people who are about him an ill ſmell. There is always a diarrhœa attending theſe fevers, and the fæces voided in it have a peculiarly offenſive ſmell. The hypochondria are always diſtended, and often in pain; the patients are attended with violent tremblings in their ſleep, ſo that they are frequently waked in terrors and uneaſineſs; and in tenderer ſubjects theſe alſo are very frequent, while waking. Pains in the head and neck are alſo a conſtant attendant of this diſtemper, and ſeem to take their origin from ſpaſms. The urine in the beginning of the diſeaſe is of a natural ſtate and colour, and afterwards becomes turbid, and depoſits a muddy ſediment during the whole courſe of the diſtemper.

Theſe are the conſtant ſymptoms of theſe fevers; but beſide theſe there are ſometimes other very violent ones, ſuch as violent anxieties of the præcordia, pains in the ſtomach and in the ſide reſembling thoſe of a pleuriſy, a loſs of ſtrength, a violent internal heat, and a continual convulſive or tremulous motion of the hands, with a ſubſultus tendinum, hiccough, and cold ſweats; which are all extremely dangerous ſymptoms, and preſage a fatal period to the diſtemper.

Beſide theſe, which are the common and the additional ſymptoms of theſe fevers, there are yet ſome others often ſeen in them, which are merely accidental, and are owing to the improper management of the patient. It is a common error to give hot and ſudorific medicines in theſe caſes, the conſequence of which is, that the peccant matter which was lodged before in the primæ viæ is propelled into the blood, and not being able to make its way through the pores it appears under the ſkin in form of petechiæ or purple ſpots, or of papulæ of a purple or reddiſh colour; ſometimes of a livid or blackiſh. Under this circumſtance, which is wholly owing to the ignorance of the preſcriber, the diſtemper gets the name of a petechial or a purple fever. Sometimes the ſame methods ſend the matter to the ears, where it occaſions deafneſs; ſometimes to the parotids and maxillary glands, where it forms tumors, inflammations, and abſceſſes of a very bad ſort; and, finally, if it be tranſferred to the brain, violent deliriums and phrenitis are the certain conſequence. Thus, according as this matter happens to be driven by this improper treatment to a more or leſs noble part of the body, it gives the ſymptoms of a more or leſs dangerous diſeaſe; and very frequently the patient ſeems to have a pleuriſy, or peripneumony, or an inflammation of the liver, ſpleen, or *Inteſtines*, while in reality the cauſe of the diſeaſe is all the while the ſame; and there is no difference, but that of the matters ſettling on one or another part. *Heiſter*'s Compend. Med. p. 97.

The Method of Cure. All hot medicines muſt be avoided, and the diſcharge of the peccant matter by the diarrhœa promoted by glyſters and by purging medicines. Some adviſe aloes, and other medicines of that kind; others ſena and manna; ſome the purging ſalts; but moſt prefer rhubarb, given in often repeated ſmall doſes. Large draughts of the lubricating decoctions, ſuch as barley-water and water-gruel, are to be given, and emulſions of ſweet almonds and of the cold ſeeds. Small quantities of oil of ſweet almonds are alſo to be given at times, and juleps of the cooling waters and ſyrups moderately acidulated, and powders of nitre, cinnabar, and the common abſorbents, as crabs-eyes and the like, are to be given to take off the pains and ſpaſms, and to attemperate the acrid matter. Bleeding in this fever is not neceſſary, unleſs in plethoric habits, and in thoſe caſes it muſt be done on the acceſs of the diſeaſe, for if done after the third or fourth day it is uſually found to do more harm than good.

The diet in theſe fevers is not to be ſo very thin and weak, as in other acute fevers, but moderate nouriſhment is to be allowed, that the patient may hold his ſtrength ſufficiently to go through it; in the beginning of the diſeaſe however, the patient has uſually an averſion for food, and then it is not to be forced upon him; but when the ſtomach begins to require it, then it is to be given in moderate quantity; and great care muſt be taken that nothing aſtringent or difficult of digeſtion be allowed, but light and innocent meats, and with theſe a little good wine to promote digeſtion. Some alſo have given frequent vomits, by ſmall doſes of ipecacuanha in theſe fevers, and that with very good ſucceſs; and it is remarkable, thot the purple fever mentioned by Stahl, and others, as peculiarly affecting lying-in women, and being very frequent in Saxony for a long time, was by Dr. Wagner, and others, cured by this method: Its origin being found to be a viſcous matter putrifying in the ſtomach and *Inteſtines*; and therefore the diſtemper being properly one of theſe *inteſtinal* fevers, was curable by the ſame methods with them, that is by emptying the primæ viæ.

Some, as Baglivi and Burchard, have called theſe fevers *meſenteric fevers*; but improperly, according to Heiſter, L. c. p. 85.

INTESTINALIS *Sphincter*, in anatomy, a name given by Winſlow to a muſcle of the anus, called by Albinus *ſphincter internus ani*. It is called by Riolan, and others, *ſphincter cutaneus*, and *ſphincter ſuperficialis*.

INTESTINUM *Cæcum*. The fiſh kinds have in general a great number of theſe *cæca*; they are called by the ichthyologiſts *Inteſtinula cæca*, and *appendices pylori*. They are always placed about the pylorus, and the beginning of the *inteſtinal* canal, and ſeem by their number and appearance to contribute not a little to the digeſtion of the food. They are very different in the ſeveral kinds of fiſh, in number, figure, and proportion. 1. In ſome fiſh there are none of them. The cetaceous fiſhes in general are without them, and the cartilaginous of many kinds alſo want them. In the ammodytes or ſand-eel there is only one *cæcum*, and this ſeems the only fiſh that has it ſingle. In many of the pleuronecti they are two in number, and very ſhort. The pearch, ſpari, *&c.* have five, ſix or ſeven of them, and all conſiderably large ones. In ſome fiſh there are eight, ten, or twelve of them, as in the catti, and ſome of the ligyri. In the herring and anchovy, there are ſeventeen or eighteen of them. Some, but not many fiſh, have twenty or more, not arriving

at thirty. The gadi, and ſome other fiſh have thirty; and the coregones and ſalmons, at leaſt ſixty of them. The clupea or thriſſa of authors has at leaſt eighty of them; and the ſword-fiſh, the tunny, the mackrel, and many others, have more than a hundred of them, or have them indeed without number. Their differences in figure are alſo very great. In ſome fiſh they are long and narrow, as in the ſalmons, gadi, and clupeæ. In others, they are very ſhort and thick, as in the pleuronecti, and oſmerus. In the greateſt part of fiſhes they are much ſmaller than the reſt of the guts; but in the mullet and ſand-eel they are nearly as large as the *Inteſtine* itſelf. It is remarkable, that theſe appendices to the pylorus, or *Inteſtine*, are not only found in fiſhes, but in ſome inſects. Dr. Tyſon found three or four of them in that ſpecies of inſect called the blatta. *Artedi*'s Ichthyology. See the article BLATTA.

INTRADA, in the Italian muſic, is uſed to denote an *entry*, and is much the ſame as *prelude*, or *overture*. See the articles PRELUDE, and OVERTURE, *Cycl.*

INTRENCHMENT, in the art of war, all ſorts of works made to fortify a poſt, againſt an enemy. See the article RETRENCHMENT, *Cycl.*

It was a maxim amongſt the Romans, that even in their moſt haſty marches they *intrenched* every night.

INTRITA, a name given by ſome authors to the maltha, a liquid bitumen uſed by the antients inſtead of mortar in building. See the article MALTHA.

INTRODUCTOR, in antiquity, was particularly uſed for an officer, who introduced the Athletæ to the Stadium, or place where they were to contend.

INTRUSIONE, a writ brought againſt an *Intruder*, by him that hath fee-ſimple, *&c.* New Nat. Brit. 453. *Blount*, *Cowel.*

INVADIATUS, in our old writers, a perſon accuſed of any crime, which not being fully proved, he was put *ſub debita fide juſſione*, and called *Invadiatus*. *Blount.*

INVECTIVE, in rhetoric, differs from reproof, as the latter proceeds from a friend and is intended for the good of the perſon reproved; whereas *invective* is the work of an enemy, and entirely deſigned to vex and give uneaſineſs to the perſon againſt whom it is directed. *Voſſ.* Rhet. L. 3. p. 420.

INVOLUCRUM, among botaniſts, expreſſes that ſort of cup which ſurrounds a number of flowers together, every one of which has beſide this general cup its own particular perianthium. The *Involucrum* conſiſts of a multitude of little leaves diſpoſed in a radiated manner. See the article CALYX.

JOA *Muſchata*, in botany, a name uſed by ſome authors for the chamæpitys or ground-pine. *Ger.* Emac. Ind. 2.

JOHNSWORT, or St. JOHN'S-WORT, *Hypericum*, in botany, *&c.* See the article HYPERICUM.

JOINTS (*Cycl.*)—The ſuppleneſs that the *Joints* may be brought to by long practice from the time of infancy, is ſurpriſing. Every common poſture-maſter at a country-fair ſhews us a great deal of this; but the moſt wonderful inſtance we have ever had of it, was in the perſon famous in London fifty or ſixty years ago, whoſe name was Clark, and commonly called Clark the poſture-maſter. This man had found the way by long practice to diſtort many of the bones, which no body before had ever thought it practicable to alter the poſition of; and had ſuch an abſolute command of his muſcles and *Joints*, that he could almoſt disjoint his whole body; ſo that he once impoſed on the famous Mullens by his diſtortions, ſo far that he refuſed to undertake his cure, as ſuppoſing him beyond relief. But, to his amazement, he had no ſooner given him over, than the man reſtored himſelf to the figure and condition of a proper man, with no diſtortion about him. See Phil. Tranſ. N° 242. p. 262.

JOINT-*Cartilage*, or ARTICULATING-*Cartilage*. An *articulating cartilage* is an elaſtic ſubſtance, uniformly compact, of a white colour and ſomewhat diaphanous, having a ſmooth poliſhed ſurface covered with a membrane, harder and more brittle than a ligament; but ſofter and more pliable than a bone. Philoſ. Tranſ. N° 469. p. 515.

When a *Joint-cartilage* is well prepared by the anatomiſt, it feels ſoft, and yields to the touch; but, as ſoon as the preſſure is taken off, reſtores itſelf to its former equality of ſurface. Its ſuperficies, examined by a glaſs, appears like a piece of velvet. If we endeavour to peel off the matter of the cartilage in ſeveral lamellæ, we find it impracticable; but if we uſe a certain degree of force, it ſeparates from the bone in ſmall pieces, and we never find the edge of the remaining part oblique, but always perpendicular to the ſubjacent ſurface of the bone. If we view this edge thro' a microſcope, it appears like the edge of a piece of velvet; that is, it is ſeen to be a maſs of ſhort and nearly parallel fibres, riſing from the bone and terminating at the ſurface of the cartilage; and the ſurface of the bone itſelf is plan'd out into a number of ſmall circular dimples in which the bundles of theſe fibres are fixed. Thus we may very aptly compare the ſubſtance of the cartilage to the pile of velvet, and the ſurface of the bone to the web of ſilk which is the baſis of it.

In both ſubſtances the ſhort threads or filaments ſink in waves on being preſſed, but by the power of elaſticity they both recover their perpendicular direction as ſoon as they are no longer ſubjected to a compreſſing force. Theſe perpendicular fibres, doubtleſs, make the greateſt part of the ſubſtance of the cartilage in its natural ſtate. In the beſt preparations they ſeem to make up the whole; but it is probable, that in the recent ſtate there were a number of tranſverſe fibrils ſerving to connect theſe erect ones together, and form the whole into a ſolid body; and that theſe periſh in making the preparation.

We are told by anatomiſts, that cartilages are covered with a membrane called perichondrium. If they mean the cartilages of the ribs, larynx, ear, *&c.* there indeed ſuch a membrane is very conſpicuous; but the perichondrium of the ſmooth *articulating cartilages* is ſo delicately thin, and ſo firmly braced upon the ſurface, that there is great room to doubt whether it has been rightly underſtood, or demonſtrated.

This membrane has, however, been raiſed by ſome late anatomiſts in pretty large pieces, after macerating, and it is found to be a continuation of that fine ſmooth membrane which lines the capſular ligament folded over the end of the bone; for when that ligament is inſerted on the neck of the bone, or between the inſertion of the ligament and the border of the cartilage, it is very conſpicuous, and may be pulled up with a pair of pincers; but where it covers the cartilage it is connected ſo cloſe, that it is not to be traced while recent, without the greateſt care and delicacy. In this particular it reſembles that membrane which is common to the eye-lids and the fore-part of the ball of the eye, and which is looſely connected with the albuginea, but ſtrongly attach'd to the cornea. From this deſcription it is plain, that every *Joint* of the human body is inveſted with a membrane, which forms a compleat bag, and gives a covering to every thing within the articulation, in the ſame manner as the peritonæum, inveſts not only the parietes but all the contents of the abdomen. Phil. Tranſ. N° 469. p. 517.

The blood-veſſels of the cartilages are ſo ſmall, that they do not admit the red globules of the blood, and conſequently they remained unknown till they were diſcovered by the modern diſcovery of injections, by which the whole vaſcular ſyſtem is filled with a liquid wax, coloured ſo as to be diſtinguiſhed from all other things: nor even by this method are we able to demonſtrate the veſſels of the true cartilaginous ſubſtance in adult ſubjects. But the fat, the glands, and the ligaments will be red with injected veſſels, while not one coloured ſpeck appears on the cartilage itſelf. Yet it is evident, that there are veſſels there, ſince in very young ſubjects after a ſubtile injection they become ſufficiently obvious. By this means their courſe is alſo diſcovered, and is found to be as follows.

All round the neck of the bone there are a great number of arteries and veins which ramify into ſmaller branches, and communicate with one another by frequent anaſtomoſes like thoſe of the meſentery. This might be called the *circulus articuli vaſculoſus*, the vaſcular body of the *Joint*. The ſmall branches of the veſſels divide into ſtill ſmaller ones upon the adjoining ſurface in their progreſs to the center of the cartilage; and we are very ſeldom able to trace them into its ſubſtance, becauſe they terminate abruptly at the edge of the cartilage in the ſame manner with the veſſels of the albuginea of the eye, when they arrive at the cornea. The larger veſſels which compoſe the vaſcular circle plunge in by a great number of holes, and diſperſe themſelves into branches between the cartilage and the bone. From theſe again there ariſes a crop of ſhort twigs, which ſhoot toward the outer ſurface. Whether theſe ſerve for nouriſhment only to the part, or whether they do not pour forth a dewy moiſture of ſervice to the functions of the part, it is not eaſily determined. It is to be obſerved however, that the diſtribution of the blood-veſſels to the articulating cartilages, is very peculiar, and ſeems calculated for the obviating of great inconveniencies. Had they run to the outer ſurface, the preſſure and motion of the two cartilages muſt infallibly have occaſioned frequent obſtructions and inflammations, which would ſoon have rendered our motions painful, and at laſt have deprived us of them; but by creeping round the cartilaginous brim where there is little friction, or under the cartilage where there is none, they are perfectly well defended from theſe accidents. Philoſ. Tranſ. N° 469. p. 518.

It would be very happy, if we could trace the nerves of the cartilages; but in relation to theſe organs we are obliged to be ſatisfied with mere conjecture, as to their exiſtence here, as well as in many other parts of the body. And tho' from the great inſenſibility of cartilages ſome perſons have ſuppoſed, that they were furniſhed with no nerves at all, yet when we conſider that theſe veſſels ſeem neceſſary to the growth and preſervation of any part, we muſt be forced to acknowledge their exiſtence in this, tho' we can neither ſee them nor be ſenſible of their effects.

The *articulating cartilages* are moſt happily contrived to all the purpoſes of motion in the parts. By their uniform ſurface they move upon one another with eaſe; by their ſoftneſs, ſmoothneſs and ſlipperineſs, their abraſion is prevented,

which elſe muſt have happened from ſuch frequent uſe. By their flexibility, the contiguous ſurfaces are always nicely adapted to one another, and the friction diffuſed equally over the whole; by their elaſticity the violence of any ſhock which may happen from running, jumping, or other violent motions, is broken and gradually ſpent; and as the courſe of the cartilaginous fibres appears calculated chiefly for this laſt advantage, we need only, to illuſtrate it, to reflect upon the difference of riding a chamber horſe of wood, and a real one, whoſe motions are ſoftened in all reſpects by the cartilages placed in the *Joints*.

The inſenſibility of the articulating cartilages is wiſely contrived by the great author of our frame, ſince it is wholly owing to this that the neceſſary motions of the body are performed without pain.

An ulcerated cartilage is generally allowed, by the beſt chirurgical writers from Hippocrates to the preſent time, to be a very troubleſome diſeaſe, and one that is more difficult to cure than a caries of the bones; and that when a cartilage is deſtroyed, it is never to be recovered again, is alſo a generally eſtabliſhed opinion. Hildanus in particular, in treating of the diſeaſes of theſe parts, has obſerved, that where a cartilage is by any means deſtroyed, nature uſually ſupplies its place by a callus thrown out from the bone, and that thus a bony anchyloſis, or immoveable continuity, is produced in the place of a moveable *Joint*. In the examining the diſeaſed *Joints*, either after death or amputation, Mr. Hunter obſerves, that he uſually found, according to the nature and ſtage of the diſeaſe, the cartilages in ſome parts reddiſh and lax, and in others ſoft and ſpongy; or that they were raiſed up in bliſters from the bone, or quite eroded, and perhaps the extremities of the bones carious; and finally, ſometimes a bony anchyloſis formed, as Hildanus reports; but that he never ſaw, or indeed heard of, an exfoliation from the ſurface of the cartilage. Now if we compare the texture of the cartilages, and their morbid appearances together, all theſe diſeaſed ſtates will admit of as rational ſolution, as thoſe of perhaps any other part of the vitiated œconomy. Phil. Tranſ. N°. 469. p. 521.

It appears from maceration of the cartilages, that their tranſverſe fibrils are extremely tender and diſſoluble, and that the coheſion of the parts of the ſtrait fibres is ſtronger than their coheſion with the bone. When a cartilage, therefore, is inflamed, and ſoaked in purulent matter, the tranſverſe, or connecting fibres, will ſooneſt give way, and the cartilage will become more or leſs red and ſoft. If the diſorder goes on a little longer, the cartilage does not throw off a ſlough, but ſeparates from the bone where the force of the coheſion is leaſt, and where the diſeaſe ſoon arrives, by reaſon of the thinneſs of the cartilage. When the bone is thus expoſed, the matter of the ulcer, or motion of the *Joint*, corrodes or abrades the bony fibres, and if the conſtitution is good, theſe will ſhoot out a callus, which either cements together the oppoſite bones of the articulation, or fills up the cavity of the *Joint*, and for the future prevents all motion: but if unfortunately the patient labours under a bad habit of body at the time, the malignancy having got root in the bone, will gain ground every day, and the caries will ſpread, till at laſt the only relief will be found the cutting off the limb.

JOINT *Water*, a term uſed by our farriers, for what the old writers in medicine have called hydarthros; a running of a clear ichor from the *Joints*, when they are either wounded or ulcerated; it is common in the diſeaſes of horſes.

JOINTE E, in the manege. See the article HANDFUL.

JOINTRESS, or JOINTERESS, ſhe that hath an eſtate ſettled upon her by the huſband, to hold during her life, if ſhe ſurvives him.

JON, in natural hiſtory, the name of a gem deſcribed by Pliny, and ſaid to be brought from the Eaſt Indies; he deſcribes it as being of a purple or violet colour, but rarely very deep in the tinge. It ſeems to have been a ſpecies of amethyſt.

JONÆ *Piſcis*, the *Jonas Fiſh*, a name given by many authors to the common ſhark, the *canis carcharias* of authors. It has this name from an opinion, that it was the fiſh which ſwallowed up the prophet of that name. But there are many objections to ſuch an opinion. See the articles CANIS and LAMIA.

JONKS, or JONQUES, in ſhip-building, veſſels very common in the Eaſt Indies, about the bigneſs of our fly-boats, but differing in form of building, according to the various methods of the nations in thoſe parts.

JONTHLASPI, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the cruciform kind, conſiſting of four leaves. The piſtil ariſes from the cup, and becomes at length a flat orbicular clypeated fruit, containing only one cell, which holds a flat and orbicular ſeed.

The ſpecies of *Jonthlaſpi*, enumerated by Mr. Tournefort, are theſe: 1. The hoary diſcoide mountain *Jonthlaſpi*, with yellow flowers: And 2. The little ſpiked lunated *Jonthlaſpi*. The firſt of theſe is called, by many authors, ſimply a *thlaſpi*, and the other a *lunaria*. *Tourn.* Inſt. p. 210.

IO PÆAN, among the antients, an exclamation uſed on account of a victory, or ſome proſperous event. Hoffman thinks that *Io Pæan* is a contraction of the Hebrew *Jao*, from *Jehovah*, and פנה, *reſpexit*; and was the ſame with *Jehovah Penoch*, i. e. *Dominus reſpiciat in nos*. Something like this exclamation ſtill remains among the *Symerones*, a people of the Weſt Indies, who on any joyful occaſion frequently cry out *Yo Peho*. *Hoffm.* Lex. in voc.

JOURNCHOPPERS, in our old writers, regrators of yarn; which formerly, perhaps, was called *Journ*. They are mentioned in the Stat. 8 Hen. 6. c. 5. *Blount*, *Cowel*.

JOY (*Cycl.*)—This paſſion has been found to increaſe the perſpiration and urine of human bodies. See the article PERSPIRATION.

JOZO, in zoology, the name of a ſmall ſea-fiſh, of the ſea-gudgeon or rock-fiſh kind, common in the Mediterranean, and called *gobius albus* by ſome authors.

It is ſmaller than any other ſpecies of the gobius, and has larger and rougher ſcales. It is of a paler and ſomewhat bluiſh colour, and the rays or nerves of its foremoſt back fin ſtand out beyond the edge of the fin itſelf, in form of hairs or briſtles. Its ſides are divided by a line running along each, from the gills to the tail, compoſed of ſmall oblong black ſpots. All the fins in this ſpecies are edged with blue, and the belly-fins are wholly blue. It is brought to market at Rome and Venice. *Willughby*'s Hiſt. Piſc. p. 207.

IPECACUANHA (*Cycl.*)—The bark of *Ipecacuanha* is ſaid to be preferable to its root, as an emetic; acting equally well, and with equal ſafety in a ſmaller doſe, either in powder, or infuſion. Six grains of the bark, infuſed for a night in an ounce and a half of old rheniſh, proves a good emetic. See Phil. Tranſ. N°. 476. Sect. 10.

The brown *Ipecacuanha* yields, by diſtillation, a ſmaller quantity of oil than the grey, and the laſt portion of the ſpirit which comes over with the oil, on urging the fire to the greateſt violence, tho' it be conſiderably acid to the taſte, yet does not ſeem to contain leſs, but rather more volatile particles than the ſpirit drawn in the ſame manner from the grey. On mixing the ſpirits of both kinds alſo with ſalt of tartar, the volatile parts of that from the brown, eſcape with more rapidity than thoſe from the ſpirit of the grey, and affect the noſe more ſenſibly.

It is rational to conclude from hence, that if the brown *Ipecacuanha* contains leſs oil than the grey, it alſo contains leſs reſin; and that as this laſt portion of ſpirit contained more volatile parts, it muſt naturally be expected that it ſhould prove more violent in its operation than the grey. This obſervation alſo, which is countenanced by fact, may in ſome degree favour the opinion of thoſe who affirm, that the purgative virtues of medicines are excited by a volatile ſalt, and that they are more or leſs violent, as they contain more or leſs of this ſalt.

The brown *Ipecacuanha*, as well as the grey, will afford two ſorts of extracts, a reſinous and a ſaline one; but both theſe are yielded in a ſmaller quantity from the brown than from the grey, and conſequently the reſiduum is alway greater from the brown. Eight ounces of the grey *Ipecacuanha* yield, with ſpirit of wine, ten drams of the reſinous extract; the ſame quantity of the brown, treated in the ſame manner, yields only ſix drams. From the reſiduum of this quantity of the grey kind, thus diveſted only of its reſin by the ſpirit, there may be procured, by a watery ſolvent, two ounces of a ſaline extract; but the reſidue of the ſame quantity of the brown will yield only five or ſix drams of this extract, by the ſame treatment. The reſidue of the grey, thus diveſted of its reſinous and ſaline parts, will weigh four ounces; and the reſidue of the brown, after the ſame treatment, will weigh near ſix ounces. Hence it is very evident, that the active principles are much more abundant in the grey than in the brown kind of this uſeful root.

If the proceſs of this analyſis be varied, and the watery menſtruum uſed firſt, the proportion of the ſaline extract will be greatly increaſed by it, and that of the reſinous greatly diminiſhed; eight ounces of the grey *Ipecacuanha*, thus treated, yielding three ounces and a half of ſaline extract, and only thirty-ſix grains of the reſinous one afterwards by ſpirit of wine; and the ſame quantity of the brown yielding one ounce and three drams of the ſaline extract, and only twenty-four grains of the reſinous one, by means of ſpirit of wine afterwards uſed. From all this it is eaſy to perceive, that the brown *Ipecacuanha* contains much leſs of the active parts, and much more of the terreſtrial than the grey; and yet it is equally certain from trial, that the brown is much more violent in its operation than the grey.

This ſeems a perplexing ſort of paradox; but to explain it we muſt remember, that the virtues of medicines are not to be meaſured by their bulk nor their weight, the moſt powerful of all acting in the ſmalleſt quantities. It has been obſerved, that the laſt portion of ſpirit drawn from the brown is more pungent and ſtrong than that from the grey; and probably this part of the root has as much power to irritate the internal parts of the inteſtines as the reſinous parts.

Small doſes of *Ipecacuanha* are recommended in diarrhœas of a more ſimple kind, as well as in dyſenteries; and in the fluor albus, we hardly know a better medicine.

IPECATI *Apoa*, in zoology, the name of a Braſilian ſpecies of duck, called *pata* by the Portugueſe; the word in that language expreſſing gooſe. It is nearly of the ſize of the gooſe, but is exactly of the ſhape and figure of the common duck. The head, neck, belly, and lower part of the tail, are white, and the back, wings, and top of the head, of the fine green colour of the necks of our drakes; and its belly has ſome few black variegations. And over the origin of the beak there is a fleſhy tubercle, which is black, variegated with white ſpecks. Its legs and feet are of a browniſh grey. The male ſeems to be diſtinguiſhed from the female, in this ſpecies, by its having ſome long feathers of its wings of a ſhining brown. It is very common in the Braſilian rivers, and is fleſhy and well taſted. *Marggrave*, Hiſt. Braſ.

IPECA GUACA, in zoology, the name of a Braſilian ſpecies of duck. It is of a middle ſize between the duck and gooſe, and is kept tame there for breeding and eating. It is a very beautiful colour'd bird. It has a very elegant red ſpot on the middle of its head. Its whole upper part is of a very beautiful white like the ſwan. Its legs and feet are yellow. It will fatten as well on dry land as when it has the uſe of water, and lays a vaſt number of eggs. *Piſo*, Hiſt. Braſil.

IPECU, in zoology, the name of a Braſilian bird of the woodpecker kind, called by Mr. Ray, *picus varius Braſilienſis*. It is of the ſize of a common pigeon. Its head is of a very gay and beautiful red, and has a very beautiful creſt of feathers of the ſame colour on it. Its neck is black, but has a very broad white line on each ſide. Its wings are black on the outſide, and red within. Its tail is black; and its belly and thighs are mottled with black and white. Its beak is ſtrait, and very hard and ſharp, and it pierces the bark and wood of trees with it, in the ſame manner as the European kinds. *Marggrave*, Hiſt. Braſ..

IPERAQUIBA, in zoology, a name by which ſome have called the *remora*, or ſucking fiſh, called alſo by the Portugueſe, *piexe pogador*, and *piexe pioltho*. Ibid. p. 117.

IPPOSELINUM, or HIPPOSELINUM, in botany, a name given by the antients to the plant from the roots of which the fineſt myrrh was obtained by inciſion. Some alſo have called this plant *ſmyrnium*; but it is evident, that it could not be the ſame with the *Hippoſelinum* or *ſmyrnium* of our authors, which is the herb Alexanders, ſince the juices of this plant have no reſemblance to myrrh. Dioſcorides calls the plant *ſmyrna*, and diſtinguiſhes it from the *ſmyrnium* of thoſe times; but others have made the *ſmyrna* and *ſmyrnium* the ſame.

IRACUNDUS *Muſculus*, in anatomy, a name given by ſome authors to one of the muſcles of the eye, called alſo the *rectus exterior* and *abducens*. It is one of the *quatuor recti oculi* of Albinus, and is called by him and Douglaſs, as well as many others, the *abductor*. See the article ABDUCTOR, *Cycl.* and *Suppl.*

IRINGIUM, a name given by ſome of the old writers on the materia medica, to a root called *ſecacul* by the Arabians, and which, from the ſimilitude of the Latin name with the word *eryngium*, many have ſuppoſed to be the ſame root which was well known to the Greeks and Romans in medicine, and ſtill is in great repute with us on the ſame occaſions. The interpreters of Aviſenna and Serapion always render the word *ſecacul* by *Iringium*, never by *eryngium*; and, according to their accounts, it was a root much reſembling ginger in ſhape, and was brought from the Eaſt Indies, and ſuppoſed to have the virtue of promoting venery.

We at this time eſteem the *eryngium* a provocative, and it is kept candied, and eaten for that purpoſe: But this, probably, is only an error founded on our ſuppoſing it the ſame with the *Iringium* of the Arabians; for Dioſcorides, who gives a full account of the virtues of his *eryngium*, which is the ſame with ours, ſays nothing of its poſſeſſing any ſuch quality; and the Greeks, at his time, were as famous for finding out the virtues of plants in this reſpect, as the eaſtern nations are at preſent, tho' not quite ſo credulous. It is poſſible that the *Iringium* may be the ſame with the *ginging* or *ginſeng*, ſo famous in the Eaſt at this time for the ſame virtues. See the article GINSENG.

IRIS (*Cycl.*)—When the aqueous humour of the eye is evacuated at a wound or ulcer of the cornea, there is danger of the *Iris* growing to it. To prevent this, the patient is to be expoſed to the light from time to time, till the cornea is again raiſed by the aqueous humour. The light occaſions a motion in the *Iris*, which may prevent its adheſion. *Demours*, ap. Med. Eſſ. Abr. V. 2. p. 508.

IRIS, the *flower de luce*, in the Linnæan ſyſtem of botany, a diſtinct genus of plants, under which that author comprehends the *Iris*, the xyphion, the ſiſyrinchium, and hermodactylus of Tournefort, as all plants of the ſame genus, the characters of which are; that there is no flower cup, but ſome ſingle ſpathæ interwoven with one another, imbricated, dividing the flowers from one another, and remaining after the flowers are fallen off. The flower is divided into ſix parts; the petals are long, and obtuſe; the three exterior ones are bent back; the three interior are erect and acute, and the whole number joined at their lower ends. The ſtamina are three pointed filaments lying on the bent petals; and the antheræ are oblong, ſtrait, and depreſſed. The germen of the piſtillum is oblong, and is placed below the receptacle. The ſtyle is ſingle, and very ſhort. The ſtigma very large, and divided into three parts; the ſegments, which reſemble ſo many petals of a flower, are broad, and bent back, and preſs upon both the petala and ſtamina; the extremities of theſe are bifid. The fruit is an oblong angular capſule, with three cells and three valves. The ſeeds are many in number, and very large. See Tab. 1. of Botany, Claſs 9.

In ſome of the plants of this genus the capſule is trigonal, in others hexangular. *Linnæi* Gen. Plant. p. 11.

The characters of *Iris*, according to Tournefort, are theſe: The flower is liliaceous, conſiſting of one leaf, and being of a tubular ſhape at the bottom: Hence it is expanded and enlarged, and forms ſix parts, three of which point upwards, and three downwards. The piſtil ariſes from the bottom of the flower, and is furniſhed with three petals, which are arched, and ſo bent down upon the reflex leaves of the flower, that they reſemble a ſort of palate. The flower-cup finally becomes an oblong fruit, which opens into three parts at the end, and is ſeen to be divided into three cells, which contain roundiſh and ſometimes flattiſh ſeeds. To this it is to be added, that the root is fleſhy, oblong, and of the creeping kind, and not covered with coats.

The ſpecies of *Iris*, enumerated by Mr. Tournefort, are theſe: 1. The common wild or German *Iris*. 2. The common garden broad-leav'd *Iris*, with purpliſh blue flowers. 3. The garden *Iris*, with pale blue flowers. 4. The little pale blue-flower'd garden *Iris*, with a white covering. 5. The white German garden *Iris*. 6. The white Florentine *Iris*. 7. The common Illyrian *Iris*. 8. The very large-flower'd black and white *Iris*. 9. The little broad-leav'd *Iris*, with white flowers and blue edges. 10. The little broad-leav'd *Iris*, with white flowers, and pale purple edges. 11. The many-flower'd blue Aſian *Iris*. 12. The purple Aſian *Iris*. 13. The reddiſh flower'd ſcentleſs *Iris*. 14. The *Iris* with the ſmell of the oxycantha. 15. The great broad-leav'd Roman blue *Iris*. 16. The great Dalmatian *Iris*, with a pale violet-colour'd flower. 17. The bluiſh purple Conſtantinople *Iris*. 18. The many flower'd blue Damaſcus *Iris*. 19. The broad-leav'd ſweet-ſcented German *Iris*. 20. The broad-leav'd German *Iris*, with the ſmell of elder flowers. 21. The broad-leav'd German *Iris*, with deep yellow flowers. 22. The broad-leav'd German *Iris*, with white and purple flowers. 23. The broad-leav'd *Iris*, with the ſmell of the oxycantha. 24. The broad-leav'd Pannonian *Iris*, with double flowers. 25. The broad-leav'd *Iris*, with green and white flowers. 26. The broad-leav'd *Iris*, with naked ſtalks. 27. The broad-leav'd *Iris*, with white flowers, ſtreaked with red. 28. The broad-leav'd Dutch *Iris*, with the ſmell of elder. 29. The variegated broad-leav'd elder-ſcented *Iris*. 30. The greater purple-flower'd broad-leav'd *Iris*, with the elder ſcent. 31. The broad-leav'd *Iris*, with whitiſh ſtriated flowers. 32. The low broad-leav'd purple *Iris*. 33. The two-flower'd *Iris*, with ſmall flowers, ſmelling like lilly of the valley. 34. The great-flower'd Illyrian *Iris*. 35. The ſmall Dalmatian *Iris*, with pale purple flowers. 36. The yellow-flower'd garden *Iris*. 37. The variegated yellow garden *Iris*. 38. The yellow-flower'd Tripoli *Iris*, with extremely long leaves. 39. The common wild marſh *Iris*, with yellow flowers, called the yellow *flag-flower*. 40. The wild yellow flag-flower, with ſhorter and bluiſh green leaves. 41. The pale wild yellow *Iris*. 42. The wild ſtinking *Iris*, called *xyris*, and ſtinking *gladwin*. 43. The narrow-leav'd meadow ſtinking *Iris*, or *gladwin*. 44. The taller narrow-leav'd not ſtinking *Iris*. 45. The lower narrow-leav'd meadow *Iris*. 46. The narrow-leav'd ſea *Iris*. 47. The leſſer narrow-leav'd ſea *Iris*. 48. The narrow-leav'd garden *Iris*, with changeable colour'd flowers. 49. The narrow-leav'd garden *Iris*, with whitiſh flowers, marked with ſtreaks of red. 50. The narrow-leav'd *Iris*, with two colour'd flowers. 51. The greater narrow-leav'd *Iris*, with the ſmell of a plum. 52. The leſſer narrow-leav'd *Iris*, with the plum ſmell. 53. The two-flower'd dwarf *Iris*, with large deep purple flowers. 54. The low *Iris*, with blackiſh purple flowers. 55. The low *Iris*, with variegated flowers. 56. The low *Iris*, with a blackiſh purple flower. 57. The low *Iris*, with plain purple flowers. 58. The low *Iris*, with white flowers, and ſtreaks and edges of blue. 59. The low Pyrenean *Iris*, with greeniſh yellow expanded leaves. 60. The low Pyrenean *Iris*, with green expanded leaves, variegated with blue. 61. The little low *Iris*, with a bluiſh purple flower. 62. The low *Iris*, with red flowers. 63. The low dwarf *Iris*, with variouſly painted flowers. 64. The low *Iris*, with purple and yellow flowers. 65. The low *Iris*, with pale and whitiſh flowers. 66. The leſſer dwarf *Iris*, with variegated flowers. 67. The leſſer *Iris*, with white flowers. 68. The dwarf *Iris*, with yellow flowers. 69. The dwarf *Iris*, with duſky yellow flowers. 70. The low *Iris*, with pale yellow flowers. 71. The low *Iris*, with white flowers, variegated with veins of many colours. 72. The

The dwarf French ſtone *Iris*. 73. The broad-leaved low ſtone *Iris*. 74. The larger leaf-leſs ſtone low *Iris*. Tourn. Inſt. p. 360.

The Florentine dry *Iris*, or orrice root, is an expectorant and attenuant. It is given with ſucceſs in aſthmas, and many other diſorders of the breaſt and lungs. The doſe is from ten to fifteen grains in powder. The juice of the freſh root of our *Iris*, is an excellent medicine in dropſies; and the beſt way of giving it is with white wine, an ounce or two for the doſe, which muſt be taken every two or three days. It works both by vomit and ſtool, and diſcharges a very great quantity of phlegm.

We have a great many ſpecies of this plant preſerved in gardens, and moſt of them very beautiful; their roots are tuberous, and increaſe very faſt, and all the ſpecies are eaſily propagated by parting them. The beſt ſeaſon for doing which, is in Auguſt, when their flower leaves are decayed, and the whole plant begins to change colour; but this ſhould always be done when the weather is moiſt, ſo that if the month of Auguſt ſhould prove very dry, it ſhould be deferred till September, though it is beſt to do it ſooner if it can be. They all love a ſhady and moiſt place. If too much dung is uſed to the ground, it rots their roots; and if they ſtand expoſed to the ſun, their flowers are but of very ſhort duration. They ſhould be taken up once in two years, to prevent their extending their roots too far, for they are very apt to ſpread, and to harbour all ſorts of vermin.

The curious may raiſe the ſeveral ſpecies from their ſeeds, which if taken from the choiceſt flowers, and cultivated with care, uſually afford a fine variety in the flowers of the plants they produce. They ſhould be ſown ſoon after they are ripe on an eaſt border; they will come up in ſpring, and the year following will flower. *Miller*'s Gard. Dict.

IRIS *lutea paluſtris*, the *yellow flag flower*. The common people of Scotland have found out a uſe of this plant, which has eſcaped the moſt accurate writers on botany. In that country the common ink is made of it. They cut ſome of theſe roots into thin ſlices, and either boil or infuſe them in water till the liquor is highly tinged with them; they then pour it clear off; and then putting into it the blade of a knife, or any other piece of iron, they rub it hard with a rough white pebble common there, and by degrees the liquor becomes black; they continue rubbing it till it is as deep a black as they require, and it is a tolerable good ink. Philoſ. Tranſ. N° 117.

The juice of this plant mixed with ſyrup of buckthorn, is reckoned an effectual hydragogue. See Med. Eſſ. Edinb. vol. 5. art. 8.

IRIS is alſo a name given by ſome authors to a peculiar ſpecies of ſpring cryſtal, remarkable for its giving the rainbow colours in reflection. This, however, being a property more or leſs found in all the kinds of ſprig cryſtal, and theſe much reſembling one another, it became applied to ſprig cryſtal in general; and *Iris*, inſtead of being the name of a peculiar ſpecies, was underſtood as a ſynonymous term for common cryſtal. Dr. Hill has, however, from the accounts of the authors who firſt gave a name to this body, aſcertained it to be properly the denomination of a peculiar ſpecies of ſprig cryſtal, which he has diſtinguiſhed by the name *ellipomacroſtylum albidum*, *pyramide longiſſima*, or whitiſh ſprig cryſtal, with a very long pyramid, which is found in great abundance in Germany, Italy, and England, adhering to the ſurfaces of fiſſures in ſtone quarries. *Hill's* Hiſt. of Foſſ. p. 179.

IRIS *Marina*, the *Sea Rainbow*. This elegant appearance is generally ſeen after a violent ſtorm, in which the ſea-water has been in vaſt emotions. The celeſtial rainbow has great advantage over the marine one in the brightneſs and variety of the colours, and in their diſtinctneſs one from the other; for in the ſea rainbow there are ſcarce any other colours than a duſky yellow on the part toward the ſun, and a pale green on the oppoſite ſide. The other colours are not ſo bright or ſo diſtinct as to be well determined, but the ſea rainbows are more frequent and more numerous than the others. It is not uncommon to ſee twenty or thirty of them at a time at noon-day. Obſerv. ſur l'Aſie, p. 292.

IRON (*Cycl.*)—It would ſcarce have been believed, till experiments confirmed it, that *Iron* makes a part of almoſt all ſorts of ſubſtances. Mr. Geoffroy attempting to produce *Iron* by chemiſtry out of ſeveral ingredients, into which it may be decompoſed, wanted firſt to find ſuch as in themſelves contained no *Iron*. He found that the aſhes of all vegetable bodies whatever, contained more or leſs of that metal; and Mr. Lemeri afterwards, in his analyſis of honey, found *Iron* in the calcined caput mortuum of that ſubſtance, many particles of it adhering to a knife that had been touched on a magnet. Mem. Acad. Par. 1706.

This had much puzzled the thoughts of the chemiſts, when Mr. Lemeri at length attempted to account for it in this manner. All earth is impregnated with a ferrugineous or vitriolic matter, and this therefore muſt be received into the roots of plants in their growth, and make a part of their ſubſtances. It is, however, in too ſmall a quantity, and in particles too much diſſeminated, to ſhew itſelf in the ſtalks or leaves of the plant; but when the whole has been calcined, the fire collecting together its ſeparated particles, they then form ſmall maſſes which act as *Iron*, and apply themſelves to the magnet.

Beſides this, the ſame author gives another explication of this phænomenon, according to which he ſuppoſes that there was abſolutely no *Iron* in the plant itſelf in its natural ſtate, but that the fire in calcining the aſhes, has converted a part of them into that metal.

The firſt of theſe has the faireſt appearance of truth, but before it can be determined with any degree of certainty which, or if either be right, it ſeems neceſſary to be perfectly informed whether there may not be in nature other particles of matter, beſide thoſe of *Iron*, capable of being attracted by the magnet. This, however, there ſeems at preſent no poſitive argument to ſupport, or reaſon to ſuppoſe; and on the other hand, it is not only in all vegetable aſhes that particles of *Iron* are diſcovered by the magnet, but in animal ones; the aſhes of caſtor having been found by the younger Lemery to contain alſo *Iron* in as large a proportion as thoſe of honey and of vegetables.

To try whether theſe particles attracted by the magnet in the aſhes of vegetables were really *Iron*, this author collected a ſmall quantity of them together by means of a knife touched on the magnet, and expoſing them to the focus of the great burning-glaſs belonging to the then duke of Orleans, they were found to be melted by that heat in the ſame manner as common *Iron*, and to be attended with all the ſame circumſtances in the ſeveral ſtates of fuſion and diſſipation. It ſparkled greatly while ſoft, and finally was reduced to a ferrugineous earth or bole, in all reſpects the ſame with that ſeparated by the ſame means from filings of *Iron*, or from the magnet. When this matter is thus proved to be real *Iron*, the doubt how it is able to get into the minute veſſels of plants, is cleared, by conſidering that *Iron* is not only preſent in all earth, but is alſo very eaſily diſſolved by all ſorts of ſalts, and takes different forms with every one, according to its ſeveral nature. When it is found in earths which contain an acid analogous to that of vitriol, ſulphur, or alum, it becomes converted into a ſalt known by the name of vitriol; and what objection can there be againſt the ſuppoſing that this ſalt, when diſſolved in a ſufficient quantity of water, is received into the veſſels of plants growing in the earth where it abounds; and we cannot doubt the diviſibility of the particles of *Iron* in the ſtate of this ſalt, being great enough to make it capable of paſſing even into the moſt minute veſſels of plants, when we conſider that a grain of vitriol diſſolved in nine thouſand times its own weight of water, is capable of giving colour to the whole, and with it a ſenſible taſte of the metal from which it had its origin.

The ſpecific gravity of *Iron* has been by ſome ſuppoſed to be a reaſon againſt the believing its aſcent in the veſſels of plants; but this appears of no weight, when we conſider that all flowers are found, on a chemical analyſis, to contain earth, and that earth is heavier than *Iron* in the ſtate of vitriol; and that the metals in the ſtate of vitriols, do often riſe in vapour, and that without any great heat, is plain from this experiment, that if blue, green, and white vitriol be put together into a box, and covered down, the natural evaporations of each falling confuſedly on the others, will change the colour of every one on their upper ſurface, while that which touches the bottom of the box remains unaltered. If vitriol be put into an earthen veſſel, and water poured on it in ſmall quantity only to moiſten it, the *Iron* loaded with its acids, will be found in a little time to aſcend up the ſides of the pot to the top. This is a ſecond proof that *Iron* in the ſtate of vitriol is to be raiſed or ſublimed with great eaſe. There is, however, beſides theſe, yet another more convincing.

When ſpirit of nitre is poured upon filings of *Iron*, there ariſes an ebullition attended with ſo great heat that the hand can ſcarce be held upon the outſide of the veſſel. After the ebullition the liquor becomes red, and greatly loaded with the diſſolved *Iron*. If oil of tartar be added to this liquor, there is raiſed a moderate ebullition, and the mixture ſwells greatly. After this there are found a number of branches very beautifully arranged on the ſides of the veſſel, and theſe continue to form themſelves under the eye, while there is no fermentation nor ebullition in the liquor. Theſe curious figures at length cover the whole ſurface of the veſſel, and riſing over the rim of it, fall on the outſide, and cover that alſo. This beautiful vegetation may be varied a great many ways by the different proportions of the ingredients; but in every proceſs it ſhews how very eaſily *Iron* may be made to aſcend upwards, and that to great heights; and when we conſider the power of the heat of the ſun, and of the ſuction of the roots of plants, which are in a manner ſo many ſyphons acting together upon the juices of an earth, among which there are particles of *Iron* thus diſſolved; we are not to wonder that *Iron* is conveyed into the veſſels of the plant, or found afterwards in its aſhes. The wonder would be, that there ſhould be any vegetable aſhes which did not afford *Iron*, but that does not appear yet to have been found in regard to any. Mem. Acad. Par. 1706.

On expoſing a piece of *Iron* of a dram weight to the focus of the great burning-glaſs, it became immediately red-hot; then its ſurface was covered with a blackiſh ſcum, looking like pitch or bitumen. If the *Iron* be taken away in this ſtate, this black matter is found to have formed a thin cruſt which covers it, and eaſily falls off on ſtriking on the backſide of the *Iron*; and the ſurface of the *Iron*, which was covered by it, appears whiter than this metal uſually does. This covering is, according to Mr. Homberg, a part of the oily matter of *Iron*, which always ſeparates itſelf from that metal when it is about to melt, and remains ſome time before it is evaporated. If the piece of *Iron* be continued longer in the focus, on a piece of charcoal, it ſoon perfectly melts, and throws out very bright ſparks; theſe are very numerous, and ſometimes are diſcharged to a foot diſtance. If theſe ſparks are caught upon paper, they appear upon examination to be ſo many globular particles of *Iron*, and are for the moſt part hollow. If the *Iron* be continued yet longer in the focus, it diſſipates intirely in form of theſe ſparks, and nothing remains of it.

This ſparkling of the *Iron* appears to be wholly owing to the ſulphureous part of the charcoal acting upon the oily part of the *Iron*; for if it at any time happens that the ſurfaces are ſeparated by a bed of aſhes, the *Iron* then ceaſes to ſparkle, and remains in a quiet ſtate of fuſion; but if by any accident the bed of aſhes is diſcompoſed, and the *Iron* becomes touched again by the charcoal, it immediately ſparkles as before. The aſhes are ſometimes vitrified by the heat, and then they either mix among the melted metal, and make together a ſort of half vitrified maſs, or elſe the glaſſy matter of the aſhes ſwims on the ſurface of the melted *Iron* in round globules; theſe are ſometimes clear and tranſparent, ſometimes opake and obſcure, according as they contain more or leſs of the metal. If after the melted *Iron* has been ſuffered to cool upon the charcoal, it be again expoſed to the focus of the glaſs upon a piece of ſtone, it then will ſparkle very violently, and wholly diſſipate itſelf, which it otherwiſe would not have done, if it had not been before fuſed upon the charcoal.

If ſteel and *Iron* be expoſed together to the focus of the glaſs upon a piece of ſtone, they both become red-hot and melt, but never ſparkle; they emit large fumes, and the metal becomes thin like oil, and if taken away in this ſtate, they fix, when cold, into regulus's uſually of a ſtriated texture. Theſe metals would be vitrified in a little more time in the focus, but the matter which they are laid upon vitrifies alſo, and by that means there is a confuſion of the two ſubſtances. The regulus before mentioned is a ſort of half vitrified matter; it is very brittle, and of an obſcure duſky brown, and is no longer in the ſtate of *Iron*; but as it has been reduced to this ſtate merely by depriving it of its oil or ſulphur, it may be again reſtored to its ductility and true metalline ſtate, by giving it again a ſulphureous matter of the ſame kind. This may be done by laying it in the focus again upon a piece of charcoal, which will reſtore its oil to it: in this caſe it melts readily, and remains a long time in fuſion without ſparkling, but at length it begins to ſparkle as common *Iron*; and if taken away at that time, it is found to be common *Iron* again, only ſomewhat whiter and more compact than before. Mem. Acad. Par. 1709.

It appears from the whole, that *Iron* contains an oil or ſulphureous principle, which is what renders it bright, malleable, and fuſible; that this oil is carried off from the metal by the ſun's heat, when it is held ſome time in fuſion, nay, and that this oil is even carried off in ſome degree by a common fire, which though not capable of melting *Iron*, yet reduces its ſurface in large pieces into a reddiſh ruſt. The metal diveſted of this oil by the ſun, appears a reguline matter, not unlike antimony in colour, and ſeems a half vitrified ſubſtance; and there ſeems no doubt but that this would be perfectly vitrified, if there were any way of holding it a ſufficient time in the focus, without melting the ſubſtances alſo on which it is ſupported. This glaſſy, or reguline matter requires only a ſmall quantity of oil to be reſtored to its priſtine ſtate of metal, and it readily receives this oily matter from charcoal; whence it ſeems no raſh inference that the oil of charcoal, and that of *Iron*, are ſubſtances not very different in their nature, ſince the one can thus replace the other; but there is evidently ſome difference, ſince the *Iron* filled with the oil of charcoal ſparkles in this trial; whereas common *Iron* does not ſo till laid upon charcoal and melted on it, in which ſtate it probably loſes ſome of its own ſulphurs, which are replaced from the charcoal.

Of all the metals *Iron* is the only one which ſparkles in the focus of the burning-glaſs, and this is probably owing to the prevalence of a vitriolic ſalt in it, which is very greedy of ſulphurs; and to this alſo it is probably owing that *Iron* conſumes the charcoal on which it is fuſed, much more quickly than any other metal. Id. ibid.

IRON, in medicine, is ſaid to have greater virtues than any of the other metals, which is not to be wondered at, as being the only one that is in a manner ſoluble in the human body. All the other metals, whether hard or ſoft, poiſonous or ſalutary, nay, even fluid mercury itſelf, ſwallowed in their crude ſtate, paſs out of the body again unaltered; but this is not the caſe with *Iron*, its crude filings are often taken as a medicine, and are always ſo much acted upon by the juices, as to produce conſiderable effects. It is ſo eaſily wrought upon out of the body alſo by fire, and by different menſtruums, that it becomes an aperient or aſtringent, as it is differently treated; and is, under proper management, greatly ſuperior to all other medicines in chronic caſes.

Its virtues internally were not unknown to the antients; Dioſcorides attributes an aſtringency and aperiency both to it, and preſcribes it in hæmorrhages. He alſo recommends its ruſt, or *crocus martis*, in ſuppreſſions of the menſes; though he on the other hand preſcribes wine or water, in which red-hot *Iron* had been quenched, as an aſtringent in dyſenteries, diarrhœas, and weakneſſes of the ſtomach.

It ſeems to act in the human body principally by means of its vitriolic ſalt; and if we rightly underſtand the nature of that ſtyptic ſalt, we ſhall not be at a loſs to comprehend how a metal that abounds ſo with it, acts in two ſuch different manners, while both ariſe from the ſame principle, though they ſhew themſelves in various forms.

Every preparation alſo of *Iron* is both aperient and aſtringent in degree; and the only difference between them is, that ſome of them operate more ſtrongly one way, ſome the other. Thoſe in more frequent uſe at preſent are, 1. The crude filings reduced to an impalpable powder. 2. The ſalt or vitriol of *Iron*, called *ſal martis*. 3. The *crocus martis aperiens*. 4. *Tinctura martis cum ſpiritu ſalis*, 5. *Flores martiales*, or flowers of *Iron*. 6. The *vinum chalybeatum*. Theſe are all accounted aperients. Among the aſtringents the two capitals ones are, 7. The *crocus martis aſtringens*; and 8. The *tinctura antiphthyſica*, or, as it is called in the New London Diſpenſatory, *tinctura ſaturnina*.

How to gild *Iron* with water-gold. See the article GILDING.

IRON *Furnaces*. Theſe furnaces as they are employed in running the moſt difficult of fuſion of all metals, ſo they are of all others contrived the largeſt, and capable of carrying heat to the greateſt degree. When they are to be uſed, they are firſt filled up to the top with coals; and the lower part being lighted; the top, and all other parts of the furnace where the air could have paſſage, are cloſed firmly up with *Iron* plates laid one over another. The conſequence of this is, that the fire is put out, and the whole is kept in this ſtate ten or twelve days. At the end of this time the furnace is opened, and the coals are found all black, without a ſingle ſpark of fire in any part, yet extremely hot, and reduced to a tenth part of their quantity. When the furnace has been thus opened about a quarter of an hour, the matter begins to take fire of itſelf by the mere contact of the air. The firſt appearance of this is very remarkable, there ariſes a very bright flame from ſome of the coals, which plays about their ſurface, and ſpreads itſelf from one to another, without the appearance of the leaſt ſpark of fire in any part of any of the coals. The ore of the *Iron* is for the firſt day put only in the middle of the furnace, and that but in ſmall quantity; the next day more, and every day afterwards more and more is put on, and by degrees it is ſpread over the whole ſurface of the furnace to the edges. This is the method of working the ore to the utmoſt advantage, and with the moſt diſpatch. The whole proceſs for one furnace of ore is finiſhed in about eight days from the time of the opening the top; all the uſe of the firſt quantity of coal, is only thoroughly to warm the ſides and walls of the furnace; and it is after this to be kept carefully ſupplyed with fuel, and the ore only ſpread out toward the ſides as the extreme heat, moſt ſenſible in the center, encreaſes. If too much be laid on of the ore at firſt, there is always a loſs from the quantity of metal. The quantity of the coals neceſſary to any given quantity of ore, differs in proportion to the advantageous or faulty ſtructure of the furnace. In the very beſt conſtructed ones, the weight of the coals and of the ore need be no more than equal. The flame which makes its way out of the bottom of the furnace, is of different colours, according to the nature of the ore and of the coals; ſometimes red, ſometimes yellow, and ſometimes green. That which iſſues out from the top of the furnace is of a red colour, and aſcends in a ſort of ſpiral line reſembling the ſound of diſtant falls of waters as it mounts up. With all the care that can be taken to heat the ſides of the furnace, and to keep them hot, the middle is always greatly the hotteſt, and the ore ſooneſt runs into metal there. *Swedenborg* de Ferro & Igni.

IRON *Ore*. In the *Iron* works in Staffordſhire, after the ore is dug, before it be fit for the furnace, they burn or calcine it on the open ground with ſmall charcoal, wood, or ſea coal, to make it break into ſmall pieces, which will be done in three days. *Plott*, Nat. Hiſt. Staff. c. 4. n. 21.

This they call annealing or fitting it for the furnace. *Hought.* Collect. N° 271. See IRON *Furnaces*, ſupra.

Iron may be procured from its ore in a cloſe veſſel in the following manner: Roaſt for a few minutes in a teſt, placed under a muffel in a pretty ſtrong fire, two centners of *Iron* ore groſsly powdered, that the volatile particles may be in part diſſipated, and the ore ſoftened in caſe it be too hard.

When it is grown cold, beat it to a very fine powder, and roaſt it a ſecond time in a ſtronger fire till it emits no ſmell, then take it out of the fire.

Compoſe a flux of three parts of the common white flux, and one part of powdered glaſs, and add of ſandiver and coal-duſt of each one half part. Add of this flux three times the quantity of the roaſted ore, and mix the whole very well together; then take a good crucible well luted within, and put into it the ore mixed with the flux; cover it with common ſalt, and ſhut it cloſe with a tile, and with lute applied to the joints. Put the common wind furnace upon its bottom part, having a bed made of coal-duſt; introduce into the furnace a ſmall grate ſupported on its iron bars, and a ſtone upon it whereon the crucible may ſtand; ſurround the whole with hard coals, not very large, and light them at top. Make the fire very ſtrong, and continue to add freſh fuel, that the veſſel may never be naked at top. When the fire has thus been continued in its full ſtrength for an hour, take out the veſſel, and ſtrike on the floor where it ſtands, to collect all the particles of *Iron* into a body, and when cold break the veſſel, and you will find the pure *Iron*. *Cramer*'s Art of Aſſaying, p. 338.

Several attempts have been made to run *Iron* ore with pit-coal, but we meet with no account of the ſucceſs of ſuch attempts: However, Mr. Maſon informs us, that at Colebrook Dale in Shropſhire, Mr. Ford makes *Iron* brittle or tough as he pleaſes, from *Iron* ore and coal, both got in the ſame dale; there being cannon thus caſt, ſo ſoft as to bear turning like wrought *Iron*. Phil. Tranſ. N° 482. Sect. 6.

IRON-*Wort*, in botany. See the article SIDERITIS.

IRREDUCIBLE *Caſe*, in algebra, is uſed for that caſe of cubic equations where the root, according to Cardan's rule, appears under an impoſſible or imaginary form, and yet is real. Thus in the equation, $x^3 - 90x - 100 = 0$, the root, according to Cardan's rule, will be $x = \sqrt[3]{50 + \sqrt{-24500}} + \sqrt[3]{50 - \sqrt{-24500}}$, which is an impoſſible expreſſion, and yet one root is equal to 10; and the other two roots of the equation are alſo real. Algebraiſts, for two centuries, have in vain endeavoured to reſolve this caſe, and bring it under a real form; and the queſtion is not leſs famous among them, than the ſquaring of the circle is among geometers.

It is to be obſerved, that as in ſome other caſes of cubic equations, the value of the root, tho' rational, is found under an irrational or ſurd form; becauſe the root in this caſe is compounded of two equal ſurds with contrary ſigns, which deſtroy each other; as if $x = 5 + \sqrt{5 + 5 - \sqrt{5}}$; then $x = 10$; in like manner, in the *irreducible* caſe, when the root is rational, there are two equal imaginary quantities, with contrary ſigns, joined to real quantities; ſo that the imaginary quantities deſtroy each other. Thus the expreſſion: $\sqrt[3]{50 + \sqrt{-24500}} = 5 + \sqrt{-5}$; and $\sqrt[3]{50 - \sqrt{-24500}} = 5 - \sqrt{-5}$. But $5 + \sqrt{-5} + 5 - \sqrt{-5} = 10 = x$, the root of the propoſed equation.

Dr. Wallis ſeems to have intended to ſhew, that there is no caſe of cubic equations irreducible, or *impracticable*, as he calls it, notwithſtanding the common opinion to the contrary.

Thus in the equation $r^3 - 63r = 162$, where the value of the root, according to Cardan's Rule, is, $r = \sqrt[3]{81 + \sqrt{-2700}} + \sqrt[3]{81 - \sqrt{-2700}}$, the doctor ſays, that the cubic root of $81 + \sqrt{-2700}$, may be extracted by another impoſſible binomial, *viz.* by $\frac{9}{2} + \frac{1}{2}\sqrt{-3}$; and in the ſame manner, that the cubic root of $81 - \sqrt{-2700}$ may be extracted, and is equal to $\frac{9}{2} - \frac{1}{2}\sqrt{-3}$; from whence he infers, that $\frac{9}{2} + \frac{1}{2}\sqrt{-3} + \frac{9}{2} - \frac{1}{2}\sqrt{-3} = 9$, is one of the roots of the equation propoſed. And this is true: But thoſe who will conſult his Algebra, p. 190, 191, will find that the rule he gives is nothing but a trial, both in determining that part of the root which is without a radical ſign, and that part which is within: And if the original equation had been ſuch as to have its roots irrational, his trial would never have ſucceeded. Beſides, it is certain, that the extracting the cube root of $81 + \sqrt{-2700}$, is of the ſame degree of difficulty, as the extracting the root of the original equation $r^3 - 63r = 162$; and that both require the triſection of an angle for a perfect ſolution. See M. de Moivre in the Appendix to Saunderſon's Algebra, p. 744, ſeq.

For Cardan's rule. See the article *Cubic* EQUATION.

IRREDUCTIBLE *Caſe*, in algebra. See the article IRREDUCIBLE.

IRREGULAR *Leap*, (*Cycl.*) in muſic. See the article LEAP.

ISABELLA, in conchyliology, the name given by the French naturaliſts to the beautiful pale-brown voluta, ſo much eſteemed in the Dutch cabinets.

ISAGON, in geometry, is ſometimes uſed for a figure conſiſting of equal angles.

ISAMBLUCIS, in natural hiſtory, the name of a genus of foſſils of the claſs of the ſelenitæ, but of the columnar, not the rhomboidal kind. See Tab. of Foſſils, Claſs 2.

The word is derived from the Greek ἴσος, equal, ἀμβλὺς, obtuſe, or blunt; and κίων, a column; and expreſſes a body in form of an obtuſe or blunt column, the ſides of which are all equal to one another. This diſtinguiſhes it from the genus of the *iſchnambluces*, or thin columnar ſelenitæ, two of the ſides of which being broader than the others, make it of a flatted form. The ſelenitæ of this genus conſiſt of ſix ſides, and two obtuſe or abrupt ends; and all their ſides being very nearly of the ſame breadth, they much reſemble broken pieces of the columns of ſprig cryſtal.

The bodies of this genus, as well as the reſt of the columnar ſelenitæ, are ſubject to a longitudinal crack, which ſometimes admitting a ſmall quantity of clay, ſhapes it into the figure of an ear of graſs. *Hill's* Hiſt. of Foſſ. p. 121. See the article SELENITES.

Of this genus there are only two known ſpecies, 1. A whitiſh one, very much reſembling a broken ſprig of cryſtal, found among the white tobacco-pipe clay near Northampton. And, 2. A ſhort and pellucid one, with ſlender filaments; this is found in the ſtrata of yellow clay in Yorkſhire, and ſometimes lying on the ſurface of the earth. *Hill's* Hiſt. of Foſſ. p. 139, 140.

ISATIS, *Woad*, in botany, the name of a genus of plants, the characters of which are theſe: The flower conſiſts of four leaves, and is of the cruciform kind; the piſtil ariſes from the cup, and afterwards becomes an unicapſular oblong fruit, compreſſed at the ſides, and containing only one oblong ſeed. See WOAD.

The ſpecies of *Woad*, enumerated by Mr. Tournefort, are theſe: 1. The broad-leaved, or manured *Woad*. 2. The narrow-leaved, or wild *Woad*. And, 3. The ſmall wild Portugueſe *Woad*. *Tournef.* Inſt. p. 211.

ISATODES, a word uſed by Hippocrates, and ſome other of the old writers, to expreſs a greeniſh colour of the bile diſcovered in the ſtools, which reſemble the colour of the herb *iſatis*, or woad. This was eſteemed an indication of a highly depraved bile.

ISCHÆMON, in botany, a name uſed by many authors for the graſs called *gramen mannæ*, manna graſs, or Ruſſia ſeed. *Park*'s Theat. p. 78.

ISCHÆMON was alſo a word uſed by the antients to expreſs any thing given as a remedy in hæmorrhages, or other fluxes of blood, whether from wounds or otherwiſe.

ISCHÆMUM, in botany, the name by which Linnæus calls the *ſchænanth*, or camel's hay. This makes a peculiar genus of plants, the characters of which are theſe: It has male and female flowers, diſtinct from one another. The male flower is very ſmall, and always ſtands upon the glume of the cup of the female flower. Its cup is a bivalve glume, with no awns, and containing only one flower; the flower is another bivalve glume of the ſize of the cup, and without awns. The ſtamina are three ſhort capillary filaments, and the antheræ ſimple; the female flower is larger; its cup is a large bivalve glume, placed within the common glume, and terminated by a twiſted awn, or beard between each valve. The flower is a ſmall double glume; the piſtil conſiſts of an oblong germen, and two reflex ſtyli; all the glumes of the cup, flower, &c. continue to ſurround and encloſe the ſeed; and they never drop it out till forced from them, each containing one ſeed. *Linnæi* Gen. Plant. p. 527.

ISCHAS, in botany, a name given by Cluſius and ſome others, to thoſe ſpecies of tithymal or ſpurge which have tuberous or knobby roots, and are called by others *apios*. See the article TITHYMALUS.

ISCHENIA, Ἰσχηνία, in antiquity, anniverſary ſports celebrated at Olymphia in memory of Iſchenus the grandſon of Mercury and Hierea; who, in a time of famine, devoted himſelf to be a ſacrifice for his country, and was honoured with a monument near the olympian ſtadium. *Potter*'s Archæol. Græc. l. 2. c. 20. tom. 1. p. 407.

ISCHIO-CAVERNEUX, in anatomy, a name given by Winſlow, and other of the French anatomiſts, to a muſcle of the penis, called alſo by ſome the *poſterior* and *collateralis penis*, but now generally named, from its office, the *erector*. See the article ERECTOR, *Cycl.*

ISCHIO-CAVERNEUX is alſo applied by the ſame authors to a muſcle of the female pudenda, called by ſome the *muſculus clitoridis*, and *clitoridis manifeſtus muſculus*, and by Cowper and Albinus, from its office, the *erector clitoridis*.

ISCHIUM (*Cycl.*)—This is the loweſt portion of the *os innominatum*, as alſo of the whole trunk. It is divided into the body, the tuberoſity, and the ramus or branch.

The body of the *os iſchium* forms the loweſt and greateſt part of the acetabulum, and ſends out an apophyſis backward, called the ſpine of the iſchium. The tuberoſity is very thick, unequal, and turned downward; and it is on this part that the whole body reſts when we ſit. It appears cartilaginous, becauſe of the dried and hardened remains of the tendons. The whole convex portion of it is originally an appohyſis, of which the marks are obliterated ſooner in ſome ſubjects than in others: three muſcular impreſſions may be diſtinguiſhed in it.

The branch of the *Iſchium* is a kind of thin flat production, or apophyſis, which aſcends forward from the curvature of the

the tuberoſity of the os pubis, and it is often covered in part by a continuation of the epiphyſes of the tuberoſity.

Theſe three parts of the *Iſchium* taken together, form a large opening, which makes the greateſt part of the foramen ovale. Three other notches are remarkable in this bone; one poſterior between the tuberoſity and the ſpine, for the paſſage of the internal obturator muſcle, which is a little cartilaginous, and divided into three or four ſuperficial channels; one lateral between the tuberoſity and the acetabulum, for the paſſage of the external obturator muſcle; and one anterior at the edge of the acetabulum for ligaments. *Winſlow*'s Anatomy, p. 71.

ISCHNAMBLUCIS, in natural hiſtory, the name of a genus of foſſils of the claſs of the ſelenitæ, but one of thoſe which are of a columnar form, not of the common rhomboidal one. See Tab. of Foſſils, Claſs 2.

The word is derived from the Greek, ἰσχνὸς, thin, ἀμβλὺς, blunt or obtuſe, and κίων, a column; and expreſſes a body in form of a thin or flatted column, with obtuſe ends.

The characters of this genus are, that the bodies of it are of a flatted columnar form, and octohedral in figure, conſiſting of ſix long planes, and two abrupt or broken ends. The whole being of a flatted figure. The top and bottom planes are much broader than the reſt; the four other planes, called the ſides, are narrower than theſe, but are uſually of very nearly the ſame breadth with one another, as are alſo theſe tops and bottoms, ſo that the whole figure comes very near an hexhedral priſm. *Hill*, Hiſt. of Foſſ. p. 121.

The bodies of this genus very frequently have a long crack reaching their whole length, and clay often getting into this, ſpreads itſelf into the form of an ear of ſome of the graſſes, and has been miſtaken for a real ear of graſs.

Of this genus there are only four known ſpecies. 1. A flat, broad, and pellucid kind, found in Northamptonſhire, Leiceſterſhire, and Yorkſhire, at conſiderably great depths in blue clay. 2. A dull rough-ſurfaced and thicker kind, found in many parts of Kent, and in great plenty in the cliffs of Sheppey iſland. 3. A dull longitudinally ſtriated kind, found in the clay-pits of Yorkſhire and elſewhere, and frequently marked in the middle with the figure of an ear of graſs. And 4. A thick, rough, and ſcaly kind, frequent on the ſhores of Sheppey iſland, and both in the clay-pits and on the ſhores of Yorkſhire. This alſo has frequently the repreſentation of an ear of graſs. Ibid. p. 136, 137, 139.

ISCHNOPHONIA, a word uſed by ſome authors to expreſs that weakneſs and ſhrilneſs of the voice which attends perſons in ſome diſeaſes; more uſually, however, it is underſtood to expreſs a ſtammering or imperfection in the ſpeech.

ISCHURIA (*Cycl.*)—See the article SUPPRESSION *of Urine*.

ISCUSTOS, a word uſed by the writers of the middle ages as the name of a gem, but ſeeming to be only a corrupt way of ſpelling aſbeſtos. Albertus ſays it was of a yellowiſh colour, and found in Spain, and that its fibrous texture made it capable of being wrought into cloth, which when thrown into the fire, was not conſumed, but only cleaned by burning. See the article ASBESTOS.

ISING-GLASS (*Cycl.*)—A ſtrong glue is made of *Iſing-glaſs* diſſolved in ſpirit of wine. See the articles GLUE and ICHTHYOCOLLA, *Cycl.* and *Suppl.*

ISINGLAS *Fiſh*, the Engliſh name of the fiſh from which the drug called *ichthyocolla* or *iſinglaſs* is made. It is a ſpecies of the *accipenſer* or ſturgeon, and is diſtinguiſhed by not having any of the tubercles which the body of the common ſturgeon has. See the article ACCIPENSER.

ISIR, or IXIR, a name uſed by ſome of the chemical writers for an elixir.

ISIS, in botany, a term uſed by Linnæus to expreſs a genus of ſea-plants, comprehending all thoſe which are branched and incruſtated, and which have a ſimple ſurface.

ISKA, a name given by the antients to a light kind of agaric growing to the old ſtumps of the oak, hazel, and other trees. This being a very light kind of fuel, was uſed by the antients in the manner of a cautery, as we have of late learned from the Indians to uſe moxa or the down of mugwort leaves.

ISLAND (*Cycl.*)—Kircher tells us of a very remarkable change of the face of the earth in the eaſtern parts of the world, by the coalition of ninety-nine *Iſles* into one larger one, under the ſame extent of ſurface which they had while divided by the ſea. But we are to obſerve, that no abſolute dependance is to be given to what he affirms of the miraculous things of China. His ſtory of the leaves of trees turning into black birds, is a proof that he took many abſurd things, on the credit of people whom a philoſopher ought not to have believ'd. *Kircher*, China illuſtrata. See the article BLACK-*Birds*.

Floating ISLANDS. Hiſtories are full of accounts of *floating Iſlands*; but the greater part of them are either falſe, or founded on exaggerations. What we generally ſee of this kind is no more than the concretion of the lighter and more viſcous matter floating on the ſurface of water in cakes, and, with the roots of plants, forming congeries of different ſizes, which not being fixed to the ſhore in any part, are blown about by the winds, and float on the ſurface. Theſe are generally found in lakes, where they are confined from being carried too far; and in proceſs of time ſome of them acquire a very conſiderable ſize. Seneca tells us of many of theſe *floating Iſlands* in Italy; and ſome later writers have deſcribed not a few of them in other places. But however true the hiſtories of theſe might have been at the time when they were wrote, there remain very few proofs of their truth at this time, theſe *Iſlands* having either diſappeared again, or been fixed to the ſides, in ſome part, in ſuch a manner as to have made a part of the ſhore. Pliny tells us of a great *Iſland* which at one time ſwam about in the lake cutilia, in the country of Reatinum, which was diſcovered to the old Romans by an oracle; and Pomponius tells us, that in Lydia there were ſeveral *Iſlands* ſo looſe in their foundations, that every little accident ſhook and removed them. Herodotus ſpeaks alſo very largely of the lake Chemnis in Ægypt.

ISLAND *Cryſtal*, a body famous among the writers of optics for its property of a double refraction; but very improperly called by that name, as it has none of the diſtinguiſhing characters of cryſtal, and is plainly a body of another claſs. Dr. Hill has reduced it to its proper claſs, and determined it to be of a genus of ſpars, which he has called, from their figure, *parallellopipedia*, and of which he has deſcribed ſeveral ſpecies, all of which, as well as ſome other bodies of a different genus, have the ſame properties. Bartholine, Huygens, and Sir Iſaac Newton, have deſcribed the body at large, but have accounted it either a cryſtal or a talc; errors which could not have happened, had the criterions of foſſils been at that time fixed; ſince Sir Iſaac Newton has recorded its property of making an ebullition with aqua fortis, which alone muſt prove that it is neither talc nor cryſtal, both thoſe bodies being wholly unaffected by that menſtruum.

It is always found in form of an oblique parallellopiped, with ſix ſides, and is found of various ſizes, from a quarter of an inch to three inches or more in diameter. It is pellucid, and not much leſs bright than the pureſt cryſtal, and its planes are all tolerably ſmooth, tho' when nicely view'd, they are found to be waved with crooked lines made by the edges of imperfect plates. What appears very ſingular in the ſtructure of this body is, that all the ſurfaces are placed in the ſame manner, and conſequently it will ſplit off into thin plates, either horizontally or perpendicularly; but this is found, on a microſcopic examination, to be owing to the regularity of figure, ſmoothneſs of ſurface, and nice joining of the ſeveral ſmall parallellopiped concretions, of which the whole is compoſed, and to the ſame cauſe is probably owing its remarkable property in refraction. *Hill*, Hiſt. of Foſſ. p. 333.

It is very ſoft and eaſily ſcratched with the point of a pin; it will not give fire on being ſtruck againſt ſteel; and ferments, and is perfectly diſſolved in aqua fortis. It is found in *Iſland* from whence it has its name; and in France, Germany, and many other places. In England fragments of other ſpars are very often miſtaken for it, many of them having, in ſome degree, the ſame property. *Hill*, Hiſt. of Foſſ. p. 334. See the article ANOMORHOMBOIDIA.

ISLAND *Fiſh*, in the fiſh trade, a name given to the common cod-fiſh when it has been caught and preſerved in *Iſland*. *Willughby*, Hiſt. Piſc. p. 166. See the article COD-FISH.

ISLEBEIANUS *Lapis*, in natural hiſtory, a name given by authors to a kind of blackiſh ſlate, very heavy, not very hard, and eaſily ſplitting into thin flakes. It is dug near Iſleb in Thuringia, whence it has its name, and is much of the nature of that ſort of black ſlate which we have common in England, lying over the coal ſtrata.

As our ſlate of this kind contains uſually leaves of fern and other plants, this foreign kind contains the impreſſions of ſeveral kinds of fiſhes, ſo exactly delineated in ſhape, and with the fins, ſcales, and all other parts ſo perfect, that the ſpecies are eaſily known. All theſe impreſſions and delineations are, however, ſo flat and thin, and have taken up ſo little room in the ſtone, that they ſeem rather to have been the ſkins and exuviæ of fiſh, than the whole bodies of them; but this is not wonderful when we conſider how eaſily the bodies, and even the bones of fiſhes, may be diſſolved; and that theſe exuviæ are lodged in a ſubſtance which contains a vitriolic ſalt, very capable of effecting ſuch a ſolution. It is eaſy to conceive, that this and other ſuch ſalts, while in a ſtate of ſolution in water, before the concretion of the matter of this ſtone into a hard maſs, might make that water a menſtruum capable of thus diſſolving the bodies and bones of fiſhes, while the outer ſkin and ſcales being much tougher, and of a very different nature, might eſcape the effects of them. It is well known that the fins and ſcales, and other external parts of fiſhes, are much more capable of bearing maceration in water, than the internal ſubſtances of them; and it is eaſy to conceive that theſe, after having withſtood that power in the water, would at length ſubſide down among the muddy matter that was to form ſome of the ſtrata of this ſlate: The motion of the water would not fail to expand theſe ſkins, tho' ever ſo thin, into the true and exact ſhape of the whole fiſh; and when thus laid along upon the ſurface of the new formed ſtratum, the next quantity of the ſame matter that ſubſided would form another ſtratum, which falling evenly upon the former, would cover it, and on the following concretion of both, the

figure of the fiſh would be beautifully preſerved between two plates or flakes of a fiſſile ſtone.

The ſcales of moſt of the fiſhes, preſerved in this *Iſleb* ſtone, are ſquare or rhomboidal, and do not terminate round as thoſe of moſt of the other fiſhes do, ſome of theſe have their natural appearance and complexion, being of a whitiſh or pearly hue, and very bright and ſhining; others are copper-colour'd, ſome yellow, and ſome green; but whether theſe have been the natural colours of the ſcales, while on the body of the fiſh; or whether they have acquired them while lying in the earth among the various ſorts of mineral matter with which they are lodged, ſeems not eaſy to determine; tho' the latter ſeems the more probable conjecture. The ſcales are uſually very fair and well preſerved, as are alſo the heads and fins, with the tail and coverings of the gills, which are all more durable and hard than the reſt of the fiſh. *Woodw.* Cat. Foſ. vol. 2. p. 23.

It is very remarkable, that as in theſe ſlates of *Iſleb* preſerving fiſhes, the external parts only are preſerved, the bones and fleſh being waſted; ſo, on the other hand, in thoſe foſſile fiſhes brought from Syria, the ſkins and ſcales are wanting, and the ſkeletons are principally the part preſerved. In ſome of theſe the bones are not clean, ſmall parcels of the fleſh being found petrified among them; but this fleſh is ſtripped of the ſkin. The ſtone in which theſe Syrian fiſhes are preſerved is alſo very different from the *Iſleb* ſlate, being whitiſh or greyiſh, and very hard. The ſtones of this kind found on mount Libanus, where they are very common, have very fine delineations of the ſtar-fiſh compleat. Id. Ibid.

ISNARDIA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the diſtinguiſhing characters of which are theſe: The cup is a perianthium, formed like a bell, ſlightly divided at the extremity into four pointed ſegments. It has no petals. The ſtamina are four filaments, growing out of the middle of the cup. The antheræ are ſimple, The germen of the piſtillum is incloſed in the ſubſtance of the cup. The ſtyle is ſimple, and longer than the ſtamina; and the ſtigma is thick and large. The fruit is made out of the baſis of the cup, which is ſquare, and has four cells. The ſeeds are few in number, and of an oblong figure. *Linnæi* Gen. Plant. p. 51.

ISOPSEPHUS, Ισόψηφος, in antiquity, an appellation given to judges, who had equal juriſdiction and authority; it was likewiſe applied to a caſe where the votes were equal on both ſides. Another ſenſe is given to it, *viz.* when the letters of different words made up the ſame ſum, they were ſaid to be ἰσοψηφα ἐημαλα; for the Greeks had no other cyphers to number with but the letters of their alphabet; ſo that α ſignified one, β two, γ three, &c. But beſide words, the antients had likewiſe whole verſes of this kind; and'tis pretended that there are ſeveral ſuch verſes in Homer. Hiſt. Acad. Inſcript. vol. 3. p. 311. ſeq.

ISOPYRUM, in botany, the name of a genus of plants deſcribed by Linnæus, the characters of which are theſe: There is no cup; the flower conſiſts of five petals, equal in ſize, of an oval figure, ſtanding open, and very ſoon falling after they are opened. The nectaria are five; they are all of the ſame ſize, and are tubular and very ſhort; their margin is oblique and undivided, and they ſtand within the baſe of the flower. The ſtamina are numerous capillary filaments, ſhorter than the flower. The antheræ are ſimple. The germina of the piſtil are two; they are of an oval figure. The ſtyles are ſimple, and of the length of the germina; and the ſtigmata are obtuſe, and of the length of the ſtamina. The fruit is compoſed of two lunulated pods, each containing a ſingle cell, in which are ſeveral ſeeds. It is evident, by theſe characters, that this genus differs from the aquilegia, hellebore, and thalictrum, with one or other of which authors have been uſed to confound it. *Linnæi* Gen. Plant. p. 245.

ISORA, in botany, the name given by Plumier to a genus of plants, called by Linnæus, helicteres. *Plumier* 37. See the article HELICTERES.

ISPIDA, the *King-Fiſher*, in ornithology, a very beautiful bird frequenting waters, and feeding on fiſh. It builds in deep holes in the banks of rivers, and lays five, or according to ſome, nine eggs. It much approaches to the picus or woodpecker, in many things, but wants its great character, which is the having two toes behind. The legs of this bird are very ſhort, and are black before, and red behind. Its colours, particularly its green and blue, which are its general ones, are extremely bright and beautiful. *Ray*'s Ornithology, p. 101.

This name is given by Linnæus to the bird called the *merops*, or bee-eater. This makes, with that author, a diſtinct genus of birds of the order of the picæ. The diſtinguiſhing character of which is, that the middle toe has three joints joined to the outer toe, and but a ſingle one joined to the inner one. *Linnæi* Syſt. Nat. p. 45.

ISSONG, in botany, a name given by the people of Guinea to a ſpecies of plant, which they infuſe in water, and afterwards boil, and then waſh the head with it, as a cure for all kinds of the head-ach. It is a plant deſcribed by the botanical writers under the name of *Piſum veſicarium fructu nigro, alba macula notato*, the bladder pea, with a black fruit marked with a white ſpot; and called by the people of Malabar, where it alſo grows very plentifully, *ulinga*. It is alſo found in Barbadoes and Jamaica, and is there called *parſley*. Philoſ. Tranſ. N°. 232.

ISSUES (*Cycl.*)—The moſt ready method of making *Iſſues*, is by inciſion, and that in the following manner: Firſt mark the proper place with ink; then elevating the integuments between the thumb and fore-finger, make an inciſion thro' them, either with the ſcalpel or lancet, big enough to admit a pea, which being inſerted, and covered with a plaſter and compreſs, nothing more is wanting but the roller to compleat the operation. Then the wound is to be cleanſed every morning and evening, and dreſſed with a freſh pea, and it will, by degrees, in a day or two, degenerate into a little ulcer, diſcharging daily a quantity of purulent matter, which ſhould be carefully wiped off at every dreſſing.

The method by cauterizing is practiſed by ſome, and is done in this manner: The iron, to be made red hot, is ſmall and rounded, and is included in a caſe, that the ſight of it may not terrify the patient. This caſe is preſſed upon the part, and then the red hot iron within is thruſt down to the ſkin, and made to burn; the burn is to be dreſſed with baſilicon till the eſchar falls off, and then the little ulcer that is formed is to be filled with a pea, and then dreſſed as before. Tho' this method of making *Iſſues* is the more ſevere and painful, it muſt be alſo the moſt efficacious, as the pain and cauterization muſt neceſſarily cauſe an afflux of humours to the part, and make a conſiderable revulſion, though there are very few patients that will bear it. *Heiſter*'s Surgery, p. 314.

The laſt method of making *Iſſues* is by cauſtic medicines. This is to be done in this manner: Firſt a piece of plaſter is to have a hole cut in its middle, and to be ſo placed on the part, that the whole may be placed upon the part marked with ink for the *Iſſue*. A piece of the common cauſtic is then to be applied to the hole in the plaſter, and retained cloſe down upon the ſkin, with ſome ſcraped lint, a ſmall compreſs, and a large plaſter: And laſtly, with a larger compreſs and bandage. After ſix or eight hours the cauſtic is to be taken off, and the eſcar dreſſed as that made by burning. See the article BURN.

Which ever way an *Iſſue* be made, it ſhould be dreſſed at leaſt twice every day, if it runs well, and at each dreſſing a freſh pea muſt be put in, and covered with a clean plaſter, and retained by a proper bandage and compreſs. Some uſe, inſtead of rollers or fillets for *Iſſues*, a leather ſwath faſtened with claſps, and others uſe peas of ſilver or wood inſtead of common ones to dreſs them with, but the difference is not material. When the iſſue has done its buſineſs, and is to be dried up, little more is required to this than the taking away the pea, without which it heals up of itſelf in a little time.

ISTHMUS, (*Cycl.*) in anatomy, is a paſſage in that part of the medulla oblongata of the brain, which lies between the cerebrum and cerebellum, and which reaches from the place called *anus* to the fourth ventricle. The upper part, or cover of this conduit, or paſſage, which is betwixt the teſtes and the foremoſt vermicular proceſs of the cerebellum, and to which two it is tied at its two ends, and to the proceſſes which come from the cerebellum to the teſtes at its ſides, is called *valenta major*; it is of a medullary ſubſtance, and its uſe is to keep the lympha from falling out above the nerves in the baſis of the ſkull. *Harris.*

ITAIARA, in zoology, a name by which ſome have called a Braſilian fiſh, of the turdus kind, of great beauty, and a very delicate taſte, more uſually known bp the name *juruncapeba*. *Ray*'s Ichthogr. p. 325. See the article JURUNCAPEBA.

ITALIAN (*Cycl.*)—ITALIAN *Marble*, a name uſed by our artificers for two or three of the variegated marbles, of great beauty, commonly wrought into chimney-pieces and other ornamental things. *Hill*, Hiſt. of Foſ. p. 473.

The name is a very indeterminate one, many of the plain, as well as the variegated marbles, being from Italy, and indeed many of the variegated ones which have other peculiar names, tho' known to be brought from Italy, being never called by it; ſo that if any meaning is to be fixed to the word at all, it muſt be ſaid to mean ſuch of the variegated foreign marbles as are not diſtinguiſhed by any other peculiar title. The artificers chiefly comprehend, however, under this name, five ſpecies: 1. The common purple and white variegated one. This is a very beautiful maſs, and in general moderately fine, but of very different degrees of purity and hardneſs in its different parts. It is, in general, white, vein'd, ſpotted, and variegated with purple; but, in ſome blocks, the purple makes the ground, and the white the variegation, and in moſt it is variegated beſide with ſpots of pale red and brown, ſometimes of yellow, and ſometimes of a greeniſh brown. This is the moſt common marble of Italy. 2. A brown and white friable one. This emulates the figure of the former in the diſpoſitions of its veins, but is only of a white ground, vein'd with a duſky brown, and is the ſofteſt of all the marbles. The white part of it appears compoſed of granules, looſely hung together, and, on a near view, much reſembles loaf ſugar of the fineſt kind, and if ſcraped with a knife, readily falls away in large granules like ſand. This is alſo common in Italy. 3. A hard variegated blue and white

white marble. This is a ſomewhat coarſe marble, of a rough grain, and of a looſe ſhattery texture, and is variegated with a duſky blue, and a pearl colour or bluiſh white, each making uſually an equal part of the maſs. This is very common in Italy, and great quantities of it are imported hither. 4. A fine black and yellow one, the yellow veins appearing like ſtreaks of gold. This is much eſteemed and uſed. And 5. A purple and yellow one, of great beauty, and very great price. This has of late been ſold at a higher than ordinary rate. *Hill*, Hiſt. of Foſſ. p. 476, 477, 478.

ITEA, in botany, a name uſed by the antients in general to ſignify the willow; but by ſome of the Greek writers it is alſo uſed as a name for the pine.

ITHYNTERION, ἰθυντηριον, in antiquity, a ſtaff of laurel, which prophets uſually carried in their hands, otherwiſe called *ſceptron*. *Pott.* Arch. Græc. l. 2. c. 12.

ITINERARIUM, in ſurgery, a name given by Hildanus, and many other writers, to a ſtaff uſed in the operation of cutting for the ſtone.

ITING, in natural hiſtory, a name given by the people of the Philippine iſlands to a bird common among them, and ſeeming, by the deſcription, to be of the woodpecker kind. It is of the bigneſs of the ſtarling. Its wings and tail are black, as are alſo its legs and beak. Its back and belly are ſilver-colour'd. Its head is bald, or deſtitute of feathers, except that there runs all along it a ſtrait row of ſhort black plumes, forming a line from the beak to the neck. It builds in the hollow trunks of the palm trees, and feeds on various kinds of fruits. It is a very noiſy bird, but its voice is not diſagreeable. People ſay this bird has but one ſtrait gut.

IVAPECANGA, in botany, a name given by ſome authors to the climbing plant, of which the ſarſaparilla, uſed in medicine, is the root. *Marggrave*, p. 11. *Piſo*, p. 258.

JUCADICE *Arbor*, in botany, a name by which ſome authors have called the *canella alba*, or wild cinnamon-tree. *Nieremberg*, p. 294.

JUDAICUS *Lapis*, (*Cycl.*) in natural hiſtory. This ſtone has by many been ſuppoſed to be a foſſile body in its native figure, but is really the remains of a ſpine of an echinus, filled with a plated ſpar. It is of the figure of an olive, and is fluted and ridged, and furrowed longitudinally in a very beautiful manner. It is very common in Syria, and is ſometimes found with us. *Hill*, Hiſt. of Foſſ. p. 652. See the article SPAR.

JUDAS *Tree*, in botany. See the article SILIQUASTRUM.

JUDDOCK, in zoology, the name commonly given, in England, to a ſmall ſpecies of ſnipe, called by authors, *gallinago minima*, and in ſome places with us, the *ged*, or *jack* ſnipe. It is but of about half the ſize of the common ſnipe. Its rump is of a purpliſh blue, like that of the back of a ſtarling, all the ends of the feathers being alſo whitiſh. The long ſhoulder-feathers are brown, yelloviſh, and blackiſh blue. The neck is variegated with brown, white, and pale red. The breaſt and belly are white. It is commonly found among ruſhes, and in watery places. *Ray*, Ornithol. p. 214.

JUDGE (*Cycl.*)—By the law of England, all *Judges* muſt derive their authority from the crown, by ſome commiſſion warranted by law. The *Judges* of the king's-bench, common pleas, and the barons of the exchequer, are all (excepting the chief juſtice of the king's-bench, who is created by writ) appointed by patent. Formerly they held their places only during the king's pleaſure: But now, for the greater ſecurity of the liberty of the ſubject, by a ſtatute of Wil. 3. [a] their commiſſions are to be *quandiu ſe bene geſſerint*. Tho' upon an addreſs of both houſes of parliament, they may be lawfully removed [b].—[[a] 12 and 13 Wil. 3. c. 2. [b] Ibid.]

Judges muſt exerciſe their authority in a legal manner, and hold their courts in their proper perſons, for they cannot act by deputy, nor any way transfer their power to another, as the *Judges* of eccleſiaſtical courts may.

The *Judges* are bound by oath to determine according to the known laws and antient cuſtoms of the realm. Their rule herein muſt be the judicial deciſions, and reſolutions upon the various caſes that have occurred, and not their own arbitrary will and pleaſure, or that of their prince. Vid. Stat. 13 Edw. 3. c. 1. 20 Edw. 3. c. 1, 2.

Judges are free from all proſecutions for any thing done by them in court, which appears to have been an error of their judgment. But for wilful corruption, they have been complained of to the ſtar-chamber formerly [a]; and may now be called to an account in parliament [b].—[[a] Vid. *Vaughan* 139. [b] 1 *Hawk.* P. C. 139. 12 *Coke* 24.]

It has been ſaid, that ſcandalous reflections on the *Judges* in Weſtminſter-hall are within the ſtatute of *ſcandalum magnatum*. V. *Vaugh.* ibid.

It was formerly enacted, ſtat. 33 Hen. 8. c. 24. that none ſhould be juſtices of aſſiſe within the county where they were born, or do inhabit; but this is repealed by a late ſtatute, 12 Geo. 2. c. 27.

By the common law, the patents of *Judges* were determined by the death of the King, in whoſe name they are made. But by ſtatute 7 & 8 Wil. & Mar. c. 27. & 1 Ann. c. 8. it is enacted, that every commiſſion, civil and military, ſhall remain in full force for the ſpace of ſix months next after the demiſe of the King, unleſs ſuperſeded by his ſucceſſor. It was formerly held, that by a juſtice's acceptance of any new name of dignity, his commiſſion was determined; but this was remedied by ſtatute 1 Edw. 6. c. 7. But it has been doubted, whether the dignity of baronet, created ſince that ſtatute, is within the equity of it. *Croke* Car. 104.

JUGERUM, a Roman meaſure, the double of the *actus quadratus*. It was a ſquare of 120 Roman feet. The *Jugerum* was divided into 12 *uncias*, and the *uncia* into 24 *ſcrupulæ*. Its proportion to the Engliſh acre is as 10000 to 16097. Treat. Pract. Geom. p. 87.

JUICE (*Cycl.*)—JUICES *of Plants*. Moſt *Juices* of vegetables coagulate when expoſed to the air, whether it be that they are drawn out of the plant by wounds, or that they naturally run out; tho' what is called naturally running out, is generally the effect of a wound in the plant, from a ſort of cancer, or ſome other internal cauſe. The flowers of the St. John's wort, and the leaves of the rorella, or ſundew, afford us purple blebs and veins, and large drops of a clear fluid, yet it does not ſeem certain that theſe are coagulated *Juices*. The ſmall green leaves, forming the cup of the flower of the common erect tutſan St. John's-wort, are ſurrounded with purple bleds, and the points or tops of the leaves alſo have each two or three ſuch blebs, all containing a purple *Juice*; yet the ſtalk of this plant, being cut and ever ſo nicely examined, does not ſhew to the naked eye, nor even to the microſcope, any veſſels containing ſuch a purple fluid. Whence it may appear not improbable, that what is thus found in ſmall blebs is a matter ſeparated by coagulation only from the reſt of the *Juice* of the flower. Philoſ. Tranſ. N°. 224. p. 366.

In the common St. John's wort the edges of all the leaves of the flower are ſurrounded with theſe purple blebs, and the ſtalk, tho' round, has a double edge, one on each ſide, and the blebs or bags are to be ſeen riſing on theſe edges of the ſtalk. The cup of the flower has ſeveral purple veins, yielding a purple *Juice*, and the leaves of the flower have alſo ſome ſuch veins, and even the apices all contain a purple matter.

In the ſquare-ſtalk'd St. John's wort, commonly called St. Peter's wort, the edges of all the leaves, from the top to the bottom of the ſtalk, are ſurrounded with rows of theſe purple bags, and the apices of the flower are ſo many purple bags; but the cup and the petals of the flower have but very few purple veins in this ſpecies.

In the *hypericum pulchrum tragi*, or upright elegant St. John's wort, the leaves and ſtalks have no purple blebs, but only the cup and the flower have them. Theſe *Juices* alone are what give the red colour to the oil of St. John's wort kept in the ſhops. And it is worthy a ſtrict enquiry, what they really are, and by what means produced.

Diverſe parts of the ſame plant yield different *Juices*. The ſame veins, in their courſe thro' the different parts of the plant, yield *Juices* of a different appearance. Thus the milky *Juice* in the root of the cow parſnep is of a brimſtone colour; but in the ſtalk it is white.

Among thoſe *Juices* of vegetables which are clammy, and readily coagulate, there are ſome which readily break with a whey. The great wild lettuce, with the ſmell of opium, yields the greateſt plenty of milky *Juice* of any known Engliſh plant. When the ſtalk is wounded with a knife, the *Juice* flows readily out like a thick cream, and is white and ropy; but if theſe wounds be made at the top of the ſtalks, the *Juice* that flows out of them is daſhed with a purple tinge, as if cream had been ſprinkled over it, with a few drops of red wine, and has ſome veins. Some little time after the letting this out, it becomes much more purple, and thickens, and finally the thicker part of it ſeparates, and the thin whey ſwims at the top. Herein the *Juice* of this plant exactly reſembles the blood of animals, which tho' a ſimple fluid, when drawn from the veſſel, yet ſoon ſeparates into a thick cake, and a thin fluid, or ſerum.

The whey, or thin part of this ſeparated matter, is eaſily preſſed out from the curd by ſqueezing between the fingers, and the curd then will remain white, and, on waſhing in fair water, becomes like rags. The purple whey, for in this part all the colour is lodged, ſoon dries into a cake of the ſame colour, and may be crumbled between the fingers into a purple powder. The white curd being dried, and kept ſome time, becomes hard and brittle. It breaks with a ſhining ſurface like reſin, and is inflammable, taking fire at a candle, and burning all away with a ſtrong flame. The ſame thick part being held over a gentle heat, would draw out into tough long threads, melting in the manner of wax. Philoſ. Tranſ. N°. 224.

The purple cake, made from the whey, is wholly different from this, and when held to a candle, ſcarce flames at all, but burns to a black coal. The whole virtue of the plant ſeems alſo to conſiſt in this thin part of its *Juice*, for the coagulum or curd, tho' looking like wax or reſin, has no taſte at all, whereas the purple cake made from the ſerum is extremely bitter, and of a taſte ſomewhat reſembling that of opium.

It is poſſible that the artifice of bees may conſiſt, in a great meaſure, in the ſeparating in this manner the thick and the

thin parts of the *Juices* of peculiar plants, the curd or thick part of which being glutinous and inſipid, may ſerve them as wax, and the thin part may make their honey.

The throat-wort, ſpurge, and many other plants, replete with milky *Juices*, are of this kind, and their *Juice*, when let out, ſeparates into curd and whey. But this, though a common law of nature, is not univerſal; for there are many plants which yield the like milky *Juices* which do not ſeparate and break into curds and whey, but coagulate all together into one ſimple maſs. The white *Juice* of the *ſonchus* never ſeparates, but dries into an uniform cake; the common red wild poppy bleeds freely with a milky *Juice*, and the heads or capſules of ſeed bleed not leſs than the reſt of the plant, even after the flower is fallen. This *Juice*, on being received into a ſhell or other ſmall veſſel, ſoon changes its white to a deep yellow colour, and dries into a cake which ſeems reſinous and oily, but no whey ſeparates from it.

It ſeems by the experiments on the *Juice* of the opium lettuce before mentioned, that theſe milky liquors are of a mixed kind, and compoſed of different fluids, of various and perhaps of contrary qualities; ſo that if the curd part be ſimple and harmleſs, the whey may be a powerful medicine, and ſo of the reſt: But in theſe which do not ſeparate in this manner, we are forced to take the whole together, unleſs ſome way may be found of ſeparating them by art. Perhaps the ſetting them in wooden veſſels, and after a time adding freſh *Juice* to them, may do it; and poſſibly the adding a little calf's runnet may be able to effect it.

The tragopogon, or goat's-beard, when wounded, bleeds freely a milky *Juice*; it is at firſt white, but becomes immediately yellow, and after that more and more red; at length it is wholly of a duſky red. It never ſeparates but dries together into one cake, and is oily and reſinous, but of an inſipid taſte. The great bindweed bleeds freely alſo a white *Juice*; the flowers, as well as the ſtalks and leaves, afford this liquor. It is of a ſharp taſte, and as many of the purging plants are of this claſs, it would be worth trying whether this milk be not purgative.

Theſe *Juices*, as well as the generality of others which bleed freely from plants, are white like milk, but there are ſome of other colours. The *Juice* of the great celandine is of a fine yellow; it flows from the plant in the thickneſs of cream, and ſoon dries into a hard cake, without any whey ſeparating from it. Another yellow *Juice* is yielded by the ſeed veſſels of the yellow centaury, in the month of July, when the ſeeds are full grown. This is of a fine yellow colour, and very clammy; it ſoon hardens altogether into a cake, no whey ſeparating from it; it ſticks to the fingers like birdlime, and is of the colour of pale amber, and will never become harder than ſoft wax, if dried in the ſhade; but if laid in the ſun it immediately becomes hard like reſin. Theſe cakes burn like wax, and emit a very pleaſant ſmell.

The great angelica alſo yields a yellowiſh *Juice* on being wounded; and this will not harden at all, but if kept ſeveral years will ſtill be ſoft and clammy, drawing out into threads like wax, or half melted reſin.

Another kind of *Juices*, very different from all theſe, are thoſe of a gummy nature; ſome of theſe remain liquid a long time, and are not to be dried ſooner without the aſſiſtance of heat; the others very quickly harden of themſelves, and are not inflammable. The gum of the *Juice* of rhubarb leaves ſoon hardens, and is afterwards ſoluble in common water, and ſparkles when put into the flame of a candle. Theſe two qualities ſhew that theſe gums have a watery part in them, and they melt alſo in the flame of a candle, and become ductile; and this ſhews that they have alſo the curdy part, though this does not ſeparate from the whey in drying, as in ſome other caſes. Theſe do not ſparkle in the flame ſo much as ſome others which contain more water; and their not burſting out into an actual flame, ſhews that they want oil.

The cluſters of the common honeyſuckle are full of a liquid gum; they frequently throw this out, and it falls upon the leaves, and retains its own form there; the red hairs of the ſundew are all terminated by large bladders of a thin watery fluid: This is alſo a liquid gum, it ſticks to the fingers, and draws out into long threads, and this ſtands the force of the ſun all day. In the center of each of theſe dew drops, there is a ſmall red bladder which ſtands immediately on the ſummit of the red hair. This is of the nature of the blebs on the leaves and flowers of the St. John's wort, containing a purple *Juice* which may be ſqueezed out of it. The pinguicula, or butter-wort, has alſo ſome gummy liquid matter on its leaves. It does not ſtand upon ſuch long hairs as that of the ſun-dew, but it is in much greater quantity. The hairs of the leaves of theſe two plants ſtand on the upper ſides of the leaves, and are very thick ſet there, while the under ſide is ſmooth. This is a ſingularity not obſervable in any other plant, at leaſt of our own growth. Vid. *Liſter*, in Philoſ. Tranſ. N° 224. and *Lowthorp*'s Abridg. vol. 2. p. 696, ſeq.

Mr. Boyle tells us that the fumigated *Juices* of plants may be ſucceſsfully preſerved by adding a ſmall quantity of the white coagulum, made by the pure ſpirits of wine and urine. See the article OFFA *alba*.

Oily JUICES. Some plants yield *Juices* which are of a manifeſtly oily nature, which, being rubbed between the fingers, are not at all clammy, but make them glib and ſlippery; and theſe *Juices* do not harden at all on being expoſed to the air. If the ſtalk of elecampane be wounded, there flows out a plain oily *Juice* ſwimming upon a watery one. The ſtalks of hemlock alſo afford the ſame oily liquor ſwimming upon the other; and the common white mullein, if the leaves are pulled off in the month of June, yields the ſame ſort of oil very freely along with its watery *Juice*. The berries of ivy, the bay, juniper, dogberry tree, and the fruit of the olive, when wounded, ſhew their oil in the ſame manner floating on the watery *Juice*.

Some of theſe oily *Juices*, ſoon after they are let out of the plant, coagulate and harden into a kind of reſin. Our ivy yields ſuch a *Juice* very abundantly; and the *Juice* of the ſmall purple-berried juniper is of the ſame kind, being hard and fat, and not very gummy.

If the bark of the common ivy be wounded in March, there will ooze out a tough and greaſy matter of a yellowiſh colour; if this be taken up between the fingers, it feels not at all gummy or ſticking, but melts in handling into a ſort of oil, which in proceſs of time hardens and cruſts upon the wounds, and looks like brown ſugar; it burns with a laſting flame, and ſmells very ſtrong. The tops of the wild lettuce, and the leaves growing near the tops, if examined with a magnifying-glaſs, ſhew a great number of ſmall bladders or drops of an oily *Juice* of a browniſh colour, hardening into a kind of reſin; they are eaſily wiped off when of any ſize, and are truly an oily *Juice* hardened a little. It is probable alſo, that the fine blue flower or powder called the bloom, upon the ſurface of our common plums, is no other than ſuch an oily *Juice* exſudating from their pores in ſmall particles, and hardening into a ſort of reſin. The leaves and ſtalks of the common Engliſh mercury, are all over covered with ſmall tranſparent drops looking like pearls; and if the plant is taken into the hand, theſe feel rigid and greaſy. The leaves of the ſtinking orach abound alſo with the ſame ſort of drops, and theſe are only ſmall portions of the oily *Juices* of the plant, which are continually exſudating through its pores, and harden into theſe reſiny pearls. Phil. Tranſ. N° 224.

The ſap or *Juice* of trees appears to be very different, according to the ſpecies or genus of the tree, as we find by experiments, or by their ſpontaneous exſudations. The extravaſations of ſap in the plum and cherry kind, being all clammy, and hardening into a gum like gum-arabic; and on the other hand, thoſe of the vine, the oak, and many other trees, being thin as water. The clammineſs of the ſap in trees, ſeems one of the great things that renders them hardy, and not liable to injuries from cold, *&c.* In the hard froſts, thoſe trees which have watery *Juices* periſh, and even ſplit and cleave of themſelves; while thoſe which have gummy and viſcous *Juices* eſcape. In our gardens the vines crack and burſt with the froſt, while the plums, cherries, peaches, and other gummy trees, ſtand without any damage or danger; and in the fields no trees ſo readily ſplit in ſevere froſts as the oaks, which though the hardeſt wood of all our timber trees, yet has of all the moſt thin and watery *Juices*.

The trees which have deciduous leaves, have in general thinner and more watery *Juices* than the evergreens; to the freezing of theſe, or their decay from want of due heat, and other accidents, is owing the decay and fall of thoſe leaves, while the others remain in their places, though not encreaſing, or no new ones growing, the *Juices* remaining unaltered, though ſtagnated in the veſſels, and ſafe from injury, though waiting the ſun's heat to put them in motion. The earlier or later germination of trees and plants of different kinds, is probably owing alſo to the ſame cauſe. The thineſt *Juices*, as they are ſooneſt injured by cold, ſo they are probably ſooneſt influenced alſo by heat; and that warmth may make them move, and prepare the plant for growing, which could ſcarce begin to attenuate the tough and gummy ones. Phil. Tranſ. N° 165. See the article SAP.

Concrete JUICES, in mineralogy, a name given by many authors to ſuch ſubſtances found in the bowels of the earth, as have once been in a ſtate of fluidity, and are capable of being rendered fluid again by art, by means of heat, moiſture, or other common agents.

Others apply the word *concrete* to all thoſe ſubſtances which may be ſeparated from fluids by chemical operations, whether they are afterwards ſoluble in them again or not; ſuch are the particles of ſpar ſeparated from water by a ſlow diſtillation, and remaining at the bottom of the veſſel.

The concrete *Juices* of the earth are ſuppoſed to be the principal things which give the virtue to mineral waters; for thoſe which receive no concretion, and are only mingled with the waters in their paſſage through that part of the earth where they are evaporated, on the waters being expoſed to the air, tho' they may give a briſkneſs to it, while entire in it, yet are not to be ſuppoſed to give the principal virtues. Theſe fluid and volatile *Juices* all fly off in the analyſes of the waters,

ters, but the concrete *Juices* are more permanent, and leave certain ſediments which render them viſible and palpable, after the diſtillation of the waters with which they are mixed. When theſe happen to be ſimple, and of the ſame ſpecies with thoſe known in a ſolid ſtate, it is eaſy to deduce the virtues of the waters from them, and to know what muſt be the effect of ſuch fluids as carry ſpar, ſulphur, vitriol, or other well known ſubſtances, into the blood; but it ſeldom happens that theſe things are thus contained ſimple and entire in the waters, they are often blended variouſly with one another, and often not the whole of the known body is contained, but the principles that conſtitute ſome part of it, ſuch as the acid of vitriol without its metalline part, the baſis of ſea ſalt without its acid, and ſo of the reſt.

Salts and earths are evidently the moſt ſenſible and the moſt common matters which are mixed with water, and it is from them in general that the medicinal ſprings take up their virtues. There is ſcarce any earth that does not contain ſome ſort of mineral ſalt, capable of being waſhed out by water, tho' it be generally in imperceptible quantities; but where the earths are richer in theſe ſalts, the waters not only take them up, but carry alſo with them the ſeveral finer particles of the earth itſelf in which they are bedded, and riſing up at ſome ſmall diſtance from the place they make medicinal ſprings, of virtues anſwerable to the peculiar ſpecies of the ſalt that was lodged there. We are always able to ſeparate, by analyſis, the ſalts and the earths of the mineral waters; but when we have done this, we are not arrived at the end of the taſk, for they are often ſuch mixed ſubſtances, that we can neither know them perfectly as they are, nor ſeparate them.

The four moſt known and frequent of thoſe concrete *Juices* which are called ſalts, are alum, nitre, vitriol, and culinary ſalt; but the examination of the waters of different medicinal ſprings ſhews us, that there are in the earth others very different from theſe, and that perhaps in great numbers. There is in Aſia a native alkali ſalt, or natrum, and in all the mineral waters we celebrate, there is a peculiar ſalt ſeparable by evaporation, which is nearer allied to this than to any of the other four, to one or other of which it has uſed to be the cuſtom to reduce all ſalts; and yet different even from this in ſome reſpects. Beſide this thoſe *Juices* of the ſaline kind, whoſe diſpoſition to concretion is not yet finiſhed, and whoſe ſtate is, as it were, but in embryo, or the firſt ſtage of being, are not to be known, when ſeparated from the waters to which yet they may have perhaps given virtues greater than the concrete, in what we call its more perfect ſtate, might have given: Nay, even thoſe that are more formed, and are already concreted, or in a ſtate capable of concretion, have not ſimple and homogeneous ſubſtances in each of the ſpecies. The ſalt that is called culinary ſalt, is obſerved to have two different portions mixed together; the one is condenſed and cryſtallized by cold and in moiſture, after the evaporation of a part of the water wherein this ſalt hath been diſſolved; and the other will not be cryſtallized nor condenſed, but by a total evaporation of the water. The portion of this ſalt that is cryſtallized by cold and in moiſture, is the moſt ſulphureous, and by its ſulphureity it will mix itſelf with the ſulphureous ſalt of calcin'd tartar reſolved in a moiſt air, or in common water, without turbidneſs, and without coagulation; but that portion of this common ſalt which is not condenſed but by the total evaporation of the water which had diſſolved it, hath an acidity which inſtantly coagulates the ſalt of tartar diſſolved, and all other ſalts in the ſame ſtate which are ſulphureous and nitrous. It is evident, that while this ſalt is in its embryo ſtate, the one or the other alone of theſe two very different ſubſtances of which it is contained, may be mixed with the waters of a ſpring, and communicate virtues different from thoſe which the whole body of the ſalt would have done. This ſalt alſo being procured by evaporation of the water, or by any other analyſis of it, could not be known or referred to the common ſalts, and much leſs if in the earth, as may very eaſily happen, it ſhould be united with ſome one of the conſtituent parts of ſome other ſalt, in the ſame diſunited or unfaſhion'd ſtate.

The vitriol which in a moiſt air yields an efflorescence upon ſulphureous marcaſites, has likewiſe a juicy portion, condenſible only by a total evaporation of its aqueous humidity; this is of a very acrimonious taſte, of an unctuous ſubſtance, and eaſily runs to water in a moiſt air. This juicy portion of vitriol is very different from that which ſhoots and condenſes in the fluid liquor, by means of the cold. Theſe cryſtals are pure vitriol acid, auſtere, and on being mixed with the ſulphureous and nitrous ſalts, a great quantity of earthy matter precipitates out of them; but the other portion will mix itſelf with theſe ſalts in ſolution, without turbidneſs or emotion, not having, like the former, that acidity upon which the ſulphureous or nitrous ſalts can act; which is exactly contrary to what happens to common ſalt, of which the firſt portion is the moſt ſulphureous, and the latter portion the moſt acid. Nitre is alſo like the reſt compoſed of two different ſaline portions, the one more ſulphureous, which cryſtallizes with the cold, and in moiſture, and the other, which remains diſſolved after all the cryſtals are obtained, and which cannot be obtained in a dry form, but by the evaporation of all the humidity. This is leſs ſulphureous than the other part obtained in cryſtals, and has ſome acidity which the other has not.

The firſt embryos of mineral ſalts are nothing elſe but vapours or *Juices* not concreted, but totally volatile or vaporable; of theſe ſome may be condenſed, and in part fixed by the action of fire, or diſengaged from their matrices, and made capable of concretion by means of the air, as is obſerved in certain nitrous, aluminous, and vitriolic ſalts. The ſulphureous part, which is formed in the lime, made of certain hard ſtones burnt in the fire, which is generally allowed to be a ſpecies of nitre, has certainly its ſeminal being in theſe crude ſtones, and in that ſtate of its firſt being, is very different from that which we find after it has paſſed the fire, which from cold and coagulative, changes into cauſtic and reſolutive. This cold and coagulative quality of this ſtony ſalt, in its firſt ſtate, manifeſts itſelf ſufficiently in the waters of certain rock ſprings, which are very limpid and cold, and breed cold and ſchirrous tumours under the throats of thoſe people who ordinarily drink them, as in the Alps, *&c.*

This ſeminal matter of this ſalt then is wholly altered in its nature by fire, and is rendered ſulphureous and cauſtic as nitre. Fire is able to exalt and alter the ſtate of being of this ſalt, but it is no more able to produce it in theſe ſtones, than in the ſhells of oyſters, *&c.* of which alſo a lime is made, which yields a ſalt not more ſulphureous, than this. *Du Clos*, Obſerv. ſur les Eaux Miner.

The ſeminal being of alum and vitriol muſt, in the ſame manner, exiſt in thoſe ſubſtances out of which thoſe ſalts are extracted by water, after they have been calcined by fire, or expoſed to a ſlower calcination in the open air. They are not found in theſe ſtones before theſe proceſſes, yet it is ſufficiently evident that the fire and air could not produce them, but could only exalt them there.

All theſe varieties to which the ſeveral mineral ſalts are liable in their different ſtages, and in which they may be abſorbed together, and united by water under the earth, do not only render the judging of the mineral waters, which partake of them by analyſiſes very uncertain, but even, in many caſes, perplex and confound us, by the very means by which we hope to underſtand them.

Mineral JUICES. Many countries afford theſe, and give marks by them of treaſures that might be turned to great account, were the proper manner of aſſaying them known; which is by firſt properly reducing them to a dry ſubſtance, ſo as to come at the ſolid matter they contain. With a view to the diſcovery of metallic veins, the erection of ſalt-works, vitriol-works, alum-works, borax-works, and the like, the curious on this ſubject may find many excellent hints for further diſcoveries in the cloſe of Agricola's work, *De re metallica*; and the view is farther carried on by Boyle, Beccher, Stahl, and Homberg. The royal academy of Paris have alſo given ſome hints that may be of uſe, in their memoirs; and ſome practical things are recorded in the Philoſophical Tranſactions.

We have accounts in the Philoſophical Tranſactions of white and thick fluids like cream, found in mines at very great depths, and containing mineral particles. The bottoms of our coal-pits ſometimes afford this liquor in very large quantities. And ſome of the iron mines in Shropſhire, particularly that called the white mine near Hales in that county, affords a great quantity of this ſort of *Juice*. It is thick as cream, white, and of a ſweetiſh taſte, but with a vitriolic twang behind it. This is contained in the nodules of iron ſtone, which are here a ſort of enhydri, very large, compoſed of thick cruſt, and ſome of them holding near a hog's-head of this ſort of liquor. Phil. Tranſ. N°. 100. See the article ENHYDROS.

JUICE *of Tar*. See the article TAR-*Water*.

JUJUBES (*Cycl.*)—There are ſeveral ſpecies of this tree preſerved in the gardens of the curious. They are propagated by planting their ſtems in pots of light earth, ſoon after the fruit is ripe, and in winter they ſhould be preſerved under a common hot-bed frame, where they may be defended from the ſeverer froſts, and in ſpring the pots ſhould be plunged into a moderate hot-bed. When the young plants are come up, they ſhould be enured to the open air by degrees, and in June they may be removed out, and placed under the ſhelter of a warm hedge. In this place, they ſhould remain till the beginning of October, when they are to be removed into the green-houſe, or elſe placed under a hot-bed frame, that they may be preſerved from the froſts. During the winter they ſhould have as much air as the ſeaſon will permit, and be watered at times, tho' this muſt be very cautiouſly done after they have ſhed their leaves. In the March following, before they begin to ſhoot, they are to be tranſplanted each into a ſeparate pot of light earth, and they ſhould then be plunged into a moderate hot-bed, and watered and ſhaded till they have taken thorough root; and in May they are to be removed thence into the open air. They muſt be houſed in winter till they are about four years old, and then may be tranſplanted into the naked ground, and will ſtand our winters. *Miller*'s Gardener's Dict.

JUJUB, *Zizyphus*, in botany. See the article ZIZYPHUS.

JULEP (*Cycl.*)—*Camphor* JULEP, *Julepum e Camphora*, a medicine preſcribed in the late London Diſpenſatory, and ſeeming the beſt calculated of any thing of the kind, to communicate the virtues of camphor to water. It is made thus: Take camphor a dram, fine ſugar half an ounce, boiling water a pint. Grind the camphor with a little ſpirit of wine till it is ſoftened, then add the ſugar, and by degrees perfectly unite theſe; finally add the water by a little at a time, and when the whole has ſtood in a covered veſſel till it is cold, ſtrain it off. *Pemberton*, Lond. Diſp. p. 286.

JULIA, in ichthyology, a name given by Salvian and Gaza to the *Ioulos* of the Greeks, called *julis* by the Latin writers in general, and by the Italians, *donzellina*. It is a ſpecies of the labrus, according to Artedi, and is diſtinguiſhed by that author from the other fiſh of that kind, by the name of the variegated labrus of a palm long, and having two larger teeth in the upper jaw. See the article LABRUS.

JULIS, in zoology, the name of a ſmall fiſh, caught principally about Genoa, and ſold in the markets, being a very delicately taſted fiſh. Its uſual ſize is about the length and a little more than the breadth of a finger. In ſhape it approaches to the long-bodied turdi, but is longer, ſlenderer, and its back leſs ridged. Its ſcales are ſmall, and adhere very cloſely to the fleſh, and its colours are ſo various and lively, that it exceeds, in this particular, even the turdi. Its back, from the head to the tail, is of a duſky and ſomewhat blackiſh hue. Along the middle of the ſides there runs a broad blue line, and immediately under this a yellow or ſaffron-colour'd one; and the belly is of a bluiſh white or pearl-colour. Its eyes are ſmall, and their iris red. Its mouth ſmall. Its teeth ſtrong and ſharp; and its lips thick and fleſhy. Its back fin reaches from head to tail. Its anterior rays are ridged and prickly, the reſt ſoft and flexile, and its colours very lively and beautiful; its bottom being yellow, its middle red, and its top blue. Its tail is blue, with an admixture of red, and is not forked. *Rondelet.* de Piſcib. l. 6. c. 7. p. 180. *Aldrovand*, de Piſc. l. 1. c. 7.

The males of this ſpecies are very beautifully painted. Their backs are green, and their heads have variegations of yellow and red. Its ſides have very broad ſerrated lines of a fine gold yellow, and its back fin has ſeveral large ſpots of blue and red. They are fond of human blood, and will ſeize upon the legs of people who walk naked into the water. *Geſner*, de Piſc. p. 549.

JULUS. See the articte GALLY-*Worm*.

JUMENTA, in the Linnæan ſyſtem of zoology, the claſſical name of one of the orders of quadrupeds; the character of which is, that the teeth of the creatures are irregularly placed, and in a different manner from thoſe of the other four orders of quadrupeds. Of this order are the elephant, the hippopotamus, the ſorex or mus araneus, the horſe, and the hog. *Linnæi* Syſtem. Naturæ, p. 40.

JUNCAGO, *Ruſh Graſs*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged into a circular form. The piſtil ariſes from the center of the flower, and finally becomes a fruit or capſule, which, when ripe, opens at the bottom, and is found to be compoſed of three vaginæ, each of which contains one oblong ſeed.

There is only one known ſpecies of this genus, which is the common *Juncago*, called by many *Gramen Spicatum*, and *Triglochin*. *Tourn.* Inſt. p. 266.

JUNCI *Lapidei*, in natural hiſtory, the name given by authors to a ſpecies of foſſile coral, of the tubularia kind, and compoſed of a congeries of ſmall tubules, which are uſually round and ſtriated within. See Tab. of Foſſils, Claſs 7.

JUNCO, in zoology, the name of a bird called in Engliſh the greater reed ſparrow. It is almoſt as large as a thruſh. Its beak is oblong, and ſomewhat crooked, the upper chop being blackiſh, and the under white. Its tongue is bifid and jagged, and its mouth yellow within. Its throat, breaſt, and belly are of a whitiſh yellow; near the tail it is more yellow than elſewhere, and its back is of a yellowiſh brown, with a faint greyiſh caſt. It has a white line over its eyes, a little yellowneſs under the wings, and a very ſtiff and rigid tail like the woodpecker. Its legs are remarkably ſhort and ſtrong. It always lives among reeds, and climbs and ſticks to them, as the woodpecker does to the branches of trees. Its feet, however, are not formed like thoſe of that bird, but have only one toe behind. It feeds on the beetles and other inſects which are found among the reeds, and ſings very agreeably and ſweetly. *Ray*, Ornithology, p. 99.

JUNCO is alſo uſed by Bellonius for a bird ſeeming, by his deſcription, the ſame with what we call the *ſtint*. See the article STINT.

JUNCUS, the *Ruſh*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, conſiſting of ſeveral petals, diſpoſed in a circular form. From the center of the flower ariſes a piſtil, which finally becomes a trigonal fruit or capſule which opens three ways, and uſually contains a number of roundiſh ſeeds.

The ſpecies of *Ruſh*, enumerated by Mr. Tournefort, are theſe: The ſharp or pointed *Ruſh*, with ſorghum heads. 2. The ſharp *Ruſh*, with ſpread panicles. 3. The longer ſharp *Ruſh*, with ſpread panicles. 4. The ſmooth or ſoft *Ruſh*, with conglomerated heads. 5. The larger *Ruſh*, with a bending top. 6. The ſmaller *Ruſh*, with bending tops, called by many, the trifid *Ruſh*. 7. The hairy *Ruſh*, with heads like thoſe of pſyllium, called by many the ſmall hairy graſs or cyperus graſs. 8. The great broad-leav'd wood *Ruſh*, commonly called the broad-leav'd wood graſs. 9. The low erect marſh *Ruſh*. 10. The low creeping marſh *Ruſh*. 11. The *Ruſh* with jointed leaves, and umbellated flowers. 12. The jointed-leav'd *Ruſh*, with umbellated and paniculated flowers. 13. The mountain water *Ruſh*. 14. The ſmall roundiſh-fruited *Ruſh*, or *Ruſh*-graſs. 15. The narrow leav'd hairy *Ruſh*, with white paniculated flowers. And 16. The leaſt leafy *Ruſh*. *Tourn.* Inſt. p. 246.

JUNGERMANNIA, in botany, the name of a genus of plants called by Dillenius, *lichenaſtrum*, and ſome of the ſpecies are called by Micheli by this name; others by that of *muſcoides*. The characters of the *Jungermannia* are theſe: It produces both male and female flowers; and theſe are often found both upon the ſame plant. The male flower ſtands upon a long pedicle, which ariſes from a ſort of cup or caſe on the leaf. This has no cup, no petals, nor any ſtamina, but is only one ſingle anthera or apex, which is at firſt of an oval figure, but being compoſed of four valves, it opens when ripe into four ſegments, and remains in this ſtate a long time upon the plant. The female part of fructification, as it may be much more properly called than flower, conſiſts only of ſeeds, ſo far as we are able to obſerve, for there is no appearance of either cup or petals; but the ſeeds are found in ſome ſpecies ſingly, in others in cluſters on different parts of the leaves. *Linnæi* Gen. Plant. p. 506. *Micheli*, Nov. Gen. p. 54.

JUNIPA, in botany, the name of a tree of the Caribbee Iſlands, and ſome other places, the fruit of which is ſaid to yield a juice as clear as water, yet yields a fine violet-colour'd dye, and being rubbed twice on the ſame place, makes it black. This tincture, it is ſaid, cannot be got out by ſoap, or any other method of cleanſing, but after nine or ten days diſappears of itſelf. It is ſaid alſo by the ſame authors, that hogs and parrots, feeding on this fruit, have their fleſh and their fat all tinged throughout of a violet colour. *Ligon.* America.

JUNIPER, (*Cycl.*) *Juniperus*, in botany, the name of a genus of trees, the characters of which are theſe: The male flowers are of the amentaceous kind, conſiſting of a number of ſmall leaves, loaded with many apices. The fruit are round berries, containing angular kernels, and in them oblong ſeeds. To this it is to be added, that the leaves are plain and ſimple, not like thoſe of the cypreſs, which is the character that diſtinguiſhes this from the cedrus.

The ſpecies of *Juniper*, enumerated by Mr. Tournefort, are theſe: 1. The common ſhrubby *Juniper*. 2. The tree *Juniper*. 3. The ſmall mountain *Juniper*, with broad leaves and oblong berries. 4. The great *Juniper*, with blue berries. And 5. The great *Juniper*, with reddiſh brown berries. *Tourn.* Inſt. p. 589.

The confuſion in names that has ariſen from the calling ſome of the *Junipers* by the name of cedar, is as old as Theophraſtus. In the days of this author the Greeks plainly did not diſtinguiſh between the names *Juniper* and cedar, but applied them indifferently to the ſame trees; and all the authors ſince have more or leſs given into it. The Greeks uſed alſo the word *thyon* as the name of both the one and the other of theſe trees. This *thyon* ſeems originally to have been the name of a kind of ſavin, uſed in the ſacrifices of the Greeks; but the reſemblance between this tree and the *Juniper*, called at that time the cedar, which was probably the ſame with our cypreſs-leav'd *Juniper* of theſe times, occaſioned its being called by the ſame name with it; and from thence all the other kinds of *Juniper* were called cedars; and this word thyon, as well as the others of *Juniper* and cedar, became indiſcriminately uſed as the name of all the kinds of this tree. Among the Greeks we find the *Juniper* called the wild cypreſs; and among the Arabians it is called the wild cedar. Myrepſus uſes the words *Juniper* and wild cedar as ſynonymous, and makes them the ſame with the citrus of the Romans. Some authots, ſince the diſcovery of America, have called the Weſt Indian *Junipers* by the name of *Cedrus Atlantica*; and we at preſent call thoſe of Virginia, and other places, by the names of Virginian and Bermudas cedars. The Spaniards have confounded the ſeveral ſpecies of *Juniper* and cypreſs under the name *Enebro*, though it was originally only uſed to expreſs the *Junipers* commonly ſo called; and the ſmall cedars, which are alſo *Junipers* of one kind or other; and in this ſenſe it made no real confuſion upon the whole. The reader is always to examine the context in his author, when he meets with the word cedar in any language, for it runs thro' a great many with very little variation, before he can know whether the cedar of Lebanon or the common *Juniper* be meant by this name.

Theophraſtus, in his time, tells us, that the world diſtinguiſhed two kinds of cedar, which they called the Lycian and the Phœnician; but he tells us, that ſome aver'd at that time, that theſe were the ſame ſhrub, and that both of them were of the ſame nature with the *Juniper*. This author him-

ſelf tells us, that the only difference between the *Juniper* and cedar, was in the leaves, for that the leaves of the cedar were hard, ſharp, and prickly, and thoſe of the *Juniper* ſofter; and that the *Juniper* tree grew much higher than the cedar. It is plain from this, that the Greeks had no idea of the cedar of Lebanon under this name, but that their cedars were only *Junipers* of peculiar ſpecies, and of the nature of our Virginian and Bermudas cedars. The Greeks in general, after the time of this author, called both theſe trees by the name of cedar, only ſometimes they diſtinguiſhed them by calling the low kind *oxycedrus*, the prickly cedar, becauſe of its prickly leaves.

JUNKES, on board a ſhip, is uſed to ſignify old hawſers.

JUNO, in aſtronomy, a name given by ſome to the ſecond ſatellite of Jupiter. *Lowthorp*'s Abrid. Phil. Tranſ. vol. 1. p. 408.

IVORY (*Cyl.*)—A green dye may be given to *Ivory* by ſteeping it in aqua fortis tinged with copper or verdigreaſe.

And by converting the aqua fortis into aqua regia, by diſſolving a fourth part of its weight of ſal ammoniac in it, *Ivory* may be ſtained of a fine purple colour. *Boyle*'s Works abr. vol. 1. p. 133.

Ivory has the ſame medicinal virtues with hartſhorn; its ſhavings too, like thoſe of hartſhorn, boil into a jelly with water, which has the ſame reſtorative quality. See the article HARTSHORN, *Cycl.* and *Suppl.*

Foſſile IVORY. The abundance of elephants teeth found buried in different parts of the world, and many of thoſe parts ſuch as no elephant is ever known to have lived in, have given great amazement to naturaliſts.

The long tuſks, which are what we call *Ivory*, are the only teeth the vulgar are acquainted with in this creature, yet even theſe, in their foſſile ſtate, have often been miſtaken for horns, or other animal parts. The grinders of this animal are ſo enormouſly large, and of ſo ſingular a ſhape, that it requires ſome knowledge in natural hiſtory to diſcover them at ſight, and many have miſtaken them when imperfect, for parts of a petrified ſhell-fiſh of the nautilus kind, their root being hollowed all along, and armed with an indented ridge on each ſide, in the manner of the back parts of ſome ſhells of that and of the cornu ammonis kind.

We are not to wonder that the teeth of elephants are found more frequently than any other bones of the animal, ſince their uſe in the creature required that they ſhould be harder than any other bone, and that hardneſs has preſerved them in places where the other bones have periſhed. The different ſtate in which theſe teeth are found, is wholly owing to the different juices abounding in the earth in the place where they were depoſited, ſome of thoſe juices being of power to preſerve, others to deſtroy them; ſome eating them inſenſibly away, ſome as it were calcining them by ſlow degrees, and others rendering them greatly more hard and durable than before. Mem. Acad. Par. 1727.

Count Marſigli, and ſome other writers, have thought it an eaſy ſolution of the queſtion of the teeth and bones of elephants being found in countries where elephants are not naturally found, that we owe them to the Romans, who bringing them over for their uſe in war, buried them wherever they happened to die. But Sir Hans Sloane expreſſes himſelf very juſtly againſt this opinion: He obſerves, that of the remains of elephants found in Europe, nothing is ſo common as the *Ivory* tuſks. Now, as he well obſerves, the Romans held *Ivory* in the higheſt eſteem, and it ſold among them at a great price; wherefore had they been the buryers of theſe elephants, they would certainly have taken away the *Ivory* tuſks firſt. It is certain, therefore, that accidents, and not deſign, have buried theſe bones, and that accident can have been no other than ſome prodigious inundation. Woodward is deſirous of making the univerſal deluge to have done all this, but that ſeems not neceſſary to be ſuppoſed in every caſe. Sir Hans Sloane gives an enumeration of the moſt curious of theſe pieces of foſſile *Ivory*, which his own cabinet contained, and of ſome others of the moſt remarkable, mentioned by authors; from which we may form a very diſtinct idea both of the nature of the bodies themſelves, and of the places where they are uſually met with. See Philoſ. Tranſ. N° 403. p. 458.

One of theſe is compoſed of coats or layers, like the annual circles or rings in the trunks of trees. The large piece, which was the baſe of the tooth, is compoſed in this ſpecimen of nine ſuch coats, ſome of which have about a tenth of an inch in thickneſs, which, allowing for the conic cavity within, which is ſomewhat more than the thickneſs of either of the ſides, gives the whole tooth at the baſe three inches in diameter. Toward the ſmaller end of the tooth, theſe nine coats were found to grow together, and form only two or three, which are conſiderably thick.

In the baſe of the tooth, each of the nine coats may, with care, be ſeparated into a great number of others which are not thicker than common parchment. The manner of theſe teeth falling to pieces, is alſo a proof of their being of this coated ſtructure, for they always fall into hollow fragments which are parts of theſe coats. This ſtructure is alſo ſometimes diſtinguiſhed in the recent teeth of the elephant, which when diſeaſed will ſometimes exfoliate, or throw off pieces in form of coats of the ſhape of a part of the tooth, but as thin as paper, and eaſily breaking on the lighteſt touch.

The power of ſubterranean calcinations to render things of this kind brittle, is alſo remarked by the ſame author from Moreton's hiſtory of Northamptonſhire, in the inſtance of a foſſile tuſk of an elephant which was in the whole at leaſt ſix foot long, and had preſerved its natural whiteneſs, though rendered ſo brittle as to fall into ſeveral pieces in the digging. This was dug up near Little Bowden in Northamptonſhire; and the ſtrata of the place where it lay, were as follows: 1. Vegetable mould fourteen inches. 2. Loam a foot and half. 3. Large pebbles, with a ſmall mixture of earth among them, two foot and a half. 4. Blue clay; in the upper part of this laſt ſtratum, the tooth was found. *Moreton*'s Hiſt. of Northamptonſhire.

Sir Hans mentions another elephant's tuſk very intire and ſound, found in Siberia. It is of a brown colour, and is hollow at the bottom, as all elephant's teeth are: This is five foot ſeven inches long, ſix inches in diameter at the baſe, and its weight forty-two pounds. The like are common in Siberia and many parts of Ruſſia, and are ſo little injured, that they are uſed as *Ivory*, and are ſuppoſed to be the teeth of a vaſt animal called the *mammouth*, which they think lives under ground. Ludolfus, however, ſays, that the more ſenſible people among the Ruſſians allow theſe to be the teeth of elephants, and ſay that they were brought to their country, and buried there by the univerſal deluge. One of theſe teeth is in the collection of curioſities of Peterſburg, and weighs one hundred and eighty-three pounds. They are found very plentifully in the high banks of rivers, which break and fall down in large pieces after froſts. The inhabitants, who have an opinion of their belonging to a ſubterranean animal, pretend that the creature dies as ſoon as ever it ſees the light, which they ſay ſometimes happens to it when it comes abruptly to a precipice, ſuch as the ſteep bank of a river, which they ſay is the reaſon why they are ſo frequently found in thoſe places. They pretend that they have ſometimes found the intire ſceletons with the fleſh yet remaining on the bones, and a thouſand other fabulous accounts of this imaginary animal, are given in the hiſtories of that country. Cornelius Le Brun, in his travels through Ruſſia to the Eaſt-Indies, mentions vaſt numbers of elephant's teeth found lying on the ſurface of the earth near Veronitz, which puzzle people to imagine how they came there: The Czar's opinion, he ſays, was, that Alexander the Great, when he paſſed the Tanais or Don, advanced as far as Koſtinka, a ſmall town eight werſts from thence; and that, probably, many of his elephants dying there, theſe teeth are the remains of them. Phil. Tranſ. N° 403. p. 468.

JUPATUMA, in zoology, a name by which ſome call a very remarkable American animal, known among us by the name of the *opoſſum*. *Marggrave*, Hiſt. Braſil. See OPOSSUM.

JUPUJUBA, the Braſilian name of a bird of the woodpecker kind, more commonly known by the name *japu*. See the article JAPU.

JUQUER. This plant is found in Braſil, and is of a poiſonous nature; but if we may credit Piſo, its root is its antidote. *Boyle*'s Works abridg. vol. 1. p. 14.

JURIS UTRUM, in law, a writ which lies for the parſon of a church, whoſe predeceſſor hath alienated the lands and tenements thereof. Terms of Law. *Blount*, *Cowel.*

JURUCUA, in zoology, the Braſilian name of a ſpecies of tortoiſe. This has feet almoſt in the ſhape of wings, the fore ones about ſix inches long, the hinder ones conſiderably ſhorter; its tail is ſhort, and of a conic figure; its eyes large and black; its mouth has no teeth, but reſembles the beak of a bird. It frequently grows to four foot long, and about three in width; its ribs are faſtened to the ſhell, and are eight on each ſide; the middle ones of theſe are the longeſt, the fore and hinder ones being the ſhorter. The fleſh and eggs of this ſpecies are very delicately taſted; they lay their eggs in holes on the ſea ſhore, covering them over with ſand, and leaving them for the ſun to hatch them. There are uſually a great many very odd figures, like geometrical lines, running in various directions on the ſhell; the whole ground of the ſhell is uſually black and very gloſſy, adorned with yellow variegations; but this is no certain character of the ſpecies, the varieties in the colouring of theſe ſhells being very great. *Ray*'s Syn. Quad. p. 256.

JURUNCAPEBA, in zoology, the name of a ſea fiſh of the turdus or wraſſe kind, caught about the ſhores of the Braſils, and called alſo *Itaiara*. It is uſually about five or ſix inches long, and about a third part of its length in breadth; its mouth is extremely large and wide, and of a ſomewhat triangular figure; its eyes are large, and their pupil white, their iris red. It has a long back fin, the anterior rays of which are prickly, the others not ſo; its ſcales are ſo evenly arranged that it ſeems ſmooth, and its colour all over is a very beautiful red; its belly having many white ſpots, and its ſides a great number of them of different ſizes, black, brown, and red; its fins are all red, and ſpotted with black. It is caught among the rocks, and is a very delicate fiſh for the table. *Marggrave*'s Hiſt. Braſil.

JURURA, in zoology, the name of a ſpecies of tortoiſe common in the Braſils. It is a ſmall kind, ſeldom exceeding ten fingers breadth in length, and eight or nine in length, and is of an elliptic figure; its under ſhell is about nine fingers long, and four and a half broad, and is flat; it can at pleaſure hide its whole body in the ſhell, or thruſt out its neck to three fingers breadth diſtance; the head is thick and long, the noſe elevated and pointed; the mouth is large, and the eyes black; it has four long claws on its feet; its tail is ſhort and pointed, and its ſkin is rough and ſcaly. The upper ſhell is brown, the lower yellow; its eggs are white and round, and about half the ſize of a hen's egg, and are very well taſted. *Ray's* Syn. Quad. p. 258.

JUS (*Cycl.*)—Jus *Gladii* is mentioned in our Latin authors, and the Norman laws, where it ſignifies a ſupreme juriſdiction, *Camd.* And hence it is, that at the creation of an earl, he is ſaid to be *gladio-ſuccinctus*, to ſignify that he had a juriſdiction over the county of which he was made earl. See PLEAS *of the Sword*, *Cycl.*

JUSQUIAMUS, in botany, a name uſed by ſome authors for the hyoſcyamus or henbane. *Ger.* Emac. Ind. 2.

JUSSIEUA, in botany, the name of a genus of plants deſcribed by Linnæus, the characters of which are theſe: The perianthium is ſmall, and ſtands upon the germen of the piſtil; it is compoſed of five leaves, which join at the baſe, and are of a pointed oval figure. The flower conſiſts of five oval expanded petals; the ſtamina are ten very ſhort and ſlender filaments, the antheræ are roundiſh, the germen of the piſtil is oblong, and ſtands under the cup; the ſtyle is capillary, the ſtigma is flat, and capitated and marked with fine ſtriæ. The fruit is oblong, thick, and coronated, and opens longitudinally when ripe; the ſeeds are numerous, and ſtand in ſeries. *Linnæi* Gen. Plant. p. 186. Hort. Malabar, vol. 2. p. 51.

JUSSIEVIA, in botany, a name given by Houſton to a genus of plants deſcribed by Linnæus under the name of *jatropha*. See the article JATROPHA.

JUSTICIA, the name given by Houſton to the plant, which is called *adhatoda* by Tournefort, and *echolium* by Rivinus. The name *Juſticia* is preſerved by Linnæus, and the plant in his ſyſtem is a diſtinct genus. The characters of this are, that the cup is an extremely ſmall perianthium compoſed of one leaf, divided into five ſegments at the end, erect, narrow, and acute; the flower is a ſingle petal, forming a gibbous tube, with a gaping mouth, the upper lip of which is oblong, and has a rim round its edge; the under one is of the ſame length, and is bent backward, and obtuſely trifid or divided into three ſegments. The ſtamina are two pointed filaments, and are hid under the upper lip of the flower; the antheræ are erect and bifid at their baſe. The fruit is a capſule, oblong, obtuſe, narrow at the baſe, containing two cells with two valves, and a ſeptum placed in a contrary direction to the valves. The ſeeds are roundiſh. *Linnæi* Gen. Plant. p. 4.

JUSTICIAR, in our old laws, an officer inſtituted by William the Conqueror as the chief officer of ſtate, and who principally determined all pleas civil and criminal. He was called in Latin, *capitalis juſticiarius totius Angliæ*. *Maddox* Hiſt. of the Excheq. c. 9.

JUSTICIARII, in church hiſtory, an appellation given to heretics who boaſt much of perfect righteouſneſs, and deſpiſe others; ſuch were the Phariſees among the Jews, and the Novatians and Donatiſts among the Chriſtians. *Hoffm.* Lex. in voc.

Magiſter JUSTICIARIUS, a judge in the kingdom of Naples, who has ſupreme juriſdiction in all caſes of treaſon, and pleas of the crown, and finally determines all appeals; he has four aſſeſſors. *Hoffm.* Lex. in voc. *Juſticiarius.*

JUSTICIARY *Court*, in Scotland. The court of *Juſticiary*, has ſupreme juriſdiction in all criminal cauſes. It came in place of that of *juſtice Eyre*, or *juſtice general*, which was laſt in the perſon of the earl of Argyle, who tranſacted for it with king Charles I. and was made juſtice general of all the iſlands; which raiſing great debates between him and ſome hereditary ſheriffs there, the juriſdiction was taken away in 1672, and this court of *Juſticiary* erected inſtead of it, conſiſting of a juſtice-general, alterable at the king's pleaſure; a *juſtice clerk*, and five other *judges*, who are likewiſe lords of the ſeſſion.

This court commonly ſits on mondays, and has an ordinary clerk, who has his commiſſion from the juſtice clerk. They have four ordinary macers and a doomſter, appointed by the lords of ſeſſion.

The form of proceſs is this, the clerk raiſes a libel or indictment, by a bill paſſed by any of the lords of that court, at the inſtance of the purſuer againſt the defender or criminal, who is committed to priſon immediately after citation. When the party, witneſſes, and great aſſize (or jury of forty-five men) are cited, the day of appearance being come, fifteen of the great aſſize are choſen to be the aſſize upon the pannel (or priſoner at the bar). The aſſize ſits with the judges to hear the libel read, witneſſes examined, and the debates on both ſides, which is written verbatim, in the adjournal books. The king's advocate pleads for the purſuer, being the king's cauſe, and other advocates for the pannel. The debates being cloſed, the judges find the libel or indictment either *not relevant*; in which caſe they deſert the diet, and aſſoil or abſolve the party accuſed: Or elſe they find the libel *relevant*; in which caſe the aſſize or jury of fifteen is removed into a cloſe room, none being allowed to be preſent with them; where they chuſe their own chancellor and clerk, aud conſider the libel, depoſitions, and debates, and bring in their verdict of the pannel ſealed, guilty or not guilty. If not guilty, the lords abſolve; if guilty, they condemn, and order the ſentence of condemnation to be pronounced againſt the criminal by the mouth of the doomſter. *Chamberlain's* Preſent State of Great Brit. p. 385. The lords of *Juſticiary* likewiſe go circuits twice a year, *viz.* in May and October, into the country, which is divided into three circuits, the ſouth, weſt, and north, where aſſizes are held, and criminals tried, as mentioned above.

JUSTICIES, in law, a writ directed to the ſheriff in ſome ſpecial caſes, by virtue of which he may hold plea of debt in his county court for a large ſum, whereas otherwiſe, by his ordinary power, he is limited to ſums under forty ſhillings. F. N. B. 117. *Kitch.* 74.

JUTRA, in botany, a name uſed by ſome authors for the tree whoſe fruit is the tamarind of the ſhops. *Piſo*, p. 157.

IVY, *Hedera*, in botany, the name of a genus of plants, the characters of which are theſe: The flower is of the roſaceous kind, or compoſed of ſeveral leaves arranged in a circular order. The piſtil ariſes from the cup, and finally becomes a roundiſh berry, containing ſeeds gibboſe on one ſide, and flat or ſmooth on the other.

The ſpecies of *Ivy* enumerated by Mr. Tourneſort are theſe: 1. The common *Ivy*. 2. The poetic, or Dionyſian *Ivy*. And, 3. The American tree *Ivy*, with ſpear-pointed leaves. *Tournf.* Inſt. p. 612.

Ivy is a very well known plant, and it is very certain, from all the writings of the antients, that they, when they wrote with propriety, meant the ſame plant by the word *Hedera* that we do at this time. There is, however, in Pliny, a paſſage which has appeared unintelligible to his commentators in general, and ſeemed to point out ſome other plant as known to the antients by the name *Hedera*, beſides our *Ivy*. See the article CISTUS.

Ground-IVY, *Hedera Terreſtris*. The leaves of the common ground-ivy are found ſometimes to produce on their under part certain galls, or round protuberances, of a fleſhy texture and green colour, of the ſize of nutmegs, or ſometimes larger. Theſe are in ſome years ſo common in France, that the poor people eat them either raw or roaſted, and find them a wholeſome food.

It is well known that the leaves of the oak afford very often protuberances of a like kind, or ſoft galls, called oak apples. Theſe, however, are not eatable, becauſe of the auſtere taſte of the juice of the tree. The common ſage alſo produces ſuch galls or apples very frequently in the warm countries, and theſe are ſo common, ſo large, and ſo well taſted, that they are in ſome places brought to the market. All theſe galls have the ſame origin, they are all produced by the eggs of a fly, which hatch into a worm or maggot that feeds on the juices of the plant. On opening theſe galls at a proper time, the maggot is always found within. See the article GALLS.

Ground Ivy is an attenuant and diſſolvent, and famous, both externally and internally, as a vulnerary. It is much uſed by way of tea in diſorders of the breaſt and lungs, and is ſometimes an ingredient in the pectoral decoction. It is eſteemed a ſpecific in eroſions and ulcerations of the viſcera, and particularly of the kidneys and lungs; with which intention its juice has been given people in conſumptions. Lindanus praiſes it in an *empyema* and *vomica pulmonum*, and recommends it to ſuch as void blood and purulent matter by urine. It is alſo ſaid to be good in bruiſes, and to cure the head-ach: But notwithſtanding all this, it is left in great meaſure to the common people.

Petrified IVY. In places where the incruſtations of moſſes and other vegetables happen, *Ivy* is one which very frequently undergoes the ſame fate. The beauty and elegance of the *petrified Ivy* of Derbyſhire with us, has been long famous. In the mountains near matlock baths in that county, there are many grotto's which afford great quantities of this *petrified Ivy*, as it is called, and of other incruſtations of the ſame kind. The beauty of theſe caverns is ſcarce to be conceived; their roofs are hung with ſtalactitæ and ſtalagmitæ, in form of cluſters of grapes, and the incruſted plants are many of them ſo delicate and tender that they fall to pieces under the touch. It is very common in theſe places to ſee *Ivy* creeping along the rock; in ſome parts the ſame branch will be found only incruſted in the common way; in other parts the ſtony matter will ſo penetrate its pores, that the wood and leaves ſhall appear wholly petrified, and in others the ſame branch ſhall be yet freſh and vegetating.

Hazel trees often make a part of theſe incruſtated matters, and appear in this ſtate very beautiful, their roots and branches being in ſome parts only thinly incruſted, in others more thickly and firmly petrified. Among theſe alſo, as in the *Ivy*, there are

continually ſhooting up a number of young branches, which after a time will all ſhare the ſame fate. Philoſ. Tranſ. N°. 456. p. 353.

Nothing can give a more lively and beautiful idea of the whole buſineſs of petrifaction, than this appearance of the ſeveral ſtates or ſtages of it in the *Ivy*, and other vegetables in theſe places. It is evident, that in theſe places not only the water diſtilling out of the rocks is able to depoſit ſtony matter on the vegetables, *&c.* in form of incruſtations, but even the ſteams and exhalations being highly ſated with theſe ſtony particles, are capable of working the ſame effect. This is evidently the caſe in regard to ſeveral pieces of the incruſtated *Ivy*, which have never been in the way of water, and yet are as compleatly covered with ſtone as the reſt; and this is the only method in which the ſtony matter is conveyed into the internal parts of the plants that are really petrified in theſe places. For experience ſhews in regard to theſe, that they are not petrified firſt, and afterwards incruſted, but it is plain, that the incruſtation is made firſt, and that afterwards, when in a long ſpace of time the vegetable matter within is periſhed and waſted away, the cavity that it leaves, by this means, is filled up afterwards with the ſame ſtony matter. It is evident that this inner part of the petrifaction was not formed while the vegetable yet exiſted by the inſinuation of ſtony matter into its pores, but that it is a mere maſs of ſtone added afterwards, ſince it has never any the leaſt trace of the inner ſtructure of the vegetable: And this ſtony matter, tho' uſually much more firm and ſolid than the outer cruſt, muſt in many caſes have been formed merely by vapours, as it is in places where water is never found to come on any occaſion. The water of ſome ſprings may be ſo loaded with ſtony matter, as perhaps by penetrating the pores of wood, and other lax bodies, to encreaſe greatly their ſpecific gravities, yet ſurely it is contrary to the laws of matter to ſay, that there are any hidden properties in that water capable of changing the bodies put into it, into other bodies ſpecifically different. A piece of wood put into one of theſe ſprings may in time loſe its texture and coherency, by the admittance of heterogeneous particles of different attractions; but the cauſe of coherency in the parts of the original body muſt ceaſe and be diſſolved, before it can be ſaid to become a part of any other body whatever. Afterwards, indeed, the ſpace that was poſſeſſed by the parts of the original body, may be ſupplied by thoſe of the new one, ſo as to make in time an uniform ſtone in the ſhape of the original plant; but if this petrified plant be ſtill kept in the place, where the ſame petrifying quality continues to act upon it, it will loſe even that ſhape, and become a part of that body which is contiguous to it, and ſo a great number of theſe plants thus petrified, arranged near to one another, will compoſe large maſſes, and perhaps whole ſtrata of ſtone. This is clearly the caſe in regard to many of the lime-ſtone rocks about the places where the petrified *Ivy* is found; and perhaps it might be carried ſo far as to ſtrengthen our conception about the general formation of the ſtrata of lime-ſtone and marble; that appearing to be every where (notwithſtanding that Dr. Woodward diſpatches them much more expeditiouſly) but eſpecially in the Peak of Derbyſhire, ſuch a petrifaction as has been deſcribed, only perfectly finiſhed. Philoſ. Tranſ. N°. 456. p. 356.

IVY *Reſin*, in the materia medica, is brought from Perſia, and ſome other of the hot countries, where alone it is to be found in any conſiderable quantity. Mr. Ray, indeed, mentions ſome of it having been found on *Ivies* in Worceſterſhire, and other authors in other parts of Europe; but theſe are only ſingular inſtances of what may happen, our ſhops being obliged to be ſupplied from the Eaſt.

The antient Greeks were acquainted with this reſin, which they called *lacryma hederæ*, as ſome alſo do to this day. It is ſaid to be emollient and detergent, and to make a noble balſam for freſh wounds; but is never uſed by us with theſe intentions. The Perſians eſteem it much as an aſtringent.

IXALOS, in natural hiſtory, a name given by the Greek writers to the creature which we call the chamoy goat.

IXIAS, in botany, a name given to the chamæleon thiſtle, of the white kind; and in the materia medica of the antients, to a poiſon, againſt which they have preſcribed many remedies. The uſe of ſynonimous words among the antients has given great occaſion to error and confuſion in the writers of later times; and this is a very remarkable inſtance of it. An explication of this confuſion is neceſſary, in order to the underſtanding either of Pliny, or of almoſt any other author who has happened to mention the poiſon *Ixias*, or the chamæleon thiſtle. It is to be obſerved, that the words, tho' ſynonymous with us, are not truly ſo in the original Greek, the one being a ſubſtantive of the feminine gender, always uſed alone, and with the particle ἡ prefixed to it, and the other being a maſculine adjective, and always introduced by the particle ὁ, and prefixed to the word chamæleon. The word *Ixias*, when uſed as a ſubſtantive, and having the particle ἡ prefixed to it, ſignifies no other than the common bird-lime which was in uſe at their times as well as now, and was eſteemed, if given internally, one of the ſlow poiſons. Galen ſays, it was one of thoſe which took time to perform its fatal office; and Dioſcorides and others inform us, that the manner of its killing the perſon to whom it was given, was by clogging and gluing up the inteſtines, ſo that nothing could paſs thro'. In this ſenſe bird-lime was eſteemed a poiſon, and when the word *Ixias* was uſed as a ſubſtantive of the feminine gender, and written ἡ ἰξιας, it always was meant as the name of this ſubſtance alone.

The female chamæleon thiſtle, or, as ſome call it, the white chamæleon thiſtle, was found in thoſe countries ſometimes to exſudate near its root a ſort of gummy juice, which was ſo like bird-lime in its quality of tenacity, that it was called by the ſame name by theſe authors, and the plant which was found to produce it was diſtinguiſhed from the other by the addition of a word to its name, expreſſive of this glue. In calling it the glue chamæleon, or bird-lime chamæleon, they could uſe no other word than that by which they expreſſed ſuch a ſubſtance, and therefore they called it the *Ixias* chamæleon. This, however, they always expreſſed by both words together, and by prefixing the particle ὁ denotative of the gender, to denote the word *Ixias* there to be an adjective ſignifying viſcous, and not the name of bird-lime: They wrote it on this occaſion ὁ ἰξιας χαμαιλέων, and by Theophraſtus it is called ἰξινη ακανθη. If this name had been uſed by all the writers, as well as by this great author, there could have been no confuſion between things in themſelves ſo unlike as the chamæleon thiſtle and common bird-lime; yet Pliny has tranſlated as belonging to the chamæleon thiſtle all that the Greek writers have ſaid of bird-lime; and others, looking upon him as a good authority, have branded a very innocent plant with the name of a poiſon. The roots of the white chamæleon being eſculent, and its gum, tho' like bird-lime in viſcoſity, yet being inoffenſive to the human body. See the article CHAMÆLEON.

IXOPUS, in botany, a name given by Cordus, and ſome other authors, to the chondrilla or ſuccory. *Ger. Emac. Ind.* 2.

IXORA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are, that the calyx is a ſmall erect perianthium, divided into four ſegments, and remaining when the flower is fallen. The flower conſiſts of one petal, which is a ſlender, cylindric, and very long tube, with a flat border, divided into four ſegments, of an oval figure. The ſtamina are four very ſhort and crooked filaments, placed in the notches of the flower. The antheræ are oblong. The germen of the piſtillum is roundiſh. The ſtyle is ſlender, and of the length of the tube; and the ſtigma is bifid. The fruit is a roundiſh berry, containing only one cell, in which are four ſeeds, convex on one ſide, and angular on the other. *Linnæi* Gen. Plant. p. 27.

JYNX, in zoology, the name of a bird of the woodpecker kind, called alſo the *torquilla*, and in Engliſh, the *wry-neck*. It is a little ſmaller than a lark. Its beak is of a bluiſh colour, and is not ſo ſtrong and thick as in moſt of the woodpecker kind. It can at pleaſure raiſe the feathers of its head into a ſort of creſt, and is a very beautifully variegated bird. Its colours are a pale grey, or aſh-colour, a white, a browniſh red, a deep plain brown, and black. Its head is grey, and is variegated with tranſverſe black lines. Its belly and breaſt have a caſt of yellowiſh in the grey, and are in like manner variegated with black lines. Its breaſt is white, with the ſame variegation. Its back is black, and the reſt of the colours are beautifully mottled on its wings. It has a very whimſical way of turning and twiſting its neck about, and bringing its head over its ſhoulders, whence it had its name *Torquilla*, and its Engliſh one of *wry-neck*. It feeds on ants, which it very dexterouſly transfixes with the bony and ſharp end of its tongue, and then draws them into its mouth. *Ray*, Ornithol. p. 95. See Tab of Birds, N°. 13.

IZTICHUILOTLI, in natural hiſtory, the American name of a ſtone found in New Spain, and ſome other places; it is very hard, of a beautiful black, and takes a fine poliſh. The Americans are very fond of it as a gem, and wear it by way of ornament; but they attribute no medicinal virtues to it.

De Laet mentions an American ſtone in his poſſeſſion, which was cut by the Indians into a flat oval plate, and was of a beautiful black, but with two round ſpots of a ſilvery white. He ſuppoſes this to have been the *uterinus lapis*, and probably it was either that ſtone, or of the ſpecies here mentioned.

IZTICPASO-QUERZALIZTLI, in natural hiſtory, the name given by the natives of ſome parts of America to a ſtone famous for its virtues in curing the colic, and many other diſeaſes, externally applied: It is of a beautiful green colour, and is by Ximenes ſuppoſed a coarſe ſpecies of emerald; but is more properly a very fine kind of *lapis nephriticus*, of a pale green colour, very hard, and more pellucid than the other ſpecies of that ſtone, but yet always ſhewing that greaſy look on being poliſhed, which characterizes all the nephritic ſtones. It is uſually found in large maſſes, and the Indians cut it into flat pieces, which they apply to the navel in the colic, and in other diſeaſes, to the part affected, and ſuppoſe it has great power in promoting a diſcharge of the noxious humours. *De Laet.*

IZTLI, in natural hiſtory, the American name of a ſpecies of ſtone, of which the natives made their weapons of war, *&c.* before they knew the uſe of iron. It is called by De Laet and other authors, *lapis novacularum*. See the article NOVACULARUM *Lapis*.

K.

KAALING, in natural hiſtory, the name of a ſpecies of ſtarling, common in China, and not unfrequent in the Philippine iſlands. It is black, but its eyes, legs, and beak are yellow. It is eaſily kept tame, and may be taught both to ſing and talk. It eats rice and inſects in its wild ſtate; but when kept in a cage will feed very heartily on bread, and all kinds of fruits.

KABANI, in the oriental offices, a perſon who ſupplies the place of what we call the notary publick. All obligations that are valid are drawn by him; and he is likewiſe the public weigh-maſter, and every thing of conſequence ought to be weighed before him. *Pocock*'s Egypt. p. 170.

KABBALA. See CABBALA.

KABBOS, in zoology, the name of an Eaſt Indian fiſh of the muſtela kind. It grows to about two feet long, has no ſcales, but feels ſmooth and ſoft, like the eel, and is of a brown colour; the noſe or ſnout much paler than the reſt, and ſpotted with black. The head is obtuſe, and the eyes placed very near the extremity of it. *Ray*'s Ichthyolog. Append. p. 4.

KÆADAS, Καιαδας, among the Lacedæmonians, a dungeon for throwing their criminals into. It was of the ſame nature with the Athenian *Barathron* or *Orygma*. *Potter*, Tom. 1. p. 135. See BARATHRON and ORYGMA.

KÆKURIAGHAKA, in botany, a name uſed by ſome authors for the tree which affords the gum elemi of the ſhops. *Herm.* Muſ. Zeyl. p. 48.

KAFER *Aliheud*, in the materia medica, the name given by Aviſenna to the drug we call *bitumen Judaicum*, or Jews pitch. What this author gives us under this head, is principally tranſcribed from Dioſcorides; but it appears that the Arabian has confounded, in his account, the piſſaſphaltum with the aſphaltum or Jews pitch, which the original author keeps ſeparate, and to which he attributes different virtues, and of which he gives different hiſtories. Dioſcorides tells us, that the piſſaſphaltum was generated in the mountains of Epidaurus and other places, and waſhed down into the ſea or rivers by the torrents that ſucceeded rains, and that the aſphaltum was generated in the bottom of the ſea. Aviſenna tells us, that the *kafer aliheud* was ſometimes produced on mountains, and ſometimes in the ſea; and hence it appears, as well as from other inſtances, that he has deſcribed both together under the ſame name of *bitumen Judaicum*.

The great reſemblance in ſound between this word *kafer* and *kofer*, which is the name of camphor, has been the occaſion of great errors among the commentators on the works of the Arabians in general. Averrhoes deſcribes this drug in the ſame manner that Aviſenna and the reſt do; but his interpreters, inſtead of rendering his words *bitumen Judaicum*, have rendered them *Camphora Indica*; hence the being produced in the ſea, and the healing of burnt wounds are attributed to camphor, though wholly different both from its real hiſtory and true virtues.

KAGHU, in botany, a name by which ſome authors have called the cajou, or caſhew tree, the fruit of which affords us the caſhew nuts. *Herm.* Muſ. Zeyl. p. 37. See ACAJOU.

KAIEBACA *Dabari*, in botany, the name uſed by ſome authors for the arnotto or urucu, called orleana or orellana by other authors. *Ger.* Emac. p. 1554.

KAIMACHAN, among the Turks. See CAIMACAN, *Cycl.*

KAKILE, a ſpecies of *eruca*. See the article ERUCA.

The original ſenſe of this word was not the plant now named by it; but the *ſoldanella* or ſea bindweed. This was one of the plants uſed in the making the potaſhes, or alkali ſalt for glaſs and ſoap making, when thoſe manufactures were firſt brought into uſe; and it had both the names from that ſalt. The *kakile* from *kali*, and the *ſoldanella* from *ſoder* or *ſolda*, another name of that ſalt. Dioſcorides calls this *crambe thalaſſia*, and we find the ſame name turned into Latin and ſtill preſerved, and the plant called *braſſica maritima*, and in Engliſh the ſea cabbage.

KAKOUSA, in botany, a name by which ſome authors have called the tree, which affords the gum elemi uſed in medicine. Hort. Beaum. p. 35.

KALD, a word uſed by Rulandus to expreſs vinegar.

KALED, a word uſed by ſome of the chemical writers to expreſs volatile.

KALI, *Glaſſwort*, (*Cycl.*) in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the roſaceous kind, compoſed of ſeveral leaves arranged in a circular form. The piſtil ariſes from the center of the flower, and finally becomes a fruit of a membranaceous ſtructure, and roundiſh figure, and containing only one ſeed, which is twiſted or wreathed like a ſnail ſhell, and uſually covered with the leaves of the flower.

The ſpecies of *kali* enumerated by Mr. Tournefort are theſe. 1. The greater *kali* with the ſnail like ſeed. 2. The prickly *kali* with longer and narrower leaves. 3. The prickly *kali* with ſhorter and broader leaves. 4. The woody Sicilian *kali* with membranaceous flowers. 5. The ſhrubby Spaniſh *Kali* with tamariſk leaves. 6. The ſhrubby Spaniſh *kali* with broom like leaves. 7. The ſhrubby Spaniſh *kali* with very narrow hairy leaves. *Tourn.* Inſt. p. 247.

This plant abounds greatly with ſea ſalt, its juices being properly a ſaline, not an inſipid aqueous fluid; but the difference between the produce of this plant when green and when dry, is wonderful in chemical experiments. If diſtilled while freſh and green, it yields an inſipid water; if a pound of it be gathered freſh and hung up to dry, it will yield only three ounces of the dried plant; this being burnt, is more difficult than any other ſubſtance of a ſeeming like texture to be reduced to aſhes; and the aſhes finally produced from this quantity burnt in a potter's kiln, will yield only a dram and half of a whitiſh ſalt, and this will but ſlightly ferment with aqua fortis. Four ounces of the freſh herb being boiled in water, and that water carefully evaporated, there will be formed near three quarters of an ounce of pure ſea ſalt in its own natural cubic form faſtened to the bottom and ſides of the veſſel; and when no more ſalt will ſhoot, the remaining liquor being carefully diſtilled, encreaſing the fire to a proper degree, the water will firſt paſs over, and then a dry volatile ſalt will be raiſed and ſtick to the top and ſides of the veſſel. The ſalts being purified, there will be found as the reſult of the experiments, that this herb, while growing, contains about one fifth part of its weight of common ſalt. The herb which had been thus boiled being dried, and afterwards again boiled in four or five pints of water, and that decoction evaporated to half the quantity, the liquor will yield ſeveral different ſmells, as that of a honey comb, that of cabbage, and other pot-herbs. And after all this, the boiled herb being left to putrify, yields the ſmell of animal excrements, and in the ſame manner becomes the reſort of flies, and yields a proper place of habitation, and food for numbers of worms hatched out of the eggs of thoſe winged inſects. *Henkel*, de Affinit. Veget. et Miner.

All the experiments that can be made with the cubic cryſtals of ſalt, formed in the evaporated decoction of this herb, prove them to be common ſalt; and the volatile ſalt raiſed afterwards by fire from that liquor, in which no more of this cubic ſalt would cryſtallize, is found to be a high alkali by its fermenting with the acid ſpirits. The juice of this plant, when it has been ſet by in order to ſhoot, and all its ſea ſalt has been ſeparated from it by that means, being dried away by evaporation, and the remainder calcined; there is found at laſt a dry and earthy ſubſtance, which has ſomewhat of a lixivial taſte, but does not run to a liquor by being expoſed to the air. This calcined ſubſtance, being mixed with any of the acid ſpirits, but particularly with that of vitriol, becomes of a beautiful blue colour, not inferior to the fineſt ultramarine.

If the recent herb *kali* be ſet to ferment with common water, it yields, in the different ſtages of fermentation, ſeveral very different ſmells; firſt that of pickled cabbage, afterwards that of earth-worms killed in ſpirit of wine, and afterwards that of fiſh and dried herrings. If this matter be after all this diſtilled, it yields a ſpirit very much reſembling the finer ſpirit of tartar, and afterwards an empyreumatic oil, exactly reſembling thoſe of animal ſubſtances; but what is remarkable is, that there can be no volatile ſalt extracted from this putrefied maſs by any art. The reſiduum yields a potaſh, which effervеſces violently with acids, and with the vitriolic acid, becomes a ſal enixum; with aqua fortis, it makes nitre; with ſpirit of ſalt it affords common ſalt, ſuch as that ſpirit was diſtilled from; and with all the acids of whatever kind under proper management, it yields the blue colour before mentioned, approaching more or leſs to the fine colour of the ultramarine, according to the nature of the acid and the proceſs. The ſalt extracted from purified potaſh, made in this manner, is of a greeniſh caſt like native borax, and the remainder, after the extracting of this ſalt on mixing and digeſting with aqua fortis, will become a ſoft gelatinous matter of a truly metallic taſte.

KALKABRE, a name given by ſome of the barbarous writers to *gagates*, or *jet*.

KAMAN, in natural hiſtory, a name given by many authors to a ſtone found about the burning mountains, and at ſome times uſed to engrave ſeals on. It is deſcribed as a white ſtone variegated with ſeveral colours.

KAMAR, a word uſed by ſome writers in chemiſtry to expreſs ſilver.

KAMINE, a name given by ſome to the butter-ſtone. See BUTTER-*ſtone*.

KANFOR, a word uſed by ſome chemical writers to expreſs tin. See the article TIN.

KANNAWAKERAKA, in botany, a name uſed by ſome authors for the tree which produces the gamboge, or gutta gamba of the ſhops. *Herm.* Muſ. Zeyl. p. 26.

KAOLIN, the name of one of the two ſubſtances, which are the ingredients of China ware. The other, which is called *petuntſe*, is eaſily vitrifiable, and this *kaolin* is ſcarce at all ſo. Whence the fire compoſes from a mixture of them both a ſemivitrification, which is China ware.

Mr. Reaumur had an opportunity of examining this ſubſtance, not in its native ſtate, but only in form of ſmall bricks, made out of a paſte of the powder of the native *kaolin* and water. He found it of a white colour, and ſprinkled all over with fine glittering particles; but theſe he did not judge to be fragments of a different ſubſtance mixt among the maſs, as are the ſmall flakes of talc in our clays and ſands; but that the whole maſs was compoſed of ſome ſtone reduced to powder and made into a paſte with water, and that theſe larger ſpangles were only coarſer particles of the powder; the examination of which he promiſed himſelf would diſcover what the ſtone was of which they were formed. And this was the more worthy a diligent enquiry, ſince the *petuntſe* might eaſily be ſupplied by many of our own earths and ſands; nothing being required of that but a ſubſtance eaſily running into a white glaſs. But the difficulty of vitrifying this other ingredient, renders it a thing much more difficult to be ſupplied by one of the ſame nature among ourſelves. The compariſon of theſe, with other mineral ſubſtances, ſoon proved that they were of the nature of talc; or, in other words, that *kaolin* was talc powdered, and made up into a paſte with water. And to be aſſured whether the whole maſs was talc powdered, or any thing elſe with a mixture of talc, he ſeparated the particles of the *kaolin* by water, and found the ſmall ones wholly the ſame with the larger, and that the larger, when reduced to powder alone, made with water a paſte wholly the ſame with the *kaolin*. It is well known, that the fragments of talc have a great reſemblance to the pearly part of ſome ſhell fiſhes; and hence unqueſtionably has ariſen the opinion of porcelain being made of ſea ſhells; ignorant perſons having ſeen the talc or *kaolin*, and taken it for ſhelly matter. Talc has not yet been ſucceſsfully uſed in any of our European manufactures of porcelain; but it is eaſy to ſee, from many unanſwerable reaſons, that ſince China porcelain is made of a mixture of a vitrifiable and an unvitrifiable matter, nothing is ſo likely to ſucceed with us in the place of the laſt of theſe as talc.

1. We know no ſubſtance in the foſſile world ſo difficult to reduce to glaſs as talc, which if put into the ſtrongeſt of our fires, in a crucible, is not to be vitrified, nor even calcined. 2. We know no ſubſtance which keeps ſo much brightneſs after having paſſed the fire as talc, or is of ſo pure a white; whence we may alſo learn that it is not to the *petuntſe* alone, that the China ware owes its whiteneſs, but that the *kaolin* is inſtrumental to the giving it that colour. 3. Talc is tranſparent, nay, and in ſome degree keeps its tranſparence after the action of the moſt violent fire. If we are to make porcelain of a vitrifiable, and an unvitrifiable matter mixt together, yet it is neceſſary that the unvitrifiable one ſhould retain its tranſparence, otherwiſe it would obſcure the maſs; and talc is therefore the only known ſubſtance qualified for this purpoſe. Perſons who have been at the China works, ſay, that the porcelain is made of equal quantities of *petuntſe* and *kaolin*, and it is therefore a juſt and exact ſemivitrification. 4. Talc is well known to have a great flexibility or toughneſs, and as it is found to preſerve this even after it has paſſed the fire; it is very probable, that it is owing to this property of the *kaolin*, that the China ware is ſo much leſs brittle than glaſs. Mem. Acad. Par. 1727.

It has been before obſerved, that we may eaſily in Europe be provided with different ſubſtances, which will, in our porcelain manufactures, ſupply the place of the *petuntſe* of China, and talc appears equally qualified to ſerve inſtead of the *kaolin*. For this purpoſe we may uſe the common Muſcovy talc, or iſinglaſs, uſed by our miniature painters, to cover their pictures inſtead of glaſs, and, by the curious, to preſerve objects for the microſcope; or perhaps the Venetian talc of the druggiſts, would ſucceed even better; at leaſt the proceſs is ſo rational as to be extremely well worth trying.

KAPAMARA, in botany, a name by which ſome authors have called the caſhew nut tree, the acajou, and acajuiba of other writers. Hort. Malab. V. 3. p. 65. See ACAJOU.

KAPNAJICORAKA, in botany, a name given by ſome authors to the tree which produces the gamboge, or *gutta gamba* of the ſhops. *Herm.* Muſ. Zeyl. p. 26.

KAPRILI, a word uſed by ſome chemical writers to expreſs ſulphur. See SULPHUR.

KARABITUS, a word uſed by the Arabian phyſicians to expreſs a delirium.

KARADRE, a name given by the writers of the middle ages to a ſtone, of which they record many imaginary virtues, ſuch as the rendering people amiable, ſprightly, and the like. They deſcribe it to have reſembled cryſtal, but with a mixture of a duſky white. It ſeems to have been a foul kind of pebble cryſtal.

KARENA, a term uſed by Paracelſus, to expreſs a very minute quantity of any liquid. He explains it, by calling it a twenty-fourth part of the ſmalleſt drop: but this is a very indeterminate ſort of meaſure.

KASAM, a word uſed by ſome chemical writers to expreſs iron. See the article IRON.

KATIMIA, a word uſed by ſome chemical writers to expreſs tutty, and by others for the lapis calaminaris.

KATOU-*alou*, in botany, a name uſed by ſome authors for the *ficus Indica*, the arched Indian fig-tree. Hort. Malab. V. 3. p. 73. See FICUS.

KATOU *Carva*, in botany, a name by which ſome authors have called the tree, whoſe leaves are the tamalapatra, or Indian leaf of the ſhops. Hort. Malab. V. 5. p. 109. See the article MALABATHRUM.

KATOVINDEL, in botany, the name given by the authors of the *hortus Malabaricus*, to a genus of plants, called by ſome *elate*, and by Linnæus *phœnix*. Hort. Malab. V. 3. p. 23. See PHOENIX.

KAYL, a word uſed by ſome writers to expreſs ſower milk.

KAYSIR, a word uſed by ſome to ſignify the froth of the ſea, and by others for the pumice ſtone, ſuppoſed to be generated of that froth.

KAZDIR, a word uſed by ſome chemical writers to expreſs tin. See the article TIN.

KEALE, ſmall fragments reſembling chips or broken pieces of ſtone of various kinds; ſome of lime-ſtone, others of free-ſtone, and others of rag-ſtone, found mixed among the earth, of the upper ſtratum in many parts of this kingdom, and giving that ſoil the name of *kealy*; hence, ſome of theſe pieces of *keale* are thin and flat like bits of ſlate. *Moreton's* North. p. 41.

KEALY *ſoil*, in agriculture, is uſed by the huſbandmen for a ſort of land, plentifully ſtrewed with *keale* or *kale*.

KECKLE, on board a ſhip. When the cables gaul in the hawſe, or the bolt ropes do ſo againſt the ſhip's quarter, the ſeamen wind ſome ſmall ropes about them; and this is called *keckling*.

KEDGER, or KEDGE-*anchor*, in a ſhip. See ANCHOR.

KEDRELÆON, *Cedrelaion*, in the materia medica of the antients, an oil taken from the *pix cedri*, or pitch of the cedar tree.

Erotian, and many of the old Greek authors have confounded together the two ſubſtances mentioned by the phyſicians of moſt account; the *cedrium* or *cedria*, and the *cedrelaion* or *cedrelæum*. Theſe were not the ſame ſubſtance, though generally ſuppoſed to be ſuch; but the *cedrium* was a kind of liquid pitch or tar obtained from the cedar wood by burning; and the *cedrelæum* was a liquid oil, that ſeparated itſelf from this *cedrium* or tar, while it was kept boiling over the fire, and was collected by locks of wool dipped into it.

Dioſcorides plainly diſtinguiſhes the two ſubſtances, and in the very formation of the word from *cedria* or *cedrium*, we may underſtand the nature of the ſubſtance expreſſed by it. For as *cedrelæum* was formed from *cedrium*, ſo was *piſſælæum* from *pix*; and as the one expreſſed the ſubſtance ſaved in the boiling of pitch, ſo the other ſignified that which was ſaved in the boiling of *cedrium*, or the pitch of the cedar. Pliny indeed confounds the *cedrelæum* and *piſſælæum* as one ſubſtance; and where he tranſlates Dioſcorides on the virtues of medicines, he often renders that *piſſælæum* which he finds in his author *cedrelæum*. But this is not ſurpriſing; ſince he knew ſo little of theſe ſubſtances, as not only to ſuppoſe them the ſame, but to give an account of their being obtained from the fruit of the cedar, not from its wood. In another place, indeed, he tells us, that this liquid ſubſtance was made from the *cedrium*, or pitch of the cedar, and that it was more efficacious than the common *piſſælæum*. This confuſion of Pliny, in regard to the oil of pitch, and that of the *cedrium*, is evidently owing to his miſtaking the name, by which the Greeks diſtinguiſhed the latter oil from the name of a tree. Inſtead of *cedrelaion*, he has written *credelaton*, and ſuppoſes it a large kind of cedar tree. When he had thus loſt the only name of the *cedrelæum*, it is no wonder that he confounded the ſubſtance with another, ſo like it, as the common oil of pitch or *piſſælæum* was.

KEEL (*Cycl.*)—KEEL-*haling*, or KEEL-*raking*, in the ſea language, is a puniſhment inflicted at ſea on very great offenders, who are drawn underneath the very *keel* of the ſhip. See DUCKING, *Cycl.*

KEEL-*rope*, a hair rope running between the *keelſon* and the *keel* of a ſhip, to clear the limber holes when they are choaked up with ballaſt, &c.

KEELAGE, *killagium*, a privilege to demand money for the bottoms of ſhips reſting in a port or harbour. Terms of law, *Blount*.

KEELING, a name uſed in ſome Engliſh writers for the common codfiſh. *Willughby*'s Hiſt. Piſc. p. 160. See the articles ASELLUS and CODFISH.

KEELSON, in a ſhip, the next piece of timber to the *keel*, lying right over it next above the floor timber.

KEEPITHEJA, in botany, the name by which ſome authors call the tree, on the branches of which the gum lacca of the ſhops is uſually found. *Herm.* Muſ. Zeyl. p. 11.

KEIKEM, in the materia medica, a name given by the Arabian writers to a gum uſed in their time for the making of varniſh.

Gum lacca is generally ſaid to be the ſubſtance meant by it, but Aviſenna ſeems to expreſs by it every thing that was uſed as varniſh. Thus he ſometimes means by it the gum ſandarach, and ſometimes amber. The *gum cancamum* of the Greeks is alſo certainly often meant by it; but this is ſcarce to be mentioned as an explication of the word, it being almoſt as general a term as itſelf, and ſtanding with many of the old authors for ſandarach, gum lacc, and amber, as well as for the gum properly expreſſed by it. In ſhort, all the gums uſed in making varniſh, are in general called by the names of any one of them, and thus vernix, ſandarach, cancamum, and lacca, are made ſynonymous words, and either ſtands for each of the things ſignified by all the words.

KEIRAN, in the oriental learning, the Perſian, and Arabic name for the planet Saturn, according to Salmaſius. See the article CHIUN.

KEKIO. See the article FERN-*oil*.

KELMESAN, in botany, a name given by ſome authors to the acacalis, or wild carob tree. *J. Bauhine*, V. 1. p. 439.

KELP, in the glaſs trade, a term uſed for a ſort of pot-aſhes uſed in many of their works, particularly for the cryſtalline metal. It is the calcined aſhes of a plant, called by the ſame name, and in ſome places ſea thongs or laces, a ſort of thick leaved fucus or ſea wrack: the *alga anguſtifolia vitrariorum* of John Bauhine. This plant, if kept moiſt a little after gathering, will ſhew afterwards, though long kept, its white ſalt upon the ſurface of its leaves. This plant is thrown on the rocks and ſhores in great abundance, and in the ſummer months is raked together, and dried as hay in the ſun and wind, and afterwards burnt to the aſhes called *kelp*, which are uſed not only in the glaſs, but in the alum works. *Merret*'s Notes on Neri, p. 263.

KEMA, in natural hiſtory, a name given by Leo Africanus, and other writers of the African hiſtory, to a ſort of ſubterranean production of the vegetable kind, greatly eſteemed as a delicious food. The Arabian writers on medicine have often mentioned it, and that under names ſufficiently reſembling the modern African appellation, ſuch as *camahe*, *camah*, *kemah*, and *camba*. Leo Africanus alſo calls them *terfez* in ſome places, and aſcertains their being the ſame thing, by telling us, that the *terfez* were called by the Arabian phyſicians *camba*. There has been much diſpute about what theſe really were: ſome have ſuppoſed them to be the *zelem* of the antient Arabians; but erroneouſly, for that was a fruit. Some have thought them the roots of the *tarſi*, or *traſi*, called *avellanda* by the Spaniards, from their likeneſs to a hazel nut in ſhape; and others have ſuppoſed them the ſame with our earth-nuts, or the roots of the bulbocaſtanum. But Scaliger declares againſt this, and tells us from Leo Africanus, that they are found as large as a quince, and of a moſt delicious flavour. He adds, that the inhabitants call them *camba*, but the Arabian phyſicians have ſoftened the word into *kemah*. We ſee, by the preceding obſervation, how little truth there is in this account of the names. Leo tells us that theſe roots, as he calls them, are produced in the deſarts of Numidia in vaſt abundance, and are carefully ſought after by the people of all the neighbouring country, and are eaten ſtewed in milk and water. We find no account of any plant growing up from theſe, but, on the contrary, are told, that they ſend up no part above the ſurface of the earth. From this, and from their delicious flavour, it is eaſy to ſee that they are not the roots of any plant, but a fine kind of ſubterraneous muſhroom, or truffle. Theſe are white on the outſide, and lie generally pretty deep in the earth. *Scaliger*, Exerc. 93.

KEMUM, in botany, a name uſed by ſome authors for the cuminum, or cummin; the plant which produces the cummin ſeeds of the ſhops. *Ger.* Emac. Ind. 2.

KENAM, or KELAM, in the materia medica, the name the Chineſe give to the fineſt ſweet ſcented calambac wood. *Dale*, Pharm. p. 448. See CALAMBAC.

KENKS, in the ſea phraſe, are doublings in a cable or rope, when it is handed in or out, ſo that it does not run ſmooth; or when any rope makes turns, and does not run ſmooth, and clever in the block, they ſay it makes *kenks*.

KENNE, in botany, a name uſed by ſome authors for the liguſtrum, or privet. *Ger.* Emac. Ind. 2.

KENNE is alſo uſed by ſome writers for a ſtone, as they call it, generated in the corners of the eyes of a ſtag, and poſſeſſing many medicinal virtues. This is doubtleſs what we now call the *lacryma cervi*, or ſtags tears.

KENNETS, in our old writers, a ſort of coarſe Welch cloth, mentioned in the Stat. 33 Hen. VIII. c. 3. *Blount*.

KENNETS, in a ſhip, are ſmall pieces of timber nailed to the inſide of the ſhip, unto which the tacks and ſheets are belayed, (as they call it) *i. e.* faſtened.

KERATOPHYTUM, a name by which Boerhaave expreſſes the black coral, called alſo *antipathes*, *lithophyton*, and *pſeudocorallium*. *Boerh.* Ind. A. 6.

KERF, is the notch or ſlit that is made by the ſaw between two pieces of wood, when they are ſawing aſunder.

KERFE-KARUMFEL, in the materia medica, a name given by Aviſenna, and others, to the wood of the clove tree, as the wood of the cinnamon tree was called *kerfe darſini*; and many others in the ſame manner.

KERMES (*Cycl.*)—The *kermes* is the moſt famous, and moſt valuable creature of its kind, and is properly an inſect of the gall-inſect claſs, and of that genus whoſe figure reſembles a ſphere, from which a ſmall Part had been cut off. This ſpecies is found on a particular kind of the ilex, known by the name of the *ilex aculeata cocciglandifera*. This never ariſes beyond the height of a ſmall ſhrub, and is very plentiful in the uncultivated parts of Provence and Languedoc, and in ſome other Places; as in Spain, in the iſlands of the Archipelago, and particularly in Crete. The peaſants make their harveſt of theſe animals, from off theſe ſhrubs, at the proper ſeaſon; and though the hiſtory of this drug is a ſubject well worthy the attention of every naturaliſt, yet it is but of very late years that it has been enquired into with any degree of accuracy. Meſſrs. de la Hire and Sedileau opened a way to the knowledge of it, by their hiſtory of the gall-inſect of the orange tree; but all the advantages that might have been expected thence were not ſoon obtained, nor was the reſemblance and ſtrict analogy between the flat and the ſpherical gall-inſects ſo ſoon obſerved, as might have been expected.

The *kermes*, when at its full growth, appears a ſmall ſhell fixed to the branches of this ſhrub, or ſeems a purſe or bag, the covering of which is ſufficiently ſtrong, bright and ſhining, and of the colour of a ripe plum, and covered with the ſame ſort of whitiſh powder, as that fruit is when ripe. This powder the people of the place call the flower of the *kermes*. Thoſe who have never ſeen *kermes*, otherwiſe than in the ſhops of the druggiſts, may naturally think it of a reddiſh brown; but this is not its natural colour, but is the effect of the vinegar they uſe for its preſervation; that remaining on the branches, and which has not been affected by vinegar, having nothing of this colour, but exactly that of ripe ſloes in the hedges.

The people in the places where the *kermes* is produced, know it in three different ſtates, according to the ſtages of its growing. Its firſt ſtate is toward the beginning of March; at this time they term it the ſetting worm. It is at this ſeaſon as ſmall as a grain of millet, and it ſeems to ſome, that this is the ſeaſon at which it begins to fix itſelf in its place, after having run about at its liberty during the winter on the ground; but it is much more probable, that this is the ſeaſon only at which it begins to acquire a ſenſible bulk, and quits the leaves of the tree to fix itſelf on its branches. Viewed in this ſtate with the microſcope, it appears of a fine bright red, and has all about, and under its belly, a downy ſubſtance, which ſerves it for a bed. It has alſo ſome parcels of the ſame cottony matter on its back, and where that is not ſo covered, the microſcope diſcovers ſeveral ſmall ſpecks of the colour and brightneſs of burniſhed gold.

The next, or ſecond ſtage of its growth, is in the month of April. The people of the country then diſtinguiſh it by the term of the worm which has hatched; but their manner of expreſſing themſelves is very irregular, ſince all that they mean by this is, that the creature has now acquired its full growth, and perfect ſhape. It is in this ſtate round, and of the bigneſs of a pea; but its ſize is by no means exactly determinable, being larger or ſmaller, according to the favourableneſs of the ſoil and ſeaſon. Its ſkin is at this time become firm, and the downy matter, which was before laid on it at intervals, and in little bundles, is now equally ſpread all over it, and lies in form of powder on its whole ſurface, and it now appears no other than as a ſhell, or bag full of a reddiſh liquor, reſembling a pale coloured blood.

The third ſtage of its growth is toward the end of May; and at this ſeaſon there are found in this bag, or, more properly ſpeaking, in the belly of the animal, eighteen hundred, or two thouſand ſmall round bodies. Theſe are its eggs, which, in the natural courſe of things, coming afterwards to hatch, would afford ſo many animals of the ſame ſpecies. Theſe eggs are not more than half the ſize of poppy-ſeeds, and are all full of a pale red juice; and viewed by the microſcope, are ſeen ſpangled over with a vaſt number of gold coloured ſpangles. The ſkin of the belly of this creature contracts inward, and approaches to the back as theſe eggs are diſcharged, and the eggs by this means find a place within the ſhell made by the body of the animal; as is the caſe in all the reſt of the gall-inſect claſs.

There are two kinds of *kermes*; the one, that which has been already deſcribed, which is of the colour of a plum, and which lays red eggs. The other is whitiſh, or ſomewhat reddiſh, and is covered in the ſame manner as the

other

other with a white powder, and lays its eggs in the ſame manner. Its growth is the ſame with the other, and at the ſame ſeaſons, and its eggs are white.

The young inſects produced from both theſe ſpecies are very like, and have a conſiderable reſemblance to wood-lice, or millepedes, as indeed have the young of all the gall-inſect claſs. They differ however in colour: thoſe which are produced from the red eggs are themſelves red; they are flat in ſhape, and ſomewhat more pointed behind than at the head; their back is convex, with a round arched prominence. This kind has ſeveral ſhining gold coloured ſpangles, and is ſtriated on the back, and has ſeveral tranſverſe lines acroſs the belly. It has ſix legs, and two horns nearly as long as its body, and a tail ſplit into two, or forked, the divided parts being nearly as long as its horns, and its eyes are black and ſhining.

The young ones produced from the white eggs, are of a dirty white; their back is ſomewhat flatter than that of the others, and the ſpangles on them, viewed by the microſcope, appear of a ſilver colour, not of a gold. There are a much ſmaller number of theſe white than of the red *kermes*, and the people of the country call them the mother of the *kermes*. There are alſo among the *kermes* ſeveral found containing, inſtead of theſe eggs, the nymphs of two kinds of ſmall flies, which regularly are produced from them, and have both a power of hopping or jumping. The one ſpecies of fly is of a fine jet black, and the other is of a dirty white. One of theſe is a white winged fly, alike, in all reſpects, to the gall-inſect fly, and is, without all doubt, the male *kermes*; though this very obſervation of a fly being produced from ſome of the *kermes*, has been one great occaſion of believing the *kermes* to be a true gall.

According as the winter has been more or leſs mild, the harveſt of *kermes* is the more or leſs plentiful; and the people always preſage themſelves a fine ſeaſon, when the ſpring has been free from froſts and fogs. It is obſerved, that the loweſt and oldeſt ſhrubs are always the fulleſt of this inſect; and the *kermes* produced on thoſe trees which are in the neighbourhood of the ſea, is always larger and finer than that from the inland places.

The merchants who purchaſe the *kermes*, always wet it with vinegar, and afterwards expoſe it to the heat of the ſun, or to an equal heat from the fire, to deſtroy all the young inſects hatched, or in a ſtate near hatching, in it.

It is no uncommon thing to have two harveſts of *kermes* in a year. Thoſe of the latter ſeaſon are ſmaller, and leſs valuable, than thoſe of the firſt, and are found not on the branches, but on the leaves of the ſhrub; which is juſt analogous to the cuſtom of the gall-inſects of all other kinds; all which about this age leave the branches to feed on the leaves, where their yet tender trunks can find an eaſier entrance. See Tab. of Inſects, N° 30.

From this analogy between the *kermes*, and other inſects of the ſame claſs, it ſhould ſeem worth while to try, whether ſome of thoſe may not poſſeſs the ſame virtues in medicine, at leaſt, if not in the arts. It is certain that the common oak produces a red gall-inſect of the very ſhape of the *kermes*, and of the colour of the paler ones. *Reaumur*, Hiſt. Inſect. p. 45.

KERMES *mineral.* The *kermes mineral* was a preparation of Glauber, which the king of France bought of Mr. de la Ligerie, and made public in 1720. That receipt was in the following form. Take a pound of Hungarian antimony, broken into thin pieces, according to the direction of its ſpicula; four ounces of nitre, fixed by charcoal; and a pint of rain water: boil them two hours; then filtre the warm liquor, and when it cools, the *kermes* precipitates. The ſame antimony undergoes the ſame operations with the remaining liquor, to which three ounces of fixed nitre, and a pint of water, is added. In a third boiling, two ounces of nitre, and a pint of water, are to be added to the former lixivium. The *kermes* thus obtained is about a dram, and is well edulcorated by waſhing it with water, and burning ſpirit of wine on it; then it is dried for uſe.

Mr. Geoffroy ſhews, by many experiments, that the *kermes* is the reguline part of the antimony, joined to a ſort of *hepar ſulphuris*. He teaches us a much eaſier way of preparing this medicine, thus. Mix intimately the fine powder of two parts of antimony, and one of any fixed alkaline ſalt; melt thoſe materials in a crucible; then having powdered them while hot, boil them two hours in a large quantity of water; after this, paſs the hot liquor through paper, receiving it into a veſſel, in which there is hot water, the *kermes* ſeparates when it cools. The groſſer parts, which do not paſs through the paper, are to be boiled again, and filtrated as before; and the operation is to be repeated a third time, by which ſix or ſeven drams of *kermes* may be got out of every ounce of antimony. He ſays, he has ſeen effects like to thoſe of mild *kermes* from antimony, reduced to ſuch a fine powder, that none of the ſhining ſpicula are to be ſeen; and that the magiſtery of antimony, made by pouring ſpirit of nitre, or aqua regia, on the powder of antimony, and then edulcorating the maſs with water, has the ſame effects as *kermes*. Mem. de l'Acad. des Sciences 1734, 1735.

Half a grain, or a grain of this powder, given every three or four hours, produces no violent effects; but by encreaſing the doſe, it may be made to vomit, purge, and ſweat. Some commend this medicine as the moſt univerſal reſolvent, and deobſtruent; aſſuring us, that it almoſt infallibly cures pleuriſies, peripneumonies, aſthmas, catarrhs, anginæ, ſmall-pox, and many other diſeaſes. Others are as poſitive, that it heats and thickens the blood, thereby increaſing obſtructions, and is particularly hurtful in all inflammatory diſeaſes.

This preparation was famous in France, and known by the name of *poudre des Chartreux*, becauſe a Carthuſian monk, who got it from Mr. de la Ligerie, firſt brought it into vogue. See Hiſt. de l'Acad. des Sciences 1720. and the Memoirs for the ſame year, where it is ſaid, that Glauber was looked upon as the firſt inventor of this remedy.

Its effects, like that of many other antimonial preparations, is very various, which is frequently owing, as Mr. Geoffroy obſerves, to the different manner and care in making it. He adds, that the more the *kermes* contains of a regulus eaſily revivified, the more it proves emetic. He alſo ſhews how to make a cinnabar with the *kermes* and mercury, and to diſengage the vitriolic acid from the *kermes*. See Mem. de l'Acad. des Sciences 1734.

KERN, in the Engliſh ſalt works, a word uſed to ſignify the cryſtallizing, or ſhooting of ſalt in the brine, when ſufficiently evaporated in the boiling pan.

This word is alſo uſed by the ſeamen for the firſt forming of the bay ſalt, made by the ſun's heat in the iſles of May, *&c.* See SALT.

KERN *ſtone*, in natural hiſtory, a name given by the common people of many parts of England to a peculiar ſort of ſtone, which is found on the ſides of hills in ſandy countries, where the hills are rocky. Pyran ſands afford a great many ſtones of this kind; and the manner of their formation is thus. The rocks in the ſides of the hills are continually covered over with the looſe ſand, which the winds toſs up, and the ſparry matter continually ouzing out of the pores of theſe ſtones, with the wet, cements the grains of ſand together. When one cruſt is thus formed, another is ſoon added, and ſo on, till the whole maſs is of a conſiderable thickneſs; and the ſpar ſtill ſerving as the general cement, the whole is held together, though but in a looſe way, yet ſo as to reſemble a ſort of ſtone. The little grains of ſand are ſtill viſible in all parts of this ſtone, and are what induced the people to call it *kern ſtone*, as they call theſe *kerns*, or *kernels*. This account of the origin of the ſtone is eaſily proved, by puting a ſmall piece of it into aqua fortis, for this diſſolves the ſpar, or cement, and the ſand is left looſe.

KERUGHA, in botany, a name uſed by ſome authors for the ricinus, or palma Chriſti. *Germ.* Emac. Ind. 2.

KESTREL, the Engliſh name of a hawk, called alſo the *ſtannel* and the *windhover*, and by authors the *tinnunculus* and *cenchris*. It builds with us in hollow oaks, and feeds on partridges and other birds. *Ray*'s Ornithol. p. 50. See TINNUNCULUS.

KETMIA, in botany, the name of a genus of plants; the characters of which are theſe. The flower conſiſts of one leaf, and is broad and open at the mouth, and very like the mallow flower. From the cup there riſes a piſtil, which is fixed in the manner of a nail to the lower part of the flower, and afterwards ripens into a fruit, which is divided into ſeveral cells, and opens at the ſummit, ſhewing a number of ſeeds.

The ſpecies of *ketmia* enumerated by Tournefort are theſe. 1. The ſmooth ſhrubby *ketmia*, called by authors *ketmia ſyrorum*. 2. The violet purple flowered ſmooth leaved *ketmia*. 3. The variegated red and white flowered ſmooth *ketmia*. 4. The yellow flowered Syrian *ketmia*. 5. The poplar leaved African *ketmia*. 6. The poplar leaved African *ketmia* with green ſtalks, and leaves hoary underneath. 7. The purple flowered bladder *ketmia* with leaves divided into three ſegments, called by many authors the *trefoil alcea*, or *bladder alcea*. 8. The poplar leaved Indian *ketmia* with a compreſſed orbicular fruit. 9. The lime leaved Indian *ketmia*. 10. The cotton leaved Indian *ketmia* with an acid taſte like that of ſorrel. 11. The mallow leaved tree *ketmia* of America with the taſte of ſorrel. 12. The Chineſe *ketmia* with a roundiſh leaf and ſingle flower. 13. The Chineſe *ketmia* with a roundiſh leaf and double flower. 14. The purple marſh *ketmia*. 15. The painted leaved *ketmia* with rough hairy ſtalks and a ſtellated fruit. 16. The Indian *ketmia* with a ſpear pointed leaf and hard fruit. 17. The large vine leaved Indian *ketmia*. 18. The vine leaved Indian *ketmia* with a horned fruit. 19. The ſmall flowered vine leaved Ægyptian *ketmia*. 20. The vine leaved Indian *ketmia* with a pendulous yellow flower. 21. The Ægyptian *ketmia* with perfumed ſeeds, called by authors *bell muſchus*, and *abel moſch.* 22. The American hairy *ketmia* with yellow flowers and perfumed ſeeds. 23. The fig-leaved Braſilian *ketmia* with a long ſulcated fruit. 24. The prickly Indian *ketmia* with fingered leaves. 25. The prickly American *ketmia* with a large

large purple flower. 26. The perennial *ketmia* of Sicily, with perfumed deeply ſerrated leaves. 27. The common bladder *ketmia*, commonly called the *bladder alva*. 28. The African bladder *ketmia*. 29. The purple flowered ſhrubby American *ketmia*, with leaves like thoſe of the mulberry. 30. The various flowered American *ketmia*, with large heart faſhioned leaves. 31. The large angular leaved American *ketmia*, with a rough clypeate fruit. *Tournefort.*

There are a great many different ſpecies of this plant propagated in gardens, where moſt of them grow to be ſhrubs of ſix or ſeven feet high; and, in the time of their flowering, which is during a great part of the latter end of the ſummer, they make a very beautiful figure. They may all be propagated by ſowing their ſeeds in February or March on a bed of light earth: they muſt be ſuffered to remain in theſe beds till the following ſpring, being well weeded, and often watered in the ſummer. In the March following the plants are to be tranſplanted into beds of the ſame ſort of earth, ſetting them at about ten inches diſtance every way; here they are to remain two years more, being well weeded and watered in the time; and in the March following they ſhould be carefully removed to the places where they are to remain. They muſt be taken up carefully, without injuring the roots; the ground muſt be well watered where they are planted, and ſome muck ſhould be laid about their roots, to prevent the ground's drying too faſt.

Some chooſe to propagate them by ſuckers from the old roots, but this is by no means adviſeable, as the plants this way raiſed are never ſo well rooted, and are always ſubject to produce great numbers of ſuckers themſelves, which render them very unſightly. *Miller*'s Gardners Dict.

KETRAN, KITRAN, or ALKETRAN, a name given by ſome of the Arabian authors to the oil of cedar, called by the Greeks *cedria*. We have of later times formed the word *cedranum* upon this, and it has ſince been applied to the zopiſſa of the antients, a compound made of pitch and wax melted together, and uſed for the covering the bottoms of ſhips.

KETTLE, in the art of war, a term the Dutch give to a battery of mortars, becauſe it is ſunk under ground.

KETTLE-*drums* are formed of two large baſins of copper or braſs, rounded at the bottom, and covered over with vellum or goat-ſkin, which is kept faſt by a circle of iron, and ſeveral holes faſtened to the body of the drum, and a like number of ſcrews to ſcrew up and down, with a key for the purpoſe. The two *drums* are kept faſt together by two ſtraps of leather, which go through two rings, and are faſtened, the one before and the other behind the pommel of the *kettle* drummer's ſaddle. They have each a banner of ſilk or damaſk, richly embroidered with the ſovereign's arms, or thoſe of the colonel, and are fringed with ſilver or gold; and to preſerve them in bad weather, they have each a cover of leather. The drum-ſticks are of crab-tree or other hard wood, of eight or nine inches long, with two knobs on the ends, which beat the drum head and cauſe the ſound. The *kettle-drum* with trumpets is the moſt martial ſound of any; each regiment of horſe has a pair.

KETTLE-*drummer*, a man on horſeback appointed to beat the *kettle-drums*, from which he takes his name.

He marches always at the head of the ſquadron, and his poſt is on the right when the ſquadron is drawn up.

KEVELS, or CHEVILS, in a ſhip, are ſmall pieces of timber nailed to the inſide of a ſhip, unto which the tacks and ſheets are belayed or faſtened.

KEY *(Cycl.)*—KEY-*ſtone*, in an arch, is the ſtone placed at the top or vertex of an arch, to bind the ſweeps of the arch together.

KEYRI, in botany, a name uſed by ſome for the common wall flower. *Park.* Theat. 625.

KIBRIC, a word uſed by ſome chemiſts as a name for the philoſopher's ſtone; others expreſs by it, what they call the parent, or firſt matter of mercury, and all fuſible and liquifiable ſubſtances.

KIBRITH, a word uſed by ſome chemical writers as a name for ſulphur. See SULPHUR.

KIBRIUS, a word uſed by ſome chemical writers as a name for arſenic.

KICKER *againſt the ſpurs*, in the manege. See RAMINGUE.

KIDDERS, thoſe that badge, or carry corn, dead victuals, or other merchandiſe, up and down to ſell: every perſon being a common badger, kidder, lader or carrier, *&c.* ſays the ſtat. 5 Eliz. c. 12. And they are called *kiddiers* 13 Eliz. c. 25. *Blount.*

KIDDLE, or KIDEL, *Kidellus*, a dam or wear in a river, with a narrow cut in it, for the laying of pots, or other engines to catch fiſh.

The word is antient, for in *Magna Charta*, c. 24. we read, *omnes* kidelli *deponantur per Thameſiam & Medweyam & per totam Angliam, niſi per coſteram maris.* And by king John's charter, power was granted to the city of London, *de* kidellis *amovendis per Thameſiam & Medweyam.* A ſurvey was ordered to be made of the wears, mills, ſtanks and *kidells* in the great rivers of England. 1 Hen. IV. Fiſhermen of late corruptly call theſe dams *kettels*; and they are much uſed in Wales, and on the ſea-coaſts of Kent. Terms of law. *Blount.*

KIDDOW, in zoology, the moſt common Engliſh name of the lomwia, a webfooted bird, common on our ſhores, and called in different places the guillemot or guillem, and the ſea hen, and ſkout. See LOMWIA.

KIDNEY *(Cycl.)*—KIDNEYS *of fiſh.* Fiſh of all kinds have *kidneys*, but they differ extremely in the ſeveral genera. All the cetaceous fiſhes, and many of the cartilaginous kinds have two *kidneys*, as quadrupeds have. In moſt of the ſpinoſe kinds, they are found concreted into one. In the ſpinoſe fiſhes they are oblong and extended throughout the whole length of the abdomen. In the cetaceous fiſhes they are of a roundiſh oblong figure as in quadrupeds; and as to their ſituation, the ſpinoſe fiſh in general have them extended all along the back bone, and the cetaceous kinds are on the contrary in the lower part of the belly: they are very long and large in the ſpinoſe kinds, and very ſmall and ſhort in the cetaceous. The urinary bladder is generally ſituated in the lower part of the abdomen in theſe creatures, and often lies upon the rectum. There are generally two ureters by which the urine is ſecreted from the *kidneys* into it: but the urethra through which the urine is to be diſcharged from the bladder, is leſs obvious in the ſpinoſe fiſhes. In the cetaceous kinds, it is plainly to be followed either into the vulva, or *foramen ſeminis. Artedi.* Ichthyolog.

KIDNEY-*Beans*, in botany. See PHASEOLUS.

KIGGELARIA, in botany, the name given by Linnæus to a genus of ſhrubs, ſuppoſed from ſome faint reſemblance in the external figure to be a kind of bay, and deſcribed by Sterbius under the name of *lauri ſpecies.* The characters of the genus are theſe. It produces ſeparate male and female flowers. The male flower has for its cup, a hollow one leaved perianthium, divided into five oval and pointed ſegments, which are concave. The flower conſiſts of five hollow lanceolated petals, which are a little longer than the cup, and form with it a figure like that of a ſort of pitcher. The nectaria are five obtuſely trilobate glandules, the middle lobe being longer than the reſt; they are coloured, and grow one to each petal near its baſe. The ſtamina are ten extremely ſmall filaments, the antheræ are oblong, but ſhorter than the cup; and their tops burſt open with two holes in the female flower. The cup and petals are the ſame as in the male. The germen of the piſtil is roundiſh, and the ſtiles are five in number of a ſimple figure, and the ſtigmata are obtuſe. The fruit is a round and rough coriacious capſule, containing one cell and made up of five valves. The ſeeds are very numerous, they are of a roundiſh figure, and each inveſted in its own peculiar membrane within the capſule. *Linnæi* Gen. Pl. p. 483. *Sterb.* p. 12.

KIJON, in antiquity, a name for Saturn, according to Salmaſius and Kircher. See CHIUN.

KILCH, in zoology, a name uſed by ſome for a ſpecies of fiſh of the albula kind, caught in the lakes of Germany, of a fine firm fleſh and delicate flavour, and ſeems very little if at all different from the ferra. *Geſner*, de Piſc. p. 1107. See the article FERRA.

KILLAS, in natural hiſtory, a name given by the people who dig in the mines of Cornwal, to a kind of greyiſh white earth, which is of great hardneſs, and ſeems to approach very much to the nature of the *ludus Helmontii* of ſome kinds, only that it is ſomewhat leſs hard than that, and has nothing of the ſepta or partitions, that make the character of that foſſil. This earth contains ſo great a quantity of ſpar, that it ferments with acids very ſtrongly, though that ſpar being once diſſolved, and the earthy part of the ſubſtance only left, it will no longer ferment with theſe menſtruums; whence it is evident, that its terreſtrial matter is not alkaline, though the ſpar it contains is ſo.

This is the certain character of what is called *killas* in many parts of Cornwal, where it lies in ſtrata of two, three, or more feet thick, and often beſide this is laid on each ſide of the vein of tin or other ore. But in ſome other parts of England the miners uſe the ſame word to expreſs a kind of white brittle and ſhattery ſtone, ſomewhat like the flag ſtone with which they cover houſes in Northamptonſhire, and many other counties.

KILLAS is alſo uſed as the name of a ſlaty ſtone of various colours, ſpangled all over with talc in ſmall flakes in the place where they uſe it. In this ſenſe, they generally expreſs themſelves, when talking of the earth deſcribed above, by the phraſe *white killas.* They alſo ſometimes call this flaky ſtone by the name *Delvin.*

KILLKENNY *Marble*, a fine black marble full of ſhells, and coralloide bodies, and much uſed in chimney pieces, *&c.* See CORALLOIDE *Marble.*

KILLOW, or CULLOW, an Engliſh name for a black earth of a very remarkable ſtructure, ſeeming of a mixed nature between the marbles, ochres, and clays, and uſually containing a large quantity of the matter of the common vitriolic pyrites or ink ſtone, which gives it a very ſharp unpleaſant taſte, and makes it, when thrown on the fire, emit a ſlight blue flame of a ſulphureous ſmell, and calcined to a deep red. It is common in many parts of England, Wales, and

and Ireland. It is lighter than any of the other clays, though that is the genus to which it moſt properly belongs; and it is of an uneven ſurface, and ſhattery ſtructure. *Hill*'s Hiſt. of Foſſ. p. 34.

KILLYTH-STALLION, in our old writers, is where lords of manors were bound by cuſtom to provide a ſtallion for the uſe of their tenants mares. *Spelm.* Gloſſ. *Blount.*

KILN *(Cycl.)*—KILN *for tin ore.* The place where the tin ore is roaſted in order to burn away the mundic, and other ſulphureous matters that are mixed with it, is called the *tin kiln.* This is of a very plain ſtructure, its hearth or floor is made of one large ſtone, and this is covered with another ſupported at ſix inches height above it. The uppermoſt has a hole in the middle through which the ore is poured on the under one, and when it is diſtributed over it in a bed of three or four inches thick, it is burnt by means of a fire of furze buſhes kept underneath, and communicating with the ſpace between the two ſtones by an aperture behind; the lower ſtone not reaching the wall by ſix inches.

When the ſulphur is all burnt away by the fire, and the flame is no longer blue, the whole bed of roaſted ore is thruſt off the ſtone by the rake into the aperture behind, through which it falls into the open fire. The fire is kept up with new buſhes, and there is a new bed of ore thrown in at the hole above. Thus the fire is kept up day and night, and ſupplies of freſh ore made through the hole by the black tin brought from the buddles of waſhing troughs. When the lower part of the furnace is filled up with the ore thrown into it, there is a hole behind the *kiln* through which this ore, and the coals and aſhes are all raked out together, and left in the open air to cool; and the whole maſs thus raked out, will ſometimes be ſeveral days in cooling, the mixture of coals among it keeping it red hot for a conſiderable time. When it is taken away from behind the furnace, it is waſhed again before it is put into the melting furnace. It is obſerved, that the different ores require for this laſt operation a different proportion, and different ſort of fuel. The moor tin, that is, ſuch ore as is dug up in the moory countries, melts beſt with moor coal charred; but that dug on the hills is found to run beſt with a mixture of charcoal and peat in equal quantities. The ſtones uſed for the *kilns* are always moor ſtone. Phil. Tranſ. N° 69.

Brick-KILN. See BRICK.

KIMBULA, in zoology, the name of a ſpecies of crocodile found in the iſland of Ceylon, and of a very beautiful variegation of colours, being mottled all over with extremely elegant black ſpots ſhining with the gloſs of black velvet. *Ray*'s Syn. Quad. p. 263.

KINAKINA *Aromatica*, in the materia medica, a name by which ſome authors have called the *cortex eleutherii*. *Geoffr.* Tract. p. 307.

KING *(Cycl.)*—The *king* of England, though he be intruſted with the whole executive power of the law, yet he cannot ſit in judgment in any court; but juſtice and the laws muſt be adminiſtred according to the powers committed and diſtributed to the ſeveral courts. 4 Inſt. 70, 71. 2 Inſt. 103.

KING, among Hebrew grammarians, is an appellation given to a ſpecies of accents anſwering to our colon. See the article ACCENT, *Cycl.*

KING *of the mullets.* See MULLUS *imberbis.*

KING *of the quails.* See ORTYGOMETRA.

KINGS-*Bench (Cycl.)* —This court was always ambulatory, and removed with the *king* wherever he went: hence the writs returnable into this court are *coram nobis ubicunque fuerimus in Anglia*; and all records there are ſtiled *coram rege*, as it is ſtill ſuppoſed to have always the *king* himſelf in perſon ſitting in it; from whence it obtained the name of the court of *king's-bench*, and hath always retained a ſupreme original juriſdiction in all criminal matters, for in theſe the proceſs both iſſued, and was returnable into this court; but in treſpaſs it might be made returnable into either the *kings-bench*, or common-pleas; becauſe the plea was criminal as well as civil. V. 4 Inſt. 70. 2 Inſt. 24. *Co. Lit.* 71. *Cromp.* of Courts. 78. 1 Rol. Abr. 94.

This court is often termed the *cuſtos morum* of all the realm, and wherever it meets with an offence contrary to the firſt principles of juſtice, and of dangerous conſequence, if not reſtrained, it may adapt a proper puniſhment to it [a]. For the better reſtraining ſuch offences, it has a diſcretionary power of inflicting exemplary puniſhment on offenders, either by fine, impriſonment, or other infamous puniſhment, as the nature of the crime, conſidered in all its circumſtances, ſhall require. It may make uſe of any priſon which ſhall ſeem moſt proper; and it is ſaid, that no other court can remove or bail perſons condemned to impriſonment by this court [b]. [[a] 2 *Hawk.* P. C. p. 6. [b] 2 *Hawk.* P. C. p. 7.]

An act of parliament, appointing, that all crimes of a certain denomination ſhall be tried before certain judges, does not exclude the juriſdiction of this court, without expreſs negative words; and therefore it has been reſolved, that 33 Hen. 8. c. 12. which enacts, that all treaſons, *&c.* within the king's houſe, ſhall be determined before the lord ſteward of the king's houſe, does not reſtrain the court of *king's-bench* from proceeding againſt ſuch offences. 2 Inſt. 549. 2 *Hawk.* P. C. p. 7.

But when a ſtatute creates a new offence, which was not taken notice of by the common law, and erects a new juriſdiction for the puniſhment of it, and preſcribes a certain method of proceeding, it ſeems queſtionable how far this court has an implied juriſdiction in ſuch a caſe. 2 *Hawk.* P. C. p. 7.

The judges of this court are the ſovereign juſtices of *oyer* and *terminer* [a], goal delivery, conſervators of the peace, *&c.* As alſo the ſovereign coroners [b]; and therefore, where the ſheriffs and coroners may receive appeals by bill, *a fortiori*, this court may. Alſo this court may admit perſons to bail in all caſes according to their diſcretion [c]. [[a] 4 Inſt. 73. 9 Co. 118. b. [b] 4 Inſt. ibid. [c] 4 Inſt. 74. Vaugh. 157.]

This court has not only a power to reverſe erroneous judgments, for ſuch errors as appear the defect of the underſtanding; but alſo to puniſh all inferior magiſtrates, and all officers of juſtice, for wilful and corrupt abuſes of their authority againſt the obvious principles of natural juſtice. Vid. 2 *Hawk.* P. C. p. 8.

This court being the ſupreme court of oyer and terminer, goal delivery, and eyre, its preſence ſuſpends the power, and avoids the proceedings of all other courts of the ſame nature in the county wherein it ſits, during its ſitting there. Vid. 2. *Hawk.* P. C. p. 8. 4 Inſt. 73. 3 Inſt. 27.

The civil ſide of the *king's-bench* commences on a ſuppoſition of a treſpaſs committed by the defendant in the county where it reſides, and that he is taken up by proceſs of this court, as the ſovereign eyre, and being committed to the marſhal, he may be declared againſt in any civil action whatſoever. The firſt proceſs therefore, is a bill either real or feigned, and ſo called, becauſe its foundation was the bill of complaint in court, touching the treſpaſs: in this is founded the *latitat*, which ſuppoſes that the defendant has eſcaped, and therefore iſſues in the *king*'s name, to apprehend the party wherever he may be found. Vid. New Abr. Law. Vol. 1. p. 595. and Title *Proceſs.*

KING-*piece*, in any building, is a piece of timber ſtanding upright in the middle, between two principal rafters, and having ſtrutts or braces going from it to the middle of each rafter.

KINNOR, in the Jewiſh antiquities, a muſical inſtrument, frequently tranſlated *cithara.* It was compoſed of a baſe or hollow ſounding belly, and of two branches raiſed perpendicularly on the two ſides of this belly. Above theſe branches was a piece of wood which went acroſs, and was faſtened to each of them. To this piece of wood were fixed three, ſix, or nine ſtrings, which made a very harmonious ſound as often as they were either play'd upon with the fingers, or touched with the bow. *Calmet*, Dict. in voc. *Cithara.* See CINYRA.

KIRATHE, a name of a weight mentioned by ſome authors equal to four grains.

KIS, in natural hiſtory, a name given by ſome people to the common pyrites; and by others to a peculiar kind of it, containing copper and a ſmall quantity of ſilver.

KISSINA, in botany, a name by which ſome authors have called the tree, whoſe wood is the *agallochum*, or lignum aloes of the ſhops. *Kempf.* Amœnit. Ex. p. 903.

KIST, a word uſed by Paracelſus as the name of a weight, equal to fourteen grains.

KITCHEN *Garden*, there are certain general rules always to be obſerved in the making this uſeful ſort of *garden*, which will render it much cheaper and more convenient than if undertaken at a venture without the conſideration of them.

It ſhould always be placed behind a houſe, that it may be both ſheltered and kept out of ſight, and always ſhould be as near as may be to the ſtables, that the dung may be ready, and coſt no great labour nor expence in carriage. A ſquare is the beſt figure for the ground; but this is not neceſſary, ſince all irregularities may be hid by the quarters. The ſoil muſt neither be very wet nor very dry, nor too ſtiff; and if there are any riſings in any part of the ground, they are by no means to be levelled, as they will be of great uſe for different crops of ſeveral things. It muſt be fully expoſed to the ſun, and by no means overſhadowed by trees. The quantity of ground is to be wholly proportioned to the ſize of the family it is to ſupply; for a ſmall one of an acre of ground will be enough, and there ſeldom requires more than three or four acres. It ſhould be walled all round with walls twelve feet high for the reception of fruit trees, and the ground ſhould be ploughed up three or four times before any thing is planted in it.

If the ſoil be ſtiff, it muſt be manured with ſea-coal aſhes, the cleanſings of the ſtreets of large towns, or ſea ſand, as alſo with rotten wood, and decayed and putrefied vegetables. On the contrary, if it be light, and warm, it muſt be manured with rotten neat's dung; and if horſe dung be uſed, it muſt be always very well rotted firſt.

The ſoil muſt be at leaſt two feet deep, and there muſt be a ſupply of water, which, if it can be contained in baſons, or reſervoirs, will be very convenient and advantageous.

As ſoon as the walls are built, the firſt thing to be done is the laying out the borders under them, which ſhould be ten or twelve feet broad; and on thoſe which are expoſed to the ſouth, the early crops are to be planted, and the later on thoſe to the north. No large or deep rooting plants ſhould ever be ſet near the roots of the wall-fruit trees, but the beans and peas, required to be early, ſhould be planted in other parts of the *garden*, and ſheltered by moveable reed hedges, which will ſcreen and forward them as well as the walls. The next thing to be done, is the laying out the ground into quarters. Theſe ſhould never be too ſmall, but in a little *garden* it is better to have only a few of them. They muſt be ſurrounded with eſpaliers of fruit trees, and have walks turfed between them, which in a ſmall *garden* ought to be ſix feet wide, in a large one ten; and on each ſide the walk there ſhould be allowed a border of three or four feet broad, between its edge and the eſpaliers. On theſe borders ſmall ſallading, or any thing that does not remain long, nor root deep, is proper to be ſown. If the walks are covered with lime rubbiſh or ſand, inſtead of being turfed, it will be an advantage to the fruit in the eſpaliers, though it takes off from the beauty of the *garden*. The beſt figure for the quarters is either a ſquare, or an oblong; but when the nature of the ground does not admit this, they may be triangular, or of any other form. The ground in theſe quarters ſhould never be ſown, or occupied by the ſame crop, for two years together; and when any part of the ground is not uſed, it ſhould be trenched up in ridges, to receive the better the benefit of the dews.

In one of the quarters which is neareſt the ſtables, and is moſt defended from bad weather, ſhould be the beds for cucumbers, melons, and other productions of the hot-bed; and it is a very good method to ſurround that part with a reed hedge, which both ſhelters and hides the beds from ſight. This ſquare ſhould always be large enough for the beds of two years.

The moſt important points of culture and management are the well digging and manuring the ſoil, and the giving a proper diſtance to each plant. The quarters and dunghills are both alſo to be kept clear of weeds, for if they are ſuffered to ſcatter their ſeeds on the dunghills, it is in vain to root them out of the *garden*, as they will be continually renewed from thence. *Miller's* Gardner's Dict.

KLIMIA, or CLIMIA, in the materia medica, the name given by the Arabian writers to the *lapis calaminaris*. Aviſenna and Serapio never call it by any other name. Some pronounce the word *calimia*. Hence the modern Greeks have formed their *celimia*, which is the name of the ſame ſubſtance; and our *calaminaris* is evidently deduced from the ſame original.

KLINKETS, in fortification, a ſort of ſmall gates made through paliſadoes for ſallies.

KLIP *fiſh*, in zoology, a name by ſome authors ſuppoſed to mean the *lupus piſcis*, or wolf fiſh, and by others the common cod fiſh.

Of the former opinion is Fabricius, who ſuppoſes the lupus ſo called, becauſe it is able to climb up rocks, or generally lies hid among rocks; the word *klip* in the German ſignifying a rock. Of the other is Schonfeldt, who ſuppoſes the cod has its name of *klip fiſh*, or rock fiſh, from its being uſually dried upon the rocks. *Willughby*, Hiſt. Piſc. p. 130.

KLIP *fiſh* is alſo a name by which the Dutch in the Eaſt-Indies call a flat fiſh caught frequently on thoſe ſhores, and ſometimes called alſo *ſoldaten viſch*, or the ſoldiers fiſh. It ſomewhat reſembles the bream in ſhape. Its general ſize is about ſix or ſeven inches in length, and it is of a very white and ſilvery hue. It differs very greatly, however, from the bream in many particulars. The nerves of its back fin are prickly as in the pearch; its tail is pointed, not forked; and the iriſes of its eyes yellow. It is one of the fineſt fiſh of the Eaſt-Indies. Its fleſh is very firm, and falls into large pieces, when dreſſed, like that of the cod, and is very well taſted. *Ray's* Ichthyogr. Append. p. 6.

KNAPWEED, *Jacea*, in botany. See JACEA.

KNAVE (*Cycl.*)—KNAVE-*line*, in a ſhip, a rope faſtened to the croſs-trees, under the main or fore-top, whence it comes down by the ties to the ram-head, and there it is reeved through a piece of wood of about two feet long, and ſo is brought to the ſhip's ſide, and there haled up taught to the rails.

KNAUTIA, in botany, a name given by Linnæus to the plant called by Boerhaave, and others, *lychni-ſcabioſa*. This makes in the Linnæan ſyſtem a diſtinct genus of plants, the characters of which are; that the calyx is a common perianthium, containing four flowers, and made up of four leaves; it is oblong, placed erect, and its ſegments are pointed, and ſet near one another. The whole complex maſs of flowers is equal and regular. Each ſingle flower is monopetalous, and unequal. The petal is formed into a tube for the length of the cup, and has an irregular mouth with four ſegments, the outer one being large, and of an oval figure. The ſtamina are four filaments, longer than the tube of the flower, and inſerted in the receptacle. The antheræ are oblong, and lie regularly on theſe. The germen of the piſtil is placed below the receptacle of the flower. The ſtyle is ſlender, and as long as the ſtamina, and the ſtigma is thick and bifid. The ſeeds are ſingle, ſquare, and hairy at the tops. *Linnæi* Genera Plantarum. p. 23.

KNECK, in the ſea language, the twiſting of a rope or cable, as it is veering out.

KNEE. The mucilaginous glands of the *knee*, which lie near the edges of the patella, are very remarkable: they are diſpoſed in fringes, and ſupported by a great quantity of fatty matter, which in ſome meaſure makes one maſs with them. This common maſs is contained within the capſular ligament, and on the ſide of the joint is covered by a very fine membrane, which likewiſe lines the inner ſurface of the ligament. The glandulous ſubſtance is eaſily diſtinguiſhed from the fat by the reddiſh colour of the capillary veſſels, which ſurround the glands. The ſuperior portion of this maſs is, as it were, ſupported by a ſmall ligament, fixed in the anterior part of the great common notch of the condyles of the os femoris, and which from thence runs to the upper part of the patella. There are alſo other mucilaginous glands, both above and below the edges of the ſemilunar cartilages, and likewiſe in the ham: ſome of theſe ſerve for the joint, and the others for the crucial ligaments. Theſe laſt lie in folds formed by the internal membrane of the capſular ligament, which give particular coverings to the crucial ligaments, and to the other bundles of ligamentary fibres near them. *Winſlow's* Anatomy, p. 131.

Luxated KNEE. A luxation of the *knee* is a receding of the tibia from under the femur. The leg is ſometimes thus luxated from the baſis of the thigh bone, on the outſide, ſometimes on the inſide, and ſometimes backward, but very rarely or never forwards, unleſs it be forcibly driven with great violence that way; for the patella is bound againſt the articulation forwards, by the ſtrong tendons of the muſcles which extend the leg; nor is it indeed eaſy for the bones of the leg to be wholly diſplaced from that of the thigh, ſo as to make a perfect luxation of the *knee*, by reaſon of the great ſtrength of the ligaments, and the two deep ſinuſes, which receive the head of the thigh bone, unleſs thoſe ſtrong ligaments ſhould happen to be broken aſunder at the ſame time. This is the reaſon alſo why people, who ſuffer a perfect luxation of the *knee*, are generally tortured with the moſt violent and excruciating pains, and convulſions; and if they eſcape the miſchiefs uſually attending ſuch ſymptoms, they are generally troubled afterward with a lameneſs and ſtiffneſs of the joint; but ſlight or imperfect luxations of this joint are uſually very ſpeedily and eaſily cured. The patient in this caſe is to be ſeated on a bed, bench, or table, and one aſſiſtant is to hold the thigh firmly above the knee, and another ſtrongly to extend the leg, while the ſurgeon replaces the bones by his hands and knee, in their natural places. If the hands and ſlings are not ſufficient, in this caſe, to make a proper extenſion, recourſe muſt be had to the pullies, generally uſed on ſuch occaſions; but in children and young perſons, great care muſt be taken not to make the extenſion ſo violent, as to ſeparate the epiphyſes from the bones, to which they are, in ſuch ſubjects, not yet firmly united. After the luxation is properly reduced, the *knee* is to be bound up with a proper bandage, and placed in a frame or caſe, ſo as to be kept at reſt for a proper time. *Heiſter*, p. 172.

KNEE, in the manege, is the joint of the fore quarters, that joins the fore thigh to the ſhank.

KNEES, in a ſhip, thoſe crooked pieces of timber, bowed like a *knee*, that bind the beams and futtocks together, being bolted faſt into them both. Some of theſe ſtand right up and down, ſome along ſhip. They are uſed about all the decks; ſome ſawed or hewed to that form, and others naturally ſo, which are certainly beſt for ſervice.

KNEE *of the head*, in a ſhip, the ſame with the cut-water. See CUT-*water*.

KNEE-*Timber*, in a ſhip, the ſame with the *cut-water*, which is called the *knee of the head*.

KNETTLES, in the ſea language, a name the ſeamen give to two pieces of ſpun yarn put together untwiſted.

KNEVELS, in a ſhip. See CHEVILS.

KNIGHTEN-*Gild*, in our old writers, a *gild* or company in London, conſiſting of nineteen knights, which king Edgar founded, giving them a portion of void ground lying within the walls of the city, now called Portſoken-ward. *Stow*, 151.

KNOTS (*Cycl.*)—KNOTS, in gardening, a term uſed to expreſs the rudiments of the firſt branches of plants, as they grow up from the ſeed. Thus in the melon, the two firſt leaves or ſeed leaves, are called the ears, and the branches, that grow from them, are called according to the order of their growth, the firſt, ſecond, and third *knots*. Mr. Quintiny's famous method of raiſing the beſt melons, depended principally on the cutting off every third *knot* of the plant as they grew up. Phil. Tranſ. N°. 45.

KNOTS, on board a ſhip, are of ſeveral ſorts; the chief of theſe are, the *wale-knot*, which is ſo made with the lays of a rope, that it cannot ſlip, and ſerves for ſheats, tacks, and ſtoppers. The *bow-line-knot* is ſo firmly made, and faſtened to the

the crengles of the ſails, that they muſt break, or the ſails ſplit, before it will ſlip; and laſtly, the *ſheep-ſhank-knot*, which ſerves to ſhorten a rope without cutting it, which may be preſently looſened.

KNOT-*Graſs*. See POLYGONUM.

KNOTT, in zoology, the name of an Engliſh bird of the ſnipe kind, not known among authors by any particular Latin name, unleſs it be the *calidrys nigra*, or black calidrys of Bellonius, which is doubtful from his deſcription; and ſaid to have obtained its Engliſh name from Canute, one of the kings of this iſland, who was particularly fond of it.

It is ſeldom of more than two ounces and a half in weight. Its head and back are of a greyiſh brown; its rump is variegated with black and grey; its breaſt and belly are white, and its ſides browniſh, in ſome, but not in all the birds of this ſpecies: there is on each ſide of the head a white ſtreak, running from the angles of the beak to the eyes. The long feathers of the wings are black and white; and the tail, which is two fingers breadth and a half in length, has its feathers tipped with white at the ends. Its beak is a finger's breadth and a half long, and is black, but it is ſtronger than any other of the ſnipe kind. Its eyes are large, and its legs are green. They appear in Lincolnſhire and Yorkſhire in the beginning of winter, and remain there ſome months, always keeping about the ſea ſhores. *Ray*'s Ornithol. p. 224.

KNOWLEDGE (*Cycl.*) may be uſefully diſtinguiſhed into three kinds; hiſtorical, philoſophical, and mathematical.

Hiſtorical KNOWLEDGE is merely the *knowledge* of facts, or of what is or happens in the material world, or within our own minds. Thus, that the ſun riſes and ſets, that trees bud in the ſpring, that we remember, will, &c. are inſtances of *hiſtorical knowledge*.

Philoſophical KNOWLEDGE is the *knowledge* of the reaſons of things, or of what is or happens. Thus he has a *philoſophical knowledge* of the motion of rivers, who can explain how it ariſes from the declivity of the bottom, and from the preſſure which the lower part of the water ſuſtains from the upper. So likewiſe the ſhewing how, and by what reaſon, deſire or appetite ariſes from the perception or imagination of its object would be *philoſophical knowledge*.

Mathematical KNOWLEDGE is the *knowledge* of the quantity of things, that is, of their proportions or ratios to ſome given meaſure. Thus he who knows the proportion of the meridian heat of the ſun at the ſummer ſolſtice to its meridian heat at the winter ſolſtice, might ſo far be ſaid to have a *mathematical knowledge* of the ſun's heat. So likewiſe he has a *mathematical knowledge* of the motion of a planet in its orbit, who can diſtinctly ſhew, how from the quantity of the impreſſed and centripetal force the velocity of the planet is produced; and how from the action of this double force, the elliptical figure of the orbit ariſes.

Theſe three kinds of *knowledge* differ evidently, it being one thing to *know* that a thing is; another, the reaſon why it is; and a third, to *know* its quantity or meaſure.

It is alſo evident, that hiſtorical *knowledge*, though extenſively uſeful, and the foundation of the reſt, is the loweſt degree of human *knowledge*. Thoſe who aim at the greateſt certainty ought to join *mathematical* with *philoſophical knowledge*. Nothing can more evidently ſhew that an effect ariſes from a certain cauſe, than the *knowledge* that the quantity of the effect is proportional to the force of the cauſe. Beſides, there are many things in nature, the reaſons of which depending on certain figures or quantities, are not aſſignable but from mathematical principles. Vid. *Wolf*. Diſc. Prelim. Logic. Cap. 1 & 2.

Philoſophical knowledge is attended with advantages not to be expected from mere hiſtory. See PHILOSOPHY.

KODDA *pail*, in botany, a name given by Plumier, and in the *hortus Malabaricus* to a genus of plants, called by Linnæus *piſtia*. *Plumier*, Gen. 39. Hort. Malab. Vol. 11. p. 32. See PISTIA.

KOHLMULEN, in ichthyography, a name given by ſome to the *aſellus flaveſcens*, or yellow cod, called by others *blank* and *gelbe*. *Willughby*'s Hiſt. Piſc. p. 173. See the article BLANK.

KOKOB, in zoology, the name of a ſpecies of ſerpent found in the Weſt Indies, and very fatal by its bite. It is ſmaller than our viper, and of a brown colour, variegated with green and red ſpots.

KOLERUS, a name given by Paracelſus to an old dry ulcer.

KOLLOW, a name given in ſome parts of England to a black earth, being of the nature of a coarſe ochre, which is found in Derbyſhire, Wales, and many other places. It has obtained its name from the old Engliſh word *collow*, which ſignifies grime, or blacking of any kind.

KOLTO, a name given by ſome writers to the *plica polonica*.

KOMMANICK, in zoology, the German name for the large creſted lark common in many parts of Germany, but not known in England. It is larger than our common lark, and has a much larger and longer beak. Its back is of a greyer colour, and leſs ſpotted than in the common lark, and its rump is ſcarce ſpotted at all. Its creſt is very beautiful, and is compoſed of eight, ten, or twelve feathers much darker coloured than the reſt, and the bird cannot only raiſe and depreſs, but can ſpread and contract them at pleaſure. It very ſeldom is ſeen high in the air, and never makes any long ſtay there, but is moſt frequently ſeen about the banks of rivers. *Aldrovand*. de Avib.

KONNARUS, a name given by Agathocles in Athenæus to a plant of Arabia, which the deſcription ſhews to be the ſame with the *ſaduc* of the later Arabians, the fruit of which is called *nabac* or *nabech*.

This tree is the *lotus* of Dioſcorides and the *acanthus* of Virgil, whoſe berries he mentions. The fruit of this tree is like a cherry, but ſmaller, and is ground to powder by the Africans when dried. It is very well known to all who are acquainted with the writings of the old phyſicians, that the berries of the *lotus* or *nabac* were ground down, by the Egyptians and other nations where they grew, to a fine powder for medicinal uſes. They were aſtringents, and uſed both externally in pultices and fomentations, and internally in decoctions and other forms where aſtringents were required. *Athenæus*, p. 61.

KORACHORYNCHUS *Indicus*, in zoology, the name of a ſea-fiſh of the Eaſt Indies, called by the Dutch the *raeven beck*. It has its name from its noſe reſembling the beak of a raven or crow, and is about ſeven inches long; its back and tail are red, and its belly yellow; it has alſo on each ſide two pale yellow longitudinal lines, running from the gills to the tail. It is a wholeſome and well taſted fiſh. *Ray*'s Ichthyograph. Append. p. 2.

KOS, in the Jewiſh antiquities, a meaſure which held the quantity of four cubic inches, and ſomething over. This was the cup of bleſſing, out of which they drank when they gave thanks after ſolemn meals, as on the day of the paſſover. — *Exod.* xxv. 29. — *Calmet*, Dict. Bibl. in voc. *Cyathus*.

KOUANIN, in the Chineſe language, the name of a tutelary deity of women. The Chineſe make great numbers of the figures of this deity in white porcelain, and ſend them to all parts of the world, as well as keep them in their own houſes. The figure repreſents a woman with a child in her arms. The women, who have no children, pay a ſort of adoration to theſe images, and ſuppoſe the deity they repreſent to be of power to make them fruitful. It has been ſuppoſed, by many Europeans, that theſe images were meant to repreſent the Virgin Mary, with our Saviour in her arms, but this is an idle opinion; the Chineſe having been fond of this figure in all times that we have an account of. The ſtatue always repreſents a handſome woman, very modeſtly attired. Obſerv. ſur les Coutumes de l'Aſie.

KRUTZVOGEL, in zoology, the German name for the loxia or croſs bill.

KUHUL, a word uſed by ſome chemical writers to expreſs lead ore.

KURUNDU, or KURUDU, in botany, a name by which ſome botanical authors have called the cinnamon tree. *Herm*. Muſ. Zeyl. p. 12.

KUSBORAH, in botany, and in the materia medica, a name uſed by ſome authors, particularly Averrhoes, for the plant or ſeed of coriander. *Ger*. Emac. Ind. 2.

KYMOLEA, a word uſed by ſome writers, to expreſs the foulneſs or muddy ſubſtance, which gathers about a ſtone uſed for cutting or grinding other bodies.

L.

LA, in the Italian muſic, a ſyllable by which *Guido* denominated the laſt ſound in each hexachord, if it begins in C it anſwers to our *a*, if in G to *e*, if in F to *d*.

LABADISTS, a ſect of religioniſts, followers of the opinion of Jean de Labadie, who lived in the laſt century, and was cotemporary with Mad^lle Bourignon.

Some of his tenets were, that 1. God could and did deceive men. 2. That in reading the ſcriptures greater attention ſhould be given to the internal inſpiration of the holy Spirit than to the words of the text. 3. That baptiſm ought to be deferred till mature age. 4. That the good and the wicked entered equally into the old alliance, providing they deſcended from Abraham, but that the new admitted only ſpiritual men. 5. That the obſervation of Sunday was a matter of indifference. 6. That Chriſt would come and reign a thouſand years on earth. 7. That the euchariſt was only a commemoration of the death of Chriſt, and that tho' the ſymbols were nothing in themſelves, yet that Chriſt was ſpiritually received by thoſe who partook of them in a due manner. 8. That a contemplative life was a ſtate of grace, and of divine union during this life, the ſummit of perfection, &c. 9. That the man whoſe heart was perfectly content and calm, half enjoys God, has familiar entertainments with him, and ſees all things in him. 10. That this ſtate was to be come at by an entire ſelf-abnegation, by the mortification of the ſenſes and their objects, and by the exerciſe of mental prayer. See Journ. des Scavans for Oct. 1727, where we have ſome account of Labadie and his followers, which were moſtly women; and with ſome of which, it has been ſaid, he took criminal liberties. See *Baſnage*, Annales des Provinces Unies, Tom. 2. cited in Journ. des Scav. l. c.

LABARIFERI, among the Romans, ſtandard-bearers, who carried the *labarum*. *Danet*, in voc. *Signa*. See LABARUM, *Cycl.*

LABDACISM Λαβδακισμὸς, in rhetoric, the too frequent repetition of the letter L, as *ſol et luna luce lucebant*, and *alba levi lactea*. *Voſſ.* Rhet. l. 4. p. 45.

LABDANUM, in the materia medica. See LADANUM, *Cycl.*

LABELLED *line*, in heraldry, a term uſed by ſome to expreſs the line in certain old arms, called more uſually urdee or champagne. Others apply the ſame word to expreſs the patee or dovetail line, called alſo the inclave line by Morgan. It ſomewhat reſembles the joint called a dovetail by our joiners, and its points, as they proceed from the ordinary, whether chief or feſs, reſemble the ends of labels. See URDEE and PATEE.

LABEO, in ichthyology, a name given by the old Latin writers to the fiſh, uſually called *cheilon* and *chelon*. See the article CHELON.

LABER, a word found in Serapion, and uſed there as the name of an aromatic drug. The commentators have been much perplexed, to find the reaſon or etymology of the word, as it appears no where elſe in the writings of the antients. It ſeems to be no other than a wrong ſpelling of the word *ſaber* or *ſebar*, ſometimes alſo written by the Arabians *cebar*, which is a name of the lignum aloes.

LABERINTH. See LABYRINTH.

LABIATED *flowers*, in botany, a term for a very large ſeries of flowers; the diſtinctions of which are, that they are monopetalous, and are in their lower part formed into a pipe or narrow tube, and in their upper become widened into one or two lips. The cup of theſe flowers conſiſts of one leaf, and is uſually tubular, and reſembles a paper cone; and their piſtil is ſurrounded with four embryos, which ripen into a fruit, compoſed of four ſeeds, and kept incloſed in the cup; by this they are diſtinguiſhed from the perſonated flowers, whoſe fruit is an oblong capſule; and they differ from the rotated flowers of borrage, and the like, in that they have ſome ſort of reſemblance to the opening of a mouth of ſome animal. See Tab. 1. of Botany, Claſs 1. *Tourn.* Inſt. p. 177.

A BIATED *leaf*. See LEAF.

LABINÆ, in natural hiſtory, a term uſed by the authors, who have written of Swiſſerland, and other mountainous countries, to expreſs thoſe vaſt maſſes of ſnow, which ſometimes fall from the hills, and bury houſes, or even whole towns; and when hardened by the froſts, as is often the caſe, into ſolid ſubſtances, they overthrow woods, villages, and whatever ſtands in the way of their courſe, as they roll down the ſteep ſides of the precipices in their way. Some authors have alſo extended the word to a larger ſenſe, and made it expreſs the falling of vaſt rocks, or parts of mountains, and their rolling down in the ſame manner into the flat country: this is a miſchief very frequent in the ſame places, after froſts, and often very fatal. *Wagner's* Hiſt. Helvet.

LABIUM *ſuperius attollens*, in anatomy, a name given by Spigelius to the muſcle, called by Albinus, Winſlow, and others, *zygomaticus major*.

LABORANT, in chemiſtry, the perſon that attends on and works under a chemiſt, while he is about any proceſs or experiment.

LABORATORY *(Cycl.)*—Dr. Shaw, who has taken great pains to bring the ſtudy of chemiſtry more into uſe in England, than it has hitherto been, has explained the eaſyneſs of its operations in general, and attempted a means of making its practice leſs expenſive, by introducing in the place of that vaſt number of furnaces, and other contrivances, figured and deſcribed by the generality of writers on the ſubject, a *portable laboratory*, by means of which alone all the chemical operations may be commodiouſly performed. This *laboratory*, fitted for its ſeveral purpoſes, is figured in the plate of chemical furnaces and veſſels, to which we refer the reader. See Tab. of Chemiſtry, N° 31. *ſeq.*

Its contrivance is ſuch, that not only compleat courſes of chemical experiments and operations may be commodiouſly performed by its means; but all the medicines may be prepared, in ſuch quantities, as to ſupply not only the demands of a family, but of an apothecary's ſhop, in moderate buſineſs. The firſt perſon who planned out this ſort of furnace was Beccher, and the ſcheme executed by Dr. Shaw is an improvement on that attempt. This *laboratory* conſiſts of two parts beſide the furnace: theſe are the apparatus and the materia chemica, which are deſcribed under the heads APPARATUS *chemicus*, and MATERIA *chemica*.

The furnace has four principal parts. 1. The cover. 2. The ring. 3. The body, and 4. The foot. The general office and uſe of the cover is to check, ſuppreſs, and throw back the heat and flame, that the fuel may not waſte itſelf too faſt, as it otherwiſe would do to very little purpoſe in many of the operations; for the action of the fire being not momentary but ſucceſſive, the more it is kept in, and directed upon the ſubject, the more it is able to perform its effect, and that with the leſs expence or deſtruction of it. In order to increaſe the draught to the fire, and ſqueeze the air the more forcibly through the body of the fuel, there is a moveable funnel or chimney, which may occaſionally be fixed to the orifice, in the top of the cover left for that and many other uſes. See the Figure, *ubi ſupra*.

The ring is the place or ſeat of many operations. The body to be worked upon by the fire is frequently lodged in it; and, in other caſes, it helps to enlarge the furnace, and renders it capable of operations it could not otherwiſe perform. The body of the furnace ſerves to contain the fuel, and is the common ſeat of the operations by the fire, in the running metals from their ores; and in theſe and many other the like caſes, it performs the office of a crucible as well as fire place, and contains the ſubject mixed along with the fuel, as is practiſed at the ſmelting houſes. To this body there belong three ſeveral grates, which may be placed at different heights therein, according to the nature of the operation, and the diſtance required between the ſubject and the fire. Laſtly, the foot is of two kinds, and is not only of uſe in ſupporting the reſt of the parts, but it receives the aſhes of the fuel, and the melted matter that may, in any of the operations, run down from the ores of metals; or, on other the like occaſions, when the fire liquates any thing above. The more immediate appurtenances of this furnace are fuel and bellows. The general fuel is to be charcoal; or, as there is a contrivance for a vent or flue in the body of the furnace, common ſea-coal may be employed, and the ſmoak directed up the chimney of the room, in which the furnace is to ſtand. The ſtructure of this furnace is alſo very well fitted for a lamp, which is a ſort of heat, highly convenient for ſome curious digeſtions and calcinations, and by this means thoſe operations, which would otherwiſe require an athanor, may be conveniently performed, and that in the moſt accurate manner.

The number of chemical proceſſes that may be performed by this furnace is not eaſily reckoned up; but it may not be improper to add an account of the ſeveral ſtates, into which it is to be put for the performing them.

The moſt ſimple ſtate of the furnace is a combination of its two lower parts, the body and the foot. When theſe are put together it is fit for fuſion by the naked fire, where the matter to be melted is to be mixed among the fuel; as for inſtance, in the running the ores of lead, tin, or iron, which may thus, in the quantity of many pounds at a time, be ſeparated from their droſs, and purged for uſe, as exactly as at the mine works, or ſmelting houſes, either with the aſſiſtance of the bellows, or without, as the nature of the ore requires. By barely placing a grate in the middle of the body, the inſtrument becomes a melting furnace for a crucible, wherein all the operations that require a fire of fuſion, animated either by the air, or bellows, are performable with ſuch advantages as cannot be had in the common wind, or blaſt furnaces made for this purpoſe. When only

the body of the furnace with its middle grate is ſet upon the foot, it anſwers all the purpoſes of a ſhop-furnace uſed by the apothecaries for decoction, inſpiſſation, extraction, and the like purpoſes, where a naked fire only is required, and certain diſtillations and ſublimations may alſo be performed conveniently by it.

It may in this ſtate alſo be conveniently made to ſerve the purpoſes of a *balneum mariæ*, an aſh heat, a ſand heat, or a ſtill ſtronger one for digeſtion and ſublimation, by only ſetting on it in this ſtate a veſſel of water, or one filled with aſhes, ſand, or iron filings; and thus ſeveral operations requiring the ſame kind of heat may be carried on at the ſame time. If inſtead of a common pan or veſſel to hold water, ſand, *&c.* the ring or third part of the furnace, be ſet on furniſhed with its ſet of pots, the whole is then a furnace fitted for that ſort of diſtillation called diſtillation in *capella vacua*, where the retorts are contained in the cavity of the pots, and locked down therein without any viſible medium between. By this means many operations may be performed in the diſtillation and ſeparation of bodies, that could not be worked upon to ſo much advantage by any other method. Particularly the rectification of the ſtrongeſt acid ſpirits, is very eaſily and conveniently performed this way at very little expence.

If an iron pan be placed in the room of the ring juſt mentioned, the inſtrument is then a calcining furnace, where ores of metals may be roaſted, and lead, antimony, and the like bodies may be conveniently reduced to aſhes.

If the loweſt grate be uſed inſtead of the middle one, then either a cold ſtill, or, as it is generally called, a hot one may be put into the body, and worked in the common manner with its head and refrigeratory. Thus all the cordial waters may be made ſpirits, may be rectified, and the eſſential oils diſtilled by the ſame means, as well as by the common fixed ſtills.

The laſt part or cover of the furnace, may ſometimes be applied to the ring, ſometimes only to the body of the furnace without the ring. The inſtrument in this caſe becomes a proper reverberatory furnace, and is uſeful for cæmentation, cupellation, and the eſſaying of ores; and for diſtilling with a fire of ſuppreſſion, that is, where the fire is placed above as well as below the ſubject, and the veſſel that contains it.

A furnace of this nature has numerous advantages, not only over all the chemical furnaces in common uſe, but even over thoſe of the moſt celebrated ſtructure and contrivance, deſcribed by authors on particular occaſions, not excepting thoſe of Glauber and Vigani. Thoſe nicely contrived furnaces are generally adapted to ſome few particular purpoſes, and yet this eaſy kind anſwers in experiment thoſe very purpoſes better; and at the ſame time is of general uſe on all the other occaſions of chemiſtry. Experience has ſhewn, that it is better for the various uſes of Glauber's philoſophical furnaces, than thoſe very furnaces themſelves, though made for theſe very purpoſes; and for the higher operations as they are called of metallurgical chemiſtry. For example, to obtain a pure ſpirit of ſalt in plenty, Glauber orders the ſalt to be thrown upon the fire, and has contrivances to catch the riſing vapour; but this is a tedious way, and turns to very little account in practice, nor is the matter much improved by quenching the coals in a brine of ſea ſalt, and afterwards burning them for their fume; but all that can be expected from theſe aukward contrivances, may be had commodiouſly from the furnace here deſcribed, where the fire being animated by bellows, cauſes the fire to burn more free, and the fuel to yield the ſpirit it was impregnated with much more quickly and eaſily, than in the furnace contrived by that author for the purpoſe, while the fuel is ſupplied by the door without any diſturbance to the operation. *Shaw*'s Eſſ. on a Portable Laboratory.

There are many other curious philoſophical experiments, which can be no way ſo well done as with this kind of furnace, and many ſcarce at all without it. It is excellently fitted alſo for enamelling, making of paſtes, ſtaining of glaſs, and making the artificial gems. And beſide theſe and a number of other curious uſes; it is extremely well fitted for all the common purpoſes of fires. Any artizan who requires fire in whatever manner in his buſineſs, may contrive to apply it in this manner as he will; the offices of a common ſtone in a kitchen, may alſo be very well ſupplied by it, and the warming a room or vault, is as well done by it as by any of the common contrivances of ſtoves, ovens, and other things, made purpoſely for that uſe.

The outer caſe of the furnace is to be made of good plate iron of a conſiderable thickneſs, formed in ſeparate pieces of the figures expreſſed in the plate, and its ſize may be ſuch as the operator chuſes; obſerving only a due proportion in its ſeveral parts. The inner ſides of all the parts muſt be lined at leaſt an inch thick with a proper luting, which muſt be carefully laid on and gently dried, the cracks which happen in the drying, being filled up with more of the ſame luting. Windſor loam alone may be uſed to this purpoſe, but the author himſelf recommends the following mixture. Take a buſhel of Windſor loam, four quarts of brickduſt, two quarts of powdered green glaſs, two quarts of iron filings, four handfuls of cow-hair, and eight handfuls of horſe-dung, theſe are all to be beat together, and a ſufficient quantity of bullocks blood added, to make the whole into a ſtiff and uniform paſte, which is to be carefully ſpread over every part of the furnace that the fire can touch.

LABOUR, in the ſea language, is uſed when a ſhip rolls and toſſes much.

LABRAX, in zoology, a name given by ſome to the lupus or ſea wolf, called in Engliſh the Baſſe. *Willughby*'s Hiſt. Piſ. p. 272. See the article BASSE.

LABRUS, in ichthyology, the name of a genus of fiſhes, the characters of which are theſe. They are of the acanthopterygious tribe. The branchioſtege membrane on each ſide contains ſix ſlender and flat bones, when the fiſh is full grown; but in the young ones, five only can be counted. The teeth are large, and are placed in the jaws, and on three bones in the fauces, the upper ones hard and two in number, the lower one ſingle, the palate and tongue are ſmooth. There are thick and fleſhy lips covering the teeth. The membrane of the back fin, contains in its fore part double rays ariſing from each baſe of theſe two, the one is prickly, the other ſoft and inoffenſive. The colour is generally beautiful and in moſt of the ſpecies elegantly variegated. The tail is generally undivided; the ſcales are large, ſoft and ſmooth; and there are no appendices to the pylorus. *Artedi* Gen. Piſc. 27. The ſpecies of this genus enumerated by Artedi are theſe. 1. The *labrus* with the ſnout turning upwards, and with the tail circular at the end. This is the *turdus vulgaris*, and *tinca marina*, or ſea tench of authors, and is called by our people in Cornwall, the wraſſe or old wife fiſh. 2. The green *labrus* with a blue line on each ſide. 3. The black *labrus* called by authors the *merula*. 4. The elegantly variegated *labrus* with the pectoral fins rounded at the ends. This is the *pavo* of Salvian. 5. The oblong green *labrus* with gold coloured iriſes. 6. The blue and yellow *labrus* with very large fore teeth. 7. The four toothed green *labrus* with a forked tail. 8. The ſmall variegated *labrus* with two large teeth in the upper jaw. 9. The *labrus* with the lower jaw longeſt with a forked tail, and variegated with tranſverſe black lines. 10. The *labrus* variegated with purple, blue, yellow, green, and black. This is called by ſome authors the *ſcarus varius*.

The word *labrus* is truly Roman, and is uſed in the ſame ſenſe by Ovid and others, being probably derived from the word *labra*, lips; this fiſh having remarkable thick and prominent lips.

LABRUSCA, in botany, a name uſed by the old authors for black bryony. *Ger.* Emac. Ind. 2.

LABUYO, in natural hiſtory, a name given by the inhabitants of the Philippine iſlands, to a bird very common among them, and called by us the Urogallus. See UROGALLUS.

LABYRINTH (*Cycl.*)—*Labyrinth*, in gardening, is a part of the ground ſo planted and diſpoſed, as to render it difficult when any one is in it to find the way out, and in the attempting to get out, there are to be as many ſtops and diſappointments laid in the way as poſſible; the center alſo is to be made difficult to be found. There are two general ways of making them; the firſt is with ſingle hedges, and this is what has been moſt practiſed in England; and this may be beſt where there is but a ſmall ſpot of ground allowed for the making them, but where there is room enough, the double hedges are greatly the moſt eligible, and theſe are beſt of all when there is a wood-work between them. The walks in *labyrinths* ſhould be gravelled, and ſhould by no means be made too narrow. Theſe are to be ſet with iron beams, and the paliſadoes ought to be twelve or fifteen feet high. *Labyrinths* are only proper for large gardens, and the fineſt in the world is ſaid to be that of Verſailles. *Miller*'s Gard. Dict.

LAC, *milk.* See MILK.

LAC *Lunæ* (*Cycl.*)—Dr. Plot gives this foſſil as a mark of good lime ſtone; but it has been obſerved, that two quarries in Ireland where *lac lunæ* was found, were of building ſtone, but would not burn into lime. Phil. Tranſ. N° 477. Sect. 9. See AGARIC, *Cycl.* and *Suppl.*

LACCA, *Gum Lacc.* The method of obtaining the fine red laque uſed by painters from this ſubſtance, is by the following ſimple proceſs. Boil the ſtick *lacc* in water, filtre the decoction, and evaporate the clear liquor to a dryneſs over a gentle fire. The occaſion of this eaſy ſeparation is, that the beautiful red colour here ſeparated, adheres only ſlightly to the outſides of the ſticks, broke off of the trees along with the *gum lacc*, and readily communicates itſelf to boiling water. Some of this ſticking matter alſo adhering to the *gum* itſelf, it is proper to boil the whole together, for the *gum* does not at all prejudice the colour, nor diſſolve in boiling water. So that after this operation, the *gum* is as fit for making ſealing wax as before; and for all other uſes which do not require its colour. *Shaw*'s Lect. p. 178.

A tincture of *gum lacc* may be thus prepared. Take two ounces of *gum lacc*, reduce it to a fine powder; and make it into a ſtiff paſte with oil of tartar per deliquium; ſet this in an open glaſs to dry by a gentle heat, then remove it to the open air, that it may relent and grow ſoft, then dry it again, and repeat this two or three times, at the

end of which the hard body of this reſin will be found reſolved into a purple liquor. This may yet again be dried, and when dried muſt be reduced to powder, which powder will afford a fine ſtrong tincture to ſpirit of wine, being boiled in it in a tall glaſs in a ſand heat for two or three hours. And by this proceſs ſtrong tinctures may be made from myrrh, amber, gum, juniper, &c. which will yield no tincture of ſtrength to ſpirit of wine alone, if treated in the uſual way. *Shaw*'s Lect. p. 203.

LACCIA, in ichthyology, a name given by Paulus Jovius to the ſhad, or, as we ſometimes call it, the mother of the pilchards. See the articles THRISSA and CLUPEA.

LACCOPEDON, a word uſed by the old medical writers to expreſs the lax part of the ſcrotum.

LACCOS, Λακκος, among the Greeks, a ditch or trench uſed inſtead of an altar, when ſacrifices were to be offered to the ſubterranean or infernal Gods. *Potter*, Archæol. Græc. l. 2. c. 2. Tom. 1. p. 192. See ALTAR.

LACEDÆMONIUM *Marmor*, in the natural hiſtory of the antients, the name of a ſpecies of *marble* very hard, and of a beautiful green colour. It is a very cloſe, even, and compact *marble*; of a fine ſtrong and bright green, and when poliſhed, is the brighteſt of all the green *marbles*, and is remarkable for this, that the colour is not regularly and equally diffuſed through the whole maſs, but leaves in it many ſpots and lines very bright and pale, and ſome much deeper than the general colour, though there is no colour but green, in the whole, only in different ſhades and degrees, ſome parts approaching to black and others to whiteneſs.

It was originally found only in Ægypt, and there not in entire ſtrata, but in large pieces waſhed off from the ſtrata, and ſometimes left on the ſurface, ſometimes buried in the earth, and was greatly valued. It has been ſince found in Italy and Germany, and in England. About five miles from the hot wells at Briſtol there is a ſtratum of it, whence it might be had in conſiderable quantities. Its beauty would ſoon recommend it if it were once known: and though hard to cut, it would make amends for that by the high poliſh it would take. *Hill*'s Hiſt. of Foſ. p. 469.

LACERTA, *the lizard*. See LACERTUS.

LACERTA *Chalcidica*, in zoology, the name of a ſpecies of *lizard*, more uſually known by the name *ſeps*. See SEPS.

LACERTA *Volans*, a ſpecies of *lizard*, which lives on trees, feeding on ants, flies and other inſects, and doing no injury to man or any other large animal. It has membranes on its ſides, which ſerve the office of wings, in carrying it from one tree to another, and has been called by Geſner the dragon or winged ſerpent.

LACERTUS, in ichthyography, the *lizard* fiſh, a name given by ſome writers to a fiſh of the cuculus kind, much reſembling the common mackerel, in ſhape and in taſte, and more uſually called *trachurus*. *Geſner* de Aquat. p. 290. See TRACHURUS.

LACERTUS is alſo uſed for a fiſh of the garfiſh kind, or *acus oppiani*, but larger than the common ſpecies, and called by the Italian fiſhermen *aguglia imperiale*, or the imperial garfiſh, and by the fiſhermen of England, particularly in Cornwall, the *girrock*, in diſtinction from the common kind which they call *ſkipper*. It is thicker in proportion to its length than the common garfiſh, and has a ſhorter and ſharper ſnout, and inſtead of teeth, has only its jaws ſerrated like a file. It is a ſcarce fiſh, but is more firm in its fleſh than the common garfiſh. *Rondelet*. de Piſ. p. 32.

LACERTUS, the *lizard*, in zoology, the name of a large genus of animals, comprehending all thoſe quadrupeds which are oviparous, and have long tails continued from their bodies. The term oviparous is to be underſtood however in a larger ſenſe, expreſſing ſome among theſe, which though they have true and proper eggs within them, yet never depoſit them as ſuch, but keep them in their bodies till they are hatched, and bring forth living young ones. Some of the ſerpents, as well as ſome of the *lizards*, are of this kind, and the obſervation is as old as Ariſtotle, who calls the creatures, whoſe generation is of this kind, *internally oviparous, externally viviparous*. See Tab. of Quadrupeds and Serpents, N° 30. *ſeq.* and *Ray*'s Syn. Quad. p. 261.

LACERTUS *Orbicularis*, in zoology, the name of a very ſingular ſpecies of *lizard*, which is not long and ſlender like the reſt, but broad and rounded. *Hermandez* Lib. 9. c. 46. See the article TOPAYAXIN.

LACERTUS *Squammoſus*, in zoology, a name given by authors to a ſpecies of *lizard*, more eminently ſcaly than any other kind. The general length of this creature is about a yard and half. His head from the noſe end to the fore feet, is not above three inches; he has no neck; his trunck from the fore legs to the hinder, is not above ten inches and a half, but his tail is exceeding long, not meaſuring leſs than a yard and a half quarter; the back part of his head is near two inches over; his noſe about an inch, his body nearly four inches, and his tail very taper, but ending in an obtuſe end; the under part of the tail is flat, the upper part hyperbolic; the fore legs, contrary to what they are in other *lizards*, are longer than the hinder, theſe being not above three inches and a half in length, and thoſe more than four. The claws of the fore feet are alſo longer, thoſe of the hinder being but about half an inch long, thoſe of the fore ones near an inch; there are on each foot four toes and a heel behind. He is all over, except his throat and belly, and the lower part of his fore legs, and the inward part of the hinder ones, covered with ſcales very thick, and in ſolidity equal to the hardeſt bone. The baſes of the ſcales are of blackiſh yellow, the reſt of a pale yellow, like that of old ivory. They are ſtriated from the baſe to the cone, and are diſpoſed alternately in the manner of the ſcales of fiſhes. In the body there are ten or eleven in each rank, and on the tail about five; the largeſt are near two inches broad, but the ſmalleſt, not more than a quarter of an inch. They are flat on the forehead, the back and the fore part of the tail, but on the edges of the tail they are doubled into an acute angle. It is ſaid to be a very tame and inoffenſive animal. *Grew*'s Muſ. Soc. R. p. 46.

The throat and belly of this animal are beſet with hairs, and Mr. Ray ſuppoſes it from that, to belong to the viviparous quadrupeds, notwithſtanding that its ſhape has always made it be ranked among the *lizard* kind. It is preſerved in the muſeums of the curious, but we are not acquainted with the part of the world it lives in. *Ray*'s Syn. Quad. p. 275.

LACERTUS *Subterraneus*, the underground *lizard*, a very diſagreeable and dangerous ſpecies of *lizard*, found in the Antilles iſlands, and ſome other places. They are often met with by the people who dig in marſhy places, and are of a very formidable aſpect; they are about ſeven inches long. Their back is covered with black gloſſy ſcales, with a few grey ones, mixed here and there among them, and they look ſleek and gloſſy as if rubbed over with oil; the belly is no leſs ſcaly than the back, and their ſkin is of a yellowiſh colour. The head is ſmall and ſharp, and the mouth opens very wide, and is armed with very numerous and ſharp teeth; their eyes are very ſmall. As ſoon as they are dug up, and thrown on the ground, they immediately dig their way in again, with their feet, which are prepared for that purpoſe, and armed with ſharp claws; and when they are once in they burrow their way like moles wherever they pleaſe. They do great miſchiefs to the inhabitants in their gardens and plantations, burrowing horizontally at ſmall depths, and deſtroying the roots of every thing they meet with. Their bite is eſteemed as dangerous as that of the moſt poiſonous ſerpent. *Rochefort*, Hiſt. des Antill.

LACERTUS *viridis*, the *green lizard*, a very beautiful creature, which is common in many parts of Italy, and is ſometimes found in Ireland. It is conſiderably larger than our land eft, and of a very beautiful green. See Tab. of Quadrupeds and Serpents, N° 30. and *Ray*'s Syn. Quad. p. 263.

LACERTUS *alter ſphincteris*, in anatomy, a name given by Santorini, and ſome others, to one of the muſcles of the anus, now generally known by the name of the *levator ani*. The *muſculus ſedem attollens* of Veſalius, and *latus* of others. The thin termination of this muſcle, not the whole, is underſtood by this name.

LACERUM *folium*, among botaniſts. See LEAF.

LACHNIS, in natural hiſtory, the name of a genus of foſſils, of the claſs of the *fibrariæ*; the characters of which are, that they are fibroſe bodies, not elaſtic, and compoſed of ſhort and abrupt fibres, or filaments.

The word is derived from the Greek λαχνη, a hair or ſhort capillament or fibre. See Tab. of Foſſils, Claſs 1.

The bodies of this genus are divided into thoſe which are compoſed of larger and broader, and thoſe which are compoſed of ſmaller and narrower filaments. Of the firſt of theſe there are ſix ſpecies known among us; and of the other, four. Thoſe of the firſt are, 1. A pale fleſh coloured very gloſſy kind, found in the marl pits of Derbyſhire, and of little value. 2. A gloſſy greeniſh white kind, found alſo in the ſame county in a greeniſh marl. 3. A greyiſh white with thick filaments, common in the hills of Yorkſhire. 4. A dead looking white one common in Derbyſhire and Leiceſterſhire. 5. A very gloſſy white one in the clay pits of Yorkſhire; and 6. A dull fleſh coloured one in the Derbyſhire marl pits, which, as well as ſome others of theſe, makes a very good gypſum with very little trouble. *Hill*'s Hiſt. of Foſſ. p. 93—98.

Thoſe of the ſecond ſort, or the narrow threaded ones are, 1. A very gloſſy pale red one, found in great plenty on Mendip hills, and burning very freely to fine plaiſter. 2. A blueiſh white one common in the marl pits of Staffordſhire, though not regarded as a thing of any value by the owners of the pits. 3. A gloſſy greeniſh grey one common on the ſhores and in the cliffs of Yorkſhire. And 4. a very bright greeniſh white kind, found in great plenty in Derbyſhire, and frequently uſed for burning into plaiſter. It is very certain, that moſt of the reſt, from the quantities they are found in, might be made a very profitable thing to the owners of the pits where they lie, though they are in moſt places neglected. *Hill*'s Hiſt. of Foſſ. p. 98, 99, 100, 101.

LACINIATED *leaf*, in botany. See LEAF.

LACRYMA *cervina*, in natural hiſtory, a little round and hard bone, ſaid to grow in the great corner of a ſtag's eye after a certain age. Some alſo preſerve under this name a thickened excretion from the inner angle of that creature's eye, in colour and conſiſtence reſembling myrrh, or ear-

wax,

wax, long hardened in the ear. This is of a ſtrong and very diſagreeable ſmell, like the ſweat of the ſame animal, and is affirmed to be ſudorific and alexipharmic. *Grew*'s Muſ. p. 21.

LACRYMA *jobi*, in botany. See DIOSPIROS.

LACTARIA, *milk wort*, a name uſed by ſome botanical authors for the tithymal or ſpurge. This plant has been ſo called on account of its *milk* like juice. *Ger.* Emac. Ind. 2.

LACTEAL *fevers*, a term uſed by medical writers, to expreſs what the women call milk fevers, that is ſuch fevers as attend the difficult ingreſs of milk to the breaſts in lying-in-women.

LACTEUS *lapis*, in natural hiſtory, a name given by ſome authors to the *galactites*. See GALACTITES.

LACTIFEROUS, an epithet applied to ſuch plants as abound with a milk like juice, ſuch as the tithymal, ſow-thiſtle, and many others.

LACTUCA, *lettuce*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the ſemi-floſcular kind, being compoſed of a number of ſmall ſemi-floſcules, ſtanding on the embryo ſeeds, and contained in a common oblong and ſlender ſcaly cup. The embryos finally become ſeeds winged with down. To this it may be added, that there is a peculiar appearance, in all the *lettuces*, which eaſily diſtinguiſhes them from all the other genera of the plants with ſemi-floſcular flowers.

The ſpecies of *lettuce* enumerated by Mr. Tournefort are theſe. 1. The common garden *lettuce*. 2. The endive leaved *lettuce*. 3. The *lettuce* with ſpotted leaves. 4. The great variegated, headed and cultivated Auſtrian *lettuce* with a ſweet ſmell, commonly called the clove *lettuce*. 5. The long ſweet *lettuce*, called the Roman *lettuce*. 6. The jagged *lettuce* with curled leaves. 7. The broader leaved curled *lettuce*. 8. The *lettuce* with oblong pointed leaves. 9. The common headed garden *lettuce*. 10. The greater headed garden *lettuce* with duſky green leaves. 11. The wild *lettuce* with thorny ribs to the leaves. 12. The Italian wild *lettuce* with a prickly middle rib and bloody ſpots on the leaves. 13. The great opium ſcented wild *lettuce*. 14. The wild *lettuce* with the ſtalk covered with leaves, called by ſome the *viſcous ſuccory*. 15. The blue flowered dwarf perennial *lettuce*. 16. The white flowered dwarf perennial *lettuce*. 17. The wild *lettuce* with narrow jagged leaves. 18. The prickly, ſhrubby Spaniſh ſea *lettuce*. 19. The dandelion leaved mountain *lettuce*. 20. The blue flowered mountain *lettuce* with broad jagged leaves. 21. The white flowered mountain *lettuce* with broad jagged leaves. 22. The tall broad leaved Canada *lettuce* with a greyiſh flower. 23. The tall narrow leaved Canada *lettuce* with a pale yellowiſh flower. *Tourn.* Inſt. p. 473. See LETTUCE.

LACTUCA *marina*, *ſea lettuce*, in botany, a name uſed by ſome authors for the *lichen marinus*, commonly called oiſter green. Chabræus 572.

LADA, in botany, a name given by ſome authors to the plant which produces the common black pepper. *Piſo*, Mant. arom. p. 492.

LADDERS, in a ſhip, are uſually three.

1. The *entring ladder* is in the *waſte*, and made of wood.

2. The *gallery ladder* made of ropes, is hung over the gallery or ſtern of a ſhip, and ſerves to enter by, out of the boat, when the weather is foul, and the ſea high.

3. The *bolt-ſprit-ladders* are at the beak-head made faſt over the bolt-ſprit, to get upon it, and are only uſed in great ſhips.

Cart-LADDERS. See the article CART.

LADIES *ſmock*. See the article CARDAMINE.

LADIES *ſlipper*, in botany. See CALCEOLUS.

LADLE *of a gun*, the inſtrument wherewith the powder is put into the piece.

It is made of a plate of copper bowed in form of a half cylinder, rounded at one end, the other being fixed upon a long ſtaff; this filled with powder, the gunner carries, with his left hand, under the end of it, to keep the powder from falling out, till he enters it in the muzzle of the piece; when he has carried the powder home to the charged cylinder, he turns the *ladle* that the powder may fall out, and withdraws it.

Ladles are fitted to the bore of each gun, and hold powder ſufficient for the charge.

LADONIS, in the materia medica of the antients, a name given by ſome to the laurus or bay tree. We find the word in a compoſition preſcribed in Galen, from the works of ſome of the empirics of his time, but it never was uſed by the more regular authors.

LADRE, in the manege. See the article DULL.

LÆNA, among the antients, a thick ſhaggy upper garment. See the article CHLÆNA.

LAERTA, in natural hiſtory, a name given by authors to a ſpecies of veſpa or waſp, whoſe ſting is ſaid to be fatal: but this is an erroneous opinion. This waſp is larger and longer bodied than the common kind, but ſmaller than the hornet. It ſeems of a very irritable diſpoſition, attacking animals of any kind that come in its way.

LAGANUM, in natural hiſtory, the name of a genus of the *echini marini*, of the general claſs of the placentæ. The characters of the *lagana* are, that they have their mouth in the center of the baſe, and their aperture for the anus in its third region; that their ſuperficies is whole, and their edges waved. Of this genus there are five known ſpecies. 1. A ſmall very white one, with a ſinuous and fimbriated edge. 2. A larger, with a ſinuous edge, jagged in two places. 3. Rumphius's flat echinus. 4. A ſmaller and thinner than that; and 5. Plot's echinites deſcribed by Liſter, which beſide the fine ſtriæ has an almoſt innumerable ſeries of fine circular rings. *Klein*'s Echinod. p. 31.

LAGINE, in natural hiſtory, a name given by Pliny to a climbing plant, of the nature of that from which ſcammony was obtained, but ſmaller, and thence called by ſome *ſcammonea parva*, the ſmaller ſcammony. The antient Greeks have called this plant *jaſine*; and it appears very probable, that the word *lagine* here mentioned by Pliny is but a corruption of that name.

LAGOCEPHALUS, in zoology, the name of a ſpecies of orbis or globe fiſh. It is about a foot long and half a foot high. Its head is ſomething like a hare's, the forehead plain and almoſt ſquare, an inch and three quarters broad; the eyes round, above three quarters of an inch over and ſtanding high; the noſtrils three quarters of an inch before the eyes, and from theſe to the noſe end is a little above an inch. Each chap is, as it were, divided into two great teeth of three quarters of an inch broad. The fins are five in number; the ſkin membranous and limber on the back, head, upper ſides and breaſt, and round about his tail ſmooth and bald, and on his belly and lower part of his breaſt armed with little ſhort prickles; and there are undulated and crooked lines running along his back and ſides. *Grew*'s Muſeum Soc. Reg. p. 108.

LAGOPUS, in zoology, the name of a bird of the partridge kind, called by many the *rabolane*, and diſtinguiſhed from all other birds of this kind, by the thick covering of its legs and feet; it is a little larger than a tame pigeon; its beak is ſhort, ſtrong, and a little hooked, like that of the other gallinaceous fowls; and over its eyes there are naked ſpaces, of a fine red, and full of fleſhy protuberances. The males have a black line on each ſide the head, which the females have not; all the reſt of the body, the tail only excepted, is as white as the pureſt ſnow. Its tail conſiſts of ſixteen feathers, and is white, variegated with grey and black. Its legs and feet are very thick, covered even to the claws, with a fine, ſoft, and warm feathers; its claws are very long and ſharp, and its toes have a hairyneſs underneath. It ſpends its life on the mountains, in regions which are for the greateſt part of the year covered with ſnow. Its food is vegetable matter, the leaves of heath, whortles, and other ſhrubs. Its fleſh is very delicate and much valued. *Ray*'s Ornithol. p. 127.

LAGOPUS *altera*, in zoology, the name of a bird of the gallinaceous kind, and approaching to the *lagopus* or rabolane in many reſpects, more commonly known by the name of the *gorcock*, *moncock*, or *red game*. Some authors indeed have uſed the name *lagopus altera*, for the otomo, a bird ſeeming not eſſentially to differ from the *lagopus*. *Ray*'s Ornithol. p. 128. See the articles GORCOCK and OTOMO.

LAGOUDI, a name given by the Indians to the tree, which produces the leſſer galangal root of the ſhops. See the article GALANGAL.

LAGRIMOSO, in the Italian muſic, is uſed to ſignify a plaintive manner of ſinging or playing.

LAKES (*Cycl.*)—The *lake* Neſs in Scotland has been commemorated by many writers, but never with any degree of judgment, till Mr. Fraſer gave a perfect account of it to our Royal Society. It never freezes though the winters be ever ſo ſevere, and is full of ſprings in almoſt every part; and its waters, in the time of the ſevereſt froſts, run fluid, and ſmoaking for ſix miles down the river into which they are diſcharged, while every thing is frozen about them. The river runs very ſlowly notwithſtanding, and from this ſmoak of the water there is raiſed a ſort of fog which overſpreads the whole country for ſeveral miles. There is a mountain near the ſide, of two miles perpendicular height from the *lake*; and on the ſummit of this mountain there is another *lake*, which has no ſpring viſibly running into it, nor any outlet, and yet always keeps of the ſame degree of fulneſs, ſummer and winter. Due weſt from the river into which the lower *lake* diſcharges itſelf, there is an opening of ſea or frith of two miles long and ſix miles wide; the middle of this is ſometimes dry, and it is then eaſily ſeen that this was once dry land, and an inhabited country. There are found there large bodies of trees felled, and lying ſtrait along: the wood of theſe is black but it is very ſound, and there are many tumuli, or heaps of ſtones, to be ſeen under water in different parts of the frith, one of which is acceſſible at low water, and there have been found in it urns, which prove that they have been all burying places. Phil. Tranſ. N° 253. p. 231.

As the ſea waſhes away the banks of this frith, there is found in many places a large quantity of wrought timber; beams of fourteen, or more feet long, with the marks of the axe and other inſtruments upon them; and at the depth of

ſixteen feet, in the ſteep banks of the neighbouring river Beuly, there are found oak trees and pieces of burnt timber. We find by this, that the face of the whole country hereabouts is very different from what it was ſome ages ago; and there ſeems ſome reſemblance between the preſent face of things here, and that in the bogs of many parts of England. The trees found buried in theſe were felled by the conquering Romans, and perhaps theſe are of ſome ſuch origin.

We have many ſingularities offering to our view in the *lakes* of our own country: that of their freezing at peculiar ſeaſons is not one of the leaſt. There is a little *lake* in Straherrick in Scotland, which never freezes over before the month of February, though the froſts be ever ſo intenſe; but after the firſt part of this month, one night's trifling froſt will cover it all over with ice, and a ſecond night will induce it to a very conſiderable thickneſs. There are alſo two other *lakes* in the ſame county, the one called *Loch Monar*, which is conſiderably large, yet always keeps up the ſame rule of freezing over in February with every little froſt, but never before that month be the ſeaſon ever ſo rigorous; and the other in Straglaſh, which is as remarkable for a contrary quality. This lies in a ſort of bottom, between the ſides of two very high hills, and is itſelf conſiderably above the level of the reſt of the country. This *lake* freezes continually. It has always ice in the middle, even in the hotteſt ſummer months, though it thaws about the edges. The ſun by reflection from the hills on each ſide of this *lake* gives a very conſiderable heat; and there are many other *lakes* in the ſame ſort of ſituation, in the neighbouring country, which yet have nothing of this phænomenon; ſo that this, and the property of the other *lakes*, muſt be owing to ſomething peculiar to themſelves, not to their ſituation, or other accidents. The herbage about the ſides of this laſt mentioned *lake* is in a ſort of perpetual ſpring all the year round, and is much eſteemed by the country people, being found to fatten cattle more in a week, than the beſt land in the country beſide will do in a fortnight. The *lake* is very deep, and the water does not manifeſt any particular quality. Phil. Tranſ. N° 114.

The ſtrange effect of ſome *lakes* on their water being diſturbed, are recorded by many writers with an air of truth; but are to be examined, with great caution, before they are credited. Wagner, in his hiſtory of Swiſſerland, quotes no leſs than thirty-five authors, who ſay, that a water there called the *lake* of Pilate is of this kind, and that it cauſes tempeſts, rain, thunder, *&c.* if any thing be caſt into it; but the truth is, that it is a very tame puddle, ſcarce deſerving the name of a *lake*; and it is proved, by experience, that no conſequence at all attends the throwing it into confuſion by any means whatever. *Wagner*'s Hiſt. Helvet.

Subterranean LAKES. That there are in many places immenſe *ſubterranean lakes*, can ſcarce be doubted, becauſe we ſee them in ſome places; but their effects are often perceived where they are not ſeen, and puzzle the people who attempt to account for thoſe effects upon other principles. The famous Zirchnitzer *lake* in Carniola, which fills and empties itſelf, at times, in an impetuous manner, bringing up with its waters fiſh, and even wild fowl, communicates with another immenſe *ſubterranean lake* in the mountain Javornick; and according to its filling or emptying, the upper one is alſo filled and emptied. The grotto *podſpetſchio*, in the ſame country, gives another inſtance of ſuch a *ſubterranean lake*. The people of the neighbouring country enter the ſide of the mountain where this *lake* is by a ſmall opening, through which they go to a cavern of a great width and heighth; and at the end of this is a ſmall opening again, through which they go on to the edge of a vaſt ſubterranean piece of water. They go with torches, and find the water very clear and fine. It is ten cubits deep at the edge, and doubtleſs is much more in the middle. The water runs into this *lake* by a large channel, and runs out of it again by another, falling down a precipice into another *lake*, and that with ſuch a noiſe, that the report of a piſtol cannot be heard near it. Stones thrown in every way are heard to fall into water, and there is great reaſon to ſuppoſe the *lake* a German mile long; for at that diſtance there is another water diſcovered through ſuch another cleft of the rock, which ſtands at the ſame horizontal height as this, and is ſubject to the ſame accidents at the ſame times. This vaſt body of water ſometimes all runs off in a few minutes and leaves the baſon dry, and after ſome weeks it fills again with a frightful noiſe. As theſe accidents always happen to both the waters above-mentioned at the ſame time, they appear very plainly to be only the two ſides of the ſame *lake*. Phil. Tranſ. N° 191.

We have in England many of theſe reſervoirs, the water of which is always remarkably clear and cold, and is ſo loaded with ſpar, that it generally encruſts things very quickly that are put into it; and when raiſed into vapours, as a part of it ſometimes is, by the ſubterranean heat, or carried up with other vapours, ſtops at the cieling of the vaults, and there forms ſtalactitæ and other ſuch concretions. In many of theſe *lakes* alſo are found the round balls of ſpar, called ſtalagnitæ. They are compoſed of ſeveral cruſts gathering round ſome central nucleus, and often exceed the ſize of a ſchool boy's marble. Phil. Tranſ. N° 144.

In Pen-Park hole in Glouceſterſhire there is a remarkable inſtance of this, that ſtrange cavern containing one of the largeſt of the *lakes* in our kingdom. The hole itſelf was accidentally diſcovered by ſome miners, who were digging for lead ore; it is twenty nine fathoms deep from the ſurface, and is a vaſt cavern of the ſhape of a horſe-ſhoe, ſurrounded with rugged rocks and rough walls of earth, containing in the midſt a river or *ſubterranean lake* of twenty fathom broad and eight fathom deep, of the ſame cold and petrifying water with the other reſervoirs of this kind. The people of the country have an opinion that this water ebbs and flows with the tide, but it is an error. The water is higher in winter and lower in ſummer; but the decreaſe is ſlow and gradual at the proper ſeaſon, and ſo is the increaſe, never happening at any other time. There is in one part of the cieling of this cavern a vaſt hole, in at which ſome miners have crept, and ſaid they found lead ore very fine, and in great quantities; but an idle opinion of ſpirits prevents their purſuing the diſcovery. The flooring of this vaſt cavern is all of a white ſparry ſtone, ſpangled over with lead ore; and the rocks, which hang over head, are all glazed, as it were, with ſpars very bright and pellucid, and of very elegant figures. The higheſt part of the roof is nineteen yards above the level of the water, and there are two large rocks in it, all covered with mud at ſuch times as the water is not above them, as in ſummer it never is. The paſſages down into the hole, and the ſide cavities, are all covered with that ſort of ſpar, which uſually attends lead ore, and there is no living creature found in the place except ſome bats. The air in the deepeſt part is clear, and the place leſs damp than might be expected.

LAKE, or LAQUE, a preparation of different ſubſtances into a kind of magiſtery for the uſe of painters. One of the fineſt and firſt invented, of which was that of *gum lacca* or *laque*, from which all the reſt, as made by the ſame proceſs, are called by the common name *laques*.

The method of preparing theſe, in general, may be known by the example of that from the curcuma root of the ſhops, called turmeric root, the proceſs for the making of which is this. Take a pound of turmeric root in fine powder, three pints of water, and an ounce of ſalt of tartar: put all into a glazed earthen veſſel, and let them boil together over a clear gentle fire, till the water appears highly impregnated with the root, and will ſtain a paper to a beautiful yellow. Filtre this liquor, and gradually add to it a ſtrong ſolution of roch alum in water, till the yellow matter is all curdled together and precipitated: after this pour the whole into a filtre of paper, and the water will run off and leave the yellow matter behind. It is to be waſhed many times with freſh water, till the water comes off inſipid, and then is the beautiful yellow, called *laque* of turmeric, and uſed in painting. *Shaw*'s Lectures, p. 178.

In this manner may a *laque* be made of any of the tinging ſubſtances that are of a ſomewhat ſtrong texture, as madder, logwood, *&c.* but it will not ſucceed in the more tender ſpecies, as the flowers of roſes, violets, *&c.* as it deſtroys the nice arrangement of parts, in thoſe ſubjects, on which their colour depends.

A yellow *lake* for painting is to be made from broom flowers in the following manner. Make a lee of pot-aſhes and lime reaſonably ſtrong; in this boil at a gentle fire freſh broom flowers till they are white, the lee having extracted all their colour; then take out the flowers, and put the lee to boil in earthen veſſels over the fire; add as much alum as the liquor will diſſolve; then empty this lee into a veſſel of clean water, and it will give a yellow colour at the bottom. Let all ſettle, and decant off the clear liquor. Waſh this powder, which is found at the bottom, with more water, till all the ſalts of the lee are waſhed off; then ſeparate the yellow matter and dry it in the ſhade. It proves a very valuable yellow. *Neri*'s Art of Glaſs, p. 162.

LAMAC, a word uſed by ſome authors to expreſs gum arabic.

LAMARE, a word uſed by ſome of the chemical writers as a name for ſulphur.

LAMB (*Cycl.*)—LAMB *earth*, in huſbandry, is a whitiſh ſtony loam. The name ſeems only a corruption of the word *loam earth*. It is a clay, with an admixture of that ſort of ſtony matter which uſually conſtitutes lime ſtone, of fragments of lime ſtone, and of many ſmaller pieces of a ſtony matter, of a leſs firm concretion. Theſe ſtones are all of much the ſame colour with the earth, and the whole eaſily breaks and moulders upon putting water to it. It has uſually an admixture of ſea ſhells alſo in it, and, while in the ſtratum, is ſo hard as ſcarce to be cut by a ſpade. It is in great eſteem in many counties of England for making the earthen floors of barns, and other ſuch uſes. *Moreton*'s Northampt. p. 67.

LAMBENT *fire*. See the article FIRE.

LAME, in the manege, is uſed in ſeveral phraſes of that art; as *lame of an ear*, called in French *boiteux de l'oreille*, is ſaid of a horſe, when he halts upon a walk or trot, and keeps

keeps time to his halting with the motions of his head: for all *lame* horſes do not keep time in that manner.

LAME *of the bridle*, is uſed by way of raillery to ſignify the ſame thing.

LAMIA, in zoology, a name uſed by ſome authors for the *ſhark*. *Rondelet*, de Piſc. See SHARK.

LAMIODONTES, in natural hiſtory, the name given by Dr. Hill to the foſſile teeth of ſharks, called by the generality of authors *gloſſopetræ*, or ſtony tongues, a name founded on an erroneous opinion, of their having been the tongues of ſerpents turned into ſtone.

The ſeveral ſizes of the teeth of the ſame ſpecies, and thoſe of the ſeveral different ſpecies of ſharks afford us a vaſt variety of theſe foſſile ones. Their uſual colours are black, blueiſh, whitiſh, yellowiſh, or brown, and in ſhape they uſually approach to a triangular figure. Some of them are ſimple, others are tricuſpidate, having a ſmall point on each ſide the large one. Some of them are very long, others ſhorter, and ſome very broad in proportion to their length; others as remarkably ſlender and narrow. Many of them alſo are quite ſtrait, though ſeveral are found crooked. Theſe laſt are not bent any one particular way, but all ways and in all directions, ſome inward, ſome outward, others ſideways, and of theſe ſome to the right and others to the left. Many of them alſo have their edges plain, others ſerrated, and that more or leſs deeply; and ſome are undulated, or waved in the manner of a flaming ſword at their edges, and ſlightly ſerrated on theſe undulations. They are as various alſo in ſize as figure, ſome being found of four or five inches long, and the ſmaller of leſs than a quarter of an inch. See Tab. of Foſſils, Claſs 8. *Hill*'s Hiſt. of Foſſ. p. 644.

They are moſt uſually found with us in the ſtrata of blue clay, though ſometimes alſo in other ſubſtances, and are frequent in the clay pits of Richmond and other places. They are very frequent alſo in Germany, but no where ſo plentiful as in the iſland of Malta. Ibid. p. 643.

The Germans attribute many virtues to theſe foſſile teeth; they call them cordials, ſudorifics, and alexipharmics: and the people of Malta, where they are extremely plentiful, hang them about their childrens necks to promote dentition. They may poſſibly be of as much ſervice this way as an anodyne necklace; and if ſuſpended in ſuch a manner, that the child can get them to its mouth, may by their hardneſs and ſmoothneſs be of the ſame uſe as a piece of coral.

LAMIOLA, in ichthyology, a name by which ſome authors have called the maltha or *ſorrat*, a kind of ſhark. *Willughby*'s Hiſt. Piſc. p. 50. See MALTHA.

LAMIOLA is alſo the name given by the modern Italians to a fiſh, called in Cornwal the *tope*. It is a ſpecies of the *ſqualus*, called by the generality of authors *galeus canis*, and by Artedi the *ſqualus*, with the noſtrils placed near the mouth, and with the ſmall foramina near the eyes.

LAMIUM, *deadnettle*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind. The upper lip is hollowed in form of a ſpoon, and the lower is divided only into two ſegments, and reſembles the figure of a heart; both of them are alſo marginated, and reſemble the jaws of ſome animal. The cup of the flower is tubular, and is divided into five ſegments; from this ariſes the piſtil, which is fixed in the manner of a nail into the hinder part of the flower, and is ſurrounded by four embryos, which afterwards become four triangular ſhaped ſeeds, which ripen in the cup. *Tourn.* Inſt. p. 183.

The ſpecies of *lamium* enumerated by Mr. Tournefort are theſe. 1. The roundiſh leaved ſtinking *deadnettle*, which is the *galeopſis* of Dioſcorides. 2. The leſſer red flowered roundiſh and ſtinking *lamium*. 3. The red flowered long leaved *lamium*. 4. The common white flowered *lamium*, called *archangel* and white *deadnettle*. 5. The *lamium* with leaves marked round with white lines. 6. The pellitory leaved *lamium*. 7. The purple flowered mountain *lamium* with deeply divided leaves. 8. The common little red *lamium* with jagged leaves. 9. The *lamium* with leaves ſurrounding the ſtalks, called *henbit*.

Theſe are all the ſpecies which this author can allow to be genuine *lamiums*, but others have accounted many more, reckoning ſeveral of the caſſidæ, the galeopſis, and baum kind, as of this genus. See GALEOPSIS, *&c.*

The flowers of *deadnettles* have been greatly recommended in the fluor albus in women, and againſt floodings of the menſes. It is alſo ſaid to be a great vulnerary, and good in obſtructions of the viſcera.

LAMIUM *exoticum*, in botany, a name given to a ſpecies of *caſſida*. See CASSIDA.

LAMNE, in ichthyology, a name given by Appian, and ſome other of the old Greek authors, to the common *ſhark*, or as we uſually call it the white *ſhark*, the *lamia* and *canis carcharias* of authors. This is properly a ſpecies of *ſqualus*, and is accurately diſtinguiſhed by Artedi under the name of the *ſqualus*, with a flat back, and with numerous teeth ſerrated at the edges. See SQUALUS.

LAMP (*Cycl.*)—The flame in a *lamp* never conſumes the wick, till the wick be expoſed to the air by the *flames* falling downward; and from hence it may be inferred, that a way found out to keep the fuel, and conſequently the flame at the ſame height upon the wick would make it laſt a long time. Many ways have been deviſed to arrive at this, but it ſeems only poſſible to be done, in any degree of perfection, by hydroſtatics. Thus, let a *lamp* be made two or three inches deep, with a pipe coming from the bottom almoſt as high as the top of the veſſel; let it be filled ſo high with water as to cover the hole of the pipe at the bottom to the end, that the oil may not get in at the pipe, and ſo be loſt. Then let the oil be poured in, ſo as to fill the veſſel almoſt brim full, which muſt have a cover pierced with as many holes as there are wicks deſigned. When the veſſel is thus filled, and the wicks are lighted, if water falls in by drops at the pipe, it will always keep the oil at the ſame height, or very near; the weight of the water being to that of the oil as 20 $\frac{8}{11}$ to 19, which in two or three inches make no great difference. If the water runs faſter than the oil waſtes, it will only run over at the top of the pipe, and what does not run over will come under the oil, and keep it at the ſame height. Phil. Tranſ. N° 245, p. 388.

Perpetual LAMP. The teſtimonies of Pliny, St. Auſtin and others, have led many to believe, that the antients had the invention of *perpetual lamps*: and ſome moderns have attempted to find out the ſecret, but hitherto in vain. Indeed it ſeems no eaſy matter to find out, either a *perpetual wick*, or a *perpetual oil*. The curious may read Dr. Plot's conjectures on the ſubject in the Philoſophical Tranſactions, N°166, or in Lowthorp's abridgment, Vol. 3. p. 636. But few, we believe, will give themſelves the trouble of ſearching for the ſecret, when they conſider, that the credulity of Pliny and St. Auſtin was ſuch, that their teſtimony does not ſeem a ſufficient evidence to induce us to believe, that a *lamp* was ever contrived to burn for 1000 or 1500 years; much leſs is it credible, that the antients had the ſecret of making one burn for ever.

LAMPERN, a river fiſh of the *lamprey* kind found in many parts of England, particularly in Oxfordſhire and the neighbouring counties, and there called the *pride of the Iſis*. The Latin authors call it the *lampetra parva* and *muſtela fluviatilis*. It is a ſmall fiſh, of a browniſh or blueiſh black upon the back, and a fine ſilver white on the belly. Its mouth is circular or elliptic, and furniſhed with ſix or ſeven teeth, and over theſe a ſmall ſemi-circular bone. In the middle of the head it has a hollow or ſmall tube, like the whale; the uſe of this is to admit the water and air, while the mouth is applied cloſe to the rocks; its gills are ſeven holes on each ſide, and has two fins on the back. *Willughby*'s Hiſt. Piſc. p. 104. *Geſner*, p. 706.

The word *lampern* is uſed by the common people in England for one ſpecies of the *lampetra*, and is not to be confounded with the other called the *lamprey*, or the *lamprey eel*. The near alliance in ſound between the two words *lampern* and *lamprey* has deceived ſeveral, to ſuppoſe they meant the ſame fiſh; and even ſome authors have not diſtinguiſhed them, but the determinate ſenſe of the words is this: they are the names of two fiſh, both of the genus of the *lampetra*, according to the generality of writers, and of the *petromyzon*, according to the new ſyſtem of Artedi. The *lampern* is that ſpecies of the genus, which is called by Geſner and Willughby the ſmall river *lampetra*, the *lampetra parva fluviatilis*. It is the *lampetra ſubcinerea*, or the greyiſh *lampetra*, and *muſtela* of the old Latin authors, as Pliny, *&c.* Caſſiodore has called it *exormiſtos*; and Albertus, *muræna*. Dr. Plot calls this ſpecies the *pride of the Iſis*, from its being found in great plenty and perfection in that river. It is the *neunaugen* of the Germans.

The *lamprey* is the fiſh called, by the ſame authors, either ſimply the *lampetra*, or the *lampetra major*, *lampetra marina*, or *lampetra maculoſa*.

The *lampern* has many other names among writers, ſuch as *pricka* and *pryk*, from the German name *pryk*; and *nattingus*, from the *natting* of the Swedes. But with all theſe variety of names, there were none that could diſtinguiſh the two fiſh from one another, till Artedi adapted names to them, and called the firſt, or *lampern*, the *petromyzon*, with only one row of very ſmall teeth in the verge of the mouth, beſide the lower larger ones; and the other, or the *lamprey*, the ſpotted *petromyzon*, with about twenty rows of teeth. *Artedi*, Gen. Piſc. p. 90. See PETROMYZON and LAMPETRA.

LAMPETRA, the *lamprey*, in zoology, a fiſh of the anguilliform kind, diſtinguiſhed from all the reſt by having a round or oval mouth, placed at the end of the ſnout, and having no fins either at the gills or belly. This is the character of the *lampetra* genus, of which there are ſeveral ſpecies. The *lampern*, *lamprey eel*, *brick*, *mucu*, *&c.* *Ray*'s Ichthyog. p. 104. See LAMPERN, &c.

LAMPETRA *Indica*, in zoology, the name of an Eaſt-Indian fiſh of the *lamprey* kind, caught in ſtanding waters, and called by the Dutch there *bont ael*, and *neegen oog*, or nine eyes. *Ray*'s Ichthyogr. Append. p. 4. See the article BONT-*ael*.

LAMPREY-*eel*, the Engliſh name of the common *lamprey*, or *lampetra*. Its back is of a blackiſh hue, with ſome an-

gular whitiſh ſpots. The ſkin is tough, but much thinner than that of the eel. Its mouth is rounded, and it lays ſo faſt hold of rocks, or wood, with this, that it ſeems to ſuck them, and ſticks ſo firmly, as not to be eaſily removed. It can however contract this mouth lengthwiſe, and ſhut it at pleaſure. It has a white ſpot in the middle of its forehead, between the eyes, and before that a hole, ſurrounded with a thin membrane, by which it admits the water and air, while its mouth lies cloſely on the rock. The gills are placed within ſeven round holes on each ſide, and the edge of its mouth is ſurrounded with a range of ſhort fibrillæ, which have by ſome been miſtaken for teeth; but are really of no other uſe, than to affix its mouth the more firmly. Its teeth are placed within its mouth, and there are twenty rows of them, the inner ones being the larger. Theſe are diſpoſed in rows from the center toward the circumference, and are five, ſix, or ſeven in a row.

It is a fiſh that equally lives in ſalt and freſh water. In the month of March it commonly runs up into the rivers, and is then moſt valuable for the table, as being fat and full of eggs. *Geſner*, de Aquat. p. 696.

The *lamprey-eel* is the *echeneis* of Oppian, and ſome other of the old Greek writers, and the *galaxias* of Galen. It is very different from what we call the *lampern*, though of the ſame genus. See LAMPERN and LAMPETRA.

LAMPRILLON, or LAMPREYON, a name by which ſome authors have called that particular ſpecies of *lamprey*, which we by way of diſtinction call *lampern*. *Willughby*, Hiſt. Piſc. p. 104. See LAMPERN.

LAMPSANA, *nipplewort*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is compoſed of a number of ſemifloſcules, placed on the embryo's, and contained in a one leaved jagged cup, which finally becomes a ſtriated ſeed veſſel, containing narrow and pointed ſeeds.

There is no other ſpecies of this plant, but the common *nipplewort*. *Tourn.* Hiſt. p. 479.

LAMPUGA, in zoology, a name given by ſome authors to the fiſh more uſually known by the name of *ſtromateus*. *Willughby*, Hiſt. Piſc. p. 156. See the article STROMATEUS.

LAMPUGO, in ichthyography, a name given by many to the *hippurus*, a ſea fiſh, caught on the coaſt of Spain, and ſuppoſed by ſome to be the ſame with the *dorado*. *Willughby*, Hiſt. Piſc. p. 213. See HIPPURUS.

LANARIA, or *Herba* LANARIA, in botany, a name given by the antient Romans to a plant called *ſtruthium* by the Greeks, and uſed in the cleanſing of wool. The plant was of the thiſtle kind, and had large roots, and very prickly leaves. Some have ſuppoſed that the *chaſcuſa* of the antients was the ſame with the *lanaria herba*, or *ſtruthium*; but this appears to be a great error, for the *chaſcuſa* of the Greeks is the *antirrhinum* of the Latins, which Pliny deſcribes to have leaves like flax.

LANATA, in botany, a name given by Cordus, and ſome other authors, to the *aria Theophraſti*, or *white beam tree*. *Ger.* Emac. Ind. 2.

LANCARIM *ſpring*, the name of a medicated water of Glamorganſhire. It has its name from a town near which it riſes, and has been very long famous in the place for the cure of the king's evil. The body of water is about an ell broad, and runs between two hills covered with wood. About twelve yards from this ſpring the rill falls from a rock of about eight or nine feet high, with a conſiderable noiſe. The ſpring is very clear, and riſes out of a pure white marl. The cures that have been performed there are proofs of a real power in the water; but there is ſome queſtion, whether the water, or its motion and coldneſs does the good; for the people, who come for relief, always drink of the ſpring, and bath the part afterwards in the fall below. It is generally ſuppoſed that the lime-ſtone rocks communicate a virtue to it, by which it cures internally; but it has been often found, that the holding a limb diſordered with the evil in the ſtrong current of a mill tail, has cured it; and there is the ſame advantage in the fall of this water. Philoſ. Tranſ. N° 233.

LANCEA *Chriſti*, in botany, a name given by ſome authors to the *ophioglоſſum*, or adder's tongue, a ſmall herb found in moiſt places, with a ſingle ſtem of ſeeds. *Ger.* Emac. Ind. 2.

LANCEARII, in middle age writers, ſoldiers whoſe chief weapon was the lance. They were in great eſteem formerly. *Pitiſc.* in voc.

LANCEOLA, in botany, a name given by ſome authors to that ſpecies of plantain called *rib-wort*, or *plantago quinquenervia*, by moſt authors. *Ger.* Emac. Ind. 2.

LANCEOLATED *leaf*, among botaniſts. See LEAF.

LAND (*Cycl.*)—*Clay* LAND. The *clay lands* in different parts of England are of different colours, as blue, black, yellow, white, and red. Of theſe the black and the yellow are every where found the beſt for corn; the red is very good, but the white and the blue are the worſt. Some of the blue in particular is of ſuch a ſtubborn nature and diſpoſition, that nothing can ſubdue it; and is ſo greedy and voracious, that nothing will ſatiate it, without the utmoſt induſtry. Some *clay lands* are more pinguid, and others more ſlippery, but all of them are very tenacious of water upon the ſurface, where it ſtagnates and chills the plant, inſtead of penetrating and nouriſhing it; and in dry ſeaſons they become ſo hard, that the dews cannot penetrate them. Wheat, barley, grey peaſe, and horſe beans, are the principal produce of theſe ſort of lands; and that the farmer may know which of his untried *lands* are of this kind, he muſt obſerve their natural productions, and if he finds gooſe-graſs, or chavers, with wild tanzy, great daiſies, thiſtles, May weed, and ſome red poppies, he may be aſſured the *land* that produces them is of this kind.

Some of theſe *clays* will bear exceeding good crops of clover, or rye graſs, and if well manured and fed, they will anſwer the expence by the richneſs of the crop. The beſt manures for them are dung, particularly horſe dung, aſhes, lime, ſoot, pigeons dung, malt duſt, and the dung of ſheep, by the folding them upon the *land* in different places. *Mortimer*'s Huſbandry, p. 68.

Clays hold the manure that is beſtowed on them better than any other *lands* whatever, and yield the beſt grain of any, eſpecially where there is a mixture of lime-ſtone with them. It is the common practice of the farmers of England to ſow theſe *lands* at firſt breaking up with black oats; they then fallow them, and after this ſow them with wheat or barley, and the etch crop with either oats, peaſe, or beans.

Bog LAND. See BOG.

Chalk LAND. See CHALK.

Chiſley LAND. See CHISLEY.

Gravelly LAND. See GRAVELLY.

Marſh LAND. See MARSHES.

Meadow LAND. See MEADOW.

Sandy LAND. See SAND.

Wood LAND. See WOOD.

Burning of LAND. See BURNING.

Incloſing of LAND. See INCLOSING *of land*.

Overflowing of LANDS. See OVERFLOWING.

LAND *layed*, at ſea. They ſay the *land is layed*, when a ſhip is juſt got out of ſight of the *land*.

LAND *mark*, at ſea, is any mountain, rock, ſteeple, wind-mill, a tree, or the like, near the ſea-ſide, which ſerve to direct ſhips, paſſing by, how to ſteer, ſo as to avoid certain dangers, be they rocks, ſhoals, whirlpools, *&c.*

LAND *ſhut in*, at ſea. When another point of *land* hinders the ſight of that which a ſhip came from, then they ſay the *land is ſhut in*.

LAND *to*, at ſea. When a ſhip lies ſo far from the ſhore, that ſhe can but juſt ken *land*; then ſhe is ſaid to lie *land to*.

LAND *turn*, at ſea, is a wind that blows from the ſhore, in the night, at certain times, in moſt hot countries.

Setting the LAND, at ſea, is obſerving by the compaſs how it bears.

Head LAND, or *Point of land*, in the ſea language, is that which lies farther out into the ſea than the reſt. See POINT, CAPE, *&c. Cycl.*

LANE, in the military art, is uſed when men are drawn up in two ranks facing one another. This is called *making a lane*, and is generally done in the ſtreets through which a great perſon is to paſs, as a mark of honour. But ſoldiers are often drawn up in this manner, when an offender is to run the gauntlet, each having a ſmall wand or ſwitch in his hand, to whip him as he paſſes.

LANGUENTE, in the Italian muſic, is uſed to denote a languiſhing and ſoft manner of ſinging.

LANIS *de creſcentia Walliæ traducendis abſque cuſtuma*, *&c.* an antient writ that lies to the cuſtomer of a port, to permit one to paſs wool without paying cuſtom, he having paid it before in Wales. Reg. Orig. 279. *Blount*, *Cowel.*

LANISTA, in antiquity, is ſometimes uſed to ſignify an *executioner*, but more frequently for a maſter-gladiator, who taught the uſe of arms, and had always people under them, ready to exhibit ſhews of that kind. For which purpoſe, they either purchaſed gladiators, or educated children, that had been expoſed, in that art. *Pitiſc.* in voc.

LANISTA was alſo uſed to denote one who taught game-cocks to fight.

LANIUS, in zoology, the name of a ſpecies of ſhort winged hawk, called in Engliſh the *butcher bird*. It is the ſmalleſt of all the European birds of prey, yet is very fierce and deſtructive. Its beak is all the way ſtrait, except juſt at the end, where it is ſlightly hooked, and its tail faſhioned like that of the magpye, the outer feathers being the ſhorteſt, the reſt gradually longer; for which reaſon ſome have called it the *pica*. The antients called it the *tyrannus*, and in Engliſh we ſometimes alſo call it the *ſhrike*.

There are three ſpecies of the *lanius*: 1. The common larger kind, called the *mattageſs*. 2. The ſmaller, called the *fluſher*. See the articles MATTAGESS and FLUSHER. And 3. The *lanius minor*, or grey little butcher bird. See Tab. of Birds, N° 5. and *Ray*'s Ornitholog. p. 52.

LANIUS *minor cinereus*, the little grey butcher bird, the name of a very ſmall ſpecies of the *lanius*. It has a white ſpot on each ſhoulder, and a tranſverſe black ſtreak over the top of the beak. Its head is of a pale brown, and its back

back brown while young, but afterwards of a pale grey; its rump is white, and its breaſt and belly of a pale greyiſh hue. Its beak is ſtrait all the way to the point, where it is a little hooked. It is common in Italy and elſewhere, and is a very great deſtroyer of the wrens, and other ſmall birds. *Ray*'s Ornithol. p. 55.

LANNARET, in zoology, a hawk of the long winged kind, the male of the *lannarius*, which being ſmaller than the female, is called *lannaret*, while that is called ſimply the *lannar*. *Ray*'s Ornithol. p. 48. See LANNARIUS.

LANNARIUS, in zoology, the name of a bird of the long winged hawk kind, called in Engliſh the *lannar*, and the male the *lannaret*. Its beak and legs are blue, and its head and neck variegated with large ſtreaks of black and white. Its back, wings, and tail are not variegated, unleſs with a few ſmall white ſpots, and its wings, when extended, are ſeen ſpeckled underneath with ſmall round white ſpots. Its neck is very ſhort, as are alſo its legs. It is common in France, and abides the whole year there, and is very docile, and ſerves to all the purpoſes of hawking. In Italy the ſpecies ſeems ſomething different, having much of a yellowiſh brown about the ſhoulders, and being indocile, and of no uſe in ſporting. *Ray*'s Ornithol. p. 48.

LANNIERS, or LANNIARDS, in a ſhip, are ſmall ropes reeved into the dead mens eyes of all the ſhrowds and chains. Their uſe is to ſlacken, or ſet taught the ſhrowds. The ſtays alſo of all maſts are ſet taught by *lanniers*. That rope, which faſtens the ſtopper of the halliards to them, is alſo called a *lannier*.

LANSPESSADE, in military affairs. See the article ANSPASSADE, *Cycl.*

LANTANA, in botany, the name given by Linnæus to a genus of plants comprehending the *camara* of Plumier, and the *myrobatindum* of Vaillant, with the *pſeudoviburnum* of Rivinus. The characters are theſe. The cup is a very ſhort one leaved perianthium of a tubular cloſe figure, very lightly divided into four ſegments at the edge, and remaining after the flower is fallen. The flower conſiſts of one petal. The tube is cylindric and ſlender, and longer than the cup; it is a little oblique; the verge is plain, obtuſe, and very ſlightly divided into five ſegments. The ſtamina are four extremely minute filaments; they ſtand in the center of the flower, and two of them are a little ſhorter than the other two. The antheræ are roundiſh. The germen of the piſtil is roundiſh. The ſtyle is capillary, and of the length of the ſtamina, and the ſtigma ſtands like a wedge on the top of the ſtyle, in an oblique manner. The fruit is an unilocular drupe of a roundiſh figure. The ſeed is a nut of a roundiſh, but ſomewhat pyramidal figure, containing two cells, in each of which there is an oblong kernel. The eſſential character of this genus is in the very remarkable figure of the ſtigma. *Linnæi* Gen. Pl. p. 303. *Plum.* 2. *Dillen*, Hort. Elth. p. 56, 57. *Vaillant*, A. G. 1722. *Rivin.* 1. 172.

LANTERNS *(Cycl.)* are uſed at ſieges in the night time, upon the batteries; but theſe muſt be blind or dark *lanterns*. There is always great proviſion of them in all ſtore-houſes.

LANTERN *fiſh*, the Engliſh name of a fiſh of the ſoal kind, but ſmaller, and ſmoother to the touch, called in Latin *arnogl ſſus*. *Willughby*, Hiſt. Piſc. p. 102.

LANTERN *fly*, in natural hiſtory, the name of a very ſingular kind of inſect produced in the Weſt-Indies, and carrying a ſtrong light with it in the night. The ſtructure of the trunk in this inſect is of the ſame kind with that of the cicada, and as it wants the power of making the noiſe for which the cicada is ſo famous, it belongs, according to Mr. Reaumur's diſtinctions, to that ſpecies of inſect called the *procigale*, or *procicada*.

The glow-worm, and the luminous beetles, with all the other luminous inſects we are acquainted with in this part of the world, diffuſe their light from a part which is near the extremity of the body, and under the belly, but the *lantern fly* gives it from its head. It differs alſo greatly in the degree of light; for this, in all the inſects we are acquainted with, is very feeble; whereas, in this fly it is ſo ſtrong, that Mrs. Morian, who is the firſt that well deſcribed it, ſays ſhe could read a ſmall print in a dark night by the light that one of them gave. The eyes of this creature are placed very near the part from which the light iſſues, and it is commonly ſuppoſed, that the uſe of the light is to ſhew the creature the objects it paſſes by in its flight; but if we conſider the effect of a light ſo placed, in regard to ourſelves, we ſhall find that it would by no means anſwer the ſame purpoſe to us. If our whole forehead was covered with a lambent flame in the night, it would rather blind us, than ſhew us any diſtant objects. The head of this creature, ſtrictly ſpeaking, is very ſhort, not exceeding the length of one of the rings of the body, if it be meaſured from its joining with the corcelet to its joining with the *lantern*; but if that part be accounted a portion of the head, then the head is equal in length to the whole body. This *lantern* is wider than it is deep, or thick, and has near its origin a large protuberance, which gives it a bunched or humped look. There are ſeveral tubercles and lines on it of a reddiſh colour. The ground colour is an olive brown, and underneath it has one large rib running all the way along it, from end to end, and dividing it into two, and by the ſides of that there are ſome others. Theſe are all reddiſh, and thoſe neareſt the edges have ſmall rows of ſpines running along them. Over each of the eyes there is a round granulated prominence, which ſeems to have been a collection of ſmaller eyes; and if ſo, the animal is ſupplied with the organs of viſion in a different manner from all other known creatures. But there requires an examination of the creature on the ſpot, and while alive, in order to find out this. The upper pair of wings are not perfectly tranſparent, they are dotted with white in ſome places, and are variegated near their origin with ſeveral blackiſh ſpots. The under pair are more tranſparent than the upper, they are much ſhorter, and are broader than the others. Theſe have each a large and beautiful round ſpot near the extremity, reſembling that on the wing of the peacock butterfly. The colours of the circles of theſe eyes are brown and olive; the laſt colour very bright and clear, the other very duſky and obſcure. The ſpots are ſo large, that they appear very beautiful. *Reaumur*, Hiſt. Inſ. Vol. 9. p. 247.

LANTERNISTS, a name aſſumed by the academicians of Toulouſe. See ACADEMY, *Cycl.*

LAPACTICS, a term uſed by the old writers in medicine to expreſs ſuch things as purged by ſtool, or at leaſt gently looſened the belly. It was ſometimes applied to the cathartic medicines, and ſometimes to thoſe foods which were of this tendency. *Caſt.* Lex. Med. in voc.

LAPARA, a word uſed by ſome writers to expreſs the flanks, or that part which is ſituated on each ſide the body, between the ſpurious ribs and the hips. *Caſt.* L. Med. in voc.

LAPATHUM, *dock*, in botany, the name of a genus of plants; the characters of which are the ſame with thoſe of ſorrel, [ſee SORREL] but that the leaves of the *dock* kind have not that acid taſte which thoſe of the ſorrel have.

The ſpecies of *dock* enumerated by Mr. Tournefort are theſe. 1. The common garden *dock* with oblong leaves. 2. The ſharp pointed *dock* with plane ſmooth leaves. 3. The ſharp pointed *dock* with curled leaves. 4. The ſharp pointed *dock* with red, or red veined leaves, commonly called the *bloody dock*. 5. The ſharp pointed *dock* with gold yellow flowers. 6. The leaſt *dock*. 7. The water *dock* with diers weed leaves. 8. The *dock* with leſs pointed leaves. 9. The broad leaved garden *dock*, called *monks rhubarb*. 10. The round leaved Alpine *dock*. 11. The round leaved Alpine *dock*, with the pedicles, and the middle ribs of the leaves, of a beautiful green. 12. The great water *dock*. 13. The leſſer water *dock*. 14. The elegant ſinuated *dock*, called the *fiddle dock*, from the ſhape of its lower leaves. 15. The ſtinking ſea *dock*. *Tourn.* Inſt. p. 504.

The great water *dock* has been long famous in medicine. Muntingius wrote a whole treatiſe on it, under the title of *de Britannica antiquorum vera*. The roots are principally uſed, and are ſaid to be of great ſervice in the jaundice, in the herpes, and eryſipelas, and in the diſpoſing inveterate ulcers to heal. It is alſo ſaid to be a ſovereign remedy in quinzies. *Lemery*, Dict. des Drog.

The *lapathum acutum*, or ſharp pointed leaved *dock*, is as eminent, as an antiſcorbutic, and a cleanſer of the blood. It is alſo uſed externally in ointments againſt the itch, and other cutaneous foulneſſes.

The common ſorrel, which is another ſpecies of the *lapathum*, is well known as a gentle acid, a cooler, and ſubaſtringent. It is excellent in fevers, in which it cools the mouth, and allays thirſt. Schroder goes ſo far as to recommend a conſerve of the freſh leaves in the plague, and in all peſtilential, petechial, and malignant fevers. *Dale*. See SORREL.

LAPHIATI, in zoology, the name by which the people of Lemnos call a ſpecies of ſerpent, ſuppoſed by Bellonius to be the ſame with the *elaps*, or *elaphis* of the antients. See ELAPS.

LAPIS *(Cycl.)*—LAPIS *Arabicus*, in the natural hiſtory of the antients, the name of a ſtone of a fine white colour, reſembling the pureſt ivory, and which, though naturally of a firm, ſolid, and compact texture, yet, when burnt, became light, porous, and ſpungy, and aſſumed the figure and appearance of a pumice; and was uſed like it in the compoſitions of the antient phyſicians for cleaning the teeth. *Hill*'s Theophraſt. p. 51.

LAPIS *æroſus*, in natural hiſtory, a name given to ſeveral ſorts of ſtones, and other foſſils, which had lain in the neighbourhood of copper mines, and been impregnated with particles of copper, though not in a ſufficient degree, to be thought worthy the name of *copper ores*. See LAPIS *atramentarius*, infra.

The ſame ſort of ſtones were alſo ſometimes called *chalcites*, which made ſome confuſion, as it gave occaſion to confound them with the true *chalcitis*. See CHALCITIS.

LAPIS *aſſius*, in the natural hiſtory of the antients, the name of a ſtone, called alſo *ſarcophagus*, from its power of conſuming fleſh.

It was a ſtone much uſed among the Greeks in their ſepultures, and is recorded to have always perfectly conſumed the fleſh of human bodies, buried in it, in forty days. This property it was much famed for, and all the antient naturaliſts mention it. There was another very ſingular quality alſo in it, but whether in all, or only in ſome peculiar pieces of it, is not known; that is, its turning into ſtone any thing that was put into veſſels made of it. This is recorded only by Mutianus and Theophraſtus, except that Pliny had copied it from theſe authors, and ſome of the later writers on theſe ſubjects from him. The account Mutianus gives of it is, that it converted into ſtone the ſhoes of perſons buried in it, as alſo the utenſils which it was, in ſome places, cuſtomary to bury with the dead, particularly thoſe which the perſon, while living, moſt delighted in. The utenſils this author mentions, are ſuch as muſt have been made of very different materials; and hence it appears that this ſtone had a power of conſuming only fleſh, but that its petrifying quality extended to ſubſtances of very different kinds. Whether ever it really poſſeſſed this laſt quality has been much doubted, and many, from the ſeeming improbability of it, have been afraid to record it. What has much encouraged the general diſbelief of it, is, Mutianus's account of its taking place on ſubſtances of very different kinds and textures; but this is no real objection, and the whole account has probably truth in it. Petrifactions in thoſe early days might not be diſtinguiſhed from incruſtations of ſparry and ſtony matter on the ſurfaces of bodies only, as we find they are not with the generality of the world even to this day; the incruſtations of ſpar on moſſes and other ſubſtances in ſome of our ſprings, being at this time called by many *petrified moſs*, &c. and incruſtations, like theſe, might eaſily be formed on ſubſtances encloſed in veſſels made of this ſtone, by water paſſing through its pores, diſlodging from the common maſs of the ſtone, and carrying with it particles of ſuch ſpar as it contained; and afterwards falling in repeated drops on whatever lay in its way, it might again depoſit them on ſuch ſubſtances, in form of incruſtations. By this means, things made of ever ſo different matter, which happened to be encloſed, and in the way of the paſſage of the water, would be equally encruſted with, and in appearance turned into ſtone, without regard to the different configuration of their pores and parts.

The place from whence the antients tell us they had this ſtone was Aſſos, a city in Lycia, in the neighbourhood of which it was dug; and De Boot informs us, that in that country, and in ſome parts of the Eaſt, there are alſo ſtones of this kind, which if tied to the bodies of living perſons, would in the ſame manner conſume their fleſh. *Hill*'s Notes on Theophraſtus, p. 14.

LAPIS *atramentarius*, the *copper ſtone*. See PYRITES.

LAPIS *Bononienſis*, the *Bolonian ſtone*. The art of preparing this ſtone ſo as to make it ſhine in the dark, has been ſuppoſed by many to be long loſt in its utmoſt perfection, and indeed that there were but few people who were ever truly poſſeſſed of it. The whole is, however, deſcribed at large in Hook's Philoſophical Collections, by Sir Marc Antonio Cellio, and in a book of the ſame author, publiſhed at Rome in 1680, expreſsly on that ſubject.

The principal places near Bolonia, where this *ſtone* is found, are, 1. At Pradalbino. 2. In a ſmall brook near the village Roncania, where it is found among a large quantity of a white ſtone like ſal armoniac, and an eruginary ſtone, which yields a vitriolic efflorescence: theſe are probably a fibroſe talc, and a pyrites. And 3. At Monte Patemo, which is the moſt noted place of all for theſe *ſtones*; and thoſe found here are ſaid to ſucceed beſt in the operation. The ground where it is found is barren, and abounds with ſmall globular gold coloured pyritæ. The *ſtone* is found moſt eaſily after rain; when the earth being waſhed away, the ſeveral maſſes of it appear as bright as burniſhed ſilver, or with the glittering of talc, reſembling the gloſs of a looking glaſs. Il Foſoro de *Marc. Anton. Cellio.*

The *ſtone* is of no certain figure, but is ſometimes round, ſometimes oblong and cylindric, ſometimes lenticular; the laſt kind uſually proves the beſt of all, as being more ſhining and tranſparent. They are uſually as big as an orange, and ſometimes are found of five pound weight, and are very light, conſidering their bulk. They are of various colours; ſome are aſh coloured, ſome of a ſky blue, ſome of a ferrugineous colour, others yellow, others greyiſh white, and ſome almoſt perfectly white. The beſt for uſe are the ſky coloured and the white. When this *ſtone* is prepared, it affords an efflorescence, in which lies its principal virtue of receiving light; which it does, either from the ſun, the moon, the common day light, or a flame, but in different degrees. When carried into the dark, it appears exactly like a burning coal, and the light it gives is ſufficient to read by, if the letters be placed near the *ſtone*. It does not retain its light long, but requires often renewing; and when well prepared, its virtues will laſt five or ſix years, but ſeldom longer. The way of ſeeing it to the greateſt advantage, is after the eye has been kept for ſome time in a dark room, and the ſtone is brought in there immediately from being held in the ſun.

The beſt method of preparing it is this: make a cylindric furnace of iron or copper plates, ſeven inches in diameter, and as many in height. Line the inſide of it with a ſtrong lute, ſo that the inſide may be ſix inches wide in the clear hollow: at the top of this there are to be made four notches of 2 ¼ inches deep, and 1 ½ inch wide; to this make ſuch a cylindrical part of the ſame diameter, but a little higher, and make at the bottom two aſh-holes, or air-holes, big enough to put in one's hand. Line this, as the other, with good lute, and give it a bottom of lute, that it may the more ſtrongly reflect the heat, and make a cover for the top, lining it in the ſame manner with lute: into this furnace put an iron wire grate near the bottom, to ſuſtain the coals, and freely admit the air. On this grate lay ſome pieces of lighted charcoal, and on theſe put others not lighted, all broken to the ſize of a walnut, or thereabouts. Some of the ſtones muſt be powdered, and thoſe which are to be calcined muſt be dipped in ſtrong aqua vitæ, and while wet rolled in this powder. Theſe ſtones, thus covered, muſt be laid upon the bed of charcoal cloſe to one another, and another bed of charcoal, in the like ſmall pieces, muſt be laid over them up to the top of the furnace. The cover of the furnace is then to be put on, and the fire lighted. When the charcoal is all burnt away, and the whole is cold, take out the ſtones, and taking out the cruſt from them, wrap them up in ſilk, and keep them in a cloſe box for uſe.

The cruſt which is taken off from the ſtones is to be preſerved; it ſhines as well as the ſtone, and is to be beat to powder, and rubbed over any thing that is to be made to ſhine; the thing being firſt daubed over with the white of an egg: this will make it ſtick on, and the whole will ſhine like the ſtone.

The furnace here deſcribed is not abſolutely neceſſary to the ſucceſs of the operation; but it is convenient to know the quantity of charcoal neceſſary to give the ſhining quality to the ſtone, ſince an over heat deſtroys it, and too ſmall a degree is not ſufficient to raiſe it.

LAPIS *caudæ cancri*, in natural hiſtory, a name given by Geſner, and ſome other writers, to the foſſile ſhells, ſince called *tubuli marini concamerati*, and by ſome *polythalamii* and *ortho-ceratitæ*. See the article TUBULUS *concameratus*.

Colicus LAPIS. See the article COLIC-*ſtone*.

LAPIS *corneus*, *horn ſtone*, a name given by many of the German authors to flint, which ſome of them have alſo very improperly called pyrites, or the fire ſtone, becauſe it is uſed to ſtrike fire with.

Butner, in his *corallographia ſubterranea*, has a remarkable ſyſtem in regard to flint. He is of opinion, that all flints are foſſile corals. He ſets out with a juſt principle, *viz.* that of thoſe things found under ground exactly reſembling animals, vegetables, or parts of them, which may be now found recent, living, or growing, not one is of true mineral origin; but that they are in reality ſtones, formed in or upon the very ſhells they repreſent. As it is very eaſy to find corals that reſemble our common flints, and as many of the branched, and oddly figured flints, found in our chalk pits, have ſomething of the external ſhape of ſome of the ſpecies of white corals; he concludes, that they were originally ſuch, and have been only altered into the ſtate and ſubſtance we find them in, by time. The trunk and branches of the white corals may be found very nicely repreſented in ſome of the oblong ramoſe flints found in ſtrata of chalk; and in theſe, as well as in thoſe now found in the ſea, ſome of the branches are intire, and ſome are truncated. The inner ſubſtance of the corals, and that of theſe flints, is ſmooth, hard, and uniform; and the flints have a white thin cruſt on their outſide as the corals have. Theſe are the [a] principal foundations on which he has built his new opinion. But it is to be obſerved, that the reſemblances of flints and corals are but very ſlight and ſuperficial, and we have no proof from their internal ſtructure of their being at all alike.

[a] Vid. *Butner*, Corallog. Subter.]

LAPIS *divinus*, a ſpecies of jaſper, ſo called from its imaginary virtues, as a diuretic and expeller of poiſons. It is found in the ſhores of the Ganges and other parts of the Eaſt Indies.

The Turks are extremely fond of it in their curious works, particularly for the handles of their ſabres.

LAPIS *Hyenius*. See HYENIUS *Lapis*.

LAPIS *Hybernicus*, a foſſile of the ſlate kind, ſo ſtrongly impregnated with alum as to deſerve the name of an alum ore; it often contains alſo a portion of vitriol, and is found in many parts of Ireland, as well as in ſeveral of our own counties.

It is given in powder as a ſtyptic in all kinds of hæmorrhages with ſucceſs; but, as it owes all its virtues to alum, it might be full as prudent to give this ſalt in its ſtead.

LAPIS *Iſlebeianus*. See ISLEBEIANUS *Lapis*.

LAPIS *Judaicus*. See JUDAICUS *lapis*.

LAPIS *lazuli*. The method of making the Venetian counterfeit *lapis lazuli* is this. Melt in a pot, in a glaſs-houſe furnace, equal quantities of the faireſt lattimo, and the whiteſt cryſtalline glaſs; when this is in fuſion, mix into it, by ſmall parcels at a time, the blue ſmalt uſed by the painters; make frequent proofs of the colour, and when it is right let the whole ſtand twelve hours, and then work it. If the metal riſe in the pot, put in a piece of leaf gold to keep it down; this makes a fine plain blue ſubſtance, repreſenting the plain blue parts of the true natural *lapis lazuli*. *Neri*'s Art of Glaſs, p. 117.

Lapis lazuli ſtands recommended againſt apoplexies, epilepſies, melancholy, and quartan agues; but its violent operation, as a purgative and emetic, has frighted people out of the uſe of it; and the preſent practice takes no notice of it in any of the above intentions. The chemical writers give us proceſſes for magiſteries, tinctures, and elixirs of *lapis lazuli*, but they are wholly out of uſe.

LAPIS *lucis*, the *ſtone of light*, in the materia medica of the Arabs, a name given to the braſſy marcaſite or pyrites. The Arabians have adopted this. Aviſenna ſuppoſes this ſubſtance to be called ſo, becauſe it was uſed after calcination for diſeaſes of the eyes. It is very probable, that where vitriolic medicines take place, the caput mortuum of this foſſile, which is only a colcothar of vitriol, may be of uſe. But its virtues in this reſpect can never be ſuppoſed ſo eminent, as to have entitled it to the pompous name it bears. It ſeems more probable, that it was called the *ſtone of light*, either from its glittering appearance where freſh broken, or from its giving large ſparks of fire, when ſtruck againſt a ſteel. It was from this quality that it obtained the name of pyrites or fire ſtone. It giving fire on the colliſion with ſteel much better than flint does.

LAPIS *luminis*, is uſed by ſome authors, in the ſame ſenſe as *lapis lucis*, that is, for the *pyrites*. De Laet. de Lap. See LAPIS *lucis* ſupra.

LAPIS *Lydius*. See LYDIUS *lapis*.

LAPIS *muſicalis*, the *muſic ſtone*, in natural hiſtory, a name given by Mr. Sivers, to a ſtone found in Pruſſia, carrying naturally on it all the muſical characters found on the ſhell, commonly called the muſic ſhell. He deſcribes the ſtone, which ſeems to have been a ſingle ſpecimen, as being of a greyiſh colour, and of the matter of the common finer ſand ſtones, ten inches in length, and ſeven in breadth. The lines which expreſs thoſe of the common ruled muſic paper are continued lengthway through the ſtone, and are of a reddiſh colour; as are alſo the marks expreſſing the notes, which are partly of the common modern character, and partly of that kind uſed by the Monks in their writing muſic on vellum. There ſeems to be no regular origin aſſignable to this ſtrange ſtone; and as this author is the only one who ever met with it, it is much to be ſuſpected that either fraud or fancy has had a great ſhare in the matter.

LAPIS *Nephriticus*. See NEPHRITICUS *lapis*, *Cycl.*

LAPIDES *Picti*, in natural hiſtory, a term uſed by Langius, to expreſs ſuch ſtones as are found with the delineations of fiſhes, trees, and ſhells, as well as leaves of ferns and other plants, very perfectly repreſenting the things themſelves, but ſcarce at all ſtanding out above the ſurface of the ſtone, and having in themſelves ſcarce any thickneſs. The foſſile bodies, which have been once parts of animals or vegetables, and are thence called by authors extraneous foſſils, have uſually the ſame thickneſs, that the natural bodies, whoſe figures they repreſent, have. Thus our *ſnail*, *wilk*, and other ſea ſhells which we find buried in ſtone, uſually are not only as long, but as thick as thoſe now found recent in the ſeas; but it is very certain, that the figures of fiſhes found in ſtone are often mere lineaments, and only repreſent figures traced out with a pencil, not the bodies of the fiſh themſelves buried in the ſtone. Theſe laſt are what this author ſeparates from the common kinds, under the names of *lapides picti*; and we find ſomething of this kind among the ſhell claſs as well as the fiſh; ſome of our own black ſlate ſtones being full of ſcallop ſhells, and *cornua ammonis*, which have ſo little thickneſs, that twenty beds of them lie over one another, in the compaſs of the ſixth of an inch.

We have been uſed to attribute this to preſſure; but however well this might ſerve to explain the flatneſs of the repreſentation of a fiſh in a hard ſtone, as it is not difficult to imagine ſo ſoft a body eaſily compreſſed by ſo hard a one; yet it ſeems ſtrange, that in a ſoft and crumbly ſtate, ſuch friable bodies as ſhells are, ſhould have been thus flatted, and yet not broken to pieces. The opinion of Langius is, that in theſe caſes the body of the animal is not there, but that as when a branch of roſemary, or any other plant, is carefully burnt, the aſhes will perfectly preſerve its form, though their whole ſubſtance might be reduced by preſſure to the thinneſs of a piece of paper; ſo in theſe caſes the body of the animal repreſented has been decayed and corrupted, but that ſome of its remaining principles, its ſulphurs, as he ſuppoſes, might preſerve its exact lineaments to the ſtone, as we ſee them. It is difficult to conceive that theſe bodies ſhould be thus diſſolved, while in a ſtate of ſuch perfect reſt, as that not one lineament ſhould be loſt, or one ſmall part ſeparated from the reſt, and carried away from ſo ſoft a maſs; but till ſome future writer ſhall advance a better ſyſtem, this may deſerve a place. The other kind of *lapides picti*, or painted ſtones, are thoſe which give delineations of rivers, trees, houſes, and the like; of this kind are the mocoa ſtone, and the florentine marble. It is very evident, that the bodies repreſented are not here, in reality, but the whole configuration is owing to the natural veins of the ſtone, and the coaleſcence of the ſeveral ſmaller maſſes of which each large ſtone is compoſed, and to the vapours from within the earth, getting into the natural fine cracks in the ſtones, and tinging their ſides with blackneſs. *Lang.* Hiſt. Lapid. Helvet.

LAPPAGO, in botany, a name given by the old Roman authors, to the plant we call aparine, or clivers, or ſome herb nearly allied to it.

Many of the modern Greeks have been erroneouſly of opinion, that the *lappago* of the Romans was the ſame with the *pheos* or *hippopheos* of the Greeks; but it is evident, that the *pheos* of the Greeks was a prickly ſhrub. Theophraſtus abſolutely deſcribes it as ſuch, and Dioſcorides yet more at large; yet Gaza interprets the *pheos* of the firſt author *lappago*, though that was, by all account, only a low herbaceous plant. The *lappago* of the Romans is no where ſaid to be a prickly plant. Pliny ſays it reſembles the anagallis, a ſmall and tender herb; but that it is more branched, and has more numerous and rough leaves. Dioſcorides ſays, that the antirrhinum is like the anagallis in ſtalks and leaves, and Theophraſtus reſembles the ſame plant to the aparine. Pliny's account of the antirrhinum is different indeed from this; but though many have, for that reaſon, ſuppoſed the text both in Theophraſtus and Dioſcorides corrupt, it appears to be right in both; and the whole matter is, that the antirrhinum of the Greeks, and antirrhinum of the Romans were two different plants; but both theſe and all the other deſcriptions given of the *lappago*, and the reſemblances mentioned between it and other plants, and compariſons of other plants to it ſeem to expreſs, that it was a very rough and tenacious plant, having ſeveral leaves growing from every joint, and bearing a fruit; which, by reaſon of its roughneſs, and its property of ſticking to peoples clothes, had ſome reſemblance to the *lappæ*, or burs, as we call them, which grow upon the common burdock.

Pliny tranſlates the aparine of Theophraſtus, where he copies his accounts from that author, ſometimes by the word *lappago*, tho' ſometimes by *lappa*; hence, it ſhould ſeem, that *lappago* and *lappa* were eſteemed ſynonymous terms at that time. Theophraſtus has peculiarly deſcribed the flower and fructification of the aparine; and Pliny has in his way tranſlated the account, uſing the word *lappa* as the name for aparine. In another part of the ſame book he tranſlates it *lappago*, where he mentions two kinds of it, the ſoft and the rough, which he calls *mollugo* and *aſperugo*. The *mollugo* ſeems to have been the ſame plant we ſtill call by that name, an herb reſembling the aparine in its whole exterior face, and manner of growing, but being wholly ſmooth. The name *aſperugo* here plainly meant the common aparine or clivers, but we have ſince appropriated it to another plant.

LAPPULA, in botany, a name given by ſome to the great caucalis, or rough fruited ſtone parſley. *J. Bauhin*, V. 3. p. 80. See CAUCALIS.

LARBASON, a word uſed by ſome authors as a name for antimony. See ANTIMONY.

LARGE, in the manege. A horſe is ſaid to go *large*, or wide, when he gains or takes in more ground in going wider from the center of the volt, and deſcribing a greater circumference. To make a horſe go *large* you muſt give him the aid of your inner heel. See ENLARGE.

LARGE, in muſic. See CHARACTER, *Cycl.*

LARGHETTO, in the Italian muſic, ſignifies a movement ſomething ſlow, yet a little quicker than *largo*.—V. Broſſ. Muſ. Dict. in Voc. See LARGO.

LARGO, in the Italian muſic, a ſlow movement, one degree quicker than *grave* and two than *adagio*. See ADAGIO and GRAVE.

LARIX, the *larch tree*, in botany, the name of a genus of trees, the characters of which are theſe. The flower is of the amentaceous kind, being compoſed of a number of apices; but it is barren, the embryo fruits appearing in other parts of the tree. Theſe finally become a ſort of cones, compoſed of a number of ſcales affixed to an axis, and containing under them a number of foliated ſeeds. To this it is to be added, that the leaves grow many together out of the ſame theca. *Tourn.* Inſt. p. 586.

The ſpecies of *larix* enumerated by Mr. Tournefort are theſe. 1. The common *larch tree*. 2. The oriental *larix* with round obtuſe fruit. 3. The American *larix*, with leaves growing, five out of the ſame theca; and 4. The Canada *larix* with very long leaves.

There are two ſpecies of this tree cultivated in the gardens about London; the one is the common kind, the other has white rudiments to the fruit. They are propagated by ſowing in March on a bed of light earth expoſed to the morning ſun. The ſeed muſt be covered half an inch thick

with fine light earth, and the beds watered at times, when the weather is over dry. In about ſix weeks the plants will appear; they muſt at this time be carefully guarded from the birds, and not expoſed to the ſun or winds, and muſt be kept clear of weeds and watered.

In the latter end of April the following year they may be removed into beds of freſh earth, placing them at ten inches diſtance every way. They are to be kept here two years, and ſuch of them as ſeem to bend muſt be tied up to a ſtake to keep them upright. They may afterwards be planted in the places where they are to remain. They thrive well on the ſides of barren hills, and make a very pretty figure there.

LARK, *Alauda*, in zoology. See ALAUDA.

The *lark* is not only a very agreeable bird for the cage, but it is alſo a very hardy one; it will live upon almoſt any food, ſo that it have once a week a freſh tuft of three leaved graſs put into the cage with it.

The *ſky* and *woodlark* differ in the time of their breeding; the former not producing her young ones till May, the latter hatching them in March. In winter it is common to ſee vaſt flocks of *ſky larks*; and yet, it is obſerved, that there are fewer of their neſts found in the ſeaſon, than of any birds that is in any degree common among us. The *ſky lark* ſometimes builds among corn, ſometimes among high graſs, and ſeldom has more than three young ones at a brood, ſcarce ever more than four; ſo that it is the more wonderful whence the large flights we ſee come. The young may be taken out of the neſt at a fortnight old, and are ſo hardy, that they will eaſily be brought up. The beſt food is ſheeps heart chopped with egg, and afterwards oatmeal, bruiſed hempſeed, and bread, with a little egg among it. They ſhould have clean ſand at the bottom of the cage, but they need no perches.

The common way of taking *larks* is in the night, with thoſe nets which are called *trammels*. Theſe are uſually made of thirty ſix yards in length, and about ſix yards over, with ſix ribs of packthread, which at the ends are put upon two poles of about ſixteen feet long, and made leſſer at each end. Theſe are to be drawn along the ground by two men, and every five or ſix ſteps the net is made to touch the ground, otherwiſe it will paſs over the birds, without diſturbing them, and they will eſcape. When they are felt to fly up againſt the net it is to be clapped down, and then all are ſafe that are under it. The darkeſt nights are the propereſt for this ſport, and the net will not only take *larks* but all other birds, that rooſt on the ground, among which are woodcocks, ſnipes, partridge, quails, field-fares, and ſeveral others.

In the depth of winter people ſometimes take great numbers of *larks* by nooſes of horſe hair. The method is this: take a hundred, or two hundred yards of packthread; faſten at every ſix inches a nooſe made of double horſe hair; at every twenty yards the line is to be pegg'd down to the ground, and ſo left ready to take them. The time to uſe this is when the ground is covered with ſnow, and the *larks* are to be allured to it by ſome white oats, ſcattered all the way among the nooſes; they will ſoon fly to theſe, and in eating will be hung by the nooſes. They muſt be taken away as ſoon as three or four are hung, otherwiſe the reſt will be frighted; but though the others are ſcared away juſt where the ſportſman comes, they will be feeding at the other end of the line, and the ſport may be thus continued a long time.

Sea LARK, in ornithology. See HIATICULA.

LARKSPUR, in botany. See DELPHINIUM.

There are eleven ſpecies of this plant cultivated in the gardens of the curious, for the beauty of the flowers; and beſide theſe a number of other varieties produced by a careful management of the ſeed ſaved from good flowers. They are to be raiſed by ſowing the ſeeds in autumn ſoon after they are ripe. Some ſow them in ſpring, but the plants are thus never ſo ſtrong, nor are the flowers ſo large. When the young plants have got a little ſtrength, they ſhould either be pulled up, or tranſplanted, ſo as to have them at ten inches diſtance every way. They will now require no farther care, but will flower in June. *Miller*'s Gardners Dict.

LARUS, the *Gull*, in the Linnæan ſyſtem of zoology, is the name of a diſtinct genus of birds of the anſer order. The characters of which are a pointed bill, feathered thighs, and feet placed not very far behind. *Linnæi* Syſtem. Natur. p. 46.

The general characters of this genus, according to Mr. Ray, are theſe. They are all, except a very few, web footed, their beak is long, narrow, ſtrait, and a little hooked at the end, their noſtrils are oblong, their wings long and ſtrong, their legs ſhort, and their feet ſmall. Their body is very light, and covered with a thick plumage. They are great flyers, very clamorous and noiſy, and feed on fiſh. There are properly two ſubordinate genera of theſe birds; the firſt is of thoſe which are large, and have an even not forked tail, and have a tubercle in the lower chap of their bill. The other of the ſmaller ones, which have all forked tails, and have no tubercle in their lower chap. Of the firſt genus are the *great gull*, the *herring gull*, the *ſea mall*, the *ſea meb*, the *tarrock*, the *pewit*, the *gannet*, the *cataracta*, the *martinazzo*, the *coddy moddy*, the *winder meb*, the *cepphus*, the *brown fern*, and the *gaviota*: and of the ſecond, or ſmaller kind, are the *ſterna*, the *fiſcherlin*, the *ſcarecrow*, and four ſpecies of the *larus fidipes*; all which ſee under their ſeveral heads. *Ray*'s Ornithol. p. 261.

LARUS *fidipes*, in zoology, the name of a peculiar kind of bird, accounted by many to be of the *larus*, or gull kind, but having its feet not webbed, as in the other birds of that genus, but the toes looſe, as in land fowls. There are four known ſpecies of this bird. 1. A black one, ſomewhat ſmaller than the common ſea ſwallow, and having a forked tail. 2. A black kind with a greyiſh white breaſt and belly, and remarkable for the great length of its wings. 3. A grey kind, of the ſize of a blackbird, with a very long tail, and very ſhort wings. And 4. A brown one, with yellow ſpots. The firſt and the laſt of theſe are common on our own coaſts; the two others are deſcribed by Aldrovand. They all feed on fiſh. *Ray*'s Ornitholog. p. 270. Vid. ſupra.

LASANON, a word uſed by different authors in very different ſenſes; ſome applying it to the trivet commonly uſed in kitchens; others to a cloſe-ſtool; and others, among whom are Hippocrates and the antient phyſicians, for a ſort of chair, contrived for a woman in labour to ſit in, as being ſo made, that the weight of the child, when born, ſhould help to draw away the ſecundines.

LASER *cyreniacum*, in the materia medica, a name ſuppoſed to be given by the antient Greeks to the gum we at this time call *aſſa fœtida*. The word *aſſa*, or, as it was originally written, *aſa*, was evidently formed on the *laſer* of the Greeks; but there was alſo an *aſa* mentioned by the old authors very different from this, being a fragrant and ſweet ſcented gum: and indeed, though Aviſenna and Serapion, and many of the authors of the middle ages, have determined the *laſer cyreniacum* to be our *aſſa fœtida*, yet it is but a ſuppoſition, and that ſo ill founded, that it will not bear a critical examination. The *laſer* of the antients was of a very agreeable and fragrant ſmell, not of the ſtinking one of our *aſſa*. Dioſcorides attributes to it a very pleaſing ſmell, and expreſsly ſays that it had nothing of the ſmell of the leek or onion kind, for which our *aſſa fœtida* is ſo remarkable. Theophraſtus quotes ſome authors, much older than himſelf, to the credit of the ſweet ſmell of *ſilphium* of Cyrene, which is the plant whence the *aſſa* of their times was produced, and even the poet Ariſtophanes calls it the ſweet ſcented gum. The miſunderſtanding ſeems to have ariſen about this gum, from the naming another thing by its name in after times. This ſweet gum was evidently the *laſer* and *aſa*, or *aſſa*, of the antient Greeks; and the *ſilphium* was the plant which produced it. This plant grew in Cyrene, and furniſhed it a long time, but in the days of Pliny it was in a manner loſt. The people of Cyrene found it more profitable to feed their cattle upon the *ſilphium*, than to gather its gum. We hear of the great eſteem, in which the fleſh of cattle fed on the *ſilphium* was among the antients, and have wondered at it, that ſo ſtinking a plant as that muſt be, which yields *aſſa fœtida*, could give a good flavour to the fleſh of cattle; but we find by this account, that the *ſilphium* was not a ſtinking plant, and that the *aſa* of thoſe times was a very ſweet and fragrant gum, not a ſtinking one, like what we now call by that name.

Pliny continues to tell us, that by the feeding cattle on this plant, it was ſo perfectly deſtroyed, in a courſe of years, that there had been, of a long time, only one plant of it ſeen, and that reckoned ſo great a curioſity, that it was ſent as a preſent to the emperor Nero.

When Cyrene no longer afforded the *ſilphium*, it was fought for in other places, and the Romans had a gum of the ſame name with that of the Cyrenian from Armenia, Media, and Perſia. This, however, was very different from the original medicine. This was of a diſagreeable ſmell, and though of a much hotter and more firey taſte than the Cyrenian, yet came very ſhort of it in its virtues. The original *aſa*, or *laſer*, had the ſmell of myrrh, but more mild and agreeable; and the *aſa* of ſucceeding times had that of leeks or garlick, and thence was diſtinguiſhed by the name *ſcorado laſerum*.

LASERPITIUM, *laſerwort*, in botany, the name of a genus of the umbelliferous plants; the characters of which are theſe. The flower is of the roſaceous kind, conſiſting of ſeveral heart faſhioned petals diſpoſed in a circular order on a cup, which finally becomes a fruit compoſed of two ſeeds, gibboſe on one ſide, and ornamented with four large foliaceous wings, which are ſometimes curled, and ſometimes plain.

The ſpecies of *laſerpitium* enumerated by Mr. Tournefort are theſe. 1. The French *laſerworts*, or *laſerpitium* of Marſeilles. 2. The *laſerpitium* with very narrow and oblong leaves. 3. The ſtinking *laſerpitium* with brittle angular leaves. 4. The ſelinum like *laſerpitium* with curled ſeeds. 5. The broad leaved *laſerpitium* with a narrow and hollow umbel. 6. The broad leaved not ſinuated *laſerpitium*. 7. The narrow leaved not ſinuated *laſerpitium*. 8. The daucus like *laſerpitium* with viſcous ſeeds. 9. The *laſerpitium* with broad lobated leaves. 10. The great round leaved Alpine

Pine *laſerpitium*. 11. The great large leaved *laſerpitium* with curled ſeeds. 12. The low *laſerpitium* with ſmallage leaves, and purple flowers. 13. The low *laſerpitium* with ſmallage leaves and white flowers. 14. The *laſerpitium* with long and divided lobes. *Tourn.* Inſt. p. 324.

LASHED, a ſea term ſignifying *made faſt*. Thus they ſay the carpenter ought to take care that there be ſpare yards *laſhed* faſt to the ſhips ſides; *i. e.* faſtened there to uſe on occaſion.

LASKETS, or LATCHES, in a ſhip, are ſmall lines, like loops, faſtened, by ſowing into the bonnets and drablers, in order to lace the bonnets to the courſes, or the drablers to the bonnets.

LAST, (*Cycl.*) in the marſhes of Kent, a court held by the twenty four jurats, and ſummoned by the bailiffs; wherein orders are made to lay and levy taxes, impoſe penalties, *&c.* for the preſervation of the ſaid marſhes. *Hiſt. of imbanking and draining*, fol. 54. *Blount.*

LATERALIS *morbus*, a name given by ſome writers to the pleuriſy.

LATERALIS *naris muſculus*, in anatomy, a name given by many authors to that muſcle of the face which Albinus has called, from its office, the *levator labii ſuperioris alæque naſi*. It is alſo called the *obliquus naſi*.

LATERCULUM, among the Romans, was uſed for a roll or liſt of all the magiſtrates and military officers under the Roman emperors, with an account of their reſpective offices and fees. *Pitiſc.* in voc.

LATEX, in chemiſtry, a name by which Van Helmont has, in ſome of his writings, called the famous menſtruum, which he boaſts Paracelſus and himſelf to have been poſſeſſed of, and which he uſually calls *alkaheſt*. See ALKAHEST.

LATH *bricks*, a particular ſort of *bricks* made in ſome parts of England of twenty two inches long, and ſix inches broad, which are uſed in the place of laths, or ſpars, ſupported by pillars in *caſts*, for the drying of malt. This is an excellent contrivance; for, beſide that they are not liable to fire as the wooden *laths* are, they retain the heat vaſtly better; ſo that being once heated, a very ſmall quantity of fire will keep them ſo. *Plot*'s Oxfordſhire, p. 257.

LATHRÆA, in botany, the name given by Linnæus to the plant called by Tournefort *clandeſtina*. This, in the Linnæan ſyſtem of botany, is alſo a diſtinct genus of plants; the characters of which are: That the cup is compoſed of one leaf, ſtanding erect, and repreſenting a bell, with its rim deeply divided into four ſegments. The flower is compoſed of a ſingle petal, in form of a tube, longer than the cup, with a gaping and bellied mouth. The upper lip of the flower is hooded, and is broad and concave, with a narrow crooked extremity; the under one is ſmaller, crooked, obtuſe, and divided into three parts. The ſtamina are two pointed filaments, of the length of the flower, hid beneath the upper lip. The antheræ are two on each filament, obtuſe above, and narrower below. The piſtillum has a roundiſh germen, a thread-like ſtyle of the ſame length with the ſtamina, and placed in the ſame manner with them, and a truncated ſtigma. The fruit is a roundiſh, obtuſe, but pointed capſule, divided into two cells, having two valves, and is very elaſtic. *Linnæi* Gen. Plant. p. 9. See CLANDESTINA.

LATHYRIS, in botany, a name given by many authors to a ſpecies of tithymal, or ſpurge, commonly known by the name of *tithymalus latifolius*, the broad leaved ſpurge, and called by ſome alſo *cataputia*.

LATHYRUS, in botany, the name of a genus of plants; the characters of which are theſe. The flower is of the papilionaceous kind. The piſtil ariſes from the cup, and finally becomes a pod, in ſome ſpecies, of a cylindric, and in others of a flatted form, containing ſometimes cylindric, and ſometimes angular ſeeds. To this it is to be added, that the ſtalks are flat and ridged, and have on each ſide a foliaceous wing, and the leaves ſtand only two on each rib; theſe are placed oppoſite to one another, and the rib itſelf ends in a tendril.

The ſpecies of *lathyrus* enumerated by Mr. Tournefort are theſe. 1. The cultivated *lathyrus* with a white flower and white fruit. 2. The purple flowered garden *lathyrus*. 3. The common large wild *lathyrus*. 4. The greater wild *lathyrus* with a blackiſh purple flower. 5. The broad leaved *lathyrus*. 6. The broad leaved *lathyrus* with white flowers. 7. The great narrow leaved french *lathyrus*. 8. The narrow leaved *lathyrus* with a ſpotted ſeed. 9. The orobus podded *lathyrus* with a very beautiful large red flower. 10. The American variegated *lathyrus* with very narrow leaves. 11. The creeping tuberoſe rooted field *lathyrus*. 12. The vetch leaved yellow flowered wild *lathyrus*. 13. The blue flowered annual *lathyrus*. 14. The yellow flowered bœtic *lathyrus*. 15. The yellow flowered Spaniſh *lathyrus*. 16. The broad leaved yellow *lathyrus*. 17. The hairy podded narrow leaved *lathyrus*. 18. The broad leaved annual *lathyrus* with a hairy jointed pod. 19. The *lathyrus* with extremely narrow leaves and round ſeeds. 20. The *lathyrus* with extremely narrow leaves, and angular ſeeds. 21. The narrow leaved red flowered *lathyrus*. And 22. The ſcarlet flowered *lathyrus* with graſs like leaves. *Tournefort*, Inſt. p. 396.

LATIBULUM, a word uſed by ſome medical writers for the fomes, or latent matter, which is the occaſion of fevers and other diſorders.

LATION, is uſed by ſome for the tranſlation, or motion of a body from one place to another.

LATI-TENDINIS *muſculus*, in anatomy, a name given by Spigelius and others to a muſcle called, by Winſlow, *muſculus faſciæ latæ*, and by Albinus the *muſculus vaginæ femoris*. See MEMBRANOSUS, *Cycl.*

LATOMIA, λατομια, in antiquity, a famous priſon or dungeon at Syracuſe, cut out of the ſolid rock.

It was the work of the tyrant Dionyſius. Cicero calls it a vaſt magnificent work, ſunk into the ſolid rock to a wonderful depth; and ſays, that nothing could even be imagined more ſecure for the confinement of priſoners. *Pitiſc.* Lex. Ant. in voc.

The word *latomia* ſignifies a quarry, from λας, a ſtone, and τεμνω, to cut.

Latomia was alſo the name of a dungeon at Rome near the priſon called *Tullianum*. *Pitiſc.* l. c.

LATTIMO, in the glaſs trade, a name for a fine milk white glaſs. There are ſeveral ways of making it, but the beſt of all others is this. Take four hundred weight of cryſtal fritt, and ſixty pound of calcined tin, and two pound and a half of prepared manganeſe; mix theſe well with the fritt, and ſet them in a pot in a furnace to melt and refine. At the end of eighteen hours this will be purified; then caſt it into water, purify it again afterwards in the furnace, and make a proof of it. If it be too clear, add fifteen pound more of calcined tin; mix it well with the metal, and let it ſtand one day to purify; it will then be of a whiteneſs ſurpaſſing even that of ſnow, and is fit to work into veſſels. *Neri*'s Art of Glaſs, p. 98.

LATTIN, a name by which we uſed to call the plates of iron covered with tin, and now uſually called tin, of which our mugs, and ſuch other things, are made. The method of preparing theſe plates of tin, as they are called, is as follows. Plates of iron are prepared of a proper thinneſs; theſe are cut into ſquares fitted to receive the tinning, but it is not every kind of iron that will ſerve to this purpoſe, but only ſuch as is moſt of all diſtenſible, eaſily beating out to any degree of thinneſs when hot, and malleable even when cold, without danger of flying to pieces. Of this the Germans have large quantities, which they always ſelect for this purpoſe. This ſort of iron is firſt formed into ſquare bars of an inch in diameter; theſe they beat out a little into flatneſs, and then cut into pieces, which they call *ſemelles*, or *ſoles*. They fold theſe together, and having made them into parcels, containing forty pieces each, they beat them all at once with a hammer, which weighs ſix or ſeven hundred weight. When they have done this, the principal part of the whole work is to prepare the leaves, now beat out to a proper thinneſs, ſo as that they ſhall readily receive the tin; for if there be but the ſmalleſt particle of duſt on them, or only the ſlighteſt ruſt in any part, the tin will never fix there.

This ſmoothing of the plates may be brought about by filing them, but that would be too expenſive, wherefore they do it by ſteeping them in acid waters. Thus preparing a great number at a time, they leave them in this liquor till the ſurface is a little preyed upon by it, and then they are ſcowered with ſand, which makes them very ſmooth and fine. By this means a woman cleans more plates in an hour, than the moſt expert workman can do in many days. Mr. Reaumur, to whom the world owes the diſcovery of this proceſs, mentions ſeveral waters, any one of which will ſucceed, but the Germans themſelves uſe nothing but common water, made eager with rye. This they make a great ſecret of, but the preparation is very eaſy. After they have ground the rye groſsly, they leave it to ferment in common water for ſome time; and they are thus ſure of a ſharp and eager menſtruum, excellently fitted for their purpoſe. With this liquor they fill certain troughs, or tuns, and into theſe they put ſeveral bundles of the plates of iron: and to make the liquor be more eager, and act the better on them, they keep it in ſtoves, where it has little air, and is kept warm with ſmall charcoal fires. The workmen go into theſe vaults once or twice a day, to turn the plates, that they may be the better wrought upon by the acid, and to take out thoſe which are moſt wrought upon, and put in others in their room. The more acid the liquor is, and the warmer the ſtove, the ſooner the plates are cleanſed: it requires, however, at leaſt two days to effect this, and oftener ſomething more.

This was the method which the German labourers, employed in the tin works in France, always made uſe of, in order to prepare the iron to receive the covering of tin; but the authors finding that this was a very laborious employ, and that the heat in the ſtoves was ſo great, that they could hardly bear it, propoſed ſome other methods in the place of this, which were attended with much leſs trouble,

and as ſmall an expence, if not leſs, and theſe, upon trial, were found to ſucceed equally well.

Having obſerved that the iron leaves, or plates, are covered with a ſmall layer of a ſort of ruſt which they contract in the fire, and which the acid liquor took very little hold of; he judged it might be better to expoſe the plates to ruſt, in order to the cleanſing them eaſily of it; as ruſt is always accompanied with a ſort of fermentation, and the particles of ruſt, found on the ſurface of the iron, would be ſure to raiſe up every thing in their way. To this purpoſe he ſteeped the plates of iron in waters, in which were ſeparately diſſolved alum, common ſalt, and ſal armoniac. Some other plates he did not ſteep in theſe liquors, but only juſt dipped them in, and then expoſed them to the air to ruſt. All theſe liquors, thus uſed, cauſed the iron to ruſt very freely, but the ſal armoniac beſt of all. After two days, during which every plate had been dipped into this menſtruum only twice or thrice, he ordered both theſe, and thoſe which had been left ſteeping during the ſame ſpace of time, to be ſcowered; and on comparing them together, it was found, that thoſe which had been dipped, and expoſed to the air, became much cleaner than thoſe which had been all the time ſteeped. The ruſt covered all the ſurface in the latter, without raiſing the ſcale; whereas, in the former, the ſurface was raiſed into bliſters of ruſt, which carried it wholly off with them. Theſe diſſolvents, though very weak, are obſerved to produce the deſired effect, as well as ſtronger, which muſt be much dearer; but among the latter he prefers vinegar in France, which ſucceeds very well, and being plentiful there, is very cheap. This operates ſo quick on the iron, that the plate need only be once dipped into it, and immediately taken out again, and ſet in a moiſt place, where it will ruſt in eight and forty hours. If the dipping is repeated three or four times, the ruſting will be ſtill more expeditious, and eſpecially if a ſmall quantity of ſal armoniac be diſſolved in the vinegar, about a pound to the puncheon. This will make a very efficacious menſtruum, the vinegar diſſolving iron very well, and the ſal armoniac ruſting it ſooner than any other ſalt. This, however, muſt be uſed very moderately, and the plate muſt be ſteeped in cold water afterwards, to take off any particle that might yet remain upon it, otherwiſe it would be ſubject to ruſt after it was tinned.

There are ſeveral other ways of making iron ruſt, as keeping it in a moiſt cellar, expoſing it to the dew, ſprinkling it with ſimple water, or, which is ſtill better, with water, in which ſal armoniac has been diſſolved, ſeveral times a day; and in thoſe countries where the pyrites is common, the vitriolic waters, which partake of it, will do it very well. This water may be prepared at little or no expence, only by heaping up large quantities of the pyrites, and letting it moulder in the air, then putting it into common water, and making a lixivium of it.

The leaves of tin, when they are finiſhed, are always found to be more bright and gloſſy on one ſide than on the other, which is owing to the plates of iron having always ſeveral roughneſſes on one ſide, where it has been moſt expoſed to the hammer. Theſe roughneſſes are what are principally to be eaten down by the menſtruums; for which reaſon Mr. Reaumur greatly prefers ſprinkling, or wetting them, to ſteeping; becauſe in ſteeping, as both ſides are equally expoſed to the force of the menſtruum, the ſmooth ſide muſt be conſequently eaten away too far, while the other is but eaten barely enough; this occaſions a loſs of the iron, which the author propoſes to ſave by ſprinkling, or ſimply wetting, as then the bad ſide only might be ſubjected to the action of the menſtruum.

There are two other cautions, very neceſſary to be obſerved in this part of the work. The firſt is in the management of the plates, before they come to be prepared; which is, in the beating of them, to turn them continually about, ſo that all parts of every plate may be equally extended. And the other is, to plunge them into ſome ſoft clay, or fullers earth, before they are heated, that they may not ſolder themſelves together.

Which ever method of ruſting the plates be uſed, it is always neceſſary to ſcower them with ſand as ſoon as it is done; and when they are thus cleaned, they muſt be immediately plunged into water, to prevent their ruſting again, and they are to be left in this water till the inſtant in which they are to be tinned, or, in the language of the workmen, *blanched*. The people employed in this part of the operation, are called *blanchers*, and the others who, aſſiſt at the cleaning the plates, the *ſealers*. The blancher makes as great a ſecret of his art, as the ſealer does of his, and it was with great difficulty that Mr. Reaumur obtained it. The manner of doing it is this.

They flux the tin in a large iron crucible, which has the figure of an oblong pyramid with four faces, of which two oppoſite ones are leſs than the two others. The crucible is heated only from below, its upper part being luted with the furnace all round. The crucible is always deeper than the plates, which are to be tinned, are long; they always put them in downright, and the tin ought to ſwim over them.

To this purpoſe artificers of different trades prepare plates of different ſhapes, but Mr. Reaumur thinks them all exceptionable. But the Germans uſe no ſort of preparation of the iron, to make it receive the tin, more than the keeping it always ſteeped in water till the time; only when the tin is melted in the crucible, they cover it with a layer of a ſort of ſuet, which is uſually two inches thick, and the plate muſt paſs through this before it can come to the melted tin. The firſt uſe of this covering is to keep the tin from burning; as if any part ſhould take fire, the ſuet would ſoon moiſten it, and reduce it to its primitive ſtate again. The blanchers ſay, this ſuet is a compounded matter. It is indeed of a black colour, but Mr. Reaumur ſuppoſed that to be only an artifice to make it a ſecret, and that it is only coloured with ſoot, or the ſmoke of a chimney; but he found it true ſo far, that the common unprepared ſuet was not ſufficient; for after ſeveral attempts, there was always ſomething wanting, to render the ſucceſs of the operation certain. The whole ſecret of blanching, therefore, was found to lie in the preparation of this ſuet; and this he at length diſcovered to conſiſt only in the firſt frying, and burning it. This ſimple operation not only gives it the colour, but puts it into a condition to give the iron a diſpoſition to be tinned, which it does ſurpriſingly.

The melted tin muſt alſo have a certain degree of heat, for if it is not hot enough, it will not ſtick to the iron; and if it is too hot, it will cover it with too thin a coat, and the plates will have ſeveral colours, as red, blue, and purple, and upon the whole will have a caſt of yellow. To prevent this, by knowing when the fire has a proper degree of heat, they might try with ſmall pieces of iron; but, in general, uſe teaches them to know the degree, and they put in the iron when the tin is at a different ſtandard of heat, according as they would give it a thicker or a thinner coat. Sometimes alſo they give the plates a double layer, as they would have them very thickly covered. This they do by dipping them into the tin, when very hot, the firſt time, and when leſs hot, the ſecond. The tin, which is to give the ſecond coat, muſt be freſh covered with ſuet, and that with the common ſuet, not the prepared. Philoſ. Tranſ. N° 406. p. 634.

LATUS, in zoology, the name of a fiſh of the coracinus, or umbra kind, caught in the Nile, and in the Adriatic and Mediterranean ſeas. It much reſembles the common coracinus, but is larger, and has not the beard which hangs from the chin in that ſpecies, and its body is ſomewhat rounder. It is eſteemed a very delicate fiſh. *Rondelet.* de Piſc. p. 130.

LATUS, (*Cycl.*) in anatomy, a name given by many authors to one of the muſcles of the anus, now generally called the *levator ani*.

LATUS *muſculus*, in anatomy, is alſo a name given by Riolanus, and others, to a muſcle called by Albinus *latiſſimus colli*, and by others *platyſma myodes*, and *quadratus genæ*. Part of this muſcle ariſing from the cheek, is called by Santorini the *muſculus riſorius novus*. See QUADRATUS.

LATUS-*pulſus*, a *broad pulſe*, a term uſed to expreſs that ſort of *pulſe*, in which the artery is very ſenſibly dilated at every ſtroke.

LAVACRUM, in botany, a name given by ſome authors to the common wild teaſel, or *dipſacus ſylveſtris major*. *Ger.* Emac. Ind. 2.

LAVARETUS, in zoology, the name of a ſmall fiſh called by ſome the *gang-fiſh*, and the *rhingau*, and by Marggrave the *curimata*. It ſeems of a middle nature, between the trout and herring kind, and is caught in vaſt quantities in the months of March and April, in ſeveral of the lakes in Germany, and is pickled, and ſent to different parts of the world. It ſeldom grows to more than four inches long, and the figure of its body is like that of the herring, flatted, broad, and oblong. Its back is black, and its belly white. It has two fins upon the back; the one near the head, and of the common kind; the other near the tail, and of the nature of the generical fin of the truttaceous fiſhes, free from rays or nerves, and fat. Its tail is forked, and it has a pair of fins under its gills, and another pair on the belly. Its head is bright, and in a manner pellucid, and is marked with black ſpots. *Willughby*, Hiſt. Piſc. p. 183.

LAUDICOENI, among the Romans, applauders, or perſons who, for a reward, attended the rehearſal of plays and orations, in order to raiſe, or join in the acclamation. See ACCLAMATION and APPLAUSE.

LAVENDULA, *lavender*, in botany, the name of a genus of plants; the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind. The upper lip is erect, roundiſh, and uſually bifid; the lower is divided into three ſegments. The piſtil ariſes from the cup, and is fixed, in the manner of a nail, to the hinder part of the flower. This is ſurrounded by four embryo's, which afterwards become ſo many ſeeds, ripening in the cup of the flower. To theſe marks it may alſo be added, that all the ſpecies of *lavender* bear their flowers in compact ſpikes at the tops of their branches.

The ſpecies of *lavender* enumerated by Mr. Tournefort are theſe. 1. The ſhort ſpiked greyiſh broad leaved Indian *lavender*. 2. The woolly Spaniſh broad leaved *lavender*. 3. The common broad leaved *lavender*. 4. The white flowered common *lavender*. 5. The narrow leaved *lavender*. 6. The white flowered narrow leaved *lavender*. 7. The cut leaved *lavender*. 8. The longer, and more elegantly cut leaved *lavender*. 9. The *lavender* with crenated leaves. 10. The American ſhrubby *lavender* with broad crenated leaves. *Tourn.* Inſt. p. 198.

We have three or four ſpecies of this plant in our gardens, all which are propagated by planting their cuttings, or ſlips, in April, in a place where they may be ſhaded. They muſt be watered till they have taken good root, which will be in about two months; after which they may be planted out where they are to remain. They thrive beſt in an open ſituation, and gravelly ſoil. They grow faſter in richer ground, but they are there very ſubject to be deſtroyed in hard winters, and their flowers are never ſo well ſcented. See LIMONIUM.

The flowers and ſummits of this plant are, in a very eminent degree, cephalic and nervine. They are given in palſies, vertigoes, lethargies, and tremors of the limbs. The compound ſpirit, diſtilled from them, is famous in theſe, and many other the like caſes.

LAVER-*bread*, a ſort of food made of a ſea plant, otherwiſe called the *oiſter-green*, or *ſea-liverwort*. It is ſaid to be uſed in the county of Glamorgan, and other parts of Wales.

LAUGHER, a name given to a particular ſpecies of pigeon, called by Moore the *columba ridens*. It is about the ſize of the common pigeon, and much of the ſame make; but it has a very bright pearl coloured eye, almoſt white, and is a mottled red, or blue. They are ſaid to be brought from Jeruſalem, and the country thereabouts. When the cock of this ſpecies courts the hen, he has a guttural cooing, not unlike the guggling of a bottle of water, when poured out haſtily; and after this he always make a noiſe, not unlike laughing, from the ſingularity of which he has obtained his name. *Moore*'s Columbarium, p. 45.

LAVIGNON, the name of a French ſhell fiſh, common on the coaſt of Poitou. It is of the *chama* kind, having a very thin pair of ſhells for its covering, which are eaſily cruſhed to pieces between the fingers, and which never can ſhut cloſe, in the manner of the oiſter or muſcle, or other common bivalve ſhells. The fiſh therefore always buries itſelf in the mud by way of ſecurity. The ſhells are very ſmooth and poliſhed, eſpecially on the inſide, and they are naturally white. This colour they always retain within, though their outer ſurface is often tinged black by the mud.

They are often buried five or ſix inches deep in the mud, but it is always eaſy to know where they are, becauſe they muſt keep a free communication with the water above; and this is done by means of a round aperture, of about a tenth of an inch diameter, which opens from the ſurface of the mud to every ſhell fiſh. Very often there are two of theſe apertures to one fiſh, and uſually they are found in great numbers together; the fiſh generally living in the neighbourhood of one another. When the ſhells of this fiſh are opened to their utmoſt width, it is eaſy to ſee a ſort of arm with which each is furniſhed, in the manner of the common muſcle, for its progreſſive motion. This part ſerves them to bury themſelves in the mud, and to raiſe themſelves out of it again, when they are inclined to ſeek a new habitation; unto which it makes its way in a more ſpeedy manner than would eaſily be thought.

When the creature is plunged to its proper depth under ground, it yet receives the benefit of the water above, by means of two pipes, or proboſcides, which have each a double aperture at their ends. Theſe take in water, and throw it out again, alternately, for the uſes of the animal, and either of the two is indifferently qualified to anſwer either purpoſe. Theſe pipes make the round apertures, which are ſeen over the places where the fiſh are buried; for as ſoon as they have entered the mud, the continual motion of the water ſmooths over the top of the hole, and the creature is deprived of the advantages of the water above, till it open a communication again by one, or both theſe pipes. The fiſh has a power of lengthening, or ſhortening theſe pipes at pleaſure, and, when it pleaſes, takes them wholly into the ſhell. It can alſo move them about, and turn them to any direction, and often they raiſe them above the ſurface of the bottom, the level with which is their uſual height; and when they are thus exerted, they draw them ſeveral ways about, and mark with them ſeveral irregular furrows about their holes. Mem. Acad. Par. 1710.

LAVIN, in natural hiſtory, a name given by the people of the Philippine iſlands to a ſpecies of hawk, a bird of great beauty, being variegated all over with yellow, black, and white. They call it alſo *ſicub*. See SICUB.

LAUNCEGAYS, in our old writers, a kind of offenſive weapons, now diſuſed, and prohibited by the ſtatute 7 Rich. II. c. 13. *Blount.*

LAUNCH, (*Cycl.*) a term uſed in ſeveral ſea phraſes, as *launch out the capſtan bars*, that is, put them out; *launch aft*, or *foreward on*, that is, when things are ſtowed in the hold, to put them more aft, or foreward on; *launch, ho!* that is, when a yard is hoiſed high enough, hoiſe no more; or in pumping, if the pump ſucks, pump no more.

LAUNDER, in mineralogy, a name given in Devonſhire, and other places, to a long and ſhallow trough, which receives the powdered ore after it comes out of the box, or coffer, which is a ſort of mortar, in which it is powdered with iron peſtles.

The powdered ore, which is waſhed into the *launder* by the water from the coffer, is always fineſt neareſt the grate, and coarſer all the way down. See DRESSING *of ore*.

LAURACES *lapis*, in natural hiſtory, the name of a ſtone ſaid to be of great virtues againſt the head-ach, but not known among us, nor deſcribed by the antients.

LAUREL, in botany. See LAURO-CERASUS.

This tree is very eaſily propagated, by planting cuttings of it in September, in a cool ſhady border, where they will very ſoon take root, and the year afterwards are to be removed into beds, and placed at two or three feet diſtance; and when they have ſtood here three years, they will be fit for tranſplanting into the places where they are to ſtand. The beſt ſeaſon of making this laſt removal is April. This is the better method when they are deſigned for dwarfs; but if they are intended for high trees, they ſhould be raiſed from berries, as they then always grow much faſter. The berries ſhould be ſown as ſoon as they are ripe, covering them an inch thick with earth, and the young plants will appear the ſpring following, when they ſhould be cleared of weeds, and watered in dry weather. The next year they ſhould be tranſplanted, and ſet at a foot diſtance; and when they are two years older, may be removed to the places where they are to remain. *Miller*'s Gard. Dict. in voc.

Laurel berries are held to be carminative, emollient, and reſolvent. They are given internally in ſuppreſſions of urine and the menſes, in colics, in pains after delivery, and in all nervous complaints. Externally they are uſed in emollient cataplaſms and fomentations.

Spurge LAUREL. See LAUREOLA.

LAUREL *water* has been diſcovered to be of a poiſonous quality. See LAURO-CERASUS.

LAURENTINA, in botany, a name given by Matthiolus, and ſome other authors, to the bugula, or bugle. *Ger.* Emac. Ind. 2.

LAUREOLA, the ſmall *ſpurge laurel*, in botany, is the ſame with the *thymelæa* with *laurel* ſhaped leaves. See the article THYMELÆA.

Laureola is a very rough purge; it operates both upwards and downwards, and uſually carries off a great quantity of matter, but it is apt to erode, and inflame the ſtomach and inteſtines. The leaves are ſomewhat milder than the bark of the ſtem; that of the root is ſtrongeſt of all. Many have given it in drops with ſucceſs; but it is ſo rough and dangerous a medicine, that while there are others capable of anſwering all the purpoſes intended by it, it is unpardonable to bring it into uſe.

LAURO-CERASUS, the *laurel*, in botany, the name of a genus of trees, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals arranged in a circular form. The cup is hollowed, and funnel faſhioned, and from it there ariſes a piſtil, which finally becomes a fruit, reſembling a cherry, ſoft, and encloſing a ſtone with a roundiſh kernel. *Tourn.* Inſt. p. 629.

The ſpecies of *laurel* enumerated by Mr. Tournefort are theſe. 1. The common *laurel*, and 2. The ſmaller Portugal *laurel*.

The diſtilled water and the infuſion of the leaves of the *lauro-ceraſus* are poiſonous; both the water and the infuſion having been obſerved to bring on convulſions, palſy, and death, when taken by the mouth, or anus.

This was diſcovered by the accident of two women dying ſuddenly at Dublin, after drinking ſome of the common diſtilled *laurel* water. Several experiments were then made on dogs, and communicated to the Royal Society by Dr. Madden, and afterwards confirmed by Dr. Mortimer, which plainly ſhewed the poiſonous effect of *laurel* water. See Phil. Tranſ. N° 418, 420.

The *lauro-ceraſus* being an ever-green, and abounding with a warm eſſential oil, it was at firſt imagined that other ever-greens might partake of the ſame poiſonous quality. But by Dr. Madden's experiments made on the leaves of the yew tree, and on box leaves no ſuch quality appeared. Phil. Tranſ. N° 418.

The expreſſed juice of *laurel* leaves had the like poiſonous effects with the diſtilled water and the decoction.

Several things were tried as antidotes to this poiſon, as *bole*, *vinegar*, and *milk*. The two former did little good, but the dog which drank the milk recovered, without any bad ſymptoms.

LAUROTAXA, in botany, a name uſed by Columna and ſome other authors for the narrow leaved kind of *ruſcus*, or butcher's broom, called by others *biſlingua*. See the article RUSCUS.

LAURUS, the *bay*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is compoſed

of only one leaf, which is hollowed into the ſhape of a baſon, and divided into many ſegments at the edges; from the bottom of the flower ariſes a piſtil, which finally becomes an oval fruit, or berry, having under its back an unicapſular ſeed veſſel, containing ſeeds of an oval figure.

The ſpecies of *bay* enumerated by Mr. Tournefort are theſe. 1. The broad leaved *bay*. 2. The common *bay*. 3. The common *bay* with double flowers. 4. The common *bay* with undulated leaves; and 5. The narrow leaved *bay*. *Tourn.* Inſt. p. 597.

We have ſeveral ſpecies of this tree cultivated in the gardens about London: they are all propagated by ſowing the berries, or by laying down the tender branches, which will take root in one year's time, and may then be tranſplanted into beds for a year or two, or even placed at once where they are to remain.

If they are to be raiſed by ſowing, the berries muſt be gathered when ripe, which is in January, and kept in dry ſand till the beginning of March, when they muſt be ſown in a bed of rich dry earth, well ſheltered from the north and eaſt winds. The bed muſt be levelled, and then furrows of an inch deep made along it, at eight inches diſtance; into theſe the berries are to be dropped about two inches aſunder, and covered with earth; and if the ſeaſon prove very dry they muſt be watered: they will come up in about two months, and ſhould be ſuffered to remain in theſe beds two years. They ſhould then be tranſplanted into a bed of earth well dug, and ſet at eighteen inches aſunder; this ſhould be done in April, and they ſhould be well watered, and the ground covered with ſome muck about their roots. They muſt be trained up ſtrait, by tying them to ſtakes, and their under ſhoots pruned off, to make them advance in height. Theſe trees are proper to plant on the warm ſides of hills, where they may be ſheltered from the north and north eaſt winds. In open ſituations, the *bay* tree will ſometimes indeed loſe all its verdure in ſevere winters and appear dead, and many trees have on this occaſion been dug up and burnt; but this is a raſh and very wrong practice; for uſually, if they are ſuffered to remain they ſhoot freely again, and after another ſeaſon are found as lively as ever. *Miller's* Gardners Dict.

LAURUS *Alexandrina*, in botany, a name given by many authors to ſome of the larger ſpecies of *ruſcus*, or butcher's broom. See RUSCUS.

LAWNS. Theſe ſpacious plains make a noble figure before grand houſes, and the great rule in regard to their dimenſions, is to make them as large as the ground will permit, but they ought never to be leſs than fifty acres. *Lawns* ought always to lie open to the front of the houſe, and be open to the neighbouring country, not pent up with trees; and the moſt happy ſituation is, when the beſt rooms of the houſe front the eaſt, and the *lawn* lies immediately before them; becauſe the ſun, in an afternoon, in this caſe, ſhines on the proſpect, and at the ſame time not into the rooms. The beſt ſituation for a *lawn*, except this, is on the ſouth ſide of a houſe; for if on the weſt, it expoſes the houſe to too much wind, and if on the north too much open to the cold. It is beſt therefore to plant trees and wilderneſſes on the weſt and north ſides of houſes. The beſt figure for a *lawn* is ſquare, and it is beſt left quite open; but if it is to be bounded by walks, there ſhould be rows of lime trees planted at proper diſtances, on each ſide, but the end ſhould be left open, unleſs it ſink very much from the houſe. A circular *lawn* is a very agreeable proſpect, and a triangular one not amiſs, but then the angle leading to the front of the houſe muſt not be too acute. If the country beyond the *lawn* do not afford an agreeable proſpect, the end ſhould be blocked up with an amphitheatre of trees, which will have a very beautiful effect. *Miller's* Gardners Dict.

The lime is a very proper tree for bounding *lawns*, becauſe it grows in a good ſhape, and if carefully planted will thrive on any good ſoil. The elm is alſo very proper, having a large and very green leaf. The beech, cheſnut, and cherry tree alſo are very proper, where the ſoil will ſuit them; and the fir and pine kind where they can live are of peculiar value, as affording a green proſpect in winter as well as ſummer.

LAWSONIA, in botany, a name given in honour to the late Dr. Lawſon to a genus of plants, before called *alhen* by Dr. Shaw, and *henna* by Ludwing. The characters of the genus are theſe. The perianthium is ſmall and permanent, and is divided into four parts. The flower conſiſts of four petals, of an oval pointed figure, which ſtand expanded. The ſtamina are eight capillary filaments of the length of the flower, they ſtand in pairs within the petals. The antheræ are roundiſh. The germen of the piſtil is roundiſh, the ſtyle is ſimple, permanent, and of the length of the ſtamina, and the ſtigma is capitated. The fruit is a globoſe capſule, terminating in a point; it contains four cells, in which are ſeveral angular pointed ſeeds. *Linnæi* Gen. Plant. p. 163. *Shaw's* Travels. *Ludw.* 143.

LAY (*Cycl.*)—LAY *fee*, *feodum laicum*, land held in fee from a *lay* lord, by the common ſervices to which military tenure was ſubject, as diſtinguiſhed from the *eccleſiaſtical* holding in *Frankalmoign*, diſcharged from thoſe burdens. *Ken.* Gloſſ.

LAYERS (*Cycl.*)—The propagating trees by *layers* is done in the following manner: the branches of the trees are to be ſlit a little way, and laid under the mould for about half a foot; the ground ſhould be firſt made very light, and after they are laid they ſhould be gently watered. If they will not remain eaſily in the poſition they are put in, they muſt be pegged down with wooden hooks: the beſt ſeaſon for doing this is, for ever-greens, toward the end of Auguſt, and for other trees, in the beginning of February. If they are found to have taken root, they are to be cut off from the main plant the ſucceeding winter, and planted out. If the branch be too high from the ground, a tub of earth is to be raiſed to a proper height for it, and ſome bare off the rind, and others twiſt the branch before they lay it, but this is not neceſſary in all caſes.

The end of the *layer* ſhould be left about a foot out of the ground, and the branch may be either tied tight round with a wire, or cut upwards from a joint, or cut round for an inch or two at the place; and it is a good method to pierce ſeveral holes through it with an awl, above the part tied with the wire. *Miller's* Gardners Dict.

LAZARI *morbus*, a name given by ſome writers to the *elephantiaſis*.

LAZIVRAD, in natural hiſtory, one of the oldeſt names by which we find the *lapis lazuli* expreſſed in authors. They uſed this equally for the ſtone itſelf, and for the colour prepared from it; and, in after times, every blue colour became called by the ſame name. From this were derived the other names of *lazurad*, *lazuri* and *azure*, as well as *lazuli*, now its common name. Aviſenna deſcribes the *lapis lazuli* under the name of *alazarad*, and his interpreter renders this *de lapide lazuli ſive armenio*, making them to be the ſame thing. But they ſtrictly are not ſo, though nearly allied to one another. See LAPIS *lazuli*.

LAZULI *lapis*. See LAPIS *lazuli*.

LEA *of yarn*, is uſed in ſome parts of England for a certain quantity of *yarn*. At Kidminſter it ought to contain 200 threads, on a reel four yards about. Stat. 22 & 23 Car. 2. *Blount*.

LEACH *brine*, a word uſed by the Engliſh ſalt workers to expreſs the brine, which runs out from the ſalt, when it ſtands in the baſkets to drain, immediately after being taken out of the pan; and alſo the liquor left in the pan, when no more ſalt will ſhoot. This is alſo called the *mother brine*, and *bittern*. In the German ſalt works they always throw this liquor away. In our *brine* ſalt works in Cheſhire they always preſerve it, and add it to the next boiling; and in the Newcaſtle, and other ſea water ſalt works, they ſave it for the making the bitter purging ſalt, called Epſom ſalt.

LEAD (*Cycl.*)—The method of ſeparating *lead* from its common fuſible ore by aſſaying, is this: beat the ore into a coarſe powder, like grains of coarſe ſand; weigh two docimaſtical centners of this powder, and put it into a teſt. Put upon this a tile, or elſe another teſt; the ore muſt be ſpread wide all over the bottom of the teſt. Roaſt it in a fire moderate at firſt, but afterwards encreaſed, ſo far as to make the teſt red hot; leave it thus for a few minutes, then take off the tile, and in a ſhort time the ore will change its blackiſh to a yellowiſh colour. This ſhews that great part of the ſulphur is now diſſipated.

Beat this roaſted ore into a fine powder, and add twice as much of the black flux, and of filings of iron not ruſty, and of ſandiver, of each half a centner; powder all theſe in a mortar to mix them well; then put them into a crucible large enough to contain twice or three times as much; cover them over a quarter of an inch thick with common ſalt, and preſs all down with a finger; put a tile, on a ſmall crucible, and ſtop the joint with a lute that will bear the fire; then dry the veſſel with a moderate heat. Then put the crucible into a wind furnace, and heap coals upon it, covering it ſome inches high. When the crucible is red hot you will hear the ſalt crackle, and this will be ſucceeded by a gentle hiſſing noiſe; ſo long as this laſts keep the ſame degree of fire, but when it is over, increaſe the fire till the whole maſs is melted, which will be done in a quarter of an hour, in a moderate melting fire. Then take out the crucible, put it upon the hearth of the furnace, which muſt be very dry, ſtrike it a few times with a hammer, to get all the *lead* together in the bottom; when it is cold take it out, and you will find by the weight of the regulus how much *lead* the ore contains. *Cramer's* Art of Aſſaying, p. 287.

This metal may be procured from its ore, of whatever kind that be, by a ſtratification with charcoal. The method of doing it in aſſay is this: take for a docimaſtical centner of the ore a hundred half ounces, or three pounds and four half ounces, that by this means each half ounce may ſtand in lieu of the docimaſtical pound; beat this to a coarſe powder, or lumps not larger than a pea. Put it at firſt into a large earthen or iron frying-pan, and heat it firſt by a gentle fire, which muſt be encreaſed gradually, that the greateſt part of the ſulphur may be diſſipated. Now have at hand a melting-furnace, with its bed made of lute and duſt of charcoal. Apply to this, on the outſide, another bed, joined to it by lute, that the matter running out of the inferior hole, when open, may be received into it. Surround this outer bed with burning and freſh coals, and fill the whole furnace with the ſame fuel, that it may be dried.

dried. Then with a pair of bellows excite the fire for a quarter of an hour, then put in the ore at ſeveral times; nor will it be amiſs to add to it ſome ſcales of iron; but the ore muſt be put in ſo as to be above the coals, facing the hole, through which the blaſt of the bellows is made; but let it not touch the wall of the furnace. Fill the furnace at leaſt two thirds with charcoal, and let it be in pieces of a moderate bigneſs; and after every portion of ore is put in, add a larger of charcoal above it. When all the ore is put in, continue to blow till all the fire is conſumed; then pour water upon the foremoſt bed, drop by drop, to cool the *lead* gathered in it, and ſee among the ſcoriæ if there be any *lead* lodged among them; and if there be, ſeparate it, and weigh all together, and you will from this know the value of the ore, and what the ſmelter may obtain from it. *Cramer*'s Art of Aſſaying, p. 298.

This metal, as in common uſe, always contains ſome ſilver, which is not in quantity enough to be worth the charges of ſeparating. The moſt common proportion is not more than two drams to a centner. This, though of little conſequence on any other occaſion, is carefully enquired into by the aſſayers of the ores of metals, particularly in regard to the ores of ſilver, for the ſeparation of which from its ore *lead* is employed; and it occaſions a very great error, when its computation is neglected, in eſtimating the value of an ore from the aſſay. This encreaſing ſilver is therefore always ſubtracted by the more accurate aſſayers; and in order to do this with the leſs trouble, a large quantity of *lead* is granulated at once for this uſe, and mixed by ſifting; then the uſual quantity employed in the aſſaying an ore is to be tried alone in a copel, and the bead of ſilver it affords carefully preſerved. After this, when the bead produced from a ſilver ore is weighed; that bead of ſilver, given by the *lead*, is to be put into the oppoſite ſcale among the weights, and then the weights balancing the bead, will, without more trouble, give the weight of the ſilver from the given quantity of its ore. *Cramer*'s Art of Aſſaying, p. 216.

All the metals may be conſidered in certain circumſtances, as acting in the manner of menſtruums on one another, and of theſe none has ſo much power as *lead*. When *lead* is expoſed to a moderate fire in an earthen veſſel, the ſurface of the melted maſs is ſoon covered with ſcoriæ, in form of a thin ſkin of many colours: when the fire is ſo far increaſed as to make the veſſels quite red hot, this ſkin melts a little, and is thrown to the ſides of the veſſel in form of a furfuraceous matter, of various yellowiſh or whitiſh colours, called litharge. After this the melted *lead* ſmoaks, and ſmall drops, reſembling the firſt ſcoriæ riſe, and ſwim like globules of oil upon the ſurface; theſe are one after another added to the litharge at the ſides; and if the fire be kept in this degree, the whole ſubſtance of the *lead* is finally turned into litharge.

If copper be added to *lead* thus ſmoaking, it cauſes a much briſker ebullition than before, and the copper burſts, and divides, and ſeems to become one homogene maſs with the *lead*; this maſs is brittle, and if made with equal parts of *lead* and copper, reſembles tempered ſteel when broken. Gold and ſilver melted thus with *lead* become brittle alſo, and gold becomes pale by the ſmalleſt admixture of it.

Tin and *lead* melt together with a fire ſtrong enough to melt the *lead* alone; but when this is increaſed, ſo as to make the veſſels red, the tin immediately riſes up above the *lead*, in form of little whitiſh duſty hillocks, ſo that the whole looks as if aſhes had fallen into the veſſel; and the tin thus calcined, when cold, is variegated in colour, with white, yellow, and red. *Lead*, ſo long as it keeps its metallic form, can never be made to join with iron, though urged by ever ſo violent a fire.

The ſemi-metals are all eaſily melted with *lead* by fire, and if added in too large a quantity they take away its malleability.

Lead and all its products turn into glaſs by a ſtrong fire; and this glaſs, or in the place of it litharge melted with ſtones, and other vitrifiable ſubſtances, makes them run into glaſs with a much leſs fire than they otherwiſe would do; and if a very large quantity of this glaſs or litharge be added, they become ſo far attenuated as to run through the ſides of the veſſels. Lime ſtones ſuffer the ſame change by means of this matter; and the incombuſtible ſtones, with proper management, are ſubject to the ſame fate; but unleſs theſe proceſſes are carefully conducted, the litharge or glaſs of *lead* gets away alone through the veſſel. Among the metals litharge facilitates the fuſion of copper and iron by the fire, but it conſumes a conſiderable quantity of them, and runs itſelf with what it poſſeſſes into glaſs; and finally, the whole tin and its calx are with difficulty vitrified by glaſs of *lead*, and they loſe nothing by it: but if gold and ſilver are very frequently melted with litharge, they will at length be found to have loſt a little of their weight; but this ſmall quantity is not deſtroyed, but may, by the proper operations, be again regained out of the litharge.

It has been proved, by the experiments of different chemiſts, that *lead* contains a real running mercury. Kunkel and Becher both ſeparated mercury from it; and Mr. Groſſe, of the Paris academy, has juſtified their experiments by producing the ſame effect; by means not only very different from theirs, but abſolutely oppoſite and contrary. They ſuppoſe that the mercury contained in *lead* is fixed there, either by acids or by ſulphurs, and therefore they uſed alkaline materials to diſengage and ſupport it. On the contrary, Mr. Groſſe uſed only acids, and by means of theſe procured a pure running mercury from this metal. His method was to diſſolve thin plates of *lead* in ſpirit of nitre, weakened with an equal quantity of water. He then obſerved a grey coloured powder precipitate, which when tried on gold or copper, ſhewed itſelf to be mercurial, and even in the powder he ſaw ſmall globules of quickſilver. Mem. de l'Acad. des Scienc. 1733.

As there could be no poſſibility of the acids forming mercury with *lead*, it is very plain that it muſt have been originally there.

In the trying *lead* by the teſt of the burning glaſs, a piece of that metal laid on a charcoal very readily melts, and afterwards wholly diſſipates itſelf in fumes; if it be placed on a piece of ſtone it fumes very much, and becomes at length a thin fluid reſembling oil, or melted reſin; and this liquor, in cooling, fixes itſelf into a ſort of glaſs, which has this peculiar quality, that it is always compoſed of plates, or ſcales, in the manner of talc; it is of a greeniſh or yellowiſh colour, with ſome reddiſh ſpots, and is very ſoft to the touch. If it be kept longer in the focus of the glaſs it ſpreads abroad upon the ſtone, and by degrees penetrates its ſubſtance, and promotes its fuſion. If the common calx of *lead*, red *lead*, or litharge, be uſed inſtead of plain *lead* in this experiment, the event is the ſame. The whole becomes a thin fluid matter, which in cooling affords a flaky glaſs, like talc. Mem. Acad. Paris 1709.

If this talcky glaſs of *lead* be expoſed to the ſame focus, laid on a piece of charcoal, it preſently melts, and re-aſſumes the form of *lead*; and, if then taken away, and ſuffered to cool, is no way different from common *lead*. If the calx of *lead*, or red *lead*, or litharge, be in the ſame manner melted in the focus of the burning glaſs on a piece of charcoal, they in the ſame manner immediately re-aſſume the form of *lead*.

It appears from the whole that there is in *lead* an oily inflammable matter, which is eaſily driven off, either by the ſolar or by a common fire; that the baſis of *lead*, which appears alone, when this is driven off, is a ſcaly or talcky earth; and that this oily matter of *lead* is no way different from the oils of vegetables, ſince the oil of charcoal is able perfectly well to ſupply its place, and to reſtore this talcky earth to the form of *lead* again.

Lead is well known to be in its natural ſtate a metal ſo little ſonorous, that it is even a proverbial expreſſion uſed to any metal that is leſs ſonorous than others, that it is almoſt as mute as *lead*.

Mr. Lemery, however, once ſhewed Mr. de Reaumur, and afterwards to the academy of ſciences at Paris, a lump of *lead*, which had been left in one of his veſſels, after ſome chemical operation, which when ſtruck, gave a very loud and acute ſound.

Mr. Lemery had no occaſion afterwards to repeat the experiment, which had afforded him this remarkable *lead*, and left it to Mr. Reaumur to diſcover the manner of doing it, who luckily hit upon it, without the difficulty he had expected from the reſearch; and, it appears, that we have a thouſand times met with ſonorous *lead*, without knowing it to be ſo. This property is not the effect of any particular operation, but is found in all *lead*, which after fuſion has taken a certain form, and this a form which accident almoſt always gives it on that occaſion. The common way of melting *lead*, in order to the caſting it into moulds, is in iron ladles; it very rarely happens, that all that is melted in the ladle is caſt into the mould, but a ſmall quantity remains, which ſoon forms itſelf into a maſs in the ladle, and this maſs is always ſoronous. Its figure is uſually either that of the ſegment of a ſphere or of a ſpheroide, and it is plane or flat on one ſide, and convex on the other: this is all it ſeems to have of regularity. The ladles are generally very irregular, and a thouſand other accidents occur, which prevent the *lead*'s receiving any determinate form. The maſſes are irregularly convex on the under ſide, and on the upper there is commonly a protuberance, which is ſometimes in the center, but much more frequently on one ſide. The maſſes of this kind, examined by Mr. Reaumur, were in general of about three inches diameter, and of about a third of an inch in thickneſs; theſe were all very ſonorous. There are, doubtleſs, certain proportions of their thickneſs to their diameter, which may make them more or leſs ſonorous, but all are conſiderably ſo: nor is the being caſt in a ladle any eſſential accident to the rendering them ſonorous, ſince pieces of the ſame ſhape caſt in ſand are equally ſo with thoſe from the ladle; and hence it will be eaſy to caſt *lead* into different moulds of earth, with all the varieties of ſpheroidal figures, and thence learn what is the proportion that moſt aſſiſts the ſound. Poſſibly alſo figures of a different kind may prove ſonorous; but Mr. Reaumur tried one convex on each ſide, and found it to have no ſound

at

at all. Larger and thicker disks of *lead* are sometimes found sonorous, but never so much so, as the figures first described. There are also two circumstances, in which the mass from the ladle itself is not sonorous; the one is, when it is covered with a coarse spungy crust, and the other, when its edges are extremely thin for any considerable space. The scum is prevented, by carefully taking it off while the metal is in fusion; and when the edges are as thin as paper, as is frequently the case, there is nothing farther necessary, than to pare them carefully off. The sound is always found to become more and more clear, as they are cut away. This is easily tried, and it is readily determined how far these edges are to be pared down, by placing the mass in equilibrio, on the top of a finger, and striking it with a key, or any other hard body, nay even with another piece of *lead*.

It is very evident then, that it is the being cast in a certain form that renders *lead* sonorous, notwithstanding the natural softness of its parts; and that in such circumstances, in spite of this obstacle, it makes very quick vibrations. It is not the form, however, which does this alone, since pieces of the same figure, made by hammering and cutting, have no more sound than *lead* in any other shape; the fusion therefore, and the casting or cooling from fusion in this shape, is an essential point. The external figure is necessary, but there is also requisite an internal configuration of the parts of the metal, which bare hammering or cutting can never give; nay, so far from giving the reality of sounding to *lead*, hammering is able to take it from it; for all these naturally sonorous casts of *lead* become greatly more dead and dull on being hammered, or struck upon by any hard body.

The author of these observations has, in another place, given an account of the arrangement, which the particles of all metals take in their cooling from a state of fusion; and has observed, that in *lead* the particles arrange themselves into a sort of fibres in this action. It was easy to conclude from hence, that this arrangement of the particles of the *lead* might be that which rendered a cast of such a figure sonorous; this was easily tried, since, if it was so, the disturbing these fibres in their arrangement must impair, or destroy the sounding; but experiment shews such a conclusion to be too hasty, and that the *lead*, though it be shook about in the ladle during the time of its cooling, or injured in the arrangement of its parts by any other means, yet does not lose any thing of its sonorous quality. Though the arrangement of the parts of this metal into fibres be not, however, the occasion of its becoming sonorous, yet it is easy to observe, that these fibres are composed of several arrangements of granules; and these may be still continued, in their natural state, during the cooling, though they are prevented by the motion from running into their natural arrangements. Thus the shaking the matter while cooling may, by preventing the concretions of these fibres, do no injury to the sound, while the blows of a hammer, which must evidently destroy the figure of these granules, may naturally be supposed wholly to take it off; since this quality plainly depends upon the vibrations of the particles of the metal on being struck; and these granules, while in their own natural figure, and disposed in a mass of a determinate shape, may easily be conceived to be capable of a vibration, which they can no longer exert, when they are beaten flat, intermingled with one another, and that the figure of the mass they form is altered.

These speculations are not without their use. It is not to be supposed indeed, that any form, into which *lead* can be cast, can make it capable of answering the purpose of the more sonorous metals in bells, *&c.* but it is very probable, that the casting metals, naturally sonorous, into a shape, or figure, which alone can render a metal, naturally mute, highly sounding, would make their sounds greatly more perfect, more loud and clear. Experiment alone can determine this, and distinguish what is only probable, and what is true. It should seem that the present form of bells, which doubtless had their origin from the observing that pots, and other vessels, made for more immediately necessary uses, gave a great sound; and thence, when bells were to be made, they cast them, as nearly as conveniently might be, of that figure. Had they had equal opportunities of observing the sonorous quality of metals cast into the shape of segments of spheres, it is very probable that all the bells in the world had now been of that form. The figure of bells, used at present, is indeed very convenient for the suspending them in churches; but there is great reason to suppose that a proper metal, cast into the form above-mentioned, would be more fit than in any other for house clocks, where a great sound is required. As the artist is limited to size in this, and in many other things of a like kind, there is great reason to believe this sonorous quality of *lead*, in a certain form, may give very useful hints for the curious artificer to improve the common practices upon. It appears from the whole, that bells may be made of *lead*, which would be sufficiently sonorous, but they would not be lasting. Their figure must necessarily be that of a segment of a sphere, thickest in the middle, and becoming gradually thinner towards the edges; and the true proportion of this decrease of thickness might be easily found by experiments, and when found, would probably prove this metal to be more sonorous than it is yet found to be. It appears also from the whole, that *lead* is a metal naturally sonorous, though that was never supposed before; that there is one peculiar form, in which it is most so; and that we destroy this property by hammering it, which destroys those granules on which its vibrations depend. Mem. Acad. Par. 1726.

LEAD, in medicine. This metal is celebrated by some chemical writers for its great medical virtues; but after all, it seems to be a metal which ought to be given internally with the greatest caution, and to be rather calculated for outward application. Its ore is so poisonous, that the steam, arising from the furnaces where it is worked, infects the grass of all the neighbouring places, and kills the animals which feed on it. Its best preparation is *saccharum saturni*; which, though able to do great good in hæmorrhages, and some other cases, is apt, however, to bring on colics of so violent a kind, that the remedy often proves worse than the disease.

The preparations of *lead*, most in use, are, 1. Minium, or red *lead*. 2. Litharge. 3. Plumbum ustum, burnt *lead*. 4. Ceruss. And 5. Saccharum saturni, sugar of *lead*. See MINIUM, LITHARGE, *&c. Cycl.* and *Suppl.*

Balsam of LEAD, an external medicine, greatly famed for its effects in old and sharp ulcers. It is made by mixing one ounce of sugar of *lead* with two of oil of turpentine, and setting this mixture in a sand-heat till the salt is dissolved. By this means the oil acquires a red colour, and is called *balsam of lead*.

Black LEAD, in mineralogy. See BLACK *lead*.

Burnt LEAD, *plumbum ustum*, is only intended for external use. It has the same virtues ascribed to it, in ointments and plasters, as litharge or minium. Mixed into an unguent with lard alone, it makes a good ointment for the piles.

Calcined LEAD. See GLASS *of lead*.

Cohesion of LEAD. When one mass of *lead* is applied to another, with both surfaces smooth, its cohesion is very extraordinary. Dr. Desaguliers tried it with two balls of *lead*, the one weighing two pounds, and the other one pound; from each of which having cut a small segment of only the diameter of a quarter of an inch, he pressed them together with his hands, giving them a twist, to make the surfaces touch as closely as could be. These supported one another, and the weight of sixteen pounds; but a little more separated them. When examined, after they were separated, the touching surfaces were found not to exceed a tenth of an inch in diameter. But it is to be observed, that on repeating the experiment, the weight required to separate the balls was never twice exactly the same; as indeed it never is in any of the experiments of this kind, and that from very obvious reasons.

Glass of LEAD. See GLASS *of lead*.

Mock LEAD, a name given to a glittering substance found in *lead* mines. See GALENA *inanis* and BLENDE.

Native LEAD. See PLUMBUM *nativum*.

Red LEAD. See MINIUM.

LEAD *ore*. Mr. Boyle observes there is great difference, discernible by the eye, between different *lead ores*. Some is so like steel, that the workers call it *steel ore*. And this being of more difficult fusion than ordinary, they mix it with other *ore*, by them called *firm ore*, when they commit it to the furnace. He says, he likewise took notice of an *ore*, which, for its aptness to vitrify, and serve potters to glaze their vessels, the miners call *pottern ore*, and sell it dearer than other *ore*. *Lead ore* often yields silver, but not always. Mr. Boyle mentions some *lead ore*, he tried, so rich, as to yield seventy *per cent* of *lead*; yet did not, though tried by one of the most expert artists, give one grain of silver. *Boyle*'s Works Abr. Vol. 1. p. 156.

The poisonous quality of this *ore* is such, that the people who live in the countries where it is dug, and near the places where it is washed, can keep neither dog nor cat, nor any kind of fowl, but all die in a short time; and it has been known that a little house, in which *lead ore* had been kept for some time, though afterwards made very clean, and bedded with fern, yet calves being then put into it, all have died in a very short time; and it is a too common melancholy observation, that children are often known to die strangely and suddenly about these places. If any sort of cattle are known to eat of the grass on which the steam, that arises from the melting of *lead*, falls, they are always observed to die a while after. Philosophical Collections, N° 2. p. 6.

Sugar of LEAD. See SACCHARUM *saturni*.

LEAD, among bowlers. See BOWLING.

LEAD, in the manege, is a term used to express the part that begins any motion first. A horse going in a streight line, always *leads*, or cuts the way with his right foot. This is called in French *entamer le chemin*. See ENTAMER.

LEAD *walling*, in the salt works, on the salt springs in some parts of England, is the term used for that quantity of brine that is necessary for twenty four hours boiling in one house.

The whole government of the works is in the hands of certain lords, who proportion the quantity to be worked by theſe *lead wallings* to the ſeveral perſons who work it. At Namptwich, in Cheſhire, two hundred and ſixteen *lead wallings* belong to all the owners of the pit, and no tradeſman, batchelor, or widow, can rent more than eighteen *lead wallings*. All is under the directions of four ſworn officers, choſen every year, and theſe appoint how much ſalt ſhall be made each year, and how many houſes ſhall work at a time. *Ray*'s Engliſh Words, p. 142.

LEAD-*Wort*. See PLUMBAGO.

LEADERS, in the military art. See FILE-*leaders*.

LEÆNA, the *lioneſs*. See LIONESS.

LEAF (*Cycl.*)—The *leaves* of trees and plants afford the curious in microſcopic obſervations many very beautiful objects.

All *leaves* are full of innumerable veſſels, which convey perſpirable juices to the pores for their diſcharge. Whether there be any circulation in them, is not yet determined; but as their juices all become ſtiff and coagulated, when let out, it is probable that they have ſome motion, which keeps them fluid while in the veſſels of the plant.

The pores in the *leaves* of plants are almoſt innumerable. Mr. Lewenhoek found an hundred and ſeventy two thouſand and ninety pores on one ſide of a *leaf* of box. The *leaves* of rue ſeem full of holes, like a honey comb; all the kinds of St. John's wort appear likewiſe ſtuck full of pin holes to the naked eye, but the microſcope diſcovers, that the places where thoſe holes ſeem to be, are really covered with a very thin and white membrane. The backſide of the herb mercury looks as if rough caſt with ſilver, and all the ribs are full of white round tranſparent balls, faſtened by ſlender ſtalks, like ſo many grapes. A ſage *leaf* appears like a rug, or ſhag, full of knots and tufts of ſilver thrums, and embelliſhed with fine round cryſtal beads, or pendants, and theſe faſtened by ſlender foot ſtalks. The back ſide of a roſe *leaf*, and particularly of that kind called *ſweet briar*, appears diapered with ſilver. Every one knows, that the *leaves* of ſtinging nettles are thick ſet with ſharp prickles, which penetrate the ſkin when touched, and occaſion heat, pain, and ſwelling. Theſe ſymptoms were imagined formerly to be owing to the prickles being left in the wounds they make, but the microſcope diſcovers ſomething much more wonderful in this plant, and ſhews that its prickles are formed for acting, in the ſame manner as the ſtings of animals. For every one of them is found to be a rigid body, hollow, and terminating in a very fine point, with an opening near its end. At the bottom of this prickle there lies a pellucid bag, containing a limpid liquor, which, upon the leaſt touching the prickle, is ſquirted out at the little outlet, and if it enters the ſkin, produces the miſchiefs beforementioned by the pungency of its ſalts. And hence it is, that the *leaves* of nettles, when they have been dried a little in the ſun, ſting ſcarce at all. *Baker*'s Microſcope, p. 259.

The *leaves* of plants are of the utmoſt conſequence to the life of the whole. Air evidently paſſes in at the *leaves*, and goes through the whole plant, and out again at the roots. If the *leaves* have no air, the whole plant will die, as is eaſily proved by the air pump; but in theſe experiments, if the *leaves* be left on the outſide of the receiver, and parted by a hole cemented with wax, and have air, the plant will thrive, and grow, though its roots and ſtalk are kept in vacuo in water. The *leaves* of plants perform the neceſſary work of altering the water received in at the roots, into the nature of the juices of the plant; and hence it is, that the life of the plants depend ſo immediately upon their *leaves*. The huſbandman often ſuffers for want of this knowledge. A crop of ſaint foin is a very valuable thing, and its root being perennial, will yield him encreaſe many years; but it is often deſtroyed at firſt, by ſuffering it to be indiſcreetly fed upon by the ſheep, which eating up all the *leaves*, the root remains without the means of a ſupply of air, and the whole periſhes.

Leaves being thus neceſſary to plants, nature has, in all perennial plants, provided a reverſionary ſtock of them. The *leaves* of theſe plants are always formed in autumn, though they are not unfolded till the following ſpring. They then open and encreaſe gradually, in proportion to the motion of the ſap, and the quantity of pabulum it then receives to be circulated. Theſe *leaves* may alſo, though not wholly appearing out of the bud, be ſufficient for the extremely ſmall motion of life, which the ſap of perennial plants, that drop their leaves, has in winter. *Tull's* Horſe-hoeing Huſbandry, p. 10.

Dr. Grew obſerved the formation of theſe autumnal *leaves*; but beſide theſe, there is another ſet of them formed in the ſpring, and expanding about Midſummer. Theſe are of infinite ſervice to many particular trees, particularly to the mulberry, as they ſave its life when the ſpring *leaves* have been all eaten up by the ſilk worms. People who ſtrip that tree for the food of theſe animals find, however, that ſome caution is neceſſary, in order to make the new ſupply of ſpring *leaves* ſave the life of the tree. For if they pull off the old *leaves* downward, ſtripping away ſtalk and all, the tree often dies, but if they pull them upwards, the tree lives without hurt; becauſe the ſtalk, in this caſe, is left, and often a piece of the bottom of the *leaf* upon it. Theſe ſerve, in ſome degree, in the place of the whole *leaves*, till the new ones are formed.

It is certain that no plant, to which nature has allotted *leaves*, can live without them, but will certainly die if they are pulled off as ſoon as they appear. The common graſs of our meadows and paſtures might ſeem an exception to this general rule; but it is to be conſidered, that though the ſheep eat this down very cloſe, and take off its *leaves* as ſoon as they grow, yet when it is thus devoured by cattle, it is only in the *leaf*, very little of it growing up into ſtalk at that time, and therefore leſs ſap is to be purified, and conſequently leſs of the operation allotted to the *leaves* required; and there is a conſtant ſucceſſion of new *leaves* growing up in the place of the old ones, and many of theſe being too ſhort to be bitten off, ſerve in the place of thoſe which are eaten.

The figure of the *leaves* of plants may be repreſented by holding one in the ſmoke of reſin, camphor, a candle, *&c.* whereby the *leaf* acquires a blackneſs, which when preſſed on white paper, gives the exact ſize, ſhape, and particular ramifactions of the fibres. This method may be of uſe to botaniſts, when they have no ſkill in drawing. *Boyle*'s Works Abr. Vol. 1. p. 132.

The *leaves* of plants have ſeveral diſtinctions among botaniſts, according to their ſhape and diviſion, each of which has its peculiar name. See Tab. of Leaves.

Aculeated LEAF, is that whoſe ſurface is covered with cartilaginous points, ſharp, rigid, and ſtrong enough to wound any tender part of the fleſh; and which adhere but ſlightly to the *leaf*, and may be eaſily ſeparated from it.

Acuminated LEAF, one terminated by a pointed and ſharp extremity, like an awl.

Acute LEAF, that which terminates in a ſharp point.

Alated LEAVES, are thoſe divided into, or compoſed of ſeveral compleat pinnated *leaves*, whether equal or unequal uniform or difform, as in the orobus, and other the like plants.

Alternate LEAVES, thoſe which do not ſtand oppoſite, but one over another, all the way up the ſtalk.

Amplexicaule LEAF, expreſſes a *leaf*, the baſe of which extends itſelf in ſuch a manner, that it environs, and ſurrounds the ſtalk every way. In this caſe, the *leaf* is generally of a ſagittated, or heart-faſhioned ſhape, and is ſeſſile.

Articulated LEAVES, thoſe which grow one on the top of another.

Bifid LEAF, one divided into two parts at the top. When a *leaf* is thus divided into three parts, it is ſaid to be *trifid*; when into four, *quadrifid*, and ſo on. *Multifid* expreſſes a *leaf* divided into a great number of ſegments.

Bigeminate LEAF, one formed of a double conjugation of leſſer *leaves*.

Binated LEAF, *binatum folium*, a kind of compound *leaf*, formed only of two folioles on one petiole.

Bipartite LEAF. See *Quinque partite* LEAF, infra.

Canaliculated LEAF, one which is hollowed all the way of its length with a channel.

Carnous LEAF, one which is full of pulp, or of a fleſhy ſubſtance, contained between the membranes which form the upper and under ſurface.

Cartilaginous LEAF, that whoſe edge is ſurrounded with a kind of cartilage, or border, thicker than the reſt, but of the ſubſtance of the *leaf*.

Cauline LEAF, that which grows not immediately from the root, but on the ſtalk of a plant.

Ciliated LEAF, one ſurrounded all the way with parallel hairs, or filaments, ſo as to give ſome reſemblance of the hairineſs of the eye-lids.

Compound LEAF, is that which is divided to the middle rib into ſeveral ſegments, and ſeems made up of ſeveral ſmaller *leaves*, as in liquorice, *&c.*

Compound leaf expreſſes, in general, a *leaf* that is formed of ſeveral other leſſer ones. In this large ſenſe, however, it is diviſible into ſeveral kinds. 1. The *compound* ones, properly and diſtinctly ſo called. 2. The *decompound*. And 3. The *ſupradecompound*. Of each of which in its place.

In deſcribing theſe kinds of *leaves*, the whole *leaf*, which is the reſult of the combination, is called *folium*, and the ſmall *leaves*, which together compoſe it, are called *foliola*.

Compound leaf, properly ſo called, is only formed of one ſeries of foliola, or of one compoſition.

Compreſſed LEAF, one with the mark of an impreſſion on both ſides.

Concave LEAF, one whoſe middle is ſunk or hollowed.

Conferta FOLIA, *leaves* placed in cluſters, or ſo cloſe to one another, that it is not eaſy to diſcover their exact ſituation.

Connata FOLIA, leaves cohering together, or whoſe baſes unite, ſo as to form but one body.

Convex LEAF, one whoſe middle riſes into a protuberant form.

Cordated

Cordated LEAF, expreſſes one of an ovated ſhape, hollowed a little on each ſide at the baſe.

Obverſely cordated LEAF, one of the ſame figure with the former, but affixed to its petiole not by the cordated part which is the baſe in the former, but by the oppoſite end.

Cordato-ſagittated LEAF, a *ſagittated leaf*, the ſides of which are convex.

Crenated LEAF, *crenatum folium*, that whoſe edges are furniſhed with indentings which are contiguous to one another, and are neither turned toward the point nor toward the baſe.

Acute crenated LEAF, a *crenated leaf*, in which the indentings are ſharp at the ends.

Obtuſe crenated, that whoſe indentings terminate obtuſely.

Criſp LEAF, *criſpum folium*, that which is undulated or folded over and over at the edge, which muſt alſo be in ſome manner divided, not entire, *viz.* either dentated, ſerrated, or lacerated.

Cuneiform LEAF, one of the ſhape of a wedge; or, the length of which greatly exceeds its breadth, and the lower part of which grows ſmaller all the way.

Decompoſite LEAF expreſſes a *leaf*, the common petiole of which divides itſelf twice before it is furniſhed with *leaves*.

Decurrent LEAF, one which adheres immediately to the ſtalk or branch of a plant, without any pedicle; and, which has its lower part extended and running along the branch.

Deltoide LEAF, one with four angles, whereof thoſe of the ſummit are farther diſtant from the center than thoſe of the ſides.

Dentated LEAF, one whoſe edge is beſet with horizontal points of the ſame matter with the *leaf* itſelf, and diſtinct and ſeparate one from another.

Depreſſed LEAF, one which has the mark of an impreſſion on one ſide.

Digitated LEAF, expreſſes a compound one, formed of a number of ſimple foliola, placed regularly on a common petiole: in a ſtrict ſenſe, however, it is uſed only to expreſs ſuch a *leaf* as is compoſed of more than four foliola.

Duplicato-pinnatum, or *pinnato-pinnatum*, expreſſes a *leaf* compoſed of ſeveral others, each of which is itſelf compoſed of ſeveral ſmaller leaves or foliola.

Duplicato-ternated LEAF, one conſiſting of *leaves*, which are themſelves compoſed of three leaves each.

Emarginated LEAF, that which has a little indenting on the ſummit. *Obtuſely emarginated*, is the term when the two points which form the indenting are obtuſe: when they are acute, it is ſaid to be *acutely emarginated*.

Enſiform LEAF, a compreſſed *leaf* of the ſhape of a ſword, which is thin, and edged as it were on the ſides, and which has a high rib running down its middle.

Erect LEAF, one ſo ſituated as to make an acute angle with the ſtalk.

Eroſe LEAF, *eroſum folium*, a *leaf* which has ſeveral ſinuſes in its diſk, and alſo in the edge or border.

Faſciculate LEAVES, expreſſes *leaves*, many of which ariſe together from the ſame point.

Floral LEAF, expreſſes one found near the flower, and which never appears but with the flower.

Frondes expreſſes *leaves* conſiſting of ſeveral other *leaves*, and forming the whole plant; as is the caſe in the fern-kind, in which the fructification being on the back of the *leaves*, the ſingle *leaf* makes the whole plant.

Haſtated LEAF, one in form like a ſpear's point: this expreſſes a triangular *leaf*, the ſides and the baſe of which are both hollowed, ſo as in ſome meaſure to give the reſemblance of a *leaf* compoſed of three parts.

Hirſutum folium. See *Piloſe* LEAF, infra.

Hiſpid LEAF, one whoſe ſurface is covered with more thick and rigid hairs than the *piloſe leaf*. See *Piloſe* LEAF, infra.

Horizontal LEAF. See *Patent* LEAF, infra.

Jagged LEAF. See *Laciniated* LEAF, infra.

Imbricated LEAF, *imbricata folia*, *leaves* placed over one another in the manner of the tiles of a houſe, or like the ſcales of fiſhes.

Inflex LEAF, *inflexum folium*, that which in growing from its baſe, turns its point again toward the plant.

Intire LEAF, *integrum* or *indiviſum folium*, a *leaf* which is not cut in with any ſinus in its diſk.

The term *integerrimum* applied to a *leaf*, denotes that it is free from all diviſions or ſinuations of any kind in the border any more than in the diſks.

Lacerated LEAF, *lacerum folium*, a *leaf*, the edge of which is compoſed of ſegments of different ſhape and figure.

Laciniated LEAVES, are thoſe which are very deeply cut in, though not quite to the middle rib, yet are divided into ſeveral jagged portions, theſe are called alſo jagged *leaves*; and of this kind are thoſe of the horned poppy, ragwort, and the like.

Lanceolated LEAF, that which is ſhaped like a ſpear's point, or which is oblong, and growing ſmaller and narrower from the middle to the extremity where it terminates in a point.

Lanigerous LEAF. See *Piloſe* LEAF, infra.

Linear LEAF, one the two ſides of which run almoſt parallel to one another: the *linear leaves* are uſually narrow, and ſomewhat broader in the middle than at either end.

Linguiform LEAF, a linear *leaf* in ſhape of a tongue, which is obtuſe, fleſhy, depreſſed, convex on the under ſide, and uſually cartilaginous at the edge.

Lunulated LEAF, one in form of a creſcent: it is a ſuborbicular *leaf* hollowed at the baſe, with two curvilinear angles in form of circles at its hinder part or baſe.

Lyrated LEAF, *folium lyratum*, one in form of a lyre; or, it is a compound *leaf*, formed of a ſimple one, which divides itſelf in its lower part in ſuch a manner, that the inciſions below make ſegments which ſtand out from the body of the *leaf*, and are detached from the larger ſegment, which forms the upper part.

Membranaceous LEAF, one merely compoſed of membranes with no pulp between.

Naked LEAF, *nudum folium*, expreſſes a *leaf* whoſe ſurface is ſmooth and equal, without any particular marks.

Natant LEAF, one which floats upon the ſurface of the water.

Nervoſe LEAF, one whoſe veſſels are ſimple, and extend themſelves parallelly from the baſe toward the ſummit, without any ramifications.

Nitidum folium, expreſſes a *leaf* of a ſmooth and gloſſy ſurface, looking as if poliſhed by art.

Oblong LEAF, one the length of which is many times equal to its breadth, and the extremities of which are both too narrow to form ſegments of circles.

Obtuſe LEAF, one terminated by the ſegment of a circle. When the ſummit of a *leaf* is obtuſe, but terminated by a fine ſharp point, affixed as it were upon it, it is ſaid to be *obtuſum cum acumine*.

Obverſely ovated LEAF, *obverſè ovatum folium*, a *leaf* of the ſame figure with the ovated *leaf*, only fixed to the petiole by its ſmaller end.

Orbicular LEAF, one of a round figure, the breadth of which is equal to its length, and every part of its edges equally diſtant from the center.

Oval LEAF, one approaching to round, but too long for its breadth; its diameter, at both extremities, is equal to the two ends, forming the ſame ſegments of circles: this might be more diſtinctly called elliptic.

Ovated LEAF, *folium ovatum*, expreſſes a *leaf*, the ſhape of which is like that of an egg; or, which is longer than broad, and the baſe or lower part of which forms the ſegment of a circle, though the other extremity is too ſmall to be in proportion to it.

Palmated LEAF, one in form of an open hand: this expreſſes a *leaf*, divided into ſeveral ſegments, from the top down to the middle, or to the baſe.

Panduriform LEAF, one of the ſhape of a violin: this is an oblong *leaf*, larger at both ends than in the middle, where it is deeply cut, in a rounded manner.

Papilloſe LEAF, one whoſe ſurface is covered with little roundiſh protuberances, or veſicles.

Patent LEAF, one which ſtands almoſt ſtrait out from the ſtalk, or nearly at right angles with it. When it forms perfectly right angles, it is called *horizontal*.

Peltated LEAF, expreſſes a *leaf*, the petiole of which is affixed to the diſk, and not to the baſe, or to the edge of the *leaf*.

Pentagonal LEAF. See *trigonal* LEAF, infra.

Perfoliate LEAF, that whoſe diſk is pierced by the ſtalk, the branch, or the peduncle; and does not any where touch or adhere to its edges.

Petiolate LEAF, one affixed to a plant by means of a peculiar pedicle, which in the caſe of a *leaf* is called *petiole*, though in caſe of fruit a *peduncle*. See PETIOLE, *&c.*

Piloſe LEAF, one whoſe ſurface is furniſhed with hairs ſo large and long, as to be diſtinguiſhable by the eye ſeparately. The ſame idea is alſo expreſſed by the term *hirſutum*, *villoſum*, and *lanigerum*.

Pinnated, or *pennated* LEAF, one formed in manner of a wing, and compoſed of two ranges or ſeries of folioles, annexed to the two ſides of one common oblong petiole.

Of the *pinnated leaves* there are ſeveral kinds: 1. The *pinnated* with an odd one: this expreſſes the *pinnated leaf*, when beſides the two ſeries juſt mentioned, there is an odd *leaf* at the extremity of the petiole. 2. The *pinnated abrupt leaf*, in which there is neither an odd *leaf*, nor a tendril at the end of the petiole. 3. The *oppoſitely pinnated*, which is when the folioles ſtand oppoſite to one another on the common petiole. 4. The *alternately pinnated*, when the folioles ſtand not oppoſitely but alternately. 5. The *interruptedly pinnated*, in which the folioles are irregular and unequal in ſize or ſituation. 6. The *cirro-pinnated*, the extremity of whoſe petiole has one or more tendrils, inſtead of an odd *leaf*. 7. The *decurrently pinnated*, in which the folioles extend beyond their proper baſe in going down the petiole, and as it were make it alated. 8. The *membranaceous pinnated*, of the ſame form with the laſt, but with the petioles themſelves membranaceous and articulated. 9. The *conjugated pinnated leaf*, when the whole compound *leaf* conſiſts of only two folioles on the petiole: this kind of *pinnated*

leaf may be either abrupt, cirrated, membranaceous in the petiole, or ſtipulated.

Pinnatifid LEAF expreſſes one divided into ſeveral parts in form of alæ; or which has three, four, or more lateral ſinus's ſeparated by long horizontal ſegments.

Plicated LEAF, one from the baſe or petiole of which there run at ſeveral diſtances veſſels or fibres, which extend themſelves to the extreme ſides, and ſome of which raiſe and others depreſs the diſk of the *leaf* in an alternate order, making acute angles.

Præmorſe LEAF, *præmorſum folium*, a *leaf* which is truncated and terminated by an acute ſinus at the ſummit.

Quadrifid LEAF. See *bifid* LEAF, ſupra.

Quaternate LEAVES. See *ternate* LEAVES, infra.

Quina FOLIA. See TERNATE.

Quinquangular LEAF, one with ſtrait ſides and five angles.

Quinquefoliate LEAF, is a compound *leaf* of the ſame form with the *trifoliate*, but made up of five ſegments; ſuch are the *leaves* of cinquefoil, &c.

Quinquepartite LEAF, one which is ſeparated into five parts down to the very baſe, ſo as to ſeem made up of five ſeparate *leaves* till cloſely examined. In the ſame manner a *leaf* is ſaid to be *bipartite*, &c. when it is divided into two, three, &c. parts.

Radical LEAF, that which grows immediately from the root of a plant not from the ſtalk.

Radicant LEAF, one which puſhes out roots from its ſummit, as ſome of the ferns do.

Radicated LEAF, *folium radicatum*, one which puſhes out roots from its diſk or lower ſurface.

Ramoſe LEAVES, thoſe which are ſtill more divided than the winged or alated *leaves*, and compoſed of one ſeries farther in their diviſion. Of this ſort are the *leaves* of female fern, and the like. Or,

Ramoſe leaf is one which grows not on its main ſtalk, but on its branches.

Ramuloſe LEAF, a kind of compound *leaf*, in which there are ſeveral foliola ſuſtained on a branched petiole.

Reclinate or *reflex* LEAF, one which has its ſummit lower than its baſe.

Reniform LEAF, one of the ſhape of a kidney; or, it is a *leaf* of a ſuborbicular figure, hollowed a little at the baſe, but without any angle.

Repanded LEAF, *folium repandum*, a *leaf*, the border of which is marked all round with ſhort lobes, each making a ſegment of a circle, with obtuſe ſinus's.

Retuſe LEAF, *retuſum folium*, a *leaf* whoſe extremity is terminated by an obtuſe line.

Revolute LEAF, *folium revolutum*, a *leaf*, the upper part of which rolls itſelf downward.

Round LEAF, *teres folium*, one which is not flatted as moſt are, but is of a cylindric figure, except the point.

Rugoſe LEAF, that whoſe veins are ſunk deep, and between which the membranous and fleſhy part of the *leaf* riſes in irregular forms, ſo as to give upon the whole a wrinkled ſurface.

Sagittated LEAF, one formed like the iron head of an arrow. This is the triangular *leaf* hollowed at its baſe for the inſertion of the petiole.

Scabrous LEAF, that which has ſeveral irregular prominences on its ſurface.

Semamplexicaule LEAF, one reſembling the *amplexicaule*, but with its lobes at the baſe too ſmall to entirely ſurround the ſtalk.

Seminal LEAF, that which appears firſt from the ſeed of a plant, and is uſually different from the reſt.

Serrated LEAF, *folium ſerratum*, that whoſe edge or border is notched like a ſaw, or furniſhed with points which make acute angles, and placed one bending toward another, and all toward the top.

Retrorſum ſerratum folium expreſſes a *leaf* whoſe edge is furniſhed with the ſame ſort of indentings, but in which they are turned backwards, or all look toward the baſe of the *leaf*.

Obſolete ſerratum folium expreſſes a *leaf* indented in the ſame manner, but the indentings obtuſe and weak.

Folium duplicato-ſerratum denotes a *leaf ſerrated* as the firſt, but with the ſerratures large, and their edges *ſerrated* again with indentings of the ſame kind.

Seſſile LEAF, one which riſes immediately from the ſtalk without any pedicle.

Simple LEAF, is that which is whole, or not divided to the middle rib, or ſeeming made up of different ſmaller *leaves*; as in ſage, mint, &c.

Simple leaf is otherwiſe defined, that of which the petiole carries only one. See PETIOLE.

Sinuated LEAF, one which has a number of ſinus's on its ſides, but theſe ſeparated by lobes not very long, nor themſelves indented or notched at the edges.

Sinuato-dentated leaf expreſſes a *leaf* like the former, but with the lateral lobes of a linear figure.

Retrorſum ſinuatum folium, a *leaf* with ſinus's at the ſides, and with the lobes which divide them, pointed and turned toward the baſe like the beards of an arrow.

Sparſe LEAVES, thoſe which are placed irregularly over the ſeveral parts of the plant.

Spinoſe LEAF, that whoſe diſk or edge is armed with cartilaginous points ſo firmly affixed, that they cannot be ſeparated without injuring the *leaf* itſelf.

Stellate LEAVES, thoſe which grow more than ſix at a joint, and are arranged like the rays of a ſtar,

Striated LEAF, one with a number of longitudinal furrows on its ſurface.

Subrotund LEAF, that approaching to the figure of the orbicular *leaf*, but departing from it, either in being too long, or too broad, or prominent, in ſome one or more parts. Vid. ſupr.

Subular LEAF, that which grows at the ramifications, or under that part of the ſtalk, from whence there grows one on ſeveral branches.

Subulated LEAF, one of the ſhape of an awl. This expreſſes a *leaf* oblong and narrow, broadeſt at the baſe, and thence gradually decreaſing, till it terminate in a point.

Sulcated LEAF, one which has a great number of ridges all round it, with obtuſe ſinuſes.

Supradecompoſite LEAF, one which has the common petiole divided more than twice, before it is charged with *leaves* or foliola.

Ternated LEAF, a compound one, conſiſting only of three *leaves* on a common petiole.

Ternate alſo expreſſes *leaves* which grow three at a joint, ſurrounding the ſtalk. When there are four or five, they are called *quaterna* and *quina*, and ſo on.

Tetragonal LEAF. See *Trigonal* LEAF, infra.

Tomentoſe LEAF, one whoſe ſurface is covered with hairs ſo ſhort and fine, that the eye does not diſtinguiſh them ſingly, though the *leaf* in general is evidently downy, both to the ſight and the touch.

Triangular LEAF, one compoſed of three rectilinear ſides, and three angles, the two inferior ones of which are on a level with the baſe.

Trifid LEAF. See *Bifid* LEAF, ſupra.

Trifoliate LEAF, is a compound *leaf* made up of ſegments placed in the ſame order as in the digitated *leaf*, but theſe ſegments are uſually ſhort, and are always three in number. Of this ſort are the *leaves* of clover, graſs, &c.

Trigonal LEAF, one much like the triquetrous, only that in this the ſeveral faces are each hollowed in form of channels, and the ribs are ſharp and membranaceous.

A *leaf* that has, inſtead of three ribs or edges, four or five, is in the ſame manner called *tetragonal*, *pentagonal*, &c.

Trilobous LEAF, one divided into three lobes. This is a *leaf* divided juſt down to the middle into three parts, which ſtand apart from one another, and are ſurroundedat the edges.

Tripartite LEAF. See *Quinquepartite* LEAF, ſupra.

Triplicato-ternatum, or *ternato-ternatum*, a *leaf*, the petiole of which divides three times into three branches, before any *leaves* or foliola are placed on it.

Triquetrous LEAF, expreſſes a *leaf* which has three faces or ſides, all flat. This is uſually alſo ſubulated, or grows ſmaller gradually from the baſe to the point.

Truncated LEAF, that whoſe ſummit or point ſeems to have been cut off, or is terminated by a ſtrait line in a tranſverſe direction.

Tubuloſe LEAF, one which is hollow within, and makes a kind of tube.

Vaginans expreſſes a *leaf*, the baſe of which is formed like a cylinder, and ſurrounds the ſtalk, as is the caſe in many of the graſſes.

Venoſe LEAF, that on the ſurface of which there are a vaſt number of branched veſſels, which frequently unite in an odd manner one with another.

Villoſe LEAF. See *Piloſe* LEAF, ſupra.

Undulated LEAF, that whoſe exterior part of the diſk is of more extent than a circle of the ſame diameter, ſo that the edges are neceſſitated to riſe and fall in a regular manner.

Indian LEAF, in botany. See TAMALAPATRI.

LEAVES, in watchmaking, is uſed for the notches of its pinion. See PINION, *Cycl.*

LEAK, at ſea, is a hole in the ſhip, through which the water comes in. A ſhip is ſaid to *ſpring a leak* when ſhe begins to *leak*, or let in the water.

The manner of ſtopping a *leak* is, to put into it a plug wrapt in oakum, and well tarred, or in a tarpawling clout, which keeps the water out; or nailing a piece of ſheet lead on the place.

Seamen ſometimes ſtop a *leak* by thruſting a piece of ſalt beef into it. The ſea water, ſays Mr. Boyle [a], being freſher than the brine imbibed by the beef, penetrates into its body, and cauſes it to ſwell ſo, as to bear ſtrongly againſt the edges of the broken plank, and thereby ſtops the influx of the water.—[a] Works Abr. Vol. 1. p. 147.

A ready way to find a *leak* in a ſhip, is to apply the narrow end of a ſpeaking trumpet to the ear, and the other to the ſide of the ſhip where the *leak* is ſuppoſed to be; then the noiſe of the water iſſuing in at the *leak* will be heard diſtinctly, whereby it may be diſcovered. See Philoſ. Tranſ. N° 201.

LEAO, in natural hiſtory, a mineral ſubſtance approaching to the nature of the *lapis lazuli*, found in the Eaſt-Indies, and

and of great uſe in the Chineſe porcelain manufacture, being the fineſt blue they are poſſeſſed of. This ſtone is found in the ſtrata of pit coal, or in thoſe of a yellowiſh or reddiſh earth in the neighbourhood of the veins of coal. There are often found pieces of it lying on the ſurface of the ground, and theſe are a ſure indication, that more will be found on digging. It is generally found in oblong pieces of the ſize of a finger, not round, but flat. Some of this is very fine, and ſome coarſe, and of a bad colour. The latter is very common, but the fine ſort is ſcarce, and greatly valued. It is not eaſy to diſtinguiſh them at ſight, but they are found by experiment, and the trying one piece is generally ſufficient for judging of the whole mine; for all that is found in the ſame place, is uſually of the ſame ſort.

Their manner of preparing it for uſe is this: They firſt waſh it very clean, to ſeparate it from the earth, or any other foulneſs it may have; they then lay it at the bottom of their baking furnaces; and when it has been thus calcined for three or four hours, it is taken out and powdered very fine in large mortars of porcelain with peſtles of ſtone faced with iron. When the powder is perfectly fine, they pour in ſome boiling water, and grind that with the reſt, and when it is thoroughly incorporated, they add more, and finally pour it off, after ſome time ſettling. The remainder at the bottom of the mortar, which is the coarſer part, they grind again with more water, and ſo on, till they have made the whole fine, excepting a little dirt or grit. When this is done, all the liquors are mixed together, and well ſtirred. They are ſuffered to ſtand two or three minutes after this, and then poured off, with the powder remaining in them. This is ſuffered to ſubſide gradually, and is the fine blue they uſe in their beſt works, our common ſmalt ſerving for the blue of all the common low priced China ware. Obſervat. ſur les Coutumes de l'Aſie, p. 326.

It is plain that this ſtone is a ſort of *lapis lazuli*, and the ultramarine blue, uſed by our painters, is made in a manner not wholly unlike this. It is much to be wiſhed that England were well ſearched for ſuch a ſtone as this *lead*, ſince our mines in Derbyſhire afford many blue ſubſtances, which have not been ſufficiently conſidered; and if it ſhould be found that either this, or any other European nation, produces it, it will be a fine diſcovery, as we ſhould not only have the means of giving a fine colour to our own manufactures of this kind, but we might trade with it in China to a vaſt advantage. If England does not poſſeſs it, it is very probable that Germany does, the mines there affording an almoſt inexhauſtible ſtore of coloured ſtones; and this being certainly no other than the ſtony matter of ſome cryſtalline nodule, accidentally tinged with ſome particles of copper. See LAZULI *lapis*.

LEAP, (*Cycl.*) in muſic, is when the ſong does not proceed by conjoint degrees. For inſtance, when there is an interval of a third, fourth, fifth, &c. between two notes, the Italians call it a *leap*, *ſalto*.

It is to be obſerved that there are two kinds of *leaps*, regular and irregular, called by the Italians, *ſalti regolari & irregolari*.

The *regular leaps* are thoſe of a third major, or minor, whether natural or accidental, fourth, fifth, ſixth minor, and octave, and theſe either aſcending or deſcending.

Irregular leaps are the tritone, ſixth major, ſeventh major, the ninth, tenth, and in general all beyond the compaſs of an octave; at leaſt in vocal muſic.

Beſides theſe there are others which may be uſed, but with diſcretion; ſuch as the diminiſhed fourth, the falſe fifth, and flat ſeventh. The difference between the regular and irregular *leaps* is, that the former are performed by the voice, without any great difficulty or effort; whereas the latter require more attention and pains to execute.

LEAP in fiſhing is uſed for a net, engine, or weel, made of twigs, to catch fiſh in. Stat. 4 and 5 Will. and Mary, cap. 23. *Blount*.

LEAP, in the manege, an air of a ſtep and a *leap*. See STEP, *Cycl.*

LEAPING-*horſe*, in the manege, is one that works in the high manege, or one that makes his *leaps* with order and obedience between two pillars upon a ſtrait line, in volts, caprioles, balotades, or croupades. Uſe excludes a gallop *a terra a terra*, and corvets, from the number of *leaps*; becauſe the horſe does not riſe ſo very high in theſe. Each *leap* of the horſe ought not to gain, or make above a foot and a half of ground forward.

LEAT, is uſed for a trench to convey water to, or from a mill. It is mentioned in the ſtatute 7 Jac. I. c. 19.

LEATHER (*Cycl.*)—Mr. Boyle ſpeaks of a method of preparing *leather* without any bark at all, and better than in the uſual way; but we do not find the proceſs of this in his works. *Shaw's* Abridg. Vol. I. p. 134.

LEATHER-*mouthed*, in ichthyography, a term uſed as the Engliſh for *malacoſtomous*, the diſtinctive epithet of ſuch fiſhes as have thick lips and no teeth in their jaws; as the carp, tench, bream, roach, &c. *Willughby*, Hiſt. Piſc. p. 129. See MALACOSTOMOUS.

LEBERIS, in ſome medical writers, a word uſed to expreſs the exuviæ of ſerpents, or the ſkins which ſnakes caſt off every year; theſe are by ſome greatly recommended for taking off freckles and ſun-burns from the face.

LEBNI, in the materia medica of the antients, a name given by ſome to ſtorax. Aviſenna has treated of this drug in three ſeparate chapters; in one under the title of *aſtarak*, in another under the title of *lebni*, and in the other under the title of *miha*, or *almiha*. This has led ſome to imagine theſe three words the names of three different drugs; but the author ſets this right, by explaining himſelf in the beginning of one of the chapters, that of *lebni*, in this manner: What is *lebni? Lebni* is *miha*. It ſeems, upon the whole, that *miha* was the general name of this drug, and that *aſtarak* and *lebni* were the names of particular kinds of it. The Greeks were very nice in diſtinguiſhing the ſeveral kinds of ſtorax, and the Arabians ſeem to have followed their example; nay, they have even borrowed ſome of the terms, by which they called the particular ſorts, as the *calamita*, and the reſt. The calamite ſtorax of the Arabians was not, however, the ſame with that of the Greeks, but only the refuſe of the preſſings of the liquid ſtorax; the *lebni* ſeems to have been the ſame with the *calamite* of the Greeks, and the aſtarak the ſame with their cymatian ſtorax.

The ſoft, or liquid ſtorax of the Greeks, ſeems to have been very common among theſe people, and they have called it *mel lebni*, the honey of ſtorax. This was a common word with them to expreſs any thing ſoft. See MEL.

LECANOMANTIA, Λεκανομαντεια, in antiquity, a kind of divination performed in a baſon with wedges of gold or ſilver. See HYDROMANTIA.

LECCIA, in zoology, a name given by ſeveral to a large fiſh caught in the Mediterranean, and known among the generality of writers by the name of *amia*; though by Aldrovand, and ſome others, called *glaucus*. *Willughby*, Hiſt. Piſc. p. 296. See AMIA and LECHIA.

LECH, in metallurgy, a term uſed by the miners to expreſs the gold ore which has been powdered, and waſhed, and afterwards run with the aſſiſtance of lime ſtone. The *lech* is afterwards burnt in a fire of charcoal, in order to render it fit for the ſeparation of the metal, by means of lead, which abſorbing and ſcorifying the extraneous matter, renders the gold pure.

LECHIA, in ichthyology, a name given by Paulus Jovius, and others, to the fiſh called by others *amia* and *glaucus*, and by the antient Greeks *amia* and *trocTus*. It is properly a ſpecies of the ſcomber, and is diſtinguiſhed by Artedi by the name of the *ſcomber* with two fins on the back, and with the laſt bone, or ray of the hinder fin very long. The Italians call it *leccia*, whence Jovius's name. *Paul. Jovius*, c. 7. p. 57.

LECITHOS, a word uſed by the old medical writers, and plainly ſignifying a ſort of pulſe, but authors have variouſly underſtood it; ſome applying it to the decorticated ſeed of the lentil; others to the meal of the ſame pulſe; and others to the fruit of a peculiar ſpecies of *aracus*, or wild vetch. The ſame word is alſo uſed by Hippocrates, ſometimes, to denote the yolk of an egg. This is one of the numerous inſtances, in which confuſion is brought into the world by theſe homonymies; for when Hippocrates applies the epithet *lecithodes* to the ſediment of the urine in ſome diſeaſed ſtates, it is not eaſy to determine from it, whether he means to compare it to the meal of lentils, or to the yolk of an egg. The ſame alſo is the caſe in regard to his applying it to the pus, or matter of certain ulcers.

LECTICA, among the Romans, a litter, or vehicle, in which people were carried. The *ſella* differed from the *lectica*, as being higher, and becauſe people always ſat in it; on which account the *ſella*, from the time it was firſt brought into uſe, was eſteemed the more honourable carriage of the two.

The *lectica* was alſo uſed as a *bier* for carrying out the dead, who were dreſſed in habits ſuitable to their quality and ſex. *Pitiſc.* in voc. See BURYING.

LECTICARII, among the Romans, ſervants who carried the *lectica*. See LECTICA.

LECTORES, among the Romans, ſervants in great men's houſes, who were employed in reading while their maſters were at ſupper. They were called by the Greeks *anagnoſtæ*. *Pitiſc.* in voc. See ANAGNOSTÆ.

LECTUS *igneus*, among the Romans, a kind of torture firſt invented by Decius. The bottom of it was ſet with ſerrated teeth, or ſpikes, and ſtrowed with ſalt; while melted tallow was poured from above on the unhappy tortured perſon. *Hofm.* in voc.

LEDGES, in a ſhip, ſmall pieces of timber lying athwart ſhips, from the waſte-trees to the roof-trees, which ſerve to bear up the nettings, or the gratings over the half deck.

LEECH, *hirudo*, in zoology, an oblong animal, deſtitute of feet,

feet, and of a black colour, with various ſpots and lines, and a mouth with three diſtinct openings.

The creature is common in ſtanding waters, and is in frequent uſe in the practice of phyſic, often ſupplying the uſe of the lancet in bleedings. The beſt to be choſen for this uſe are the ſmall ones, and of thoſe, ſuch as have the moſt diſtinct lines on their backs. *Dale*, Pharmac. p. 355.

The hiſtory of this animal, and the ſtructure of its parts, by means of which it becomes uſeful to us, in ſupplying very happily the place of the lancet, with every other particular circumſtance of its life and food, have been very accurately given by Mr. Morand, in the Memoirs of the Academy of Sciences in the year 1739.

The more vulgarly known particulars of this animal are briefly mentioned by this gentleman; ſuch are the cutaneous annules of its outer coat, the beautiful arrangement of the ſeveral rays, the colours, the pyramids, and points, with which it is ornamented; the avidity with which this creature ſeizes the fleſh of animals; the manner of its applying its mouth; the vermicular motion obſerved within it while ſucking, which reſembles the common motion of deglution; the time they have been known to live in the water without any viſible food; and the faculty they have in common with many other animals, of moving when cut into ſeveral pieces: Theſe the author ſuppoſes already ſufficiently known, and paſſes on to what is leſs ſo, the ſtructure of its inner parts.

The part of this animal, by which it pierces the ſkin of any creature to get at its blood, is generally called, ſimply, its mouth, but it really conſiſts of five different parts, which are confounded under that general name. Theſe are two regular lips, a cavity, which is properly the mouth, certain inſtruments to pierce with, others which ſerve it for ſucking, and finally a ſort of throat, or œſophagus, through which it ſwallows the blood. When the *leech* is in a ſtate of reſt, its upper lip forms a regular ſemicircle, and the lower a portion of a much larger circle.

When the creature lengthens its head to move, the ſemicircle of the upper lip becomes two oblique lines, the junction of which makes a ſaliant angle, which the creature applies to whatever it would fix itſelf to. That angle is marked by a regular black ſpot on the outer edge of the lip. The extreme ſoftneſs of the fibres of this part makes it very ſerviceable to the animal, in that it readily aſſumes any figure, according to the occaſion of ſeizing any thing ſolid, in order to move the reſt of its body; or on the fleſh of an animal, to give opportunity to the piercing inſtruments to exert their force and action.

Whether it be for either of theſe purpoſes, that the creature fixes its mouth, the two lips regularly fix, and make in this ſtate a ſort of acetabulum, like the hollow of the tail. This may be ſeen in their fixing on the ſides of a glaſs veſſel in which they are kept, and the mouth, or aperture between the lips, is diſtinctly ſeen. This mouth is formed, like the lips, of ſuch extremely ſupple fibres, that it takes the figure of the part to which it is applied, and fixes perfectly cloſe to it. When the lips are fixed on the fleſh, in order to ſuck, this little mouth continues moveable under them, and ſearches over the compaſs of fleſh, incloſed in the larger circle of the lips, for the ſpot where it will be eaſieſt to draw much blood.

Within this mouth is placed the inſtrument for the piercing the ſkin, which is more than the meer ſucker of the gnat, or the like kind of flies; ſince the quantity of blood to be ſucked, by the *leech*, is greatly larger, and the aperture of the veſſel muſt therefore alſo be larger. The ſhape of this weapon may be diſcovered by examining the wound it leaves. This is compoſed of three cuts, making three rays, which uniting in a center, make equal angles one with another. This ſtructure of the wound is moſt diſtinctly ſeen when the ſwelling is gone down, and the ſkin is clean; and this is uſually on the fourth day after the application. The three openings are then plainly ſeen not to be punctures, but abſolute wounds, or cuts, as if made by a fine lancet. In examining the creature, the organ, deſtined for making the wound, is found to be placed between the aperture of the lips and the bottom of the mouth; and on cutting up the animal, and drawing the finger carefully over this part of it, there is felt a roughneſs like that of a fine file, which evidently is owing to ſome rough ſubſtance, of the hardneſs of bone. Theſe are, in reality, a number of fine and ſharp teeth, and when examined by a microſope, they are found to be diſpoſed in three ſeries on three ribs, or, as they may be called, jaws; each of which is placed along the middle of a ſtrong muſcle of its own length; and theſe correſponding regularly to a triangular opening, which the creature has in its mouth. When that has ſeized on a proper part for the getting blood, and is fixed, theſe muſcles exert their action, and ſtrike in the teeth through the ſkin.

Theſe are the inſtruments which pierce the ſkin, and the veſſel which is to afford the blood, and for the receiving it into the body of the animal. There is between theſe rows of teeth, or in the common center of the mouth, a ſmall aperture; and within this there is a little body to be diſcovered, which by its motion ſeems very plainly to be a tongue, and which probably acts as a piſton to take up the blood flowing from the triple wound, in the center of which it naturally ſtands, while the larger circle of the lips, &c. perform the office of the body of the pump, and the blood is eaſily, by this means, conveyed into the body of the animal. Finally, between the root of the tongue and the beginning of the ſtomach, there is a ſpace of two lines in length, in which it is eaſy to diſcover two different arrangements of fibres; the one ſet are flat and plain, the others are circular. Theſe evidently have a power of widening or contracting the cavity of the pump, and by that means facilitate its office; the plane ones contracting in length, to enlarge the capacity, and the circular ones determining the blood toward the ſtomach, by their power of contracting the hollow, when the blood is received. The blood from hence enters into a membranaceous ſort of ſack, which ſerves the animal for ſtomach and guts, and occupies the greateſt part of the body of the creature. If the air is admitted into the body by the mouth, it may be ſeen to make its way down a longitudinal canal, and fill, as it goes, a number of ſacks, or little bags, which are on each ſide. Theſe veſicules receive the blood, and becoming filled with it, ſwell out the body of the animal to a great ſize. It remains here many months, and nouriſhes the creature, and if any thing is excreted from it, it muſt be merely by an inſenſible perſpiration; ſince the creature has no anus, ſo far as can be yet diſcovereed, nor any aperture which can ſupply the place of one.

Leeches are able to live in oil; and when removed out of this liquor into water again, they throw off a tender ſkin, or film, of the regular ſhape of their body, and reſembling the ſkin of an eel in miniature. Their living in oil ſeems a proof, that their organs of reſpiration are not placed on the outſide of their bodies, as they are in many ſmall animals, which therefore die on being only rubbed over with oil. But the *leech* ſeems to reſpire by the mouth; and this may be the more plainly diſcovered, if the water, in which it is kept, be gently heated, for then the animal being uneaſy, breathes hard, and very viſibly.

The *leech* is a well known inſect, common in waters, and uſed to draw blood in medicine. The common ſtanding waters afford us two ſpecies of this inſect, a larger, called the *horſe-leech*, and a ſmaller, diſtinguiſhed from this not only in ſize, but by its whole ſurface, being covered with ſmall tubercles. The larger kind grow to five inches long, and is yelloviſh on the belly, and black upon the back. It is divided, in the manner of the earth-worm, into a number of annular joints, not leſs than an hundred, and is ſmaller toward the mouth, than toward the tail. The ſmaller kind has a broad ſtreak of a greeniſh black running down its back, and on each ſide of that a reddiſh line, and beyond theſe there are other lines formed of large black ſpots. The belly is blackiſh, with a caſt of green. This is the kind that ſhould be uſed in medicine, and is eaſily diſtinguiſhed from the other. Mr. Ray obſerves, that there are ſometimes found great numbers of young *leeches* ſticking in cluſters to the belly of the old one.

We have on the coaſt of Cornwall another inſect, much approaching to the nature of the *leech*. It is about ſix inches long, of a greyiſh colour, ſpotted with black, and is divided into about nineteen rings. It has a great number of a ſort of tubercles on the body, and is uſually found full of blood, or of a ſubſtance reſembling blood in colour. *Ray*'s Hiſt. Inſect. p. 3.

Bleeding with LEECHES. The method of bleeding by theſe animals was very early introduced into the practice of phyſic. *Leeches* ſhould always be choſen from clear and running waters; for thoſe from ſtagnant ones, and dirty ponds, ſeem to have ſomething malignant in their bite. The ſurgeons uſually chuſe ſuch as have ſlender heads, green lines on their backs, and bellies of a reddiſh yellow. But from whatever waters theſe creatures have been taken, the beſt method is to keep them many days in a glaſs of water, changing it often, that they may cleanſe themſelves.

Before the *leech* is applied to the ſkin, it ſhould be taken out of the water, and kept an hour in an empty cup, to drain itſelf, that it may thus be rendered thirſty and empty. They may be properly applied to the temples, or behind the ears, in diſorders of the head, and to the veins of the rectum in the blind piles. And applied to this part alſo, they often prove of great ſervice in hæmorrhages, or ſpittings of blood by the noſe, eſpecially when theſe have been occaſioned by a ſtoppage of the uſual diſcharges that way; though where this is not the caſe, they do great ſervice merely by revulſion.

Before the *leech* is applied, the ſkin muſt be well rubbed, till it become hot and red, and then either hold the *leech* by the tail to the part, or let it crawl of itſelf out of the cup upon it. By this means they readily lay hold; but if they refuſe, the blood of a chicken or pigeon ſhould be rubbed on the part; and if that does not allure them, they muſt be laid aſide as uſeleſs, and others taken in their ſtead.

If much blood is required to be drawn, the tails of the *leeches* may be cut off as they are ſucking, by which means, the blood they have already ſucked will be diſcharged, as well as what they continue to take in; for they will not let go their hold, but continue ſucking as before.

If they do not let go after a ſufficient quantity of blood is drawn, they are not to be pulled off, for that often occaſions tumors, and inflammations; but if a little ſalt be ſprinkled on the place, they quit their hold. The orifices ſhould be waſhed with warm wine, or water, and they uſually heal readily of themſelves. *Heiſter*'s Surgery, p. 312.

LEECH is alſo a name given by Boccone to a very particular water animal, which he found ſticking to the ſides of the *xiphias*, or ſword fiſh.

He calls it *hirudo*, or *acus cauda utrinque pennata*, and obſerves that it is ſlightly mentioned by Geſner, and by Johnſton, in their books of fiſhes. It is about four inches long. The belly is white and cartilaginous, and tranſparent. There is no regular head to be ſeen, but only a hollow ſnout, in the place of the head. This is covered with a very hard membrane, and differs extremely from the ſkin of the belly. This ſnout it thruſts up to the end into the body of the fiſh, and ſucks its blood with it. It has a tail ſhaped like a feather, and under it two ſlender filaments, or fibres, longer than its whole body. By means of theſe, when it is not faſtened to the body of the fiſh, it clings to ſtones, or ſea plants, to prevent its being carried away by the motion of the water; and when it is on the body of the fiſh, theſe ſerve it to hold much more faſtly with, than it otherwiſe could do. When it faſtens itſelf to the ſword fiſh, it always fixes on thoſe parts where the fins of the fiſh cannot come at it to diſturb it. Sometimes it adheres to the belly, ſometimes to the back, ſometimes to the tail, and often very near the head. The body of the creature is filled with ſlender tubes and pipes, by means of which it ſucks up the blood of the fiſh into the ſnout, which is a meer vacant tube, and from thence conveys it to the inteſtines. The whole body of the creature is formed of rings, which ſerve to draw up the tubes into the ſnout, and return them back upon occaſion. This creature miſerably afflicts the ſword fiſh, but it is itſelf as much tormented by an animal that preys on its blood and juices; this is a ſort of louſe, which is always found upon it. It is of a browniſh colour, and is generally found faſtened toward the tail of the creature, ſticking as firmly as a limpet to a rock. It is nearly of the bigneſs of a pea, and when cruſhed a little, will thruſt out ſeveral ſlender filaments. This *leech* is not found, ſo far as has yet been obſerved, on any other fiſh but the ſword fiſh; nor this louſe among other creatures, beſide this *leech*. Phil. Tranſ. N° 100.

LEEK, *porrum*, in botany. See PORRUM.

We have two kinds of *leek* commonly cultivated in our gardens, the one called the common *leek*, and the other a broader leaved one, commonly called the London *leek*. There are ſome reaſons to ſuſpect that theſe are only varieties of the ſame ſpecies of plant, both ariſing from the ſame ſeeds.

The method of propagating theſe is by ſeeds, and they are commonly ſown along with onions. The onions growing up firſt; and after they are pulled up, the *leeks* have time enough to grow to their ſize. *Miller*'s Gard. Dict.

LEEK-*head*, in the manege. See WART and PORIEAU.

LEER, (*Cycl.*) in glaſs making, a ſort of third furnace intended to anneal and cool, by proper degrees, the veſſels when made. This properly comprehends two parts, the tower and *leer*. The tower is that part which lies directly above the melting furnace, with a partition between them of a foot thick; in the midſt whereof there is a round hole, placed exactly over the furnace, through which the flame and heat paſs into the tower. On the floor of this tower the veſſels are ſet to anneal. There are two openings, by which the veſſels are put into this tower, and after ſtanding there ſome time, they are put into iron pans, which by degrees are drawn out all along that part of this furnace, which is properly called the *leer*; which is five or ſix yards long, that the veſſels may cool by degrees. This *leer* is continued to its tower, and arched all along, and is about four feet wide and high within. The glaſſes are cool by that time they are come to the mouth of this, which enters into a room where the glaſſes are placed when taken out. *Neri*'s Art of Glaſs, p. 243.

LEETCH *of a ſail*, in a ſhip, the outward edge or ſkitt of the *ſail* from the earing to the clew, or rather the middle of the *ſail* between theſe two.

LEETCH-*lines*, in a ſhip, ſmall ropes faſtened to the *leetch* of the top ſails (only) and then reeved into a block at the yard, juſt by the top ſail ties. Their uſe is to hale the *leetch* of the ſails, when the top ſails are to be taken in; which is always firſt done, and then the ſail can be taken in with the greater eaſe.

LEEWARD *ſhip*, at ſea, one that is not faſt by a wind, or which doth not ſail ſo near the wind, nor make her way ſo good as ſhe ſhould. See LEE, *Cycl.*

To *lay a ſhip by the lee*, or *to come by the lee*, is to bring her ſo that all her ſails may lie flat againſt her maſts and ſhrowds, and that the wind may come right upon her broad-ſide. The way to do which, if all a ſhip's ſails be abroad, is to bear up the helm hard to windward, to let riſe the fore jack, veer the main-ſheet, and take in the miſſen maſt, or at leaſt to peek it up, which is called *ſpelling the miſſen*.

LEEWARD *tide*, at ſea. See TIDE.

LEG (*Cycl.*)—In fractures of the two bones of the *tibia* and *fibula*, or either of them alone; the limb is to be extended, by aſſiſtants, both ways, while the ſurgeon replaces the bones, which done the limb is to be rolled up with the proper bandage, and retained in the moſt proper poſture. When both theſe bones are broken, they are ſeldom both broken juſt in the ſame place, but one a little higher than the other. If the *tibia* be broken alone, it is eaſily diſcovered by its lying ſo near the ſkin; but if the *fibula* alone, it is buried under ſo many muſcles that the fracture is not always ſo eaſily diſcovered, and the patient is ſo much leſs afflicted by it as to be ſometimes able to walk.

If a fracture of the *tibia* be accompanied with an external wound, this muſt be firſt well cleanſed, and the ſplinters of the bone carefully removed, and then the broken bone, by the help of a proper extenſion reduced to its proper place, the hæmorrhage ſtopped, and the whole bound up with the eighteen headed bandage; but if any fragments of the bone ſtick out, ſo as to hinder its reduction; they muſt be firſt removed by a pair of ſharp forceps, or if neceſſary a fine ſaw. The limb, when ſet, is to be laid in a proper frame, or in a caſe of ſtraw, renewing the dreſſing and bandage daily till the wound be healed. *Heiſter*, p. 136.

Ulcers in the LEGS. Although no part of the body is free from inveterate and obſtinate ulcers, yet the *legs* are found to be much more ſubject to them than the reſt. The general cauſes of ulcers in the *legs* are the ſame with thoſe of ulcers in other parts, a bad habit of body, too great a thinneſs and acrimony in the juices, and obſtructions of the menſes in women; to theſe alſo may be added calloſity of the lips of wounds, and caries of the bones within.

In perſons advanced in years, and naturally of a bad habit of body, it is moſt adviſeable not to attempt to heal theſe, ſince the effect of cure is often much worſe than the diſeaſe, and not unfrequently, even death itſelf: for theſe ulcers are, in many caſes, rather to be looked on as a relief to nature than a diſorder, as they ſerve to drain off a vaſt quantity of noxious humours from the body. This, however, ſhould not be extended to young robuſt habits, though bad, becauſe theſe may be corrected in ſuch ſubjects, and the firſt cauſe of the ſtubbornneſs of the ulcers removed by abſtinence, or a regular way of living, or by opening iſſues, with the help of internal remedies; and the cauſe thus removed, the ulcer may be removed with perfect ſafety: and though in old perſons theſe ulcers are not to be healed, yet palliative methods may be taken with them, to the great comfort of the afflicted perſons, that pain, and other violent ſymptoms may be removed, and the ulcer kept from ſpreading, or new bad ſymptoms from coming on.

Abſtinence and a ſtrict regimen are the great care, and gentle doſes of purging medicines are to be taken at times, and internal medicines, likely to do good in regard to the cauſe of the ulcer, may be alſo given: of this kind are eſſence of myrrh, balſam of peru, and the like. Externally, care muſt be taken to keep the ulcer perfectly clean; twice a day it ought to be dreſſed, and every time wiped clean from the ſanies; it ſhould then be dreſſed either with dry lint, or with lint dipped in a decoction of walnut leaves, or of birthwort, and over this a lead plaiſter, as that of the minium, or any of a like kind may be applied. Theſe ulcers treated in this eaſy manner will become very mild, of little trouble, and of great ſervice to the preſerving the life of the patient.

When inflammations and violent pains come on in theſe caſes, as they very frequently do from a blow, from cold, from dipping the *leg* in cold water, or from violent paſſions of the mind, or irregularity of diet, a linnen compreſs muſt be applied in this caſe dipped in Hungary water, or ſpirit of wine with camphor, or with a mixture of equal parts of lime water, and either of theſe liquors; theſe ſhould be applied warm, the patient ſhould be confined to his bed, and the limb carefully defended from the injuries of the external air, and ſmall liquors ſhould be frequently drank warm, to promote gentle ſweating; when the inflammation runs very high, and threatens a gangrene, great care is to be taken, and the methods uſed in inflammations and gangrenes regularly applied, otherwiſe there is the greateſt danger, that a ſphacelus, and death will be the conſequence.

When the ulcers dry up of themſelves in old people, nauſeas, horrors, and great weakneſs uſually ſucceed, which ſhew death at hand: in this caſe, the patient's ſtrength and ſpirits muſt be kept up as much as poſſible, and gentian, and florentine iris root muſt be applied in powder to the wound; and if theſe are of too little force, black hellebore root, either in powder or formed into little balls; and laſtly, powder of cantharides, or ſmall pieces of the common bliſtering plaiſter. If theſe applications ſucceed, and produce a running of the ulcer again, the methods before directed

muſt

muſt be again cautiouſly purſued; but if theſe fail of ſucceſs there is little hope of life. *Heiſter*'s Surgery, p. 253.

LEGS *of flies*. Theſe furniſh us with ſeveral diſtinctions for this large claſs of inſects. All flies have indeed ſix *legs*, but though they are the ſame in number, they differ ſufficiently in many other reſpects. Some flies have very long *legs*, and others as remarkably ſhort ones.

The gnats and tipulæ ſeem mounted on ſtilts, and by that differ from other flies, whoſe form of body is the ſame; but what is yet more obſervable, in regard to the *legs* of theſe inſects is, that though they are uſually all fixed to the corcelet, there are ſome ſpecies of flies which have the hinder pair faſtened to the rings of their body. *Reaumur*'s Hiſt. Inſ. Tom. 4. p. 143.

The *legs* of flies are often not only large or ſmall according to the ſize of the creature, but every portion of them comprized between two of the articulations, differs often from the other in length and thickneſs. What they all have in common, is, that the foot, or bottom part of them, on which the creature reſts itſelf, is always provided with at leaſt two claws, or hooks, which terminate in points ſo extremely fine, that they are able to lay hold of what appear to us the moſt ſmooth and poliſhed bodies.

The blue fleſh fly, and ſeveral other ſpecies, have alſo as it were two ſoles of feet; theſe are each of them nearly of a boat figure, and reſemble two ſmall balls; theſe touch at the part where they are connected to the foot, and leave between them an angular ſpace afterwards. Their external inferior ſurface is ſomewhat convex, and covered with very ſhort hairs very cloſely arranged; theſe hairs, like the points of the two claws, can find themſelves a paſſage into the pores of what appear to us the moſt poliſhed ſurfaces, and are of great uſe to the creatures, in their placing themſelves on vertical planes of glaſs.

Mr. Homberg has ſometimes found flies which could not walk upon glaſs in this poſition; and is of opinion, that theſe are ſuch, as by age had loſt the hairs from theſe balls on their feet. Thoſe alſo whoſe claws or hooks were become ſoft or blunt muſt find themſelves in the ſame ſituation: yet there are ſeveral ſpecies of flies which have not theſe balls; ſuch as the bee claſs, which yet are able to walk up our window glaſſes with great eaſe. *Reaumur*, Hiſt. Inſ. V. 4. p. 259.

LEG, in the manege, the member that ſupports a horſe's body, and performs the motion when he goes. Of the four *legs*, the two before have ſeveral parts, each of which has a peculiar name: ſo that by the name of fore-*leg*, we commonly underſtand that part of the fore-quarters that extends from the hough to the paſtern joint, and call it the ſhank; the part that correſponds to this in the hind-quarters is called the inſtep. But in common diſcourſe we confound the fore, and the hind-quarters; and without any diſtinction ſay the *four legs* of a horſe.

The French call a horſe *droit ſur les jambes*, i. e. ſtraight membered, or ſtraight upon his *legs*, when the fore part of the paſtern falls perpendicularly upon the *cronet*, and the ſhank and the paſtern are in a ſtraight line. See STRAIGHT and LONG-*jointed*.

The horſeman's legs are likewiſe of ſingular concern in the manege, for the action of theſe given ſeaſonably, and with judgment, conſtitutes one of the principal aids, which conſiſts in approaching more or leſs with the calf of the *leg* to the horſe's flank, and in bearing it more or leſs off as there is occaſion. This aid a horſeman ought to give very nicely, in order to animate a horſe: and it is ſo much the finer, that it is hidden and private: for in ſtretching the ham he makes the horſe dread the ſpur, and this fear has as much effect as the ſpur itſelf. See AID.

LEGS *of the martinets*, in a ſhip, is uſed for thoſe ſmall ropes, which are put through the bolt ropes of the main and fore ſail, in the leetch of each. They are above a foot in length, and at either end are ſpliced into themſelves: they have alſo a ſmall eye, into which the *martinets* are faſtened by two hitches, and the end is ſeized into the ſtanding part of the *martinets*.

LEGATE-*Note*, in the Italian muſic. Notes are ſaid to be *legate* when this ⌒, or this ⌣ mark is found over or under the heads of them. This is what we call *tying* them, and is done when they are properly but one note, but obliged to be ſeparated into two, becauſe part is found at the end of one bar, and the other part in the beginning of the following bar; or becauſe the two halves of a note are in different parts of the meaſure. See SYNCOPE.

LEGATO, in the Italian muſic, ſignifies confined or conſtrained by certain rules for ſome deſign; thus they ſay, *canone legato*, &c. See CANON.

LEGATORY, or LEGATARY, the ſame with *legatee* of a will. 27 Eliz. c. 16. *Blount*. It is derived from the Latin *legatarius*.

LEGER-*line*, in muſic, is uſed to ſignify a line, added to the ſtaff of five lines; when the aſcending and deſcending notes run very high or very low. We often meet with ſeveral of theſe lines both above and below the ſtaff.

LEGGIARDO, or LEGGIARDAMENTE, in the Italian muſic, is uſed to intimate, that the muſician is to ſing or play in a gay, briſk, and lively manner. See ALLEGRO.

LEGNA, Λεγνα, among the antients, a name given to the borders of the *Toga* and *Pallium*, that were on each hand; the extremities above and below being called *Ora*. *Pitiſc.* Lex. Ant. See ORA.

LEGUME, among botaniſts, a *pericarpium* of an oblong compreſſed figure, formed of two valves, joined by a viſible ſuture, both on the upper and under part, and having the ſeeds affixed to the upper limbs of the two valves in an alternate order. See PERICARPIUM.

LEIOBATUS, in ichthyology, a name given by Ariſtotle and Athenæus to a ſpecies of the ray fiſh, called by many of the old authors *bos marinus*, and by the later authors *lævi-raia*, or *raia oxyrynchus*. It is accurately diſtinguiſhed by Artedi, by the name of the variegated ray, with ten prickly tubercles on the middle of the back.

LEIOPODES, an epithet uſed by the old medical writers, to expreſs ſuch perſons who had feet perfectly ſmooth and even at the bottom, without the uſual hollow between the heel and the fore part of the foot.

LEITURGI, Λειτυργοι, among the Athenians, perſons of conſiderable eſtates; who, by their own tribe, or the whole people, were ordered to perform ſome public duty, or ſupply the commonwealth with neceſſaries at their own expences. *Potter*, Archæol. Græc. l. 1. c. 15.

LEMING, in zoology, the name of a creature of the rat kind, called by authors *mus Norwegicus*, the *Norway rat*. Olaus is the firſt author who has mentioned and deſcribed this creature, and from him Geſner, Scaliger, Johnſon, and the reſt, took their deſcriptions of it down to the time of Wormius, who took ſingular pains in giving its true hiſtory from his own obſervations. *Ray*'s Syn. Quad. p. 227.

It is a creature of the figure of the dormouſe, but has a ſmaller tail; it is uſually about five inches long, and its hair is very fine, and variegated with ſeveral colours; the lower part of the head is black; the crown yellow, and the neck and ſhoulders black again. The body is of a reddiſh tawney colour, but variegated with a great number of black ſpots of different figures, but uſually ſmall. The tail is ſcarce half an inch long, and very ſlender, and covered with a yellowiſh black hair.

It varies extremely in the order and diſpoſition of its ſpots; its noſe is ſharp, and its mouth ſurrounded by a great number of ſtiff hairs; among theſe there are twelve, which are much longer than the reſt, and are ſet at diſtances from one another; its mouth is ſmall, and the upper lip ſplit, and there are ſeen in this ſlit two very long teeth which are bent, and very ſharp; the eyes are ſmall and black, the ears are obtuſe and lie on the head, not ſtanding erect. The legs are ſhort, and the fore ones much ſhorter than the hinder pair; the creature is very ſwift in running, the toes of each foot are four in number.

LEMMA, in pharmacy, a term uſed to expreſs the huſk or ſhell of certain fruits, as the almond, and the like; and in general, whatever is taken off in decortication. Thus the huſks of oats, barley, &c. are the lemmata of thoſe ſeeds.

LEMMA is alſo a name given by ſome of the lower claſs of writers, in natural hiſtory, to an imaginary animal, which they deſcribe, as living in the woods of Aſia, and having the face of a woman and the body of a beaſt of prey.

LEMMA, in natural hiſtory, is alſo the name of a ſmall water plant well known to the antients, and called by Theophraſtus by this diſtinct name; but very improperly confounded by late writers among the duck weed kinds, and called by Bauhine, Ray, Parkinſon, and others, *lenticula paluſtris quadrifolia*, the four leaved duck weed; and by Petiver, in his gazophylacium naturæ & artis, *ſtratiotes paluſtris foliis lujulæ*, or the water ſoldier, with leaves like thoſe of wood ſorrel. Memoirs de l'Acad. Sc. Par. 1740.

Mr. Barnard Juſſieu has been at the pains of thoroughly enquiring into the nature and fructification of this plant, and to him alone we owe its true hiſtory. Its flowers having never been ſeen or regarded, till that gentleman gave an account of them in the memoirs of the academy of ſciences of Paris; and many of the more eminent botaniſts, from its different appearance when in the water and when out of it, having miſtaken it for two different plants. It indeed differs extremely from itſelf in three different ſituations in which it is found. It is ſometimes found in the middle of large ponds of freſh water, and is then very large, fair, and full; ſometimes it is found in ſhallow water, and is then conſiderably poorer, and ſometimes it is found on dry land, in which caſe it makes an extremely different figure; and is ſo ſtarved, and poor, as ſcarce to be known for the ſame herb.

The middle ſtate of theſe, that is when it grows in ſhallow water, ſeems its moſt natural appearance, and is the only condition in which it is found to produce its flowers and ſeeds. It is a ſpreading plant, its branches extend a great way far and wide; theſe ſend from their under part roots at certain diſtances, and from their upper four leaves ſuſtained by a long and ſlender ſtalk, and uſually there are ſeveral of theſe ſtalks from the ſame part of the plant, from

the ſame parts of the branches from whence the leaves ariſe; there are alſo ſeen to ariſe other very ſlender and very ſhort ſtalks which bear ſmall capſules, within which is encloſed the flower and afterwards the ſeed. The flowers are placed in ſeveral lodgments in this ſhell, and are compoſed of ſtamina and piſtils, but have no petals; the piſtils are various in number in the different flowers, from three to eight, the ſtamina are always very minute and very numerous. Memoirs Acad. Scien. Par. 1740.

Plukenet has deſcribed this plant a little differently from this writer, but the difference ſeems only owing to this, that Plukenet deſcribed one he found in deep water, whereas Mr. Juſſieu formed his account from the more ordinary and perfect appearance of the plant in ſhallow water, where alone it ripens its flowers and ſeeds. We have it not in England ſo far as is yet known, but it is common in the Eaſt and Weſt Indies and in France.

LEMNIAN *earth*, LEMNIA *terra*, a kind of bole or fine earth uſed in medicine, of which there are three ſpecies; the white, the yellow, and the red, but the red is moſt uſed. The characters by which they may be diſtinguiſhed from all other earths of the ſame colours are theſe.

Red *lemnian earth* is a denſe compact earth of a cloſe firm texture and pale red colour, and of a ſmooth and even, but not gloſſy ſurface. It does not break readily between the fingers, nor at all ſtains the hands, is not readily diffuſible in water, melts ſlowly in the mouth, is very aſtringent to the taſte, and when in its native ſtate is always ſomewhat harſh and gritty between the teeth; for what we find of it that is perfectly pure, and free from ſand, is ſuch as has been waſhed and ſeparated from it, all the genuine earth naturally containing ſome. It adheres firmly to the tongue, raiſes a ſlight efferveſcence with aqua fortis, and ſuffers very little change in a moderate fire. *Hill*'s Hiſt. of Foſſils, p. 13.

This is dug in the iſland of Lemnos, and in no other place ſo far as is yet known; and the fine and true earth only in one pit, which is opened once every year and no oftner, with great ſolemnity; and the earth, ſuppoſed ſufficient for the year's demand, is taken out and ſold to the merchants; ſome ſealed with various figures, other quantities unſealed; but, what is there bought unſealed is generally formed into ſmall maſſes, and ſealed before it is offered to ſale in Europe, the druggiſts always expecting to find *lemnian earth* ſealed. This is a very valuable earth, but is too often adulterated, frequently by the Turks upon the ſpot, either by mixing it with other earths, or another earth alone being ſold in its place, but more frequently in Europe, where every wholeſale dealer knows how to make a compoſition of our own clays, and properly tinge them with ochre, and afterwards give an impreſſion reſembling that of the genuine. Ibid.

The white lemnian earth is a fine bole of a very pure white, but of a ſomewhat lax texture, and leſs weighty than the other boles; it appears of a tolerably ſmooth ſurface, but feels ſomewhat duſty on rubbing; it ſcarce at all ſtains the fingers in handling, very eaſily crumbles to pieces, adheres ſtrongly to the tongue, and melts freely in the mouth, but like the red, leaves a ſandy harſhneſs between the teeth; this makes no efferveſcence with acids. It is dug in the iſland of Lemnos, and uſed in the German ſhops as an aſtringent and ſudorific. The antients knew this kind, but never uſed it in medicine, eſteeming the other ſuperior, but they employed it as the cimolia about cloaths. *Hill*'s Hiſt. of Foſſils, p. 2.

The yellow lemnian earth is a very valuable earth, common in the ſhops, and more than all the other ſubſtances of this kind ſubject to be counterfeited.

It is a very pure and fine earth, of a lively florid yellow, of a cloſe compact texture and ſmooth ſurface, conſiderably hard, and not at all ſtaining the fingers in handling. It ſticks firmly to the tongue, and melts pretty readily in the mouth, leaving not the leaſt harſhneſs between the teeth, and does not ferment with acid menſtrua. It is counterfeited two ways; the one by a yellow ochre, which may be diſcovered by its ſtaining the hands, and the other by a yellow clay; but this is eaſily known by its want of the true florid colour, and having all the characters of a clay not a bole. The genuine is found only in the iſland of Lemnos, and is the ſtratum next above the red. It is eſteemed a ſudorific, aſtringent and vulnerary. *Hill*'s Hiſt. of Foſſils, p. 8.

LENÆA, Ληναια, in antiquity, a feſtival of Bacchus, ſurnamed *lenæus* from ληνος, i. e. a vine preſs. Beſides the uſual ceremonies at feaſts ſacred to this God, it was remarkable for poetical contentions, and tragedies acted at this time. *Potter*, Archæol. l. 2. c. 20. T. 1. p. 412.

LENGTH, in the manege—*To paſſage a horſe upon his own length*, is to make him go round in two treads, at a walk or trot, upon a ſpot of ground ſo narrow, that the horſe's haunches being in the center of the volt, his own *length* is much about the ſemi-diameter of the volt; the horſe ſtill working between the two heels, without putting out his croupe, or going at laſt faſter or ſlower than at firſt. See the article VOLT.

LENS (*Cycl.*)—In the Philoſophical Tranſactions we have the figure of a machine for grinding *lenſes* ſpherically. It is a contrivance to turn a ſphere at one and the ſame time on two axes, interſecting each other at right angles, with an equal velocity and preſſure on each. See the Tranſactions, N° 459. Sect. 1.

LENS, the *lentil*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the papilionaceous kind, and from the cup there ariſes a piſtil, which finally becomes a ſhort rod, containing orbicular ſeeds, and thicker toward the middle than at the edges.

The ſpecies of *lentil* enumerated by Mr. Tournefort are theſe. 1. The common *lentil* with browniſh red ſeeds. 2. The common *lentil* with pale yellow ſeeds. 3. The common *lentil* with ſpotted ſeeds. 4. The common *lentil* with black ſeeds. 5. The greater *lentil*; and 6. The Hungarian *lentil*, with taller ſtalks and perennial roots. *Tourn.* Inſt. p. 390.

LENTA *febris*. See the article FEVER.

LENTES *lapideæ*, *foſſile lentils*, the name given by many writers to a very remarkable foſſile ſubſtance, uſually found immerſed in hard ſtones, and of a roundiſh but flatted ſhape, reſembling not unaptly a *pea* or *lentil* flatted by preſſure. They generally lie in great quantities in the ſame maſs of ſtone; and are of a very different appearance, when their ſides or ends are ſeen from that which they exhibit, when their flat ſurfaces come in view. They are generally ſuppoſed to be *lentils* petrified and bedded in ſtone, and as their ſides come in view in ſome parts of the maſſes, they are not perceived to be a part of the ſame ſubſtances, but are called the remains of ſeeds of other plants, and the whole ſtone is uſually named *lapis frumentarius*.

We are not to ſuppoſe, that ſo ſoft a body as the *lentil* ſeed, or a common *pea*, could be eaſily petrified and preſerved in its own form in ſtone; ſince if theſe ſoft ſubſtances were readily capable of ſuch a change, they are ſo very common in their recent ſtate, that they muſt be expected to be found in this *foſſile* condition very frequently alſo, and in great variety; this, however, is not the caſe. But this improbability is not all the reaſon we have to conjecture, that theſe are not what they are vulgarly ſuppoſed to be, that is, *foſſile* ſeeds; for a ſtricter examination of the things themſelves proves this to be impoſſible. Seeds, and other ſuch things, are of ſome determinate growth; the ſize of which we know, and are well acquainted with their internal ſtructure, which is only a farinaceous matter contained in a thick ſuperficial ſkin or covering.

On the contrary, theſe *foſſils*, when examined, prove to be of various ſizes, from the minuteſt ſpeck viſible to the eye, to near an inch in diameter, a ſize that no *lentil* could be ſuppoſed to arrive at. They are of two kinds; the one convex on both ſides, the other convex on one ſide only, and plain on the other. The firſt are thickeſt in the middle, and gradually leſſen in thickneſs all round, till they terminate in a thin edge; the others are juſt like the halves of theſe, when ſplit horizontally. Thoſe which are convex on both ſides, have uſually ſeveral crooked lines, riſing from the umbilicus on each ſide, and tending toward the circumference; and the flat ones, have uſually on the flatted ſide, a number of concentric circles, ſurrounding the umbilicus, and one another to the edge. When theſe are broken they are found to conſiſt of a number of caſes, or coats, one within another, all of the ſame ſhape with the outer one; and ſome of them are ſtriated or made up of tranſverſe fibres; they are plainly of animal origin, though they differ from all the parts of animals hitherto known. *Woodward*'s Cat. Foſſ. Vol. 2.

Dr. Woodward, in one place, ſuppoſes them to have been the looſe bones which are found in the heads of ſome ſea fiſhes, and are ſuppoſed to ſerve for hearing; but that they belong to ſome fiſh at preſent unknown, or that has not been yet examined in this particular: there is, however, another much more probable opinion, which he mentions afterwards, that they may have been opercula of ſhell fiſhes, of the nature of the umbilicus veneris, of which the fiſhes we know afford us a great variety; and the many others we are yet unacquainted with, may furniſh numbers of other kinds very different from all we do know.

Theſe bodies are found in a hard greyiſh ſtone, and ſome of the large ones which are flatted on one ſide, give great reaſon to judge that they are of this origin, as ſome of the large ones have on the flat ſide, a reddiſh line beginning at the center, and thence continuing in a ſpiral form, for eleven or twelve turns, till it reaches the edge of the ſtone. This is exactly the formation and lineation of the common umbilicus veneris, only that it has fewer ſpires. The ſtone called by authors *lapis numiſmalis*, is generally allowed to be of the nature of theſe opercula, and this differs very little from theſe large *lentes lapideæ*, as they are called.

LENTISCUS, the *lentiſk* or *maſtic tree*, in botany, the name of a genus of trees, very nearly allied to the terebinthus or turpentine tree in its characters, but differing in that the leaves are pinnated; but there is no ſingle leaf to terminate the end of each compound one. *Tourn.* Inſt. p. 580.

The ſpecies of the *lentiſk* enumerated by Mr. Tournefort

are theſe. 1. The common *lentiſk*. 2. The narrow leaved *lentiſk* of Marſeilles.

It does not ſeem certain that the *lentiſk* of the Arabians was the ſame with the tree which we call by this name. For they always mention the *lentiſk* as a ſpecies of turpentine tree; and when they have treated of it at large under that head, both Aviſenna and Serapion have, in other parts of their works, diſtinct chapters on the *maſtic*. The *lentiſk* which they deſcribe among the turpentine trees, was remarkable for its large fruit, and, as we find by Rawwolf, that there is a kind of turpentine tree growing at this time in Arabia, remarkable for the ſame character, it ſeems very probable that this was their *lentiſk*, and that they did not call the tree which produces the *maſtick* by that name, but only by that of the *maſtick tree*.

The antient authors in agriculture tell us, that the *lentiſk* tree has three ſeaſons of flowering and bearing fruit in the year, and that the times of ſowing and reaping were directed by theſe, and that the vigour of its growth denoted a plentiful harveſt, and its languiſhing condition a bad one. Aratus expreſſes all this very elegantly in verſe, and uſes the word *ſkinus*, σκινος, for what is tranſlated the *lentiſk*; but it is hard to ſuppoſe that the original author, who is Theophraſtus, from whom Aratus has tranſcribed the greateſt part of his work, ſhould ſay this of the *lentiſk*, which flowers in April, and ripens its fruit in October, and then flowers no more till the following ſpring.

The whole ſeems to be only intelligible this way. The word *ſkinus* is uſed by the antient Greeks, as the name of the eſculent kind of ſquill, as well as of the *lentiſk tree*; and this plant may very probably flower three times a year, being a vigorous bulb rooted herb, and a very quick grower. The ſame author (Aratus) uſes the flower of the ſquill, and the fruit of the *lentiſk*, in different parts of his work, as the preſages of ſowing and harveſt; and he expreſsly ſays, that the ſquill flowers produces fruit three times in the year. Since it is evident, therefore, that the word *ſkinus*, σκινος, ſignifies both a peculiar ſort of ſquill and the *lentiſk tree*; and ſince it is certain that the ſquill, in the countries where theſe authors wrote, does flower three times in the year, and that the *lentiſk* never does, nor ever can do ſo any where; it ſeems no raſh judgment to determine, that the antient Greeks, whenever they gave the *ſkinos* as the director for the ſowing or reaping corn, meant the ſquill by that word, never the *lentiſk tree*; though that happened to be called by the ſame name as this ſpecies of ſquill was, and by the Athenians, indeed, the ſquill in general.

The Latin writers, as they derived all theſe omens of the *ſkinus* from the Greeks, are not to be ſuppoſed to mean any thing but the ſquill in theſe directions to the farmer, even though they have erroneouſly rendered the word by *lentiſcus*. Cicero himſelf has fallen into this miſtake, quoting the abovementioned paſſage of Aratus, of the *ſkinos* bearing flowers and fruit three times in the year, and tranſlating it the *lentiſk*; but no authority can make us believe that this was ſaid of a tree, that can only flower and produce fruit once in the year. See SKINUS.

LENTISK-*wood*, *Lignum lentiſci*, is eſteemed aſtringent and balſamic, and is recommended in gonorrhœas and the fluor albus; but at preſent is little uſed.

LEO (*Cycl.*)— LEO, in botany, a name uſed by ſome authors for the *columbine*, or *aquilegia*. Columella, among others, calls it by this name. *Ger.* Emac. Ind. 2. See AQUILEGIA.

LEO, the *lion*, in zoology. See LION.

LEO-*pulex*, a name given by Mr. Reaumur to a ſpecies of inſect which feeds on the *pulex arboreus*, or common tree puceron, in the ſame manner that the creature, called the *formica leo*, does on the ants: This being alſo, like that, an animal, yet in an imperfect ſtate, and finally to be changed into a different creature, this author has kept up the remembrance of this analogy between them, by giving this a ſimilar name.

The *leo-pulex* is uſually bred among the herds of the pulices, which he devours moſt unmercifully. He is a worm of the hexapode, or ſix legged kind, and very ſoon arrives at the time of his change; after which he becomes a green fly with four wings. Another animal of this kind, and not leſs deſtructive of this ſmall race of animals, is a ſix legged worm of a whitiſh colour, and ſmaller than the former, which finally becomes a round bodied beetle.

Another ſpecies of theſe devourers this author calls *vermis hyſtrix*, the porcupine worm, from the vaſt number of ſpiculæ, or tender prickles, with which he is armed. This alſo finally becomes a round and ſmall beetle. *Reaumur*, Hiſt. Inſect. Tom. 1.

LEOCROCOTTA, in natural hiſtory, a name given by the antients to an animal, ſaid to be the ſwifteſt of all creatures in the world. Pliny, and ſome others, have called it *leucocrotta*, or *leucrocotta*, but theſe are only corruptions of the true name *leocrocotta*. It is deſcribed as a mungrel, or baſtard animal, unable to propagate its own ſpecies, and produced by the mixture of two different kinds of animals; being begotten upon the lioneſs by the male hyæna of ſome of the larger kinds.

Pliny tells us, in another part of his hiſtory, of this mixture of theſe two ſpecies, and ſays, that the animal produced between them was called the *crocotta*; whence we find, that the *crocotta* and the *leocrocotta* are the ſame animal, though deſcribed by moſt authors as two diſtinct ones.

In another place, however, he calls the creature produced between a dog and a female wolf, by this name, *crocotta*; ſo that this word is not always to be aſcertained in its ſenſe.

The *leocrocotta*, according to Pliny, has the head, neck, and breaſt of a lion, as alſo the tail. He adds, that it is one of the moſt voracious and deſtructive beaſts in the world, and that it imitates the human voice to draw men near it, that it may devour them; and that its jaw is one continued bone, without any diſtinction of teeth. The Greeks have not any where mentioned this animal, though they have in many places, and on many occaſions, named the *crocotta*, and upon the whole it appears to be one of thoſe animals, the exiſtence of which is much to be doubted.

The Latin authors have made ſome confuſion between this creature and the mantichora, attributing the things that have been ſaid of one to the other. See MANTICHORA.

LEONTESERES, in the natural hiſtory of the antients, the name of a ſpecies of agate, famous in early times for its imaginary virtues in taming the rage of wild beaſts, and not a little eſteemed among us for its beauty. It is the moſt variegated of all the agates. Its ground colour is yellow, and its variegations are flame colour, white, black, and green.

Sometimes it is one irregular congeries of all theſe colours, but more frequently it is very beautifully variegated with them in form of clouds and veins; the black and green particularly are uſually diſpoſed in concentric circles, round one or more points. It is found only in the Eaſt-Indies, and is very ſcarce. *Hill*'s Hiſt. of Foſſ. p. 487.

LEONTICE, in botany, the name given by Linnæus to that genus of plants which Tournefort and others have called *leontopetalon*. See LEONTOPETALON.

LEONTICE is alſo a plant mentioned by the antient Greeks, and called by them *cacalia*.

Dioſcorides tells us that it had theſe names in common, and that it was of great virtue in curing diſeaſes of the *aſpera arteria*, or wnid pipe.

This medicinal plant of the Greeks was very different from that we now call *cacalia*. Some have deſcribed it to have flowers like the oak, others like the olive tree, but the old manuſcripts of Dioſcorides all ſay, the flowers were like thoſe of bryony. Hence it could by no means be the *cacalia* of the moderns; nor is it eaſy to ſay, from ſuch ſhort and uncertain accounts, what it was.

LEONTIASIS, a name uſed by ſome authors for the elephantiaſis.

LEONTODERON, in natural hiſtory, a name given by ſeveral authors to a ſpecies of agate, of a plain yellowiſh colour, without variegations.

LEONTOPETALOIDES, in botany, the name of a genus of plants deſcribed by Dr. Amman; the characters of which are theſe. The flower is monopetalous, of the funnel faſhioned kind, and divided into ſeveral ſegments at the edge. This is ſucceeded by a bladder, or inflated fruit, which contains a number of oval ſeeds.

The plant is a native of the Eaſt-Indies; its root is tuberous, and two inches thick in the middle; it is grey on the outſide, and white within, and ſends out but few fibres. There uſually ariſe four ſtalks from each root. Theſe are very tall, and of a finger's thickneſs. Two of them uſually bear each one large and beautiful leaf, very thin in its ſubſtance, variouſly jagged, and of a beautiful green. The two others bear each a tuft of flowers, which are large and yellow, and ſtand in cups of a fine green, compoſed each of one leaf, divided into ſome ſegments at the end. Each flower is ſuſtained on a pedicle of about an inch in length. Theſe are ſucceeded by the fruit, which are green inflated bladders of an angular form, and of an inch diameter in the largeſt part, from whence they run to a point, where they are purple. The ſeeds are large, ſtriated, and of a pale brick colour. Act. Petrop. Vol. 8. p. 209.

LEONTOPETALON, in botany, the name of a genus of plants, called *leontice* by Linnæus. Its characters are, that the calyx is very ſmall and deciduous, and is compoſed of ſix leaves; the flower conſiſts of ſix petals of an oval figure, narroweſt at the baſe, the three interior ones being alternately ſmaller; the ſtamina are ſix very ſhort filaments; the antheræ are erect, formed of two valves, divided into two cells, and open lengthwiſe from the baſe to the apex, where they are firmly united; the germen is of an oblong, oval figure; there is no ſtyle; the ſtigma is obtuſe, and of the height of the ſtamina; the fruit is a large, globoſe, acuminated capſule, inflated, ſomewhat ſucculent, and containing only one cell. The ſeeds are globoſe and few in number.

There are only two ſpecies of *leontopetalon*, 1. The *leontopetalon* with tripartite leaves. And, 2. The ſimple leaved *leontopetalon*. Vid. *Linnæi* Gen. Plant. p. 146. and *Hill*'s Nat. Hiſt. Vol. 2. p. 377. ſeq.

The

The *artanita*, or *leontopetalon*, of the antients, is generally eſteemed a ſynonymous name for the *cyclamen*, or ſow bread, and is uſed as ſuch by moſt authors; but if the Arabian writers are underſtood of it in this ſenſe, it will be hard to reconcile their works with thoſe of the Greeks on the ſubject of this plant. See CYCLAMEN.

Aviſenna treats of the *artanita*, which he renders *cyclamen*, but the plant by no means agrees with the *cyclamen*, being the ſame with the *leontopetalon* of Dioſcorides and the Greeks; and after an account, which cannot belong to any plant but this, there follow the virtues properly belonging to the *cyclamen*. Aviſenna, who appears in all his writings to have been very well acquainted with plants, perceives his own error in this chapter, and lays the fault upon the tranſlator from the Greek. From this circumſtance we find, that the works of the Greek phyſicians were, in his time, tranſlated into the Arabic language; and that both this author, and Serapion, uſed theſe tranſlations, and not the originals. *Aviſenna*, Lib. 2. c. 62.

Aviſenna, in the abovementioned chapter, obſerves that the plant, known in his time by the name of *artanita*, had not the leaſt reſemblance with the *artanita* here mentioned, by the interpreter of Dioſcorides, whoſe works he uſed; but that it was plainly the *leontopetalon* of Dioſcorides, that was here deſcribed under that name. But in the remaining part of the chapter, we are let into another ſignification of the word *artanita*, which is, that it was among the Arabians a name given to the *ſtruthium* of the Greeks. Aviſenna ſays, that it was a plant of the thiſtle kind, armed with ſhort but very numerous thorns, and that its root was uſed in the cleanſing of wool. If this was the *artanita* of the times of Aviſenna, it is plain that the *artanita* of thoſe times was the *ſtruthium* of the antient Greeks, and the *herba lanaria* of the Latins, not the *candiſi*, as had been by ſome ſuppoſed. Pliny, from Theophraſtus, tells us alſo, that the *lanaria*, or *ſtruthium*, was a thorny plant.

The origin of this error ſeems not difficult to trace up from the earlier times; for in ſome of the old manuſcripts of Dioſcorides yet extant, with Arabic remarks, there ſtands the word *harthanithe* in Arabic characters againſt the *leontopetalon*. The old interpreter of this author, from whoſe Arabic tranſlation Aviſenna acknowledges that he took his account, has plainly given this name for the *leontopetalon*, though it belonged to the next chapter, which was of the *ſtruthium*; of which word it was the proper Arabic interpretation.

It ſeems that the two adjoining chapters had been joined into one, and that the Arabian interpreter not perceiving this, had given the ſynonymous names in the two languages amiſs. This is a thing that might eaſily happen in the copies of any of the Greek authors, where the chapters are not divided from one another, as in our books, by ſpaces, or the name of the ſubject treated of placed in capitals at the top; but only by a red letter, for the beginning of the name of the plant, about which a chapter was to treat. This only mark we find often omitted through the careleſsneſs of the copyiſts, and two chapters, or more, blended into one, both in the works of Dioſcorides and Theophraſtus.

This ſeems to have happened to the chapters of *ſtruthium* and *leontopetalon*, in the preſent inſtance. *Struthium* and *arthanita* we find, by Aviſenna, are names of the ſame plant, an herb whoſe roots were uſed in the wool trade; and the interpreter underſtanding the word *artanita* to mean *cyclamen*, gives the virtues of *cyclamen*, as belonging to it; and to compleat the error, adds the figure and characters of the *leontopetalon* from Dioſcorides, on account of its ſimilitude in ſome reſpects to the *cyclamen*. The roots both of the one and the other are black and tuberous, and like a turnep. See STRUTHIUM.

LEONTOPODIUM, *lion's* foot, in botany, a name given by ſome to a genus of plants, otherwiſe called *gnaphalium*. See GNAPHALIUM.

LEONURUS, *lions-tail*, in botany, the name of a genus of plants; the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind; the upper lip is imbricated, and much longer than the lower. From the cup there ariſes a piſtil, which is fixed, in the manner of a nail, to the hinder part of the flower; this is ſurrounded by four embryo's, which afterwards become ſo many ſeeds, and ripen in a long tubular huſk, which was the cup of the flowers.

The ſpecies of *leonurus* enumerated by Mr. Tournefort are theſe. 1. The ſideritis leaved perennial African *leonurus* with large purple flowers. 2. The catmint leaved annual American *leonurus* with ſmaller purple flowers. 3. The origanum leaved Canada *leonurus*. *Tourn.* Inſt. p. 187.

LEOPARD. This creature, when carefully examined, is found to be very like a cat; particularly its head, teeth, tongue, feet, and claws. Its actions alſo are all like a cat's; it boxes with its fore feet, as a cat does her kittens; leaps at its prey as the cat does; and will ſpit much in the ſame manner.

All the *leopard* kind, as they walk, keep the claws of their fore feet turned up from the ground, and ſheathed, as it were, in the ſkin of the toes, whereby they preſerve them ſharp for the ſeizing their prey.

Notwithſtanding the natural fierceneſs of the *leopard*, numbers of them are bred up tame, and kept for the Great Cham of Tartary's uſe, for the hunting of deer and other beaſts.

They are moſt numerous in Africa and Syria. *Grew's* Muſ. p. 12.

LEOPARD'S *bane*, in botany. See DORONICUM.

LEPA, in our old writers, a meaſure which contained the third part of two buſhels. Whence we derive a *ſeed-leap*. *Du Cange*. *Blount*.

LEPAS, in natural hiſtory, the name of a genus of ſhell fiſh, the ſame as *patella*. See PATELLA.

LEPASTRUM, in natural hiſtory, the name of a genus of foſſils, of the claſs of the *ſelenitæ*, compoſed of filaments arranged into broad plates, and thoſe diſpoſed in the form of a radiated ſtar.

The word is derived from the Greek λεπὶς, a ſcale or plate, and ἀστὴρ, a ſtar. *Hill's* Hiſt. of Foſſ. p. 123.

Of this genus there are two known ſpecies; the one a bright browniſh white kind, with thinner flakes, the other a white dull looking kind, with thick flakes. They are both found on the ſhores of Sheppey iſland in Kent, and form themſelves in the cavities of the ſeptariæ, called by authors *ludus Helmontii*; and the ſeptariæ with theſe affixed to them, have been accounted a ſeparated ſpecies of that body, and called the ſtarred waxen vein, or *ludus Helmontii ſtellatus*. The world in general has erred as to the origin of theſe beautiful foſſils, they having been ſuppoſed to be talcky ſpars; whereas, their want of elaſticity, the great character of talc, and their not fermenting with acids, which is the fundamental diſtinction of the ſpars, prove them to be not at all of the nature of either of theſe bodies; and experiments on them, plainly ſhew them to be a *ſelenites* of a particular kind. Ibid. p. 148.

LEPIDIUM, *dittander*, in botany, the name of a genus of plants; the characters of which are theſe. The flower conſiſts of four leaves, and is of the cruciform kind. The piſtil ariſes from the cup, and becomes at length a ſeed veſſel of a ſpear-pointed ſhape, and divided into two cells by an intermediate membrane, to which there adhere valves. The ſeeds contained in this capſule are uſually of an oblong figure.

The ſpecies of *lepidium*, enumerated by Mr. Tournefort, are theſe. 1. The common great broad leaved *lepidium*. 2. The low hoary field *lepidium*, called by many the *umbelliferous draba*, or Babyloniſh creſs. 3. The low leſs hoary *lepidium* of Aleppo. 4. The graſſy leaved *lepidium*, called by authors *iberis*, or *ſciatica creſs*. 5. The Spaniſh ſhrubby five leaved *lepidium*. *Tourn.* Inſt. p. 215.

LEPIDOCARPODENDRON, a name given by Boerhaave to a genus of plants, called by Linnæus *leucadendron*. See LEUCADENDRON.

LEPIDOTES, in natural hiſtory, the name of a ſtone carrying a reſemblance to the ſcales of fiſhes. The word has been uſed by ſome, as the name of thoſe ſtones which are compoſed of ſmall flakes, or ſcales of talc, and by others to expreſs the ſtones containing fiſh, or the impreſſions of fiſh, found in many parts of Germany.

LEPIUM, in natural hiſtory, the name of a genus of foſſils, of the claſs of the *gypſums*; the characters of which are, that the bodies of it are moderately hard, compoſed of very ſmall particles, and of a duſky hue.

Of this genus there is only one known ſpecies, and that is the leaſt valuable, and moſt impure of almoſt all the claſs of *gypſums*. It is of a rude, coarſe, and irregular ſtructure, a little ſoft to the touch, and in colour of a whitiſh grey; the two colours being irregularly blended in the different maſſes, and making ſome of a regularly deep colour, throughout great part of them, others merely white, with veins and ſpots of grey, and ſometimes there is mixed among this a greeniſh or reddiſh caſt. It is found in maſſes of ſix or ſeven inches in diameter, and of a very rugged ſurface. It ſplits horizontally more eaſily than in any other direction, and will neither give fire with ſteel, nor ferment with acid menſtrua, and is ſeen to be compoſed of irregularly ſhaped flattiſh particles.

It is found in great plenty in Germany, and is one of the many ſubſtances which, from their uſe in fuſion and caſting, the Germans called *ſpaad*. We have it in great plenty in Derbyſhire, and it is burnt into a ſort of plaiſter of Paris for the coarſer works; but it calcines very ſlowly and unequally. *Hill's* Hiſt. of Foſſ. p. 114.

LEPORARIA *aquila*, a name given by ſome authors to the *melanaëtos*, or black eagle, from his deſtroying great numbers of hares. *Willughby's* Ornitholog. p. 30.

LEPORINUM *genus*, in zoology, the name of a genus of animals, ſo called from their general reſemblance to the hare in ſhape, and other particulars; the characters by which they are diſtinguiſhed from other quadrupeds are theſe. They have feet divided into claws; they feed on vegetables; and

they

they have two very long teeth in the forepart of their mouths. *Ray*'s Syn. Quad. p. 204.

LEPRAS, in zoology, the name of a ſea fiſh of the turdus, or wraſſe kind, remarkable for the great variety and beauty of its colouring. It is ſeldom caught of more than five or ſix inches in length, and is conſiderably broad and flat. It ſometimes grows to a foot long, but that only in the ocean, never in the Mediterranean Sea, where it is uſually caught; and even there very rarely. It is ſpotted all over like the body of a leopard. It has only one long fin on the back, the anterior rays or ribs of which are prickly, the others ſoft and flexile; and this, as well as all its other fins, is ſpotted with blue, green, red, and yellow. Its body is alſo covered with ſpots and lines of the ſame colours, very beautifully diſpoſed, and the edges of all its ſcales are of a ſtrong red. Its mouth is ſmall; its teeth ſmall and ſharp; and it has the appearance of lips. Its ſcales are large, and its ſide lines finely arched and bent. Its head is leſs variegated than any other part of it, yet this has a number of red, green, and blue lines. Its eyes are ſmall and round, and their iris, as the fiſh turns them about, appears of a great variety of colours. It is one of the moſt beautiful fiſh of the Mediterranean, but is not much eſteemed at table, being of an inſipid and watery taſte. *Bellon.* de Piſc. *Geſner.* de Piſc. p. 559. See TURDUS.

LEPROSO *amovendo*, in law, an antient writ that lay to remove a *leper*, or *lazer*, who thruſt himſelf into the company of his neighbours in any pariſh, either in the church, or at other publick meetings, to their annoyance. Reg. Orig. 237. The writ lies againſt thoſe *lepers* that appear outwardly to be ſuch, by ſores on their bodies, ſmell, *&c.* and not againſt others: and if a man be a *leper*, and keep within his houſe, ſo as not to converſe with his neighbours, he ſhall not be removed. New Nat. Br. 521. *Blount*, *Cowel.*

LEPTODECARHOMBIS, in natural hiſtory, the name of a genus of foſſils of the claſs of the *ſelenitæ*.

The word is derived from the Greek, λεπτὸς, thin, δεκας, ten, and ῥομβὸς, a rhombic figure, and expreſſes a thin or ſlender rhomboidal body, conſiſting of ten planes, or ſides.

The characters of this genus are, that the *ſelenitæ* of it conſiſt of ten planes, each ſo nearly equal to that oppoſite to it, as very much to approach to a decahedral parallelopiped, but they never truly or regularly are ſo. Two of the planes in this genus, which may properly enough be called the top and bottom, are ever broader and flatter than the reſt, and theſe, though not regularly equal, uſually very nearly anſwer one another, as do alſo the other eight, in two ſets of fours.

There are four ſhorter planes meeting in ſomewhat acute angles, two and two, from the ends, or two ſhorter edges of the two flat and broad rhomboidal planes, called the top and bottom; and four longer meeting in more obtuſe angles from the ſides, or longer edges of the ſame rhomboidal planes.

As the broader and flatter planes, or the top and bottom, in this genus are not regularly equal to each other, ſo neither are the eight narrower to their oppoſites, but there are uſually differences both in their angles, and in the breadth of them.

Of this genus there are only five known ſpecies. 1. A thin, fine, pellucid, and ſlender ſtreaked one with tranſverſe ſtriæ, found in conſiderable quantities in the ſtrata of clay in moſt parts of England, particularly near Heddington in Oxfordſhire. 2. A thin, dull-looking, opake, and ſlender ſtreaked one, more ſcarce than the former, and found principally in Leiceſterſhire and Staffordſhire. 3. A thin fine ſtreaked one with longitudinal ſtriæ, found in the clay pits at Richmond, and generally lying at great depths. This has often on its top and bottom a very elegant ſmaller rhomboide, deſcribed by four regular lines. 4. A rough kind with thick tranſverſe ſtriæ, and a ſcabrous ſurface, very common in Leiceſterſhire and Yorkſhire. And 5. a very ſhort kind with thick plates, common in the clay pits of Northamptonſhire and Yorkſhire. *Hill*'s Hiſt. of Foſſ. p. 118 to 129.

LEPTOS *libanotis*, in the materia medica of the antients, a name given by ſome of the Greek writers to the ſmall frankincenſe, that is ſuch as came to their hands in ſmall flakes, broken from the larger maſſes in the gathering or packing up. This was alſo called *manna thuris*, the manna of frankincenſe, the word *manna* being of old uſed to expreſs any thing formed of granules, or ſmall pieces. The antients eſteemed this *leptos libanotis*, or *manna thuris*, when pure, beyond any other kind, for they always valued that frankincenſe moſt, which was drieſt and moſt brittle, and ſuch only as was ſo, could break off in theſe ſmall flakes. The medicine, however, ſoon grew ſubject to adulteration, and loſt its credit; for the duſt of the frankincenſe being allowed to be put up among this *manna thuris*, Dioſcorides tells us that in his time people, greedy of gain, had found the way to adulterate it, by adding, inſtead of this genuine duſt, the ſifted powder of the reſin of the pine tree.

LEPTUM, in antiquity, a ſmall piece of money, which, according to ſome, was only the eighth part of an obolus; but others will have it to be a ſilver or braſs drachm. *Pitiſc. Lex. Ant.* in voc.

LEPUS, the *hare*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of animals; the characters of which are, that the animals of it have feet made for running, with five toes on the fore ones, and four on the hinder, and have very long ears. Under this genus the author takes in all the creatures of the *hare* and rabbit kind. *Linnæi* Syſtem. Nat. p. 38.

What is moſt particular in the *hare* is, that the hinder legs are much longer than the fore ones, and are furniſhed with extremely ſtrong muſcles; by which means the creature, naturally defenceleſs, is furniſhed with a power of running very ſwiftly from whatever aſſails it. The head is roundiſh; the eyes prominent; and the upper lip ſplit. Its ears are very long; and it is ſaid to ſleep with its eyes open, for fear of danger. It lies hid all day, but in the night goes out in ſearch of food. *Ray*'s Syn. Quad. p. 204.

LEPUS *aqueus*, the *water hare*, a name given to the creſted diver, or colymbus of America, which is the ſame ſpecies with the larger European kind, though deſcribed by many authors as a different bird. It has the name of the *ſea hare*, or *water hare*, from its great nimbleneſs in the water. It is caught with much difficulty; and the Mexicans have a thouſand fabulous ſtories about it; as that it is able to call up the winds to overſet the boats of people who hunt it, that it has a jewel of great value in its heart, and the like ridiculous ſtories. *Ray*'s Orni. p. 257.

LESBIUM *marmor*, a name given by the antients to a ſpecies of marble of a blueiſh white, ſometimes uſed for vaſes and other ornamental works, but principally in the walls of public buildings.

LESSON, in the manege, is uſed for any piece of inſtruction in that art, whether given to the ſcholar or the horſe.

LET-*fall*, at ſea, the word of command for putting out a ſail, when the yards are aloft, and the ſail is to come down from the yard; but when the yards are ſtricken down, then the ſail is looſed below, before they hoiſe the yard.

Let-fall is not properly ſaid of top-ſails, becauſe they lie on the top; and therefore the word for them is, *Heave out your top-ſails*. Nor can it be applied to the miſſen; for the word is, *Strike the miſſen and ſet it*. So that in ſtrictneſs the term *let-fall* belongs only to the main-ſail, fore-ſail and ſprit-ſail, when their yards are hoiſted up aloft.

LETTER (*Cycl.*)— LETTERS *of marque*, in the Britiſh dominions, are to be granted by the admiralty. See PRIZES.

Aſſyrian LETTERS. See ASSYRIAN.

Hebrew LETTERS. See HEBREW.

LETTUCE, *lactuca*, in botany. See LACTUCA.

We have the ſeveral ſpecies of *lettuce* cultivated in the kitchen gardens about London, all of which are excellent ſallad herbs, and ſucceed one another in their ſeveral ſeaſons. The ſeveral kinds are, 1. The common *lettuce*. 2. The cabbage kind. 3. The Sileſia. 4. The Dutch brown. 5. The Aleppo. 6. The Imperial. 7. The green capuchin *lettuce*. 8. The Verſailles, or upright white cos *lettuce*. 9. The black cos. 10. The white cos *lettuce*. 11. The red capuchin *lettuce*. 12. The Roman *lettuce*. 13. Prince *lettuce*, and 14. The royal *lettuce*.

The firſt of theſe ſorts is very common in all gardens, and is commonly ſown for cutting very young, to mix with other ſalad herbs in ſpring; and the ſecond, or cabbage *lettuce* is only this, mended by culture. It may be ſown at all times of the year, but in the hot months requires to be ſown in ſhady borders. The cabbage *lettuce* may alſo be ſown at different ſeaſons to have a continuation of it through the ſummer. The firſt crop ſhould be ſown in February in an open ſituation; the others, at three weeks diſtance, but the later ones under covert, but not under the drippings of trees. *Miller*'s Gardners Dict.

The Sileſia, imperial, royal, black, white and upright cos *lettuces*, may be ſown firſt in the latter end of February or the beginning of March, on a warm light ſoil, and in an open ſituation; when the plants are come up, they muſt be thinned to fifteen inches diſtance every way, they will then require no farther care than the keeping them clear of weeds; and the black cos, as it grows large, ſhould have its leaves tied together to whiten the inner part. Succeeding crops of theſe ſhould be ſown in April, May, and June, and toward the latter end of Auguſt they may be ſowed for a winter crop, to be preſerved under glaſſes, or in a bed arched over with hoops and covered with mats.

The moſt valuable, of all the Engliſh *lettuces*, are the white cos, or the Verſailles, the Sileſia, and the black cos. The brown Dutch and the green capuchin are very hardy, and may be ſown late, under walls, where they will ſtand the winter, and be valuable, when no others are to be had. The red capuchin Roman, and prince *lettuce*, are very early kinds, and are ſown for variety, as are alſo the Aleppo ones for the beauty of their ſpotted leaves.

The milk of the common garden *lettuces* is hypnotic, while the root of the plant is cooling, diluent and nouriſhing. Dr. Aſton. ap. Med. Eſſ. Edinb. Vol. 5. art. 12.

LEVARE *antiphonam*, in the muſic of the Romiſh church, is to begin or open the firſt note of an anthem.

LEVA-

LEVATOR *ani parvus*, in anatomy, a name given by Riolanus, Douglaſs, and others, to a muſcle, called alſo by ſome *tranſverſalis penis* and *tranſverſalis urethræ*, and by Albinus *tranſverſus perinæi*.

LEVATOR *ani ſextus*, in anatomy, a name given by Riolanus and ſome others, to what was ſuppoſed by them to be a diſtinct muſcle; though, according to the later writers, it proves to be only a part of the ſphincter of the anus running into the perinæum. Some have alſo called this proceſs of the ſphincter the *dilatator urethræ* and *dilatator penis*.

LEVATOR *coccygis*, in anatomy, a name given by many to the muſcle, now generally known by the name of *coccygæus*. See COCCYGÆUS.

LEVATORES *breviores coſtarum*, in anatomy, the modern name introduced by Albinus for certain muſcles of the ribs, called by others the *ſupracoſtales*, the *ſur coſtaux* of the French, and the *ſcaleni quarti* by ſome. Steno was the firſt who called them *levatores coſtarum*, from their office; he is followed in this by Morgagni, and Albinus adding the word *breviores*, by way of diſtinction from ſome other longer ones, called *ſupracoſtales longi* by authors, has formed the modern name.

LEVATOR *internus*, in anatomy, a name given by Douglaſs, and ſome others, to a muſcle, now generally called only the *levator ani*.

LEVATOR *labii ſuperioris*, in anatomy, a name given by Albinus to a muſcle, called by Santorini and Winſlow the *inciſorius*, and by Cowper the *elevator labii ſuperioris*, and by Spigelius *alas naſi abducens*.

LEVATOR *menti*, in anatomy, a name given by Albinus to a muſcle of the face, called by Cowper and others *elevator labii inferioris*, and by ſome the *inciſivus inferior*. See the article INCISIVUS and ELEVATOR.

LEVATOR *palpebræ ſuperioris*, in anatomy, a name given by Albinus to a muſcle of the face, called by Cowper, Douglaſs, and the generality of writers, *aperiens palpebram*, and *aperiens palpebram rectus*.

LEVATOR *proſtatæ*, in anatomy, a name given by Santorini, and ſome others, to a muſcle, called by Winſlow, *proſtaticus ſuperior*, and by Albinus *compreſſor proſtatæ*.

LEVATOR *ſcapulæ proprior*, in anatomy, a long and pretty thick muſcle, about two fingers in breadth, lying above the ſuperior angle of the ſcapula, along the poſterior lateral part of the back of that bone. It is inſerted above, in the extremities of the tranſverſe apophyſes of the four firſt vertebræ of the neck by four fleſhy branches, ending in ſhort tendons. Sometimes the ſecond, ſometimes the third, or both; and ſometimes the third of theſe branches is wanting, theſe defects being made up by the largeneſs of the reſt: from thence theſe branches run down a little obliquely, and then uniting together, they are inſerted in the ſuperior angle of the ſcapula, and in the edge of its baſis from thence to the ſmall triangular ſpace, being there covered a little by the rhomboides. This muſcle is eaſily divided into two through its whole length. It is covered by the trapezius, and its inſertions in the neck are ſometimes mixed with thoſe of the neighbouring muſcles.

LEUCACHATES, in the natural hiſtory of the antients, the name of an agate, but that not a peculiar ſpecies, but only a particular appearance of the lead coloured agate, called *phaſſachates*. *Hill*'s Hiſt of Foſſ. p. 478. See PHASSACHATES.

LEUCACANTHA, in botany, a name uſed by Dioſcorides and the other Greek writers for the acacia tree, which produces the gum arabic, but it was alſo uſed for a kind of prickly plant, called alſo *amgaila* by ſome of the Arabians; as being a plant whoſe roots were knotted and jointed. Theſe joints were ſeparated and dried, and then uſed in medicine as cordiacs and carminatives, under the names of *bunk* or *bunken*. They were of a very agreeable aromatic ſmell, and very little taſte; and the antients always preferred ſuch of them as were yellow and light, rejecting thoſe which were heavy and white, and which wanted ſmell. It is not well known at this time what theſe roots were; but it is neceſſary, in order to the right underſtanding the works of the antients, to know that there were ſuch roots; and that though called by the ſame name with the gum arabic tree, they were of a very different nature.

The calling them *leucacantha* and *acantha arabica*, two common names for that tree, ſeems to have led others into the ſuppoſing them the ſame with that tree or its roots; and all the names of that tree have at one time or other been given to theſe roots; and all the names of theſe roots, or of the plant to which they belong, have been given to the acacia tree; ſo that in reading either the Greek or Arabian authors, where any of theſe words occur, the ſenſe of the context only can explain whether the acacia tree, or the bunken plant be meant by them. See AMGAILA and BUNK.

LEUCANTHEMUM, the *great daiſy*, in botany, the name of a genus of plants, the flowers and ſeeds of which are wholly the ſame with thoſe of the chryſanthemum or corn-marygold, except that the petals which compoſe the outer circle of the flower in this genus are always white.

The ſpecies of *leucanthemum*, enumerated by Mr. Tournefort, are theſe. 1. The common *leucanthemum*, or common *great daiſy*. 2. The common *great daiſy* with hairy ſtalks. 3. The great alpine *leucanthemum* with rigid leaves. 4. The great mountain *leucanthemum* with ſharp pointed leaves. 5. The mountain *leucanthemum* with obtuſe crenated leaves. 6. The *leucanthemum* with broad ſerrated leaves, and creeping roots. 7. The leſſer mountain *leucanthemum*. 8. The mountain *leucanthemum* with corn-marygold leaves. 9. The graſſy leaved *leucanthemum*. 10. The broad leaved great flowered *leucanthemum*. 11. The Alpine *leucanthemum* with coronopus leaves. 12. The alpine *leucanthemum* with very deeply divided leaves. 13. The little pyrenean *leucanthemum* with divided and hairy leaves. 14. The Portugal *leucanthemum* with jagged ſilvery leaves. 15. The Canary *leucanthemum* with corn-marygold leaves, and the taſte of pyrethrum. *Tourn.* Inſt. p. 492.

For the characters and different ſpecies of the common *daiſy*. See the article BELLIS.

LEUCELECTRUM, a name given by ſome authors to that ſort of amber, which is white and opake, and uſually of a fatty look. See SUCCINUM.

LEUCISCUS, in zoology, the fiſh commonly known in England by the name of the *dace* or *dare*.

It is diſtinguiſhed from other fiſhes by its reſembling the chub in ſize, but that it is ſmaller and whiter, and has a ſmaller head in proportion to its body. Its head is leſs flatted alſo, and its tail more forked, and its body thinner and flatter than that of the chub, but longer and narrower than that of the roach. It has no teeth in its jaws, but like the reſt of the leather mouthed fiſhes has them in the throat. It is very common in our rivers, and is a remarkably lively fiſh. They ſpawn in February, and the males at that time are ſpotted and ſcabby, as in the rudd, *&c.* and are in higheſt ſeaſon for the table in April and May, but they are never a very well taſted fiſh, or much eſteemed. See DACE.

LEUCOCROTTA, in natural hiſtory, the name given by many authors to a beaſt, ſuppoſed to be the ſwifteſt of all creatures in the world: others have called it *leucrocotta*, but the true name is *leocrocotta*. See LEOCROCOTTA.

LEUCODENDROS, in botany, a name given to the *ſilver pine-tree*. See *ſilver* PINE-*tree*.

LEUCOGÆA, in natural hiſtory, a name by which ſome authors have called the ſubſtance more uſually known by the name of *morochthus*, and called in Engliſh, French chalk, or Brianſon chalk. *Hill*'s Hiſt. of Foſſils, p. 22. See the article MOROCHTHUS.

LEUCOGRAPHIS, in natural hiſtory, the name uſed by ſome of the antient writers, for the ſubſtance commonly called *morochthus*, or French chalk. *Hill*'s Hiſt. of Foſſils, p. 22. See MOROCHTHUS.

LEUCOIUM, *wall-flower*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of four leaves, and is of the cruciform kind. The piſtil ariſes from the cup, and ripens into a long flatted pod, which is divided by an intermediate membrane into two cells, and contains a number of flattiſh rounded and marginated ſeeds.

The ſpecies of *leucoium*, enumerated by Mr. Tournefort, are theſe. 1. The great white *leucoium*. 2. The great white or hoary *leucoium* with greyiſh flowers. 3. The common purple *leucoium*. 4. The great ſcarlet flowered, hoary leaved *leucoium*. 5. The violet flowered *leucoium*. 6. The purpliſh red flowered *leucoium*. 7. The leſſer hoary *leucoium*. 8. The great hoary *leucoium* with double red flowers. 9. The great hoary *leucoium* with double purple flowers. 10. The great hoary *leucoium* with double blueiſh purple flowers. 11. The great hoary *leucoium* with double white flowers. 12. The great hoary *leucoium* with a flower variegated with irregular ſtreaks. 13. The great hoary *leucoium* with purple ſpotted flowers. 14. The great hoary *leucoium* with double variegated flowers. 15. The great purple flowered *leucoium* with blood coloured ſpots. 16. The great hoary double flowered variegated *leucoium* with leaves edged with ſilver. 17. The great double white *leucoium* with purple ſpots in the flowers. 18. The great double white *leucoium* with blood coloured ſpots in the flower. 19. The green leaved ſweet ſcented white flowered *leucoium*. 20. The great white ſpring flowering perennial *leucoium*. 21. The heſperis leaved *leucoium*. 22. The little ſpring ſea rocket leaved *leucoium* with white flowers. 23. The ſea *leucoium* with ſinuated leaves. 24. The white ſea *leucoium*. 25. The great yellow *leucoium* with bullated leaves. 26. The large flowered yellow *leucoium*. 27. The large flowered yellow *leucoium* with ſerrated leaves. 28. The common yellow *leucoium* or *wall-flower*. 29. The great double yellow *leucoium*. 30. The leſſer double yellow *leucoium*. 31. The double yellow *leucoium* with expanded flowers. 32. The double ferrugineous flowered *leucoium*. 33. The great double *leucoium* with flowers variegated with purple and yellow; and 34. The narrow leaved alpine *leucoium* with brimſtone coloured flowers.

Several ſpecies of this plant are propagated in gardens for the beauty of their flowers, where they are commonly called *ſtock july flowers*.

They are all to be propagated by ſeeds, and the beſt time for ſowing them is in the beginning of April. They muſt be ſown upon a border of freſh light earth, where they may enjoy the morning ſun; if they are expoſed to too much ſun, or ſown on too dry a ſoil, they are uſually deſtroyed while young by a ſort of fly, but there is a way of guarding againſt this, which is to ſow a few radiſhes on the ſame ground; for the flies being more fond of their leaves, will ſpare the others. The radiſhes, however, muſt not ſtand too thick, for that would weaken the plants.

When the young plants have got about ſix leaves, they ſhould be tranſplanted, to borders of light earth, where they may alſo enjoy the morning ſun; and here they ſhould ſtand at four inches diſtance, and be watered and ſhaded till they have taken root, and in the latter end of the Auguſt following they may be tranſplanted to the places in the flower garden, where they will flower the ſucceeding ſpring. This laſt tranſplanting ſhould, if poſſible, be done in a wet ſeaſon.

Theſe are but biennial plants, for which reaſon they ſhould be ſown every year; and it is a good method to exchange ſeeds annually with a perſon who raiſes good flowers in ſome other place. All the kinds may be propagated by ſlips and cuttings, but they never are ſo ſtrong, or flower ſo well this way, as when raiſed from ſeeds. *Miller*'s Gardners Dict.

LEUCOLIBANON, in the materia medica of the antients, a name given to the white *olibanum*, or frankincenſe, which they carefully diſtinguiſhed from the reddiſh or yellowiſh *olibanum*. This was alſo called *argyrolibanum*, or the ſilver coloured olibanum; and the yellow one *chalcolibanum*. This latter word is uſed in the Apocalyps of St. John, and is miſunderſtood ſo far, as to be tranſlated braſs, and ſuppoſed to be a kind of braſs from Mount Lebanon. See CHALCOLIBANON.

LEUCOLITHOS, in natural hiſtory, a name given by ſome of the Greek writers to the *pyrites argenteus*, or ſilvery pyrites. The antients had a great opinion of theſe foſſils in diſeaſes of the eyes; they uſed all the kinds of pyrites, or marcaſite, after calcination, for this purpoſe; but as they diſtinguiſhed four kinds of them, they attributed theſe virtues, in different degrees, to the different kinds; therefore they had recourſe to ſo many peculiar names for the diſtinguiſhing them; and the white kind was called *leucolithos*, to diſtinguiſh it from the duſky one called the iron pyrites, and the deeper and paler yellow kinds, called the gold and braſſy marcaſites.

LEUCOMA, Λευκωμα, among the Athenians, ſignified a public regiſter of the whole city, in which were written the names of all the citizens, as ſoon as they came to be of age to enter upon their paternal inheritance. *Potter*, Archæol. Græc. lib. 1. c. 13. Tom. I. p. 79.

LEUCOMÆNAS, in zoology, a name by which ſome have called the *ſmaris*, a ſmall fiſh caught in great plenty in the Mediterranean. *Willughby*, Hiſt. Piſc. p. 319. See the article SMARIS.

LEUCOPETALOS, in natural hiſtory, the name of a beautiful ſtone deſcribed by Pliny, as being of a fine gold yellow, variegated with white.

LEUCOPHAGIUM, a name given by ſome phyſicians to a ſort of medical aliment good in conſumptions, and other general decays. It is compoſed of ſweet almonds macerated in roſe water with the tender fleſh of a capon, all being finally boiled together to a pulp, capable of being paſſed through a ſieve.

LEUCOPIPER, in the materia medica, a name by which ſome authors have diſtinguiſhed the white pepper. Mant. Exot. p. 10.

LEUCORHŒA, a name given by ſome medical writers to the whites, or *fluor albus*, a very troubleſome diſeaſe to women. See FLUOR *albus*.

LEUCORODIUS, in zoology, a name by which ſome have called the *platea*, or ſpoonbill, a very remarkable kind of ſtork or hern. See PLATEA.

LEUCOSTAPHYLOS, in botany, a name given by ſome authors to the water elder, or *opulus*. *Ger.* Emac. Ind. 2.

LEVEN, in botany, a term uſed by Boccone for the milky juice contained in the globules placed at the tops of the ſtalks of red coral. Theſe round buttons are the only part of the coral, which are ſoft while under water, and from theſe the milky juice is eaſily expreſſed by a gentle ſqueezing between the fingers. The globules are each made up of five or ſix little cells, not communicating with one another, and each containing its own ſeparate quantity of this white and thick fluid. When the coral is newly taken up out of the ſea, this juice is of a ſharp, acrimonious, and aſtringent taſte; but when it has been ſome time expoſed to the air, it loſes the acrimony, and the aſtringency of the taſte only remains. This change in the taſte is made in ſix or eight hours, in hot weather, and the juice, in the ſame time, loſes its colour and conſiſtence, growing hard and brown. Philoſ. Tranſ. N° 100.

LEVIRATE, in the Jewiſh cuſtoms, a term uſed by authors who have written on the law and cuſtoms of the Jews, to denote particularly that law of Moſes, which obliges one brother to marry the widow of another, who died without children, and to raiſe up ſeed to him.

The word is derived from *levir*, which ſignifies, in Latin, the huſband's brother, or the brother-in-law; and the word *levirate* has been hence formed, to expreſs the law whereof we have been ſpeaking.

This law, which is an exception to that which condemns marriages between brothers and ſiſters, and between brothers-in-law, and ſiſters-in-law, ſeems to have been in uſe among the Hebrews and Canaanites before the time of Moſes; ſince Judah gives his firſt born Er, and Onan his ſecond ſon, ſucceſſively to Tamar, and obliges himſelf to give her likewiſe to Selah his third ſon. *Calm.* Dict. Bibl.

LEVISTICUM, in botany, a name given by ſome to *liguſticum*, or lovage. See LIGUSTICUM.

LEVITICI, in church hiſtory, a ſect of heretics who ſprung from the Gnoſtics and Nicolaitans. *Hofm.* Lex. in voc.

LEWING, in metallurgy, the ſifting the ores of metals in water. This is done in fine ſieves moved backward and forward under water; and is the method of ſeparating the finer part of the ores which had ſubſided among the larger lumps, under that part of it ſeparated for uſe in the various waſhings. The coarſer matter, left in the ſieve, is powdered again with the larger maſſes, and all thus ſifted together for the blowing-houſe. *Ray*'s Engliſh Words, p. 122.

LEXIARCHI, Λεξιαρχοι, at Athens, ſix officers, aſſiſted by thirty inferior ones, whoſe buſineſs it was to lay fines upon ſuch as came not to the public aſſemblies, and alſo to make ſcrutiny among ſuch as were preſent. *Potter*, Archæol. Græc. l. 1. c. 13. Tom. I. p. 79.

The *lexiarchi* kept a regiſter of the age, manners, and abilities of all the citizens, who were always enrolled at the age of twenty. Hiſt. Acad. Inſcrip. Vol. 4. p. 93.

LEYGAGER, is uſed for wager of law. Stat. 1 Car. I. c. 3. *Blount.*

LIBADION, in botany, a name by which Pliny, and ſome other authors, have called the *centaureum*, or centaury. *Ger.* Emac. Ind. 2.

LIBANIUM, in botany, a name given by Apuleius, and ſome other authors to the common *borago*, or borrage. *Ger.* Emac. Ind. 2.

LIBANOMANTIA, Λιβανομαντεια, in antiquity, a ſpecies of divination performed with frankincenſe; which, if it preſently caught fire, and ſent forth a grateful odour, was eſteemed a happy omen, and *vice verſa*. *Potter*, Archæol. Græc. l. 2. c. 14. Tom. I. p. 319.

LIBEL, in the law of Scotland, is uſed for a criminal accuſation.

LIBELLA, in natural hiſtory, the name of a very large genus of four winged flies, called by us *adder-flies* and *dragon-flies*. See FLY.

Theſe flies have all two very large and reticulated eyes, covering the whole ſurface of the head. They fly very ſwiftly, and prey upon the wing, being of great uſe to mankind, in clearing the air of innumerable little flies.

They are produced of ſeveral ſpecies of ſix-legged worms living in the waters, and figured by Mouffett, and other authors, under the name of *pulices* and *locuſtæ aquaticæ*. Mr. Ray deſcribes twenty three ſpecies of theſe flies. 1. The common greateſt *libella* with ſilvery wings. This is nearly three inches long, and is of a mixed colour of greeniſh and blackiſh. 2. The great *libella* with a long and ſlender body, and with yellowiſh wings. 3. The great *libella* with a long and ſlender body, of a lively green, inflated at both ends. 4. The common great *libella* with a ſhort and broad yellow body. 5. The great *libella* with a ſhort and broad blue body. 6. The great *libella* with a long and ſlender yellow body, and with no ſpots at the roots of the wings. 7. The great yellow winged *libella* with ſmooth ſhoulders. 8. The great *libella* with hairy ſhoulders and reticulated wings, and with a very beautiful red body, thicker toward the tail than elſewhere. 9. The middle ſized *libella* with a body partly of a green, and partly of a blue colour, with a row of large black ſpots in the middle. 10. The middle ſized *libella* with a blueiſh body, and wings all over of a blueiſh black. 11. The middle ſized *libella* with a blueiſh green body, and yellowiſh unſpotted wings. 12. The green bodied middle ſized *libella* with yellowiſh wings, marked with white ſpots toward the ends. 13. The green bodied middle fized *libella* with pale green wings. 14. The middle ſized *libella* with membranaceous ſilvery wings, with round brown ſpots in the middle. 15. The ſmall *libella* with reticulated wings, and with a green back with white joints. 16. The middle ſized *libella* with a white back, with two black ſpots at the joints. 17. The ſmall *libella* with reticulated wings, with a red back variegated with black ſpots at the joints. 18. The ſmall ſhort winged *libella* with a blue body, variegated with black ſpots. 19. The ſmall *libella* with ſhort wings, variegated with white and brown ſpots. 20. The ſlender weak *libella* with pellucid reticulated wings, marked with black ſpots. 21. The ſmalleſt *libella* with a body variegated with green and black. To theſe Mr. Ray adds two flies, he took in Italy, with large and long wings, which were reticulated, and of a browniſh colour, and were variegated with almoſt innumerable brown ſpots of various ſizes.

Moſt

Moſt of theſe ſpecies are found in Auguſt and September, in our fields and gardens, eſpecially near places where there are waters, as they have their origin from worms living in that element. The great ones uſually live all their time about waters, but the ſmaller are common among hedges, and the ſmalleſt of all are moſt frequent in gardens. The ſmaller kinds often ſettle upon buſhes, or upon the ground; but the large ones are almoſt always upon the wing, ſo that it is very difficult to take them. Their eyes are a beautiful object for the microſcope. *Ray*'s Hiſt. Inſect. p. 50.

The manner of this inſect's coupling with the female is a thing that has attracted the obſervation and admiration of multitudes, as they are frequently ſeen, in the hotter months, in that ſtate, flying together about the edges of waters.

Mr. Homberg, of the Academy of Paris, has taken great pains to inform the world of the whole ſecret of this ſtrange coitus, and of ſeveral other remarkable particulars in regard to the creature. The ſpecies in which he obſerved it is the common *libella* with a blue body, and large black ſpots on the wings; and is one of the middle ſize, between the largeſt and leaſt of theſe creatures, and very frequent in moſt places in June, July, and Auguſt.

He obſerves, that the male and female, in this ſpecies, are of the ſame ſize and appearance, but that the tail, or end of the body is larger in the female. The body of the male is of a bright violet colour, and the wings have each a large duſky ſpot near their extremity. This ſpot is really of the ſame violet colour with the body, but being deep, and on a very tranſparent body, it only ſerves to render it opake on a ſlight view. The females have bodies of a ſhining greeniſh grey, and their wings have not theſe ſpots. When this animal is at reſt, its wings are all placed erect, and ſo cloſe together, that they make the appearance of only one wing; which is a peculiarity in this ſpecies, the other *libella* carrying their wings always extended, as well when in a ſtate of reſt, as when flying. The head, in this ſpecies, is very large, in proportion to the body, and is joined to it only by a ſlender filament; and the belly is divided by ten articulations, which ſerve only to move it upwards and downwards, having no power of turning it ſideways. The part to which the wings are fixed is called the breaſt in animals of this kind; but in this creature the lungs are not ſituated there, but in the middle of the belly, which is ſeen continually riſing and falling at inſpiration and expiration. The laſt joint of the body of the male is a ring containing the anus, and this is furniſhed with two pair of hooks; the one pair outward and larger, the other inward and ſmaller: theſe the creature is able to open and ſhut as lobſters do their claws. The extremity of the belly of the female ſeems to conſiſt of two tubes, or pipes, one placed upon the other; the upper one is the anus, out at which it voids its excrements; the under one is the female part of generation, and the entrance to the womb of the animal. The womb is about a twelfth of an inch long, and has its origin at the lower part of the eighth ring of the body. Each of theſe tubes is furniſhed at the extremity with two ſmall points, as the anus of the male is with two pair of hooks; and theſe two pipes placed one over the other in the female, are the reaſon why the end of the body is not ſo large in the male as in this ſex.

When the male of this ſpecies finds the female ſiting upon a leaf, or ſtick, he ſeizes her as he flies, taking faſt hold of her with the hooks at the anus by the neck, or that part which joins the head to the breaſt, and immediately flies away with her, holding her fixed by the neck to the end of his tail. It would not be unnatural, on this occaſion, to imagine that there were one ſpecies of animal running away with another to devour it; but this thought muſt be of ſhort duration, ſince the female will be ſoon obſerved to make no attempts to get away; but, on the contrary, to contrive, as well as ſhe can, to be better carried, and that with leſs trouble to the male.

The male does not carry his bride far before he ſettles himſelf upon ſome plant, and raiſes his tail ſo, that the female may be brought to ſit eaſily under him upon the ſame plant. As ſoon as the female is thus ſeated, ſhe turns up her tail, and brings it between the legs of the male, then places it to a certain part of the breaſt of the male, in which are the organs of generation in that ſex. All this while the male keeps his hold of her neck with his forceps, or hooks. They uſually remain in this poſture about three minutes; and after that the male gently raiſing up his breaſt, they become ſeparated, and leaving the hold he had on her neck, at the ſame time, he flies away as he pleaſes. The female uſually remains on the place for half a quarter of an hour, and then ſhe flies away alſo. Mr. Homberg having obſerved the coupling of theſe animals thus far, was determined to examine the organs uſed in it by diſſection. To this purpoſe he caught ſeveral of them, and on the whole collected theſe obſervations.

The upper part of the body, as well in the male as female, is rounded, or convex, and the under part is ſo folded in the middle, as to make a kind of channel. The ſecond ring, in the body of the males, has a furrow, the edges of which are ſurrounded with hairs, and from the bottom of which, toward the breaſt, there ariſes a long black body, of the thickneſs of a hog's briſtle; at the end of this there is a ſmall white globule, which is hard, and very bright; this enters the breaſt, and ſeems to be the penis of the male. Its uſual poſition is horizontal, in the furrow of the body, and its white globule at the end may be always made to ſhew itſelf, by preſſing the body gently with a feather. The preſſing the tail of the animal, alſo makes it appear in the ſame manner. On cutting the breaſt of the animal tranſverſely, there appears a hollow cone, the baſe of which lies toward the body, and its apex runs to the root of this penis; and if a fine probe be puſhed into the hollow cone in the breaſt, the penis is always extended to its utmoſt length. This hollow cone ſeems the reſervoir of the ſemen of the male, and is only to be ſeen ſoon after the coupling with the female, when that ſemen has been ejected; it is then always to be ſeen hollow and empty, but at other times, when full, its parietes are ſo thin, that its ſhape is not to be diſtinguiſhed. The furrows, in which the penis is lodged, is no way different from that which runs all along the underſide of the body, and of which it is a continuation; only that it is deeper in this part, and is covered with hairs, which it is not elſewhere.

The female has the ſame furrow, but it is in her no deeper in this part than elſewhere, and has no hairs. The ninth ring in the female has, on its under part, an aperture, which is furniſhed at its edge with a little greyiſh ſubſtance, reſembling a ſmall wing, on each ſide. Theſe two wings ſerve to ſhut and open the paſſage to this aperture, at the pleaſure of the animal, and when ſhut they make a ſort of pipe before it. From the root of the eighth joint to the end of the ninth, there runs a ſmall elevation, at the extremity of which are placed two ſmall black horns. Theſe are very hard, and are about a twelfth of an inch long, and bent; their points are turned toward the anus: theſe conſiſt of a number of articulations, and conſequently are moveable every way. Theſe are generally hid under the little wings beforementioned, and are placed ſo cloſely and evenly together, that they ſeem only one little hook. It is eaſy to ſee that theſe little bodies may be of great uſe in the act of generation; they ſerve to open the female part at pleaſure, and to direct and fix it in the proper place for the male. When the female, in turning her body upwards, extends theſe hooks, and fixes them in the edges of the furrow, which runs along the body of the male, there is no more required than to ſlide them gently upwards, to bring the parts which they belong to exactly to the deſtined place. Mem. Acad. Par. 1699.

LIBELLA, among the Romans, was the tenth part of the *denarius*. See DENARIUS, *Cycl.*

LIBER, in vegetables, the bark or rind, principally of trees. This is to be conceived as conſiſting of a number of cylindric and concentric ſurfaces, whoſe texture is reticular, and in ſome trees plainly extruſible every way, by reaſon that the fibres are ſoft and flexible. While in this condition they are either hollow regular canals, or, if not ſo, they have interſtitial ſpaces, which ſerve the office of canals. The nutritious juice, which they are continually receiving, remains in part in them, and makes them grow in length and thickneſs, and ſtrengthens and brings them cloſer together; and by this means the texture, which was before reticular, becomes an aſſemblage of ſtrait fibres, ranged vertically, and parallel to each other; that is, as they are thus altered behind one another, they, by degrees, become a new ſubſtance more woody, and called *blea*. *Boerhaave*'s Chym. Not. p. 138. See BARK.

LIBERATE, in law, a writ that lies for the payment of a yearly penſion, or ſum of money, granted under the great ſeal, and directed to the treaſurer, chamberlains, and barons of the Exchequer, *&c.* for that purpoſe.

In another ſenſe it is a writ to the ſheriff of a county, for the delivery of poſſeſſion of lands, and goods extended, or taken upon the forfeiture of a recognizance.

Liberate is alſo uſed for a writ iſſuing out of the Chancery, directed to a gaoler for delivery of a priſoner, who hath put in bail for his appearance. F. N. B. 132. 4 Inſt. 116. Terms of the law. *Blount*, *Cowel.*

LIBERTATE *probanda*, in law, an antient writ that lay for ſuch as being demanded for villains offered to prove themſelves free; directed to the ſheriff, that he ſhould take ſecurity of them for their proving of their freedom before the juſtices of aſſize, and that in the mean time they ſhould be unmoleſted. F. N. B. 77. Terms of law. *Blount*, *Cowel.*

LIBERTATIBUS *allocandis*, in law, a writ lying for a citizen or burgeſs, impleaded contrary to his liberty, to have his privilege allowed. Reg. Orig. 262.

If any do claim a ſpecial liberty to be impleaded within a city or borough, and not elſewhere, there may be a ſpecial writ *de libertatibus allocandis*, to permit the burgeſſes to uſe their liberties, *&c.* Theſe writs are of ſeveral forms, and may be ſued by a corporation, or by any ſingle perſon, as the caſe ſhall happen. New Nat. Br. 509, 510. *Blount*, *Cowel.*

LIBERTY (*Cycl.*)—LIBERTY *of the tongue*, in the manege, is a void ſpace left in the middle of a bit, to give place to the tongue of a horſe, made by the bit's arching in the middle, and riſing towards the roof of the mouth. The bit, according to the various forms of the *liberty*, acquires different names; hence we ſay a *ſcatch mouth*, a *pignatelle*, i. e. with the *liberty* after Pignatelli's faſhion, and a *canon mouth*, with the liberty like a pigeon's neck.

In forging the bit, care muſt be taken not to make the *liberty* too high, leſt it hurt, or at leaſt tickle the palate, and make the horſe carry low.

LIBETHRIDES, in antiquity, a deſignation given to the muſes from Libethra a fountain of Magneſia, which was ſacred to them; but ſome derive the name from *Libethro*, a mountain of Thrace, in which was a cave likewiſe ſacred to them. *Hofm.* Lex. in voc.

LIBRATA *terræ*. This is the ſame with what in Scotland is called pound land of old extent.[—Tr. Pract. Geom. p. 87.]—See POUND *land*.

LICE, in zoology. See the article LOUSE.

LICHANUS, in the antient muſic, the name of one of the ſounds of a tetrachord. It was next to the nete. The word is Greek λιχανὸς, and ſignifies *index*. The reaſon of the appellation was, that the *lichanus* ſhewed whether, and how far the genus was *molle* or *intenſum*. For the more remote the *lichanus* was from the moſt acute ſound in the tetrachord, the more did the genus partake of the *molle*. And, on the contrary, the nearer the *lichanus* approached to this higheſt note, the genus was reckoned the more intenſe. Vid. *Wallis* Append. ad Ptolem. Harm. p. 160.

This is Dr. Wallis's account of the matter. And indeed, the reaſon of the name *lichanus* is not at all myſterious, if we conſider that the ſound of this chord was different in every one of the genera, whereas the ſound of the parypate remained the ſame in three different genera, and could not therefore be an index or characteriſtic of thoſe genera, which were, the *chromaticum toniæum*, the *diatonicum molle*, and the *diatonicum intenſum*. See CHROMATIC and DIATONIC.

LICHANUS *hypaton*, λιχανὸς ὑπατων, in the Greek ſcale of muſic, was the penultimate note of the hypaton tetrachord, and anſwers to *D ſol re* of Guido's ſcale. *Wallis* Append. ad Ptolem. Harm. p. 157. See DIAGRAM.

LICHANUS *meſon*, λιχανὸς μεσων, in the Greek muſic, was the penultimate note of the *meſon* tetrachord, and anſwers to Guido's *G ſol re ut*. Vid. *Wallis* Append. ad Ptolem. Harm. p. 157. See DIAGRAM.

LICHEN, *liverwort*, in botany, the name of a genus of moſſes, the characters of which are theſe. They have the moſt perfect fructification of all the moſſes, having evident flowers as well as ſeeds. Their flowering heads are of various figures, and have a number of monopetalous flowers in them, divided into a different number of ſegments; theſe have ſeveral filaments, and among them have a large quantity of a farina, which when examined by the microſcope appears of a globular figure. The ſeeds are produced in other parts of the plant, and are contained in certain cups, which ſtand without pedicles on the ſurface of the leaves; theſe are ſometimes on the ſame individual plant, with the flowering heads, but ſometimes they are on different plants of the ſame ſpecies.

Beſides theſe and the flowering heads, there are alſo in ſome ſpecies of *lichen*, certain other heads of the ſhape of a button ſtanding on pedicles, and containing neither flowers nor ſeeds; theſe are always found on ſuch plants as have no male flowers. The pedicles of theſe, as well as of the male flowers, are uſually naked, or without any covering at the baſe. To this it may be added, that the leaves of the *lichens* are leſs pellucid, and more like the leaves of the larger plants than thoſe of the other maſſes; and that they are of an irregular and indeterminate figure, ſpreading themſelves every way upon the ground, and ſending out roots from the underſide in various places. *Dillen.* Hiſt. Muſc. p. 516.

The *lichens* being a numerous family of plants, are by Dillenius divided into different orders.

The firſt order comprehends the pileated *lichens*, or ſuch as have not the ſtarry flowering heads of the more common kinds, of theſe there are only five known ſpecies. 1. The common great pileated and verrucoſe *lichen*, or muſhroom headed *liverwort*, this grows in great abundance on the clayey banks of rivers; it flowers in March and April. 2. The ſmaller muſhroom headed *liverwort* with crenated leaves. The leaves of this are uſually about an inch in length, and are moderately thick, ſomewhat concave, and pretty deeply notched at the edges. It is found on ſhady banks in many parts of England. 3. The muſhroom headed *liverwort* with narrow forked leaves. This grows on rocks and ſtones among other moſſes. It is not found in England. 4. The ſmall *liverwort*, with channelled leaves and fringed cups. This is found in large tufts on the northern mountains, it flowers in July, and uſually produces a great number of heads, which is contrary to the cuſtom of the other *liverworts*. 5. The pileated *liverwort* with lunulated ſeeds bearing leaves, and with heads finally becoming croſſed. This alſo grows in tufts on the damp ſides of hills and flowers in July. *Dillen.* Hiſt. Muſc. p. 521.

The ſecond order of the *liverworts* comprehends thoſe which have radiated or ſtellated heads. Of theſe the following are all the known ſpecies. 1. The great ſtar headed water *liverwort*. This grows on the banks of ditches, and in the ſides of wells, in which laſt place it is uſually of a more agreeable ſmell. It bears frequent cups on its leaves containing its ſeeds. 2. The ſmaller *liverwort*, with cups on the leaves, and with ſtellate and umbellated heads. This has much ſmaller leaves than the former, and is common in old walls. 3. The *liverwort* of America, with heads reſembling a duck's foot. This is found in the iſland of Martinico and in ſome other parts of America. It is of a very juicy or fatty ſtructure. Id. Ibid.

The third order of the *lichens* comprehends thoſe, the flowers and ſeeds of which are leſs accurately diſtinguiſhed than thoſe of the former kinds. Of theſe Dillenius mentions the following ſpecies. 1. The rock *liverwort* with grains like the ſeeds of the orobus. This is found in Italy, and ſome other countries, but not in England, ſo far as has been yet obſerved. 2. The dwarf *liverwort* with venous leaves, parting themſelves into two or three diviſions as they grow. This is deſcribed by Mr. Ray, in his hiſtory of plants, and is found in moiſt places on heaths. 3. The leaſt ſtar ſpread *liverwort* with ſharp divided leaves. This is found on Blackheath, and in other places about London. 4. The marſh *liverwort* with leaves divided like thoſe of rue. 5. The ſmall narrow leaved *liverwort* with plain ſegments, deſcribed by Micheli, under the name of *riccia*. 6. The greater checquered *liverwort* with the taſte of coriander. This is alſo deſcribed under the name of *riccia* by Micheli. 7. The middle ſized *liverwort* with deeply channelled leaves. This is alſo another of the *riccias* of Micheli, and is remarkable for its pyramidal fruit. 8. The little round headed marſh *liverwort*, called by Micheli *ſphærocarpos terreſtris minor*. 9. The heart cut *liverwort* with fringed leaves, found by Mr. Buddle, and by ſome called a ſpecies of *duckweed*. 10. The broad leaved green *liverwort* like the ſkin of a ſhark, with flowers at the edges of the leaves. 11. The *liverwort*, called by Ximenes *ychcacalotic*, or the cotton pod.

This is an American ſpecies of *liverwort* found by the ſides of rivers in hot places, and bearing ſtellated flowers like ours on ſhort and naked pedicles. It is of a cooling agreeable taſte, and is given in fevers, with good ſucceſs.

The Engliſh name *liverwort* expreſſes the good opinion the world has had of it in all diſorders of the liver. It is grown out of uſe with us at preſent, but the German phyſicians preſcribe it, and it is ſaid with ſucceſs in jaundices, and alſo in hectics. There are authors alſo who recommend it greatly in inflammatory fevers, in cutaneous eruptions, and in a gonorrhœa, but we have not ſo good accounts of the benefit received by it in theſe as in the other. Externally, it is recommended for ſtaunching the blood in freſh wounds; given in powder, in a doſe of about two ſcruples, it is excellent to ſtop the bleeding at the noſe, profluviæ of the menſes, or any other hæmorrhage; it acts by incraſſating the blood. There are ſome families in the weſt of England who prepare a medicated drink, which they pretend to be a cure for cancers, in which this plant is the principal ingredient. The antients recommended it as a remedy againſt laſſitude; they uſed it in baths and ointments. It has an Engliſh name, *cheeſe renning*, from its property of coagulating, or curdling freſh milk, and by a dry diſtillation it yields a manifeſt acid.

The grey ground *lichen* is famous for its virtues againſt the bite of a mad dog. It makes the baſis of the *pulvis antilyſſus* of the diſpenſatories. *Dale* Pharmac.

LICHENASTRUM, in botany, the name of a genus of plants of the moſs kind, ſo called from the *lichens* or *liverworts*, the flowers of which thoſe of this moſs ſomewhat reſemble. The characters of the *lichenaſtra* are theſe. The flower is naked, and of the antheraceous kind, globoſe at its firſt appearance, but ſoon after burſting open into a ſtellate or cruciform four leaved flower, or the reſemblance of one, much reſembling that of the galliums. This ſheds a fine duſt, or true farina, and is ſuſtained on a pedicle ſingly, and coming out of a theca or cup, which in ſome is undivided, in others is divided into two or more ſegments, repreſents a true flower. All the moſſes which have this ſort of flower are to be ranked in this genus, however widely they differ from one another in their external general form.

The firſt order of the *lichenaſtra*, according to Dillenius, contains thoſe with ſhoots and branches of a determinate figure; and of theſe the firſt ſeries conſiſts of ſuch as have leaves all ſet one way. Of theſe the following are all the known ſpecies. 1. The purple ſpoon leaved alpine *lichenaſtrum*. The leaves of this are auriculated, and hollowed like a ſpoon, it is found in the mountainous parts of Wales. 2. The upright branched *lichenaſtrum* with very ſmall round leaves. This has ſlender branches, and extremely thin and pellucid leaves, it is brought from Greenland. 3. The *ſcorpioide lichenaſtrum* with fine fringed leaves. This alſo is a na-

a native of Greenland, and very rarely is found in flower. 4. The fineſt leaved many flowered *lichenaſtrum*. This is an extremely ſmall ſpecies, it grows plentifully with us on Shooter's Hill. *Dillen.* Hiſt. Muſc. p. 486.

The ſecond ſeries of theſe *lichenaſtra* comprehends thoſe, which have their leaves ſet on each ſide the ſtalks, and reſemble in miniature the ſeveral kinds of the trichomanes and aſplenium. The firſt diviſion of theſe comprehends thoſe which have ſimple pinnæ, placed alternately againſt one another, and the middle rib naked.

The firſt ſubdiviſion comprehends thoſe which have whole pinnæ, or at the utmoſt ſuch as are only lightly crenated. Of theſe the following are all the known ſpecies. 1. The ſpleenwort-like *lichenaſtrum*, with thin ſet leaves. This grows among the other moſſes in ſhady places, and when it grows near clear running waters, uſually has a ſweet ſmell. 2. The ſpleenwort-like *lichenaſtrum*, with thicker ſet leaves. This grows in wet and ſhadowy places. 3. The trichomanes-like *lichenaſtrum*, with flowers from the middle and bottom. This flowers in April, and is not uncommon in wet places in woods. 4. The aquatic trichomanes-like *lichenaſtrum*, with a ſweet ſcent, commonly called the St. Winifred's well moſs. This is found in many parts of Devonſhire, and in ſome other places in wet grounds. 5. The ſhort creeping trichomanes-like *lichenaſtrum* with many flowers. This is found in many parts of England, and is eaſily diſtinguiſhed at a diſtance, when in flower, from the great number of the flowers. 6. The ſmall trichomanes-like *lichenaſtrum*, with flowers at the ends of the branches: this is common in ſhady places, and produces its heads in April. *Dillen.* Hiſt. Muſc. p. 487.

The ſecond ſubdiviſion of theſe *lichenaſtra* comprehends thoſe which have pinnæ cut into two or three ſegments, or as it were prickly. Of theſe the following are all the known ſpecies. 1. The larger hollow double ſtriped *lichenaſtrum*. This grows to two inches long, and is frequently found with its flowers in October and November, on heaths and in ſhady woods on the ſtumps of trees. 2. The ſmaller double ſtriped *lichenaſtrum* with blunter points. The pinnæ of this are ſhorter, more obtuſe, and leſs deeply cut in than thoſe of the former: it is common in wet and ſhady places. 3. The ſmalleſt double ſtriped *lichenaſtrum* with ſharper points. The branches of this are very ſhort, and it is very frequently found with a great number of flowers in April in ſhady woods. 4. The leaſt double ſtriped bifid *lichenaſtrum* with ſwollen ſheaths. This is not more than of half the bigneſs of the former. 5. The triple ſtriped *lichenaſtrum* with many branches. This is found on the Welch mountains. 6. The *lichenaſtrum*, with alternate, and as it were prickly pinnæ. *Dillen.* Hiſt. Muſc. p. 489.

The third diviſion of theſe *lichenaſtra* takes in thoſe which are pinnated and reſemble the trichomanes, but which have their middle rib hid, or covered by the auriculæ of the pinnæ, or elſe by ſecondary ones.

The firſt ſubdiviſion of theſe comprehends thoſe which have the middle rib covered by the auriculæ of the pinnæ. The following are the known ſpecies of this kind. 1. The *lichenaſtrum* with pinnæ, not ſerrated, but with very large auricles. This is of a ruſty colour, and does not creep, but grows tolerably erect. It is not unfrequent in woods. 2. The *lichenaſtrum* with ſmaller auricles and ſerrated leaves. This is found in ſome parts of Germany, but not in England. 3. The auriculated *lichenaſtrum* with round thick ſet leaves. This grows in large cluſters, yet is not erect, it is found on rocks in moiſt places. 4. The flat ear'd *lichenaſtrum* with narrow crooked leaves. This grows in tufts, its leaves are bent, and the ſtalks from half an inch to an inch and half in height, it is common in ſhady places, and flowers in April. 5. The auriculated *lichenaſtrum*, with hairy birds foot leaves. This has longer branches, and the leaves are leſs curled or bent than in the other ſpecies. It is found on the Welch mountains. *Dillen.* Hiſt. Muſc. p. 493.

The ſecond ſubdiviſion of theſe *lichenaſtra*, comprehends thoſe which have the lower part of their middle rib, covered with either one ſingle foliage, or with a ſeries of intermediate pinnæ. Of theſe the following are all the known ſpecies. 1. The *lichenaſtrum*, with a geniculated middle rib, and obtuſely trifid pinnæ. This is found on the Welch mountains, and is ſometimes ſingle ſtalked, ſometimes branched. 2. The greater *lichenaſtrum* with multifid leaves, and flowers from the extremities. This uſually grows in large tufts, and is ſometimes erect, ſometimes creeping; it is found in many parts of England. 3. The dwarf *lichenaſtrum* with multifid leaves, and with flowers growing from the bottom of the ſtalks. This in drying acquires an imbricated look, which it loſes again on being wetted. It is common by hollow road ſides. 4. The pennated fern-like *lichenaſtrum*. This is a ſort of miniature picture of ſome of the ferns, it grows in Patagonia.

The third ſeries of theſe *lichenaſtra*, comprehends thoſe which are imbricated, or have their pinnæ ſtanding cloſer upon, and lying over one another, and ſtanding leſs out from the ſurface of the ſtalks. The firſt diviſion of theſe takes in thoſe which have ſcales or pinnæ, as it were furniſhed with a ſecondary ſcale below. Of theſe the following are all the known ſpecies. 1. The large, flat, ſcaly *lichenaſtrum*. This is common on the barks of trees in almoſt all places, but it flouriſhes beſt in damp and ſhady parts of woods. 2. The leſſer convex ſcaly *lichenaſtrum*: this is commonly found mixed among the other in woods, but it is ſometimes ſeparate. It is while young of a beautiful green, but it ſoon loſes that colour, and becomes firſt brown, and afterwards of a blueiſh purple. 3. The leaſt flat *lichenaſtrum* with grey ſcaly leaves. This is found in the woods about Oxford and in many other parts of England, and is uſually met with among other moſſes, and creeping upon them. 4. The ſmalleſt herniaria leaved *lichenaſtrum*, deſcribed by Micheli. This is found in Italy. 5. The ſmalleſt round leaved *lichenaſtrum* with punctated leaves. This alſo is deſcribed by Micheli, and is found in Italy among other moſſes on the ſtumps of trees. *Dillen.* Hiſt. Muſc. p. 499.

The ſecond diviſion of theſe *lichenaſtra* contains thoſe which have the ribs or nerves of the branches, covered underneath by a ſort of ſecondary ſquammæ; of theſe the following are all the known ſpecies. 1. The ſcaly *lichenaſtrum*, reſembling the French tamariſk; this is found on rocks, and on the ſtumps of trees in many parts of England. 2. The ſmaller leſs round leaved, arbor vitæ-like *lichenaſtrum*. This grows on trees and walls in very thick tufts, and is very common both in England and North America. 3. The rounder leaved arbor vitæ-like *lichenaſtrum*. This alſo grows with us on the ſtumps of trees, but is leſs common than the former. 4. The imbricated *lichenaſtrum* with leaves like a curled fern. This grows to two inches high, and is found on barks of trees in Patagonia. *Dillen.* Hiſt. Muſc. p. 502.

The fourth ſeries of theſe *lichenaſtra* takes in thoſe, which are every way ſurrounded with leaves. Of this kind the following are the known ſpecies. 1. The elegant woolly fern-like *lichenaſtrum*. This is common about London in damp places. 2. The *lichenaſtrum* with various leaves. This is common in damp places in woods, and flowers in the ſpring. 3. The leaſt hoary *lichenaſtrum* flowering at the points. This is found in the woods of Germany, but has not yet been obſerved in England. 4. The alpine *lichenaſtrum* reſembling the ſilver bryum. This grows in very thick tufts, and is found on the Welch mountains. 5. The chocolate coloured alpine *lichenaſtrum* with ſcaly ſheaths. This alſo is found on the Welch mountains, and grows in thick tufts. 6. The duſky alpine *lichenaſtrum* with fine reflected leaves. This grows on the rocks in the higheſt parts of the Welch mountains, but uſually in damp places.

The ſecond order of theſe *lichenaſtra* comprehends thoſe which have leaves variouſly and indeterminately divided, which creep upon the ground, and have no ſtalks except the pedicles. Of theſe the following are all the known ſpecies. 1. The broad leaved *lichenaſtrum* with round heads growing out of the middle of the leaves. This is frequent on the ſteep banks of rivers, and in other damp places, it flowers in March. 2. The jagged *lichenaſtrum*, with oblong heads, growing near the ſegments of the leaves. This flowers in April, and is frequent about London. 3. The fine cut ambroſia-like *lichenaſtrum*: this is a ſmall ſpecies, and its leaves are always ſpread about the ground. It grows in woods and ſhady places in ſome parts of England, but is very ſcarce. 4. The germander like *lichenaſtrum* with multifid leaves. This is found in ſhady wet places. 5. The thin leaved forked *lichenaſtrum* with round hairy capſules. This grows in tufts, and is in ſome degree erect. It is found not unfrequently at the ſtumps of trees and on rocks, and flowers early in ſpring. 6. The little *lichenaſtrum*, with round, black and ſhining heads growing out of ſmall cups. This is a very elegant ſpecies, the leaves are lightly ſinuated, and have little cups, in many places, out of which grow the heads. It is found in wet ſhady places. *Dillen.* Hiſt. Muſc. p. 519.

The third order of the *lichenaſtra* comprehends a few ſpecies, of which the author was leſs perfectly informed than of the reſt, not having ſeen their heads, or abſolutely depending on the accounts of them. Theſe are, 1. The narrow floating forked *lichenaſtrum*. This always grows in ſtanding waters, and ſometimes floats on the ſurface, ſometimes ſinks deeper. 2. The *lichenaſtrum*, called by authors the branched and leafy marſh ulva. This ſomewhat reſembles the ambroſia *lichenaſtrum*, but is longer and more branched. 3. The *lichenaſtrum*, called by Micheli *jungermannia*, with branched ſtalks and flatted ſhoots, and hairy oval imbricated leaves laid in a double ſeries. 4. The *jungermannia* with a ſimple ſtalk, and leaves looſely imbricated, of an obtuſely oval figure, and reflected at the edges. Theſe two are mentioned by Linnæus in his flora laponica. *Dillen.* Hiſt. Muſc. p. 515.

LICHENOIDES, in botany, the name of a genus of moſſes, the characters of which are theſe. They are compoſed of parts of different figure and ſtructure, not ſimple and uniform as the byſſi; they have uſually no ſtalk, but grow on the branches of trees, on ſtones, and other bodies, either in

in form of a mere cruſt, or of leaves variouſly divided, and raiſed. They have tubercles on the ſeveral parts of theſe ſerving in the place of flowers or ſeeds, and growing cloſely upon the leaves without pedicles. Micheli has deſcribed the flowers and ſeeds of theſe plants from microſcopic obſervations, but theſe are too minute to form generical diſtinctions on. Theſe plants have the name *lichenoides*, from their reſemblance to the *lichen*, or liverwort, as they conſiſt, like it, of leaves diffuſed every way. They have hence been called by ſome *lichens*; but the difference between the two genera is very great, theſe having very imperfect flowers, the others the moſt perfect of all the moſſes.

The *lichenoides* are a very numerous genus, and are therefore divided into ſeveral ſubordinate ſeries, or orders.

Of the firſt order, or thoſe which have no leaves, but are merely cruſtaceous, the following are all the known ſpecies. 1. The cruſtaceous *lichenoides*, marked with lines reſembling foreign characters. The cruſt is white in this, and the lines ſlender and black. 2. The black dotted wrinkled *lichenoides*. The cruſt of this is white, and the ſpots ſmall and protuberant, and of a fine black. 3. The leprous brown knobbed *lichenoides*. The cruſt of this is very thin, and of a whitiſh grey; the tubercles are brown and large. 4. The yellow *lichenoides*, marked with lines reſembling the figures on a map. The cruſt is of a pale yellow, and very thin; the lines black. 5. The red knobbed *lichenoides*. This has no cruſtaceous bottom, but conſiſts only of ſmall red tubercles, reſembling ſmall fungus's. 6. The black lentil *lichenoides*. This grows on rotten wood. The tubercles are blackiſh, and of an oval figure; and it ſeems of a middle nature, between the *lichenoides* and fungus's. 7. The white tartareous ſcarlet dying *lichenoides*. This grows on the rocks in the mountains of Wales, and is compoſed of a hard and gritty cruſt, ſeeming almoſt of a ſtony nature, and much reſembling common tartar. This is whitiſh, and is ornamented, in ſeveral parts, with black tubercles. They boil this in urine, and it dies ſilk to a very beautiful red. *Dillen*, Hiſt. Muſc. p. 124.

The ſecond order of the *lichenoides* comprehends thoſe which have regular ſcutellæ appearing in manner of flowers; theſe are little hollowed cups, as it were, ſurrounded with a kind of rim. Of theſe the following are the known ſpecies. 1. The wrinkled wart *lichenoides*. This conſiſts of a thin cruſt of a blueiſh grey colour, beſet with ſmall wart-like protuberances; which, as they grow larger, aſſume the form of ſcutellæ, or little diſhes, hollowed pretty deeply. It grows on old trees, and on ſtones. 2. The ſcabrous *lichenoides* with tubercles reſembling crabs eyes. The cruſt is grey, and the tubercles grow to be wide ſcutellæ. This is uſed in dying, and is called by ſome *perelle*. 3. The meally rugged *lichenoides*. This firſt appears in form of a duſty ſubſtance, then it riſes into tubercles, and theſe finally become ſcutellæ. It grows on oak trees. 4. The meally tartareous *lichenoides* with brown ſcutellæ. This is compoſed of a thick cruſt, which is covered with a white farinaceous matter; the ſcutellæ are very broad, and have a white rim, but are brown in the middle. 5. The large leprous *lichenoides* with yellow plates. The cruſt of this is thick and wrinkled, the ſcutellæ broad, and of a pale yellow, with white rims. 6. The red ſpangled tartareous *lichenoides*. This has a thick cruſt, of a livid or blueiſh colour, the ſcutellæ are very broad, and have a ſilvery rim, being red in the middle. 7. The black ſpangled leprous *lichenoides*. The cruſt is thin, and of a greyiſh colour, the ſcutellæ ſome large, ſome ſmall, and all black. 8. The brown, or variouſly ſpangled leprous *lichenoides*. This makes its firſt appearance in form of ſmall grey tubercles, with a little brown hole in the center of each: theſe afterwards ripen into ſcutellæ. It is common on old walls, trees, *&c.* 9. The round grey cruſtaceous *lichenoides*. This is common on trees and old walls, and ſticks faſt to them all round. 10. The round yellow cruſtaceous *lichenoides*. This is extremely common on old walls, and the cruſt and ſcutellæ are both yellow. Ibid. p. 129.

The ſecond order comprehends the foliaceous *lichenoides*. Of theſe ſome are of a gelatinous ſubſtance, and have tubercles and ſcutellæ. Of this kind the following are all the known ſpecies. 1. The curled fleſhy ſea *lichenoides*. This reſembles the inteſtines of an animal, and is ſhort and thick, but not hollow, and is of a browniſh green colour, and jelly-like ſubſtance. It grows in ſea marſhes. 2. The wrinkled bats wing *lichenoides*. This is thin, membranaceous, and black. 3. The thin reticulated *lichenoides*. This is of a pale greeniſh colour, and has a great number of prominent veins diſpoſed in a reticular form. 4. The lobated jelly-like *lichenoides*. This is hollow, and divided into ſeveral lobes. It is of a greeniſh brown colour, and grows to ſtones. 5. The curled jelly-like *lichenoides*. This is of a greeniſh black colour, and is variouſly ſinuated. 6. The ear-like granulated gelatinous *lichenoides*. This grows to ſmall ſtones in garden walks. 7. The ſea ragwort leaved *lichenoides*. This is of a brown colour, and beautifully laciniated. 8. The imbricated jelly-like *lichenoides*. This is of a greeniſh colour. 9. The palmated jelly-like cluſtered *lichenoides*. This is found in woods in the winter months. 10. The opuntia-like jelly *lichenoides*. The leaves of this are narrow and thick. It is found in the mountains of Wales and Yorkſhire. 11. The broader opuntia leaved jelly *lichenoides*. The leaves of this are leſs wrinkled than thoſe of the former, and are of a duſky green, beſet all over with tubercles. 12. The horned and tranſparent *lichenoides*. This is ſometimes green, ſometimes purpliſh, and is compoſed of leaves growing into horns at their edges. It is common in ſpring among other moſſes on heaths. 13. The tranſparent endive leaved *lichenoides*. This is thin, and curled at the edges, and of a pale green, and is common among moſs. 14. The lettuce leaved tranſparent *lichenoides*. This is of a blueiſh green colour, and grows in Patagonia. 15. The criſp jelly *lichenoides* with flat leaves. This grows in cluſters, and its leaves ſpread every way about. 16. The criſp jelly *lichenoides* with ſmall upright leaves. This grows in ſmall tufts, and is of a bright pleaſant green. 17. The criſp jelly-like *lichenoides*, which ſeems as if prickly. This is of a blackiſh green, and is ſo nicely divided into ſegments at the edges, as to appear prickly. Ibid. p. 140 ſeq.

Of the gelatinous *lichenoides*, the following are the known ſpecies of the dry and more rigid kinds, which have regular ſcutellæ. 1. The common blue curled *lichenoides*. This is common on walls and old trees. 2. The ſmall leaved blueiſh *lichenoides* with hairy edges. This is common on the bodies of old oaks in Penſylvania. 3. The broad leaved *lichenoides* with hairy edges. The leaves of this are black underneath. 4. The ſaucer *lichenoides*. The leaves of this are much divided, grey on the upper ſide, and black underneath, and the ſcutellæ are large, and of a blackiſh red. 5. The larger ſea-green hairy *lichenoides*. The leaves of this are from one inch to two in length, and variouſly divided; the ſcutellæ grow at their edges, and ſtand on longiſh pedicles. 6. The ſmall grey hairy *lichenoides*. This is a very fine and tender kind, and the ſcutellæ are black. 7. The ſmall grey tree *lichenoides*, with black underſides to the leaves, and brown ſcutellæ, deſcribed by Micheli. 8. The blunt horned *lichenoides*. This grows on the ground, and ſtands ſomewhat erect. Ibid. p. 146.

Theſe have their ſcutellæ ſtanding on pedicles, more or leſs long; the following kinds have them applied cloſe to the ſurface of the leaves, and uſually of one colour: the leaves of theſe are more or leſs broad, and generally grow out from ſtones, or the branches of trees. 1. The grey flat black haired *lichenoides*. This grows to an inch in length, and the leaves are flatted, and edged with long black hairs. 2. The rough narrow leaved *lichenoides* with black ſpangles. The leaves of this are ſomewhat compreſſed and rigid, and are divided into five ſegments: the ſcutellæ are ſmall and black, ſurrounded with a thin edge of grey. 3. The bitter horned grey *lichenoides*. The leaves of this are narrow at the baſe, and wider toward the extremity: the ſcutellæ are rarely ſeen, but they are large, and black within. 4. The white prickly *lichenoides* with yellow ſcutellæ. This is divided into ſeveral ſegments, and is of a whitiſh colour, both on the upper and under ſide. 5. The white narrow horned *lichenoides*. The leaves of this are ſoft and tender, and have uſually a number of ſmall tubercles at their edges. 6. The common horned tree *lichenoides*. This is of a pale aſh colour, and is the moſt common of all the ſpecies: the trunks and branches of old trees are every where almoſt covered with it, and old pales and gates afford it in great abundance. 7. The ſmooth pitted endive leaved *lichenoides*. This does not grow on trees, but on ſtones, or on the ground, and has a baſis of a coarſe blackiſh cruſtaceous matter, from which it riſes in form of beautifully divided green leaves. 8. The black jagged, or fringed *lichenoides*. This is ſometimes compoſed of broader, ſometimes of narrower leaves, but they are always cut into jags and coarſe fringes at the extremities, in the manner of a farrier's apron. 9. The *lichenoides* which reſembles the fallopian tube. This is of a membranaceous ſubſtance, of a blueiſh green colour on the outſide, and white underneath: the ſcutellæ are broad, and ſtand near the edges. 10. The long leaved wrinkled ſtiff *lichenoides*. This is of a duſky greyiſh green, and is all over covered with ſcutellæ in the proper ſeaſon. It grows on the trunks of old oaks, and other trees. 11. The dyers *lichenoides* with ſhort and blunt horns. This is very like ſome of the ſea fucus's in the diviſion of its leaves; the leaves are whitiſh, and the tubercles very ſmall. It grows on the rocks in the iſland of Jerſey. 12. The flat dyers *lichenoides* with longer and ſharper horns. This alſo reſembles ſome of the fucus's in the diviſion of its leaves. It grows in large cluſters. It is common in the Eaſt-Indies, and is called by many authors *alga tinctoria*, and *rocella*, and is uſed in dying. See ROCELLA. 13. The coralliform channelled leaved *lichenoides*. This is of a whitiſh colour, and from an inch to three in length. Its ſcutellæ are ſmall, and grow about the edges and extremities of the leaves. 14. The fine cut warty *lichenoides*. This is divided at the edges into extremely fine ſegments, and is beſet toward the extremities with ſmall duſty tubercles. 15. The brown

brown rough *lichenoides* with ſtarry ſpangles, deſcribed by Micheli. Ibid. p. 158, 173.

Theſe have all their leaves, more or leſs, free; but there are ſome ſpecies which have them cloſely adhering, in every part, to the ſtone or wood on which they grow. Of this kind the following are all the known ſpecies. 1. The ſmalleſt fine cut *lichenoides*. This is extremely ſmall, and of a yellow colour: the ſcutellæ alſo are yellow. It grows on ſtones, and is common in many parts of Germany. 2. The brown ſmall cut *lichenoides*. The leaves of this are very narrow, and the ſcutellæ are black. 3. The grey ſmall cut ſtarry *lichenoides*. This grows frequently on the ſmall branches of trees. 4. The green blunt cut round *lichenoides*. This grows in a beautifully orbicular manner, the leaves are all collected in each plant into a ſort of circle, and the ſeveral ſingle plants grow in ſuch a manner together, as to form large circles. It grows on old trees. The ſcutellæ are black. 5. The green *lichenoides* with ſmall diſtorted leaves. This has leaves divided into very narrow ſegments, and grows on the barks of old trees. 6. The thin and ſoft agaric-like *lichenoides*. This is of a greyiſh colour, and grows on rocks. 7. The cartilaginous *lichenoides* with large ſpangles. The leaves of this are ſmall, but broad and rigid; they grow, like tiles, one over another; the ſcutellæ are very large, and of a yellowiſh tawney colour. 8. The greeniſh *lichenoides* with cheſnut coloured ſcutellæ. This has ſmall leaves collected into round tufts, the inner leaves of which are all the way ſmaller than the outer. It grows on rocks in the mountainous parts of England and Wales. 9. The common curled *lichenoides* with yellow leaves and plates. This is a middle ſized kind, and grows very frequently on trees and old walls. 10. The olive coloured *lichenoides* with ſmooth plates. This always grows in an orbicular form. Its leaves are very thin, and adhere firmly to the barks of trees. 11. The olive coloured *lichenoides* with watry ſcutellæ. The leaves of this are ſmaller, and more cut and divided than thoſe of the former. 12. The olive coloured *lichenoides* with wrinkled ſcutellæ. The leaves of this are of a ſomewhat greener hue than the former, and the ſcutellæ deeper. 13. The hairy purple ſtone *lichenoides*, called *cork*, or *arcell*, and by ſome *ken du*. The poor people uſe this in many places for dying, or ſtaining their linnen. 14. The black groenland cork, or *lichenoides*. The leaves of this are very ſmall, and finely divided, and the tubercles ſtand very thick and cloſe together. 15. The ſmooth bladder cork, or *lichenoides*. The leaves of this are not hairy at the edges, but are beſet with a great number of veſicles. 16. The common blueiſh grey pitted *lichenoides*. This is very common on old trees, and gates and pales. It very rarely produces the ſcutellæ. 17. The ſmooth endive leaved *lichenoides*. The leaves of this are green and curled at the edges, and black underneath. It grows on the ground in dry heathy places. 18. The wrinkled roſe leaved *lichenoides*. This is of a yellowiſh green colour, and is uſually expanded into the form of a roſe. It is common in many places both on walls and trees. 19. The bright green *lichenoides* with reddiſh diſhes. This grows frequently on old aſh trees in Ireland, and in ſome parts of England. 20. The pale blue ſcollopped leaved *lichenoides*. The leaves of this ſtand in thick cluſters, and are beautifully divided at the edges. 21. The ſooty *lichenoides* with ruſt coloured ſpangles. The leaves of this are ſoft and thin, and are divided into many ſegments: the ſcutellæ rarely appear. Ibid. p. 178, 194.

The third ſeries of the *lichenoides* takes in thoſe which are dry and peltated, or clypeated, which have tubercles of a roundiſh, or oblong figure, ſometimes flat, ſometimes convex, but never concave, nor ſurrounded with any rim or margin, in the manner of the ſcutellæ of the former kinds. The following are the known ſpecies of this kind of *lichenoides*. Firſt of ſuch as have the edges of the leaves, or their appendages, growing to the whole ſubſtance of the peltæ; that is, whoſe peltæ adhere by their whole inferior rim. 1. The rough villoſe *lichenoides* with ſmall peltæ or ſhields. The leaves of this are oblong, and divided into broad ſegments; the colour is a deep green at firſt, which turns to a browniſh red when dry. 2. The common grey or aſh coloured ground *lichenoides*, famous for the cure of the bite of a mad dog. 3. The dark coloured fingered *lichenoides*, with curled lettuce like leaves. This is uſually confounded with the former kind. It grows in the ſame places with that, and is indeed more common. The leaves are more rigid and thick in this ſpecies, and are divided into deeper ſegments, with curled edges turning inward. 4. The brown *lichenoides* with flat ſhields. This has variouſly ſinuated leaves, and grows frequently among graſs, and other moſſes, in dry places. 5. The livid *lichenoides* with reverſed brown ſhields. This is ſmaller, and its leaves ſhorter than the precedent kinds. 6. The fine green *lichenoides* with black warts. The leaves of this are ſhort and broad, and in the recent plant are of a good green. 7. The aſh coloured many fingered *lichenoides*. The leaves of this are an inch, or a little more, in length, narrow at their baſe, and broader toward the extremities; they are of a duſky greyiſh green, and the peltæ ſtand upon a ſort of pedicles, and are of a browniſh colour. 8. The double fingered tranſparent *lichenoides*. The leaves of this are about an inch long, divided into many ſegments, and of a whitiſh green colour. 9. The ſmall green *lichenoides* with flat black ſhields. The leaves of this are half an inch long, broad, ſmooth, and rigid. 10. The leaſt round leaved *lichenoides*. The leaves of this are flat, and lie cloſe upon the ground; they are green, and are the ſmalleſt of thoſe of all the *lichenoides*. 11. The eryngo leaved *lichenoides*. This is very rigid, and its leaves are variouſly ſinuated. 12. The finer eryngo leaved *lichenoides*. This is a tenderer plant than the former, and its leaves are more curled at the edges. Ibid. p. 204.

The ſecond diviſion of theſe *lichenoides* contains thoſe which have pileated heads or peltæ, ſuſtained on ſhort pedicles which are fixed to their middle. The known ſpecies of this kind are the following. 1. The common tree *lungwort*. This is a tough membranaceous ſubſtance of a browniſh colour, reticulated with a number of veins, and adorned with a great many peltæ at the edges. It is common on the bark of large woods. 2. The glaucous leaved *lungwort*, woolly on the underſide. The leaves of this are lobated or divided into broad obtuſe ſegments. 3. The buck's horn *lichenoides* ſpungy on the under ſide. The leaves of theſe ſpread upon ſtones, and grow to four or five inches in length. The peltæ are ſmall, and grow both on the edges and in the middle of the leaf. 4. The horny fimbriated *lichenoides* with heads like hair buttons. The leaves of this are about an inch long, and are uſually arranged in a circular manner. 5. The grey leathery *lichenoides* with black warts. This ſeldom exceeds an inch in length, the peltæ or warts are very ſmall. 6. The ſad coloured ſtiff *lichenoides* with black peltæ. This grows in a circular direction, and is about two inches in length in the largeſt leaves. 7. The chagrin *lichenoides*. This is black, and is granulated in the manner of the common chagrin leather. 8. The orange coloured *lichenoides* with black flat peltæ. This was found by Linnæus in Lapland. 9. The liverwort-like *lichenoides* with peltæ in ſockets. This is found on ſtones in ſome parts of England, and ſomewhat reſembles the preceding kind. 10. The round leaved peltated Lapland *lichenoides* with undivided edges, and leaves very hairy underneath. Ibid. p. 222.

To all theſe there are to be added ſome other ſpecies, the peltæ or ſhields of which very rarely, if ever appear, ſo that they have not yet been obſerved. 1. The grey cloudy leather-like *lichenoides*, yellow on the under ſide. This is found on moiſt rocks in ſome parts of England. 2. The imbricated, lead coloured *lichenoides*. The leaves of this are ſmall, and it grows in moiſt places on rocks. 3. The ſmall ſmooth rocky *lichenoides* with duſky leaves. This grows alſo in wet places. 4. The ſinged *lichenoides* with grey puſtules. This is one of the moſt elegant plants of this numerous tribe, and is found on moiſt rocks in ſome parts of France, and in ſome mountainous places with us. 5. The little yellowiſh ſtone *lichenoides* with pulpy leaves. 6. The ſmall green undivided *lichenoides* deſcribed by Micheli. 7. The ſmall green ſtone *lichenoides* with imbricated leaves deſcribed by the ſame author. And, 8. Haller's ſmall *lichenoides* with ſhort thick ſcales. As all theſe delight in watery places, it is much to be queſtioned whether they are not varieties of the other ſpecies, which had they grown in their natural dry ſoil, would have aſſumed their regular figure, and been furniſhed with their peltæ. Ibid. p. 229.

LICINIUM, a word uſed by many chirurgical writers to expreſs a tent.

LICNON, Λίκνον, in the Dionyſian ſolemnities, the myſtical van of Bacchus; a thing ſo eſſential to all the ſolemnities of this god, that they could not be duly celebrated without it. *Pott.* l. 2. c. 20. T. 1. p. 383. See DIONYSIA, *Cycl.*

LICNOPHORI, Λικνοφόροι, in the Dionyſian ſolemnity, thoſe who carried the *licnon*. See LICNON.

LICTORS, among the Romans, were officers who always attended the chief magiſtrates when they appeared in public. The duty of their office conſiſted in the three following particulars. 1. *Submotio*, or clearing the way for the magiſtrate they attended; this they did by word of mouth; or if there was occaſion by uſing the rods they always carried along with them. 2. *Animadverſio*, or cauſing the people to pay the uſual reſpect to the magiſtrate, as to alight, if on horſeback or in a chariot; to riſe up, uncover, make way, and the like. 3. *Præitio*, or walking before the magiſtrates; this they did not confuſedly, or all together, nor by two or three a-breaſt, but ſingly following one another in a ſtrait line. Their enſigns were the *faſces* and *ſecuris*. *Pitiſc.* in voc. See FASCES and SECURIS.

As to the number of *lictors* allowed each magiſtrate, a dictator had twenty-four, a maſter of the horſe ſix, a conſul twelve, a prætor ſix; and each veſtal virgin, when ſhe appeared abroad, had one.

LIENIS *infarctus*, in medicine. See the article SPLEEN.

LIFE (*Cycl.*)—LIFE *of animals*. Some contend that the *life* of animals is preſerved by the acid parts of the air mixing with the blood in the lungs; which parts diſſolve or atte-

nuate the blood and preſerve its heat, and by both theſe keep up the motion of the heart. See Dr. *Bryan Robinſon*'s Treat. of the Anim. Œconomy.

LIFE *eſtates*, in our law, are either for the life of the owner, or for the life of another, or others.

Annuity for LIFE. See the APPENDIX.

Prolongation of LIFE. See PROLONGATION.

LIFTING *pieces*, in a clock, are thoſe parts which lift up and unlock the detents in the clock part.

LIFTS, in a ſhip, ropes belonging to the yard arms of all yards. Their uſe is to ſtop the yard-arms, *i. e.* to make the end of the yards hang higher or lower, as occaſion ſerves. The top-ſail *lifts* ſerve as ſheats for the top-gallant yards, as well as for *lifts* to the top-ſail yards. The haling of theſe ropes is called *topping the lifts*: thus they ſay *top a ſtarboard*, or *top a port*, i. e. hale upon the ſtarboard or larboard *lift*. The *lifts* for the ſprit ſail yard, are called *ſtanding lifts*.

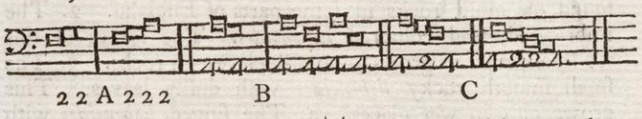
LIGAMENT (*Cycl.*)—LIGAMENTS *of the vertebræ*. Mr. du Vernoi has mentioned more *ligaments* of the vertebræ of the back, than are commonly deſcribed. See Comment. Acad. Petrop. Tom. VI.

LIGAMENTUM *peculiare ſtapides*, in anatomy, a name given by Schelhammer and ſome others, to what is properly a muſcle, and is called by Albinus *ſtapedium*, and by Cowper and others *muſculus ſtapides* and *ſtapedaceus*.

LIGATURE (*Cycl.*)—LIGATURE, *ligatura*, in the Italian muſic, ſignifies a tying or binding together of notes.

Hence ſyncopes are often called *ligatures*, becauſe they are made by the *ligature* of many notes. There is another ſort of *ligatures* for breves, when there are many of theſe on different lines, or in different ſpaces, to be ſung to one ſyllable.

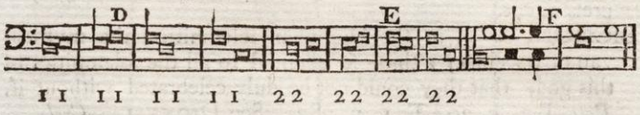
To underſtand this, it muſt be obſerved, that only breves are capable of this ſpecies of *legature*, by reaſon their figure admits of their being placed ſo cloſe together, as to ſeem one character only, though placed on different degrees, unleſs there be occaſion to place a ſemi-circle either above or below them, to ſhew that they are tied. This kind of *ligature* regards common time only. Breves again muſt be conſidered as ſimple, as having a tail, and as being of different colours. Firſt, if they be ſimple 𝅜 and aſcend, they contain their natural quantity, *i. e.* each two ſemi-breves. Example A. But if they deſcend, then each is equivalent to four ſemi-breves, if only two follow one another, as in B. If there are three or four following ones, the firſt and laſt contain each four ſemi-breves, and thoſe in the middle but two, as in C.



2 2 A 2 2 2 B C

Secondly, if they have tails 𝅗𝅥, and the tail be turned upwards, the breves contain only one meaſure, as well aſcending as deſcending. See Ex. D. But if it be marked downwards, the breve then contains its natural quantity. See Example E. This ſpecies of *ligature* was invented only becauſe the minim being round, could not be uſed in this manner. And the ſemi-circle was not at that time in uſe.

It may be here remarked, that ordinarily the firſt breve alone of every *ligature* has a tail, and that uſually placed on the left ſide: laſtly, if they be of different colours, *i. e.* if the firſt be white, or open in the middle, and the ſecond black, the firſt contains a ſemi-breve, and the ſecond a pointed minim. Example F.



II II II II 22 22 22 22

Theſe are the principal *ligatures*, beſides which there are many others, for which ſee NOTA. *Broſſard.*

LIGATURES, in ſurgery, called alſo chords, bands, or ſtrings, are of different kinds, ſome fine, others coarſe and ſtrong, and are made either of flax, or hemp, or cloth, or ſilk, or horſe hair, according to the nature of the diſorder; for theſe things are almoſt conſtantly required. We uſe them to replace or extend bones that are broken or diſlocated; to tie the patients down in lithotomy, amputations, and operations of that kind; to tie up the veins in phlebotomy; to tie up arteries after amputations, or in large wounds; to ſecure the ſplints that are applied to fractures; to tie up the proceſſes of the peritoneum, with the ſpermatic veſſels in caſtration; and laſtly, in taking off warts, and other excreſcencies by *ligature*, and in all other operations of this kind. *Heiſter*'s Surg. p. 23.

LIGEANCE, *ligeantia*, is the true and faithful obedience of a ſubject to his ſovereign; and is alſo applied to the dominion or territory of the liege lord; thus children are ſaid to be born in or out of the *ligeance* of the king, *&c.* Stat. 25 Ed. 3. Co. Litt. 129. Terms of Law. *Blount*, *Cowel.*

LIGHT (*Cycl.*)—LIGHT *from diamonds and other bodies*. *Light* has of late ages become in a manner more common than it uſed to be among us. The chemical phoſphori have greatly increaſed its kinds, many electrical bodies are luminous, and many other bodies there are which are luminous without being electric.

The antient naturaliſts, and ſince their time, ſeveral other writers, at different periods of time, have been acquainted with many of theſe properties in ſeveral bodies, though very imperfectly. They have obſerved them too careleſsly, often exaggerated them in their accounts, and frequently deſtroyed the whole credit of the narration, by a mixture of falſity with the truth. M. du Fay, who laboured extremely in theſe diſquiſitions, has been at the pains of collecting all the accounts of this kind from authors, and ſeparating truth and probability from what is falſe or abſurd in theſe accounts, has with them given many experiments of his own to the academy of ſciences at Paris.

Among luminous bodies the diamond is to be reckoned, as ſome diamonds are known to ſhine in the dark. But on account of the feebleneſs of their ſplendor, it is neceſſary for the perſon, who is to obſerve them, previouſly to ſtay in the dark at leaſt a quarter of an hour; that the pupil of the eye may be dilated and enlarged, and ſo rendered capable of receiving a larger quantity of the rays of light. M. du Fay has alſo obſerved, that the eyes ought to be ſhut for this time, or at leaſt one of them; and that, in that caſe, the light of the diamond is afterwards only ſeen by that eye, which has been ſhut. Before the diamond is brought into the dark room, it muſt be expoſed to the ſun ſhine, or at leaſt to the open day light, to imbibe a ſufficient quantity of rays; and this is done in one minute, or even leſs; eight or ten ſeconds having been found to furniſh as much *light* as a ſtone is capable of receiving; and when brought into the dark its *light* continues about twelve or thirteen minutes, weakening all the while by inſenſible degrees. It is very remarkable, that in bodies ſo extremely ſimilar to each other as diamonds are, ſome ſhould have this property of imbibing the ſun's rays and ſhining in the dark, and that others ſhould not; yet ſo it is found to be by experiment, and the moſt nearly reſembling ſtones ſhall be found one to have this property, and another to be deſtitute of it; while the many of the moſt diſſimilar have this property in common. There ſeems to be no rule, nor even the leaſt traces of any imperfect rule of judging, which diamonds have and which have not this property; their natural brightneſs, their purity, their ſize, or their ſhape, contribute nothing to it; and all that has been yet diſcovered of the leaſt regularity among them, is, that all the yellow diamonds have this property. This may probably ariſe from their having more ſulphur in their compoſition, and therefore illuminating more readily, or emitting a more viſible flame.

The burning of diamonds is a term uſed among the jewellers; for putting them into a fierce fire, as they frequently do, when they are fouled with brown, or yellow, or the like; this always diveſts them of their colour, without doing them the leaſt ſenſible injury. M. du Fay having been informed of this common practice, formed a conjecture, that the difference of diamonds in their ſhining, or not ſhining in the dark, was owing to it; and that either all thoſe which had been burnt, or all thoſe that had not, were thoſe which alone ſhone in the dark. But this was found an erroneous conjecture; for two diamonds, one lucid in the dark, the other not, were both burnt, and afterwards both were found to retain the ſame properties they had before. It is not only the open ſun-ſhine, or open day-*light*, which gives to theſe diamonds power of ſhining in the dark; they receive it in the ſame manner, even if laid under a glaſs, or plunged in water or in milk.

M. du Fay tried whether it was poſſible to make the diamond retain, for any longer time, the *light* it naturally parts with ſo ſoon; and found, that if the diamond, after being expoſed to the *light*, be covered with black wax, it will ſhine in the dark, as well ſix hours afterwards as at the time it was firſt impregnated with the *light*. Mem. Acad. Scien. Par. 1735.

The imbibing *light*, in this manner, being ſo nice a property as not to be found in ſeveral diamonds, it was not to be ſuppoſed that it would be found in any other ſtones: accordingly on trial, the ruby, the ſapphire, and the topaz, were found wholly deſtitute of it, and among a large number of rough emeralds, one only was found to poſſeſs it. Such is the ſtrange uncertainty of theſe accidents.

All the other leſs precious ſtones were tried, and found not to poſſeſs this property of imbibing *light*, from the day-*light*, or ſun-ſhine, but they all became luminous, by the different means of heating, or friction; with this difference, that ſome acquired it by one of theſe methods, and others by the other; each being unaffected by that which gave the property to the other. The diamond becomes luminous by all theſe ways. Ibid.

LIGHT, in the manege. A *horſe* is ſaid to be *light*, in French *un cheval leger*, that is, a ſwift, nimble runner. We likewiſe call a horſe *light* that is well made, though he is neither ſwift nor active: for in this laſt expreſſion we conſider only the ſhape and make of a horſe, without regard to his qualities.

Light upon the hand; a horſe is ſaid to be ſuch, that has a good

good tractable mouth, and does not reſt too heavy upon the bit.

A coach horſe is ſaid to be *light*, when he ſtirs nimbly, and dreads the whip; or when he has a *light* trot.

LIGHT-*hand*. See the article HAND.

LIGHT *bellied*, in the manege. A horſe is thus called that commonly has flat, narrow, contracted ſides, which makes the flank turn up like that of a grey-hound.

LIGHTEN, in the manege. To *lighten* a horſe, or make him *light* in the fore hand, is to make him freer and *lighter* in the fore-hand, than behind. If you would have your horſe *light*, you ought to keep him always diſpoſed to a gallop, when you put him to a trot; and after gallopping ſome time, you ſhould put him back to the trot again.

LIGHTNING. In the diſſection of the body of a man killed by a ſtroke of *lightning* at Peterſburg, the abdomen and penis were found greatly inflated. The ſkin of the left ſide reſembled burnt leather; in the other parts of the body it was purple, except that on the neck, which was red as ſcarlet, and there was a ſmall hæmorrhage from the right ear: on the top of the head there was a ſmall wound, as if the fleſh had been torn away, but the ſkull was not injured; the head was found full of very fluid blood, every part of the brain being covered with it; and in the theca of the vertebræ there was a great quantity of ſerum. The lungs looked blackiſh and were collapſed; the heart had no blood in it, nor was there any in the veſſels about it; the gall bladder, and the urinary bladder, were both collapſed and wholly empty, and the ureters greatly diſtended with urine. Act. Petropol. VI. p. 383.

Lightning has been known to render iron magnetical. See Phil. Tranſ. N° 437. and N° 459. Sect. 11.

Artificial LIGHTNING. The phoſphorus, when newly made, gives a ſort of artificial *lightning* viſible in the dark, which would ſurprize thoſe who are not uſed to ſuch a phænomenon: the uſual method of keeping this preparation is under water, and if the coruſcations are deſired to be ſeen to the greateſt advantage, the glaſs in which it is kept ſhould be deep and cylindric, and not more than three fourths filled with water. The phoſphorus put into this water will ſend up coruſcations at times, which will pierce through the incumbent water, and expand themſelves with great brightneſs in the empty upper part of the bottle.

If we compare this artificial coruſcation to the real *lightning*, we ſhall find, that as in this the fire paſſes unaltered through the water, ſo in that the flaſhes of *lightning*, which come at intervals, paſs uninterrupted through the moſt denſe clouds, and are not obſtructed by the heavieſt ſtorms of rain, but like the beams of the ſun, or any other fire, paſs uninterrupted through glaſs and water. The ſeaſon of the weather, as well as the newneſs of the phoſphorus, muſt concur to produce theſe flaſhes; for they are as uncommon in winter as lightning is, but in warm weather both are very frequent.

The flame of *lightning* is generally inoffenſive, and does not, except under particular circumſtances, ſet fire to any thing that it falls upon; and, in like manner, the flaſhings of the phoſphorus through the water will not burn the fleſh, nor even fire the moſt combuſtible things; though the phoſphorus itſelf, like the *lightning*, under proper circumſtances, may be a very conſuming and terrible fire. The warmth of the air, or the immediate beams of the ſun will ſet fire to the condenſed body of the phoſphorus, and it then becomes this terrible fire; and in the ſame manner, *lightning* when condenſed and contracted, and wrapped up in a vehicle of air, ſo that it does not ſo eaſily diffuſe itſelf through the yielding æther, ſets fire to trees, houſes, or whatever it comes near.

The phoſphorus, while burning, acts the part of a corroſive, and when it goes out reſolves into a menſtruum, which diſſolves gold, iron, and other metals; and *lightning*, in the ſame manner, melts the ſame ſubſtances. From the whole, it appears that there is much more reſemblance between this phoſphorus and *lightning*, than between gunpowder or aurum fulminans, and that fire; though theſe have often been ſuppoſed to be nearly allied to its nature.

LIGNICENSIS *terra*, in the materia medica, the name of a fine yellow bole dug in many parts of Germany, particularly about Emeric in the circle of Weſtphalia, and uſed in cordial and aſtringent compoſitions. It is a common ſuccedaneum for the yellow Sileſian bole, where that is not to be had, and is generally eſteemed very nearly, if not abſolutely equal to it in its virtues. *Hill*'s Hiſt. of Foſſ. p. 8.

It is moderately heavy, naturally of a ſmooth ſurface, and of a beautiful gold colour. It eaſily breaks between the fingers, and does not ſtain the ſkin in handling, and melts freely in the mouth, but generally leaves a little grittyneſs between the teeth. It makes no efferveſcence with acids; and burns not to a red, but to a pale brown, and almoſt to a ſtone hardneſs.

Charlton (Foſſ. p. 5.) ſays it is more frequently known by the name of *terra ſigillata goltbergenſis*.

LIGNITES, the name of a ſtone deſcribed by Ludovicus Dulcis, as having the veins and appearance of wood, and the tranſparence of glaſs. He celebrates it for many imaginary virtues, nor does the ſtone itſelf indeed ſeem much leſs imaginary; this author, as De Boet obſerves, having deſcribed many ſtones which he never ſaw, and no ſmall number that never exiſted.

LIGNUM (*Cycl.*)—LIGNUM *campechianum*. See LOG-WOOD.

LIGNUM *colubrinum*. Garcias tells us of the wonderful effects of this drug againſt the bites of venomous ſerpents, and deſcribes two kinds of the plant which produces it; one having leaves like the pomegranate, and the other like the peach tree: theſe, he ſays, both grow in the iſland of Ceylon; and Acoſta mentions two other ſpecies of plants producing this wood, both different from either of thoſe deſcribed by Garcias, and both growing in Malabar. We have alſo accounts in the *geographus nubienſis* of another *lignum colubrinum*, different from theſe, growing in Æthiopia, and poſſeſſed of the ſame virtues againſt the bites of ſerpents as the others. This laſt is called in the Arabic *haud alhaic*, the plain verbal tranſlation of which is ſnake wood, or *lignum colubrinum*. He tells us, that it has ſome reſemblance in form to pyrethrum, and that the wood is always contorted.

Alha cararha is another of its Arabic names, and this is the word by which Aviſenna, and the other Arabian writers, interpret the *pyrethrum* of Dioſcorides; but it is not certain, whether the ſimilitude of ſounds between two or more Arabic words, may not have occaſioned ſome confuſion or error here. Dicæarchus, in his fragment of mount Pelion, deſcribes the root of a tree growing there, which is not only a ſovereign remedy for the bites of ſerpents, but even deſtroys them by its ſmell. This is alſo a *lignum colubrinum*; but whether the ſame with any of the others, or different from them all, we have not deſcriptions enough to determine.

It appears, upon the whole, that little can be depended on in the accounts of the medicine called *lignum colubrinum* by any author, unleſs he has himſelf experimented what he relates, and deſcribed the plant which produces the drug; for much imaginary virtue has been at all times given to many things againſt the bitings of ſerpents, and the *lignum colubrinum* of one author is not the *lignum colubrinum* of another. Every one having given this name to the thing which he ſuppoſed moſt deſerved it. Garcias tells a remarkable ſtory of a ſort of ferret, which he calls *quirl*, or *quirpele*; this creature, he ſays, is a continual enemy to the rattle ſnake, and often voluntarily attacks it in ſingle combat; but before it does this, he ſays, it always eats a quantity of the *lignum colubrinum*, and moiſtening its paws with the ſpittle, the creature rubs itſelf all over with it, and then attacks its enemy. The natural enmity between theſe creatures, of the weaſel kind and ſerpent, is recorded in many of the antients. Pliny tells us of the hatred of this creature and the baſiliſk; and Solinus adds, that if put into the hole, where a poiſonous ſerpent inhabits, the creature generally periſhes by the bite of the ſerpent, and the ſerpent is deſtroyed by the ſmell of it. If this be the caſe, there needs no anointing with the ſpittle impregnated with *lignum colubrinum*; and the whole matter of the enmity between theſe creatures and the ſerpent kind, ſeems rather reducible to hunger than any other provocation, the fleſh of ſerpents being a very delicious food where they can be got at; but the rattle ſnake muſt needs be an overmatch for any of theſe creatures, as it ſwallows larger animals whole.

LIGNUM *nephriticum*. See NEPHRITIC, *Cycl.*

LIGULA, a word uſed by medical writers in very different ſenſes. Some expreſs by it the clavicle, others the glottis; others uſe it as the name of a meaſure, for things either liquid or dry, being a quarter of a cyathus, equal to a forty-eighth part of a pint with us; others finally uſe it for a weight, leſs than half an ounce by two ſcruples, or ten ſcruples.

LIGULA *marina*, a name given by ſome botanical writers to a plant of the fucus or ſea wrack kind, called by others *fucus in ligulas diviſus*. It uſually grows in places always covered by the ſea, not on the banks, which are dry at the ebbing of the tides; and is for the moſt part compoſed of a ſort of long cords or ſtrings, of an oval rather than a round figure, ſeldom exceeding a fifth of an inch in diameter, but often two or three feet long, and not unfrequently divided into two, at ſeveral diſtances, one above another. The ſtalk is ſolid, and not hollow, as in the *fucus chordam referens*, or the ſtringy fucus of Mr. Ray; at leaſt the ſtalk of this plant is full of a thick and tough viſcous matter, like that found in the bladders, at the extremities of the branches of the common fucus, at the time when the ſeeds are ready to fall. This gluey matter is of a whitiſh green, and the colour of the plant itſelf is a deep olive; there is no rib or nerve to be ſeen in any part, but its texture is very cloſe and compact. The indefatigable Mr. Reaumur diſcovered irregular flowers in this plant; they are each compoſed of a number of ſhort and ſlender filaments, iſſuing out of a little hole, which ſerve them as a cup. Theſe filaments are diſpoſed in a circular order upon the ſtalk; and reſemble, in miniature, the common radiated flowers of the hawk weed, and the like plants; but their diameter is not more than the twentieth part of an inch. Notwithſtanding the ſmallneſs of theſe flowers,

flowers, they are however eaſily diſtinguiſhed becauſe they are green, whereas the ſtalk is olive coloured.

Theſe flowers are diſperſed over the whole plant, and ſometimes ſtand in a ſort of cluſters, a great number of them being placed cloſe together, and afterwards there being a little ſpace, and then another ſuch parcel. What is peculiar in this plant, and differs from the other ſea fucuſes, is, that as in them only a few of the flowers produce ſeeds, in this almoſt all the flowers do it; ſeeds being found ſucceeding thoſe flowers, which ſtand far off from the extremities, as well as thoſe which ſtand near them; and thoſe parts of the plant where the ſeeds are produced do not ſwell any more than the reſt. The viſcous matter lodged only at the extremities of the leaves of the common fucuſes, which ſerves for the nouriſhing the ſeeds, is, as before obſerved, in this lodged all along the center of the ſtalk; and conſequently the ſtalk, or leaf, which ever it may beſt be called, is furniſhed with matter for the nouriſhment of ſeeds all the way down. When the flowers are fallen, it is eaſy to diſcover multitudes of ſmall round holes in the ſtalk, each of which has been the cup of a flower, and underneath each hole there is now to be diſtinguiſhed a little round body, which is a capſule, containing the ſeeds; this capſule being divided, there are ſeen a number of minute round ſeeds ſticking to its ſides. Mem. Acad. Par. 1712.

LIGULATED *floſcules*, *ligulati floſculi*, in botany, a term uſed by authors to expreſs a part of the floſcules, or ſmall ſeparate flowers, which together form the whole head or flower of the compound flowered plants. The *ligulated floſcules* generally ſtand on the edge, and have a flat ſtrait end turned downwards, and armed with three teeth, but not divided into any ſegments.

LIGURINUS, in zoology, a name uſed by many authors for the bird more commonly known by the name of *ſpinus*, and called in England the *ſiſkin*. See SPINUS.

LIGURIUS, in Jewiſh antiquity, a precious ſtone on the high prieſt's breaſt plate. It is called *leſchem* in Hebrew. Theophraſtus and Pliny deſcribe the *ligurius* to be a ſtone like a carbuncle, of a brightneſs ſparkling like fire. Epiphanius and Jerom took it for a kind of hyacinth. Some have aſſerted that it is the ſame as *lyncurius*, or the lynx-ſtone, formed, as is ſaid, of the lynx's urine [a], which is congealed into a ſhining ſtone, as ſoon as it comes out of this creature's body. But this is fabulous, as Pliny himſelf obſerves who relates it. The *ligurius* was the firſt ſtone in the third row upon the high prieſt's pectoral, and the name of God was inſcribed upon it [b]. [—[a] *Ælian* de Animal. l. 4. c. 17. *Plin.* l. 8. c. 38. & l. 37. c. 3. [b] *Calm.* Dict. Bibl.—] See LYNCURIUS *lapis*.

LIGUSTICUM, or LEVISTICUM, *lovage*, in botany, the name of a genus of umbelliferous plants, the characters of which are theſe. The flower is of the roſaceous kind, being compoſed of ſeveral petals, arranged in a circular order round a cup, which finally becomes a fruit compoſed of two oblong ſeeds, gibboſe and ſtriated on one ſide with foliaceous rims, and ſmooth and flat on the other.

The ſpecies of *liguſticum* enumerated by Mr. Tournefort are theſe. 1. The *liguſticum*, which is commonly called the *ſeſeli* of the ſhops. 2. The narrow leaved *liguſticum* or *ſeſeli*. 3. The pyrenean *liguſticum* with very large and thin leaves. 4. The ſmooth hemlock leaved *liguſticum*. 5. The alpine *liguſticum* with long multifid leaves. 6. The Scotch *liguſticum* with apium leaves. 7. The *liguſticum* with leaves like fennel giant. 8. The ſhining pyrenean *liguſticum* with fennel leaves. *Tourn.* Inſt. p. 323.

The root of this plant is eſteemed a powerful alexipharmic and ſudorific; it is recommended in malignant fevers, in palſies and apoplexies, and in all diſorders of the head. The ſeeds are warm and carminative, and are given with ſucceſs in colics, and againſt indigeſtions and flatuſes.

LIGUSTICUM *marmor*, in natural hiſtory, a name by which ſome authors have called the *carrara marble*, the *marmor lunenſe* of the antients. It is a fine white marble, harder than the parian or ſtatuary kind, and uſed for tables, chimneys, &c. as the other for carving. *Aldrovand.* Muſ. Met. 748. See LUNENSE *marmor*.

LIGUSTRUM, *privet*, in botany, the name of a genus of trees, the characters of which are theſe. The flower conſiſts of one leaf, and is of a funnel like ſhape; the piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower: this, finally, becomes a round ſucculent fruit, or berry, and contains uſually four ſeeds, gibboſe on one ſide and flat on the other. *Tourn.* Inſt. p. 596.

The ſpecies of *privet* enumerated by Mr. Tournefort are theſe. 1. The common *privet*. 2. The *privet* with leaves variegated with yellow; and 3. The American bay leaved *privet*, with yellow flowers and white berries.

In the Linnæan ſyſtem of botany, the characters of this genus are, that the plants of it have a ſmall tubular perianthium compoſed of one leaf, with its extremity erect, and divided by four notches; the flower conſiſts of a ſingle petal, which is tubular, and of the ſame length with the perianthium, its extremities expanded, divided into four ſegments of a ſomewhat oval figure; the ſtamina are two ſimple filaments placed oppoſite to one another, and terminated by erect antheræ, of the length of the flower. The piſtillum is compoſed of a roundiſh germ, a ſingle and very ſhort ſtyle, and a thick bifid and obtuſe ſtigma. The fruit is a ſmooth round berry, containing only one cell. The ſeeds are four in number in each berry, and are convex on one ſide, and angular on the other. *Linnæi* Gen. Plant. p. 2. See PRIVET.

LILAC, in botany, the name of a genus of trees, the characters of which are theſe. The flower conſiſts of one leaf, and is of the funnel ſhaped kind, and uſually divided into four ſegments at the edge. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the hinder part of the flower: this, finally, becomes a compreſſed or flatted fruit of the ſhape of a tongue, which opens into two parts, and is divided by an intermediate ſeptum into two cells, containing flat and marginated ſeeds. *Tourn.* Inſt. p. 607.

The ſpecies of *lilac* enumerated by Mr. Tournefort are theſe. 1. The common blue flowered *lilac*, called by many the *blue ſyringa*, or pipe tree. 2. The *lilac* with ſilvery white flowers. 3. The *lilac* with deep purple flowers. 4. The privet leaved *lilac*, commonly called the *Perſian jaſmine*; and 5. The *lilac* with jagged leaves.

Theſe are frequently cultivated in gardens; and ſome growing, with good management, to eighteen or twenty feet high, are with their large tufts of flowers very ornamental.

The common way of propagating theſe ſhrubs is by ſuckers, which they always produce in very great abundance; theſe ſhould be taken off from the old plants in October, and carefully planted in a nurſery, where after they have ſtood about three years, they will be fit to plant where they are to remain, after which they require no farther care than the digging about their roots once a year, and taking away their ſuckers, which are not only very unſightly but ſtarve the plant. *Miller*'s Gardners Dict.

They will grow almoſt any where, but they are obſerved to flower beſt in a dry ſoil, as indeed do moſt other ſhrubs, though they grow faſteſt in a wet one.

LILI, the name of one of the favourite remedies of Paracelſus, the baſis of which is antimony, but he has not given us the proceſs to prepare it.

LILIAGO, in botany, a name uſed by Cordus and ſome other authors for the phalangium or ſpiderwort. *Ger.* Emac. Ind. 2.

LILIACEOUS, in botany, a term uſed to expreſs the flowers of ſome plants, which approach to thoſe of the lilly in ſhape. The characters of a *liliaceous* flower are theſe; it is compoſed of ſix leaves, or elſe of three leaves divided into ſix, but this is more rarely the caſe; the piſtil, or cup of this flower always becomes finally a ſeed veſſel divided into three cells.

Of this ſort are the flowers of the tulip, hyacinth, aſphodel, ephemerum, and the like; many of which, though they leſs reſemble the lilly flowers than the others, yet are to be diſtinguiſhed by this title, becauſe they leave behind them the *liliaceous* ſeed veſſel, which is long, and divided into three cells. *Tourn.* Inſt. p. 343.

LILIASTRUM, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the liliaceous kind, and is compoſed of ſix petals, and of the ſhape of the lilly flower. The piſtil ariſes from the center of the flower, and finally becomes an oblong fruit, divided into three cells, and containing angular ſeeds. To this, it is to be added, that the root is compoſed of ſeveral long fleſhy bodies hanging from one common head.

The ſpecies of *liliaſtrum* enumerated by Mr. Tournefort are theſe. 1. The greater alpine *liliaſtrum*; and 2. The leſſer alpine *liliaſtrum*, called the *phalangium allobrogicum*, and large flowered *phalangium*. *Tourn.* Inſt. p. 369.

LILIO-ASPHODELUS, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the liliaceous kind, but conſiſts only of one leaf, and is tubular at the bottom, and divided into ſix large ſegments toward the top. The piſtil ariſes from the bottom of the flower, and becomes at length a ſeed veſſel of a ſomewhat oval ſhape, but three cornered; this is divided into three cells, each of which contains a number of roundiſh ſeeds: to this, it may be added, that the root is large and fleſhy. See Tab. 1. of Botany, Claſs 9.

The ſpecies of *lilio-aſphodelus* enumerated by Mr. Tournefort are theſe. 1. The common yellow flowered *lilly-aſphodel*. 2. The ſmaller white flowered *lilly-aſphodel*. 3. The crimſon flowered *lilly-aſphodel*. 4. The ſmaller red *lilly-aſphodel*. 5. The American *lilly-aſphodel*, with white umbellated flowers, each having purple ribs. 6. The aloe leaved American *lilly-aſphodel*, with very large ſweet ſcented flowers diſpoſed in umbells. 7. The American *lilly-aſphodel*, with leaves like the ſquill, and large purple flowers in umbells. 8. The bifoliate American *lilly-aſphodel* with a ſingle purple flower. *Tourn.* Inſt. p. 344.

LILIO-HYACINTHUS, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the liliaceous kind, being compoſed of ſix petals, and reſembling in ſhape the hyacinth flowers. The piſtil finally becomes a fruit of a globoſe, but pointed form, and uſually

ſome-

ſomewhat three cornered, and divided into three cells, which contain roundiſh ſeeds. To this, it is to be added, that the root is of a bulbous ſhape, and made up of fleſhy ſcales in the manner of that of the lilly. *Tourn.* Inſt. p. 371. The ſpecies of *lilio-hyacinthus* enumerated by Mr. Tournefort are theſe. 1. The common blue flowered *lilly-hyacinth*, commonly called the lilly leaved ſtarry hyacinth. 2. The white flowered *lilly-hyacinth*; and 3. The *lilly-hyacinth* with reddiſh flowers. *Tourn.* Inſt. p. 371.

LILIO-NARCISSUS, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the liliaceous kind, and is compoſed of ſix leaves, diſpoſed in the form of thoſe of the common lilly. The cup, or embryo, afterwards becomes a fruit, in all reſpects, like that of the *narciſſus*. To this, it is to be added, that the root is bulbous and truncated in the common way; in which it differs from the lilly, as it does from the *narciſſus*, in the having a ſix leaved flower.

The ſpecies of *lilio-narciſſus* enumerated by Mr. Tournefort are theſe. 1. The broad leaved red flowered Indian *lilio-narciſſus*. 2. The deep purple flowered Indian *lilio-narciſſus*. 3. The largeſt ſpherical Indian *lilio-narciſſus*, with a number of red liliaceous flowers. 4. The Indian *lilio-narciſſus* with white flowers, red on the outſide. 5. The red flowered *lilio-narciſſus* of Japan. 6. The dwarf many flowered Indian *lilio-narciſſus*. 7. The dwarf African many flowered *lilio-narciſſus*. 8. The many flowered *lilio-narciſſus*, as with fleſh coloured flowers, with pale yellow bottoms. 9. The broad leaved *lilio-narciſſus* of Ceylon, with ſnow white flowers, with a purple ſtreak at the back of every petal. 10. The broadeſt leaved *lilio-narciſſus* with more white ſcentleſs flowers. 11. The lilly of the valley leaved American *lilio-narciſſus*, with flowers yellow on the inſide and ſcarlet on the out. 12. The Carolina *lilio-narciſſus*, with a ſingle pale whitiſh red flower. 13. The dwarf white ſingle flowered Indian *lilio-narciſſus*. 14. The Indian *lilio-narciſſus*, with gold yellow flowers ſtreaked with a ſilvery white, with two large bending leaves, and a hollow ſtalk like that of the onion. 15. The yellow ſpring *lilio-narciſſus*. 16. The great yellow autumnal *lilio-narciſſus*. 17. The yellow double autumnal *lilio-narciſſus*. 18. The leſſer yellow autumnal *lilio-narciſſus*. 19. The autumnal *lilio-narciſſus* with a duſky yellow flower. 20. The ſmall yellow ſweet ſcented *lilio-narciſſus*. *Tourn.* Inſt. p. 388.

LILIUM, the *lilly*, in botany, the name of a large genus of plants, the characters of which are theſe. The flower is of a ſort of bell faſhioned ſhape, but is compoſed of ſix leaves, which are more or leſs expanded and bent back. The piſtil ſtands in the center of the flower, and finally becomes an oblong and trigonal fruit, which is divided into three cells, and contains a number of marginated ſeeds, arranged in a double order one on another. To this, it is to be added, that the root is of a bulbous form, and is compoſed of a number of fleſhy ſcales affixed to an axis.

The ſpecies of *lilly* enumerated by Mr. Tournefort are theſe. 1. The common white *lilly*. 2. The double white *lilly* with ſcentleſs flowers. 3. The white *lilly* with depending flowers. 4. The large purpliſh yellow *lilly*. 5. The great white *lilly*. 6. The double flowered purpliſh yellow *lilly*. 7. The common white *lilly* with yellow edges to the leaves. 8. The *lilly* with leaves variegated with yellow ſpots. 9. The *lilly* with the flower variegated with purple lines. 10. The white Syrian *lilly*. 11. The leſſer purpliſh yellow *lilly*. 12. The ſmall double flowered purple *lilly*. 13. The pale purple flowered *lilly*. 14. The many flowered bloody *lilly*. 15. The great broad leaved bulbiferous bloody *lilly*. 16. The narrow leaved bulbiferous bloody *lilly*. 17. The ſmall creeping bulbiferous bloody *lilly*. 18. The hairy bulbiferous *lily*. 19. The mountain *lilly* with red reflex flowers. 20. The double red mountain *lilly* with reflex flowers. 21. The mountain *lilly* with white reflex flowers. 22. The mountain *lilly* with reflex flowers, of a pale purple, ſpotted with a deeper red. 23. The mountain *lilly* with reflex freſh coloured flowers. 24. The mountain *lilly* with reflex flowers, and a longer ſpike. 25. The hairy *lilly* with reflex flowers. 26. The *lilly* with plain purple flowers. 27. The *lilly* with duſky browniſh reflex flowers. 28. The *lilly* with reflex variegated flowers. 29. The *lilly* with white reflex flowers not ſpotted. 30. The *lilly* with double white reflex flowers not ſpotted. 31. The *lilly* with reflex white ſpotted flowers. 32. The ſcarlet Conſtantinople *lilly*. 33. The Conſtantinople *lilly* with plain white flowers. 34. The Conſtantinople *lilly* with yellow flowers. 35. The Conſtantinople *lilly* with pale red flowers. 36. The many flowered Conſtantinople *lilly* with deep red flowers. 37. The late flowering Conſtantinople *lilly*. 38. The double flowered Conſtantinople *lilly*. 39. The purpliſh bloody *lilly* with reflex flowers. 40. The pyramidal muſk *lilly*. 41. The narrow leaved red *lilly*. 42. The red flowered *lilly* with ſhort graſſy leaves. 43. The narrow leaved ſweet ſcented red *lilly*. 44. The narrow leaved yellow *lilly*. 45. The narrow leaved *lilly* with pale whitiſh yellow flowers. 46. The yellow flowered *lilly* with black ſpots in the flowers. *Tourn.* Inſt. p. 369, 370. See LILLY.

LILIUM *convallium*. *Lilly of the valley*, in botany, the name of a genus of plants; the characters of which are, that the flower is compoſed of only one leaf, formed into the ſhape of a bell, ſhort, divided into ſeveral ſegments at the edge, and incloſed in no cup; from the bottom of this flower there riſes a piſtil, which ripens into a ſoft and uſually globular fruit, full of ſeeds, laid cloſely together.

The ſpecies of *lilly of the valley* are theſe. 1. The common white kind. 2. One which has its flowers produced from little follicles. 3. The ſingle flowered kind. 4. The narrow leaved kind. 5. The great broad leaved kind. 6. The double flowered variegated broad leaved one; and 7. The red flowered one.

The plant commonly called *one blade*, and by Caſpar Bauhine *lilium convallium minus*, is uſually eſteemed a ſpecies of this genus, but improperly; it being one of the ſmilaxes. *Tourn.* Inſt. p. 77. See SMILAX.

The name *lilly* is very improperly given to this genus of plants, as they have not the leaſt affinity to the *lilly*.

The flowers of *lilly of the valley* are cephalic and nervine, and preſcribed for vertigoes, apoplexies, palſies, *&c.*

LILIUM *lapideum*, a name given by the writers, in natural hiſtory, to a foſſile body found in ſome parts of Germany; which plainly ſhews, that it was once a ſpecies of ſtar fiſh; though the animal be not, at this time, known in its recent ſtate. Klein, who has well conſidered this body, in compliance to the vulgarly received names of things, call this the *entrochus ramoſus*, or *branched entrochus*; and the reſemblance ſome of its parts have to the common entrochi, ſhews plainly that their origin has been the ſame, and that they are fragments either of this ſpecies or of the magellanic ſtar fiſh. The recent fiſh not being found from which the *lilium lapideum* is formed is no peculiar fate, but is common to it, and to the *cornua ammonis*, and many other animal remains.

LILLO, in ichthyology, a name given by the Rhodians to the *labrus*. See LABRUS.

LILLY, *lilium*, in botany. See the article LILIUM.

All the ſorts of *lillies* and martagons are propagated by ſowing their ſeeds; and if the ſeeds are carefully ſaved from good flowers, the martagons very frequently afford very beautiful varieties.

The manner of ſowing them is this: ſome ſquare boxes ſhould be provided of about ſix inches deep, with holes bored in the bottoms to let out the wet; theſe muſt be filled with freſh light ſandy earth, and the ſeeds muſt be ſown on them pretty thick in the beginning of Auguſt; ſoon after they are ripe, and covered over about half an inch deep with light ſifted earth of the ſame kind. They ſhould be then placed where they may have the morning ſun; and, if the weather prove dry, they muſt be watered at times, and the weeds carefully picked out. In the month of October, the boxes are to be removed to a place where they may have as much ſun as poſſible, and be ſecured from the north and north eaſt winds. In ſpring the young plants will appear, and the boxes are then to be removed into their former ſituation; they ſhould be watered at times during the ſummer; and in Auguſt the ſmalleſt roots are to be emptied out of theſe boxes, and ſtrewed over a bed of light earth, and covered with about half an inch depth of light earth ſifted over them; they muſt here be watered and ſhaded at times, and defended from the ſeverity of the winter, by a light covering of ſtraw, or peas haulm, in the hardeſt weather. In February the ſurface of the bed ſhould be cleared, and a little light earth ſifted over it. When the leaves are decayed, the earth ſhould be a little ſtirred over the roots, and in the month of September following a little more light earth ſifted on. In the September, of the following year, the roots muſt be tranſplanted to the places where they are to remain, and ſet at eight inches diſtance, the roots being placed four inches below the ſurface: this ſhould be done in moiſt weather. They will now require the ſame care as in the preceding winters; and the ſecond after they are tranſplanted, the ſtrongeſt roots will begin to flower. The fine ones ſhould then be removed at the proper ſeaſon into flower beds, and planted at great diſtances from one another, that they may flower ſtrong.

The roots of the *white lilly* are emollient, maturating, and greatly ſuppurative. They are uſed externally in cataplaſms for theſe purpoſes with ſucceſs. The common form of applying them is boiled and bruiſed; but ſome prefer the roaſting them till tender, and then beating them to a paſte with oil, in which form they are ſaid to be excellent againſt burns. Gerard recommends them internally in dropſies.

Water LILLY. See NYMPHÆA.

LIMANDA, in zoology, a name by which ſome authors have called the flat fiſh, which we in Engliſh call the *dab*, the *paſſer aſper* of authors. *Geſner* de Piſc. p. 781.

LIMANDE, in ichthyology, a name given by the French to the *paſſer aſper*, a rough plaice, called in Engliſh a *dab*. This French name is evidently arrived from the Latin *limanda*, uſed by Geſner and Bellonius as the name of this fiſh.

LIMARIA, in ichthyology, a name given by Gaza and ſome other writers to the thynnus or tunny fiſh, called the Spaniſh mackrel. See the article THYNNUS.

LIMAX *marinus*, in zoology, a name given by ſome to the *lipparis*, or as it is commonly termed in Engliſh the ſea ſnail, caught in plenty at the mouths of rivers in Yorkſhire and ſome other places. *Ray*'s Ichthyogr. Append. p. 17.

LIMB (*Cycl.*)—*Motions of the* LIMBS. It cannot but have been obſerved, by every one, that it is much more natural and eaſy to make certain motions with both hands, or both feet at once, in the two contrary or oppoſite directions, than in the ſame direction. We may trace in the air, for inſtance, two ſpiral lines with our two hands, with much more eaſe, in the contrary directions, than if we attempt to do them the ſame way; and it will be eaſy to find that the caſe is exactly the ſame with the feet, if we attempt to do the ſame thing with them when ſitting; and the very ſame difficulty on one hand and facility on the other will be found, if we attempt the ſame motion with one hand only, and with the oppoſite foot at the ſame time: yet it is extremely difficult, and almoſt impoſſible, to make theſe motions in a contrary direction, at the ſame time with the arm and leg of the ſame ſide.

We muſt therefore alſo reſolve into this principle, the power which we have by a ſort of natural mechaniſm, and that without any acquired habitude, of eaſily making with one hand, or even with both hands at once, exactly the counter action to that motion, which the other hand naturally and moſt eaſily is found to make, and the contrary of which it cannot itſelf make without difficulty, and repeated trials and cuſtom. It is owing to this, that we can with the left hand eaſily make the very contrary ſtrokes with the pen, that we are accuſtomed to make with the right; if we ſuffer that left hand to move, without giving our particular attention to what it is doing, as in the playing on ſome inſtruments of muſic, the fingers being after practice left as it were to themſelves, ſucceed more happily than when the attention is more engaged in what they are doing. The letters or figures thus made by counter ſtrokes from the unforced action of the left hand, though they appear ſtrange and confuſed at firſt ſight, yet if held up againſt a looking-glaſs, they will be found ſufficiently determinate and expreſs.

In the ſame manner that the counter actions to thoſe, which ſeem in ſome degree natural to our peculiar *limbs*, are with difficulty performed, there are a great many motions, which we continually do by the mere natural diſpoſition of our *limbs* freely, without art and without exerciſe; nay, even without cuſtom, either of which, with either hand or foot is equally eaſy, and yet we are not without great difficulty able to do both, when in contrary directions one to another. Of this nature is the attempt to make two different motions with the hands, in right lines, the one of which ſhall be perpendicular to the other; the moving one hand, or one foot, perpendicularly up or perpendicularly down, at the ſame inſtant that the other hand or foot is moving, directly from right to left, or from left to right, is, according to this principle, very difficult; eſpecially to make them both perfectly, regularly, and tolerably quick, as is eaſily found by any one, in attempting to rub the body upwards and downwards with one hand, and tranſverſly, or from ſide to ſide with the other; and much more plainly, if it be attempted to make theſe contrary motions in the air, without touching any body, or touching only very lightly, and performing the motion quickly. This is no where more obvious than in thoſe, who are learning to play upon the trumpet marine, a ſtring inſtrument, with a remarkably long neck, where the running up and down the hand to make the notes is found extremely aukward, while the other is employed in an exactly contrary motion ſideways, in directing the bow.

This difficulty of making motions, at the ſame time, contrary to one another with two *limbs*, either of which motions ſingly would be no difficulty to either, is not peculiar to the arms; if we ſit down and try the experiment with the feet the ſucceſs is found the ſame, and even the moving differently the like fingers or toes of the different hands or feet, is found of proportionate difficulty. Nor is the difficulty of theſe motions peculiar to the perpendicular or tranſverſe ones; the making circles, or ſpiral or ſerpentine lines, with the two hands, or two feet, at the ſame time, in the ſame contrary directions, being equally difficult: yet it is equally true, that though it is ſo extremely difficult, and almoſt impoſſible, to make theſe motions in contrary directions at the ſame time, yet they are all motions, which we ſeparately make, with great facility, and with great quickneſs. We, in the ſame manner, are not able, by any means, to direct our two eyes to two different objects, placed in contrary ſituations at the ſame time; but in this the difficulty, though great in the ſtructure of our eyes, is not univerſal to all creatures. The chamæleon being able to do this, and to look before and behind, or in any other ever ſo different directions, both at the ſame time. Mr. Winſlow was led by a great number of obſervations of this kind, diligently to examine the diſpoſitions of the nerves, and their different origins in the brain, the cerebellum, the medulla oblongata, and the ſpinal marrow. The firſt thing on which this accurate anatomiſt made his obſervation, was the crucial interlacement of the nerves in the medulla oblongata, firſt diſcovered by Mr. Petit, and accurately deſcribed and figured by him; and the obſervations of the ſame author, of different perſons, who, within his own knowledge, had become paralytic in the *limbs* on the contrary ſide of their body to the affected part of the brain alſo. The being able determinately to bring on the like ſymptoms in brutes, from injuries to the contrary ſides of the brain, and the regular croſſing of the filaments which paſs tranſverſely on the medullary arch, commonly called the callous body of the brain, and of other of the nervous fibres, ſeemed to promiſe to give ſome light into the explication of the difficulty of theſe contrary motions being performed at the ſame time. When this accurate obſerver had ſufficiently informed himſelf of theſe croſſings of the nerves, and the other reciprocal communications of the ſeveral parts of the brain, or its two lateral halves, as well by the two large tranſverſe cords, as by the thick tranſverſe fibres of the ſmall inferior, and triangular ſurface of the arch; he beſtowed his particular obſervation on the ſtructure of the ſpinal marrow. This he carefully examined by the microſcope, and beſide the tranſverſe fibres, which make the communication between the two columns of this marrow, and which Mr. Petit had before nicely deſcribed, there appeared to Mr. Winſlow, in the thickneſs of each of theſe columns, a long train very diſtinct, and made up of a leſs white and more cloudy matter than the reſt; or a medullary cord, which had not been before obſerved by any body, any more than the ſmall cords and tranſverſe fibres of the ſummit of the arch of the brain, or the croſſing of its tranſverſe fibres.

By theſe ſeveral croſſings, and reciprocal communications of the medullary filaments, which are, as it were, the roots of the nerves of each half, or each ſeveral ſide of the human body; it ſeems not impoſſible to explain the reaſon of the before obſerved difficulty of making the contrary motions with the two oppoſite *limbs* at the ſame time; eſpecially when it is obſerved, that the two ſmall parcels of medullary filaments, which compoſe the primitive trunks of every pair of nerves that are propagated from the ſpinal marrow, have their paſſage through the lateral apertures of the vertebræ, and before that ſeem to proceed partly from the neighbouring column or moiety of the ſpinal marrow, and partly from the other column or moiety, by means of the croſſing beforementioned; and conſequently, that by this reciprocal croſſing, or interlacing, one of the primitive parcels or bundles of filaments of each primitive trunk of the nerves of one ſide of the body, muſt communicate with the fellow parcel or bundle of filaments of the nerves of the other ſide.

Every body almoſt knows that the motion of the muſcles, and ſenſation by the touch, are performed by means of the nerves and their filaments; but no one has ever yet diſcovered the true means: this however is certain, that when we would put in motion, at one time, the two legs, or the two arms, or the fingers or toes of each hand or foot; at that time the croſſed filaments of the primitive trunks of the nerves, which go to their correſpondent muſcles on each ſide, immediately come mutually into contact, and conſent with one another; and their ſo meeting, in the time of their motion, communicates certain impreſſions reciprocally to the ſeveral nerves, which from them are propagated to the two different ſides of the body, and continue them to act in concert on the ſeveral muſcles of both the arms or legs at the ſame time, and communicate to both that principle of motion, which we meant to give alone to one. Mem. Acad. Scien. Par. 1739.

LIMB *of a flower*, among botaniſts. See PETAL.

LIMBERS, in artillery, a ſort of advanced train joined to the carriage of a cannon, upon a march. It is compoſed of two ſhafts wide enough to receive a horſe betwixt them, which is called the *fillet horſe*; theſe ſhafts are joined by two bars of wood, and a bolt of iron at one end, and have a pair of ſmall wheels; upon the axle-tree riſes a ſtrong iron ſpike, upon which the train of the carriage is put. But when a gun is upon action, the *limbers* are run out behind her.

LIMBER *holes*, in a ſhip, little holes cut through her floor timbers, ſerving to let the water to the well of the pump, which otherwiſe would lie between thoſe timbers, where the keel rope runs.

LIME (*Cycl.*)—*Lime* affords a great variety of figures in its ſalts. The moſt perfect concretions among them ſeem to be double pointed figures, thick toward one end and growing thin toward the other; ſome are flat, and of a quadrilateral figure, and others flat and very thin but hexangular; ſome are of the ſhape of a wedge, being cut off taper near one end, and blunt at the other. *Soda*, or pot-aſh, made of the plant *kali*, is very elegant and various in its ſhoots. Some are beautiful priſms, with the angles cut off near each end; others are oblong, and leſs regularly formed, ſome ſquare and very thin; others oblong, with a tendency to a rhomboidal ſhape, and ſome roundiſh. Theſe are a few, out

of a great number of experiments, made by the accurate Lewenhoek, and ſince repeated by other obſervers. The reſt with the figures of theſe ſhoots are publiſhed at large in the Philoſophical Tranſactions.

Lime makes the greateſt improvement upon light ſandy lands, or upon a dry gravel: but a cold clay ſeldom is much benefited by it. If it be mixed with dung, or with mud, drawn from the bottom of the rivers, it makes an excellent mixture, eſpecially where the ſoil is very ſandy; and in Weſtmoreland they procure fine crops of barley from their ſandy lands, by manuring them with *lime* and cow-dung mixed together. The nature of *lime* on land is like that of chalk, it works downwards, as the farmers expreſs it; it is therefore beſt to treat it in the ſame manner, laying it upon a lay the year before it is to be plowed up. *Lime* is reckoned to make corn grow with a thin huſk; but it is not a laſting manure, ſeldom holding for more than five crops. When *lime* is uſed to land, which lies upon a deſcent, it ſhould be mixed with dung, and laid principally on the higher part of the land; the conſequence of which, will be, that the rain will waſh out the virtue of the *lime* and dung together, and carry the whole to the lower parts as it runs down. Dung and *lime* mixed together will do better for any land, than either of them alone.

Lime is made of chalk, or of any ſtone, that is not too cold, or ſandy, as free ſtone, and the like. All the ſoft ſtones that are of a tolerably cloſe texture, will burn to good *lime*, as will alſo marble, ſlate, ſea ſhells, corals, and flints; but this laſt kind of ſtone is more difficult to be burnt to *lime* than the others, except in a reverberatory kiln, for they are apt to run to glaſs. The harder the ſtones of which *lime* is made are, the better the *lime* is; and when it is made of chalk, that is much better, which is made of the hard ſtony kind, than that which is made from the ſoft; but the harder the ſtones are, the more fire is required to burn them: both ſorts may be burnt with wood, coals, turff, or fern, which makes a very fierce fire. The kilns uſed for chalk, or ſtone, they commonly make in a large pit, which is dug either round or ſquare, according as they have convenience; and is of ſuch a ſize, as will be proper for the quantities they intend to burn. They are wideſt at the top, and narrower, by degrees, as they come nearer the bottom. The inſide of this pit is lined with a wall built of *lime*-ſtone; at the outſide, near the bottom, they have a hole, or door, by which they take out the aſhes, and above that ſome have an iron grate, which comes cloſe to the wall all about it; but others arch it over with ſtone, or large pieces of chalk; and upon this they lay a layer of ſtone, or of whatever elſe they burn in the pit; upon this they place a layer of wood, or coals, and ſo on, layer over layer, to the top of the pit; only they obſerve, that the outermoſt layer be always of the fuel, not of the ſtone. When the kiln is thus filled they give fire at the hole underneath, and the *lime* is finiſhed in a different time, according to the nature of the ſubſtance. That made of chalk, is commonly burnt into *lime* in twenty-four hours; but *lime*-ſtone generally takes ſixty hours in burning. Ten buſhels of ſea coal, or one hundred of faggots, three feet long, will burn forty buſhels of chalk, and this will yield thirty buſhels of unſlaked *lime*. Where chalk is ſcarce, they work up the chalk rubbiſh into a ſort of ſtiff paſte with water, and make it into a ſort of bricks, which they dry in the air, and then burn them into *lime* in the common way; but this is not quite ſo good as the other. Hot *lime* taken out of the kiln, and mixed into a very ſoft paſte with water, and then mixed with ſand, makes a kind of mortar, very much ſuperior to the common ſort. *Mortimer*'s Huſbandry.

All *lime* is a very good manure, but that made of ſtone is much better than what is made of chalk. The common allowance is a buſhel to a pole ſquare, or a hundred and ſixty buſhels to an acre.

This they cover with earth, and ſo leave it till the rains fall and ſlake it, and after that they ſpread it as evenly as poſſible upon the ground. They always find that if it be carried hot out of the kiln, and laid upon the land to cool, it does much better than in any other way.

The improvement it makes upon land is owing chiefly to its heat, and the ſalt it contains. It is in much the ſame manner that coal aſhes, and the ſoot of coal become uſeful upon the like ſort of lands; but the farmers always find that a mixture of good earth and *lime*, that has lain a conſiderable time together, is better for this purpoſe than freſh *lime* alone. *Moreton*'s Northampt. p. 481.

In the late diſtemper among the horned cattle, ſome were buried with *lime*, two buſhels to each cow. The effect ſeemed to be a ſtrong ſcent ariſing through the ground, though the carcaſs was ten feet under ground. It was difficult to keep the dogs from ſcratching, and endeavouring to tear up the ground to get at the fleſh. Whereas, when the carcaſſes were buried without *lime*, though but eight feet under ground, the dogs never attempted any ſuch thing. Hence it was thought beſt to bury without *lime*, as it is probable it might ſend up and ſpread malignant particles through the air. That *lime* renders animal ſalts more volatile and pungent, appears in the proceſs of ſpirit of ſal ammoniac with quick *lime*. See Phil. Tranſ. N° 480. p. 224, 225.

Bird-LIME. See BIRD-*lime*.

LIME *galls*, in natural hiſtory, a ſort of *galls* or vegetable protuberances, formed on the edges of the leaves of the *lime* tree in ſpring time; they are very common in the plantations of *limes*, and are irregularly ſhaped, but uſually oblong and rugged, and of a reddiſh colour, they occupy only the edges of the leaves, and are of a red colour, ſometimes very beautiful. As theſe are very plentiful, Mr. Reaumur was of opinion, that they might be of ſervice in the dying trade; he made trial by rubbing them on ſome parts of his linnen, and found that they gave a very beautiful red colour, which did not come out in the firſt waſhings afterwards. It is extremely probable, that there wants only inquiry to prove that we have many valuable productions of this kind, which, though diſregarded at preſent, might prove of great uſe in the ſeveral mechanical arts as well as in medicine.

Theſe *galls* of the *lime* leaves are formed by a worm, which inhabits them during its term of life, being found in them of all ſizes, from the moſt minute to that of the full growth, which is about half an inch in length; but when its period of life, as a worm, draws near, it deſerts this habitation, and goes elſewhere to paſs into its chryſalis ſtate. This alſo is the caſe with the worms that inhabit many *galls*, which are frequently found to contain them in the worm ſtate, but never in that of the chryſalis, which they always paſs into elſewhere. *Reaumur*'s Hiſt. Inſ. Vol. 6. p. 188.

Beſide theſe *galls* of the leaves of the *lime* tree, they have ſometimes another appearance not leſs ſingular, and this is alſo owing to an inſect; though many curious obſervers have miſſed the finding it there. In this ſtate the whole leaf of the *lime* tree reſembles a common ſpoon, being ſunk into a hollow in the middle, and in its pedicle making the handle. The edge of the leaf in this caſe is always tumid, and forms a rib or ridge, running round the whole circumference in the ſhape of a cord: this is uſually found during the time that the leaf is growing to its ſize, and to this is owing the whole figure it aſſumes afterward; for the leaf being unable to extend itſelf farther toward the circumference by reaſon of this ring, naturally forms a ſort of hollow or baſin in its ſucceeding growth. The protuberance, in this caſe, ſurrounding the leaf is a kind of *gall*, and owes its origin in the manner of all the other excreſcences of that kind to an inſect. This, however, has been ſought for in vain by many, who enquired after it too late; but Mr. Reaumur ſearching the leaves in the beginning of May, found in every protuberance of this kind, ſeveral ſmall worms of a white colour, and conſiderable length, though not exceeding a horſe hair in thickneſs. The reaſon that theſe are not found in the ſame place afterwards, probably, is, that they either go out of it, as the inhabitants of many other *galls* do, in order to paſs into their chryſalis ſtate, or elſe that this life in the worm ſtate, and the duration of that in the chryſalis, are both very ſhort, and that they are generally eſcaped in the form of flies before the time that they are ſought for in the leaves. See Tab. of Inſects, N° 27. and *Reaumur*'s Hiſt. Inſ. Vol. 6. p. 189.

LIME *phoſphorus*, a kind of phoſphorus, invented by Mr. Homberg, and made of ſal armoniac and *lime*. The method of making it is this: Take of ſal armoniac one part, of *lime* ſlaked in the air two parts, mix theſe well together, and fill a ſmall crucible with them; ſet this in a ſmall fire of fuſion, and as ſoon as the crucible is red hot, the mixture will melt, and ſhould be ſtirred with an iron rod to prevent its running over. When the matter is entirely fuſed, pour it into a braſs mortar, and when cold it will appear of a grey colour, and as if vitrified; if now it be ſtruck upon with any hard body, it appears as on fire in the whole extent of the ſtroke; but the matter being brittle, it is proper for the experiment's ſake, to dip little bars of iron or copper into the melted matter in the crucible; for thus they will be enamelled as it were with the matter, and theſe bars being ſtruck upon will give the ſame fire, and the experiment may be ſeveral times repeated before all the matter falls off. Theſe bars muſt be kept in a dry place. *Shaw*'s Lectures, p. 406.

LIME *tree*. The ſeveral ſpecies of the *tilia*, or *lime tree*, are all eaſily propagated by layers, which in one year will take good root, and ſhould then be removed to the nurſery, planting them at four feet diſtance in rows, and the plants two feet aſunder in each row. The beſt ſeaſon for removing them is Michaelmas. They ſhould remain four or five years in the nurſery, and ſhould afterwards be removed to the places where they are to remain. The ſoil they love beſt is a ſtrong fat loam, in which they will grow very faſt. *Miller*'s Gardners Dict. See TILIA.

LIME *water*. The general opinion of *lime* acting as a cauſtic, and conſuming the bodies it was made to act upon, by means of the great quantity of particles of fire it contained, long denied any preparation of it a place among internal medicines; at length, water poured upon it was found to take in a part of its virtues, and to be a valuable medicine, and very ſafely to be given internally in large quantities.

All *lime* is not equally good for the making this water, but the ſeveral kinds differ according to the ſubſtances they are made from. In Holland they at this time make *lime* of ſea

ſhells, which they find in vaſt abundance on their ſea ſhores. This was alſo a practice in the time of Dioſcorides; but the *lime* thus made is not fit for making *lime water*. The water made from it does not keep long, and is leſs ſtyptic, and ſweetiſh to the taſte, and is greatly inferior to the water made with *lime* burnt from ſtones. The newer the *lime* is, the leſs it has been expoſed to the air, and the drier it has been kept, and finally, the more it has held together without crumbling, or mouldering to powder, the better it is for the making *lime water*. Hot water has alſo been found to make it better than cold, and rain water much better than any other kind. The ſame *lime* will ſerve twice to make the medicinal water; but if it be tried a third time, the water will be found to be quite inſipid: if after twice uſing it be calcined again, the fire will give it the ſame qualities, and it will again make the *lime water* as ſtrong as the firſt. It has this inconvenience, however made, that it will not mix with any other liquor. It ferments with all kinds of ſyrups, and will not bear the leaſt mixture of any thing in the leaſt acid without becoming turbid, and depoſiting a ſediment. Mem. Acad. Par. 1700.

Experience has ſhewn *lime water* to be an excellent medicine in many caſes. In the gravel and ſtone, particularly. And it has alſo been found very ſerviceable in the gout, in habitual relaxations of the bowels, and in other caſes of relaxation. In ſome kinds of the ſcurvy likewiſe it is of uſe; and is often applied, with ſucceſs, externally, to ulcers, *&c.*

Fabricius ab Aquapendente aſſures us, he cured a ſchirrhus ſpleen, and the dropſy, by a continued uſe of ſponges dipped in common *lime water*, and placed near the part affected. *Boyle*'s Works Abr. Vol. 1. p. 80.

LIMITS, (*Cycl.*) in mathematics, is ſometimes uſed, in general, for quantities, one of which is greater, and the other leſs than another quantity. Thus, in the quantities, a, x, b, if a be leſs than x and b be greater than x, a and b are ſaid to be *limits* of x. The word occurs in this ſenſe, when we ſpeak of the *limits* of the roots of equations.

Sometimes a quantity is ſaid to be a *limit* between two others, when it is greater than the one and leſs than the other. So a ratio is ſaid to be a *limit* between two other ratios, when it is greater than the one and leſs than the other.

But *limit* is often uſed in a more reſtricted ſenſe; thus, when a variable quantity approaches continually to ſome determinate quantity, and may come nearer to it than to have any given difference, but can never go beyond it; then is the determinate quantity ſaid to be the *limit* of the variable quantity.

Hence, the circle may be ſaid to be the *limit* of its circumſcribed, and inſcribed polygons; becauſe theſe, by increaſing the number of their ſides, can be made to differ from the circle leſs than by any ſpace that can be propoſed, how ſmall ſoever.

The *limit* of a variable ratio, is ſome determinate ratio, to which the variable ratio, may continually approach, and come nearer to it than to have any given difference, but can never go beyond it. Hence, the ratio of the ordinate to the ſub-tangent of a curve, is ſaid to be the *limit* of the variable ratio of the differences of the ordinates, to the differences of the abſciſſæ.

The word *limit*, in this ſenſe, ſignifies the ſame as what Sir Iſaac Newton calls a firſt, or prime, and a laſt, or ultimate ratio.

There are two caſes of a variable quantity, or variable ratio, tending to ſuch a *limit*, as we have been deſcribing.

In the firſt caſe, the variable quantity, or ratio, will not only approach to its *limit* nearer than any given difference, but will actually arrive at its *limit*.

In the ſecond caſe, the variable quantity, or ratio, will only approach its *limit* within leſs than any given difference, but will never actually arrive at it.

Sir Iſaac Newton, to avoid the harſhneſs of the hypotheſis, of indiviſibles, and the tediouſneſs of demonſtrations, according to the method of the antients, by deductions *ad abſurdum*, has premiſed ſeveral lemmata, in the firſt ſection of the firſt book of his principles, relating to the firſt and laſt ſums, and ratio's of naſcent and evaneſcent quantities; that is, to the *limits* of ſums, and ratio's. This doctrine chiefly depends on the firſt of thoſe lemmata; the words of which are, *Quantitates ut & quantitatum rationes, quæ ad æqualitatem tempore quovis finito conſtanter tendunt, & ante finem temporis illius propius ad invicem accedunt quam pro data quavis differentia, fiunt ultimo æquales.*

The learned gentlemen, who have written in defence of Sir Iſaac, againſt the author of the Analyſt, are not agreed among themſelves, as to the preciſe meaning of this lemma. One of theſe gentlemen [a] ſays, that the genuine meaning of this propoſition is, that thoſe quantities are to be eſteemed ultimately equal, and thoſe ratio's ultimately the ſame, which are perpetually to each other, in ſuch a manner, that any difference, how minute ſoever, being given, a finite time may be aſſigned, before the end of which, the difference of thoſe quantities, or ratio's, ſhall become leſs than that given difference. [—[a] See Preſ. State of the rep. of Letters for Oct. 1735, and for Oct. 1736.—]

What Sir Iſaac Newton intends, we ſhould underſtand by the ultimate equality of magnitudes, and the ultimate identity of ratio's propoſed in this lemma, will be beſt known from the demonſtration annexed to it. By that it appears, Sir Iſaac Newton did not mean, that any point of time was aſſignable, wherein theſe varying magnitudes would become actually equal, or the ratios really the ſame; but only that no difference whatever could be named, which they ſhould not paſs. The ordinate of any diameter of an hyperbola, is always leſs than the ſame continued to the aſymptote; yet the demonſtration of this lemma can be applied, without changing a ſingle word, to prove their ultimate equality. The ſame is evident from the lemma immediately following, where parallelograms are inſcribed, and others circumſcribed to a curvilinear ſpace. Here the firſt lemma is applied to prove, that by multiplying the number, and diminiſhing the breadth of theſe parallelograms *in infinitum*, that is, perpetually and without end, the inſcribed and circumſcribed figures become ultimately equal to the curvilinear ſpace, and to each other; whereas, it is evident, that no point of time can be aſſigned, wherein they are actually equal; to ſuppoſe this were to aſſert, that the variation, aſcribed to theſe figures, though endleſs, could be brought to a period, and be perfectly accompliſhed; and thus we ſhould return to the unintelligible language of indiviſibles. The excellence of this method conſiſts in making the ſame advantage of this endleſs approximation towards equality, as by the uſe of indiviſibles, without being involved in the abſurdities of that doctrine. In ſhort, the difference between theſe two may be thus explained.

There are but three ways in nature of comparing ſpaces: one is by ſhewing them to conſiſt of ſuch, as by impoſition on each other will appear to occupy the ſame place: another is by ſhewing their proportion to ſome third; and this method can only be directly applied to the like ſpaces as the former; for this proportion muſt be finally determined by ſhewing, when the multiples of ſuch ſpaces are equal, and when they differ: the third method to be uſed, where theſe other two fail, is by deſcribing upon the ſpaces in queſtion ſuch figures, as may be compared by the former methods; and thence deducing the relation between thoſe ſpaces, by that indirect manner of proof, commonly called *deductio ad abſurdum*; and this is as concluſive a demonſtration, as any other, it being indubitable, that thoſe things are equal, which have no difference. Thus Euclid and Archimedes demonſtrate all they have written, concerning the compariſon and menſuration of curvilinear ſpaces. The method advanced by Sir Iſaac Newton for the ſame purpoſe, differs from theirs, only by applying this indirect form of proof to ſome general propoſitions, and from thence deducing the reſt by a direct form of reaſoning. Whoever compares the fourth of Sir Iſaac Newton's lemmas with the firſt, will ſee, that the proof of the curvilinear ſpaces, there conſidered, having the proportion named, depends wholly upon this, that if otherwiſe the figure inſcribed within one of them, could not approach, by ſome certain diſtance, to the magnitude of that ſpace: and this is preciſely the form of reaſoning, whereby Euclid proves the proportion between different circles. As this method of reaſoning is very diffuſely ſet out in the writings of the antients; and Sir Iſaac Newton has here expreſſed himſelf with that brevity, that the turn of his argument may poſſibly eſcape the unwary; the reading the antients, muſt be the beſt introduction to the knowledge of his method. The impoſſible attempt of comparing curvilinear ſpaces, without having any recourſe to the fore-mentioned indirect method of arguing, produced the abſurdity of indiviſibles.

As the magnitudes, called in this lemma, ultimately equal, may never abſolutely exiſt under that equality; ſo the varying magnitudes holding to each other the variable ratios, here conſidered, may never exiſt under that, which is here called their ultimate ratio. Of this Sir Iſaac Newton gives an inſtance, from lines increaſing together by equal additions, and having from the firſt a given difference. For the ultimate ratio of theſe lines, in the ſenſe of this lemma, as Sir Iſaac Newton himſelf obſerves, will be the ratio of equality, though theſe lines can never have this ratio; ſince no point of time can be aſſigned, when one does not exceed the other.

In like manner, the quantities called by Sir Iſaac Newton vaniſhing, may never ſubſiſt under that proportion here eſteemed their ultimate.

In the caſe of drawing tangents to curves, where the ordinate bears the ſame proportion to the ſubtangent, as that wherewith the difference of the ordinates, to the difference of abſciſſæ, vaniſh; theſe lines muſt not be conceived, by the name of an evaneſcent, or any other appellation, ever to ſubſiſt under that proportion: for ſhould we conceive theſe lines, in any manner, to ſubſiſt under this proportion, though at the inſtant of their vaniſhing, we ſhall fall into the unintelligible notion of indiviſibles, by endeavouring to repreſent, to the imagination, ſome inconceivable kind of exiſtence of theſe lines between their having a real magnitude, and becoming abſolutely nothing. Sir Iſaac Newton

ton was himſelf apprehenſive, that this miſtake might be made; for as he thought fit (in compliance with the bad taſte which then prevailed) to continue the uſe of ſome looſe and indiſtinct expreſſions reſembling thoſe of indiviſibles, for which he has himſelf apologized, he expreſsly cautions us againſt miſinterpreting him in this manner, when he ſays: *Si quando dixero quantitates quam minimas, vel evaneſcentes, vel ultimas, cave intelligas quantitates magnitudine determinatas, ſed cogita ſemper diminuendas ſine limite.* Thus expreſsly has he declared to us, that vaniſhing quantities, or whatever other leſs accurate appellation he names them by, are to be conſidered as indeterminate quantities bearing to each other under their different magnitudes, different proportions; which the quantities themſelves can never obtain, and the *limit* of theſe proportions, is that, for the ſake of which theſe quantities are conſidered: inſomuch, that ſince theſe quantities have different proportions, while they obtain the name of vaniſhing quantities, the term ultimate is neceſſarily added to denote that proportion, which is the *limit* of an endleſs number of varying ones. The like remark is neceſſary, when theſe quantities are conſidered in the other light, as ariſing before the imagination: for then the proportion intended muſt be ſpecified, by calling it the firſt, or prime proportion of theſe quantities. And as this additional epithet is neceſſary to expreſs the proportion intended, ſo it is abſurd to apply it to the quantities themſelves; as Sir Iſaac Newton ſays, there are *rationes primæ quantitatum naſcentium*, but not *quantitates primæ naſcentes*. Phil. Tranſ. N° 342. p. 205. So that according to the author we have been quoting, all the examples given by Sir Iſaac in the before-mentioned ſection, are to be underſtood of ſuch *limits* or ultimate ratios, as are never attained to by the quantities and ratios limited, but to which theſe may approach indefinitely, that is, ſo as to differ leſs than by a given quantity.

On the other hand, a learned gentleman, who aſſumed the name of *Philalethes Cantabrigienſis* [a], thinks that Sir Iſaac means, by the words of the lemma, and proves, in his demonſtration, not that the quantities or ratios, are barely to be conſidered as ultimately, becoming equal, or are to be eſteemed as ultimately equal; though, in reality, they can never have that proportion to each other; but that they do at laſt become actually, perfectly, and abſolutely equal. [— [a] Preſ. State of the Rep. of Letters for Nov. 1735. p. 371.—]

He alſo diſtinguiſhes, as above, between quantities and ratios which arrive at their *limits*, and thoſe which do not.

And it is inſiſted on, that every one of the examples given in the *lemmata* of this firſt ſection of the firſt book of Sir Iſaac's principles, are of ſuch quantities and ratios as actually arrive at their reſpective *limits*; nor is there an inſtance there given of a quantity, or ratio, which never arrives at its *limit*, except one at the latter end of the ſcholium of this ſection (and that by way of illuſtration of a particular objection only) of two quantities, having a given difference, and being equally increaſed, *ad infinitum*, and whoſe ratio, it is admitted, never arrives at its *limit*. But decreaſing quantities may really, and, in fact, be diminiſhed *ad infinitum*: for they may vaniſh and come to nothing. The ratio therefore of theſe, ſays he, may arrive at its *limit*, though that of the others cannot.

Neither are theſe learned gentlemen agreed as to the ſenſe of the word *vaniſhing* or *evaneſcent*, in the ſcholium of this firſt ſection of Sir Iſaac's principles.

The queſtion is, whether the quantities that vaniſh, are underſtood to ſpend ſome finite time in vaniſhing, or to vaniſh in an inſtant, or point of time; and conſequently, whether they bear to one another an infinite number of different ſucceſſive ratios during the vaniſhing, or one ratio only, at the point, or inſtant, of their evaneſcence.

This laſt is the ſenſe in which *Philalethes* takes the word evaneſcent or vaniſhing; and the diſpute, on this head, as he obſerves [a], is of no other conſequence, than to determine, whether the ſenſe in which he uſes the word be agreeable to Sir Iſaac Newton's. For, if the quantities vaniſh in an inſtant, and I take the only ratio with which they vaniſh; or they ſpend a finite time in vaniſhing, and I take the laſt of the ratios, which they ſucceſſively bear to one another during that time; ſtill the ratio, taken in either of theſe caſes, will be one and the ſame. [— [a] Preſ. State of Rep. of Lett. for Nov. 1735, p. 383, 384.—]

We cannot pretend to give the whole detail of this controverſy: but muſt refer the curious to the preſent ſtate of the republic of letters for 1735. We ſhall only obſerve, that this diſquiſition is partly critical and partly ſcientifical. The critical enquiry is into the ſenſe of Sir Iſaac, ſo far as it may be determined from his own words, and here we cannot help thinking that this is ſomewhat doubtful. The other enquiry is about the true or ſcientifical notion, upon which this doctrine ought to be founded. With reſpect to which we ſhall only aſk two queſtions, which every reader may reſolve for himſelf, to wit, whether the conception or notion he has of the ratio or proportion of evaneſcent quantities, at the point or inſtance of their evaneſcence, be more clear and diſtinct than the notion of infiniteſimals? And whether the notion of inſcribed or circumſcribed polygons to any curve, attaining their laſt form, and thereby coinciding with their curvilinear *limit*, be more clear and diſtinct than the notion of polygons of an infinite number of ſides, in the method of infiniteſimals?

Before we leave this ſubject, it may be proper to give the ſentiments of an eminent mathematician [c] about the doctrine of *limits*, or of prime and ultimate ratios, and to ſhew the connection of this doctrine with that of fluxions. [—[c] Mr. *Maclaurin*, in his Treat. of Fluxions, Art. 502.—]

Sir Iſaac Newton conſiders the ſimultaneous increments of flowing quantities as finite, and then inveſtigates the ratio which is the *limit* of the various proportions which thoſe increments bear to each other, while he ſuppoſes them to decreaſe together till they vaniſh; which ratio is the ſame with the ratio of the fluxions. In order to diſcover this *limit*, he firſt determines the ratio of the increments in general, and reduces it to the moſt ſimple terms, ſo as that (generally ſpeaking) a part at leaſt of each term may be independent of the value of the increments themſelves; then by ſuppoſing the increments to decreaſe till they vaniſh, the *limit* readily appears.

For example, let a be an invariable quantity, x a flowing quantity, and o any increment of x; then the ſimultaneous increments of xx and ax will be $2xo+oo$ and ao, which are in the ſame ratio to each other, as $2x+o$ is to a. This ratio of $2x+o$ to a, continually decreaſes while o decreaſes, and is always greater than the ratio of $2x$ to a, while o is any real increment; but it is manifeſt, that it continually approaches to the ratio of $2x$ to a as its *limit*; whence it follows, that the fluxion of xx is to the fluxion of ax as $2x$ is to a. If x be ſuppoſed to flow uniformly, ax will likewiſe flow uniformly, but xx with a motion continually accelerated: the motion with which ax flows, may be meaſured by ao; but the motion with which xx flows, is not to be meaſured by its increment $2xo+oo$, but by the part $2xo$ only, which is generated in conſequence of that motion; and the part oo is to be rejected, becauſe it is generated in conſequence only of the acceleration of the motion with which the variable ſquare flows, while o the increment of its ſide is generated: and the ratio of $2xo$ to ao is that of $2x$ to a, which was found to be the *limit* of the ratio of the increments $2xo+oo$ and ao. See the article FLUXION.

It is objected againſt Sir Iſaac Newton's method of inveſtigating this *limit*, that he firſt ſuppoſes that there are increments, that when it is ſaid *let the increments vaniſh*, the former ſuppoſition is deſtroyed, and yet a conſequence of this ſuppoſition, *i. e.* an expreſſion got by virtue thereof, is retained. But the ſuppoſitions that are made in this method of inveſtigating the *limit*, are not ſo contradictory as this objection ſeems to import. He firſt ſuppoſes that there are increments generated, and repreſents their ratio by that of two quantities, one of which is given ſo as not to vary with the increments. If he had afterwards ſuppoſed that no increments had been generated, this indeed had been a ſuppoſition directly contradictory to the former. But when he ſuppoſes thoſe increments to be diminiſhed till they vaniſh, this ſuppoſition ſurely cannot be ſaid to be ſo contradictory to the former, as to hinder us from knowing what was the ratio of thoſe increments, at any term of the time while they had a real exiſtence; how this ratio varied, and to what *limit* it approached, while the increments were continually diminiſhed. On the contrary, this is a very conciſe and juſt method of diſcovering the *limit* which is required.

It is to be obſerved, that the limiting, prime, or ultimate ratio of increments, ſtrictly ſpeaking, is not the ratio of any real increments whatſoever. But as the tangent of an arch is the right line that *limits* the poſition of all the ſecants that can paſs through the point of contact, though ſtrictly ſpeaking it be no ſecant; ſo a ratio may *limit* the variable ratios of the increments, though it cannot be ſaid to be the ratio of any real increments. The ratio of the generating motions may be likewiſe ſaid to be the laſt, or ultimate ratio of the increments, while they are ſuppoſed to be diminiſhed till they vaniſh, for a like reaſon.

LIMITANEI, among the Romans, an appellation given to the ſoldiers who were ſtationed on the frontiers of the empire. *Pitiſc.* Lex. Ant. in voc.

LIMITOTROPHI, among the Romans, the ſame with *limitanei*. See LIMITANEI, ſupr.

LIMMA, λεῖμμα, *reſiduum*, in the antient muſic, is the difference of the diateſſaron and the ditonus. It is expreſſed by $\frac{256}{243}$.

Euclid demonſtrates it to be leſs than the hemitone [a]. Boethius calls the *limma*, *hemitonium minus* [b]. —[a] *Wallis*'s Append. Ptolem. Harm. p. 169, 170. [b] Ibid. p. 170.—]

The *limma* here defined is that of Ptolemy. Modern muſicians have applied this name to ſeveral other intervals, ariſing from the ſubſtraction of ſemi-tones from the tone major. Thus the difference between the ſemi-tone minor and the tone major is $\frac{9}{8} : \frac{25}{24} = \frac{27}{25}$ is by Mr. Euler called *limma majus*; and the difference between the ſemi-tone major and tone major he calls *limma minus* [a]. This laſt is expreſſed by

by $\frac{135}{128} = \frac{9}{8} : \frac{16}{15}$. The octave is nearly equal to nine greater *limmas*, and to thirteen leſſer [b]. [[a] *Euler*, Tentam. Nov. Theor. Muſic. p. 107, 108. [b] Ibid. p. 108.]

LIMNITIS, a word uſed by the antients to expreſs the concretion round reeds, or water plants, by ſome called *adarce*, or ſomewhat analogous to that.

LIMOCINCTI, among the Romans, a kind of prieſts, who officiated at public ſacrifices, and were dreſſed with a garment called *limus*. See LIMUS.

LIMODORUM, *birds neſt*, in botany, the name of a genus of plants; the characters of which are theſe. The flower is of the polypetalous anomalous kind, reſembling the orchis flowers. The cup finally becomes a fruit, which is pervious by three feneſtræ, and furniſhed with a valve to each. The ſeeds are ſmall, and reſemble duſt.

There is only one known ſpecies of *limodorum*, which is the plant called by many *orchis abortiva*, and *birds neſt*. This plant differs from the orchis by fibroſe roots, and from the helleborine in its having a ſpear, or heel, to the flower; as it does from the twy blade, by having its leaves placed alternately on the ſtalks. *Tourn.* Inſt. p. 437.

LIMON, the *lemon tree*, in botany, the name of a genus of trees, the characters of which are theſe. The flowers and leaves are altogether like thoſe of the citron, but the fruit is of an oval figure, and has but a thin fleſhy ſubſtance, divided into many cells, containing juice, and callous ſeeds. To this it is to be added, that there is a peculiar, and appropriated general appearance in the *lemon tree*, by which the gardners, and other perſons converſant in theſe things, readily diſtinguiſh it from the orange and the citron.

The ſpecies of *lemon*, enumerated by Mr. Tournefort, are theſe. 1. The common *lemon*. 2. The little ball *lemon*. 3. The incomparable *lemon*. 4. The ſweet *lemon*. 5. The Liſbon ſweet *lemon*. 6. The pear-ſhaped *lemon*. 7. The ſpataphora *lemon*. 8. The ſhardonian *lemon*. 9. The barbadore *lemon*. 10. The ſweet *lemon*. 11. The ſharp *lemon*. 12. The citron-like *lemon*. 13. The citron *lemon* with one fruit including another. 14. Racemous fruited *lemon*. *Tourn.* Inſt. p. 621.

LIMONIATES, a name given by ſome authors to the emerald. *Plin.* lib. 37. cap. 10.

LIMONIUM, *ſea lavender*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the caryophyllous kind, being compoſed of ſeveral petals arranged in a circular form, and ariſing out of a tubular cup. From the ſame cup there alſo ariſes a piſtil, which finally becomes a ſingle oblong ſeed, which remains involved in the cup. This is the general ſtate of the flowers of this genus of plants; but ſome of them, inſtead of their caryophyllous flower, have a one-leaved funnel-faſhioned one, which is ever, however, ſo divided into ſegments at the end, that it reſembles the flowers of the common kinds.

The ſpecies of *limonium*, enumerated by Mr. Tournefort, are theſe. 1. The common large *limonium*. 2. The late flowering large French *limonium*. 3. The ſmaller *limonium* with olive-like leaves. 4. The little daiſy leaved *limonium*. 5. The little daiſy leaved *limonium* with fennel-like branches. 6. The leſſer *limonium* with heart-faſhioned leaves. 7. The ſmalleſt *limonium*. 8. The little *limonium* with crooked tortuous branches. 9. The ceterach leaved *limonium*. 10. The hairy ſhrub *limonium*. 11. The ſmooth ſhrub *limonium*. 12. The procumbent *limonium* with reticulated ſtalks. 13. The Sicilian heart-faſhioned leaved *limonium*. 14. The little annual *limonium* with echioide, or bullated leaves. 15. The Portugal *limonium* with ſpear pointed leaves. 16. The Portugal *limonium* with leaves like the auriculas. 17. The Portugal hairy leaved *limonium*. 18. The *limonium* with curled appendages to the ſtalks. 19. The *limonium* with ſea purſelain leaves. 20. The woody gall bearing *limonium*. 21. The Spaniſh plantain leaved *limonium* with bullated leaves. 22. The Spaniſh plantain leaved *limonium* with ſmooth leaves. 23. The Spaniſh *limonium* with divided leaves. 24. The *limonium* with leaves like ſtatice, and conglomerated heads. 25. The articulated blueiſh green Spaniſh *limonium*. *Tourn.* Inſt. p. 341, 342.

The common *ſea lavender* is an aſtringent, and is given with good ſucceſs againſt diarrhœas, dyſenteries, profluvia of the menſes, and hæmorrhages of all kinds. The roots and leaves are the parts moſt uſed.

LIMONIUM *gall*, in natural hiſtory, the name of a ſpecies of *gall*, or vegetable protuberance, ſerving for the lodging of an inſect, affording a very beautiful appearance on the plant, and very common in the eaſtern parts of the world. The *galls* of all kinds are produced by the worm of a winged inſect, hatched from an egg depoſited there by the parent animal, that the young progeny may find food, and a defence from injuries, as ſoon as hatched. It is a general obſervation, however, that theſe protuberances on vegetables are the effect of the eggs depoſited by the various ſpecies of flies, but this of the *limonium* is ſingular, in that it is produced from a butterfly egg, and is inhabited by a true caterpillar. The butterfly depoſits her eggs on ſeveral parts of the leaves and ſtalks of this plant, and the young caterpillar, as ſoon as hatched, eats its way through the ſurface; and continuing to eat when within, his depredations occaſion an abundant derivation of juices to the part, by means of which a gall, or protuberance, is formed, which is ſuſtained by a pedicle, and in all reſpects reſembles a fruit. This is of a roundiſh figure, and by degrees grows to the ſize of a nutmeg. It is compoſed of ſeveral coats, or cruſts; the exterior ones are ſoft and ſpungy, but the interior are harder, and more woody than the galls of the oak. As the generality of other caterpillars feed on the ſubſtance of the leaves of trees and plants, this eats only the inſide of its lodgment; and nature ſo readily ſupplies this defect by new matter, that the cavity, in which it is lodged, is never found to be very great.

In the generality of *galls*, their being whole in every part is a proof, that the inſect to which they ſerve for a habitation is yet in them; and when there is a hole ſeen on any ſide, it is a proof that they are empty, the creature having made its eſcape that way. But this does not hold good in this inſtance; for though a fly may have a power of making a hole for itſelf to get out at, a butterfly has no organs with which to perform ſuch a work; and conſequently the caterpillar, while it has the proper organs, muſt do it, and make the hole ready for the creature to come out at. If one of theſe *galls* be opened before there is any hole on its ſurface, the caterpillar is ſure to be found alive, and in an eating ſtate within; but when the time of its transformation approaches, it ceaſes to eat, and the laſt uſe of its teeth is the gnawing a hole through its habitation, out at which it may eſcape when in its winged ſtate. As ſoon as it has finiſhed this aperture, it retreats back into its cell, and there ſpins a web, in which it changes into a butterfly. The creature always has the caution to place that part of the chryſalis, in which the head of the butterfly is, cloſe to the aperture; and the creature then, as it makes its way out of the chryſalis, at the ſame time gets into the paſſage through the ſhell of its habitation, and finally gets out of it before its wings are unfolded, or expanded, as it would be impoſſible for it to paſs through ſo ſmall an aperture with its wings hardened, and of their full ſize. This ſeems the only known inſtance of a gall formed by a genuine caterpillar. The inhabitants of the willow *galls*, though uſually eſteemed ſmooth caterpillars, being not ſo, but the worms of a four winged fly. *Reaumur*, Hiſt. Inſect. Vol. 6. p. 227.

LIMOSA, in zoology, the name of a long legged water bird, common in Italy, and called by ſome *glottis*, *totano*, and *pluvialis major*. It is but a ſmall bird, its uſual weight being about ſeven ounces. Its beak is black, but ſomewhat reddiſh near the angle of the under jaw. The upper part of its head, neck, ſhoulders, wings, and the forepart of its back, is variegated with brown and grey; the middle of the head feathers are black, and their ends whitiſh. Its rump, and its whole breaſt, belly, and throat, are white; the long wing feathers are brown; the tail feathers are variegated with brown and grey. Its legs are very long, and are naked for two fingers breadth above the knee. *Ray*'s Ornitholog. p. 221.

LIMOSA, in ichthyology, a name given by Salvian to the common mackrel, and in his figures to the *thynnus*, or tunny fiſh, called the *Spaniſh mackrel*.

LIMOSELLA, in botany, the name given by Linnæus to a genus of plants, called by Dillenius, and others, *plantaginella*; the characters of which are theſe. The perianthium is erect, one leaved, lightly divided into five ſegments at the edge, and remaining after the flower is fallen. The flower conſiſts of one petal, which is ſmall, erect, acute, and lightly divided into five ſegments at the end. The ſtamina are four erect filaments. The antheræ are ſimple. The germen of the piſtil is oblong and obtuſe. The ſtyle is ſingle, and of the length of the ſtamina, and the ſtigma is globular. The fruit is an oval capſule, affixed to the baſe of the cup, compoſed of two valves, and including two cells, in which are a great number of ſmall ſeeds of an oval figure. *Linnæi* Gen. Pl. p. 300. *Dillen.* Hort. Elth. p. 6.

LIMPET, *patella*, in conchyliology. See Tab. of Shells, N° 1, 2. and the article PATELLA.

The manner of the *limpet*'s faſtening itſelf to the rocks has not been well underſtood till the time of Mr. Reaumur, though the fact was ſo well known, as to become in ſome places a proverbial compariſon.

The ſhell of the *limpet* approaches to the figure of a cone; the baſe of this cone is occupied by a large muſcle, which alone has nearly as much fleſh in it as the whole body of the fiſh. This muſcle is not covered by the ſhell, but ſerves the creature equally to move forward, or to fix itſelf by at pleaſure. When it is in a ſtate of reſt, which is the common caſe, it applies this muſcle every way round to the ſurface of ſome ſtone, and holds itſelf by that means fixed very firmly to it, inſomuch that it is impoſſible to take it off with the hands; and thoſe who would remove them are forced to uſe a knife for that purpoſe, and the removing the fiſh this way is not eaſy; for every where that the

blade of the knife attempts to enter, the fish fixes its muscle with double force to the stone. Mr. Reaumur, to try the force of the adhesion of this fish, tied lines with weights at their ends to the shells, when placed in an horizontal direction on the stone, and found that thirty pound was the least weight that would tear them off, and that they would resist that for several minutes. It might be naturally supposed, that the cause of this strong adhesion was the animal's thrusting the fibres of this muscle into every small pore of the stone, and there keeping them forcibly inflated: but were this the case, the adhesion must cease with the life of the animal; but it does not so, for if a *limpet* be cut into several portions through the shell and body, yet every portion, thus separated, will adhere with its due proportion of force to the stone. Neither can this force be resolved on the principles of the adhesion of two polished marbles, or that of the leather to the stone in the common sport of children; for in both these cases, whatever perpendicular force the adhesion can bear, the least force applied horizontally makes them slip, or slide off from one another. But this is not the case in the adhesion of this fish, it equally resisting horizontal and perpendicular force.

The true cause of this adhesion is a viscous juice, a sort of glue thrown out by this muscle, which, though imperceptible to the eye, is able to produce these great effects. This is easily perceived by the touch, however; for if immediately after the removing a *limpet* from a stone, the finger be applied to the place, it is fastened very strongly to it by means of the glue left there. If any wet, however, have touched the stone, after the fish was removed, there is no viscosity perceived on it, the whole substance of the glue being immediately dissolved, and its effects wholly taken off by it. This is a consideration which may lead us to observe the great care of nature over all her works, manifested eminently in this little fish. It was necessary that it should have a power of fixing itself to stones, *&c.* to prevent its being washed away by every wave: this power is given it by means of a certain glue, which holds it very firmly; but if this glue was not capable of being resolved, and its force destroyed by some power in the animal, it must needs perish for want of food, when once fixed to a barren spot. Water is therefore made a solvent for this glue; the close adhesion of the outer rim of the great circular muscle prevents the external water from acting upon it, else it must always be destroyed as soon as discharged, and so be of no use; but the under surface of the body of the animal is all over covered with small tubercles, containing water, at least many of them do so. When the creature then has a mind to unfix itself for motion, it only discharges a quantity of this water, and the whole cement dissolves before it, and sets the creature free. Those tubercles which do not contain water, probably contain the viscous matter, or glue, whence it may be conveyed by proper vessels to the circumference; so that when the animal has a mind to fix itself to a stone, it needs only squeeze the one set of these tubercles; and when it would unloose itself, the other.

The water contained in these tubercles is particularly necessary in some circumstances, in which, tho' the creature could, at pleasure, open the outer verge of the muscle, to admit sea water, it would not do; for it often fixes itself to rocks left dry at the ebb, and from these nothing but the water contained in itself could set it free. The glue it is provided with is but in a certain limited proportion; for after removing the same *limpet* three or four times, it is found no longer able to fix itself with any degree of firmness, till nature, after a proper time, has supplied the dissipated viscosity. This viscous humidity allotted to this animal, for the fixing itself to the rocks, is not peculiar to it; the *urtica marina* has the same, and the horns of the sea urchins, by which they fix themselves, are endued with a power of discharging a liquor of the same kind, which serves them to the same purpose. Mem. Acad. Par. 1711. See URTICA MARINA, and *Sea* URCHIN.

LIMUS, among the Romans, a garment reaching to the ground, and worn by the priests, who on that account were called *limocincti*. *Pitisc.*

LINARIA, *toad flax*, in botany, the name of a genus of plants; the characters of which are these. The flower is composed of only one leaf, and is personated before, and runs into a heel behind. The forepart has two lips; the upper of which is divided into two or more segments, the lower always into three. The pistil arises from the cup, and is fixed in the manner of a nail into the hinder part of the flower: this finally becomes a fruit, or capsule, of a roundish figure, divided into two cells by an intermediate septum, and containing seeds, in some species flatted, in others angular, or roundish, and fixed to a placenta.

The species of *toad flax*, enumerated by Mr. Tournefort, are these. 1. The great purple flowered broad leaved Portugal *toad flax*. 2. The great broad leaved Dalmatian *toad flax* with very large flowers. 3. The broad leaved trifoliate Sicilian *toad flax*. 4. The lesser three-leaved yellow flowered *toad flax*. 5. The three-leaved blue flowered *toad flax*. 6. The daisy leaved *toad flax*. 7. The white flowered daisy leaved *codflax*. 8. The Portugal *toad flax* with large hairy daisy-like leaves. 9. The common smooth ivy leaved *toad flax*, called by many *cymbalaria*. 10. The Alpine hairy *cymbalaria*. 11. The hairy moneywort leaved corn *toad flax*, called by most authors *elatine*, or round leaved *fluellin*. 12. The hairy yellow flowered moneywort leaved corn *toad flax* with auriculated leaves, called by authors the angular leaved *elatine*, or *fluellin*. 13. The blue flowered hairy auriculated leaved corn *toad flax*. 14. The hairy perennial stone *toad flax* with yellow flowers. 15. The common small field *toad flax*, called by authors the *lesser snapdragon*. 16. The mother of thyme leaved stone *toad flax*, called by authors *stone snapdragon*. 17. The hairy chickweed leaved stone *toad flax*. 18. The hairy knotgrass leaved stone *toad flax*. 19. The hairy moneywort white flowered Spanish *toad flax* with white flowers. 20. The hairy broad leaved trifoliate Spanish *toad flax*. 21. The Portugal sea *toad flax* with milkwort leaves. 22. The smallest hairy auriculated leaved *toad flax* with extremely small yellow flowers. 23. The broad leaved small procumbent *toad flax* with a pale yellow flower, with a gold coloured mouth. 24. The broad leaved trifoliate *toad flax* with a great purple flower, with a yellow opening. 25. The violet coloured annual *toad flax* with the lower leaves roundish. 26. The dwarf Portugal *toad flax* with flowers wanting the palate. 27. The common yellow *toad flax* with larger flowers. 28. The common yellow *toad flax* with smaller flowers. 29. The pale flowered *toad flax* with the deep yellow mouth. 30. The taller pale flowered *toad flax* with a deep yellow mouth. 31. The whitish flowered *toad flax* with a purple mouth. 32. The upright sweet *toad flax* with a dusky blue flower, with a yellow mouth. 33. The small creeping scentless *toad flax*. 34. The great purple sweet scented *toad flax*. 35. The great white sweet scented *toad flax*. 36. The broader leaved sweet purple *toad flax*. 37. The narrowest leaved sweet *toad flax*. 38. The narrow leaved hoary *toad flax*. 39. The narrow leaved rust coloured *toad flax*. 40. The yellow flowered mountain *toad flax* with dyers weed leaves. 41. The least flowered yellow *toad flax*. 42. The American *toad flax* with small yellow flowers. 43. The blue flowered field *toad flax*. 44. The violet coloured field *toad flax*. 45. The four-leaved yellow flowered *toad flax*. 46. The small procumbent yellow *toad flax*. 47. The small flowered yellow dwarf *toad flax* with thick fleshy leaves. 48. The greyish fleshy leaved Spanish *toad flax*. 49. The blue flowered creeping *toad flax*. 50. The snow-white flowered creeping *toad flax*. 51. The low four-leaved purple *toad flax*. 52. The mollugo leaved many stalked Sicilian *toad flax*. 53. The narrow leaved annual *toad flax* with large yellow flowers. 54. The best hairy clammy leaved sea *toad flax* with yellow flowers. 55. The narrow leaved hairy, and clammy Spanish *toad flax*. 56. The thyme leaved stone *toad flax*. 57. The narrow leaved annual *toad flax* with white flowers, with very long heels. *Tourn.* Inst. p. 169, 170.

There are some other plants improperly ranked among the *linariæ* by many authors. Of these are the *osyris frutescens baccifera*, or shrubby berry-bearing osyris, which is a species of *cassia*. The great leafy headed yellow *toad flax* of Caspar Bauhine, which is a species of *fleabane*. The bastard golden *toad flax*, and the white flowered mountain *toad flax*, which are species of *alchymilla*.

LINARIA, in zoology, the name of the *linnet*, a genus of birds, of which there are several species. The general characters of the genus are these. The birds of it are somewhat smaller than the chaffinch; their general colour is a greyish brown; their tail is a little forked, the outer feathers of it having white extremities; and they all sing very sweetly. We have in England four species of this bird. 1. The common brown *linnet*, well known to every one. 2. The *linaria rubra major*, or greater red headed *linnet*. This has a fine red head, a grey neck, a dusky reddish brown back, and its breast and belly are somewhat reddish. The female of this species, however, has no redness on its head, or breast, but has somewhat of a greenish cast among the brown of her back, and is yellowish on the breast, with some brownish spots. 3. The *linaria rubra minor*, or lesser red headed *linnet*. This is smaller than the former, and on the back is of the same colour with the common *linnet*. The back part of its head is red, as is also its breast, but the lower part of its belly is whitish. In this species the female, as well as the male, has a red head, and both have their beaks much sharper, and their feet and legs blacker than in the larger kind. This also is a gregarious bird; the larger kind commonly flies single. 4. The last species is the *linaria montana*, or mountain *linnet*. This is the largest of all the *linnets*. Its beak is very small; its head and back are of the same colour with those of the common *linnet*, and the feathers of its breast and belly are black in the middle, and edged with a whitish colour. The rump is of a fine and beautiful red, and is the only part of the bird which is so. This is common in Derbyshire, but seems not so frequent in other places. *Ray's* Ornitholog. p. 192. See LINNET.

LINCH-*pin*, a term given by carters to the *pin* which keeps the wheel on the axle-tree. See CART.

LINE (*Cycl.*)—A *line* in geometry, is to be conceived as the termination or limit of a ſurface, and not as a part of that ſurface, however ſmall. Hobbes, and ſome others, who have taken it in the latter ſenſe, have fallen into many abſurdities.

LINES *of the third order*. Sir Iſaac Newton [a] enumerated ſeventy-two *lines* of the third order, and Mr. Stirling [b] found four more; ſince that Mr. Stone [c] has found two others which had eſcaped Sir Iſaac and Mr. Stirling. The two ſpecies added are to be reckoned among the hyperbolico-parabolical curves. [—[a] Enumer. Lin. Tert. Ordin. [b] Linea Tert. Ordin. Neutonianæ Oxon. 1717, 8vo. [c] Phil. Tranſ. N° 456. Sect. 6.—]

Angling LINE. The beſt materials for making theſe *lines* are fine and even horſe hairs: the hair ſhould be round and twiſted even, for that greatly ſtrengthens it; and all the hairs ſhould be of an equal bigneſs, or as nearly ſo as may be. They ſhould be laid in the water about a quarter of an hour after twiſting, that it may be ſeen which will ſhrink: they are then to be twiſted over again. In this laſt twiſting ſome intermingle ſilk among them, but that is not ſo well. *Lines* made entirely of ſilk are not bad; but thoſe of ſilk and hair mixed are never found to do well. The beſt colours for a *line* are ſorrel, white, and grey, the two laſt are beſt for angling in clear waters. The former in muddy ones. The pale watery green is alſo a very good colour, and may be made thus: boil in a quart of alum water a large handful of marygold flowers; there will ariſe a ſcum, which muſt be taken off; then add to this liquor copperas and verdigreaſe, of each half a pound, beat to powder together, boil theſe up together: then put the hair into this liquor, and let it lie ten or twelve hours; it will obtain a watery blueiſh green colour, which will not waſh out afterwards.

LINES, among fowlers, is uſed to expreſs the ſtrings by which they catch birds. The large and ſmall land birds are equally eaſy to be taken by them, and ſometimes the water fowl.

Theſe *lines* are made of long and ſmall cords, knotted in different places, and containing in length as many fathom as the places where they are to be laid require. Plovers, and the larger wild fowl, are very conveniently taken by them: when theſe ſtrings are to be uſed, they muſt be limed with the ſtrongeſt bird lime that can be got, and then coming to their haunts before the evening flights, that is before ſun-ſet, or for the morning flights, at leaſt two hours before day, the ſportſman is to carry a parcel of ſmall ſticks, each about two feet long, and ſharpened at both ends, but having a little ſlit in one end like a fork. The plain end of each ſtick is to be ſtuck into the ground, in ſuch a manner, that the ſtick ſtanding aſlant its upper or forked end may be about a foot and half from the ſurface. The limed ſtrings are then to be carried along all theſe ſticks, in different rows, ſome higher than others. Every row of the ſticks is thus to be filled, and the whole haunt covered with the *lines*. The plover, and other birds that fly low, when they come to their haunts, fly directly in among theſe ſtrings, and are taken in great numbers; the whole flight coming in at once, and covering all the place, ſo that thoſe which are not yet alighted, have no opportunity of ſeeing the diſtreſs of their companions. There is no need for the ſportſman to be conſtantly upon the watch for the taking of the bird; for when once they are taken they cannot looſen themſelves, ſo that he may come and take them up at his own time. The water fowl may be eaſily taken, in the ſame manner, by obſerving their haunts, and ſtretching theſe *lines*, in ſeveral rows, acroſs the brook, or river, ſome higher and ſome lower, the loweſt lying almoſt at the edge of the water. Theſe muſt never be uſed in moon light nights on the occaſion, for the ſhadow of the ſtrings in the water will then fright them away.

LINES, in heraldry, the figures uſed in armories to divide the ſhield into different parts, and to compoſe different figures.

They are of different forms, and were it not for this, many arms would be one and the ſame, for a chief wavey differs from a plain chief, by the *lines* which compoſe them, and the heralds ſhew particular reaſons for all theſe different forms of *lines*.

Theſe *lines*, according to their forms and names, give denomination to the pieces or figures which they form, except the ſtrait or plain *lines*.

The crooked *lines* are theſe: firſt the ingraled and inverted; theſe when repreſented together are ſomewhat known the one from the other, being oppoſite to one another, both being made as it were of ſemi-circles. The ingraled with the points upward, the inverted with the points downward. But this is not a ſufficient diſtinction; for ſuppoſe the ſpace between them which they form be a feſs; then the whole is only ingraled, not inverted; for the feſs ingraled muſt have the points on both ſides turned toward the field, and the convex or gibboſe parts toward the feſs itſelf, and ſo of a bend, cheveron, and other proper figures of heraldry; and if theſe be inverted, then the convex parts of the *lines* are toward the field; but theſe *lines* are better diſtinguiſhed when placed by way of bordure, with the letters within a bordure ingraled or inverted.

Theſe two *lines* are more hard to be diſtinguiſhed, when the field is divided into two equal parts, of different colours, as parted per pale, parted per feſs, &c. here we know not whether the *line* be ingraled or inverted, except we follow this rule, that the form of the *line* muſt be applied to the colour firſt named. The French terms for theſe two *lines* are for the ingraled, *engrele*, and for the inverted, *canele*; and the Latin writers expreſs ingraled by *ingrediatus*, *imbricatus*, and *ſtriatus*, and the inverted by the words *invertus* and *canaliculatus*. *Leigh*'s Heraldry.

The wavey, or waved *line*, is ſuch an one as is formed in repreſentation of the waves of the ſea, as parted per feſs wavey in arms and other waved *lines*, as the wavey bars all expreſs that the perſon got his honours by ſea ſervice. Nebulee is another name of a *line* in heraldry; it expreſſes a clouded *line*, the French called it *nuance*, and the Latins *nebuloſa linea*; this alſo has been given to perſons, who have been eminently ſkilled in navigation. *Neſbit*'s Heraldry, p. 22.

Crenele, or imbattled *lines*, repreſent the battlements of a houſe, and are ſaid to repreſent in heraldry the ſkill in architecture, for which the firſt of the family was famous; they were alſo given ſometimes for eminent ſervices, in aſſaulting or defending caſtles in time of war, and ſometimes only as emblems of a houſe, to expreſs the perſon who bore them, being of a noble houſe or family; for of old none were ſuffered to embattle their houſes but perſons of great diſtinction. Cambden ſpeaking of Tunſtall's ſeat in England, mentions it as a ſingular mark of favour, that the king had given him leave to embattle his houſe. The term crenele, however, is properly uſed for a figure only, when one ſide of it is embattled; for when both ſides are formed of embattled *lines*, it is called *bretеſſe*, or as ſome expreſs it *contre bretеſſe*.

The Latin writers in heraldry uſe for the word *crenelee*, the terms *pinnatus* and *pinnis aſperatus*, according to Uredus in his blazons, and Sylveſter petra ſancta in his *murales pinnalee*.

There is another *line* of this kind in heraldry, which Leigh calls the battled embattled *line*; this has one degree of embattling above another. When the upper points in this kind of *line* are repreſented ſharp, it is called campagne, as if the *lines* ending in points, repreſented baſtions, or the outer works of cities and camps; and when the upper points are rounded, it is called crenele embattled arrondi.

The indented *line* is notched ſo at the edges that it repreſents the teeth of a ſaw, and has its name from the Latin *dens*, a tooth, or from the law term indenture, a ſort of deed, the top of which is always notched like the teeth of a ſaw.

The daunzette is another *line*, very much reſembling the indented *line*, but that it is always much ſmaller; it is therefore ſaid by the heralds to be the ſame in quality but not in quantity. The daunzette differs alſo from the indented *line*, in that it always conſiſts but of a few teeth, though never leſs than three; according to Mr. Holmes, in his office of armory, whereas the indented *line* has always a great many teeth. The French expreſs our indented *line* by the terms danche or dentille; and the daunzette, when it has but very few teeth, and thoſe very long, by the term *vivere*, which Meneſtrier takes to be the letter M, with its legs extended from ſide to ſide of the ſhield, becauſe many who carry a partition, or feſs, after that form, have the family name, beginning with that letter. The Latin writers expreſs the term indented, by *dentatus*, *indentatus*, and *denticulatus*, and when the teeth are very long, as in the daunzette, they call them *dentes decumani*.

There are yet two other *lines* mentioned by heraldry writers; the firſt is the patee or dovetail *line*, ſo called from its reſemblance to a ſort of joint uſed by our carpenters, in which one part goes alternately all the way down between two others; this is called by Morgan the inclave, or labelled line, becauſe the points as they proceed from the ordinary, ſuch as a chief or feſs, repreſent not amiſs the points, or rather the ends of labels. The other *line* is called urdee or champagne by Freſne; and by Upton, vair, becauſe its points are formed like pieces of the furr called by heralds vair. *Neſbit*'s Heraldry, p. 23.

The two laſt of theſe are in very little uſe, the others are the common *lines* of arms, and are called the attributes or accidents of armorial figures which they form; and if any other *lines* are found in the figures or engravings of arms, which are not reducible to the one or other of theſe, they are called irregular, and by the French heralds *clatte*. The knowledge and uſe of theſe forms of *lines* are neceſſary in the ſcience of heraldry, to diſtinguiſh and difference many armorial bearings.

Lateral LINE, *linea lateralis*, in ichthyology, a name given by naturaliſts to a *line* or ſtreak, with which many kinds of fiſh are marked, paſſing along their ſides. Few fiſh are without this *line*; but it is very variouſly formed in the ſeveral kinds, and makes a very conſiderable article in their deſcription,

tion, if not in the diſtinction of the ſpecies. In ſome ſpecies it is made of a ſeries of little points, or holes, as appears to the eye; of this nature is the *linea* in eels, &c. In ſome others it is formed of a ſort of duct, running along the center of a great number of ſcales. This is its ſtructure in the generality of fiſhes. *Artedi*'s Ichthyology.

This *line*, in various kinds of fiſh, varies alſo in regard to number, ſituation, figure, and other properties. In regard to number, there is no *line* obſerved in the ſyngnathi and petromyza, in almoſt all other fiſh there is one on each ſide; and finally, in ſome there are as it were two lines on each ſide: an inſtance of this we have in the ammodytæ. In regard to the ſituation, the differences are theſe. 1. In ſome it is near the back, as in the clupea, ſalmons, pearch, and the like. 2. In others it is placed nearer the belly, and runs parallel with it, as in the cyprini. 3. In ſome it is placed in the center of each ſide between the back and the belly, as in the caraſſius. 4. In ſome it is placed againſt the interſtices of the muſcles, or the ſpina dorſalis, as in the muræna; and 5. In ſome it is placed above the interſtices, as in the ammodytæ, &c. It has been ſuppoſed, by many, that this *linea lateralis* was always parallel to the interſtices of the muſcles, but this is evinced to be an erroneous opinion, by the obſervation of the pearch and mackrel. In regard to the differences of figure, this *line* is in ſome ſtrait, as in the coregones, ſalmons, &c. 2. In others it is crooked, as in the cyprini, the pearch, &c. and in the generality of fiſh is ſmooth to the touch, but in ſome it is rough and accelerated, as in the trachurus and pleuronecti. *Artedi* Ichthyolog.

LINES, in muſic, is uſed for thoſe ſtrokes drawn horizontally on a piece of paper, on and between which, the characters and notes of muſic are diſpoſed. Their number is commonly five, when another is added for one, two or more notes, it is called a *leger line*. See LEGER.

Some ſay that it is to Guido Aretine that we owe their invention: they are very commodious, and greatly aſſiſt the imagination in diſtinguiſhing the low notes from the high. Upon their firſt introduction, the *lines* only were uſed, and the ſpaces between them intirely neglected. *Broſſard.*

Originally there were as many *lines* drawn for a ſong, as it required notes aſcending; but at length the notes being placed in the intervals of the *lines*, theſe were reduced to four; ſo that there were nine places or degrees for nine different ſounds, which was their extent: at laſt they raiſed the number to five, of which the loweſt is reckoned firſt; and hereon they placed the characters for eleven different ſounds, including the ſpaces above the fifth and below the firſt; and at the ſame time they had the liberty, at pleaſure, to add more *lines* if the ſong ran to a greater compaſs.

LINE *of the banquet* in the manege. See BANQUET.

Knave LINE, in a ſhip. See KNAVE.

LINE *of equated bodies*. See EQUATED *bodies*.

Indented LINE, in fortification. See INDENTED *line*.

Labelled LINE. See LABELLED *line*.

LINE *of a volt*, in the manege. See SQUARE and VOLT.

LINEA *nubeloſa*. See NUBELOSA *linea*.

LINEAR *leaf*, among botaniſts. See LEAF.

LINEATORES, in the hippodrome at Conſtantinople, were the ſame with the *deſignatores* in the circus at Rome. See HIPPODROMUS, CIRCUS, DESIGNATOR, *Cycl.*

LING, in ichthyology, the Engliſh name for a kind of fiſh, which is a ſpecies of the *aſellus*, according to the generality of authors, and is generally called *aſellus longus*. According to the new Artedian ſyſtem, it is a ſpecies of the *gadi*, and is diſtinguiſhed by the expreſſive name of the *gadus*, with two fins on the back, with a bearded mouth, and with the upper jaw longeſt. See ASELLUS and GADUS.

Ling is eſteemed, both freſh and cured for the table. It is a long bodied fiſh, more approaching to the *merlucius* or hake, than to any other ſpecies. It is covered with very ſmall ſcales which adhere cloſely to the ſkin. The back and ſides are of a blueiſh or greeniſh brown, and the belly white. Its head is flat and large, and its ſnout conſiderably long. The upper jaw is longer than the under, and both are furniſhed with ſeveral rows of ſhort teeth, and the lower with one range of longer. And in the palate there are a large number of ſmall teeth, among which there are four or five large and long ones intermixed. The mouth opens very wide, and in the angle of the lower jaw has a ſingle ſhort beard. It has two fins upon the back, one near the head; the other not far behind it, and reaching down almoſt to the tail. The gill fins are ſmall, the belly fins are placed high, and the tail is not forked. See Tab. of Fiſhes, N° 28. and *Ray*'s Ichthyog. p. 175.

LINGUA *avis*, *birds tongue*, in the materia medica, the ſeed of the aſh tree, or aſhen keys. *Ger.* Emac. Ind. 2.

LINGUÆ *ſecundum par*, a name given by Caſſerius to a pair of muſcles of the tongue, called by the generality of authors *ſtyloglosſus*. See STYLOGLOSSUS.

LINGUA *cervina*, *hart's tongue*, in botany, the name of a genus of plants; the characters of which are theſe. The leaves reſemble the *tongue* of an animal in ſhape, or are, at leaſt, vulgarly ſuppoſed to do ſo; they are uſually plain and ſimple, but ſometimes they are jagged, and in ſome ſpecies they are compoſed of many ſegments affixed to a middle rib. The flowers are not diſcovered, but the ſeeds grow on the under part of the leaf, in ſeveral long, ſulcated and ſeemingly bivalve furrows; theſe are filled with oblong capſules, each of which is furniſhed with an elaſtic ring, by the contraction of which they are burſt when the ſeeds are ripened.

The ſpecies of *hart's tongue* enumerated by Mr. Tournefort are theſe. 1. The common *hart's tongue*. 2. The great *hart's tongue* with undulated leaves, auriculated at their baſes. 3. The *hart's tongue* with the middle rib of the leaf terminating in a prickle. 4. The *hart's tongue* with leaves corniculated, and divided into many ſegments at their ſummits. 5. The narrow leaved ſhining *hart's tongue* with leaves not ſerrated. 6. The ſmalleſt *hart's tongue* with undulated leaves. 7. The narrow leaved great *hart's tongue* with down, hiding the ſegments of the leaves. 8. The oak leaved *hart's tongue*. 9. The Virginian *hart's tongue* with leaves bending down, and taking root from their ſummits. 10. The ſmooth but rigid *hart's tongue*. 11. The broad leaved *hart's tongue* with ſcaly pedicles. 12. The ſhining *hart's tongue* with jointed pedicles. 13. The narrow leaved reticulated *hart's tongue*. 14. The ilex leaved climbing *hart's tongue*. 15. The moſſy *hart's tongue* with yellow hairs and ſcales. 16. The leſſer hairy *hart's tongue*. 17. The ſhort and thick leaved *hart's tongue*. 18. The ſmalleſt, creeping, hairy *hart's tongue*. 19. The largeſt leaved *hart's tongue*. 20. The *hart's tongue* covered on its underſide with a fine gold coloured powder. 21. The long and very narrow leaved *hart's tongue*. 22. The *hart's tongue* with ſharp pointed leaves, duſty at the tops and on their edges. 23. The round dented not branched *hart's tongue*. 24. The *hart's tongue* with long, broad, and ſerrated leaves. 25. The climbing *hart's tongue* with ſcaly ſtalks. 26. The *hart's tongue* with long, narrow, and undulated leaves. 27. The great hairy reddiſh *hart's tongue*. 28. The *hart's tongue* with green ſpotted creeping roots. 29. The hairy *hart's tongue* with broad and roundiſh leaves. 30. The double leaved *hart's tongue*. 31. The narrow leaved *hart's tongue* with hairy ſtalks and ribs. 32. The climbing *hart's tongue* with bay-like ſerrated leaves. 33. The *hart's tongue* with multifid leaves. 34. The larger *hart's tongue* with leaves divided into two or three large ſegments. 35. The great branched *hart's tongue* with multifid and curled leaves. 36. The ſmaller branched *hart's tongue* with multifid and curled leaves. 37. The branched *hart's tongue* with leaves turning round at the ends. 38. The large *hart's tongue* with the appearance of ſmall leaves growing at the extremities of the ſegments. 39. The many pointed ſcaled *hart's tongue*. 40. The multifid *hart's tongue* with jagged tops. 41. The *hart's tongue* with leaves growing on a middle rib. 42. The branched, rough, and undulated *hart's tongue*. 43. The great knotty branched *hart's tongue*. 44. The great climbing and creeping American *hart's tongue*. 45. The great, branched, climbing, citron leaved *hart's tongue*. 46. The ſmaller climbing branched citron leaved *hart's tongue*. 47. The branched *hart's tongue* with pointed and ſerrated leaves. 48. The oak leaved branched *hart's tongue*. 49. The branched *hart's tongue* with black ſpots on the leaves. 50. The climbing branched *hart's tongue* with narrow undulated leaves. 51. The branched *hart's tongue* with ſerrated ſword like leaves. 52. The branched *hart's tongue* with leaves duſty at the edges. 53. The broad leaved branched *hart's tongue* with the edges ſurrounded with a thin membrane. 54. The golden branched *hart's tongue*. 55. The branched *hart's tongue* with black duſty tubercles. 56. The ſmall, knotty branched *hart's tongue*. 57. The *hart's tongue* with ſinuated leaves, divided into three ſegments at their ends. 58. The cinquefoil branched *hart's tongue* with ſcaly pedicles and ſharp pointed leaves. 59. The trefoil *hart's tongue* with narrow and ſerrated leaves. *Tourn.* Inſt. p. 585. See PUFF *ball*.

LINGUADO, in zoology, the name of a Weſt-Indian fiſh, in ſhape reſembling a ſoal. Its mouth is furniſhed with very ſharp teeth, but has no tongue. It has large gills, with two ſmall fins annext near their bottoms to the under part, or belly. It is of a pale ſtone colour, and is cloathed on the back with very ſmall ſcales. Its tail is almoſt ſquare in ſhape, and made of a very thin fin. It lives in ſhallow water, and keeps cloſe upon the ſand. It, upon the whole, very much approaches to our ſoal, but principally differs in that the fins under its gills terminate in a ſmall filament. *Marggrave*'s Hiſt. Braſ. p. 71.

LINGUATULA, in zoology, the name of a ſpecies of fiſh, ſomewhat reſembling the ſoal, but ſmaller and ſhorter, and much inferior to it in taſte. It is common in the Mediterranean, and brought to market at Rome, Venice, and elſewhere, and is called by other authors *cynogloſſus*, and *citharus flavus*, or *citharus aſper*. *Willughby*, Hiſt. Piſc. p. 101. See the article CYNOGLOSSUS.

LINGUIFORM *leaf*, among botaniſts. See LEAF.

LINGULA, in zoology, the name of an extremely ſmall fiſh of the ſoal kind. It is known from the reſt of this genus not only by its ſmallneſs, but by a ridge of ſmall ſcales which

which run along the line over the ſpine, and are much more elevated and diſtinguiſhable, both to the eye and touch, than thoſe of the reſt of the body. It is a well taſted fiſh, and much firmer in its fleſh than the ſoal, but is very ſcarce, and is of little value, becauſe of its thinneſs. It is caught in the Mediterranean. *Geſner.* p. 786.

LINGULACA, in zoology, a name by which ſeveral authors, particularly ſome of the older naturaliſts, have called the *ſoal fiſh*. *Willughby*, Hiſt. Piſc. p. 100.

LINIFICUS *lapis*, a name given by ſome authors to a ſtone, which was ſaid to cure the epilepſy when taken internally. It ſeems to have been a name given by ſome fanciful writers to the *alumen plumoſum*.

LINIMENTUM *album*, a form of medicine differing in nothing from the *unguentum album*, but in that it is a little ſofter: they are both preſcribed in the late London Pharmacopœia, and both made of the ſame ingredients. The preſcription for this is as follows. Take oil olive three ounces, ſperma ceti ſix drams, white wax two drams; melt all together over a gentle fire, ſtirring it till it is perfectly cold. *Pemberton*'s London Diſp. p. 372.

LINIMENTUM *ſaponaceum*, the ſoap *liniment*, a form of medicine preſcribed in the late London Pharmacopœia, and meant to ſupply the place of the ointment well known by the name of *opodeldoch*. It is made thus. Take ſpirit of roſemary a pint, hard Spaniſh ſoap three ounces, camphor one ounce; digeſt the ſoap with the roſemary ſpirit till it is diſſolved, and then add the camphor. When this is melted, the whole is finiſhed. *Pemberton*'s London Diſp. p. 372.

LINIMENTUM *volatile*, a form of medicine preſcribed in the late London Diſpenſatory, and ordered to be made of oil of almonds an ounce, ſpirit of ſal armoniac, made without lime, two drams; theſe are to be ſhook together in a wide mouthed vial, till they are perfectly mixed. *Pemberton*'s London Diſp. p. 374.

LINKIO, in botany, a kind of water plant among the Chineſe, the fruit of which is of a triangular pyramidical form, prominent every way with a green thick rind, that grows reddiſh towards the apex, and, when the fruit is dried, grows black. The internal ſubſtance is exceeding white, its taſte like that of a cheſnut, three or four of which it equals in bulk. The plant is found in ſtanding waters, and has very ſlender leaves, that ſpread themſelves over a large extent on the ſurface of the water, and the fruit lies concealed under water in great numbers. Vid. *Hofm.* Univ. Lex. in voc.

LINNÆA, in botany, the name of a genus of plants, given by Gronovius in honour to his friend Linnæus, the characters of which are theſe. The cup is a double perianthium. The perianthium of the fruit conſiſts of four leaves, two of theſe which ſtand oppoſite to one another are ſmall and acute, and the other two are elliptic, hollow, acute, and hairy: theſe embrace the germen, and remain after the flower is fallen. The perianthium of the flower ſtands upon the germen, and is narrow, erect, and acute, and compoſed of one leaf divided into five ſegments. The flower is monopetalous, of a turbinated form; it is twice as large as the cup, and is lightly divided into five ſegments at the edge. The ſtamina are four ſubulated filaments, inſerted in the baſe of the flower; two of theſe are very ſhort, but the two longer are not ſo long as the flower. The antheræ are of a compreſſed figure, and can turn round upon the ſtamina. The germen of the piſtil is roundiſh, and is placed within the cup. The ſtyle is ſtrait and ſlender, and is of the length of the flower; it always bends toward one ſide, and is terminated by a globoſe ſtigma. The fruit is a dry oval berry of two cells, and is covered with the hairy and glutinous cup of the flower. The ſeeds are ſingle and roundiſh. *Linnæi* Gen. Pl. p. 299.

LINNET, *linaria*, in zoology. See LINARIA.

It is remarkable of this bird, that when it builds in hedges, and when in furz buſhes on heaths, in both which places the neſts are very common, they are made of different materials. When they build in hedges, they uſe the ſlender filaments of the roots of trees, and the down of feathers and thiſtles; but when they build in heaths, they uſe moſs, principally, for the outer part, finiſhing it within with ſuch things as the place will afford. Theſe birds will have young ones three or four times a year, eſpecially if they are taken away before they are able to leave the neſts.

When they are intended to be taught to whiſtle tunes, or to imitate the notes of any other bird, they are to be taken from the old one when they are not more than four days old; for at this time they have no idea of the note of the old ones, and will readily be taught to modulate their voice like any thing that is moſt familiar to their ears, and within the compaſs of their throats. There requires more care in the feeding them when they are taken thus young, than when they are left in the neſt till nearly fledged, but they will be reared very well upon a food half bread, and half rape-ſeed, boiled and bruiſed: this muſt be given them ſeveral times a day. It muſt be made freſh every day, and given them ſufficiently moiſt, but not in the extreme. If it be in the leaſt ſour, it gripes and kills them; and if too ſtiff, it is as miſchievous by binding them up.

They muſt be hung up as ſoon as taken from the neſt, under the bird whoſe note they are intended to learn; or if they are to be taught to whiſtle tunes, it muſt be done by giving them leſſons at the time of feeding, for they will profit more while young in a few days, than in a long time afterwards, and will take in the whole method of their notes before they are able to crack hard ſeeds. Some have attempted to learn them to ſpeak, in the manner of the parrot or other birds, and they will arrive at ſome ſort of perfection in it with great pains.

LINOZOSTIS, in botany, a name given by the antient Greek writers to two plants very different from one another; the one is the *mercurialis*, or Engliſh mercury, a plant common in uncultivated places, and eaten by many boiled in the manner of aſparagus; the other the *epilinum*, or dodder, growing upon the plants of flax.

Theophraſtus, Dioſcorides, and the antient Greeks, uſe the word in the firſt ſenſe, and the modern Greeks in the latter. The Latin authors call this *linozoſtis*, or *epilinum*, ſometimes *angina lini*, and *podagra lini*, looking on it as a diſeaſe which choaks the plant it grows on, and cauſes gouty tumors on the ſtalks.

Dodder, or *cuſcuta*, is a paraſitical plant never taking root in the ground, but always growing upon the ſtalk of ſome other herb. When it grows on thyme it is called *epithymum*; when on the nettle *epurtica*; and ſo on of all the other plants. Aviſenna calls it *keſuth*, or *keſluth*, and Theophraſtus *caſuta*. It ſeems indeed that Dioſcorides confounded the *cuſcuta*, or dodder growing upon the thyme, with the thyme itſelf; for he compares the ſeed of alypum to that of epithymum, and it is found to be very like that of thyme.

LINSEED *(Cycl.)—Linſeed*, from which the oil has been expreſſed, boiled in milk, and applied warm in a cloth to herniæ, is much recommended in the Satyr. Sileſiac. Specim. 4. Obſ. 4.

LINSPINS, are ſmall pins of iron which keep the wheel of a cannon, or waggon, on the axletree; for when the end of the axletree is put through the nave, the *linſpin* is put in to keep the wheel from falling off.

LINT, in ſurgery, is the ſcraping of fine linnen uſed by ſurgeons in dreſſing wounds. It is made into various forms, which acquire different names according to the difference of their figures.

Lint made up in an oval, or orbicular form, is called a *pledgit*; if in a cylindrical form, or in the ſhape of a date or olive ſtone, it is called a *doſſil*. See DOSSIL.

Theſe different forms of *lint* are required for many purpoſes, as 1°. to ſtop blood in freſh wounds, by filling them up with dry *lint* before the application of a bandage: though if ſcraped *lint* be not at hand, a piece of fine linnen may be torn into ſmall rags, and applied in the ſame manner. In very large hæmorrhages the *lint*, or rags, ſhould be firſt dipt in ſome ſtyptic liquor, alcohol, or oil of turpentine, or ſprinkled with a ſtyptic powder. 2°. To agglutinate and heal wounds; to which end *lint* is very ſerviceable, if ſpread with ſome digeſtive ointment, or balſam, or dipt in ſome vulnerary liquor. 3°. In drying up wounds and ulcers, and forwarding the formation of a cicatrix. 4°. In keeping the lips of wounds at a proper diſtance, that they may not haſtily unite, before the bottom is well digeſted and healed. 5°. They are highly neceſſary to preſerve wounds from the injuries of the air.

Small portions of *lint* tied round with a thread are chiefly uſed in dreſſing wounds and ulcers of the deeper kind. They are always applied to the bottom of ſuch wounds, the remaining cavity being filled up with other portions of *lint*. By this means, the immediate removal of the dreſſings is not only provided for, but the poſſibility of leaving any part of them in the bottom of the wound is prevented.

In very large wounds, and eſpecially in amputations of the limbs, which operations are frequently required in the army and navy, at times when *lint* is very ſcarce, it will be ſufficient to dreſs the bare bone and face of the wound with ſcraped *lint*, filling up the cavity with tow, and covering all with a large compreſs.

Surgeons of former ages formed compreſſes of ſponge, feathers, wool, or cotton, linnen being ſcarce; but *lint* is far preferable to all theſe, and is at preſent univerſally uſed. *Heiſt.* Surg. Introd. Sect. 54.

Incombuſtible LINT. See the article INCOMBUSTIBLE.

LINUM, *flax*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the caryophylleous kind, being compoſed of a number of petals arranged into a circular form, and ariſing out of a many leaved cup of a tubular form. The piſtil ariſes from the ſame cup, and finally becomes a fruit of a ſomewhat globular form, but pointed at the end, and compoſed of a number of capſules, which open inwards, and contain ſeeds of a flatiſh ſhape, and oval figure, rounded at one end, and pointed at the other. See Tab. 1. of Botany, Claſs 8.

The ſpecies of *flax*, enumerated by Mr. Tournefort, are theſe. 1. The common manured *flax*. 2. The broad leaved African *flax* with a larger fruit. 3. The great perennial blue flowered *flax* with large heads. 4. The leſſer perennial blue flowered *flax* with ſmaller heads. 5. The common wild *flax*, reſembling the cultivated kind. 6. The hairy broad leaved blue flowered wild *flax*. 7. The hairy white flowered broad leaved wild *flax*. 8. The ſhrubby *flax* with ſnow-white flowers. 9. The broad leaved yellow flowered wild *flax*. 10. The yellow flowered wild *flax* with roundiſh leaves. 11. The yellow flowered *flax* with flowers at the joints of the ſtalk. 12. The duſky yellow flowered ſhrubby *flax*. 13. The wild yellow tree *flax* of Candy. 14. The ſmall broad leaved annual yellow flowered wild *flax*. 15. The ſmall narrow leaved annual yellow flowered *flax*. 16. The yellow flowered ſea *flax*. 17. The wild blue flowered *flax* with ſharp pointed leaves. 18. The narrow leaved wild *flax* with large white flowers. 19. The narrow leaved wild *flax* with large deep blue flowers. 20. The narrow leaved wild *flax* with very large greyiſh flowers. 21. The narrow leaved wild *flax* with white flowers, variegated with ſtreaks of red. 22. The narrow leaved white flowered procumbent wild *flax*. 23. The leſſer flowered wild *flax* with narrow and thick-ſet leaves. 24. The narrow leaved wild *flax* with fewer leaves. 25. The narrow leaved wild *flax* with fewer leaves and white flowers. 26. The leaſt wild *flax* with very ſmall flowers, called by ſome the leaſt ſmooth ſpring *chickweed*. 27. The rough leaved *flax* with yellow umbellated flowers. 28. The yellow Portugal *flax* with ſpiked flowers. 29. The narrow leaved ſhrubby *flax* with rigid and prickly leaves. 30. The capillacious leaved Portugal *flax*. And 31. The larix leaved alpine *flax*. *Tourn.* Inſt. p. 340. See FLAX.

LINUM *carpaſium*, *carpaſian flax*, or *linnen*, a term often occurring in the old writers, and uſed by different authors in very different ſenſes.

The firſt uſe we find made of the word, is for the expreſſing a kind of *flax* which was finer and ſmaller, as well as brighter and more gloſſy than any other. Pliny uſes the word in this ſenſe, and tells us that ſuch *flax* was principally brought from Spain; and that both it, and the *linnen* made of it, were, at his time, called by the name *carpaſian:* from this it became a cuſtom to call all very fine *flax*, or fine *linnen*, *carpaſian linnen*, and the word ſignified no more than delicate, or fine.

The modern Greeks uſe the word in this ſenſe, and Suidas expreſſes the fineſt *linnen* veils by the term *carpaſian*. The author of the *Periplus maris Erythræi*, who was cotemporary with Pliny, calls the *flax*, of which the Indian *linnens* were made, *carpaſos*; but none of the older Greeks have the word. This author is not, however, to be appealed to for aſcertaining the purity of the language of the antients; for it is plain, that he has taken in many words which are not good Greek, nor ever were uſed by any author of credit, but are the mere technical terms of the tradeſmen and merchants of that time.

Pauſanias uſes the word *carpaſium linum* in a very different ſenſe from all theſe; for with him it is made to expreſs the *flax* made of the ſtone aſbeſtos, and the *linnen* made of this, which was thrown into the fire to be cleaned. Solinus uſes the word alſo in the ſame ſenſe: he ſays, that in Caryſtos there was found that kind of *flax* which remained unhurt in the fire; and Hieronymus Mercurialis thinks that the *carbaſus* of the antient Romans was a word properly uſed only to ſignify the *carpaſian flax* of Pauſanias, which was not to be deſtroyed by the fire, and was the true *linum incombuſtibile*, or threads of the aſbeſtos ſtone, or *linnen* made of that material. This, however, is not the ſenſe of the word in later times, for we find it evidently uſed for all *linnen* manufactures of whatever kind.

Caryſtium LINUM, in natural hiſtory, a name given by Pauſanias to the aſbeſtos, a woolly ſtone of which clothes and paper were made, which, on being heated red-hot in the fire, were cleaned, but not conſumed or injured by it. It was found plentifully, in this author's time, near Caryſtus, a town in the Negropont, and thence obtained its name. See ASBESTOS.

LINUM *catharticum*, *Purging flax*, in medicine, makes a common purge among the country people. It is almoſt as rough as that of *gratiola*. See GRATIOLA.

It is a ſpecies of wild *flax*, and is taken in infuſion in ale. A dram of the powder of the dried herb, or of the freſh leaves bruiſed and formed into a bolus, will anſwer the purpoſe.

It is greatly recommended by ſome in dropſies; and to prevent its griping, they mix aniſe, or ſome other of the carminative ſeeds with it. It is given in moſt chronic caſes, where people's conſtitutions are ſtrong enough to bear it, and often with great ſucceſs.

LION, *leo*, in the Linnæan ſyſtem of zoology, makes a diſtinct genus of quadrupeds, the characters of which are, to have two paps placed on the belly, and feet adapted to climbing. *Linnæi* Syſt. Nat. p. 35.

The head of the *lion* appears very large, in proportion to its body, and is the moſt fleſhy of the heads of all the known animals. Its jaw bones alſo are remarkably large. The breaſt alſo appears very large, but this is only owing to the great quantity of long hair that covers it, for the ſternum is ſmaller than that of moſt animals of the ſame ſize. The tail, which is very long, appears alſo of the ſame thickneſs all the way, but this is wholly owing to the growth of the hair. The tail itſelf is largeſt at the baſe, and thence goes taper to the point; but the hair being very ſhort near its baſe, and continuing to grow longer all the way, as that decreaſes in thickneſs, is ſo exactly proportioned in this growth, that it always gives the whole tail this regular appearance. See Tab. of Quadrupeds, N° 1.

The long hair that grows about the neck and breaſt, and makes what is called the mane of the *lion*, only differs from the hair of the reſt of the body in length, having no greater thickneſs, or rigidity, like that of the manes of other animals. The claws of the *lion* have no caſes, as Pliny pretends that they have, for the animal to withdraw them into in walking; but Plutarch, Solinus, and ſome others, are much more in the right, in ſaying that the *lion* draws them up backwards when he walks, and places them cloſely among the articulations of the toes.

It is certain that the laſt joint but one of every toe in this creature has a peculiarly eaſy joint for motion, and by means of this the laſt joint, with the claw that is affixed to it, are very readily drawn up, and hid upon the foot, and placed wholly out of the way of being hurt in walking. This creature, therefore, does not put the extremities of its toes to the ground in walking, but the termination of each toe, as to its touching the earth, is the joint of the laſt piece with the laſt but one. This drawing up of the laſt joint of every toe, by means of which each claw is hid between the toe it belongs to, and the next, is the effect of a ligament, which in its natural ſtate is ſo ſhortened, as to keep them in this poſition; and it is only by the action of a very ſtrong muſcle, that this joint can be pulled downward, when the claws are to be uſed, the ligament beforementioned always drawing them naturally into their firſt poſition again, as ſoon as the force of that muſcle is over.

The *lion* has fourteen teeth in each jaw, four inciſores, four canine, and ſix molares. The inciſores are ſmall, the canine are unequal in ſize, two being very large, and two very ſmall; the large ones are an inch and half long, and are the only ones that the antients allowed to be canine teeth. The molares alſo are irregular in ſize, the anterior ones being very ſmall, the others large, and terminated by three or four points, forming a ſort of flower de luce.

Ariſtotle, Ælian, and others, ſay that the neck of the *lion* is all compoſed of one unjointed bone. It appears indeed very rigid in this creature, but this does not proceed from ſo ſtrange a cauſe, but is found owing to this, that the ſpinoſe apophyſes of the vertebræ of the neck are long, and faſtened together by extremely ſtrong and rigid ligaments.

The tongue of the *lion* is very rough and rigid, being covered with a great number of prominences of a hard matter, reſembling that of a cat's claws, and theſe are much in the ſhape of thoſe claws, and nearly of the ſame ſize, the baſe of each being a round fleſhy prominence on the ſurface of the tongue.

The eyes of the *lion* are clear and bright, even after the creature is dead. The common obſervation that this creature ſleeps with its eyes open, is founded on this, that it has a very thick membrane lodged in the greater canthus of the eye, which it can extend over the whole eye upon occaſion, as birds do their *membrana nictitans*, and thus will have no occaſion to ſhut its eye-lids, in order to exclude the light. It is very remarkable, that the common cat has all the ſingular ſtructure of the ſeveral parts as the *lion* has, its claws, feet, tongue, and eyes, being of the ſame kind, and its internal parts bearing as ſtrong a reſemblance.

The heart of the *lion* is greatly larger than that of any other creature of the ſame ſize, being ſix inches long, and four in diameter, in the largeſt part, and terminating in a very ſharp point. The brain is as remarkably ſmall; and the compariſon of this with the great quantity of brain in a calf, and purſuing the obſervation through ſeveral other creatures, as to the proportion of brain they have, it does not appear that a ſmall quantity of brain is a mark of folly, but uſually of great ſubtlety, and of a cruel diſpoſition. Memoires pour l'Hiſtoire des Anim. p. 5.

The French, when they had once a ſick *lion*, attempted to recover him from his ſickneſs by ſuch foods as nature never intended him, that is, by the tender and pure fleſh of young animals, without any of the external coat. They gave him young lambs flead alive for this purpoſe; but nature not having given this animal the ſubtlety to flea his food, and the hair, wool, feathers, *&c.* being as neceſſary to theſe beaſts of prey with the fleſh, as that fleſh itſelf, the new food bred too much blood, and proved a worſe diſeaſe than that he had before, ſo that he ſoon died. *Pitfield*'s Hiſt. Anim.

LION-*puceron*, in natural hiſtory, the name given by Mr. Reaumur to a genus of worms which deſtroy the *pucerons* in the ſame manner that the *formica leo* does the ants,

Theſe little inſects are a prey alſo to a ſort of worm hatched from the egg of a two winged fly. This has no legs, and is of ſeveral colours. See the article VER-*puceron*.

Though theſe *lion-pucerons* be all hexapodes, yet they are of different origin; ſome being produced from the eggs of a four winged fly, others from thoſe of a beetle. As the *formica leo* has two horns, the extremities of which ſerve him by way of mouths, our *lion-puceron* has the ſame kind alſo; but as the former of theſe inſects can only move backwards, and is forced to make ſnares for his prey, not being able to hunt it; this creature runs very nimbly in the common way, and ſeizes its prey, without having recourſe to ſuch ſtratagems.

The body of the *lion-puceron* is longer than that of the *formica leo*, and is flat; the breaſt is the thickeſt and broadeſt part of it, and from this it gradually tapers off to a point at the tail. It has two legs fixed to the breaſt, the other four to the anterior rings of the body, and when it moves, the poſterior end of the body ſerves it in the place of a ſeventh leg, for it always bends it downward, and draws it along the ſurface it walks upon. The back of this creature is not ſmooth or gloſſy, but is every where rough, and full of wrinkles, and ſeems as if every ring of it was compoſed of ſeveral other ſmaller rings.

This is the general deſcription of the creature, treating of it in a general way, theſe characters ſuiting all the kinds of it. There are others, however, by which the whole claſs may be divided into three principal kinds.

The moſt common ſpecies is diſtinguiſhed by a peculiar character, which is, that it is hairy at the ſides, or, to ſpeak more determinately, every ring of the body has on each ſide, juſt in that part where the back and the belly meet, a fleſhy tubercle, or protuberance, which carries a tuft of ten or twelve hairs. There are of this kind of ſeveral ſizes and colours, and the moſt frequent are of a cheſnut, or yellowiſh hue on the back, and white on the belly.

Theſe are much more voracious devourers of the *pucerons*, than the worms which feed on them. A ſmall *puceron*, ſeized by one of them, is eaten in an inſtant, and the very largeſt is not the work of half a minute for them. Theſe creatures are very ſmall when firſt produced from the egg, and yet they immediately begin to feed. They are ſo ravenous of food alſo, that whenever they can they catch and eat one another. But as the *pucerons*, among which they live, are eaſier to be caught, they uſually eſcape one another's fury pretty well; unleſs where there is a ſcarcity of the *pucerons*, or when they offend one another.

Mr. Reaumur put twenty of theſe creatures together into a box, where they had no other food, and where they could not eſcape one another, and theſe were very ſoon reduced to three or four. It is eaſy to conceive that a creature, which feeds ſo very faſt, muſt ſoon arrive at its full growth; and this is the caſe with theſe animals, for within five or ſix days of their being hatched from the egg, they are ready for their final transformation, or the putting on the form of the animals to whoſe eggs they owed their origin. In order to this, the creature leaves the place where he has hitherto fed, and ſeeks the folds of a leaf, or ſome other ſuch convenient receptacle, where it ſpins a web of very fine ſilk, every way ſurrounding its body with it, and under this cover paſſes the ſtate of a nymph or chryſalis. The ſilk of this web is not only very ſtrong, but the threads are very cloſely laid together, ſo that it is much firmer than the webs of any of the caterpillar kind. It is of a roundiſh figure, and is ſomewhat ſmaller than a pea.

This round figure is owing to the form into which they roll up their body, which ſerves as a mould for it; and the orifice, out of which the ſilky matter is produced, is at the extremity of the poſterior part of the body. The creature continues in this ſtate about three weeks, if it be in the beginning of the ſummer that it goes into it; but if toward autumn, it remains in it all the following winter; and is afterwards, in ſpring, ſeen to come out in the form of a very beautiful fly, of a remarkably large ſize, in proportion to the creature it is produced from, and the web out of which it comes. It is a very long bodied one, and much reſembles the libella or dragon fly, only that its wings are larger in proportion to its body: theſe wings are of a moſt delicately fine ſtructure, the fineſt gawſe being coarſe and thick in compariſon to them. Theſe, when the creature is at reſt, are placed in an angle over the body, and form a ſort of canopy or tent for it, but they are ſo perfectly tranſparent that the body is eaſily ſeen through them. The body and breaſt are all green, and that of a very beautiful tinge; but the moſt remarkable beauty of this creature is its eyes; theſe are large and prominent, and are of a fine gold colour, and of greater luſtre than the moſt highly poliſhed metal.

The eggs of this fly are a very ſingular object, and cannot have eſcaped the eye of any perſon who is converſant among the inſects which live on trees; though of the many who have ſeen them, perhaps few or none ever found what they really were. It is common to ſee on the leaves, and pedicles of the leaves of the plum tree, and ſeveral other trees, as alſo on their young branches, a number of long and ſlender filaments, running out to about an inch in length, and being of the thickneſs of a hair; ten or twelve of theſe are uſually ſeen placed near one another, and a vaſt number of theſe cluſters are often found on the ſame tree. The end of each of theſe filaments is terminated by a ſort of ſwelling or tubercle of the ſhape of an egg. People who have obſerved theſe, have generally ſuppoſed them to be of vegetable origin, and that they were a ſort of paraſitical plants, growing out of others, as the miſletoe, moſſes, *&c.* from the oak and other trees. They very much reſemble in figure thoſe ſpecies of mouldineſs, which Malpighi and others have figured under the ſhape of little muſhrooms, only they are much larger than thoſe little plants, and bear the heat of the ſun and other accidents uninjured, which would deſtroy the tender plants of that kind. There is a time, when theſe egg-like balls, which terminate every one of theſe filaments, are found open at their ends, and in this ſtate they very much reſemble flowers, and they are in this ſtate figured by ſome authors under the name of flowers of a ſingular kind, found on the leaves of the willow. All this, however, is wholly erroneous, and the purſuing the hiſtory of our *lion pucerons*, ſhews their true origin to be from the fly of that creature. What theſe authors took for flowers of the willow were only the eggs of this fly, out of which the young animals had been hatched, and had made their eſcape. The leaves and branches on which theſe eggs are found, are uſually ſeen covered over with the *pucerons*; and the creature providing a place where her young ſhall find nouriſhment as ſoon as hatched, places her eggs in the midſt of theſe harmleſs and defenceleſs animals, fixing each on a ſlender pedicle, yet ſufficiently ſtrong to ſupport its weight. If theſe eggs be nicely examined, a worm may be diſcovered in them while yet whole; but the moſt certain way of judging of them, is, to put ſeveral of them into a box, in which caſe every one of them is found at a proper time to hatch, and to give an inſect; which, when viewed by the microſcope, appears plainly to be a *lion puceron* in all its parts, and requiring only increaſe in ſize, without any change of ſhape, to be one of thoſe we have already deſcribed, as feeding ſo voraciouſly on the *pucerons*. *Reaumur's* Hiſt. Inſ. Vol. 6. p. 142.

The manner in which the parent fly places her eggs in this ſingular way on the trees, is a ſubject that greatly excited the curioſity of Mr. Reaumur. He often watched the animals in vain, in order to ſee them employed in it; and, in fine, ſhut up ſeveral of them in boxes. The conſequence of which was, that they fixed their eggs on long pedicles, to the ſides of the box, in the ſame manner, that they before had to the ſides of the branches, or leaves of trees; but he never could find them employed about it. The manner in which he ſuppoſes it done, however, appears very rational, and is as follows:

The egg is ſuppoſed, while in the body of the inſect, to be covered with a tough glutinous matter, capable of drying very ſuddenly in the air. The creature, when the egg begins to come forth, applies the extremity of it to ſome ſolid body, as a leaf, or ſtalk of a plant, and then drawing herſelf away, there follows a thread or filament of this viſcous matter, which is faſtened at one end to the leaf, and at the other to the egg in her body. When ſhe has drawn this out, to an inch in length, ſhe ſtops a moment, and the whole will harden into a ſolid matter; and, on her next motion, will draw out the egg from her body, and will become a pedicle to it. In this condition it will remain till the egg is hatched, and then the young inſect needs only to deſcend downward on the leaf, on which the pedicle is fixed, and it will find itſelf in the midſt of plenty of food.

Mr. Piſtorius found a number of theſe eggs on a cherry; he diſtinguiſhed them very plainly to be eggs, and preſerved them till they hatched. The young ones died with him for want of nouriſhment; but, by his figures of them engraved from the microſcope, it appears very plainly, that they were the very inſect we have deſcribed under the name of the *lion puceron*.

The ſecond kind of theſe inſects differs from the firſt in no other particular, but that it has no tufts of hairs on its ſides, and in that it is not of a yellow or brown colour as thoſe of the firſt kind are, but of a duſky grey. This after it has lived its proper time in this ſtate, becomes alſo a chryſalis of a round figure, and of the ſize of a pea, enveloped in a web of ſilk of its own ſpinning. After the creature has remained a month in this ſtate, it comes forth in the form of a four winged fly; which, however, is very different from that produced by the firſt kind. Its body is oblong, but leſs long than that of the former; and its wings are extremely different, being as remarkably opake in this, as they are remarkably tranſparent in the other; the outer wings are of a browniſh red, and the inner ones of a yellowiſh colour; the outer ones are conſiderably the moſt opake and thick, and indeed they not a little reſemble the upper wings of the graſhoppers. *Reaumur's* Hiſt. Inſect. Vol. 6. p. 139.

The third kind of theſe inſects is very different from the other two. It is conſiderably ſmaller and thicker bodied, the others being both very flat. This feeds on the *pucerons* in the manner of the others, but it is ſo voracious, that

it

it will ſeize on almoſt any thing. Mr. Reaumur tried it with a hexapode worm of a beetle, which it immediately ſeized upon, though three times as big as itſelf, and ſoon ſucked it abſolutely dry, leaving nothing but ſkin. It is very ſingular alſo in its way of living, as it does not remain naked in the manner of the other kinds, but has always a ſort of houſe or cave over it, in the manner of the common moth found in cloth. This caſe of the *lion puceron* is ſo large, that it ſeems a great burthen for the creature to carry; it covers it all over from the neck to the extremity of the body, and even reaches far beyond it. This caſe is made up of ſeveral coloured filaments, reſembling a ſort of down. Some of theſe are white, others brown, and others yellowiſh. This caſe is made of the ſkins and down of the *pucerons* which the creature has eaten, and if theſe were not in the way it would have made one of any thing elſe. Nature has made this animal tender, and rendered a covering neceſſary, and the creature always prepares itſelf one, out of whatever materials it finds moſt ready.

Mr. Reaumur took the covering off from one of them, and put it naked into a box, where there was a web of a ſilk worm. The creature immediately made itſelf a covering of the fragments, into which it broke the threads of ſilk; and another, in the ſame manner, made itſelf one of ſome ſcraped paper. There is no great ſkill employed in the fabric of this, but the things are coarſely laid together, and hang to one another, and to the inequalities of the body. The manner in which the creature forms it, is only by taking the particles of which it is compoſed ſeverally between its horns, and throwing them over its head, ſo that they may fall on ſome part of the back. This ſpecies, like the two before deſcribed, ſpins itſelf a round web, and after lying about a month in the chryſalis ſtate, it comes forth in form of a four winged fly; and is ſo like the beautiful fly produced from the firſt ſpecies, that it is ſcarce to be known from it, unleſs by its being ſmaller.

Theſe are the *puceron lions* which finally change into flies; but beſide theſe, we have another kind, which have alſo ſix legs, and which finally become beetles: theſe are the worms of a large claſs of ſmall beetles, one of which is extremely common among us, and known to children by the name of the cow lady: as this is yellow, ſpotted with black, there are others which are blue, brown, reddiſh, and of other colours, but all ſpotted in that manner. *Reaumur*'s Hiſt. Inſ. Vol. 6. p. 152.

The worms of all theſe are *puceron lions*; they are oblong and flat, their hinder extremity terminates in a point, and their breaſt is the largeſt part. Their legs are all faſtened near the head; and they have at the extremity of the head two hooks, in the manner of other worms of the fly kind. They are uſually of a rounded figure, in their common ſituation on the leaves of the trees; and as they are hereafter to become beetles, of ſeveral different kinds, they are themſelves of different colours, ſome yellowiſh, ſome greeniſh, and ſome grey, theſe laſt are uſually ſpotted with ſeveral browniſh or black ſpots.

The parents of theſe lay their eggs indifferently on any part of the tree; and the young ones, as ſoon as hatched, are to crawl over the leaves and branches, till they find ſome place where the *pucerons* are; and then they fix their habitation there, till they have eaten all up, or till they have lived their appointed time.

When the period of their change is near, they forbear eating, and ſoon after they faſten themſelves by the hinder part to a leaf; and there, without ſpinning a web, wait for their final transformation, which is made in a caſe or ſhell, formed of their own ſkin dried and hardened. After they have drawn their bodies as ſhort as can be, they remain about a fortnight in this ſtate, and then come out in the form of a lady-bird, or ſome other ſmall beetle of that form. The female of which afterwards lays a number of oblong eggs of the colour of amber; from theſe are ſoon hatched the creatures we have been deſcribing; which, as ſoon as well out of the egg, travels about the tree or plant in ſearch of the cluſters of the *pucerons*.

Ant-LION, *Formica* LEO. See FORMICA *leo*.

LIONS *tail*, in botany. See LEONURUS.

LIONESS, *leæna*, a female *lion*. See LION.

The *lioneſs* has no mane, or long hairs upon the neck and breaſt, which ſo remarkably characterizes the *lion*. The noſe alſo is longer in the *lioneſs*, and the head more flatted in the upper part. The claws alſo are much ſmaller than thoſe of the male *lion*. This creature, when full grown, is about three feet high, from the fore feet to the ridge of the back, and about five feet long from the end of the noſe to the inſertion of the tail, which is about two feet and a half long. The claws are of a fibroſe texture, the fibres being very hard in themſelves, but eaſily ſeparable from one another. In other particulars the *lioneſs* very little differs from the *lion*. See Tab. of Quadrupeds, N° 2. and the article LION.

LIONINE, or LIONADE, in the hiſtory of the coins current in Ireland, a name given to certain coins, imported privately from France and other places. There were beſide theſe many others of the ſame ſort, impreſſed with eagles, roſes, and the like, and called by names ſignifying thoſe impreſſions. They were a very baſe and poor ſort of money. The penny *lionade*, or *lionine*, not coming up to the value of the half-penny of the coin of the kingdom. They were diſcountenanced in the year 1300; and good money being ſtruck there, it was made death, and confiſcation of goods to import any of them; and the run of them was thus ſtopped. *Simon*'s Iriſh coins.

LIP (*Cycl.*)—*Wounded* LIPS. Wounds of the *lips* are made either with ſharp or with blunt inſtruments, or elſe with bullets. Thoſe of the firſt ſort, whether longitudinal, or tranſverſe, are generally to be cured by the dry ſuture. The patient, while under cure, muſt avoid talking and chewing; his diet therefore muſt be ſpoon meat. But in caſes where the wound is very large the bloody ſuture is ſometimes neceſſary. In wounds of the *lips* made by blunt inſtruments, by falls, or by bullets, the ſhattered parts muſt be brought to digeſtion; and the *lips* of the wound, after being cleaned, brought together, either by means of ſticking plaiſters, or by the ſuture uſed in the hare *lip*. *Heiſter* Surg. 81.

LIP *of a horſe*, in the manege, is the ſkin that covers the ſides of his mouth, and ſurrounds his jaws. A horſe is ſaid to arm or guard himſelf with his *lips*, when his *lips* are ſo thick, that they cover their bars, and keep off the preſſure of the curb.

LIPA, a word uſed frequently by Hippocrates to expreſs any thing fat or oily. He calls certain ſtools, which have a fatty appearance by this name. Theſe are eſteemed a ſign of great colliquation; he alſo applies it to a ſort of fatty ſubſtance, often ſeen ſwimming on the ſurface of the urine like a ſpider's web; this the ſame great author gives as a ſign of a conſumption.

LIPARÆUS *lapis*, in the natural hiſtory of the antients, the name of a ſtone uſually found in Lipara, one of the Æolian Iſlands, and brought thence in the time of the Greeks among the pumices, of which that place always afforded them a large quantity.

It was a ſmall ſtone, about the bigneſs of a filbert, of an irregular and uncertain ſhape, and porous and friable conſtitution, like that of the pumices, but more eaſily falling to pieces on rubbing between the fingers, than even the ſofteſt of them; the colour was a duſky grey, and the whole external ſurface plainly ſhewed that it had ſuffered changes by the means of fire. The antients had theſe ſtones in great eſteem; and Pliny has recorded an idle tradition concerning them, which ſeems to have been then generally believed. This was that all ſorts of wild beaſts were got together by the burning of it. The ſtone, at preſent, however, is ſo little regarded, that the writers on ſuch ſubjects have even forgot to name it; and Wormius, the only one of the late naturaliſts, who ſeems to have had the ſtone, and given it a place in his muſæum, and a deſcription in his hiſtory of it, yet has not honoured it with any particular name, and ſeems not to have known that it ever had any. They are ſometimes brought to us, to this day, among the pumices from the burning mountains, but are not regarded. *Hill*'s Theophraſtus, p. 36.

LIPARIS, in zoology, the name of a fiſh of the general order of the anguilliformes, or eel ſhaped, and moſt approaching to the alauda, of any ſpecies. Its head is ſhaped ſomewhat like that of a rabbet. Its mouth is ſmall, and its jaws rough, but deſtitute of teeth. It has a broad back fin reaching from near the head to the tail. It is covered with ſmall ſcales, and has two pair of belly fins, the one placed under the gills, the other lower down, and another from the anus to the tail which is forked. It ſeems one lump of fat within, not only the inteſtines being loaded with fat, but it in a manner ſupplying the place of fleſh under the ſkin. It is brought to the table among other ſmall fiſh, but is of an inſipid taſte, and generally either offends the ſtomach, or urges to ſtool. It is caught in the Mediterranean and other ſeas. *Rondelet* de Piſc.

The name is originally Greek, and is formed of the adjective λιπαρὸς fat.

LIPARIS is alſo uſed by ſome for the fiſh, called by authors the *gunnellus*, and by the people of Cornwall the butter fiſh. *Ray*'s Ichthyog. p. 115. See the article GUNNELLUS.

LIPARIS, in botany, a name given by ſome authors to the pinguicula, butterwort, or Yorkſhire ſanicle.

LIPARIS *noſtras*, in zoology, the name of a ſmall fiſh common on the coaſts of Yorkſhire and ſome other parts of England, and called in Engliſh the *ſnail*, and *limax marinus* by ſome authors. It is about five fingers long. On its back and ſides it is of a bright brown, and on the belly of a fine white. Theſe are its colours, when freſh taken, for when it has been kept ten or twelve hours, the whole ſurface of the body, except the fins, becomes of a paler and bright brown. The head is thick, and not flat, but rounded. It has no teeth, but its jaws are both rough like files. The apertures of the gills are ſmall holes, ſcarce large enough to admit a pea; and over the root of the firſt pair of fins there is a ſort of valve which the fiſh opens and contracts at pleaſure; and under the throat there is a round ſpot, exactly reſembling the impreſſion of a ſeal; this is of a blueiſh white, and has twelve ſmaller ſpots of the ſame colour ſurrounding

ſt. The tail has much the appearance of that of an eel. The whole fiſh, head as well as body is very ſoft and unctuous, and eaſily melts into a ſort of oily liquor. It is caught principally at the mouths of great rivers where they open into the ſea. *Ray*'s Ichthyogr. Append. p. 17.

LIPOTHYMIA, (*Cycl.*) in medicine, the name of a diſeaſe uſually confounded with the ſyncope, but really different from it in many particulars.

The *lipothymia* is a very conſiderable abolition of the vital and animal faculties, at leaſt to appearance: and the ſyncope is a plenary or total abolition of them, as far as appears to us at the time. It is eaſy to ſee, however, that theſe are only two different ſtages of the ſame diſtemperature. The *lipothymy* is ſometimes an idiopathic, ſometimes a ſymptomatic diſeaſe, and moſt frequently attends the ſcurvy, malignant fevers, and other diſorders: the ſyncope is idiopathic, and attacks perſons in health as well as thoſe that are diſeaſed. The *lipothymy* is always eaſily diſtinguiſhed from a convulſed ſtate of the body, by this, that the limbs are all flaccid in it. The ſyncope differs from death only in degree; and the body being flaccid in this, and growing rigid under the laſt convulſions in death, is the only diſtinction of them in extreme caſes.

Signs of it. The *lipothymia* is uſually preceded by a remarkable anxiety about the heart, and this is ſucceeded by an immediate loſs of life and motion for a time: the ſenſes, the animal motions, and even the pulſe, ſeeming all to be loſt for a time; and the heart flutters weakly, or trembles, and reſpiration is ſcarce ſenſible. In the ſyncope, the reſpiration as well as the pulſe ſeem wholly impeded, and the patient appears wholly dead; the face looks as pale as in a corpſe, and the limbs are wholly flaccid, and without motion. The extremities grow cold, and the eyes are either ſhut, or turgid, and inflamed; the mouth is ſometimes ſhut, but not clenched firmly together as in convulſions, and ſometimes it continues frightfully open; and as ſoon as the patient comes to himſelf he uſually ſighs ſeveral times, and reſpiration ſeems very much laboured.

Perſons ſubject to it. The idiopathic *lipothymy* is a very uncommon complaint, and the perſons ſubject to it are thoſe of a tender and ſenſible diſpoſition, who are eaſily affected by the ſeveral paſſions, and particularly by fear, or ſuch as have been before frequently ſubject to it in diſeaſes, or are of a melancholic habit. People who uſe inceſſant ſtudy for a long time on many occaſions, alſo ſometimes fall into it, women with child are alſo ſubject to it from the preſſure of the breaſt from the abdomen; and unmarried women, when they faint at meals, give too much cauſe to ſuſpect this to be the caſe with them. Some people who are paſſionate, and ſuppreſs violent fits of it while at their meals, fall into faintings alſo.

The ſymptomatic *lipothymy* is a very common diſorder, and ariſes from a great number of different cauſes. Women who have ſuppreſſions of the menſes are very frequently ſubject to it. People fatigued with violent emetics alſo often fall into it, as do alſo perſons exhauſted by violent hæmorrhages, by profuſe ſweats, diarrhœas, violent pains of any kind, and by want of food. People, on the contrary, who are very voracious, and load the ſtomach with great quantities of food as often fall into it; and women after hard child birth, or too great a flux of the lochia are very ſubject to it. People who have taken poiſons, and ſuch as have taken violently cooling medicines alſo ſometimes are ſubject to it; and thoſe, who in fevers, ſuddenly cool themſelves, and check their ſweats, or who once load the ſtomach with great quantities of food immediately after recovering from illneſſes. The approach of epidemical malignant fevers is often preſaged by faintings; and finally, people are ſometimes ſubject to them from omitting any cuſtomary evacuations.

Prognoſtics in it. An idiopathic *lipothymy*, which happens in healthy, but very tender and ſenſible, or melancholic perſons, and has had a fright, or ſome other paſſion for its origin, is a thing of no great conſequence for the preſent; but it is apt to grow upon people if not taken care of, and they will be perhaps always ſubject to it afterwards. *Lipothymies*, when ſymptomatic, are of much more conſequence. In chronic diſeaſes they are leſs dangerous ſymptoms than in acute ones if attended with faintings in the beginning; for theſe often prove dangerous. In other ſtages of acute diſeaſes, faintings are always bad ſymptoms; but when they are owing to the ſuppreſſion of ſome habitual excretion, during the courſe of the diſeaſe, they are of leſs danger than when they appear without ſuch cauſes. All faintings that attend other diſeaſes are however to be regarded only as ſymptoms, not treated diſtinctly; and when the diſtemper which occaſioned them goes off, they naturally follow it. Syncopes that often return upon a perſon, and continue for a long time, frequently leave fevers behind them. Syncopes from hæmorrhages are often dangerous, eſpecially in perſons not accuſtomed to them, and to ſuch as are of a timid diſpoſition; whence women in childbed, who are ſubject to faint, are to be carefully watched, for they ſometimes die in theſe fits.

Method of cure. In idiopathic *lipothymies* ſtimulating glyſters, the ſprinkling of cold water upon the face, and the penetrating ſmells, ſuch as thoſe of the volatile ſalts, ſpirit of hartſhorn and Hungary water, all tend to recover the loſt motion. To theſe are to be added undreſſing, or looſening the clothes, lying down in a warm bed, frictions, ſternutatory powders, and the laying a little pepper, or a ſmall morſel of ſome pungent volatile ſalt upon the tongue. After the patient is, by this means, brought to himſelf, a glaſs of warm wine, with ſome tincture of ſaffron, is very proper to recruit the ſtrength; and if there be danger of a fever coming on, that is to be guarded againſt, by giving powders of nitre, crabs eyes, diaphoretic antimony, and a little cinnabar. In caſes where faintings happen from an over repletion of the ſtomach, or from a weakneſs of the primæ viæ, with crudities lodged there, and attended with eructations, the uſe of digeſtive medicines is proper; and vomits ſhould be now and then given with them. When the faintings happen from the violence of emetic medicines, burnt wine, with the ſpices, is to be taken occaſionally in the day time, and a moderate doſe of the theriaca at night. When faintings have been brought on by violent paſſions, a vomit ſhould always be given; and when the operation of that is over, the nitrous and abſorbent medicines ſhould be given for a day or two, to prevent a fever, which often attends faintings from ſuch cauſes. When they happen to people exhauſted by repeated hæmorrhages, or by diarrhœas, profuſe ſweats, or other evacuations, the analeptics are the proper medicines to carry them off, and reſtorative electuaries, with coral and the like, are to be given; and the frequent eating of jellies, and other rich foods of that kind, recommended by way of prevention. The crudities of the primæ viæ muſt be cleared off by digeſtives and purging medicines; the mind muſt be unbent from ſtudy, and kept free from the violence of all paſſions; the neceſſary and habitual excretions muſt be, by all means promoted; and the patients ſhould always have ſalts, and volatile ſpirits about them, to uſe on occaſion of being threatened with a fit. Finally, moderate exerciſe is always to be adviſed. In the time of the fits ſtimulating glyſters are never to be given, before it has continued a quarter of an hour; and in general, where there remains any ſign of life, they are not neceſſary; and during the time of the fit, an internal medicine muſt be given with the greateſt caution; for they are apt to paſs into the aſpera arteria. People, juſt recovered out of a fainting fit, are not to be ſuffered to ſleep, if they ever ſo much deſire it; and after the paroxyſm is thoroughly over, a chearfulneſs of temper will do more towards a thorough cure, and the prevention of returns, than all the medicines in the world. If a fever comes on immediately after the fainting, then the uſe of a glaſs of wine, ſo beneficial on all other occaſions of this kind, is not to be allowed, but recourſe is immediately to be had to antifebrific medicines. Vomits are very proper in faintings occaſioned by paſſion or terror, in the time of eating a hearty meal, or immediately after it; for it is much better that the food ſhould be thrown up undigeſted, than remain ſo in the ſtomach.

Many people are ſubject to faintings after bleeding; in this caſe the arm ſhould be but gently tied up, and they ſhould never be blooded after a full meal, nor get up immediately after the bleeding is over.

It is very obſervable, that in faintings ariſing from a preſent cauſe, as in the juſt mentioned article of bleeding, the patient has at firſt ſome power of motion, though on a confuſed principle, and will often, before he faints, violently attempt to prevent the ſurgeon from tying up the arm; but in thoſe faintings, which are preſages of future miſchief, the patient always falls down at once to the ground, and has no power of motion, or ſenſe of it, in its approach. *Junker*'s Conſp. Med. p. 673, ſeq.

LIPPIA, in botany, the name of a genus of plants, the characters of which are theſe. The perianthium is roundiſh, flatted, and perpendicular, and on each ſide is enlarged by a ſmall margin, its tranſverſe diameter being greater than its length. This cup remains till the ſeed is ripened. The flower conſiſts of one petal, and is open and bellied, and its edge is divided into four ſegments, which are rounded at the ends, and the upper and lower ones larger than the ſide ones; the upper ſegment alſo bends back. The ſtamina are four filaments, two of which are longer than the others, but they are all ſhorter than the flower. The antheræ are ſimple. The germen of the piſtil is of an oval figure. The ſtyle is of the ſame length with the ſtamina, and ſtands in the ſame direction. The ſtigma is marginated. The fruit is a bivalve capſule of a compreſſed figure, and the ſeeds are contained two in its ſingle cell: theſe uſually alſo grow together. Many of the fructifications of this plant are uſually collected into a head. *Linnæi* Gen. Pl. p. 299.

LIPTOTES, in rhetoric, a figure, wherein, by denying the contrary of what we intend, more is ſignified than we would ſeem to expreſs: thus in the following verſe of Virgil,

Quid prodeſt, quod me ipſe animo non ſpernis, Amynta?

See *Voſs*, Rhet. l. 4. p. 183.

LIPYRIA, a name given by ſome medical writers to a dangerous ſpecies of fever, in which the outſide of the fleſh is cold, while the inſide is very hot.

LIQUAMEN *pyriticum*, in natural hiſtory, a name given by ſome authors to the liquid matter remaining in the pans in which the common vitriol is made; after which no more of that ſalt will ſhoot. It is otherwiſe called *liquamen of vitriol*. See VITRIOL.

LIQUAMUMIA, a term invented by ſome of the diſpenſatory writers to ſignify human fat.

LIQUID (*Cycl.*)—See FLUIDS, *Cycl.* and *Suppl.*

LIQUID *alum*. We have a ſort of *liquid alum* found with us. It is very well known, that the ſame ſtone will often produce vitriol, alum, and ſulphur. This is practiſed in the countries where theſe ſubſtances are prepared in greateſt abundance. The ſtones are firſt burnt, and the ſulphur melted from them; they are then expoſed to the air till they moulder in pieces, and then the vitriol is produced from them; and after all this is ſeparated, they afford *alum* on a ſecond burning and expoſing to the air. The ſame ſtones, which are of the marcaſite kind, as are uſed in Germany for this purpoſe, are found in our coal countries, as about Newcaſtle, and elſewhere; and nature with us ſometimes performs that which art does with them. When there have been ſubterraneous fires in any part of theſe countries, it is not uncommon to find *liquid alum* in the places where they have raged. It is a milky thick liquor, and is found lodged in cavities of the ſtrata of ſtone, when the ſulphur and ſal armoniac have been ſublimed away. The acid aluminous part of the matter will alſo take wing with a great degree of heat, leaving in the place of the liquor only a dry ſtyptic, and hard ſtony matter. The liquor itſelf is of a very ſtyptic taſte, and will yield one half its weight of pure cryſtalline *alum* on evaporation. Philoſ. Tranſ. N° 130.

LIQUOR (*Cycl.*) — *Fermented* LIQUORS. See the article FERMENTED *liquors*.

Teſt LIQUOR, among the dealers in brandy. See the articles SPIRIT and TEST *liquors*.

LIQUOR *mineralis anodynus*, the name given by Hoffman to a *liquor* of his own invention, famous at this time in Germany, and ſuppoſed by Burggrave to be made in this manner. Take oil of vitriol and Indian nitre, of each four ounces, diſtil the ſpirit gradually from this by a retort; pour two ounces of this ſpirit cautiouſly and ſucceſſively into fifteen ounces of ſpirit of wine highly rectified; diſtil this, and there comes over a very fragrant ſpirit. This is to be again diſtilled, to render it perfectly pure, adding firſt to it a ſmall quantity of oil of cloves, and a quantity of water, equal to that of the ſpirit; after this, as ſoon as the watery vapours begin to ariſe, the whole proceſs is to be ſtopped, and the ſpirit kept alone in a bottle well ſtopt. This has great virtues, as an anodyne, diaphoretic, antiſeptic, and carminative. It is not certain, that it is exactly the ſame with Hoffman's, that author having never publiſhed his manner of making it, but it appears the ſame to the ſmell and taſte, and has the ſame virtues.

LIQUORICE, *glycyrrhiza*, in botany. See GLYCYRRHIZA. This is a plant propagated in many parts of England to very great advantage. It delights in a rich light ſandy ſoil, which ſhould be three feet deep at leaſt; for the greateſt advantage conſiſts in the length of the roots. The greateſt quantities of it propagated in England are about Pontefract in Yorkſhire, and about Godalmin in Surry, though there is no inconſiderable quantity propagated in the gardens about London.

The ground deſigned for *liquorice* muſt be well dug, and dunged the year before, that the dung may be thoroughly rotted in it, and juſt before it is planted, the earth is to be dug three ſpades deep; and laid very light. The plants to be ſet ſhould be taken from the ſides or heads of the old roots, and each muſt have a very good bud, or eye, otherwiſe they are very ſubject to miſcarry; they ſhould alſo be about ten inches long, and perfectly ſound. The beſt ſeaſon for planting them is the end of February, or the beginning of March, and this muſt be done in the following manner. The rows muſt be marked by a line drawn acroſs the bed, at two feet diſtance, and the plants muſt be ſet in theſe by making a hole of their full depth, and ſomething more, that the eye of the root may be an inch below the ſurface: they muſt alſo be ſet at two feet diſtance from each other in each row. When this is done, the ground may be ſowed over with onions, which not rooting deep, will do the *liquorice* roots no injury for the firſt year. In October, when the ſtalks of the *liquorice* are dead, a little very rotten dung ſhould be ſpread over the ſurface of the ground. Three years after the time of planting, the *liquorice* will be fit to take up for uſe; and this ſhould be done juſt when the ſtalks are dead off; for if taken up ſooner, the roots are very apt to ſhrink greatly in their weight. The roots about London look browner than thoſe which have been propagated in a leſs rich ſoil, but then they are much larger, and grow quicker to their ſize. *Miller*'s Gardners Dict.

LIRIODENDRUM, in botany, a name given by Linnæus to a genus of plants called *tulipifera* by Cateſby, and others, and by us the *tulip tree*. The characters are theſe: the perianthium conſiſts of three oblong and concave leaves, which ſtand expanded, and reſemble petals, and fall with the flower. The flower conſiſts of ſix or nine petals, which are oblong, erect, and obtuſe, narrower at the baſe than in any other part, and all of the ſame ſize. The ſtamina are a great number of filaments, ſhorter than the flower, erect, and very ſlender, and affixed to the receptacle of the fructification. The antheræ are ſlender, and grow to the inſides of the ſtamina. The germina are numerous, and are ranged into the form of a cone. The ſtyles are ſhort, and the ſtigmata are ſimple. There is properly no fruit, but the ſeeds are laid together in an imbricated manner, ſo as to reſemble a ſtrobilus: theſe are numerous, pointed, and compreſſed at the baſe, and ending in a pointed ſcale. *Linnæi* Gen. Pl. p. 254. *Cateſby*, p. 48.

LISSA, or *Thynnus* LYSSA, in zoology, a name by which ſome authors have called the fiſh more uſually called *gliſſa*, a large ſea fiſh of the tunny kind. *Bellon.* de Piſc. p. 118.

LISTENING, in the manege, as when we ſay a horſe goes a *liſtening* pace. See ECOUTE.

LITCHI, in botany, the name of an Oriental fruit very common in China, and greatly eſteemed by the Chineſe. They ſay it is of the exact middle temperature between hot and cold, and that, beyond all other vegetables, it gives vigour and ſtrength to the body: they alſo commend it for the gravel, when properly prepared. This is a fruit that muſt be nicely watched, to find the time of its ripening, and when that comes it muſt be gathered, for it ſoon decays.

LITE, the name of a plaiſter much commended by the antients; it conſiſted of verdigreaſe, wax, and reſin. Whatever virtues this plaiſter poſſeſſed, might be probably found in the melilot plaiſter of the ſhops in general, till the late reformation made by the London Pharmacopœa, the colour being generally given by our wholeſale dealers with verdigreaſe, not with the juice of the herb from which it took its name.

LITERÆ *communicatoriæ*, in church hiſtory, letters granted by the biſhop to penitents, when the time of their penance was finiſhed, by which they were again received into the communion of the faithful. *Hofm.* Lex. in voc.

LITHAGOGI, an epithet given by ſome medical writers to ſuch medicines as work by urine, and are ſuppoſed to have the virtue of expelling the ſtone.

LITHANTHRAX, in natural hiſtory, is uſed as the name of the common pit coal. Among the learned, it is one of the claſs of opake inflammable foſſils, and is diſtinguiſhed from the reſt by being of a gloſſy hue, ſoft, friable, not fuſible, but eaſily inflammable, and leaving, after burning, a large reſiduum of whitiſh aſhes. We have three ſpecies of this foſſil in common uſe for our fuel in different parts of the kingdom. 1. A hard duſky black coal. This is in common uſe with us, under the name of Scotch coal (though that name is not reſtrained to this ſpecies alone, but the following is indiſcriminately known among the dealers by the ſame appellation) this is uſually of a rough and duſty ſurface, and is leſs gloſſy, when freſh broken, than any other coal. It burns briſkly, and turns wholly to aſhes, not leaving any cinders. There is a vaſt deal of this dug about Limington in Hampſhire, whence it is often called by the dealers Limington coal. 2. A hard gloſſy coal. This is ſometimes ſold in London with the former, under the name of Scotch coal, but it is more determinately known in many parts of the kingdom by the name of Welch coal. It is diſtinguiſhed from the others by its great hardneſs, and gloſſy black, where freſh broken, and is much eſteemed for burning with leſs ſmoak than any other kind; and in ſome parts of this kingdom, and generally in Wales, they uſe it to make malt, without any previous burning. The third is our common coal, too well known to need any deſcription, but diſtinguiſhed from all the others by its ſhattery friable ſtructure, and its great gloſs when freſh broken. *Hill*'s Hiſt. of Foſſ. p. 418. See COAL.

LITHARGE (*Cycl.*)—This preparation of lead is of great uſe in the roaſting the ſtubborn ores of gold, ſilver, and copper; for it melts all kinds of ſtones and earth into glaſs, ſooner than the metals; and by this means the metal, which is heavier, will fall through the glaſs, which is a thin and light ſubſtance, and will be collected under it into a regulus, with only a few duſty ſcoriæ adhering to it. But if it be copper that is thus ſeparated, a ſmall portion of it is always deſtroyed; and if gold or ſilver, a like ſmall portion is always lodged and detained in the ſcoriæ.

But as the *litharge* penetrates through all ſorts of veſſels, and while melting riſes into a ſcum, that often runs over their edges, the aſſayers never uſe it alone, but always mix with it ſuch ſubſtances as may give it a clammyneſs, ſuch as flints, ſand, clay, or the like: they mix two parts of *litharge* with one part of any of theſe ſubſtances, and add ſome nitre, or common ſalt, that the whole may run the more eaſily. They ſhut up the veſſels, which muſt be made very thick and ſolid, with a ſmall cover or lid, cut cloſe, and placing this in a wind furnace, they keep it in fuſion a quarter of an hour, looking at times into the aſh-hole, to ſee if the glaſs have not eſcaped through the veſſel, and run down thither. Very often it is found ſweating through the ſides of the veſſel, like water, and falling in drops into the aſh-

aſh-hole; and in this caſe, there is no way to preſerve the remainder, but to take the veſſel out of the fire.

When the whole is cool, the veſſel muſt be broke, and at the bottom there will be found a ſmall quantity of a regulus of lead, revived by means of the ſalt; in the middle the glaſs of lead, which muſt be kept for uſe; and at the top a ſaline cruſt, which is to be thrown away.

LITHIDIA, in natural hiſtory, the name of a large claſs of foſſils, including the flint and pebble kinds.

The *lithidia* are defined to be ſtones of a debaſed cryſtalline matter, covered by, and ſurrounded with an opake cruſt, and frequently of great beauty, and conſiderable brightneſs within, though of but a ſlight degree of tranſparence, approaching to the nature of the ſemipellucid gems, and like them found in not very large maſſes.

The bodies of this claſs are divided into two general orders, and under thoſe into three genera. The firſt order of the *lithidia* contains thoſe compoſed of a cryſtalline matter, but ſlightly debaſed, and that ever by one and the ſame earth, though diffuſed through them in different degrees, and always free from veins. The ſecond order is of thoſe of a more debaſed cryſtalline matter, blended with different portions of differently coloured earths.

Of the firſt of theſe orders there is only one genus, which is that of the common flint. See the article SILEX.

Of the ſecond order there are two genera. 1. The *homochroa*, which are of one plain and ſimple colour; and 2. the *calculi*, which are compoſed of cruſts of ſeveral different colours. Both theſe genera are compriſed under the common Engliſh name of *pebbles*. *Hill*'s Hiſt. of Foſſ. p. 505. See HOMOCHROA and PEBBLES.

LITHOBOLIA, λιθοβολια, in antiquity, a feſtival celebrated by the Træzenians in memory of Lamia and Auxeſia, two virgins, that coming from Crete to Træzene, in a time of tumult and ſedition, became a ſacrifice to the fury of the people, by whom they were ſtoned to death. *Potter*, Archæol. Græc. l. 2. c. 20. Tom. I. p. 412.

LITHOBOLIA, or *lapidation*, was alſo a common puniſhment inflicted by the primitive Greeks upon ſuch as were taken in adultery. *Potter*, l. 1. c. 25. Tom. I. p. 135.

LITHODÆMON, or LAPIS *dæmonum*, a name given by ſome authors to jet. See GAGATES.

LITHODENDRON, a name by which, according to Dioſcorides, many of the antients expreſs the common red coral. *Dale*'s Pharm. p. 54.

LITHOGENESIA, a term uſed by ſome authors to expreſs the formation and origin of ſtones. See STONE.

Henkell has thrown together ſome very ingenious thoughts on this abſtruſe ſubject, in a treatiſe publiſhed in the year 1734, where he builds no opinions on any other baſis than that of facts, obſervations of nature, and experiments.

He had lived twenty years in the neighbourhood of the mines in Miſnia, and had in that time perhaps ſeen more of the entrails of the earth opened, than any other man who ever viewed it with a philoſophic eye; and loving chemiſtry, had made experiments greatly more numerous than thoſe of any other writer on this ſubject: this may give ſome weight to his opinions, which differ greatly from thoſe of the generality of writers, and with which he modeſtly acknowledges himſelf not to be perfectly ſatisfied, as to all the operations of nature in this abſtruſe and hidden myſtery.

He ſuppoſes that the earth was at firſt every where ſoft on the ſurface, and that this ſoft matter, by degrees, hardened, and formed ſtones of ſeveral kinds. He ſeems to imagine, that the ſurface of the earth was a ſecond time all reduced to this ſoft ſtate by the univerſal deluge at the time of Noah, and that this matter, afterwards hardening into ſtones of various kinds, included the ſhells of ſea fiſhes, and other animal remains of the produce of the ſeas, in flints, in limeſtone, or in whatever other ſubſtance the matter among which they lay, chanced to harden. Thus may the ſea ſhells, found ſingly in the middle of hard flints, or lodged in vaſt numbers in the ſtrata of earth, limeſtone, or marble, be accounted for.

Waters of other kinds we are very ſenſible may carry particles of ſtony matter, and lodge them ſo in other bodies, as to form compleat hard and ſolid ſtones: this is frequently done at this day in the common petrifactions of wood, and in the ſtones generated in the bladders of animals. If this be allowed a property common to ſeveral fluids, and to water in ſeveral ſtates, there is no reaſon why it ſhould be denied to have exiſted in that of the univerſal deluge; and if that be acknowledged to have had a power of forming ſtones of various kinds, there is no wonder that ſtones of various kinds ſhould be found in the ſtrata, and on the ſurface of this earth, which was all covered by that water; or that the ſtones formed in that immenſe body of water ſhould ſhew, as they do in many inſtances, the ſeveral cruſts or coats laid one upon another, by the ſucceſſive applications of the matter of which they were formed.

If we conſider alſo the immenſe quantity of animal and vegetable bodies; ſome entire, others only ſeparated into parts which muſt have been mixed with, floating among, or lying upon the bottom of this immenſe bed of water, and that ſtones were continually forming out of this water at this time, we cannot wonder that theſe ſtones ſhould take up theſe parts of plants or animals, or concrete about them, or that we ſhould find ſhells and teeth of fiſhes, or pieces of wood, or leaves of plants preſerved in them.

Nor is water alone the agent that may have made theſe changes in the once ſoft parts of the earth's ſurface; we can by fire reduce the pooreſt earths into a ſort of glaſs, a hard tranſparent body, not a little reſembling the nature of flint or the other ſemi-pellucid ſtones. Fire is of power to do great things in the bowels of the earth, and the way to learn what changes it may there make in ſtones, is to try its effect upon the ſeveral different kinds of ſtones and earths here. By experiments of this kind we learn, that of the ſeveral ſpecies of ſtones in their preſent ſtate ſome are reduced to a friable maſs, and finally to powder by the force of fire, others are hardened by it, others are melted, and become a kind of glaſs: and by experiments, on the other foſſile ſubſtances, it appears, that the original matter of all ſtones has been earth, either of the nature of chalk, marl, or clay; and that many of them have been greatly altered by receiving metallic or other mineral matter into their earthy matter, at the time of their formation; and all ſeem to have owed their change into their hard ſtate, either to fire alone, or to ſaline, oily, metallic or ſaline ſulphureous matters, either conjunctly with the force of this agent, or alone. *Henkell*'s Lithogeneſia.

Thoſe ſtones, which were formed in their preſent ſtate, immediately out of fluids, have been produced either by congelation, a rude coalition, or cryſtallization; and that all the gems have been once fluid, is plain, from their imperfections in certain inſtances, as from their containing grains of ſand, or the like extraneous ſubſtances, firmly embodied in them. If theſe, the hardeſt of all ſtones, have been once fluid, there is no reaſon to diſpute, but that all the other kinds may have been ſo, which are leſs hard and leſs perfect.

LITHOLABON, a name given by ſome chirurgical writers to an inſtrument uſed in the operation of lithotomy, it is a forceps intended for taking hold of the ſtone.

LITHOMANTIA, λιθομαντεια, in antiquity, a ſpecies of divination performed with ſtones. Sometimes the ſtone, called *ſiderites*, was uſed: this they waſhed in ſpring-water in the night by candle-light; the perſon that conſulted it, was to be purified from all manner of pollution, and to have his face covered: this done, he repeated divers prayers, and placed certain characters in an appointed order; and then the ſtone moved of itſelf, and in a ſoft, gentle, murmur, (or as ſome ſay) in a voice like that of a child, returned an anſwer. By a ſtone of this nature, Helena is reported to have foretold the deſtruction of Troy. *Potter*, Archæol. Græc. l. 2. c. 18. T. 1. p. 351.

LITHOMARGA, (*Cycl.*) *Stone marle*, a name given by ſome authors to a ſparry ſubſtance highly debaſed by earth, which is found in great plenty in the caves of the Hart's foreſt in Germany, and uſed there in medicine, under the name of the *unicornu foſſile*, or foſſile unicorn's horn, from its ſometimes emulating that figure. *Hill*'s Hiſt. of Foſſ. p. 360.

LITHONTRIPTICON *Tulpii*, the name of a famous diuretic medicine, invented by Tulpius, and given with great ſucceſs in caſes of the ſtone, but requiring great judgment and caution in the adminiſtring it.

The preparation is this: take a dram of cantharides without their wings, and a dram of leſſer cardamoms without their huſks, powder them fine, and pour upon them an ounce of rectified ſpirit of wine, and half an ounce of ſpirit of nitre: ſet them to infuſe, without heat, for five or ſix days, ſtirring them from time to time. The vial muſt not be ſtopped cloſe; becauſe, if it be, the continual fermentation will burſt it. The doſe is from fourteen to fifteen, or twenty drops, in a glaſs of wine and water, it is to be taken in a morning, an hour after the eating a meſs of broth, and may be repeated for three or four days.

It is remarkable, that this mixture never ceaſes fermenting for many years; but if it be too faſt corked will break the glaſs; if but ſlightly ſtopped, it only throws out the cork with an exploſion. Mem. Acad. Par. 1709. p. 358. Edit. Par.

LITHOPAEDION, a word uſed by ſome medical writers to expreſs a recent calculous concretion in the bladder.

The ſtone, in this ſtate, is ſuppoſed to be more eaſily worked upon by medicines, than when of longer ſtanding; but the cruſtated ſtructure of theſe ſtones, when examined plainly, ſhews that they arrive at their bigneſs only by ſlow degrees, and therefore, that there is properly no ſuch thing as a recent calculous concretion capable of giving pain.

LITHOPHYTON, *Coral*, in botany, the name of a genus of ſea plants, the characters of which are theſe. They are of a ſort of horney texture, or of a middle degree of hardneſs between that of ſtone and wood, and have uſually a ſort of bark, either compoſed of fibres, and reſembling the bark of trees, or elſe merely cruſtaceous, and reſembling a tartarous cruſt. See Tab. 1. of Botany, Claſs 17.

The ſpecies of *lithophyton*, enumerated by Mr. Tournefort, are

are theſe. 1. The white ſea *lithophyton* called ſhrubby coralline. 2. The purple ſea *lithophyton*, called purple ſhrubby coralline. 3. The yellow punctated *lithophyton*. 4. The white knotty *lithophyton*. 5. The *lithophyton* with a white verrucoſe coat. 6. The grey rugoſe *lithophyton*. 7. The ſmall white rugoſe *lithophyton*. 8. The pale yellow *lithophyton* with a ſmooth bark. 9. The great, grey American *lithophyton* with a punctated bark. 10. The ſmaller yellow American *lithophyton* with a punctated bark. 11. The great black American *lithophyton* beſet with tubercles pointing upwards. 12. The ſmall white American *lithophyton* beſet with erect tubercles. 13. The white American *lithophyton* reſembling the leaves of polypody. 14. The American *lithophyton* with compreſſed branches reſembling pods. 15. The black woody coral *lithophyton*. 16. The black, hairy, or briſtly *lithophyton*. 17. The white, hairy, or briſtly *lithophyton*. 18. The larger black, hairy, briſtly *lithophyton*. 19. The circumvoluted black ſetaceous *lithophyton*. 20. The *lithophyton* variegated with yellow and roſe colours. 21. The *lithophyton* variegated with white and roſe colour. 22. The great purple reticulated *lithophyton*. 23. The ſmaller purple reticulated *lithophyton*. 24. The great yellow reticulated *lithophyton*. 25. The great reticulated *lithophyton*, yellow on one part and white on the other. 26. The tall tamariſk like erect *lithophyton*. 27. The knotty and reticulated *lithophyton*. 28. The prickly ferulaceous *lithophyton*.

The nature and origin of *coral* has been as much diſputed as any one point in natural knowledge. The moderns can neither agree with the antients about it, nor with one another; and there are, at this time, among the men of eminence in thoſe ſtudies, ſome who will have it to be of vegetable, ſome of mineral origin, and others only the caſes of ſome of the animal kingdom.

It were eaſy to overthrow all that has been advanced toward the proving it to belong to the animal kingdom. Its being of mineral origin, has gained much more ground, however, and the excellent and truly great Dr. Woodward, has ſtood up as a very vigorous champion for this opinion.

It may not be improper to obſerve, that it was of abſolute neceſſity, to this gentleman's ſyſtem, of the ſolution of all foſſils at the deluge, that *coral* ſhould be proved to be one; becauſe, he gives it as a certainty, that all the foſſile *corals* have been in a ſtate of ſolution; which, according to his own ſyſtem, had they ever been vegetable bodies they could not have been. But if his ſyſtem be juſt, in this point, there are abundant proofs in the foſſile world, whatever he might think to the contrary, of *coral*'s being a vegetable; for there are unqueſtionable authorities in the bodies themſelves for proving, that they never have been in a ſtate of ſolution; and muſt have been, therefore, according to his ſyſtem, a vegetable body; for we frequently find numbers of *corals* in our clay and chalk pits, which have upon them the very ſhells of the balani marini, which had affixed themſelves to them while they were growing in the ſea, and yet remain on them in their natural poſtures.

It might be poſſibly objected, that ſhells being affixed to *coral*, could be no proof of its not having been once diſſolved, and having concreted again: ſince, if it concreted in a fluid, where theſe ſhells were ſuſpended in great abundance, they might have been affixed to it by being waſhed againſt it, during that ſecond concretion. But, in this caſe, the ſhells muſt have been lodged in, as well as upon the *corals*; which is never found to be the caſe; and they would alſo have been laid on it in any poſture that happened readieſt; whereas thoſe found remaining on the foſſile *corals* are ever found in their natural poſitions, and living poſture. Nor are we to imagine, that the foſſile *corals* have been in a ſtate of ſolution, becauſe they are often of a ſtony hardneſs, or have matter very different from the coralline in their conſtitution; for we find this frequently the caſe in foſſile wood, ſome of which is almoſt wholly formed of ſtony matter, and a vaſt deal wholly of that of the pyrites; yet this being a vegetable body, beyond contradiction, cannot have been in a ſtate of ſolution, according to the Woodwardian ſyſtem. *Hill*'s Theophr. p. 97.

To this, it may be added, that after that gentleman has been at all poſſible pains, to prove the marine *corals* truly of foſſile origin, and formed, by an appoſition of particles, not by vegetation; yet a chemical analyſis of them, obliges him to own, that they have ſomething of a vegetable matter in them. And how are we to ſuppoſe that this vegetable matter comes there? When we can be informed how any thing of a vegetable matter can be produced, otherwiſe than from ſeeds; we may ſuppoſe, according to this gentleman's ſyſtem, that *corals* are formed by a mere appoſition of particles waſhed out of the neighbouring rocks; but till then we certainly have a much more rational account of their ſeveral elegant figures, in the concluding, that like all other ſubſtances, which are compoſed of vegetable matter, they are vegetables.

One of the moſt remarkable ſpecies of the ſmall *lithophyta*, we have any where an account of, is that deſcribed by Mr. Lewenhoek, though without any particular name in the Philoſophical Tranſactions.

The firſt notice this gentleman took of this water plant was accidental; for ſtanding by the ſide of a canal, whoſe water was very clear, he obſerved ſomething glitter in it as it paſſed along; examining this with the beſt diligence by the naked eye, could give no farther idea of its figure, but that of its being an aſſemblage of ſmall fibres. On taking up ſome of this water from the canal into a glaſs tube, there was perceived ſome few of theſe floating branches of matter, which ſtuck to the ſides of the glaſs, and could not be removed from thence, though the water was ſhook about them. On viewing theſe with a microſcope, they are always found very beautifully divaricated, and repreſent, in figure, either ſome of the large and branched *lithophyta*, which grow to rocks in the ſea, or the boughs of a tree, with numbers of ramoſe twigs upon them. They grow in the very ſame manner from the ſides of the tube that theſe ſea plants do, from ſtones and other things under the water. The part which ſeems in the place of a root is a ſmall roundiſh flatted particle, applied firmly againſt the ſides of the glaſs; from this ariſes the main ſtem, and that again divides into a great number of finer branches. Phil. Tranſ. N° 286. p. 1430.

Theſe plants do not faſten themſelves to the glaſs on the inſtant of the waters being received into it; but ſometimes, when firſt taken up, there appear nothing of them, and on the ſtanding twenty or thirty hours of the water in the glaſs, the ſmall particle attaches itſelf to ſome part of the ſides, and from this the reſt of the plant grows in its due form and order.

When theſe plants have arrived at a certain ſize, they do not increaſe any farther; but there is an appearance at their extremities, very much reſembling the flowers of ſome plants, and which might very naturally be miſtaken for the proper flowers of theſe: they appear like little roſes, compoſed of four round bodies, each reſembling the petals or leaves of flowers; theſe alſo reſemble flowers, in this particular, that they ſoon decay and fall off. But it would be a very great error to ſuppoſe them ſuch, for they are in reality no part of the plant, but only a ſort of ſmall animals, which find this a proper place for their reſiding, and conſtantly fix themſelves thus to the extremities of the twigs of theſe plants, where they propagate their ſpecies, and then periſh.

It is not uncommon to ſee a ſmall round body endued with animal motion, fall from one of what appear the petals of this flower, and go where it pleaſes. It is not only on the ſummits, or twigs of theſe tips, that theſe animals live; they are alſo found very frequently on their ſides, and even on the main trunk; and they in the ſame manner propagate their ſpecies; but it is only on theſe ſummits of the branches, that they are ſo diſtinctly viſible.

It is remarkable, that the ſucceſſive growth of this plant, from its firſt appearance, is ſo very ſudden, that it is ſcarce poſſible to find it in a time of increaſe, but it is uſually found at its full growth as ſoon it is obſerved at all. All the ramifications of it are ſo extremely minute, and fine, that it requires a good microſcope to ſee them, with any degree of preciſion, but toward the top it always divides itſelf it into ſome extreme branches, which are ſo very ſlender, that they even eſcape the microſcope itſelf; theſe, however, are terminated, at their ſummits, by the ſame animalcules, four in a cluſter, and reſembling flowers.

The weight of theſe animals bends down the branch they adhere to, ſo that they often appear out of the line of the reſt of the boughs, but they are known to belong to the plant; though the branches to which they are attached, are wholly inviſible, becauſe they never remove their places; and if the whole little plant be ſhook, by putting the water in a ſlight motion, theſe flowers, as they appear to be, are always moved in the ſame manner as the reſt of the branches are, and never can be ſeparated from them, unleſs by ſuch a motion of the water, as will wholly deſtroy the plant. Theſe branches are in a continual vibration while in the water; and it is a very pleaſant ſight to obſerve the motion of the cluſters of animals at the ends, as well of the viſible as of the inviſible branches. But the way to come at a perfect view of the whole plant, with all its ramifications, is to pour all the water gently out of the glaſs, and the whole plant will then be laid ſideways along the glaſs, and all its ramifications diſtinctly traced. The whole plant, though it appear bright and glittering in ſome lights, yet it is in general of the colour of a branch of the oak.

The ingenious obſerver of theſe plants, ſeems in ſome doubt, as to their being in reality of vegetable origin; he was apt to ſuppoſe them mere combinations of particles, hanging one to another, in chains, like filings of iron, by means of a magnet: but as there is, in this caſe, no ſuch external force to put them in this arrangement; and as the whole growth and appearance of them reſembles very exactly that of a larger *lithophyton*, there is no doubt of their being in reality ſmall plants of the ſame genus with the larger.

The antients extolled *coral* as a cordial and alexipharmic; alſo as a cooling and aſtringent medicine. They uſed it externally, as well as internally: we uſe it only internally, and that as an aſtringent and abſorbent in diarrhœas, the fluor albus, and hæmorrhages, but in none of theſe caſes alone,

alone, being always prescribed with other medicines of the same intention.

Dispensary writers have given us receipts for a great many preparations of *coral*, as magisteries, tinctures, syrups, salts, &c. none of which enter the present practice.

LITHOPHYTON *terrestre*, a name given by Mr. Marchant to a species of plant, approaching to the mushroom kind, and resembling that fungous production, compared by some authors to the clusters of the Æthiopian pepper.

Mr. Marchant's curious observations on this little regarded subject, give many valuable hints towards the explaining the vegetation of great numbers of the other plants, whose fructification is less obvious to the eyes, and may lead to a knowledge of many of the fructifications of sea plants; which all our enquires, on other foundations, have as yet left us unacquainted with.

This gentleman having cut down a maple in his garden, found after some months a number of little tubercles, of a fungous substance on the stump; they somewhat approached to the figure of an olive, with its stalk, and were then of a brown colour.

The outside of these tubercles was porous, and they appeared somewhat spongy though rigid, and on squeezing a little there issued out of the pores a small quantity of an aqueous humidity; the inside, when it was cut open, appeared composed of fine and closely compacted fibres.

These plants, as they may properly be called, stood the whole winter, and in the following spring were found to be grown to their full size, which was about an inch and half long, and half an inch thick; they stood in clusters, of near twenty together, and resembled a set of irregular and ill proportioned fingers, and when pressed were found to be much harder than while young. Mem. Acad. Par. 1711.

The pores on their surface, which still continued visible, and were very different from any known plant of the mushroom kind, gave the observer hopes of a discovery of something new in the fructification, and the stump of the tree being now perfectly dry, and unable to furnish any more nourishment to them, he cut them all off, with part of the stump, and carried them to his closet for observation.

Each plant was nearly circular in figure, and terminated in a roundish or pointed end, and had at several distances two or three circular lines, by means of which it resembled a toe or finger with its joints. The outer skin was now become wrinkled, and the pores were all surrounded with a sort of rosaceous rim, and within them there often appeared a number of fine slender filaments, having the appearance of stamina.

On cutting the plants vertically, these pores were all found to correspond with certain round cavities within the plant, which were lined with a black matter. These cavities were formed in a white fibrous matter; all the fibres of which took their origin at the center, and tended to the circumference, and of these was the whole inner substance of the plant composed.

Some months after this, on cutting more of these plants, the round cavities, in some of them, were found filled with a black matter, in form of a powder, composed of small granules, and looked as if filled up with very fine gunpowder. The help of a microscope shewed this matter to be composed of small black particles, resembling the seeds of the vanilla pods, only vastly less, and not so shining.

On the whole, Mr. Marchant, notwithstanding the external resemblance of this plant to some of the mushrooms, thinks, that when closely examined, it approaches more to the nature of the marine *lithophytons*.

It grows, as he observes, on hard bodies, without any appearance of roots in the manner of those sea plants. Its bark, or outer covering, seems a sort of coriaceous or tartareous substance, much more resembling the bark of the sea *lithophytons* than that of any land plant; and its pores surrounded with rosaceous rims, and answering to certain cavities containing seeds within the body of the plant, bring it to a near resemblance with the sea *lithophytons*, though they do not at all resemble any known land plant.

The *corals* and other *lithophytons* of the sea have all of them flowers on their surface, surrounded with the same sort of rosaceous rim with the pores of this plant: in the sea plants the flowers are indeed more distinguishable than in this land vegetable, but their seeds are too small for the nicest eye to distinguish; these, however, in the land plant, are large enough to be easily seen; and thus between both kinds, the whole secret of the fructification both of these two, and of multitudes of other plants of the same class, both sea and land ones may be understood. Mem. Acad. Par. 1711.

LITHOPHOSPHORUS *fuhlensis*, in natural history, a name given by some authors to a species of spar, which, when it has been heated over the fire, retains a property of giving light in the dark. This is a quality that seems more or less in degree to be inherent in several sorts of spars. *Woodw.* Cat. Foss. V. 2. p. 11.

The Bononian stone is a fossile of this kind, and several of the green spars of the German mines, have been found to possess this quality in some degree.

The *lithophosphorus* here meant, has the appearance of a common purple spar. There is another kind, of an opake white colour, so common about the edge of the Hart's forest, that it is used as a flux for some of the copper ores, readily burning into lime, and then acting as an alkali, and absorbing their sulphurs; this kind, when moderately heated, shews an elegant light on being put into a dark room, but when it is heated too much it bursts to pieces.

LITHOPTERIS, *stone fern*, in natural history, a name given by Mr. Lhuyd, to some of the fossile plants of the fern kind. See PLANTS *fossile*.

LITHOSPERMUM, *gromwell*, in the Linnæan system of botany, the name of a genus of plants, the characters of which are these. The cup is an oblong erect perianthium, divided into five segments, and remaining after the flower is fallen. The several segments are tapering and hollowed. The flower consists of a single petal of the length of the cup, formed into a cylindric tube, with its edge divided slightly into five erect obtuse segments; the mouth of the flower is perforated. The stamina are five extremely short filaments, the antheræ are oblong, and situated in the opening of the flower. The pistil has four germina, the style is slender, and of the length of the tube of the flower. The stigma is obtuse and bifid. The cup remains to supply the place of a fruit, containing in its bottom four smooth, very hard, and pointed seeds. *Linnæi* Gen. Plant. p. 57.

The characters of this genus, according to Tournefort, are these. The flower consists of one leaf, and is fashioned like a funnel, and divided into segments at the edge. The cup is divided to its very base, and from it there arises a pistil, which is fixed in the manner of a nail in the lower part of the flower, and surrounded with four embryos, which afterwards become so many roundish hard polished bodies, remaining till ripe in the cup, which becomes enlarged for the containing them. *Tourn.* Inst. p. 137.

The species of *gromwell*, enumerated by Mr. Tournefort, are these. 1. The smaller upright *gromwell*. 2. The great creeping broad leaved *gromwell*. 3. The common smaller field *gromwell*. 4. The smaller field *gromwell* with blueish yellow flowers. 5. The small blue flowered marsh or water *gromwell*. 6. The smaller marsh *gromwell* with white flowers. 7. The small alpine woolly *gromwell*.

There have been several plants referred to this genus, by authors, which do not at all belong to it. Of this number are, 1. The Job's tears. See LACRYMA *jobi*. 2. The red rooted field *gromwell*, a species of *bugloss*. See BUGLOSS. 3. The *lithospermum linariæ folio*, a species of *thymelæa*; and another plant of the same name, a species of flax. See FLAX and LINUM.

The seeds of the *common gromwell*, which are hard, white, and of a delicate polish, are recommended as very powerful diuretics, and some have pretended to cure the stone solely by the use of them. The good women have an opinion of them also, as promoters of the menses and of labour.

LITHOSTROTA, among the antients, pavements made up of small pieces of cut marble of different kinds and colour. *Pitisc.* Lex. Ant. in voc.

LITHOSTROTION, in natural history, the name of a species of fossile *coral*, composed of a great number of long and slender columns, sometimes round, sometimes angular, jointed nicely to one another, and of a starry or radiated surface at their tops. These are found in considerable quantities in the northern and western parts of this kingdom, sometimes in single, sometimes in complex specimens. See Tab. of Fossils, Class 7.

LITHOXOS. See COLAPTICE.

LITHOXYLUM, in botany, a term used by Linnæus, to express a heterogeneous substance on sea plants, which has fructifications in impressed points.

LITHUS, a name given by some authors for the magnet.

LITUITES, in natural history, a name given by some authors to a figured fossile, found in the shell of the sea fish, called *lituus*, a concamerated shell of the conic kind, running strait for a great part of its length, and after that twisting into a spiral form.

LINUFAR, in botany, a name used by some of the writers of the middle ages, to express the water lilly. The Arabians gave this genus of plants the name of *nilufar*, and this word *linufar* is only formed of that by transposing some of the letters. See NILUFAR.

LITOTES, Λιτότης, in rhetoric. See LIPTOTES.

LITTER (*Cycl.*)—When a horse comes tired into a stable, fresh *litter* has the virtue always to occasion him immediately to stale. This is known to be a very great advantage to a horse in a tired state; and when the *litter* is old and dirty, it never has any such effect upon him. If the owner knew how refreshing it is to a horse to discharge his urine on his return from labour, they would be more careful in giving him all means and occasions of it than they do. This staling after fatigue prevents those obstructions in the neck of the bladder or urinary passages, which horses are too subject to. The bladder being often inflamed by the long retention of the heated urine in it, and the creature perishing by it. Some of our farmers act wrong in this case of the *litter*, not through carelessness or accident, but by principle; they order the old *litter* to be left a long time in the stables, that

it may be impregnated with more and more of the urine, &c. of the animal, and be made richer for the fields. It is not to be doubted but the manure is greatly improved by this; but the damage done to the horſe by it is greatly over-proportioned to the benefit. The heat which the dung acquires, by thus lying together, ſpoils the feet of the creature, and makes it unfit for any ſervice, and occaſions many diſtempers, which are ignorantly continued and increaſed by the continual addition of heat in the fermenting dung, till at length the horſe periſhes.

LITUITES, a name given to the ſtones formed in the lituus-ſhell. See LITUITUS, infra.

LITUUS, in natural hiſtory, a name given to a genus of ſhells of the claſs of the polythalamii, or thoſe which conſiſt of ſeveral concamerations or chambers, parted from one another by ſhelly diaphragms, and communicating with one another by means of a ſiphunculus, which runs through the whole length of the ſhell. To this general character of the claſs, it is to be added, that the *lituus* is always a conic ſhell, running in a ſtrait line from the mouth, through a great part of the length, and from the end of this ſtrait part to the extremity, twiſting into the ſhape of a cornu ammonis, or ſpiral ſhell of that kind.

It is thus called from its reſembling the inſtrument called *lituus* among the antients. The ſtony matter often found caſt in this ſhell, and reſembling all its lineaments, is called by authors *lituites*, as thoſe ſtones formed in the pecten *pectinites*, and thoſe in the echini marini *echinitæ*. *Breynius* de Polythalamiis.

LIVE, at ſea, is uſed to ſignify the ſame, as being able to endure the ſea, without overſetting or ſuffering any damage; thus, they ſay of a boat, that it will *live* in any ſea; that is, it will endure, or bear with, any ſea.

LIVE *caves*, in mining, a phraſe uſed by many people, to expreſs ſuch caverns in the earth as have but little communication with the external air, and are found to abound with mineral productions. The workers in the lead mines on Mendip hills, diſtinguiſh the numerous caverns in thoſe places into the *live* or *quick caves*, and the *dead caves*; the latter are ſuch as admit the air into them two or three ways, and are barren of any thing valuable; the others have only one paſſage, and that but narrow and winding, and generally lie at great depths. Theſe abound in numerous elegant productions. They almoſt always contain ore in ſome form or other, and uſually abound in elegant ſpars. Mr. Beaumont mentions one of theſe in the Philoſophical Tranſactions, which lay at thirty-five fathom perpendicular depth, in which there was found a fine liver coloured earth, of the nature of bole armenic, which in many places ſhoot up in a wonderful manner into a ſort of ſpires of the height of three or four inches, formed with ridges and furrows, and uſually covered with ſpar at the top; ſometimes all the way down, to the bed of earth. Phil. Tranſ. N° 129.

LIVER (*Cycl.*)—Thoſe things which increaſe or leſſen the proportion of the weight of the heart to the weight of the body, do at the ſame time leſſen or increaſe the proportion of the weight of the *liver* to the weight of the heart. (See HEART.) And conſequently, when an animal grows fat from much food, much ſleep and little exerciſe, its heart leſſens, and its *liver* increaſes; and, on the contrary, when an animal grows lean from little food, little ſleep and much exerciſe, its heart increaſes and its *liver* leſſens. When the weight of the heart is too little for the weight of the body, the *liver* enlarges beyond its juſt magnitude, and preſſes too much on the contiguous parts, particularly on the ſtomach, inteſtines, and diaphragm, and by the preſſure leſſens the capacities of the ſtomach, inteſtines, and thorax; whence the appetite grows leſs, the periſtaltic motion leſs, and reſpiration more difficult and uneaſy. Dr. *Robinſon*'s Diſſ. on the Food, &c. of Hum. Bod.

The weight of the *liver* in proportion to the quantity of blood, is leſs at a medium in wild beaſts than in tame, and in round fiſh than in flat fiſh. Ibid. p. 111.

In moſt chronical diſeaſes the *liver* is larger than in health, as has been found by diſſections. And it ſeems probable, that the weight of the heart, and quantity of blood, in thoſe diſtempers, are both leſs than in health; moſt chronical diſeaſes ariſing from too much food and too little exerciſe, leſſen the weight of the heart and quantity of blood, but increaſe the *liver*. Hence, when this part is grown too large by intemperance and inactivity, it may be leſſened and brought to a healthful magnitude by temperance and exerciſe. It may indeed alſo be emptied by art, but nothing can prevent its filling again, and conſequently ſecure good and conſtant health, but an exact diet and exerciſe. Thus purging and vomiting may leſſen the *liver*, but cannot prevent its increaſing again, ſo long as perſons live too fully and uſe too little exerciſe. Ibid. p. 119.

Each lobule of the *liver* conſiſts of an external, friable, yelloviſh-red cortical ſubſtance, and of an internal ſoft, pulpous, medullary part. The medullary ſubſtance is the pulpy extremities of the biliary ducts, proceeding from the cortical part. See Mr. *Ferren* in Hiſt. de l'Acad. des Scienc. 1733.

The blood in the hepatic artery has bile ſecreted from it, and its remaining blood is conveyed by veins into the vena portarum, where a ſecond ſecretion is made from it. Beſides, the ſecretion of bile made from the hepatic artery and vena portarum, Mr. Ferren has ſeen biliary ducts coming from the left ligament of the *liver*, the diaphragm coats of the gall bladder, and part of the vena cava; all which are viſible upon injecting coloured liquors into the trunks of the hepatic ducts. The bile is equally bitter and ſtrong in the ſmalleſt biliary canals, as in the larger trunks. The thick yellow bile, ſometimes found in the trunks, being the cyſtic bile, remounting from the common into the hepatic duct, on which account the hepatic is often larger than the common duct. The lymphatic veſſels may be traced to the extreme branches of the vena portarum, and to the biliary ducts, by injecting liquors into the larger trunks of the external lymphatics. *Ferren* ubi ſupra.

The *liver* in fiſhes, is generally very large in proportion to the reſt of the body, and is generally placed in the left ſide of the abdomen; but this is not the caſe in all. In figure and proportion it differs greatly in the different kinds; it is in ſome ſimple, and undivided, as in the pleuronecti, petromyza, ſalmons, &c. In ſome it is divided into two lobes, as in pearch and moſt of the cartilaginous kinds. As alſo in the torpedo, the ſquali, the lamiæ, the perilophus, the paſtinacha of authors, the clupeæ, the eels, the ſtromateus of Rondeletius, the dolphins, and ſome of the ligyri. In ſome it is divided into three lobes, as in the cyprini, ſome of the gadi, the ſcorpæna, the rays, the ſquatina, the tunny, the gaſteroſteus, and the faber, or Solen doree. *Artedi* Ichthyol.

In regard to proportion, it is in ſome fiſh much ſhorter than the abdomen; as in pearch, clupeæ, oſmari, coregones, ſalmons, eſoces, and the greater part of fiſhes. In ſome it is nearly of the ſame length with the abdomen, as in the gaſteroſteus, &c. The gall bladder, which is an appendage to the *liver*, is never wanting in any kind of fiſh, but it is very differently ſituated in the different kinds.

In the cartilaginous fiſhes, it is immerſed in the ſubſtance of the *liver*; in other fiſh, it ſometimes adheres cloſely to the lower part of it, as in the eſoces, cyprini, pearch, and the greater part of fiſhes. In others it is hung to the *liver* by a long neck, as in the muræna, conger and ammodytes.

Abſceſs in the LIVER. Abſceſſes in the *liver* have been uſually accounted mortal, and wholly beyond the reach of remedy; we have, however, in the hiſtory of the academy of Paris, an account of a very remarkable one, perfectly cured by Mr. Souiller, a ſurgeon of Montpelier, in the following manner. The patient was a young gentleman of about fourteen, who had contracted a violent fever, by putting his feet while very hot into ſome cold water. The conſequence of this fever was a large tumor in the middle of the epigaſtric region, which raiſed the xiphoide cartilage, and puſhed it two inches out of its place, and terminated below, two inches under the navel. The common means failing to do any ſervice, the patient was ſent to Montpelier, where the beforementioned ſurgeon opened the tumor; on this the *liver* was found abſceſſed in its anterior or convex part, and a cavity was found there capable of receiving half a hen's egg, and there iſſued out of it on a gentle preſſure a thick and bloody, ſometimes a yelloviſh bitter and inflammable matter. This laſt was true bile, and both with this and with the other diſcharge, there always came away ſmall portions of the ſubſtance of the *liver*, and the ſmall extremities of numbers of veſſels might be perceived, ſome ſanguineous, ſome bilious.

The great buſineſs for the ſurgeon, in this caſe, was the getting the matter out of the abſceſs, the preventing its remaining in the ſubſtance of the *liver*, or being again received into the blood. For this purpoſe, Mr. Souiller invented a particular canula, made very ſoft at the end, where it was to be paſſed into the *liver*, and having there ſix lateral holes capable of receiving the matter. This canula was of ſilver, and under its other end there was placed a thin plate of lead, to receive the matter which was diſcharged through it, which would otherwiſe have excoriated any part on which it fell. The abſceſs, which was, by this means, always kept perfectly clean, ſoon began to heal; the fever went off by degrees, the patient every day grew into a better ſtate; and finally, the wound was cicatrized, and all perfectly cured in a very ſhort time. Hiſt. Acad. Par. 1730.

One thing obſervable in the courſe of the cure, was the refutation of a common opinion, that the bile is neither bitter nor coloured, till it gets into the gall bladder; for, in this caſe, it was diſcharged yellow and bitter from the wounded veſſels of the *liver*.

LIVER, in antiquity, was much uſed in divination. See the article HEPATOSCOPIA.

LIVER-*wort*. See the article LICHEN.

LIVERYMEN, (*Cycl.*) in natural hiſtory, a name given by authors to a ſort of caterpillars, remarkable for their variety of colours. Theſe are of that claſs of caterpillars, which live in communities, and build themſelves neſts to defend them from the injuries of the weather. Theſe may be ranked among the proceſſionary kinds, always following one ano-

another with great order in their marches; but what is moſt ſurpriſing, is, to ſee them ſtraggle very far from their neſts, and this often, by ſeveral repeated windings and turnings without loſing their way. Their art, in doing this, deſerves notice, and is the ſame by which Theſeus got out of the labyrinth of Crete. Phil. Tranſ. N° 470. p. 459.

Theſe creatures ſpin all the way that they go. The firſt ſpins a thread as he crawls along, the ſecond follows him in the ſame tract, and a third follows that, and ſo on, all ſpinning as they go; and their threads being all laid cloſe together, by means of their all purſuing the ſame track, they at length furniſh a fine ſhining track all the way they have gone. Theſe make a ſort of path, and ſeveral of theſe paths are ſeen running ſeveral ways from the neſt, which is the common center of them all. By means of theſe paths the creatures are able, at pleaſure, to run back directly to the neſt through all the ways they have gone from it.

If any one of theſe congeries of threads be broken in any part, all the caterpillars that are beyond that part, will be found at a terrible loſs, and running about in different directions, when they come to the place, without any knowledge of the true road to the neſt, till they are led by ſome one, who happens to find the way to the other broken end of the path, and by drawing his threads acroſs the breach, unites the path again; as ſoon as this is done, all the reſt go on the ſame road, and arrive at the neſt.

Theſe, and ſome other caterpillars, have very ſingular taſtes as to food. They firſt of all prey upon the ſhell of the egg out of which they were hatched, and ſome not content with this ſmall quantity of a food they judge ſo delicious, will eat the ſhells of other eggs of the ſame ſpecies that lie near them, and are not yet hatched. Other caterpillars are very fond of their own ſkins, eating up their own exuviæ as a very delicious food. They ſeize upon theſe as food the moment they are thrown off; and this is the more ſingular, as it is well known that the caterpillar, when it has newly thrown off its ſkin, is very feeble, and is not in a condition to eat for ſome time, till its neceſſary organs are hardened in this new ſtate. Yet theſe ſpecies not only immediately devour their tough ſkin, but even the hard parts of their former covering, as the ſkull, ſcales, legs, &c. nay, ſome are obſerved to ſeize firſt of all upon theſe hard parts, and to eat them up before they touch any other. Phil. Tranſ. N° 470. p. 461.

LIVIA, in zoology, a name given by ſome authors to a particular ſpecies of pigeon called *pelæas* by the Greeks. It is very like the common pigeon in ſhape, but is ſomewhat ſmaller, its legs are red, and its beak white, except that it is a little purpliſh about the noſtrils.

It is all over grey, but that the ends of its tail feathers are black, and there is a purpliſh and greeniſh variegation about the ſides and ſhoulders. And its wing feathers have ſome white variegations, as has alſo the lower part of the neck. It is ſuppoſed, by Mr. Ray, and ſome others, to be the ſame with the *faſſarollo* of the Italians, or COLUMBA *rupicola*. *Geſner* de Avib. See the article SASSAROLLO.

LIVONICA *terra*, in the materia medica, a kind of fine bole uſed in the ſhops of Germany and Italy, of which there are two ſpecies, the yellow and the red. The diſtinguiſhing characters of which are theſe.

The yellow livonian earth is a pure and perfectly fine bole, of a ſhattery friable texture conſiderably heavy, and of a dull duſky yellow, which has uſually ſome faint bluſh of reddiſhneſs in it. It is of a ſmooth ſurface, and does not ſtain the hands; it adheres firmly to the tongue, and melts freely in the mouth, leaving no grittineſs between the teeth, and ferments not at all with acid menſtrua.

The red livonian earth is an impure bole, of a looſe texture, and of a pale red. It is of a ſmooth ſurface, breaks eaſily between the fingers, and does not at all ſtain the hands. It melts freely in the mouth, has a very ſtrongly aſtringent taſte, but leaves a grittineſs between the teeth, and does not ferment with acid menſtrua.

Theſe earths are both dug out of the ſame pit, in the place from whence they have their name, and in ſome other parts of the world. They are generally brought to us made up into little cakes, and ſealed with the impreſſion of a church, and an eſcutheon with two croſs keys. In Spain and Portugal they are much uſed, ſometimes ſingly, ſometimes mixed together, and are good in fevers and in fluxes of all kinds. The red is the more powerful aſtringent. *Hill*'s Hiſt. of Foſſ. p. 12.

The Spaniards and Portugueze make alſo a light kind of earthen ware of them.

LIXIVIAL *ſalts*. See the artice SALT.

LIXIVIUM (*Cycl.*)—LIXIVIUM *martis*, a new form of medicine introduced into practiſe in the late London Diſpenſatory. The manner of preparing it is to ſet the matter remaining in the retort after the ſubliming the *flores martis*, in a damp place, where by means of the moiſture of the air it will run into a liquor. *Pemberton*'s Lond. Diſp. p. 216. See the article FLORES *martiales*.

LIXIVIUM *ſaponarium*, *ſoap lees*, a liquor now much uſed in medicine in caſes of the ſtone; and when intended for this uſe, is to be made ſomething leſs ſtrong than for the ſoap boiler's uſe, and ſhould be prepared in the following manner. Take Ruſſia pot-aſh, and quick-lime, of each an equal quantity; throw water on them by ſmall quantities till the lime is ſlaked; then throw on more water, and ſtir the whole together, that the ſalt of the aſhes may be diſſolved: after ſome time pour the liquor filtered through paper, if needful, into another veſſel. A true ſtandard wine pint of this liquor meaſured with the greateſt exactneſs, ought to weigh juſt ſixteen ounces. If it be found on trial to be heavier than this; for every dram it exceeds that weight, an ounce and a half of water is to be added to each pint: but if it be lighter than this, it muſt be either boiled to this ſtandard, or elſe poured upon freſh lime and aſhes.

The makers of ſoft ſoap with us prepare their *lees* ſo much ſtronger than this, that to be reduced to this ſtandard, it requires to be diluted with an equal quantity of fair water. *Pemberton*'s Lond. Diſp. p. 183.

LIXIVIUM *tartari*, the name given in the London Diſpenſatory to the liquor called, by moſt authors, oil of tartar per deliquium. This is made of tartar which is to be calcined to a whiteneſs, and then ſet in a damp place, where it will liquify by the moiſture of the air. The liquor thus procured is more pure, than if the calcined tartar were diſſolved directly in water. *Pemberton*'s Lond. Diſp. p. 181.

LIZARD, in zoology. See LACERTUS.

Devil-LIZARD, or *Fly-catching* LIZARD. See MABOUJAS.

LIZIERE, the ſame with *berme*, *foreland*, or *relais*. See the article BERME, *Cycl.*

When this ſpace is covered with a parapet, it is called a *fauſſe-braye*, or low wall. See FAUSSE-BRAYE, *Cycl.*

LLECH, the welch name for a kind of monumental ſtone found in that country. See PILLAR.

LOACH, in ichthyology, the Engliſh name of a fiſh, called alſo the *groundling*, and by the Germans the *ſmorle* or *ſmorling*. It is a ſpecies of the cobitis, and is diſtinguiſhed by Artedi, by the name of the ſmooth ſpotted cobitis with the cylindric body. See COBITIS.

LOAD (*Cycl.*)—LOAD, in mining, is uſed, eſpecially in the tin mines, for a vein of ore. See TIN.

It is to be obſerved, that mines in general are veins or cavities within the earth, whoſe ſides receding from or approaching to each other, make them of unequal breadths in different places, ſometimes forming large ſpaces, which are called *holes*; theſe holes are filled like the reſt with ſubſtances; which, whether metallic, or of any other nature, are called *loads*. When the ſubſtances forming theſe *loads* are reducible to metal, the *loads* are by the Engliſh miners ſaid to be alive, otherwiſe they are termed dead *loads*.

In Cornwal and Devonſhire the *loads* all hold their courſe from eaſtward to weſtward, though in other parts of England they frequently run from north to ſouth. The miners report, that the ſides of the *load* never bear in a perpendicular, but always overhang either to the north or ſouth. The mines ſeem to have been ſo many channels, through which the waters paſs within the earth, and like rivers they have their ſmall branches opening into them, in all directions; theſe are by the miners termed the feeders of the *load*. Moſt mines have ſtreams of water running through them, and when they are found dry, it ſeems owing to the water having changed its courſe, which it ſeems ſometimes to have been compelled to by the *load*'s having filled up the courſe, and ſometimes to have fallen into other more eaſy channels. Phil. Tranſ. N° 401. p. 404.

The *load* is frequently intercepted by the croſſing of a vein of earth, or ſtone, or ſome other metalline ſubſtance, in which caſe it generally happens, that one part of the *load* is moved to a conſiderable diſtance on one ſide. This tranſient *load* is, by the miners, termed a *flooking*; and the part of the *load* which is moved, is by them ſaid to be heaved. This heaving of the *load* would be an inexpreſſible loſs to the miner, did not experience teach him, that as the *loads* always run on the ſides of the hills, ſo the part heaved is always moved toward the deſcent of the hill; ſo that the miner working toward the aſcent of the hill, and meeting a flooking, conſiders himſelf as working in the heaved part; wherefore, cutting through the flooking, he works upon its back up the aſcent of the hill, till he recovers the load, and *vice verſa*.

Sometimes, though not univerſally, the mine is lined with an intermediate ſubſtance between the *load* and itſelf. This is properly ſpeaking the wall of the *load*; though, in the common acceptation of that term, it ſignifies either ſuch intermediate ſubſtance, or the ſide of the mine where the *load* immediately unites itſelf to it. The ſprings in theſe parts are always hard, as they abound in ſtony or other mineral particles. From theſe particles, which are ſuſtained in large quantities in all theſe places, we frequently find the paſſages quite choaked up; the ſtony matter ſeparated from the water of the ſpring, gradually concreting to the walls of the mine, till it has in time blocked up the whole cavity, with a maſs of ſpar, of a coarſe texture and irregular figure; at other times this ſtony matter concretes more diſtinctly; in which caſe it ſeems to be governed in its formation by a

plaſtic

plaſtic power, or peculiar modus of attraction, by which the particles before ſuſpended in the water are brought together under a peculiar form. This power in general ſo exerts itſelf over the harder particles of matter ſuſtained in the water, as to arrange them into the form of an hexangular pyramid, terminating an hexangular column of four, five, or more times its length. Thus is the common rock cryſtal formed; and when this power is unmoleſted, the columns of this body are carried to a great ſize.

Theſe cryſtals are of different tranſparences and colours, as the pure matter, of which they are compoſed, is more or leſs diſengaged from the mixture of foreign particles; or as thoſe, or other ſubſtances, are found capable of imparting their tinctures, or other qualities to them: but when the plaſtic particles are more numerous, there ſeems reaſon to believe that theſe very plaſtic particles, before they are fixed, are ſubject to the controul and direction of any fixed plaſtic particle, within the verge of whoſe activity they happen to move. Notwithſtanding which, after they are once fixed, they exert their own plaſtic powers, and, in conjunction with the firſt plaſtic principle, govern the future concretion in ſuch manner, as to form a ſeemingly irregular cryſtal, though compoſed of two more regular cryſtals.

Theſe cryſtalline concretions exert a ſtrong attraction on many metallic ſubſtances, ſo as frequently to contain lead, copper, and other metals, in very conſiderable quantities, embodied in them.

The waters of mines are, beſide cryſtal, impregnated alſo with a great quantity of ſulphureo-ſaline particles, and theſe are in ſome of a vitriolic, and in others of an arſenical nature. The firſt of theſe, when pure, concrete into white cubes, reſembling grains of ſilver; while the other, or arſenical ſulphur, concretes into yellow cubes, reſembling grains of pure gold. Both theſe concretions, whether ſingle, or in large confuſed cluſters, are called by the miners *mundick*. The ſulphureo-ſaline principle of concretion ſeems of the ſame nature with the plaſtic power in the formation of cryſtals; and theſe bodies, like the others, are in the ſame manner found ſometimes ſimple, ſometimes compound. On the ſides of theſe the concretion may always be obſerved forming itſelf into threads, which in three ſides run in different directions, but are always ſimilar in the oppoſite ſides. Philoſ. Tranſ. N° 401, p. 403.

LOAD is alſo uſed for nine diſhes of ore, each diſh being about half a hundred weight. *Houghton*'s compl. Miner in the Explan. of the Terms.

Maſter LOAD, among miners. See MASTER *load*.

LOADSTONE (*Cycl.*)—*Armed* LOADSTONE, one that is capped, caſed, or ſet in iron or ſteel, in order to make it take up a greater weight, and alſo to diſtinguiſh its poles readily.

The armour of a *loadſtone*, in figure of a right angled parallelogram, conſiſts of two thin pieces of ſteel or iron, in figure of a ſquare, having a thickneſs proportional to the goodneſs of the ſtone; for if a weak ſtone has a ſtrong armour, it will produce no effect; and if the armour of a ſtrong *loadſtone* be too thin, it will not produce ſuch an effect, as if the armour were thicker. A convenient thickneſs for the armour is found by filing it thinner and thinner, until you find its effect to be the greateſt poſſible.

The armour of a ſpherical *loadſtone* conſiſts of two ſteel ſhells faſtened to one another by a joint, and muſt cover a good part of the convexity of the ſtone. This muſt be alſo filed away by degrees, until the effect of the *loadſtone* is found greateſt.

It is very wonderful, that the armour of a *loadſtone* will ſo much augment its effect, that good ſtones, after they are armed, will lift up above one hundred and fifty times more than before. And even indifferent ones, that weigh only three ounces unarmed, will, when armed, lift more than ſeven pounds.

LOAM, (*Cycl.*) in natural hiſtory, the name of a claſs of foſſile bodies, the characters of which are theſe. They are compound earths compoſed of diſſimilar particles, hard, ſtiff, denſe, harſh, and rough to the touch, not eaſily ductile while moiſt, readily diffuſible in water, and uſually compoſed of ſand and a tough viſcid clay.

Of this claſs there are two genera. 1. The *thrauſtomicthes*; and 2. the *gliſchromicthes*. The firſt are compoſed of ſand and a leſs viſcid clay, and are of a friable or crumbly texture. The ſecond are compoſed of ſand and a more viſcid clay, and are of a more tough and viſcid texture. *Hill*'s Hiſt. of Foſſ. See the articles THRAUSTOMICTHES and GLISCHROMICTHES.

LOBLOLLY, a ſea-faring diſh, otherwiſe called *burgoo*. See the article BURGOO.

LOBS, in mining, are ſteps that aſcend or deſcend within the mines, as ſtairs up to and down from a chamber. *Houghton*'s compl. Miner in the Explan. of the Terms.

LOBUS *echinatus*, in the materia medica, a name by which ſome authors have called the *bonduch*, or Bezoar nut. *Ger. Emac.* p. 1554.

LOCH, (*Cycl.*) in the materia medica, a name given by Aviſenna, and others, to the gum lac. They call it alſo *keikem* and *kenkem*, and are too apt to confound it with the cancamum, ſandarach, and other gums, with which they made their ſeveral ſorts of varniſh. See CANCAMUM.

LOCHE, or *ſea* LOCHE, a name uſed in ſome parts of England for the muſtela, called in other places, particularly in Cornwall, the *whiſtle fiſh*. *Willughby*'s Hiſt. Piſc. p. 121. See MUSTELA.

LOCHIA (*Cycl.*)—The flux of the *lochia*, or of blood and humors from the uterus, about the time of parturition, is of two kinds; the one called *legitimate*, which happens after the excluſion of the fœtus, at its proper time; the other *abortive*, which attends miſcarriages, and does not indeed follow them, but either precedes, or happens immediately in the act of abortion, and that uſually in a very violent and terrible manner. The legitimate is alſo often too copious.

Signs of it. The legitimate *lochial* flux is an excretion of blood from the genitals for eight, ten, twelve, or fourteen days after child-birth, and ſometimes for a longer time than that. During the firſt days, pure blood, grumous, and coagulated, is diſcharged, or at leaſt a fluid coloured with blood; after the fourth or fifth day, this diſcharge is attended with a diſagreeable, and ſometimes with a plainly fœtid ſmell; in the ſucceeding days the humor becomes leſs bloody, and more and more yellowiſh, and after this it gradually becomes pale and watery, till it loſes all colour and ſmell: all this while alſo the flux becomes more and more moderate in quantity, till at length it wholly ceaſes of itſelf. This is the natural ſtate of this flux; but if the ſecundines are too long retained, or if a part of them be torn off and left in the uterus, then the flux frequently exceeds its due bounds, and many pains and ſpaſtic motions are felt about the uterus, and throughout the abdomen.

In the *lochial* fluxes attending abortions, the blood uſually flows out gently and moderately before the act, then it comes on, during the excluſion of the fœtus, with great violence. Sometimes alſo, when violent paſſions of the mind have preceded, it comes on with all this violence at the firſt attack, before the fœtus is excluded: this is followed by the fœtus, or falſe conception, which ever is in the uterus, and this is attended uſually with faintings, and with violent pains in the belly. Perſons ſubject to frequent abortions, have leſs trouble and pain with them than others, and the *lochial* flux is with them in leſs quantity.

The too great flux of the *lochia* is a thing of dangerous conſequence, and the perſons principally ſubject to it are thoſe of plethoric habits, and ſuch as are ſubject to violent paſſions; ſuch as are uſed to much wine, or other ſtrong liquors, and to high ſeaſoned foods, as alſo ſuch as have omitted bleeding at the proper times during their being with child, and ſuch as have been accuſtomed to too copious fluxes of the menſes. In caſes of abortions, thoſe are moſt of all ſubject to immoderate fluxes of them, who have not been duly treated, or properly purged and cleanſed, after a former lying in. The principal occaſions of large fluxes of the *lochia* after child-birth, are either a plethoric habit, or the uſe of violent medicines to promote delivery, or the retention of part of the ſecundines in the uterus.

Prognoſticks from it. The flux of the *lochia*, when moderate and regular, is of the utmoſt benefit to the perſon, and the ſuppreſſion of it is ever attended with danger. This is, of all other fluxes of blood, the moſt ſubject to exceed the uſual quantity; and in abortions, after the third month of pregnancy, is uſually greater than in parturitions at the full time. When this flux is immoderately great, the patient's ſtrength is conſumed by it in a very little time; and when it is not thus violent for a continuance, but returns, after ſhort intervals, with violent effects, it is a ſign that the womb is not properly cleanſed, and the perſon is afterwards frequently either barren, or ſubject to repeated abortions. In caſes of a threatned abortion, when there has once been a copious diſcharge of blood, there ſhould be no attempt made to retain the fœtus in its place.

Method of treating. When the flux of the *lochia* is moderate, it requires no aſſiſtance from the phyſician, but nature is to be left to her own courſe; if they flow too immoderately, the ſame means are to be uſed as in caſes of violent fluxes of the menſes. The medicines which have power to quiet the violent emotions of the blood are to be often repeated, ſuch are nitre, the alkaline abſorbents, as crabs eyes, and the like, and a little cinnabar: if theſe are inſufficient, recourſe is to be had to the milder aſtringents, ſuch as the *crocus martis antimonialis*, and tincture of ſalt of ſteel, and the decoction, or extract of the common yarrow. The abortive flux of the *lochia* is to be treated in the ſame manner with the too violent one attending parturition at the full time. The abortion is always to be haſtened, and the fœtus, mole, or whatever, to be taken out as ſoon as poſſible, when the flux becomes violent, leſt the patient faint and periſh under it. The way to prevent an immoderate flux of the *lochia* in parturition, is to bleed often during the time of pregnancy, and if neceſſary, this may be done even juſt before delivery. The proper ligatures on the belly, after the excluſion of the fœtus, are alſo of great ſervice in

this view, and the keeping perfectly quiet, and avoiding much talking, are greatly conducive to it. The return of abortions is principally guarded againſt by a ſufficient cleanſing of the womb at the time, and by bleeding in the arm about that time of pregnancy, at which the abortion happened before.

Child-bearing women are to be conſidered after parturition, as wounded perſons, in whom fevers are very eaſily brought on, and every thing that makes any commotion in the blood is to be carefully avoided by them. Aſtringent medicines are to be avoided as much as poſſible in theſe caſes; and where they are found abſolutely neceſſary, the milder only are to be given, and attemperating medicines muſt always be given between; and if this is neglected, inflammatory fevers, hectics, and often dropſies, are the conſequence. *Junker*. Conſpect. Med. p. 60, ſeq.

Suppreſſions of the LOCHIA. Theſe are either plenary or partial. In the plenary ſuppreſſion there is no blood diſcharged at all, or if there was a beginning of a proper diſcharge, it ſtops during the firſt day. In the partial ſuppreſſion, or as it is called by ſome writers, the imminution of the *lochia*, they keep their period of eight, ten, or twelve days, but are in ſo ſmall a quantity, as to be ſcarce allowable under the name of a flux of this kind. In the judging of this imminution, it is neceſſary to conſider the natural ſtate and conſtitution of the patient; and if in the time of her not being pregnant, ſhe have been uſed to but ſmall diſcharges by the menſtrual flux, there is not to be expected a large flux of the *lochia*; if the perſon has had children before, enquiry is alſo to be made into the quantity diſcharged at thoſe times, and from that is to be determined what is to be expected. The perſons ſubject to ſuppreſſions of the *lochia* are principally thoſe of a plethoric habit, and whoſe veins are ſmall; thoſe who are of a timid diſpoſition, and eaſily ſubject to fear, ſorrow, and the like paſſions. Theſe are principally the natural cauſes of a ſuppreſſion of the *lochia*, but to theſe are to be joined many accidental and adventitious ones; ſuch as the ſudden cooling of the body, the giving very forcing medicines to forward the delivery, and the improper uſe of hot medicines. Theſe are often given to promote the *lochia*, when they are judged not to flow in ſufficient quantity, and they often produce a plenary ſuppreſſion of them, inſtead of a cure. Myrrh, ſaffron, and the volatile ſalts, when given injudiciouſly, are of this tribe. Sometimes alſo ſuppreſſions of them are brought on by violent paſſions, and by the repeated and forcible efforts the perſon has been obliged to make during a hard labour.

Prognoſticks from it. There is no kind of hæmorrhage, the ſuppreſſion of which is attended with ſuch great, or ſuch imminent danger, as this of the *lochia*. The natural ſuppreſſions are uſually either from an over quantity of blood, with a ſpiſſitude of it, or from a turgeſcence and violent emotion of it. In the firſt caſe, the ſymptoms which ſucceed are leſs violent, in the latter they are more terrible. Of the firſt kind are inquietude, toſſing and turning about, anxiety, and ſtraitneſs of the præcordia, pains of the head, and want of appetite. In the latter caſe, fevers of the inflammatory kind often immediately enſue, and ſometimes miliary and purple fevers, with great malignity; ſome alſo immediately fall into deliriums of the moſt violent kinds, and into quinſeys. Theſe are the ſudden effects of theſe ſuppreſſions; but beſide theſe, there are often left coagulations, or grumes of blood in the uterus; theſe prevent future conception, or prevent the fœtus, when conceived, from receiving due nouriſhment, and bring on, by that means, abortion; and when this is not the caſe, they ſubject the patient to various hyſteric and convulſive diſorders, and frequent faintings.

Method of cure. When the ſuppreſſion is but partial, and the *lochia* do flow, though in too ſmall a quantity; in this caſe the more gently ſtimulating medicines are to be given, and even theſe only in very ſmall doſes. The tincture of myrrh and ſaffron, and eſſence of amber, may in this caſe be mixt and given, twenty, or twenty-five drops at a doſe twice a day: theſe often have a very ſpeedy and happy effect. When the ſuppreſſion is plenary, and eſpecially when it has already held the patient ſome days, it is vain to expect to bring on a regular diſcharge of them at once by ſtimulating medicines; the cauſes of the ſuppreſſion are then to be enquired into, and the febrile emotions of the blood allayed by febrifuges, and by nitrous medicines; and when the blood is reſtored to its proper ſtate, they will again begin to flow regularly. The common method of bleeding to bring them on again, is ſeldom attended with much ſucceſs; when indeed the patient has omitted bleeding at proper times during pregnancy, this ſometimes proves ſerviceable; but rarely when the blood is faulty in quality, rather than in quantity. The generality of the world are afraid of nitre in theſe caſes, leſt it ſhould bring on diarrhœas, but it is only an immoderate uſe of it, that is liable to this objection; for given in doſes of four, five, or ſix grains, it will rather prevent, than occaſion a diarrhœa in theſe caſes. *Junker*'s Conſp. Med. p. 80. See DELIVERY.

LOCHIAL *fevers*, a term uſed by medical writers to expreſs ſuch fevers as ariſe from ſuppreſſions, or imminutions of the *lochial* diſcharges in lying-in-women, or from any other irregularities during the time of that diſcharge. *Junker*'s Conſp. Med. p. 252.

LOCKER, in a ſhip, a kind of box or cheſt made along the ſide of a ſhip, to put or ſtow any thing in.

LOCKMAN, in the Iſle of Man, the officer who executes the orders of the government, much like our under ſheriff. *King*'s Deſcript. Iſl. Man, p. 26.

LOCKS, in the manege, in French called *entravons*, are pieces of leather two fingers broad, turned round, and ſtuffed on the inſide, to prevent their hurting the paſtern of a horſe, round which they are clapped. An *entrave* is compoſed of two *entravons* joined by an iron chain, ſeven or eight inches long.

LOCKSPIT, among miners, is the ſmall cut, or trench made with a ſpade of about a foot wide, to mark out the firſt lines of a work.

LOCRIAN, in antient muſic, the ſeventh ſpecies of the diapaſon. It was alſo called *hypodorian*, and *common*. See the article DIAPASON.

LOCUS, (*Cycl.*) among antient muſicians, was uſed to ſignify the interval between one degree of acuteneſs, or gravity of ſound, and another. The Greeks uſed the word τοπος in the ſame ſenſe, for the ſpace through which the voice moved. *Wallis*'s Append. ad Ptolem. Harmon. p. 153. *Ariſtoxenus*, p. 3, 8, 9, 10. Edit. Meibom. See MOTION.

This motion the Greeks diſtinguiſhed into two kinds; one continued, συνεχη, the other disjunct, διαστηματικη. Inſtances of the firſt kind are in ſpeaking; of the ſecond in ſinging; and this they called melodic motion, or what was adapted to ſinging. Ptolemy in like manner divides ſounds of unequal pitch, ψοφους ανισοτονους, into continued and diſcrete, and ſays the firſt kind are improper, and the ſecond proper, for harmony.

Ariſtides Quintilianus [a] interpoſes a third kind of motion between the two here mentioned, ſuch as that of a perſon reciting a poem.—[[a] Id. p. 6. Edit. Meibom.]

LOCUS, the *locuſt tree*, in botany, is uſed by ſome for the tree whoſe juices afford us the gum anime of the ſhops. *Dale*'s Pharm. p. 338.

LOCUS, in rhetoric, a topic, or head, whence arguments are brought to prove the queſtion in hand. Some of theſe are called *loci communes*, or common topics, as being common to all ſorts of arguments; thus, whether a thing be poſſible or impoſſible, more or leſs than ſomething elſe, &c. *Voſſ.* Rhet. l. 1. p. 12.

Beſide theſe, three others are mentioned by rhetoricians *juſtum*, *utile*, & *honeſtum*; to which ſome add *jucundum*; but Voſſius will have this laſt to be comprehended under *utile*. Id. ibid. p. 32, ſeq.

LOCUST, *locuſta*, a genus of inſects comprehending the *locuſt*, ſimply ſo called, the ſeveral ſpecies of other *locuſts* and graſhoppers, with the crickets of the houſe and field.

Willughby obſerves, that in theſe animals there are always more males than females, which is contrary to the order of nature in other inſects, where the females are much the moſt numerous; and Swammerdam obſerves, that it is only the males that make a noiſe, which he ſays they do by a ſwift vibration of their wings, either againſt one another, or againſt their legs. See Tab. of Inſects, N° 3. ſeq.

The nympha, or worm of the *locuſt*, ſcarce at all differs from the creature in its perfect ſtate. It moves and eats in the nymph ſtate, and all the viſible difference is, that the wings are not expanded as in the perfect *locuſt*, but are gathered up in a ſmall compaſs, and form four little buttons on the ſhoulders. Swammerdam obſerves, that the want of attention to this particular in former writers, had been the occaſion of a very unneceſſary multiplication of names; as Aldrovand, Johnſon, Mouffet, and others, have deſcribed theſe *locuſts* in the nymph ſtate under the names of *bruchi*, *attebali*, and *aſelli*, ſuppoſing them to be ſo many diſtinct ſpecies of animals. It is obſerved, that toward the end of ſummer the males are very tender of the females, three or four of them being frequently ſeen gathered about one of that ſex, and ſeeming to do her all the kind offices in their power, fluttering about with their wings, and rubbing her with their fore legs. The males are always more briſk and nimble than the females; and among all the kinds of *locuſts*, there are a great many naturally imperfect; particularly many have only one hinder leg, yet theſe hop almoſt as well as the reſt. *Swammerd.* Bibl. Natur. *Ray*'s Hiſt. Inſ. p. 60.

We have in England but very few inſects of this kind. The ſpecies mentioned by Mr. Ray are theſe. 1. The common ſmall green *graſhopper*. This has articulated antennæ, very flexile, and nearly half an inch long; its belly is green; its outer wings brown, and its inner ones membranaceous, tranſparent, and reticulated. Its back is divided into eight or nine rings, and is of a browniſh colour. The hinder legs are very long, and ſtrong. There is a great variety in the colour of this ſpecies, ſome have more, ſome leſs green, and ſome have a little yellow about them. 2. The larger

grey

grey winged *graſhopper*. This is diſtinguiſhed by having grey wings ſpotted with black. 3. The ſmall brown *graſhopper* with a long rhomboidal head. The antennæ in this ſpecies are very ſhort. 4. The great green *graſhopper*. This is accurately deſcribed by Joan. de Muralto in the German Ephemerides, and Mr. Ray has taken the whole into his hiſtory. The antennæ are long and ſlender, the eyes black and prominent, and the breaſt is remarkably high and narrow. 5. The great Spaniſh *locuſt* of a browniſh grey with ſpotted wings. This is about three inches long, and is the ſpecies lately found in England. 6. The great African *locuſt* with ſtriated ſhoulders. This differs from the former only in theſe ſtreaks. 7. The great African *locuſt*. This is four inches long, and is of a green colour. Under the ſhoulders there are only ſmall rudiments of wings, and it has two ſtrong yellow forceps's under the tail, which terminate in black points. Thoſe ſpecies of this genus commonly called crickets, ſee under the article GRYLLUS. Ephem. Germ. Anno 12. Obſ. 16. *Ray*'s Hiſt. Inſ. p. 64. See alſo CICADA and HARVEST-*fly*.

The country of the Coſſacks or Ukrain is, in dry ſummers, much infeſted with ſwarms of *locuſts* driven thither by an eaſt or ſouth eaſt wind. The number of theſe inſects is ſo great, that they darken the air, and devour all the corn of the country. They lay their eggs in autumn and then die. It is ſaid that each of theſe creatures lays two, or three hundred eggs, which hatching the enſuing ſpring, produce ſuch a number of *locuſts*, that they do far more miſchief than before, unleſs the rains fall, which kill both the eggs and the inſects, or unleſs a ſtrong north or north weſt wind ariſes, which drives all into the Euxine Sea. The hogs of the country are fond of theſe eggs, and devour great quantities of them. In the night, when theſe inſects reſt on the ground, they cover it to the height of three or four inches. If a wheel paſs over them they emit an intolerable ſtench. Phil. Tranſ. N° 8. p. 137. where Monſieur Beauplan's deſcription of Poland, and Thevenot's Voyages, Part I. are referred to.

Water LOCUST, *locuſta aquatica*, the name given by authors to a ſpecies of water inſect, ſomewhat reſembling the *locuſt* kind in ſhape. It is about three inches long, its tail an inch and quarter, and its legs are of different lengths; the anterior pair being the ſhorteſt of all. Its body is ſlender, and its fore-legs are always carried ſtrait forward, ſo as to reach beyond the head in the form of antennæ. Theſe, as well as the other legs, end each in two claws. The eyes are ſmall and not very prominent, and the upper wings are cruſtaceous, the under ones membranaceous, thin, and tranſparent. The middle joint of the leg is ſuch, that the creature can only move them upwards, not downwards, and there runs an acute tongue or proboſcis under the belly, as is the caſe in the water ſcorpion and notonecta. *Ray*'s Hiſt. Inſ. p. 59.

LOCUSTA *pulex*, a name given by Swammerdam to a genus of inſects, deſcribed ſince by Mr. Ray, under the name *cicadula*. See CICADULA.

LOCUSTELLA, in zoology, the name of a ſmall bird of the lark kind. It is ſmaller than the common wren, and of a browniſh yellow colour ſpotted with black; its tail is long and brown, and its belly and thighs are variegated with oblong ſtreaks of a blackiſh brown; its legs are very long, ſlender, and brown. It feeds on flies, and makes the ſame ſort of noiſe that the graſhopper does, only much louder; and uſually, as it ſings, ſits on the ſummit of ſome prickly ſhrub, and vibrates its wings about very briſkly. *Johnſon* de Avibus.

LOESELIA, in botany, the name of a genus of plants, called alſo *royenia* by Houſton. The characters are theſe: the perianthium is one leaved, and tubular; it is ſhort, and divided into four ſegments, and remains after the flower is fallen. The flower conſiſts of one irregular petal. It is formed into a tube of the length of the cup, and its verge is divided into five equal ſegments, all bending toward one ſide, and of an oval figure. The ſtamina are four filaments of the length of the flower. Two of theſe are ſhorter than the others. The antheræ are ſimple, and the germen of the piſtil is oval. The ſtyle is ſimple, the ſtigma thick, the capſule is of an oval figure, divided into three cells, and containing a number of ſeeds of an angular figure. *Linnæi* Gen. Pl. p. 306. *Houſton* A. A.

LOG (*Cycl.*)—LOG, in the Jewiſh antiquities, a meaſure which held a quarter of a *cab*, and conſequently five ſixths of a pint. There is mention of a *log*, 2 Kings vi. 25. under the name of a *fourth part of a cab*. But in Leviticus the word *log* is often met with, and ſignifies that meaſure of oil, which lepers were to offer at the temple after they were cured of their diſeaſe.[—*Calmet*. Dict. Bibl. Levit. xiv. 12, 24.—]

Dr. Arbuthnot ſays, that the *log* was a meaſure of liquids, the 72^{d} part of the *Bath* or *Ephah*, and 12th part of the Hin, according to all the accounts of the Jewiſh writers. *Arbuth*. Tables of antient coins, *&c.*

LOG-*book*, at ſea, a book ruled and columned like the *log-board*. It is uſed by ſome to enter the *log-board*'s account in every day at noon, with the obſervations then made; and from hence it is corrected and entered into the journals.

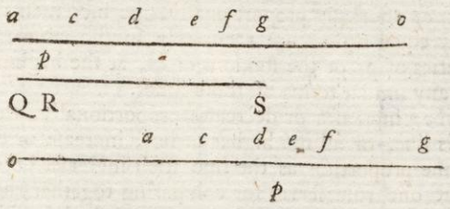
LOG-*wood*, the wood of a tree called by Ray *arbor ſiliquoſa floribus papilionaceis*. It is deſcribed by Breynius under the name of *criſta pavonis coronillæ folio ſecunda*, and *erythroxylum indicum ſpinoſiſſimum coluteæ foliis, floribus luteis, ſiliquis maximis*. It grows both in the Eaſt and Weſt-Indies, but no where ſo plentifully as on the coaſt of Campeche. See CAMPECHE, *Cycl.*

Beſide its uſe among dyers, it is found to be an excellent aſtringent, and is given, with ſucceſs, in form of extract in diarrhœas.

LOGARITHM (*Cycl.*)—*Logarithms* are not only of great uſe for facilitating computations in arithmetic and trigonometry, but have been found of extenſive ſervice in the higher geometry, particularly in the method of fluxions. The nature and geneſis of *logarithms* is explained in the Cyclopædia, after the manner made uſe of in moſt elementary treatiſes; but it may be proper to add ſomething more on this ſubject from Mr. Mac Laurin's Treatiſe of fluxions, who has explained the nature and geneſis of *logarithms*, agreeably to the notion of their firſt inventor Lord Napier.

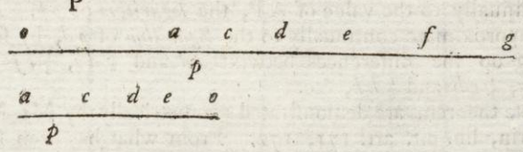
Logarithms, and the quantities to which they correſpond, may be ſuppoſed to be generated by the motion of a point. If this point moves over equal ſpaces in equal times, the line deſcribed by it increaſes equally.

Again, a line decreaſes proportionally when the point that moves over it deſcribes ſuch parts in equal times as are always in the ſame conſtant ratio to the lines from which they are ſubducted, or to the diſtances of that point at the beginning of thoſe times, from a given term in the line. In like manner, a line may increaſe proportionally, if in equal times the moving point deſcribes ſpaces proportional to its diſtances from a certain term, at the beginning of each time. Thus, in the firſt caſe, let *ac* be to *ao*, *cd* to *co*, *de* to *do*,



ef to *eo*, *fg* to *fo*, always in the ſame ratio of QR to QS; and ſuppoſe the point *p* ſets out from *a*, deſcribing *ac*, *cd*, *de*, *ef*, *fg*, in equal parts of the time; and let the ſpace deſcribed by *p* in any given time, be always in the ſame ratio to the diſtance of *p* from *o* at the beginning of that time, then will the right line *ao* decreaſe proportionally.

In like manner the line *oa*, increaſes proportionally, if the point *p* in equal times deſcribes ſpaces *ac*, *cd*, *de*, *ef*, *fg*, &c. ſo that *ac* is to *ao*, *cd* to *co*, *de* to *do*, &c. in a conſtant ratio.



If we now ſuppoſe a point P deſcribing the line AB with an uniform motion, while the point *p* deſcribes a line increaſing or decreaſing proportionally, the line AP deſcribed by P with this uniform motion, in the ſame time that *oa* by increaſing or decreaſing proportionally becomes equal to *op*, is the *logarithm* of *op*. Thus AC, AD, AE, *&c.* are the *logarithms* of *oc*, *od*, *oe*, &c. reſpectively; and *oa* is the quantity whoſe *logarithm* is ſuppoſed equal to nothing.

We have here abſtracted from numbers, that the doctrine may be the more general; but it is plain, that if AC, AD, AE, *&c.* be ſuppoſed 1, 2, 3, *&c.* in arithmetic progreſſion; *oc*, *od*, *oe*, &c. will be in geometric progreſſion, and that the *logarithm* of *oa*, which may be taken for unity, is nothing.

Lord Napier, in his firſt ſcheme of *logarithms*, ſuppoſes, that while *op* increaſes or decreaſes proportionally, the uniform motion of the point P, by which the *logarithm* of *op* is generated, is equal to the velocity of *p* at *a*; that is, at the term of time, when the *logarithms* begin to be generated. Hence *logarithms* formed after this model are called *Napier*'s *logarithms*, and ſometimes *natural logarithms*.

When a ratio is given, the point *p*, deſcribes the difference of the terms of the ratio in the ſame time. When a ratio is duplicate of another ratio, the point *p* deſcribes the difference of the terms in a double time. When a ratio is triplicate of another, it deſcribes the difference of the terms in a triple time; and ſo on. Alſo when a ratio is compounded of two or more ratio's, the point *p* deſcribes the difference of the terms of that ratio, in a time equal to the ſum of the times, in which it deſcribes the differences of the terms of the ſimple ratios of which it is compounded. And

what is here ſaid of the times of the motion of p when op increaſes proportionally, is to be applied to the ſpaces deſcribed by P, in thoſe times; with its uniform motion.

Hence the chief properties of *logarithms* are deduced. They are the meaſures of ratios. The exceſs of the *logarithm* of the antecedent above the *logarithm* of the conſequent meaſures the ratio of thoſe terms. The meaſure of the ratio of a greater quantity to a leſſer is poſitive, as this ratio compounded with any other ratio increaſes it. The ratio of equality compounded with any other ratio, neither increaſes nor diminiſhes it; and its meaſure is nothing. The meaſure of the ratio of a leſſer quantity to a greater is negative, as this ratio compounded with any other ratio diminiſhes it. The ratio of any quantity A to unity, compounded with the ratio of unity to A, produces the ratio of A to A, or the ratio of equality; and the meaſures of thoſe two ratios deſtroy each other when added together; ſo that when the one is conſidered as poſitive, the other is to be conſidered as negative.

When op increaſes proportionally, the motion of p is perpetually accelerated; and, on the contrary, when op decreaſes proportionally, the motion of p is perpetually retarded.

If the velocity of the point p be always as the diſtance op, then will this line increaſe or decreaſe in the manner ſuppoſed by Lord Napier; and the velocity of the point p being the fluxion of the line op, will always vary in the ſame ratio as this quantity itſelf. See *Mac Laurin*'s Fluxions, Art. 151—160.

The fluxion of any quantity is to the fluxion of its *logarithm*, as the quantity itſelf is to unity.

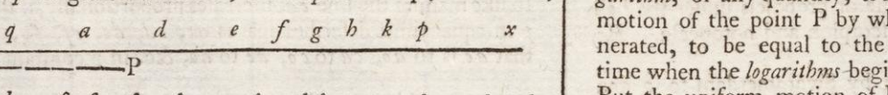
Hence, the fluxion of the *logarithm* of x will be $\frac{\dot{x}}{x}$. For $x : 1 :: \dot{x} : \frac{\dot{x}}{x}$ = the fluxion of the *logarithm* required.

When op increaſes proportionally, the increments generated in any equal times, are accurately in the ſame ratio as the velocities of p, or the fluxions of op, at the beginning, end, or at any ſimilar terms of thoſe times.

When op increaſes or decreaſes proportionally, the fluxions of this line, of all the higher orders, increaſe or decreaſe in the ſame proportion as the line itſelf increaſes or decreaſes; ſo that one rule ſerves for comparing together thoſe of any kind at different terms of the time. And in this caſe we never arrive at any conſtant or invariable fluxion.

If the *logarithms* of two quantities be always to each other in any invariable ratio, the fluxions of thoſe quantities ſhall be in a ratio that is compounded of the ratio of the quantities themſelves, and of the invariable ratio of their *logarithms*.

Let op be greater than oa; $ad : ap :: oa : op$; and let oa,



ad, de, ef, fg, &c. be continued in proportion: then by adding together ad, $\frac{1}{2}de$, $\frac{1}{3}ef$, $\frac{1}{4}fg$, &c. we approximate continually to the value of A P, the *logarithm* of op. And we approximate continually to the *logarithm* of od, by ſumming up the differences betwixt ad and $\frac{1}{2}de$, $\frac{1}{3}ef$ and $\frac{1}{4}fg$, $\frac{1}{5}gh$ and $\frac{1}{6}hk$, &c.

Theſe theorems are demonſtrated geometrically by Mr. Mac Laurin, lib. cit. art. 171, 172. From what has been ſaid, it follows, that if $oa : od :: op : ox$, then the *logarithm* of ox will be equal to the ſum of the *logarithms* of op and od, that is, to the ſum of $ad + \frac{1}{2}de + \frac{1}{3}ef + \frac{1}{4}fg + \frac{1}{5}gh + \frac{1}{6}hk$, &c. and $ad - \frac{1}{2}de + \frac{1}{3}ef - \frac{1}{4}fg + \frac{1}{5}gh - \frac{1}{6}hk$, &c. which ſum is $2ad + \frac{2}{3}ef + \frac{2}{5}gh +$ &c.

Let $aq = ad$; then the *logarithm* of ox will meaſure the ratio of od to oq. But od and oq have half their ſum equal to oa, and half their difference equal to ad, which are the two firſt terms of the geometric progreſſion oa, ad, de, ef, fg, gh, hk, &c. Hence, if $oa = 1$, and $ad = x$, de, ef, fg, &c. will be reſpectively, x^2, x^3, x^4, &c. and the ratio of $1+x$ to $1-x$ will be equal to that of od to oq. But the *logarithm* of this ratio is $2ad + \frac{2}{3}ef + \frac{2}{5}gh +$, &c. therefore the *logarithm* of $\frac{1+x}{1-x} = 2x + \frac{1}{3}x^3 + \frac{1}{5}x^5 + \frac{1}{7}x^7 +$ &c. agreeably to what has been ſhewn by Dr. Halley and others.

To find, for example, the *logarithm* of 2. From this expreſſion of the *logarithm* of $\frac{1+x}{1-x}$. Then $\frac{1+x}{1-x} = 2$, or $1+x = 2-2x$, and $3x = 1$ or $x = \frac{1}{3}$, that is in decimals.

x	= 0.33333333	And x	= 0.33333333
x^3	= 3703703	$\frac{1}{3}x^3$	= 1234568
x^5	= 411522	$\frac{1}{5}x^5$	= 82304
x^7	= 45725	$\frac{1}{7}x^7$	= 6532
x^9	= 5081	$\frac{1}{9}x^9$	= 720
x^{11}	= 564	$\frac{1}{11}x^{11}$	= 51
x^{13}	= 63	$\frac{1}{13}x^{13}$	= 5
x^{15}	= 7	Sum	0.34657513
		Multiply by	2
			0.69315026 Napier's.

Logarithm of 2.

To find the *log.* of 3, find firſt the *logarithm* of $\frac{1}{2} = \frac{1+x}{1-x}$ where $x = \frac{1}{3}$. To the *logarithm* of $\frac{1}{2}$ add the *logarithm* of 2, and the ſum will be the *logarithm* of 3. If the *logarithm* of 10 were required, ſuppoſe $\frac{10}{9} = \frac{1+x}{1-x}$, then $x = \frac{1}{19}$. To the *logarithm* of $\frac{10}{9}$ add twice the *logarithm* of 3, and the ſum will be the *logarithm* of 10, which will be found to be 2.30258509, &c. and its reciprocal or $\frac{1}{2.30258, \&c.}$ will be = 0.43429448, &c.

Now to convert any of Napiers's or of the natural *logarithms* into Briggs, where the *logarithm* of 10 is unity, ſay, as Napier's *logarithm* of 10 is to 1, ſo is any other of Napier's *logarithms* to Brigg's *logarithm* of the ſame number. Hence, Briggs's *logarithm* will be equal to Napier's divided by 2.30258509, &c. or which comes to the ſame thing, multiplied by its reciprocal, 0.43429448, &c. And *vice verſa*, Briggs's *logarithm* being given, to find Napier's correſponding, multiply Briggs's by 2.30258509, &c.

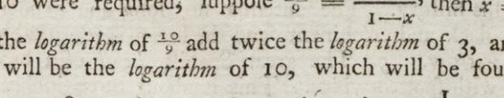
In general, to find Briggs's *logarithm* of any number n. Let $\frac{1+x}{1-x} = n$, and conſequently $x = \frac{n-1}{n+1}$. Multiply x by 0.86858896, &c. (= 2 × 0.43429, &c.) and then continually multiply this product by xx, and divide the reſulting products, reſpectively, by the terms of the progreſſion 1, 3, 5, 7, &c. The ſum of theſe quotients will be Briggs's *logarithm* required.

The firſt *logarithms* being once found, we may thence form the *logarithm* of any prime number. For inſtance, let it be required to find the *logarithm* of 19. Take two integers, one immediately greater, the other leſs than 19, that is, 18 and 20. Theſe not being primes, their *logarithms* may be found from thoſe of their factors, 2, 3, and 5; thus $l.20 = 2l.2 + l.5$. and $l.18 = 2l.3 + l.2$. But the ſquare of the mean number 19 always exceeds the rectangle of the two above and below it by 1. (Since in general, $nn = \overline{n+1} \times \overline{n-1} + 1 = nn - 1 + 1$). Find therefore the *logarithm* of $\frac{361}{360} = \frac{1+}{1-x}$, where $x = \frac{1}{721}$. To this *logarithm* add the *logarithm* of $360 = l.18 + l.20$, the ſum will be $l.361$, half of which is the *logarithm* of 19. See *Cotes*'s Harm. Menſ. Prop. 2.

As to the various compendia ariſing in the practice of conſtructing a table of *logarithms*, we refer to Gardiner's, and to Sherwin's Tables.

We have already obſerved, that Napier's, or the natural *logarithm*, of any quantity, is found by ſuppoſing the uniform motion of the point P by which the *logarithm* of op is generated, to be equal to the velocity of p, at the term of time when the *logarithms* begin to be generated.

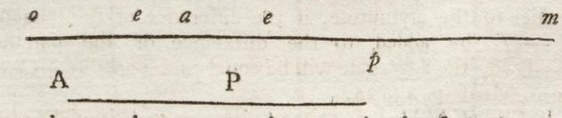
But the uniform motion of P may be ſuppoſed equal to the motion of p at any other term, as when it comes to e, in which caſe the conſtant velocity of P is to the velocity with which p ſets out from a, when the *logarithm* begins to be generated, as oe is to oa. Thus we may have as many *logarithms* as we pleaſe; and the line oe is what Mr. Cotes calls the *modulus* of the ſyſtem.



The meaſures of a given ratio in the different ſyſtems are in the ſame proportion as the lines oe, e being always the term where the velocity of p becomes equal to the conſtant velocity of P. Hence, the *logarithm* of any quantity in Napier's firſt ſyſtem, becomes equal to the *logarithm* of the ſame quantity in any other ſyſtem whoſe modulus is oe, by multiplying by the number which expreſſes the ratio of oe to oa; and the modulus of any ſyſtem is to the modulus of any other ſyſtem, as the *logarithm* of any given quantity in the firſt is to its *logarithm* in the ſecond. Thus in Napier's firſt ſcheme, in the ſame time that op from being equal to oa becomes equal to ten times oa, the point P deſcribes a line, the ratio of which to oa is that of 2.30258509, &c. to unity. But it was found convenient that the *logarithm* of 10 ſhould be 1; and the motion of P was ſuppoſed to be ſo far diminiſhed, that the ſpace deſcribed by it in that time might be equal only to oa; that is, its velocity, in this caſe, was ſuppoſed leſs than its velocity in the former, in the ſame ratio, as 1 is leſs than 2.30258, &c. If oe be taken leſs than oa in the ſame ratio, the velocity of P ſhall be equal, in this caſe, to the velocity of p at e; and oe will be the modulus of this ſyſtem, which will therefore be expreſſed by 0.43429448, &c. $= \frac{1}{2.30258509 \&c.}$ oa being unity. *Mac Laur.* Lib. cit. Art. 174.

When a ratio is given, its meaſure is always as the modulus of the ſyſtem. It is therefore the ſame invariable ratio that is always meaſured by the modulus of the ſyſtem, which

is called by Mr. Cotes *ratio modularis*. This ratio is that of *om* to *oe*, if *op* by increasing proportionally, from being

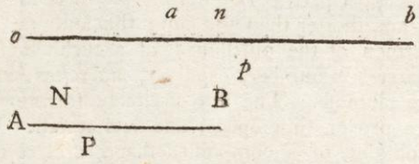


equal to *oe*, becomes equal to *om*, in the same time that P, by its uniform motion, describes a line equal to the modulus *oe*. Ibid. Art. 175, 753.

This *ratio modularis* is found to be that of 2,718281828459, &c. to 1; or of 1 to 0.367879441171, &c. *Cotes*, Harm. Mensur. p. 7.

If a *logarithm* z be given, the number corresponding, if z be a natural *logarithm*, will be expressed by this series, $1 + z + \frac{1}{2} z^2 + \frac{1}{6} z^3 + \frac{1}{24} z^4 + \frac{1}{120} z^5 + \frac{1}{720} z^6 +$, &c. or generally, if the modulus be M, by this, $1 + \frac{z}{M} + \frac{z^2}{2M^2} + \frac{z^3}{6M^3} +$, &c. which when $z = M$ is chang'd into $1 + 1 + \frac{1}{2} + \frac{1}{6} + \frac{1}{24} + \frac{1}{120} +$, &c. or $1 + \frac{1}{1} + \frac{1}{1.2} + \frac{1}{1.2.3} + \frac{1}{1.2.3.4} + \frac{1}{1.2.3.4.5} + \frac{1}{1.2.3.4.5.6} +$, &c. = 2.7182818, &c. the ratio of which to 1 is the ratio modulans. See *Mac Laurin*, Flux. Art. 753. *Cotes*, Harm. Mensur. p. 6, 7.

We have said, that, in Lord Napier's first system, the constant velocity of P, by which the *logarithm* AP is generated, is equal to the velocity with which *p* sets out from *a*. Therefore, if we suppose AP and *ap* to be diminished continually,

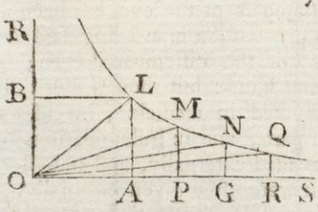


AP being always the *logarithm* of *op*, their ratio shall continually approach to a ratio of equality as its limit. (See LIMIT.) And, *oa* being supposed to represent unity, if *ap* be very small compared with *oa*, it may be supposed in approximations to be the *logarithm* of *op*, in this system; and any very small fraction may be supposed to be the *logarithm* of the sum of unity and that fraction added together. From this it follows, that if a series of mean proportionals be interposed between *oa* and any given line *ob*, and the number of all the terms, exclusive of *oa*, be *x*; and *on* being the second term of the series, *an* be to *ab* as unity is to the number *q*: then, by increasing continually the number of mean proportionals betwixt *oa* and *ob*, the ratio of *x* to *q* shall approach continually to the ratio of AB (the *logarithm* of *ob*) to *ab*, as its limit. For the number *x* is to unity as AB is to AN (the *logarithm* of *on*;) and unity is to *q* as *an* (which approaches continually to AN) is to *ab*. Therefore the ratio of *x* to *q* approaches continually to that of AB to *ab*. For instance, if *ob* be double of *oa*, the ratio of *x* to *q* approaches continually to the ratio of the natural *logarithm* of 2 to unity, which is nearly that of 7 to 10. *Mac Laurin*, lib. cit. Art. 179. and *De Moivre* Doctr. of Chances, Probl. 5.

Hyperbolic LOGARITHMS are the same as natural *logarithms*, or those of Napier's first scheme.

The reason of the appellation is the analogy hyperbolic spaces have to *logarithms*. Thus,

It is known, that if on the asymptote OS of an hyperbola



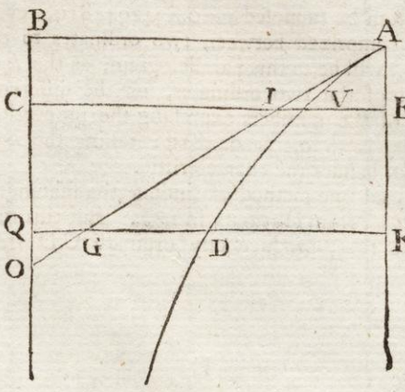
LMN, the abscissæ OA, OP, OG, OR, &c. be taken in geometric progression, the corresponding sectors LOM, LON, LOQ, &c. or the segments LAPM, LAGN, LARQ, &c. will be in arithmetical progression. Hence, the segments or sectors will be the *logarithms* of their corresponding abscissæ, OP, OG, OR, &c. And the sector LOM, or the segment LAPM measures the ratio OP to OA. The modulus of this system of *logarithms* is the parallelograms OALB, which being supposed unity, these *logarithms* coincide with Napier's.

Hyperbolic sectors measure ratios as circular sectors or arches measure angles. See *Mac Laurin*, l. c. Art. 177. *L'Hopital* Sect. Coniq. Art. 221.

LOGARITHMIC (*Cycl.*)—LOGARITHMIC *curve*. This curve was called *logarithmic* or *logistic* by Huygens: though others had considered it before him, none had named it. He has given us several curious properties relating to it, at the end of his treatise of the cause of gravity, but without demonstrations. These have been since supplied by Guido Grandi. See *Huyg.* Oper. Vol. 2. Amstel. 1728.

These properties are,

1. The spaces comprehended between two ordinates, are as the difference of those ordinates. Thus let AVD be a *logarithmic*, and its ordinates AB, VC, DQ; let the two last continued meet AK, a parallel to the asymptote BO, in E and K, then will the spaces ABCV, ABQD be to each other as EV to KD.



2. If AO be a tangent in A, intersecting CE and KQ in I, G; the spaces AVE, ADK, will be to each other as VI and DG.

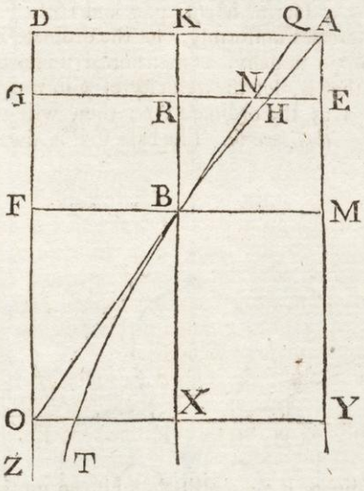
3. The space ABQD; is to the infinite space beyond QD, and lying between the curve and its asymptote, as KD to DQ.

The accurate author observes, that when he says the infinite space has a certain proportion to a finite one, he means that this infinite, or indefinite space, may approach so near to a given space, having that certain proportion to another, that the difference may become less than any assigned quantity.

4. The subtangent is constant.

5. This subtangent may be found by approximation, and is to the portion of the asymptote intercepted between ordinates in the ratio of 2 to 1, as 43429, &c. to 30103, or nearly as 13 to 9. That is, as the modulus of Briggs's system, to the *logarithm* of 2. See LOGARITHM.

6. If there be three ordinates, as AD, GH, BF, and if from the extremity B of the least, there be drawn a parallel to the asymptote BK, cutting the other two ordinates in R, K; as also a tangent BQ, cutting them in N, Q; the trilinear spaces ABK, HBR, will be to each other as the portions of the ordinates intercepted between the curve and the tangent, that is, as AQ, HN.



7. The infinite space between the curve and its asymptote, lying beyond any ordinate BF is double of the triangle BFO, formed by that ordinate, the subtangent and tangent. In which sense this is to be understood. See above N° 3.

8. The space comprehended between two ordinates is equal to the rectangle under the subtangent and the difference of the ordinates. Thus the space ABFD is equal to the rectangle under FO, AK, or to BMXY.

9. The solid formed by the revolution of the infinite space lying beyond any ordinate, about the asymptote, is to a cone of the height of the subtangent, with a base equal to the circle described with that ordinate as radius, as 3 to 2. Thus the solid formed by the revolution of the indefinite space FBTZ, about FZ is to the cone formed by the revolution of the triangle FBO, as 3 to 2.

10. The solid formed by the revolution of the same infinite space about the ordinate FB, is sextuple of the cone formed by the triangle FBO, revolving about FB.

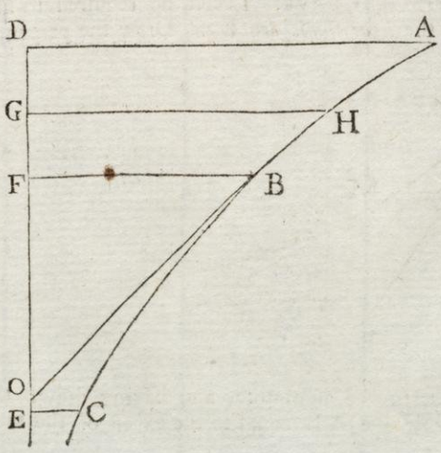
11. The distance of the center of gravity of this infinite plain space from the ordinate BF, is the length of the subtangent FO.

12. The distance of this center from the asymptote is one fourth of the ordinate.

13. The distance of the center of gravity of the first of the before-mentioned solids, from its base, is one half of the sub-tangent.

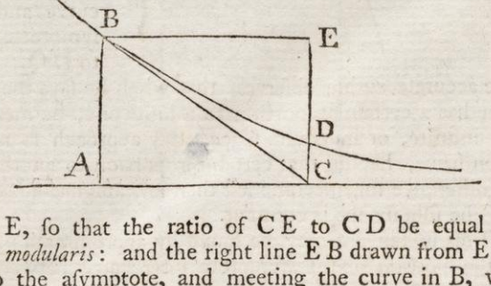
14. The distance of the center of gravity of the other solid, from its infinite base, is one eighth of its axis.

15. If there be two segments of an hyperbola, comprized between ordinates to one of its asymptotes, and if the ordinates of the one be to each other, as the ordinates AD, HG of the *logarithmic*; and if the ordinates of the other, be as BF, to CE; then will the hyperbolic spaces be to each other, as DG to FE. And these hyperbolic



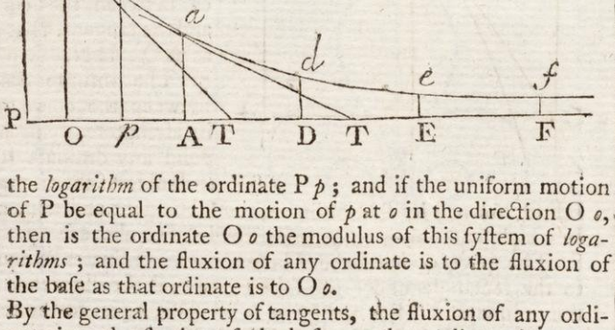
perbolic ſpaces are ⊕ the parallelogram of the hyperbola, as the lines DG, FE are to the ſubtangent FO. So that if this parallelogram be ſuppoſed = 0.4342944819, every hyperbolic ſpace comprized between two ordinates to one of the aſymptotes, will be to this parallelogram, as the *logarithm* of the ratio of the two ordinates, or the difference of the *logarithms* of the numbers expreſſing the proportions of thoſe ordinates, is to 0.4342944819; taking the *logarithms* of 10 figures beſides the characteriſtic.

We have mentioned one method of finding the ſubtangent of a given *logarithmic* from Huygens in n° 4. But this may be otherwiſe done thus, produce any ordinate CD from



C to E, ſo that the ratio of CE to CD be equal to the *ratio modularis*: and the right line EB drawn from E parallel to the aſymptote, and meeting the curve in B, will be equal to the ſub-tangent. The *ratio modularis* is 2.7182818, &c. to 1, or 1 to 0.3678794, &c. for which may be ſubſtituted the approximations 11 to 4, 87 to 32, &c. greater than the true, and 8 to 3, 19 to 7, 106 to 39, &c. leſs than the true ratio. See *Cotes*, Harm. Menſ. p. 7 and 16.

While the baſe OP increaſes uniformly, let the ordinate P*p* increaſe or decreaſe proportionally, as mentioned under the head LOGARITHM; that is, let the velocity of *p* in the direction O*o*, be always as the ordinate P*p*; then will the point *p* deſcribe the *logarithmic curve*. The baſe OP is always



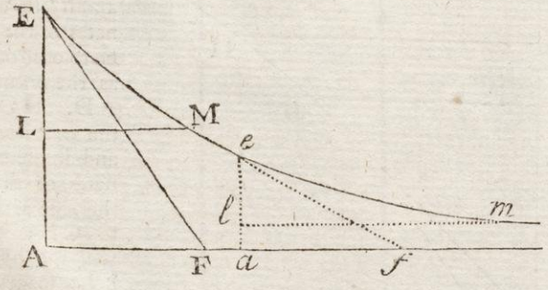
the *logarithm* of the ordinate P*p*; and if the uniform motion of P be equal to the motion of *p* at *o* in the direction O*o*, then is the ordinate O*o* the modulus of this ſyſtem of *logarithms*; and the fluxion of any ordinate is to the fluxion of the baſe as that ordinate is to O*o*.

By the general property of tangents, the fluxion of any ordinate is to the fluxion of the baſe, as that ordinate is to the ſub-tangent. Hence the ſub-tangent OT, or AT, will be equal to O*o*. The ſub-tangent will therefore be conſtant. In any other *logarithmic curve*, the ſub-tangent will always be equal to that ordinate, whoſe fluxion is equal to the fluxion of the baſe, that is, the modulus always expreſſes the ſub-tangent of the *logarithmic curve*. See the article LOGARITHM.

The ſub-tangent of the *logarithmic* expreſſing the modulus of that ſyſtem of *logarithms*, the ſubtangent will be the *logarithm* of the ratio modularis, that is, of the ratio of two ordinates raiſed at the extremities of the ſub-tangent; and as the *ratio modularis* is the ſame in all ſyſtems of *logarithms*, ſo the ratio of the two ordinates placed at the extremities of their reſpective ſub-tangents, is the ſame in all *logarithmic curves* whatſoever.

When the *logarithmic curve* is ſuppoſed to be deſcribed, exponential quantities are eaſily determined by it. Let the ordinate A*a*, be expreſſed by A; let OP be to OA as any quantity expreſſed by *x* is to 1: then the ordinate P*p* may be expreſſed by A^x, an exponential quantity of the firſt degree when *x* is variable. See EXPONENTIAL, *Cycl.*

To rectify the logarithmic CURVE. Let it be required to find the length of the *logarithmic* arc E*e*. Draw the perpendi-



lars ELA, *ela*, to the aſymptote, and having drawn the tangents EF, *ef*, take AL equal to the exceſs of the tangent above the ſub-tangent AF; and *al*, equal to the exceſs of the tangent *ef* above *af*; then having drawn LM, *lm* parallel to the aſymptote, if the difference of the tangents EF—*ef*, be added to the difference of the parallels *lm*—LM, the aggregate will be equal to the arc E*e*. *Cotes*, Harm. Menſ. p. 23, 24.

LOGISTIC (*Cycl.*)—LOGISTICA, in geometry, is uſed to ſignify the *logarithmic curve*. Huygens introduced this term in his treatiſe of the cauſe of gravity, at the end of which he gives us ſeveral curious properties of this curve. See LOGARITHMIC *curve*.

LOGOGRAPHI, Λογογράφοι, among the antients, were the ſecretaries of the logiſtæ, and kept an account of the public revenues. See LOGISTÆ, *Cycl.*

LOGOTHETA, an officer under the emperors of the eaſt, who kept an account of the various branches of public and private expence.

There were ſeveral kinds of them, diſtinguiſhed by the particular branch they ſuperintended, as the *logotheta τῦ δρόμε*, or poſt-maſter general, *logotheta τῶν οἰκειακῶν*, or maſter of the houſhold, &c. Vid. du *Cange*, Gloſſ. Lat. T. 2. in voc.

LOLIUM, *Darnell*, in the Linnæan ſyſtem of botany, makes a diſtinct genus of plants. The diſtinguiſhing characters of which are, that the calyx is a glume containing ſeveral flowers, univalve, oblong, ſtrait, pointed, and very rigid, containing the flowers gathered in a ſort of ſpike placed cloſely againſt the ſtalk. The flower is compoſed of two valves; the inferior is narrow, and pointed, rolled up, and of the length of the cup; the upper valve is ſhorter, ſtrait, obtuſe, and hollow in its upper part. The ſtamina are three filaments, very ſlender, and ſhorter than the cup; the antheræ are oblong. The germen of the piſtillum is of a turbinated form, the ſtyles are two in number, capillary, and reflex, and the ſtigmata are plumoſe. The flower cloſely ſurrounds the ſeed, and at a proper time opens, and lets it fall. The ſeed is ſingle, oblong, of a compreſſed ſhape, and convex on one ſide, and flat and furrowed on the other. *Linnæi* Gen. Plant. p. 16.

The antients uſe the word *lolium*, as the name of a diſeaſed ſtate of corn of any kind, and have given accounts of ſeveral ſorts of diſeaſed appearances, to all of which they indifferently gave this name. When the corn was deſtroyed by the great and unnatural increaſe of the root, they called it *polypode lolium*. This never produced good ears, but often a great number of ſtraggling and uſeleſs branches. Another kind of *lolium* was owing to the ſeeds in the ear being ſtinted in growth, never arriving at their natural ſize, and becoming of a greyiſh colour. Another kind was, when the ſeeds in the ear were larger and harder than they naturally ought to be, and of a black colour; and another kind was, when the grains grew large, and oblong, and were crooked, and marked with a white ſpot in the middle, but black in all the other parts. The Germans are ſubject to this diſtemperature of their grain, and they call it *mutter korn*.

Theſe diſtempered ſtates of the corn, when they affect a great quantity of it in the fields, and are gathered and ground along with the natural and ſound corn, for the uſe of the common people, are the cauſe of epilepſies, and many other terrible diſeaſes raging violently among them, and carrying off great numbers.

The antients were well acquainted with the pernicious nature of this ſort of corn; and Ariſtotle, Theophraſtus, Pliny, and many others, the moſt eminent hiſtorians, naturaliſts, and poets, give accounts of diſeaſes brought on by eating it. The cauſing diſtempers of the eyes has been attributed to this, even to a proverb; a man being ſaid *lolia victitare*, to feed on *lolium*, or this diſtempered corn; inſtead of, in plain words, being blind: but though thus hurtful in food, this *lolium* was uſed in medicine, in caſes of pains in the head and other parts, and in inflammations and ulcers; in theſe caſes it was uſed externally, and in hyſteric complaints a few grains of it were often given internally.

LOMBAIRE *externe*, in anatomy, a name given by Winſlow, and ſome other of the French writers, to a muſcle, called by the earlier authors the *primus dorſi*, and now generally known by the name *quadratus lumborum*. The French call this the external lumbal muſcle, in diſtinction from the *pſoas magnus*, which they call the *lombaire interne*.

LOMBAIRE *interne*, in anatomy, a name given by Winſlow, and ſome other French writers, to the muſcle generally called *pſoas magnus*.

LOMENTUM, a word uſed by the old writers on medicine, to expreſs a meal made of beans, or bread made of this meal, and uſed as a waſh. See DETERSORIUM.

Others have applied it to the French chalk, or morochthus, uſed by the ſcowerers of cloaths, which is brought over in large cakes, reſembling loaves or cakes of bread.

LOMWIA, in zoology, the name of a web footed water fowl common on the Engliſh ſhores, and called in different places the *guillem*, *guillemot*, *ſea hen*, *kiddow*, and *ſkout*: the laſt name, however, is ſomewhat equivocal, as the Scotch call the common *razor bill* by this name.

The *lomwia*, or kiddow, is much like the razor bill, but

it

it is larger, being of the full ſize of the common duck. Its head, neck, wings, back, and tail, as alſo the upper part of its throat are of a mixed colour, between brown, black, and grey. Its breaſt, belly, and lower part of its throat are white, and its wings are variegated with a mixture of white; its bill is ſtrait, black, and ſharp, and is three fingers breadth long, and rounded. Its legs are placed far behind, and it has no hinder toes. It is very plentiful on the Corniſh ſhore, and builds on the naked rocks there. *Ray*'s Ornithol. p. 244.

LONCHITIS, *ſpleenwort*, in botany, the name of a genus of plants, the characters of which are theſe. The flowers have not been diſcovered, but the ſeeds grow on the back part of the leaves. The leaves reſemble thoſe of the ferns in ſhape, but differ in that the pinnules are auriculated near their baſes. See Tab. 1. of Botany, Claſs 16.

The ſpecies of *lonchitis*, enumerated by Mr. Tournefort, are theſe. 1. The great rough *lonchitis*. 2. The tall globuliferous *lonchitis*, called by many the berry bearing *maiden-hair*. 3. The prickly *lonchitis* with broad pinnules, called the prickly auriculated male fern. 4. The great prickly *lonchitis*. 5. The leſſer prickly *lonchitis*. 6. The ſea *lonchitis*, called the dwarf ſea fern. 7. The climbing Braſilian *lonchitis*, with elegantly jagged pinnules. 8. The great ſmooth *lonchitis*. 9. The ſmaller ſmooth *lonchitis*. 10. The ſerrated *lonchitis*. 11. The *lonchitis* with leaves duſty near the middle rib. 12. The branched *lonchitis* duſty near the edge. 13. The branched *lonchitis* with long, and in part auriculated pinnules. 14. The broad leaved *lonchitis*, divided into broad, obtuſe, and lightly crenated pinnules. 15. The leſſer round dented *lonchitis*. 16. The ſlender branched *lonchitis*, with prickly pedicles. 17. The broad leaved *lonchitis* with black ſhining ſtalks. 18. The betony leaved *lonchitis*. 19. The water *lonchitis* formed of a thin membrane. 20. The *lonchitis* with long and narrow leaves, duſty at the edges. 21. The *lonchitis* with long narrow leaves, foliaceous at their bottoms. 22. The branched, duſty *lonchitis*, with black pedicles. 23. The great *lonchitis* with leaves divided in their upper part. 24. The ſmall *lonchitis* with leaves divided at their upper part. 25. The jagged *lonchitis* with roundiſh auricles. 26. The branched *lonchitis* with ſquammoſe ſtalks. 27. The heart faſhioned leaved *lonchitis*. 28. The little branched *lonchitis*. 29. The pointed leaved *lonchitis* with round auricles. 30. The *lonchitis* divided into roundiſh auricles. 31. The radiated *lonchitis* with the appearance of maiden-hair, called the radiated *maiden-hair*, and American branched *maiden-hair*. *Tourn.* Inſt. p. 538.

The general character of the *lonchitis*, according to Linnæus, is, that the fructifications are diſpoſed in lines of a lunulated figure, which are placed in the under part of the ſinus's of the leaves.

LONCHOTON, a word uſed by ſome chemical writers to expreſs the beſt and pureſt kinds of native vitriol, of the green or blueiſh green kinds.

LONG, (*Cycl.*) in muſic. See CHARACTER, *Cycl.* and LONGA, *Supplem.*

LONG-*jointed*, in the manege. A horſe is ſaid to be *long-jointed*, whoſe paſtern is ſlender and pliant. *Long-jointed* horſes are wont to have wind galls.

LONGA, *long*, in the Italian muſic, is a character marked thus  , containing four ſemi-breves, in common tune, and conſequently eight minims, unleſs tied to a breve; for its content in ſuch caſe [a], ſee LIGATURE.[—[a] *Broſſ.* Muſ. Dict. in voc.—]

LONGANON, a name given by ſome authors to the inteſtinum rectum.

LONGINA, in botany, a name uſed by ſome authors for the lonchitis or ſpleen-wort. *Ger.* Emac. Ind. 2.

LONICERA, in botany, a name given by Plumier and others to a genus of plants, called by Linnæus *loranthus*. The characters are theſe: the perianthium is the margin of the fruit, and is hollow and undivided; beſide this, there is another perianthium, proper to the flower, which ſtands upon the germen of the piſtil, and is in the ſame manner hollow and undivided. The flower conſiſts of one leaf, and is of a ſexangular figure, divided at the edge into ſix ſlender and nearly equal ſegments, which bend back at their points. The ſtamina are ſix ſubulated filaments, three of which are ſomewhat longer than the others, but all nearly of the ſame length with the flower. The germen of the piſtil is roundiſh. The ſtyle is ſimple, and of the length of the ſtamina. The ſtigma is obtuſe. The fruit is a roundiſh berry, having only one cell, and contains ſix ſeeds, convex on one ſide and angular on the other. *Linnæi* Gen. Pl. 151. *Plumier* Gen. 37. *Vaillant* 30.

LONKETT, a term uſed by ſome chemical writers to expreſs ſpirit of turpentine.

LOOF (*Cycl.*)—LOOF-*hook*, in a ſhip, a tackle with two hooks to it, one of which is to hitch into the crengle of the main and fore-ſail, and the other is to hitch into a certain ſtrap, which is ſpliced into the cheſs-tree, and ſo down the ſail. Its uſe is to ſuccour the tackles in a large ſail, that all the ſtreſs may not bear upon the tack. Sometimes alſo it is uſed when the tack is to be ſeized the furer.

LOOF-*pieces*, in a man of war, are thoſe guns which lie at the *loof* of the ſhip.

LOOF-*tackle*, or LUFF-*tackle*, in a ſhip, a ſmall *tackle*, ſerving to lift all ſmall weights in or out of the ſhip.

LOOL, in metallurgy, a veſſel made to receive the waſhings of ores of metals. The heavier or more metalline part of the ores remaining in the trough in which they are waſhed; the lighter, and more earthy, running off with the water, but ſettling in the *lool*. *Ray*'s Engliſh words, p. 121.

LOOME, at ſea. If a ſhip appears big, when ſeen at a diſtance, they ſay ſhe *looms*, or appears a great ſail.

LOOME-*gale*, at ſea, a gentle, eaſy gale or wind, in which a ſhip can carry her top-ſails *a-trip*. See TRIP.

LOON, in zoology, a name given to the *columbus major*, or great diver. See DIVER.

LOOP (*Cycl.*)—LOOP, in the iron works, is a part of a ſow or block of caſt iron broken or melted off from the reſt, and prepared for the forge or hammer. The uſual method is, to break off the *loop* of about three quarters of a hundred weight. This *loop* they take up with their ſlingling tongs, and beat it with iron ſledges upon an iron plate near the fire, that ſo it may not fall to pieces, but be in a condition to be carried under the hammer. It is then placed under the hammer, and a little water being drawn to make the hammer move but ſoftly, it is beat very gently, and by this means the droſs and foulneſs are forced off, and after this they draw more and more water by degrees, and beat it more and more till they bring it to a four ſquare maſs, of about two feet long, which they call a bloom. *Ray*'s Engliſh words, p. 128.

LOOPING, in metallurgy, a word uſed by the miners of ſome counties of England, to expreſs the running together of the matter of an ore into a maſs, in the roaſting, or firſt burning, intended only to calcine it ſo far as to make it fit for powdering. This accident, which gives the miners ſome trouble, is generally owing to the continuing the fire too long in this proceſs. *Ray*'s Engliſh words, p. 125.

LOPHIA, in anatomy, a term for the upper part of the *cervix*, or back part of the human neck.

LOPHIUS, in ichthyology, the name of a genus of fiſhes of the branchioſtegous kind. The characters of which are theſe. There is no branchioſtege membrane. The figure of the body is monſtrous and depreſſed, the head very large; there are ſeveral pinnules, which ſurround the ſides of the fiſh from the head to the tail. We at preſent know only one ſpecies of this genus, which is the *lophius* or *cirrhoſa* of Artedi, or the *rana piſcatrix* of authors. *Artedi* Gen. Piſ. 41. *Linnæi* Syſt. Nat. p. 52. See the article RANA *piſcatrix*.

LOPPA, a word uſed by the chemical writers, to expreſs the metallic maſs, which reſults from a cementatory calcination, either with or without regulus.

LOPPING, among gardners, the cutting in a proper and artful manner the branches of trees, ſo as to make them grow more beautiful or more durable.

It is obſervable, that moſt old trees are hollow within, and this is in general owing to their wrong management, the tops being ſuffered to grow too large before they are lopped. This is a very common error in regard to the aſh, elm, horn beam, &c. and is owing to peoples perſuading themſelves, that by this means they ſhall have more great wood; but, they do not conſider, that the cutting off large tops, deſtroys or decays the tree, ſo that it decays more in the body than it grows in the head. And though the horn beams, and elm will bear large tops when the outſide is little more than a ſhell; yet this is not at all the caſe with the aſh, which ſhould therefore always be cut down as ſoon as it begins to decay. *Miller*'s Gardners Dict.

The *lopping* of young trees, that is of ſuch as are ten or twelve years old, will preſerve them much longer, and will occaſion the ſhoots to grow more into wood in one year, than they do in old tops in two or three. The taking off of large boughs in a careleſs manner deſtroys many a tree; they ſhould therefore always be lopped with great care, and the wound covered with ſome loam to keep it from rotting, and preventing the wet from entering and getting into the body of the tree.

All ſorts of reſinous trees, or ſuch as abound with a milky juice, ſhould be lopped but very ſparingly, for they are very ſubject to decay when cut. The beſt ſeaſon for the *lopping* theſe is the end of Auguſt, when they will not bleed very much, and the wounds will heal before the hard weather.

Whatever ſhape a tree is intended to be of, it muſt be thrown into it by *lopping* while young, for the branches being then ſmall, full of juice, heal eaſily, and never endanger the tree. When a tree is intended for timber it muſt be left to grow to its own height, and its top is never to be cut off on any account, Thoſe trees which have large piths, as the aſh, elm, willow, poplar, and the like, muſt never have their heads cut off, if intended to ſtand long, for the wet gets into the ſoft part of the tree, and begins to hollow, and rot it

where cut off, and ſoon ſpreads to the very root, ſo that the whole is but a ſhell or caſe of a tree. If a tree grow top heavy, and be in danger of breaking down, then ſome think it neceſſary to take off the top to preſerve it; but this may be much better done only by thinning the top, that is cutting off the ſmall branches that grow from the main boughs of the head, and leaving them bare, ſo as to let the wind have a free paſſage through them. This is a very good practice for young trees, which are intended to be ſpreading ones; and if they are intended to be tall and ſlender ones, the beſt method to be taken with them, while young, is rubbing off the buds as faſt as they appear in the ſpring, and taking off the ſide ſhoots as they grow, leaving only here and there one; when any new ſhoots break out, ſome of them may be ſaved, and the others cut off in their place, always obſerving to cut off the largeſt, and leave the youngeſt; the whole intent being to leave ſome check there for the ſap, to prevent its all running up to the head, which would endanger the breaking of the body in ſome weak place. When the trunk ſeems ſtrong and robuſt, the fewer of theſe ſhoots need be left: the great care, in this caſe, is to be employed about the head. The leading ſtalk, or branch, muſt be carried up all the way ſtrait and ſingle, and not ſuffered to fork or ſplit till it come to the head, and the quantity of boughs left there muſt be ſuch as will not leave the whole top heavy. When the tree is grown to its proper height, the head is to be ſuffered to break out in its natural way, and the ſide branches are to be kept cut off as they ſhoot, or at any proper diſtances of time. *Mortimer*'s Huſbandry, Vol. 2. p. 81, ſeq.

If the ſide boughs are found ſtill breaking out, and the top is able to ſuſtain itſelf, the boughs that put out in ſpring ſhould be lopped very cloſe in ſummer, a little after Midſummer; this will cauſe the bark to ſhoot over them, and they will not be liable to grow again. This is the only method of making a tree grow with a fine ſtrait and handſome body.

The generality of the world are againſt pruning timber trees at all, and where they naturally grow ſtrait and regular it is much better let alone. But all the common faults in ſhape may be regulated by this *lopping* them while young, and it can be attended with no ill conſequence to the timber; for the cut not lying near the timber pith cannot affect it, when grown up, and ſquared in the working for beams or other uſes, or to be quartered; for all the defects occaſioned by ſuch wounds, are in the ſuperficial parts, and all the four quarters are perfectly ſound within.

As to the large foreſt trees they ſhould not be lopped at all, except in caſes of great neceſſity, and then the large boughs muſt not be cut, but only the ſide branches, and even theſe muſt be cut off cloſe, that the bark may ſoon cover the wound, and yet a little ſlanting, that the water may run off, not lodge upon the cut part.

If there is a neceſſity of cutting off a large bough, as by its being broken or cankered, let it be cut off ſlanting at about four feet diſtance from the body of the tree, and that if poſſible near ſome place where there is a young ſhoot from it, which may receive the ſap, and grow up in its place. No ſtump muſt be left ſtanding out farther than this, becauſe they are wounded parts which never can heal, and which will always be letting in the water, and will ſerve as pipes to convey that water to the heart of the body of the tree, and by degrees will utterly ſpoil it. All that grow upright, whether they be large or ſmall branches, muſt in cutting be taken off ſlanting, never evenly for the ſame reaſon; thoſe boughs that bear from the head are to be cut with the ſlope on the lower ſide, and on any occaſion that great wounds are given to a tree, they ſhould be covered with a mixture of clay and horſe dung, which will make them heal much ſooner than they otherwiſe would do. Ibid. Vol. 2. p. 84.

LORARII, among the Romans, officers whoſe buſineſs it was, with whips and ſcourges, to compel the gladiators to engage.

The *lorarii* alſo puniſhed ſlaves who diſobeyed their maſters. *Pitiſc.* Lex. Ant. in voc.

LORD (*Cycl.*)—Lords *of the admiralty*, a name frequently uſed for the commiſſioners for executing the office of *lord* high admiral.

Lords *of ſeſſion*, in Scotland. See Session.

LORDOSIS, in the medical writings, a name given to a diſtempered ſtate of the ſpine, in which it is bent inwards, or toward the anterior parts. It is uſed in oppoſition to gibbous, or hump backed.

LORICA, a name given by ſome chemical writers to a peculiar lute made for the coating over veſſels, which are to bear a very vehement fire.

This is ordered to be made of the powdered glaſs of broken retorts mixed up into a paſte with potters clay by means of warm water: the retort, or other veſſel, to be loricated, is to be covered a third of an inch thick with this matter, and if it cracks in the drying, which muſt be done gradually before it is to be uſed, the cracks muſt be filled up with ſome of the ſame paſte, and this muſt be left to dry as the former. Collect. Chym. Leyd. See farther under Lorication.

LORICATION, or Coating, in chemiſtry, is the covering a glaſs or earthen veſſel with a *coat* or *cruſt* of a matter able to reſiſt the fire; to prevent its breaking in the performing an operation, that requires great violence of fire.

Either when veſſels are expoſed to a fire too ſtrong for their ſtructure, or on the throwing on of freſh cold fuel into the fire where they ſtand, it frequently happens that they crack and burſt; for the preventing of which the operator has recourſe to this method of *coating* or *loricating* his veſſels; it is performed in the following manner: take a quantity of waſhed clay, with an admixture of pure ſand, powder of calcined flints, or broken crucibles; and inſtead of pure water, moiſten it with freſh blood that has not yet been coagulated, diluted with twice or three times its quantity of water; make the clay with this into a thin paſte, and work into it ſome cow's hair, or other hair not too long, or too ſtiff, and a little powdered and ſifted glaſs, if you have it at hand; ſmear over the veſſel intended to be uſed with this paſte, by means of a pencil, and ſet it to dry; when dry beſmear it again, and repeat the operation, till the veſſel have a cruſt of a third, or a quarter of an inch at leaſt thick, of this matter, and let it be thoroughly dry before it is uſed.

To keep blood in a proper ſtate for this uſe, it muſt, when juſt let out from the animal, be well ſtirred about with a ſtick, for ſome time; at leaſt till it is quite cold, and being thus prepared, it will keep for ſome days without coagulating and fit for uſe.

This compoſition, with an admixture of bole, worked into a paſte with the whites of eggs diluted with water, makes alſo the proper lute for cloſing the junctures of other chemical veſſels, in the diſtilling ſtrong ſpirits. *Cramer*, Art of Aſſay. p. 74.

LORIMERS, one of the companies of London, that make bits for bridles, ſpurs, and ſuch like ſmall iron ware. They are mentioned Stat. 1 Rich. 2. c. 12.

The word ſeems derived from the Latin *lorum*, a thong.

LORIPES, in zoology, the name uſed by ſome authors for the *himantopus*, a bird of the water kind, remarkable for the length and weakneſs of its legs. *Ray*'s Ornithol. p. 220. See the article Himantopus.

LORUS, a name by which ſome of the chemical writers have called mercury.

LOT (*Cycl.*)—Lot, or Loth, in mining, is the thirteenth diſh, meaſure, or part of the miner's ore, which the bar-maſter takes up for the king, or the farmer. *Houghton*'s compl. miner. in the explan. of the terms.

LOTA, in zoology, the name of a ſpecies of the *muſtela fluviatilis*, or eel pout, differing from the ordinary kind, in that it has no hairs or excreſcences on the upper jaw. The tail is flat, and like the point of a broad ſword, whereas that of the common kind is more rounded, and that it is covered with eaſily diſtinguiſhable ſcales. *Rondelet.*

LOTION (*Cycl.*)—Lotio *ſaponacea*, the ſaponaceous *lotion*, the name of a form of medicine preſcribed in the late London Pharmacopœia, being properly ſoap in a liquid form. It is ordered to be made thus: take damaſk roſe water three quarters of a pint, oil of olives a quarter of a pint, ley of tartar half an ounce in meaſure; rub the ley and oil together till they are mixed, and then gradually add the water. *Pemberton*'s Lond. Diſp. p. 348.

LOTOMETRA, in botany, a name given by many of the antients to the *nymphæa indica*, or *ægyptiaca*, called alſo the *faba ægyptiaca*; and originally the *nilufar*, an abbreviation of *nilnufar*; *nufar* ſignifying a water lilly, and the prefix *nil* expreſſing its growing particularly in the river Nile.

Neophytus tells us, that this *lotometra* has leaves of a middle form, between thoſe of the common *nymphæa* which are roundiſh, and thoſe of the *arum* which are oblong and pointed, and are cordated at the baſe, and this is the very figure of the leaves of the *faba ægyptiaca*, as we ſee it in all paintings, &c.

LOTUS, in botany, the name of a genus of plants. The characters of which are theſe. The flower is of the papilionaceous kind. Its piſtil ariſes from the cup, and finally becomes a pod, ſometimes divided by tranſverſe ſepta into ſeveral cells, and furniſhed with roundiſh ſeeds. To this it is to be added, that the leaves ſtand three at a joint, and are furniſhed at the ſtalk with two other foliaceous wings.

The ſpecies of *lotus*, enumerated by Mr. Tournefort, are theſe. 1. The ſmall ſmooth hand cinquefoil *lotus*, called the ſmaller ſmooth horned *lotus*. 2. The ſmall ſmooth cinquefoil *lotus* with longer and narrower leaves. 3. The leſſer hairy horned *lotus*. 4. The ſmall five leaved hairy *lotus* with very ſlender pods. 5. The five leaved *lotus* with a large ſhining yellow flower. 6. The hoary and white large cinquefoil *lotus*. 7. The great cinquefoil *lotus*. 8. The ſhrubby cinquefoil *lotus* with very narrow ſmooth leaves. 9. The Spaniſh *lotus* with ſpotted leaves. 10. The ſilvery ſhrubby *lotus* of Crete, with long, ſtrait, propendent pods. 11. The yellow flowered Cretic *lotus* with long, erect pods. 12. The hairy, white, cinquefoil *lotus*. 13. The low white hæmorrhoidal, podded *lotus*. 14. The talleſt hairy *lotus* with glomerated flowers. 15. The large hard ſtalked yellow meadow *lotus*. 16. The ſmaller, and ſofter ſtalked

ſtalked yellow meadow *lotus*. 17. The yellow, podded, ſea *lotus*, with a thick, fleſhy, and ſmooth leaf. 18. The red *lotus* with angulated pods. 19. The cinquefoil *lotus* with a horned pod. 20. The *lotus* with the ornithopodium pods. 21. The cinquefoil *lotus* with crooked pods, reſembling the toes of a raven's foot. 22. The great yellow Portugal *lotus*. 23. The yellow Sicilian *lotus* with articulated pods. *Tourn.* Inſt. p. 402. See Tab. 1. of Botany, Claſs 10. The fruit of the *lotus* was, by the antients, imagined to be endowed with the virtue of making ſtrangers forget their native country. *Pitiſc.* Lex. Ant. in voc.

LOTUS *glycycalamus*, a name given by the antient Greeks to an Egyptian plant according to ſome, and according to others, to a rare plant, found only in few places, and only met with by accident, by people who made long and uncommon voyages. The whole account given of it, by the earlieſt writers, is no more than that it was of a very ſweet and pleaſant taſte. Myrepſus uſes the term frequently, and his interpreters underſtand him to mean the *caſſia fiſtula* by it. But we have accounts from Homer, that the followers of Ulyſſes were detained by eating the *lotus glycycalamus*; and it is not at all probable, that the *caſſia fiſtula* could be the thing meant by the word in this place; neither will the words of the author allow it to be any thing of this kind. The *caſſia fiſtula* is the fruit of a tree; but this *glycycalamus* we find in Homer himſelf was an herbaceous plant. Quintilian [a] calls it expreſsly a kind of graſs, *gramen*; and from the other accounts of its growing in form of reeds, and in wet places; it ſeems very probable, that it was the ſugar cane that they called by this name.[—[a] *Quintill.* l. 5. c. 8.—]

LOVAGE, in botany. See LIGUSTICUM.

LOVE-APPLE is the Engliſh name for the fruit of the *lycopersicon*, a plant cultivated in gardens with us, for the ſingularity of its appearance. The Portugueſe call it *tomato*, and eat the fruit, either raw or ſtewed, as do alſo the Jew families in England. See LYCOPERSICON.

LOUF, in the ſea language. See LOOF.

LOUS, Λως, in chronology, the Macedonian name for the Athenian month *ecatombæon*, which was the firſt of their year, and anſwered to the latter part of our June and the beginning of July. See the articles ECATOMBÆON and MONTH.

LOUSE. This animal affords to the microſcopic obſerver of the works of the creation, a very delicate and beautiful ſtructure of parts. See Tab. of microſcopical Objects, Claſs 1. This creature has ſo tranſparent a ſhell, or ſkin, that we are able to diſcover more of what paſſes within its body, than in moſt other living creatures. It has naturally three diviſions, the head, the breaſt, and the tail part. In the head appear two fine black eyes, with a horn that has five joints, and is ſurrounded with hairs ſtanding before each eye; and from the end of the noſe, or ſnout, there is a pointed projecting part, which ſerves as a ſheath or caſe to a piercer, or ſucker, which the creature thruſts into the ſkin to draw out the blood and humours which are its deſtined food, for it has no mouth that opens in the common way. This piercer, or ſucker, is judged to be ſeven hundred times ſmaller than a hair, and is contained in another caſe within the firſt, and can be thruſt out or drawn in at pleaſure. *Baker*'s Microſcope, p. 177.

The breaſt is very beautifully marked in the middle, the ſkin is tranſparent, and full of little pits, and from the under part of it proceed ſix legs, each having five joints, and their ſkin all the way reſembling ſhagreen, except at the ends where it is ſmoother. Each leg is terminated by two claws, which are hooked, and are of an unequal length and ſize; theſe it uſes as we would a thumb and a middle finger, and there are hairs between theſe claws as well as all over the legs. *Lewenhoek*'s Arcan. Natur. T. 2. p. 74.

On the back of the tail part there may be diſcovered ſome ring like diviſions, abundance of hairs, and a ſort of marks, which will look like the ſtrokes of a rod on a child that has been whipped; the ſkin of the belly ſeems like ſhagreen, and toward the lower end is very clear, and full of pits: at the extremity of the tail there are two ſemi-circular parts, covered all over with hairs, which ſerve to conceal the anus.

When the *louſe* moves its legs, the motion of the muſcles, which all unite in an oblong dark ſpot in the middle of the breaſt, may be diſtinguiſhed perfectly, and ſo may the motion of the muſcles of the head when it moves its horns. We may likewiſe ſee the various ramifications of the veins and arteries, which are white, with the pulſe regularly beating in the arteries. But the moſt ſurprizing of all the ſights is the periſtaltic motion of the guts, which is continued from the ſtomach down to the anus. Philoſ. Tranſ. N° 102.

If one of theſe creatures, when hungry, be placed on the back of the hand, it will thruſt its ſucker into the ſkin, and the blood it ſucks may be ſeen paſſing in a fine ſtream to the fore part of the head; where falling into a roundiſh cavity, it paſſes again in a fine ſtream to another circular receptacle in the middle of the head; from thence it runs through a ſmaller veſſel to the breaſt, and then to a gut which reaches to the hinder part of the body, where in a curve it turns again a little upward. In the breaſt and the gut the blood is moved, without intermiſſion, with a great force, eſpecially in the gut; and that with ſo ſtrong a propulſion downward, and ſuch a contraction of the gut as is very ſurpriſing. *Power*'s Mic. Obſ. 9.

In the upper part of the crooked aſcending gut beforementioned the propelled blood ſtands ſtill, and ſeems to undergo a ſeparation; ſome of it becoming clear and wateriſh, while other little black particles paſs downward to the anus.

If a *louſe* be placed on its back two bloody darkiſh ſpots appear; the larger in the middle of the body, the leſſer toward the tail. In the larger ſpot, a white film or bladder contracts and dilates upwards and downwards from the head toward the tail, the motions of which are followed by a pulſation of the dark bloody ſpot, in or over which the white bladder ſeems to lie. This motion of the ſyſtole and diaſtole is beſt ſeen when the creature begins to grow weak; and on pricking the white bladder, which ſeems to be the heart, the creature always inſtantly dies. The lower dark ſpot is ſuppoſed to be the excrements in the guts. *Lewenhoek*'s Arcan. Nat. T. 2. p. 77.

Lice have been ſuppoſed to be hermaphrodites, but this is erroneous; for Mr. Lewenhoek diſcovered that the males have ſtings in their tails, which the females have not. And he ſuppoſes the ſmarting pain theſe creatures ſometimes give to be owing to their ſtinging with theſe ſtings, when made uneaſy by preſſure or otherwiſe. And this accurate obſerver ſays, that he felt little or no pain from their ſuckers, though ſix of them were feeding on his hand at once.

The ſame accurate obſerver determining to know their true hiſtory and manner of breeding, put two females into a black ſtocking which he wore night and day. He found, on examination, that in ſix days one of them had laid above fifty eggs; and upon diſſecting it, he found as many yet remaining in the ovary; whence, he concludes, that in twelve days it would have laid an hundred eggs. Theſe eggs naturally hatch in ſix days, and would then probably have produced fifty males and as many females; and theſe females coming to their full growth in eighteen days, might each of them be ſuppoſed after twelve days more to lay a hundred eggs; which eggs, in ſix days more, might produce a young brood of five thouſand; ſo that in eight weeks one *louſe* may ſee five thouſand of its own deſcendants. A *louſe* may be eaſily diſſected in a ſmall drop of water upon a ſlip of glaſs; and thus placed before the microſcope, it is common to find five or ſix eggs of a ſize ready to be laid, and ſixty or ſeventy others of different bigneſſes. In the male the penis is very remarkably diſtinct, as are alſo the teſtes, of which he ſeems to have a double pair, as is alſo the ſting the ſtructure of which merits a peculiar attention. *Lewenhoek*'s Arcan. Natur. p. 78.

Many animals, both of the quadruped and flying kinds, are ſubject to *lice*; but theſe are of peculiar ſpecies on each animal, and are not at all like thoſe which infeſt the human body. Nay, even inſects are infeſted with vermin, which feed on them and torment them. Several kinds of beetles are very ſubject to *lice*, but particularly that kind, called thence the louſy beetle. The *lice* on this are very numerous, but will not be ſhook off. The ear-wig is often infeſted with *lice* juſt at the ſetting on of its head; theſe are white, and ſhining like mites, but they are much ſmaller; they are round backed, flat bellied, and have long legs, particularly the foremoſt pair. Snails of all kinds, but eſpecially the large naked kinds, are very ſubject to *lice*, which are continually ſeen running about them, and devouring them. Numbers of little red *lice*, with a very ſmall head, and in ſhape reſembling a tortoiſe, are often ſeen about the legs of ſpiders, and they never leave the ſpider while he lives, but if he be killed they almoſt inſtantly forſake him. A ſort of whitiſh *lice* are very common on humble bees; they are alſo found on ants; and many ſorts of fiſhes are not leſs ſubject to them than the land animals. Kircher ſays, that he has found *lice* alſo on flies. *Baker*'s Microſcope, p. 182.

Senior Redi, who has more accurately examined theſe creatures than any other author, has engraved ſeveral ſpecies found on different animals. He calls thoſe found on beaſts *lice*, and thoſe found on birds fleas. He is of opinion that every ſpecies of birds has its peculiar ſort of flea, different from thoſe of other birds; and has obſerved that they are hatched white, but that they gradually acquire a colour, like that of the feathers they live among; yet they uſually remain tranſparent enough for a good microſcope to diſcover the motion of their inteſtines. The kinds he has obſerved are theſe: on the hawk three different ſorts; on the large pigeon, the turtle dove, the hen, the ſtarling, the crane, the magpye, the heron, the leſſer heron, the ſwan, the turky duck, the ſea mew, the ſmall ſwan, the teal, the caſtrel, the peacock, the capon, and the crow, on each one ſort; on the moorhen three ſorts; on the wild gooſe two ſorts; and on the crane, beſide the common one, a white ſort, marked as it were with Arabic characters. Men, he obſerves, are ſubject to two kinds, the common *louſe*, and that called the crab-*louſe*. He alſo found peculiar ſorts on the

the goat, the camel, the aſs, the African ram, the ſtag, which has, like many of the birds, two kinds, and on the lion and the tyger. The ſame author has obſerved, that the ſize of theſe creatures is not at all proportioned to that of the animal they are to inhabit, for the ſtarling has them as large as the ſwan. *Redi*, Gen. Inſ. p. 312.

It is obſervable, that ſome ſort of conſtitutions are more apt to breed *lice* than others; and that in certain places, of different degrees of heat, they are very certain to be deſtroyed upon people, who in other climates are over-run with them. It is an obſervation of Oviedo, that the Spaniſh ſailors, who are generally much afflicted with *lice*, always looſe them in a certain degree in their voyage to the Indies, and have them again on their coming to the ſame degree at their return; this is not only true of the Spaniards, but of all other people who make the ſame voyage; for though they ſet out ever ſo *louſy*, they have not one of theſe creatures to be found after they come to the tropic. And in the Indies there is no ſuch thing as a *louſe* about the body, though the people be ever ſo naſty. The ſailors continue free from theſe creatures till their return; but in going back they uſually begin to be *louſy*, after they come to about the latitude of Maderas. The extreme ſweats, which the working people naturally fall into between this latitude and the Indies, drown and deſtroy the *lice*, and are of the ſame effect as the rubbing over the *louſy* heads of children with butter and oil. The ſweat in and about the Indies is not rank as in Europe, and therefore it is not apt to breed *lice*; but when the people return into latitudes where they ſweat rank again, their naſtineſs ſubjects them to the ſame viſitations of theſe vermin which it uſed to have.

The people in general, in the Indies, are very ſubject to *lice* in their heads, though free from them in their bodies. The reaſon of this is, that their heads ſweat leſs than their body, and they take no care to comb and clean them. The Spaniſh negroes waſh their heads thoroughly once every week with ſoap, to prevent their being louſy. This makes them eſcape much better than the other negroes who are ſlaves there, for the *lice* grow ſo numerous in their heads, that they often eat large holes in this part.

Mr. de la Hire has given a curious account of the creature which he found on the common fly. Having occaſion to view a living fly by the microſcope; he obſerved on its head, back, and ſhoulders, a great number of ſmall animals crawling very nimbly about, and often climbing up the hairs, which grow at the origin of the fly's legs. He, with a fine needle, took up one of theſe and placed it before the microſcope, uſed to view the animalcules in fluids. It had eight legs, four on each ſide; they were not placed very diſtant from one another, but the four toward the head were ſeparated by a ſmall ſpace from the four toward the tail. The feet were of a particular ſtructure, being compoſed of ſeveral fingers, as it were, and fitted for taking faſt hold of any thing; the two neareſt the head were alſo more remarkable in this particular than thoſe near the tail; the extremities of the legs, for a little way above the feet, were dry and void of fleſh, like the legs of birds, but above this part they appeared plump and fleſhy. It had two ſmall horns upon its head, formed of ſeveral hairs arranged cloſely together; and there were ſome other cluſters of hairs by the ſide of theſe horns, but they had not the ſame figure; and toward the origin of the hinder legs there were two other ſuch cluſters of hairs, which took their origin at the middle of the back. The whole creature was of a bright yellowiſh red; and the legs, and all the body, except a large ſpot in the center, were perfectly tranſparent. In ſize, the author believes it was about $\frac{1}{4000}^{th}$ part of the bigneſs of the head of the fly; he obſerves, that it is rarely that flies are found infeſted with them. Mem. Acad. Par. 1693.

Wood LOUSE. See MILLEPEDES.

LOW *bell*, in birding, a name given to a *bell*, by means of which they take birds in the night in open champaign countries, and among ſtubble in October. The method is to go out about nine o'clock at night in a ſtill evening, when the air is mild and the moon does not ſhine.

The *low bell* is to be of a deep and hollow ſound, and of ſuch a ſize, that a man may conveniently carry it in one hand. The perſon who carries it is to make it toll all the way he goes, as nearly as may be, in that manner in which the *bell* on the neck of a ſheep tolls, as it goes on while it feeds. There muſt alſo be a box made like a large lanthorn, about a foot ſquare, and lined with tin, but with one ſide open. Two or three great lights are to be ſet in this, and the box is to be fixed to the perſon's breaſt, with the open ſide forwards, ſo that the light may be caſt forward to a great diſtance; it will ſpread as it goes out of the box, and will diſtinctly ſhew the perſon who carries it whatever there is in the large ſpace of ground which it extends over, and conſequently all the birds that rooſt upon the ground. Two perſons muſt follow him who carries the box and *bell*, one on each ſide, ſo as not to be within the reach of the light to ſhew themſelves. Each of theſe is to have a hand net of about three or four feet ſquare, faſtened to a long ſtick or pole; and on which ever ſide any bird is ſeen at rooſt, the perſon who is neareſt is to lay his net over it, and take it with as little noiſe as poſſible. When the net is over the bird, the perſon who laid it, is not to be in a hurry to take the bird, but muſt ſtay till he who carries the light is got beyond it, that the motions may not be diſcovered. The blaze of the light, and the noiſe of the *bell*, terrify and amaze the birds, in ſuch a manner, that they remain ſtill to be taken; but the people who are about the work muſt keep the ſtricteſt quiet and ſtillneſs that may be.

Some people are fond of going on this ſcheme alone. The perſon then fixes the light box to his breaſt, and carries the *bell* in one hand and the net in the other; the net, in this caſe, may be ſomewhat ſmaller, and the handle ſhorter. When more than one are out at a time, it is always proper to carry a gun. It is no uncommon thing to ſpy a hare when on this expedition; and, in that caſe, it is better to ſhoot her, than to truſt to the taking her in the net, for ſhe will very eaſily eſcape from that. Some tye the *bell* to their girdle, and carry the light in their left hand and the net in the right; the light is not to be ſo large in this caſe, and the other way is therefore rather the better.

LOW, in the manege—To *carry* LOW. See CARRY.

LOW-*water*. See WATER.

LOW *wines*. See *low* WINES.

LOWERING (*Cycl.*)—LOWERING, in the diſtillers buſineſs, a term uſed to expreſs the debaſing the ſtrength of any ſpirituous liquor by mixing water with it. The ſtandard and marketable price of theſe liquors is fixed, in regard to a certain ſtrength in them called proof; this is that ſtrength, which makes them, when ſhook in a vial, or poured from on high into a glaſs, retain a froth or crown of bubbles for ſome time. In this ſtate ſpirits conſiſt of about half pure, or totally inflammable ſpirit and half water; and if any foreign or home ſpirit is to be expoſed to ſale, and is found to have that proof wanting, ſcarce any one will buy it, till it has been diſtilled again and brought to that ſtrength; and if it is above that ſtrength, the proprietor uſually adds water to it to bring it down to that ſtandard. This addition of water, to debaſe the ſtrength, is what is called *lowering* it. People well acquainted with the goods, will indeed buy ſpirits at any ſtrength, only *lowering* a ſample to the proof ſtrength, and by that judging of the ſtrength of the whole; but the generality of buyers will not enter into this, but muſt have it all *lowered* for them. *Shaw*'s Eſſay on Diſtillery.

There is another kind of *lowering* in practice among the retailers of ſpirituous liquors to the vulgar, this is the reducing it under the ſtandard of proof. They buy it proof, and afterwards increaſe their profit upon it, by *lowering* it with water one eighth part. The quantity of ſpirit is what they generally allow themſelves for the addition of water; and whoever has the art of doing this, without deſtroying the bubble proof, as this is eaſily done by means of ſome addition, that gives a greater tenacity to the parts of the ſpirit, will deceive all that judge by this proof alone; that is, very nearly all who are concerned in the ſpirit trade. Such an additional quantity of water as one eighth, makes the ſpirit taſte ſofter and cooler, and will make many prefer it to the ſtronger ſpirit which is hoter and more fiery; but unleſs the ſpirit, thus *lowered*, were tolerably clean, or the proof be ſome other way preſerved, the addition of the water lets looſe ſome of the coarſe oil, which makes the liquor milky, and leaves a very nauceous taſte in the mouth. *Shaw*'s Eſſay on Diſtillery.

The way to judge of ſpirits not being thus *lowered*, or debaſed in its ſtrength, is to examine it by the eye and tongue; and in buying a quantity of proof goods, ſuch ſhould always be choſen as are clean, thin, and light, and have a good crown of froth which goes off in large bubbles, ſuch as taſte ſoft and uniform, and are not high flavoured, of an alkaline guſt, nor acrid and fiery, but ſoon quit the tongue.

LOXIA, in zoology, the name of a bird, called in Engliſh the *croſs bill*, and in ſome places the *ſhell apple*, ſuppoſed to be the Tragon of the antients.

It is about the ſize of the green finch, and much of the ſame ſhape. Its beak is very hard, thick, ſtrong, and black; and contrary to the cuſtom of nature, in all other birds, both parts of it are crooked, and that contrary ways: the upper chap being bent into a point downwards, and the lower one hooked and brought upwards to one as ſharp, ſo that the ends ſtand acroſs. They do not always obſerve the ſame ſide of falling over: the upper one ſometimes lying on the right, ſometimes on the left ſide of the under. One would think this croſs ſtructure of the beak, but a bad one for feeding with, yet the bird is very voracious; it feeds on ſeeds, which it picks up with great dexterity; in particular, it is fond of the kernels of the apple, and to get at them, ſplits an apple in two with one ſtroke of its odly faſhioned beak, by which it does infinite miſchief in orchards. Its back and head are variegated with black and green; the middle of every feather being of the former of thoſe colours, and the edges of the latter; there is alſo a mixture of grey about the head; the rump is green, the upper part of the throat is grey, the breaſt green, and the belly white; the wings and tail are variegated with black and green. See Tab. of Birds, N° 36.

It is common in Germany, Sweden, and ſome other countries, and ſometimes in autumn, comes over to us in vaſt abundance, doing great miſchief to the orchards in the weſt of England. It ſings very ſweetly, and, as it is ſaid, only in winter. *Ray*'s Ornitholog. p. 181.

In the Linnæan ſyſtem of zoology, *loxia* is uſed for the name of a genus of birds of the paſſeres kind; the diſtinguiſhing characters of which are, that the tongue is plain, equal, and whole; the beak large, thick, and ſhort, and crooked and convex both ways.

Of this genus are the *coccothrauſtes*, *loxia*, or *croſs-bill*, &c. *Linnæus*'s Syſt. Naturæ. p. 48.

LOYAL, in the manege. A horſe is ſaid to be *loyal*, that freely bends all his force in obeying, and performing any manege he is put to; and does not defend himſelf, or reſiſt, notwithſtanding his being ill treated.

A *loyal* mouth is an excellent mouth, of the nature of ſuch as we call mouths, with a full reſt upon the hand.

LOZENGES (*Cycl.*)—LOZENGES, among jewellers, are common to brilliant and roſe diamonds. In the former they are formed by the meeting of the ſkill and ſtar facets on the bezil; in the latter, by the meeting of the facets in the horizontal ribs of the crown. *Jeffries* on Diamonds. See the article FACETS, *&c.*

LUBI, in botany, a name by which many authors have called the *coconut-tree*, or *palma nucifera medica* of other writers. *Camell.* Syll. p. 43.

LUCAR, among the Romans, an appellation given to the money expended upon plays and public ſhews. *Pitiſc.*

LUCERNA, in zoology, the name of a fiſh caught in the Mediterranean and ſome other ſeas, of the cuculus kind, and very nearly approaching to the ſhape and figure of the hirundo. Its tail is but ſlightly forked, and what diſtinguiſhes it principally from the hirundo, is, that its ſide lines near the tail divide into two, whereas in that fiſh they continue ſingle. Its ſcales are very ſmall, and it has a furrow on the back, edged by twenty-five ſpines on each ſide. The gill fins are of a remarkable ſize, and look like wings. It feeds on ſhrimps and other ſmall animals. See Tab. of Fiſhes, N° 47. and *Willughby*'s Hiſt. Piſc. p. 281.

LUCERNE, in huſbandry, the name of a plant frequently cultivated by our farmers in the manner of clover. It is the ſame plant which the antients were ſo fond of under the name of *medica*, and in the culture of which they beſtowed ſuch great care and pains. See MEDICA.

Its leaves grow three at a joint, like thoſe of the clover; its flowers are blue, and its pods of a ſcrew like ſhape, containing ſeeds like thoſe of the broad clover, but larger, and more kidney ſhaped.

The ſtalks grow erect, and after mowing, they immediately grow up again from the parts where they were cut off. The roots are longer than thoſe of the ſaint foin, and are not ſingle, but ſometimes they run perpendicularly in three or four places from the crown.

It is the only plant in the world, whoſe hay is preferable to the ſaint foin for the fattening of cattle; but its virtues, in that reſpect, are ſo great, that they are not to be credited by any that have not tried the plant. It is the ſweeteſt graſs in the world, but muſt be given to cattle with caution, and in ſmall quantities, otherwiſe they will ſwell and incur diſeaſes from it.

The antients were at the greateſt pains to plant this properly, they choſe the fatteſt and beſt land they had for it, and this they dunged and laid out in beds as we do for the choiceſt garden plants. They ſowed it in the end of April, firſt carefully preparing the ground by breaking the clods, they then raked the earth over the ſeeds to cover them lightly, and when it was come up they carefully kept the beds clear of weeds. They ſowed it very thick, and let the firſt crop of it ſtand till the ſeed was in part ſhattered out, that they might be ſure of more plants in the beds; after this, they cut it as young as they pleaſed, and it uſually yielded them four or five crops or more in a year. A land well planted with it, would, with proper management, laſt ten years, and produce largely all the time. It is computed that Engliſh gardiners make forty pounds of an acre of aſparagus, or many other garden plants, with half the labour and expence, that was beſtowed upon an acre of the Roman *medica*. This was a piece of huſbandry only practiſed while that great empire was in its glory; at preſent they have very little *medica* or *lucerne* in Italy, and what they have is manured in a leſs troubleſome manner.

In the ſouth of France there is annually a great quantity of it raiſed. They ſow it alone in March, or in the end of September, chooſing for this purpoſe dry and ſandy lands, but ſuch as lie low.

They prepare theſe by ploughing and harrowing them very fine, and the ſpring and autumn being rainy, they have no occaſion to water the plants, while young, as the Romans did. The ſummers in that part of the world are much drier than in Italy, and by that means the graſs is burnt up, and other weeds much deſtroyed, ſo that the crop does not want that vaſt expence in weeding that the Roman *medica* did, by this means the expence alſo is greatly abated.

The colder countries are leſs calculated for the raiſing of *lucerne*; becauſe being more wet, and leſs hot, the ground ſooner hardens on the ſurface, and common graſs ſooner grows into turf, and covers it, and this is the great deſtruction of *lucerne*. In Swiſſerland they cultivate ſmall parcels of it in their vineyards, that they may have it for their cattle, when ſick, but it uſually ſtands but about two years, and muſt then be replanted; and, in France, about Paris, they find it ſucceed ſo ill, that they are now plowing it up, and ſowing ſaint foin in its place as a plant, that much better keeps the graſs under.

From the ſucceſs of *lucerne*, in other countries, there appears very little proſpect of bringing it into uſe in England, where the ſeaſons are more rainy, and the ſun weaker. Our poor land will not produce crops of it ſufficient to pay the expences of the farmer, and our rich land will produce graſs ſo faſt among it, that it will be ſoon choaked up and deſtroyed.

It has been carefully tried to plant *lucerne*, in a meadow breaſt, plowed and ſown firſt with carrots. When, by this means, the graſs was entirely deſtroyed, the *lucerne* was ſown, and flouriſhed for two years; but after that the graſs grew among it, and wholly choaked it up; and if it be tried in our gardens, it is always found to decline, as the graſs grows up amongſt it, which is the ſooner, the richer the land is.

The poor whitiſh ſoil, ſo common in many parts of England, has been tried for *lucerne*, as the natural graſs grows of itſelf, but poorly here: it was hoped the great inconvenience of *lucerne* in England might be obviated by this means; but the *lucerne* will not come to any perfection on this poor land; and though it continues ſeveral years, is always ſo weak and low, that the crops will ſcarce pay the expence of mowing; and by all the trials that have been made in England, all our land ſeems either too rich, too poor, or too cold, for the raiſing this valuable plant, in the way of the common huſbandry.

The advantage of the new horſe-hoeing huſbandry is very evident in the caſe of this plant, for by it all the before-named inconveniences are remedied, and thoſe very peculiarities of our ſoil and climate, which prevented its ſucceſs with us, become the means of that ſucceſs.

Mr. Tull ſpeaks experimentally of the ſucceſs of a great number of old plants of this *lucerne* in ſeveral lands, as well poor as rich ones; and ſeems convinced, that many thouſands of acres of Engliſh land are capable of producing, by this management, fine crops of it, and that for an age together. The greater degree of moiſture, and leſs heat, of this climate, are all of the utmoſt advantage to this plant, when horſe-hoed, as that ſufficiently prevents the growth of the turf which would deſtroy it.

In the drier ſummers in Italy and the ſouth of France, the *lucerne* yields only four or five crops inſtead of ſix or ſeven; but in the drieſt ſummers in England, it would ſucceed the beſt of all, and give the moſt numerous crops. The horſe-hoeing prevents the turf, and makes the land imbibe the dews, and retain them for the nouriſhment of the plants; and *lucerne*, in ſheltered places, will grow by this means, even in our winter, plants of it having been ſeen at Chriſtmas of fourteen inches high. Our winters need not be feared in regard to the *lucerne*, for at Neuf Chatell it is found to ſtand all the winters very well; yet there the roſemary plants all die if left out in the winter. This is a proof that the winters are more ſevere than ours, for it is not one winter in forty that hurts this ſhrub with us.

In the year 1708, the *lucerne* in Languedoc ſuffered by the ſeverity of the winter, but this was ſo ſharp, that the olive trees, and even the walnut trees were alſo killed by it: as no ſuch froſts come among us, as to kill our walnut trees, we need not fear a crop of this plant, for much of it ſurvived even there, when thoſe trees periſhed.

In Languedoc the *lucerne* never arrives at any great height, except where it has the advantage of the plow; and in Wiltſhire there have been lands ſown with it, where it grew but poorly and low; but after the ſame grounds had been plowed, and after corn laid down with ſaint foin, the *lucerne* plants that were left grew up to a vaſt height, and were very vigorous, this ſhews the advantage of the plow; and all this advantage will be regularly given by horſe-hoeing, without the deſtruction of any of the plants. *Tull*'s Horſe-hoeing Huſbandry, p. 93. ſeq.

Though the common method of huſbandry will not raiſe *lucerne* to advantage; yet the horſe-hoeing huſbandry will raiſe it annually, increaſing in value to the owner, and make one of the moſt profitable articles of his buſineſs of it.

The ſoil to plant it on muſt be either a hot gravel, or a very rich and dry land, or ſome other rich and dry land that has not an under ſtratum of clay, and is not too near ſprings of water. The natural poorneſs of gravel may be made up by dung and the benefit of the hoe, and the natural richneſs of the other lands being increaſed by hoeing and cleanſing them from graſs, the *lucerne* will thrive with leſs heat; for what is wanted in one of theſe qualities muſt be

be made up in the other. The beſt ſeaſon for planting it in England is early in the ſpring, the earlier the better, for then there is always moiſture enough in the earth to make it grow, and not ſo much heat as would dry up its tender roots, and kill it after the firſt ſhooting. About a pound and half of ſeed will be ſufficient for an acre; and if this be ſown in February, though ſome of the young plants will be deſtroyed by the froſts in March, yet there will be enough left of them for the making as thick a crop as is neceſſary. The planting it in autumn might do very well in hotter countries, but with us the long winters would kill a great part of the tender plants, and greatly ſtunt and injure thoſe which they did not kill. The number of *lucerne* plants ſhould be leſs than thoſe of ſaint foin to an acre, becauſe they grow much larger in this way of management, and each occupies a greater ſpace of ground, and produces a larger quantity of hay. The quick growth of this plant requires that it ſhould have large ſupplies of nouriſhment, and good room to grow in, and it is better in all things of this kind to err in ſetting the plants too far diſtant than in ſetting them too near.

The moſt fatal diſeaſe incident to *lucerne* is ſtarving; for this reaſon good culture is neceſſary to it, and the often turning the earth with the hoe all about it. By this means, a plant, that in the common way of ſowing, would not have been more than four or five inches high will be three feet, and will ſpread every way, ſo as to produce a quantity of hay, more like the cutting of a ſhrub than a plant.

The plants ſhould ſtand at five inches diſtance in ſingle rows, and the intervals between theſe rows muſt be left wide enough for the uſe of the hoe plow.

The rows of *lucerne* plants muſt not be thinned till they are grown up to ſome height; for while young they are ſubject to be eaten by the fly, like turnips; and if this deſtroyer ſhould ſeize them, after they are reduced to only a competent number, the crop would be rendered much too thin. The hoe plow is the only inſtrument that can bring this plant to perfection, and it muſt be frequently had in proportion to the number of crops it produces; but then it muſt be ſtill ſome years, leſt the plowed ground injure the hay that is made upon it; and when it is come to a turf, and the *lucerne* wants renewing, the four coultered plow is the only inſtrument that can prepare the turf to be killed, and cure the *lucerne*. This plow muſt be uſed in the following manner: turn its furrows toward one row, and from the next; that is, plow round one row, and that will finiſh two intervals; and ſo of the reſt. The next plowing muſt be towards thoſe rows from which they were turned the firſt time, and care muſt be taken that the firſt furrows do not lie long enough on the rows to kill the plants, which will be much longer in winter than in ſummer.

Lucerne is to be made into hay in the ſame manner as ſaint foin; but this is to be obſerved, that it is always to be cut juſt before it comes to flower. The richeſt *lucerne* hay of any is that cut while the ſtalks are ſingle, without any collateral branches, and in this caſe there uſually is not ſo much as the bud of a flower to be ſeen on the plants.

Lucerne can never be expected to ſucceed well any where, let the ſoil be ever ſo good, unleſs it be kept clean from natural graſs. *Tull*'s Huſbandry, p. 102.

LUCERNE, in ichthyology, a name given by the Venetians to the fiſh commonly called the *uranoſcope*. It is a ſpecies of Trachinus, with many beards on the lower jaw.

LUCIDA (*Cycl.*)—LUCIDA *hydræ*, in aſtronomy. See COR *hydræ*, *Cycl.*

LUCIOLA, in botany, a name uſed by ſome authors for the ophiogloſſum, or adder's tongue. *Ger.* Emac. Ind. 2.

LUCIOPERCA, the *pike pearch*, a fiſh caught in the Danube and other large rivers, and in the lakes of Germany, and eſteemed a very good one for the table. Others have called it by the names *ſchilus* and *nagumulus*. It is a fiſh that grows to a very conſiderable ſize, being frequently caught from two feet to three or four in length. It is of a longer ſhape than the river pearch, and grows narrower toward the tail; its ſnout is alſo more pointed and longer, and its back much leſs prominent than that of the common pearch. Its figure, upon the whole, more approaches to that of the pike than of the pearch; its belly is however broad and flat; and on the anterior part of the back, toward the head, there is a furrow in the middle. The ſcales are ranged very cloſely together, and are fimbriated round their edges. The breaſt has no ſcales. The ſides are of the ſame colour with thoſe of the common pearch, a yelloviſh brown, and its belly and fins are red, but leſs ſo than in the common pearch. *Ray*'s Ichthyog. p. 292.

LUCIUS, in zoology, the name of the common river fiſh, called in Engliſh the *jack*, or *pike*, and by ſome the *pickerel*. It is a well known fiſh, and very frequent in our ponds, lakes, and rivers, and grows to a very great ſize, often weighing from fifteen to thirty pounds. It is a very voracious fiſh, feeding on others, and often ſeizing ſuch as are but little leſs than itſelf. It is often found in ponds where the owners never intended it ſhould come, and devours multitudes of ſmall fiſh. It is ſaid that it will be produced in theſe places from the ſpawn eaten by herons, and voided in them. *Ray*'s Ichthyog. p. 236.

Many authors have treated of the common *pike* under the names of three ſpecies; theſe are diſtinguiſhed by the different times of ſpawning, and have no real characters to diſtinguiſh them by; though they are called by three names, as if ſo many diſtinct ſorts of fiſh. The firſt is the *giadda*, that is the *lucius glacialis* or *ice-pike*. This is common in the lakes of Sweden, and ſpawns in the ſpring time under the ice. The ſecond is called the *blomſter-giadda*, that is the *flower pike*. It has this name from its time of ſpawning, which is at a more advanced ſeaſon, when the flowers begin to open in the fields. The third is called *fro-giadda*, or the *ſeed pike*. This ſpawns much later in the ſeaſon, as in Auguſt and September, and is thus called from the plants being in ſeed at that time. But the fiſh is the ſame ſpecies, under all theſe differences of time of ſpawning, and the diſtinctions therefore idle and unneceſſary. *Artedi*'s Ichthyol.

LUCIUS *marinus*, the *ſea pike*, a name given by ſome authors to the fiſh more uſually called the *merlucius*, and in Engliſh the *hake*. *Willughby*'s Hiſt. Piſc. p. 174. See the article MERLUCIUS.

LUCIUS *marinus*, is alſo uſed by many authors for the *ſudis*, called alſo by ſome *ſphyræna*. *Aldrovand.* de Piſc. p. 102. See the article SUDIS.

LUCIUS *terreſtris*, the *land pike*, in zoology, the name of a very ſingular ſpecies of American lizard, which has the ſhape, ſcales, &c. of the pike fiſh. In the place of the fins of that fiſh it has four legs, but theſe are ſo weak and ſlender that it makes no uſe of them in walking, but crawls along upon the ground in the manner of a ſnake, and draws its legs after it. It grows to about fifteen inches long, with a proportionable thickneſs. It is all over covered with ſmall, ſtrong, and gloſſy ſcales, of a ſilvery grey. In the night they retire into holes and caverns, and make a very diſagreeable and loud noiſe, much louder than the croaking of frogs. They ſeldom ſtir out of their holes, unleſs in the duſk of the evening; and if they are ever met with in the day time, their ſtrange motion ſurprizes all who ſee them. *Rochefort*'s Hiſt. Inſ. Antill.

LUCULLEUM *marmor*, in the natural hiſtory of the antients, the name of a hard ſtony kind of marble, of a good fine black, and capable of an elegant poliſh, but little regarded from its want of variegations. When freſh broken, it is ſeen to be full of ſmall, but very bright ſhining particles, appearing like ſo many ſmall ſpangles of talc.

It had its name from the Roman conſul Lucullus, who firſt brought it into uſe in that city. It is common in Italy, Germany, and France. We have much of it imported, and our artificers call it the *namur* marble, the Spaniards call it marble of *buga*. *Hill*'s Hiſt. of Foſſ. p. 466.

LUDUS (*Cycl.*)—LUDUS *helmontii*, in natural hiſtory, an opake foſſile of an irregular ſhape, but of a very regular and ſingular internal ſtructure. It is of an earthy hue, and always divided into ſeparate maſſes, by a number of veins of a different colour, and purer matter than the reſt. Theſe maſſes, into which it is divided, are ſometimes ſmall and pretty regularly figured; in which caſe, they are called *tali* or *ludi*, dice; but they are more frequently of no regular ſhape at all. There are others of them cruſtated or compoſed of many coats, diſpoſed one over another about a central nucleus. In theſe the *ſepta*, or dividing veins, are very thin and fine, in the others thicker.

It is only theſe *ſepta* that are uſed in medicine, being given in nephritic complaints with ſucceſs. The doſe is from a ſcruple to a dram.

LUDWIGIA, in the Linnæan ſyſtem of botany, the name of a genus of plants, the diſtinguiſhing characters of which are theſe. The cup is a perianthium compoſed of one leaf, divided into four ſegments, ſituated on the germen of the piſtil, and remaining after the flower is fallen; the ſegments of the cup are pointed, ſpread very wide, and of the ſame length with the petals of the flower. The flower is compoſed of four petals all of the ſame ſize, ſpread wide open, flat, and cordated. The ſtamina are four erect, pointed, ſhort filaments. The antheræ are ſimple, erect, and oblong. The germen of the piſtil is ſquare, and is cloathed with the baſis of the cup under the receptacle of the flower. The ſtyle is cylindric, and of the length of the ſtamina, and the ſtigma is ſomewhat ſquared and headed. The fruit is an obtuſe, ſquare capſule, covered with, and crowned by the cup; it contains four cells, and opens four ways. The ſeeds are numerous and ſmall. *Linnæi* Gen. Plant. p. 49.

LUG-*a-leaf*, a name uſed in ſome parts of England for a ſmall fiſh of the turbot kind, or rather a middle kind, between that and the plaiſe. The ſame with the *ſoaggio*. *Willughby*'s Hiſt. Piſc. p. 95. See the article SOAGGIO.

LUGGS, the Engliſh name for a peculiar ſpecies of inſect, found in great plenty on the ſhores of Cornwal. It is of the nature of the *ſcolopendra*, and is called by Mr. Ray *vermis ſcolopendroides*. It grows to twelve inches long, and has inſtead of legs nineteen pair of ſtiff briſtles, theſe all ſtand toward the head part of the creature. The tail being

of at leaſt five inches long when full grown, and having no mark of them. Its body is rounded, and much reſembles the body of the common earth worm, and is of a fleſh colour, or pale red; it has no forceps.

LUGMON, in natural hiſtory, a name given by the people of the Philippine Iſlands to a ſpecies of turtle; the female of which has a tuft of red feathers, of a pale blood colour on her breaſt, which have greatly the appearance of a wound, given by nature, but ſo much reſembling a real wound, that any body would at firſt ſight be deceived.

LUJULA, *wood ſorrel*, in medicine. See SORREL.

LULANIS, in botany, a name given by ſome of the antient Greeks to a plant, uſed very frequently for a yellow colour in dying, and by the ladies for tinging their hair yellow, the favourite colours of thoſe times. Neophytus explaining this word, ſays, that it ſignified the ſame with iſatis, glaſtum, or woad; and ſeveral others have been of that opinion, though very abſurdly, ſince the glaſtum or woad dies a blue colour not a yellow; and by no means anſwers the deſcription of the *lulanis*, which is the ſame with the *lutum* or *lutea herba* of the Romans, and with the *geniſtella tinctoria* or dyers wood of theſe times. See the article LUTUM.

LUMELLA, in the glaſs trade, the round hole in the floor of the tower of the leer, which is directly over the working furnace, and by which the flame is let into the tower. *Neri*'s Art of Glaſs, p. 243.

LUMINOUS (*Cycl.*)—*Luminous* emanations have been obſerved from human bodies, as alſo from thoſe of brutes. The light ariſing from currying a horſe, or from rubbing a cat's back are known to moſt. Inſtances of a like kind have been known on combing a woman's head. Bartholin [a] gives us an account, which he entitles *mulier ſplendens*, of a lady in Italy, whoſe body would ſhine, whenever ſlightly touched with a piece of linnen. Theſe effluvia of animal bodies have many properties in common with thoſe produced from glaſs; ſuch as their being lucid, their ſnapping, and their not being excited without ſome degree of friction, to which may be added electricity; as a cat's back has been found ſtrongly electrical when ſtroaked [b].—[[a] Cant. 3. Hiſt. 70. [b] Phil. Tranſ. N° 476. p. 444, ſeq.—] See ELECTRICITY.

Human bodies not only appear *luminous*, but even the exhalations from them adhering to their cloathing will cauſe it to ſhine likewiſe [c].—[[c] Ibid. & p. 477.]

LUMME, in zoology, the name of a water fowl of the colymbus kind, called by authors *colymbus arcticus*, and common about Iceland and ſome parts of Norway, and ſcarce known in any other part of the world.

It is a beautful bird of the ſize of a duck. It has a black and ſharp beak of two inches long, and its head and neck are covered with grey feathers, running each way to a ſharp edge, and making the appearance of a hood or friar's cawl. Its back and wings are black, variegated with ſquare ſpecks of white, and juſt under the neck there is a large black ſquare ſpot. This runs down the back alſo to five inches in length, and is about two inches broad, and beautifully variegated with black, white, and grey. Its belly is white, its legs are ſhort, and its feet webbed. The people where it is common, hold it as ſacred, in ſome meaſure, and are afraid of killing it in ſome places; but the icelanders make it their principal food, and are very dextrous at catching it with ſnares. *Ray*'s Ornithol. p. 259.

LUMP *fiſh*. See the article LUMPUS.

LUMP *of fleſh*, in the manege. See BOUILLON.

LUMPEN, in ichthyology, the name of a long bodied fiſh of the muſtela kind, common in the markets at Antwerp.

It is of a long and round body, growing gradually ſlenderer to the tail. Its colour is a greeniſh yellow, with black broad lines on the back placed tranſverſely; and it has a little redneſs at the end of its tail. *Willughby*'s Hiſt. Piſc. p. 120.

It has alſo a number of duſky ſpots all over the body, except under the longitudinal mark, which runs along each ſide from the gills to the tail. It has either no ſcales, or ſuch as are too ſmall to be perceptible; its mouth is large, and furniſhed with one row of teeth in each jaw; its tongue is broad, ſoft, and roundiſh, and the iris of the eyes is yellow. The apertures of its gills are ſmall, its back fin runs ſingly the whole length of the back, and turning round the tail, comes up to the anus; near which there is another aperture, out of which may be preſſed an aqueous liquor.

The *lumpen* is the *galea piſcis*, or *muſtela altera* of Geſner and others. It is a ſpecies of the *blenni* diſtinguiſhed by Artedi, by the name of the *blennus*, with fins like cirri under its neck, and tranſverſe ſtreaks on the back. The cirri are bifid.

LUMPUS, in zoology, the name of a thick and ſhort ſea fiſh, called in Engliſh the *lump fiſh*, and *ſea own*, and by the Scotch the *cock paddle*.

It is a thick and very ill ſhaped fiſh. Its belly is broad and flat, and its back riſes to a ridge. Its colour is a mixture of blackiſh and red; its belly is red. It has no ſcales, but is covered with a tough ſkin, which is full of ſharp tubercles; and on each ſide it has three rows of prickles or crooked thorns. It has two fins on the back, the firſt thick, cartilaginous, or rather fleſhy, and having no rays or nerves; and another below it ſupported by nine rays. Its mouth is large, and its jaws are furniſhed with vaſt numbers of ſmall teeth. It is caught in many parts of the Engliſh ſeas, and is common in the fiſhmongers ſhops in London, but it is not much eſteemed. See Tab. of Fiſhes, N° 32. and *Willughby*'s Hiſt. Piſc. p. 208.

LUNA (*Cycl.*)—LUNA *marina*, in zoology, a name by which Geſner has called a peculiar ſpecies of *ſtar fiſh*, called alſo the *ſea ſun*. See SOLEIL *de mer*.

LUNA *piſcis*, in zoology, a name by which ſome have called the *mola*, which we uſually call in Engliſh the *ſun fiſh*. *Willughby*'s Hiſt. Piſc. p. 15. See the article MOLA.

Lac LUNÆ. See the article LAC *lunæ*.

LUNÆTRIA, a term invented by ſome affected writers, on medicine for a fever, which they ſay is curable in one period of the moon.

LUNAR (*Cycl.*)—LUNAR *cycle*, in chronology. See CYCLE *of the moon*, Cycl.

LUNARE *os*, in anatomy, is the ſecond bone in the firſt row of the carpus. It has its name from the Latin *luna*, the moon, becauſe one of its ſides is in form of a creſcent.

The articular ſides in this bone are four in number. One convex for the baſis of the radius, one ſemi-lunar for the os ſcaphoides, one almoſt triangular for the os cuneiforme, and one hollow; which, with the hollow ſide of the os ſcaphoides, forms a cotyloide cavity for the head of the os magnum. The convex ſide, together with that of the os ſcaphoides, forms an oblong convexity, anſwering to the oblong concavity in the baſis of the radius, the outer and inner ſurfaces are ſmall and rough. This bone would ſomewhat more properly be named *os ſemi-lunare*, than *lunare*, &c. *Winſlow*'s Anatomy, p. 83.

LUNARIA, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of four leaves, and is of the cruciform kind. The piſtil ariſes from the cup, and finally becomes a very remarkable ſeed veſſel, extremely broad, thin, and flat and divided by an intermediate membrane into two cells, which uſually contain kidney ſhaped and marginated ſeeds. See Tab. 1. of Botany, Claſs 8.

The ſpecies of *lunaria*, enumerated by Mr. Tournefort, are theſe. 1. The common larger round podded *lunaria*. 2. The white flowered round podded perennial larger *lunaria*. 3. The larger *lunaria* with long ſhaped pods. 4. The purple flowered long podded larger *lunaria*. 5. The wall flower leaved *lunaria* with large and long pods. 6. The wall flower leaved *lunaria* with long ſhaped ſmaller pods. 7. The *lunaria* with long crooked pods. *Tourn.* Inſt. p. 218.

This plant is famous in ſome parts of the kingdom for its medicinal virtues, though it has not the fortune to be received in the ſhops. The people in the northern countries dry the whole plant in an oven, and give as much as will lie on a ſhilling for a doſe, twice a day, in hæmorrhages of all kinds, particularly in the too abundant flowing of the menſes, and this with great ſucceſs. The Welſh, among whom it is not uncommon, Dr. Needham informs us, make an ointment of it, which they uſe externally, and pretend it cures dyſenteries. *Dale* Pharm.

LUNARIA, in natural hiſtory, is alſo uſed by ſome authors for the Selenites.

LUNARIS *cochlea*, in natural hiſtory, the name of a genus of ſhells of the ſnail kind, the diſtinguiſhing character of which is their having a perfectly round mouth. Theſe are univalve, umbilicated ſhells, with a depreſſed clavicle, and a ſurface ſometimes ſmooth, but more frequently ſtriated, furrowed, laciniated, or covered with tubercles.

The *cochleæ*, or ſnails in general, are divided into three genera, which are founded on the differences in the ſhape of the mouth. The firſt genus has the mouth round, the ſecond has it ſemi-circular, and the third oval. The firſt is, the genus charactered by the term *cochlea lunaris*.

This genus of *cochleæ* may be very aptly divided into three ſections. 1. The ſmooth *cochleæ lunares*. 2. The ſulcated ones, and 3. The rough or ſcabrous ones. Yet, it is to be obſerved, that this method of diſtinction, which was inſtituted by Rumphius, is, though very obvious, yet very ſlightly founded, as it takes in only the varieties of the ſuperficies, not any eſſential characters. The name *limax* ſeems to have been given the ſnail from the Latin *limus* mud, for it is uſually bred among mud. They have all an operculum or covering for the mouth. This entirely ſtops up the aperture of the ſhell, when the fiſh draws its body into it; and this operculum, when found looſe, and ſeparate, as many kinds of it frequently are, is called by many *umbilicus veneris*, as if it were a peculiar ſpecies of ſhell. No ſnail has leſs than two volutæ or turns, in the ſhell, and many have as far as ten. It is ſaid, that Archimedes took the invention of the ſcrew, ſo famous ever ſince his time, and ſtill called after his name from the form of this ſhell; and it is generally allowed, that architects have taken the hint of their winding flights of ſtairs from it. *Rumph.* p. 29. *Liſter* de Conch. Hiſt. Nat. Eclaire, P. 2. p. 251.

The ſmall ſpecies of crab, called *bernard the hermit*, often lodges itſelf in a ſhell of one of theſe animals, after the creature

creature to whom it belonged is dead. One ſpecies of this genus is called the *rotunda* from its round ſhape. This is ſo large as to contain two quarts of water, and from an old practice of uſing this ſpecies by way of an oil jar in families, it obtained the name of *olearia*. There is a peculiar ſpecies called the dauphin ſnail, which is elegantly furniſhed with rows of points of a jagged form on all its ſpires; and the ſhell called the *eperon* is another ſpecies of this genus, the volutæ of which are in the ſame manner furniſhed with points; but in this ſpecies they are ſmoother and ſharper than in the dauphin ſnail. Rondeletius has given the name *echinophora* to one, which is all over covered with rough tubercles. And there is one ſpecies of this ſhell brought from America, which is very large, and of a fine pearly coat within. The workmen in toys take much of what they uſe from it, and what we imagine the inſide of the nacre, or mother of pearl, is often no other than the inner coat of this ſnail.

The ſpecies of this genus are the following. 1. The faſciated and tuberous *lunar* ſnail. 2. The great American *burgau*. This is often ſeen in the cabinets of the curious, with its outer ſurface eaten off, and then when it has been poliſhed it looks all over pearly, and makes a very elegant appearance. 3. The ſerpent ſkin *lunar* ſnail, ſo called from the colours and ſpots. 4. The green ſnail. 5. The *olearia* or large umbilicated *lunar cochlea*. 6. The *lunar* ſnail, with an exerted clavicle. 7. The ribband ſnail. This, however, is but a variety of the former ſpecies. 8. The furrowed *lunar* ſnail. 9. The parrot *lunar* ſnail. 10. The roaſted cheſnut ſnail. 11. The variegated ſnail. 12. The *lunar* ſnail with a depreſſed apex, of a variegated green colour. 13. The ſmall ſmaragdine ſnail. 14. The goat's eye ſnail; there is a Chineſe ſpecies of this ſnail, with green and white lines very beautiful. 15. The violet ſnail of Columna. 16. The wide lipped *lunar* ſnail variegated with yellow and white. 17. The rough and furrowed ſnail, called the *os aureum*, or golden mouth. 18. The rough and furrowed ſnail, called the ſilver mouth, or *os argenteum*. 19. The dauphin ſnail. 20. The granulated and umbilicated ſnail. 21. The depreſſed ſnail with tubercles on each ſide. 22. The ſpur ſnail, with prickles diſpoſed in two ranges. Hiſt. Nat. Eclair, p. 2. p. 251.

LUNDA, in zoology, a name by which Wormius, Hoier, and ſome others, have called the bird, commonly known by the name of *anas arctica Cluſii*. See DUCK.

LUNDRESS, in our old writers, a ſterling ſilver-penny; which had its name from being coined only at London, and not at the country mints. *Lownds*'s Eſſay upon Coins, p. 17.

LUNE, *Lunula* (*Cycl.*)—The quadrature of the *lunula* is generally aſcribed to Hippocrates of Chios; but Proclus tells us expreſsly, that it was found by Œnopidas of Chios. See Mr. *Heinius* in Mem. de l'Acad. de Berlin, Tom. 2. p. 410. who has given us a diſſertation about this Œnopidas.

LUNENSE *marmor*, in the natural hiſtory of the antients, the name of that ſpecies, of white marble now known among us, by the name of the *Carrara marble*, and diſtinguiſhed from the ſtatuary kind, by its greater hardneſs and leſs ſplendour. It was ever greatly eſteemed in building and ornamental works, and is ſo ſtill. It is of a very cloſe and fine texture, of a very pure white, and much more tranſparent than any other of the white marbles. It has always been found in great quantities in Italy, and is ſo to this day. *Hill*'s Hiſt. of Foſſ. p. 463.

LUNETTE (*Cycl.*)—LUNETTE, in the manege. A half horſe-ſhoe, or ſuch a ſhoe as wants the ſpunge, *i. e.* that part of the branch which runs towards the quarters of the foot, has this name given it.

LUNETTE is alſo the name of two ſmall pieces of felt made round and hollow, to clap upon the eyes of a vicious horſe that is apt to bite, and ſtrike with his fore feet, or that will not ſuffer his rider to mount him.

LUNGS (*Cycl.*)—From the experiments made on living animals by Dr. Houſton [a], Dr. Hoadley [b], and Mr. Bremond [c], the *lungs* ſeem to act independent of the thorax, continuing to be dilated and contracted after they are expoſed to the air.[—[a] Phil. Tranſ. N° 441. Sect. 4. [b] Lectures on Reſpiration. [c] Mem. de l'Acad. des Sciences, 1739.—]

An artificial inflation of the *lungs* of a dead or dying animal will put the heart in motion, and continue it ſo for ſome time. And we have an inſtance of the ſucceſsful application of this experiment to the reſcuing the life of a perſon ſuffocated by the means of a coal pit. See Medic. Eſſ. Edinb. Vol. 5. And Phil. Tranſ. N°. 475. Sect. 11.

In the medical Eſſays Edinb. we read of an ulcer in the *lungs*, piercing through the diaphragm into the liver. See Vol. 1. Art. 26.

Dropſy of the LUNGS. See the article HYDROPS *pulmonum*.

LUNGS *wounded*. There is always reaſon to apprehend that the *lungs* are wounded, when the patient voids a great quantity of frothy blood by the mouth, accompanied with a cough after receiving a wound in the thorax, eſpecially when the blood that is voided at the wound, is very florid, and the patient makes a particular noiſe when he draws his breath. The office of a ſurgeon, in this caſe, is to clear the cavity of the thorax from extravaſated blood, and to heal the external wound when that may be done with ſafety: but as no application can be made to the internal wound, that muſt be left to nature. Whenever the divided veſſels contract themſelves, and the blood ſtops of itſelf, the patient will recover; the perſons who have recovered from theſe wounds, are afterwards externally ſubject to conſumptions, and ulcers of the *lungs*. Sometimes in caſes of this kind, the wounded part of the *lungs* puſhes itſelf forward, and ſticks pretty firmly in the orifice of the external wound. In this caſe, if it is forced back again, it will diſcharge a great quantity of blood into the cavity of the thorax: therefore it is better to let it remain in the ſituation nature has thrown it into, for by this means it will admit of the immediate application of proper dreſſings, and you may ſafely encourage it to adhere to the lips of the external wound: but if a wounded portion of the *lungs* ſhould be puſhed out of the thorax, beyond the limits of the external wound, a fine piece of linnen is to be wrapped round this part, and a ligature muſt be then made above the linnen, and all that is below the ligature taken off with a fine knife, and the ſound part of the *lungs* muſt then be returned into the body, keeping one end of the ligature conſtantly hanging out at the external wound; the wound is then to be kept open with a tent, and the ligature at length may be ſafely drawn out. The wound is then to be healed in the ordinary way. And during the courſe of the cure, the patient muſt take internally vulnerary decoctions, and lucatellus balſam. By this treatment wounds of this dangerous kind are ſometimes cured, but when they are not, it is a ſatisfaction to know that all has been done, that could be done in ſo deſperate a caſe. *Heiſter*. Surg. 73.

LUNGS *of inſects*. In the fly claſs the ſtigmata are extremely numerous, and the tracheæ which they terminate are branched and divaricated all over the body in an amazing manner, as if every part and particle of the bodies of theſe little animals had occaſion for its particular air veſſels; beſide theſe, however, flies are provided with proper *lungs*. They have two, and thoſe ſo very large, that they frequently take up half, and ſometimes two thirds of the body of the animal. *Reaumur*'s Hiſt. Inſ. Vol. 4. p. 267.

Theſe are two bladders placed ſideways one by the other, alike in ſhape and ſize; and having their origin at the junction of the corcelet and body, and in many flies whoſe bodies are compoſed of five rings, extending to the third, and ſometimes reaching the fourth. The ſize and figure of each of theſe bladders is ſuch, as is neceſſary, to fill almoſt entirely that cavity of the body in which it is lodged. They each of them touch the ſides of this cavity, the part when they join one another is flat, and this commiſſure forms a line running ſtrait down the body; they are, however, in this part, though ſo cloſely in contact, yet not at all joined to one another; this commiſſure, however, does not reach quite up to the back or quite down to the belly, there is a ſmall cavity left between each, which was very neceſſary in both places; the one to give paſſage to the great artery, the other to the excrements. Ibid. p. 268.

LUNG-*wort*, *Pulmonaria*, in botany. See PULMONARIA.

LUNULA, in geometry. See LUNE, *Cycl.* & *Suppl.*

LUNULA, the *half moon*, among the Romans, an ornament the patricians wore on their ſhoes.

LUNULA was alſo an ornament in form of a moon worn by the ladies.

LUNULARIA, a name given by Micheli to certain ſpecies of the marchantia, a kind of lichen. Theſe have the male cup divided into four ſegments, and thoſe turning their edges over the flower; whereas the marchantia, as he calls them, have eight or ten ſegments, and thoſe plain. *Micheli* Nov. Gen. Pl. 55.

LUNULATED *leaf*, among botaniſts. See LEAF.

LUPIA, in ſurgery, a name given by ſome authors to that ſort of ſwelling, called by others *talpa* and *teſtudo*. This is an encyſted tumor, more diſtinguiſhed by its ſituation than by its nature, ſince of whatever kind it be, whether aſteatomatous, or atheromatous, &c. if ſituated under the ſcalp, it is called by theſe names. *Heiſter*'s Surgery, p. 324.

LUPINASTER, in botany, the name given by Buxbaum to a new genus of plants, from their near approach to the characters of the lupine. The flowers are like thoſe of the other papilionaceous plants; the leaves are digitated as in the lupines. The flowers are collected into a head, ſuſtained on a long pedicle, iſſuing from the alæ of the leaves. The pods are flat, and the ſeeds kidney ſhaped. The ſtalks are ſix or eight inches high, the leaves long, of a blueiſh green; ſharply ſerrated, and elegantly ſtriated; they grow ſix, ſeven, or eight on a pedicle, which comes out of a yellowiſh membrane ſurrounding the ſtalk. The flowers are of a blueiſh purple, and ariſe out of cups, divided into ſeveral ſegments. The pods are long and depreſſed, and the ſeeds black and kidney ſhaped. It grows in great plenty about the banks of the Volga. Act. Petrop. Vol. 2. p. 346.

LUPINE, in botany. See LUPINUS, infra.

LUPINUS, the *lupine*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the

the papilionaceous kind. The piſtil ariſes from the cup, and finally becomes a pod, containing in ſome ſpecies roundiſh, and in others flatted ſeeds. The leaves of the *lupine* are alſo of a fan-like ſhape, or grow in the ſhape of fingers, all from the extremity of the ſtalks.

The ſpecies of *lupine* enumerated by Mr. Tournefort are theſe. 1. The common white garden *lupine*. 2. The great hairy blue flowered *lupine*. 3. The broad leaved hairy purple flowered *lupine*, called the wild *lupine* by old authors. 4. The broad leaved and hairy wild *lupine* with white flowers, in all things greatly reſembling the cultivated kind. 5. The white flowered hairy, low, broad leaved *lupine*. 6. The American trifoliate tree *lupine* with white flowers, and variegated fruit. 7. The broad leaved duſky flowered Portugal *lupine*. 8. The great *lupine* with fleſh coloured flowers. 9. The purple flowered wild *lupine*, with large, round, variegated ſeeds. 10. The purple flowered wild *lupine*, with ſmaller, round, variegated ſeeds. 11. The reddiſh flowered wild *lupine*. 12. The wild *lupine* with roſe coloured flowers. 13. The tall narrow leaved blue flowered *lupine*. 14. The little blue flowered *lupine*. 15. The little perennial creeping, blue flowered Virginian *lupine*. 16. The little Indian *lupine*, and 17. The wild, yellow flowered *lupine*. *Tourn.* Inſt. p. 392.

There are ſeveral ſpecies of this plant propagated in gardens, where they make a very agreeable appearance. But the kind moſt frequent with us is the leſſer purple or blue flowered kind. This is propagated by ſowing the ſeeds in a common flower border, where they require no care, but will come up and thrive of themſelves, they ſhould be ſown in April, in May, and in June, that there may be a ſucceſſion of them in flower for a conſiderable time. They ſhould always be ſown where they are to remain, for it gives leſs trouble, and they are plants which but very badly bear tranſplanting. *Miller*'s Gardners Dict.

LUPULUS, *hop*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the apetalous kind, being compoſed only of a number of ſtamina placed in a cup. Theſe flowers are barren, and the embryo fruits are found on other ſpecies of *hops*, on which there are no flowers. Theſe finally become a ſquammoſe fruit, compoſed of many leaves affixed to an axis, and containing many ſeeds, covered with a hand.

The ſpecies of *hop*, enumerated by Mr. Tournefort, are theſe. 1. The common male *hop*. 2. The common female *hop*. *Tourn.* Inſt. p. 535.

The flowers of the *hop*, beſide their uſe in brewing, are recommended as of great uſe in medicine, in the intention of anodynes and diſcutients. They are given in powder in diſeaſes of the liver and ſpleen, in the jaundice, and in obſtructions of the menſes, they alſo powerfully promote urine; and uſed externally in the way of a cataplaſm, they are of ſervice in tumors and contuſions. *Strother*, Pharm.

It is generally ſaid, that the *lupulus*, or *hop*, was, the *bryon* of the antient Greeks. Theſe authors have indeed deſcribed the *bryon*, βρυον, to be a climbing plant, with long branches, twiſting itſelf round every thing that comes in its way, and growing up to a great height; but this is all they have ſaid that gives the leaſt countenance to the opinion of their meaning the *lupulus* or *hop* by it, and this may as well agree with any other of the climbing plants as the *hop*. All that gave birth to this error, was, the writing in abbreviation, the word *bryon* being only a compendious way of writing *bryonia*, and it is very certain that the white *bryony* is the only plant ever meant by this word: the later Greek writers have indeed omitted the abbreviation, and have conſtantly written *bryonia* at length, which our tranſlators from the Greek render *lupulus*. See BRYON and HOPS.

LUPUS, the *wolf*, in zoology (*Cycl.*)—This is a beaſt of prey, but wholly of the dog kind, and the largeſt and fierceſt of that race of animals. It is extremely like the domeſtic dog in ſhape, and if the head did not differ a little in figure, one would be apt to declare it the very ſame animal. It has a very fierce look about the face, its eyes are glaring and ſavage, and its teeth, and the opening of its mouth fierce and frightful. The antients had an opinion, that the neck of the *wolf* was all of one ſolid bone; but, on the contrary, this creature is able to turn and twiſt about better than the dog kind. *Ray*'s Syn. Quad. p. 171.

The *wolf*, as well as all the other beaſts of prey, can endure hunger a long time, though very voracious when it meets with food. The *wolf* differs from the dog in his note, for inſtead of the barking of the dog this creature only howls; his ears which ſtand erect, and his buſhy tail make him alſo greatly reſemble the fox.

LUPUS, in botany, a name ſaid to be given by Pliny to the common hops: this is, however, an error, for tho' the word ſtands in moſt of the copies of that author *lupus*, the true meaning is doubtleſs *lupulus*, the hop. Pliny has coupled it with a word that expreſſes its climbing upon willows, calling it *lupus ſalictarius*. We find in all the old writers the *upulus*, which is the proper name of the hop before the initial, *l*, was added, joined with the word *ſalictarius*, but no where mention of *lupus ſalictarius*, unleſs in Pliny.

LUPUS, in ornithology, a name given by ſome authors to the *monedula* or *jackdaw*, from his voracious appetite and habit of ſtealing. *Aldrovand.* de Avibus.

LUPUS, in the hiſtory of inſects, the name of a *fly* called alſo in Engliſh the *wolf fly*. It has this name from its ravenous and devouring diſpoſition. It feeds on flies, or whatever other inſects come in its way, and is eaſily known by being of a very large ſize, and having long and ſtrong legs, and an oblong and conſiderable thick black body.

LUPUS is alſo the name given by authors to a peculiar claſs of ſpiders, from the manner of their taking their prey, which is by open hunting and running down, and not by means of webs as the common ſpiders do theirs. Theſe are diſtinguiſhed into two kinds, the one properly the *lupus*, or *wolf ſpider*, the other the *crab ſpider*.

All the ſpiders of the *lupus* kind have four large eyes and four ſmall ones. Their hinder pair of legs are longer than any of the others; and they uſually live upon the ground, ſeldom climbing into trees. Of the firſt kind, or the *lupi*, properly ſo called, there are four principal ſpecies. 1. The black ſpider. This is of a middle ſize, the male and female are both black, the head is ſmall, and the legs are beautifully ſpotted. 2. The brown ſpider with oblique ſtreaks upon the body. This is of a middle ſize, and has a black head. 3. The plain yellowiſh ſpider, with a long ſhaped pointed body. This is a very large ſpider, and its legs are long and robuſt; it lives among buſhes. 4. The livid ſpider with a long pointed body undulated with white. This is a very large ſpecies, and lives among trees and under hedges. *Ray*'s Hiſt. Inſ. p. 36.

Of the cancriform, or crab ſpiders, which are leſs properly called *lupi*, there are two principal kinds. The diſtinguiſhing character of the crab ſpiders, is, their having the hinder pair of legs the ſhorteſt of all, or at the utmoſt, not exceeding the third pair in length. The ſpecies are theſe. 1. The ſlow moving crab ſpider, with a blue body and very ſmall purple eyes. This is of a middling ſize, and when in motion, has much of the appearance of a ſmall crab. The ſmall nimble crab ſpider, of a yellowiſh colour, but with a brown tip of the body. This is a very ſmall ſpider, and is of a brown colour, when viewed in the ſhade, but gilded when turned to the ſun.

LUPUS *aureus*, the *gold coloured wolf*, in zoology, the name by which Latin authors call the creature known in Engliſh by the name of the *jackall*.

LUPUS *cervarius*, in zoology, a name by which many authors have called the *lynx*, from its feeding on deer. See the article LYNX. See JACKALL.

LUPUS *marinus*, the *ſea wolf*, a voracious ſea fiſh, caught ſometimes in our ſeas, but more frequently in the Mediterranean, and very fierce and voracious. Its head is larger in proportion to its ſize, than that of the ſhark, and rounder. This, as alſo the back, ſides, and fins, are all of a blueiſh colour. The belly is white, the ſkin is ſmooth and ſoft, but his teeth ſo remarkably hard and ſtrong, that if he bites againſt an anchor of a ſhip, or other iron ſubſtance, they make a loud noiſe, and leave their marks in the iron. In the rim of his under jaw he has ten ſharp and round teeth diſpoſed in two rows, and twelve grinders on each ſide behind theſe, diſpoſed in the ſame manner in two rows. The upper jaw has twelve ſharp and round teeth before, and there are three orders or rows of grinders in his palate; the middle one conſiſting of twelve teeth, as the others, but having them larger than the human teeth, and running farther toward the jaw; and in the upper jaw he has two rough and ſharp bones; to which a rough part near the root of the tongue anſwers; and this like thoſe is beſet with ſharp teeth. *Willughby*'s Hiſt. Piſc. p. 130.

It has two fins like wings, ſituated juſt under the gills; each of two hands breadth long, and one long fin running from the head to the tail of four or five fingers broad, and another reaching from the anus to the tail.

LURE (*Cycl.*)—There are three things to be conſidered before the *lure* be ſhewn to a hawk newly reclaimed; the firſt is, that ſhe be bold and familiar in company, and not afraid of dogs or horſes; the ſecond is, that ſhe be very ſharp ſet and hungry, having regard to the hour of the morning and evening when ſhe is to be *lured*; and thirdly, ſhe muſt be clean within, and the *lure* muſt be well garniſhed on all ſides with meat, and when it is intended to give her the length of a leaſh, the falconer muſt abſcond himſelf: ſhe muſt alſo be unhooded, and a bit or two given her on the *lure* as ſhe ſits on the fiſt: after this the *lure* is to be taken from her and hid, then thrown upon the ground ſo near her that ſhe may catch it within the length of her leaſh, and as ſoon as ſhe has ſeized it, the falconer is then to uſe his voice, and then to feed her on the ground with the warm thigh of a pullet.

After this, by degrees, another perſon is to hold the hawk while the falconer holds the *lure*, and ſhe is to be taught to come to it for food. This is to be done at greater and

greater diſtances; and finally, when ſhe is accuſtomed to it alone it is to be done in company, taking great care that nothing fright her; and when ſhe is perfect in it on foot, ſhe is to be *lured* on horſeback.

LUSCINIA, the *nightingale*. See PHILOMELA.

LUSHBURGHS, or LUXENBURGHS, in our old writers, a baſe ſort of foreign coin, made of the likeneſs of Engliſh money, and brought into England in the time of Ed. 3. to deceive the king and his people: on account of which it was made treaſon, for any one willingly to bring any ſuch money into the realm, as knowing it to be falſe. Stat. 23 Ed. 3. 3 Inſt. 1. *Terms of Law.*

LUST, at ſea. If a ſhip *heel* either to ſtar-board or port the ſeamen ſay ſhe hath a *luſt* that way; and they ſay ſo, though it be occaſioned only by the ſhooting of her ballaſt, or by the unequal ſtowing of things in her hold; though it is more properly ſaid of a ſhip, when ſhe is inclined to heel any way upon the account of her mold or make.

LUSTRE, an appellation given to a branched candleſtic, when made of glaſs. See the articles BRANCH and JESSE.

LUSTRATION (*Cycl.*)—The manner of the Macedonians purifying their army by *luſtration* was this; at the time of their feſtival Xanthica, they divided a bitch into two halves, one of which, together with the entrails, was placed upon the right hand, the other upon the left; between theſe the army marched in this order: after the arms of the Macedonian kings, came the firſt line of the army, conſiſting of horſe; theſe were followed by the king, and his children, after whom went the life guards; then followed the reſt of the army: this done, the army was divided into two parts, one of which being ſet in array againſt the other, there followed a ſhort encounter, in imitation of a fight. *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 417.

LUSTRICUS *dies*, among the antients, the day on which young children underwent the ceremony of *luſtration*, and received their names. Some will have it to have been the ninth day after their birth in males, and the eighth in females; but others make it the fifth day after their birth, and ſome the laſt day of the week. The ceremony was performed among the Greeks after this manner: the midwives, having firſt purified themſelves by waſhing their hands, ran round the fire-hearth with the infant in their arms, thereby, as it were, entering it into the family, and putting it under the protection of the houſhold gods, to whom the hearth ſerved inſtead of an altar; hence it had the name of *amphidromia*. See AMPHIDROMIA, *Cycl.*

It was celebrated as a feſtival with great expreſſions of joy; and they received gifts from their friends on this occaſion. If the child was a male, their door was decked with an olive garland; if a female, with wool, to ſignify the work women were to be employed about. *Potter*, Archæol. Græc. l. 4. c. 14. T. 2. p. 328. *Hofm.* Lex. in voc.

LUSTRUM (*Cycl.*)—The *cenſus* was accompanied always by a *luſtration* of the people, ſo the word, *luſtrum*, has conſtantly been taken by the antients and moderns for a term of five years: yet, if we enquire into the real ſtate of the caſe, we ſhall find no good ground for fixing ſo preciſe a ſignification to it; but, on the contrary, that the *cenſus* and *luſtrum* were, for the moſt part, held irregularly and uncertainly, at very different and various intervals of time, as the particular exigencies of the ſtate required. *Middlet.* of Rom. Sen. p. 107.

LUTATION, in chemiſtry, is uſed for the cementing of chemical veſſels cloſe together.

LUTEA, in natural hiſtory, the name of a ſpecies of fly found frequently near waters after rain; it is of a duniſh yellow colour, the wings are long, and the eyes large and prominent; the tail is thick, and has two hairs of a conſiderable length, growing at the head, ſo that it is of the biſetæ kind.

LUTEA is alſo a name by which ſome authors have called the *emberiza flava*, or *yellow hammer*. See the article YELLOW *Hammer*.

LUTEOLA, *dyers weed*, in botany, the name of a genus of plants, the characters of which are theſe. The flower is of the polypetalous anomolaus kind, conſiſting of ſeveral irregularly ſized petals. The piſtil ariſes from the cup, and finally becomes a fruit, or ſeed veſſel, of a ſomewhat orbicular ſhape, terminating in three points, and containing roundiſh ſeeds.

The ſpecies of *luteola*, enumerated by Mr. Tournefort, are theſe. 1. The common or willow leaved *luteola*. 2. The little Portugal *luteola* with curled leaves. 3. The dwarf Pyrenean *luteola* with toad flax leaves. *Tourn.* Inſt. p. 423.

LUTEOLA, in zoology, a name given by many to a ſmall bird, called by others *aſelus*, and by others *regulus non criſtatis*; but this laſt is a name that has occaſioned ſome confuſion, as many have erroneouſly called our common wren the *regulus*, and as it has no creſt imagined it to be the bird meant by this name.

It is, excepting the creſted wren, the ſmalleſt of all European birds, and it very little exceeds that in ſize. Its head, neck, and back, are of a greeniſh brown; the rump is greener than the reſt. It has a yellow line on each ſide, extended from the noſtrils, beyond the eyes, to the hinder part of the head. The breaſt, throat, and belly, are yellow, with a very faint caſt of green. The wings and tail are brown, and all their feathers are tipped with green at their ends: the under part of the wings has much of a very fine green. The beak is extremely ſlender, and half an inch long. The mouth yellow within. It makes a loud noiſe, like that of the graſshopper, and is principally found among willows: it is continually creeping, and ſinging among the branches of trees. It builds with ſtraw and feathers, and lays five eggs, which are white, and ſpotted with red. There is a conſiderable variation in the colours of theſe birds; ſome of them being much greener on the back, and much whiter on the belly, than others. *Ray*'s Ornitholog. p. 164.

LUTRA, in zoology, the name given by authors to the otter, called by the Greeks, from his loving the water, ἔνυδρις, *enhydris*. See Tab. 1. of Quadruped, N° 19.

The otter is ſmaller than the beaver, and has a longer and more ſlender body. Its tail is alſo longer than that of the beaver, and is all over covered with hair; and its legs are very ſhort in proportion to the ſize of its body. The feet have all five toes each, which are naturally expanded, and are connected by a membrane like the toes of web-footed fowl; and are all ſo equally diſtant, that there is no diſtinction of any in the place of the great toe in other animals. The head and face exactly reſemble the beaver, and the ears are ſmall, and placed under the eyes, near the upper jaw, as in the beaver. The hair is ſhort, and of a cheſnut brown, but paler under the belly. The tail has ſhorter hair than that of the body, but longer than that of the legs. *Ray*'s Syn. Quad. p. 187.

In the Linnæan ſyſtem of zoology, the *lutra* makes a diſtinct genus of animals. The diſtinction of which, from thoſe quadrupeds to which it moſt approaches, is its feet being adapted to ſwimming. He makes two ſpecies of the *lutra*; the common otter, which he calls *lutra digitis equalibus*, and the *lutra pollice digitis breviore*. The firſt, the otter with all its toes of equal length; the ſecond, the otter with the great toe ſhorter than the reſt. *Linnæi*, Syſt. Nat. p. 36.

LUTTA, in botany, the name of a ſpecies of momordica. See MOMORDICA.

LUTUM, in botany, a name given by the antient Roman authors to a plant ſince called *luteola*, or dyers weed, and by authors of later date *carniola*, and *cymene*. It is uſed at this time to dye things yellow, and was ſo by the antient Greeks, who expreſsly mention the dying woollen cloaths with it. The Roman courtezans had alſo a way of dying their hair yellow with it, and hence the old verſe,

Sus immunda luto, *gaudet meretricula* luto.

This laſt *lutum* evidently means the yellow herb *lutea*, or *luteola*. Vitruvius calls it *lutea herba*, as does alſo Pliny; but Macer, and Paulus Ægineta, with ſeveral others, miſtaking it to be the ſame plant with the *iſatis*, or woad, call it *gioſda*, or *gueſda*. This is a common name of that plant, but can never belong to the *lutea*, unleſs blue and yellow can be proved to be the ſame colour; the woad *iſatis*, or *gueſda*, dying blue, not yellow. Neophytus is in the ſame error, and ſays that *iſatis* is the plant which the Romans called *lutea*. It is ſtrange alſo how this error, of confounding two plants ſo different in their nature and properties, has made its way to this time in the world. So far as the confuſion of names will carry it, we call the *luteola* in England ſometimes *dyers weed*, which is a very indeterminate name, and more uſually *wold*, or *woad*, the very names of the *iſatis*; and the Burgundians call it *guad*, the very name by which they call *woad*; though both they, and we, perfectly well know that they are different plants, and dye different colours. There is this alſo yet to be obſerved, that as we confound the herb *luteola*, and the *geniſta tinctoria*, together, under the name *dyers weed*; ſo others have done it under the names of *lutum*, *carniola*, &c. and it is plain that theſe words, as alſo the *cymene*, and *æcomene* of the Greeks, ſometimes expreſs the one, and ſometimes the other of thoſe plants. See LUTEOLA.

LUXATION (*Cycl.*)—LUXATION *of the ancle*. See the article ANCLE.

LUXATION *of the humerus*. Heiſter is of opinion, that the ſurgeon's hand and a napkin, with ſtrong and dextrous aſſiſtants to make the extenſion, and hold the patient firm, will of themſelves be generally ſufficient for the buſineſs. He ſeems to have no great opinion of the ambe of Hippocrates, nor of ſeveral other contrivances for this purpoſe. Vid. *Heiſt.* Surg. Vol. 1. p. 160, 163. See AMBE.

LUZZO *marino*, in ichthyology, a name given by the Italians to the fiſh called by the antient Greek writers, and many of the modern Latin authors, *ſphyræna*; and by Pliny, Varro, and ſome other of the old Roman authors, *ſudis*. Gaza has called it the *malleolus*, and the French, at this time, call it *ſpet*. It ſeems to belong to the genus of the *ſcombri*.

ſcombri. Salvian has given a figure of it, but it is an imperfect one; for he has omitted the firſt fin of the back. See the articles SPHYRÆNA and SUDIS.

LYCÆA, Λυκαια, in antiquity, an Arcadian feſtival reſembling the Roman *lupercalia*, in which the conqueror was rewarded with a ſuit of brazen armour. *Potter*, Archæol. Græc. lib. 2. c. 20. Tom. I. p. 412. See the article LUPERCALIA, *Cycl.*

LYCHNIS, *catch fly*, in botany, the name of a very large genus of plants, the characters of which are theſe. The flower is of the caryophylleous kind, being compoſed of ſeveral petals, diſpoſed in an orbicular form, and ariſing out of a tubular cup; and being uſually bifid, and ſurrounded with a ſort of circle of two or three ſmall leaves. The piſtil ariſes from the cup, and finally becomes a fruit, which terminates in a conic point, and is enveloped in the cup. This opens at the end when ripe, and is ſeen to contain ſometimes roundiſh, ſometimes angular, and ſometimes kidney-ſhaped ſeeds, affixed to a placenta. See Tab. 1. of Botany, Claſs 8.

The ſpecies of *lychnis*, enumerated by Mr. Tournefort, are theſe. 1. The great hairy ſcarlet *lychnis*, called the Conſtantinople *lychnis*. 2. The great hairy *lychnis* with fleſh coloured flowers. 3. The great hairy *lychnis* with ſaffron coloured flowers. 4. The great hairy *lychnis* with white flowers. 5. The great hairy *lychnis* with variegated flowers. 6. The great hairy *lychnis* with red lead coloured flowers. 7. The ſmooth ſoft leaved purpliſh red flowered *lychnis*. 8. The leſſer ſcarlet flowered Conſtantinople *lychnis*. 9. The pale red flowered garden *campion*. 10. The deep red flowered garden *campion*. 11. The crimſon flowered garden *campion*. 12. The white flowered garden *campion*. 13. The garden *campion* with flowers red within, and white without. 14. The garden *campion* with fleſh coloured ſpotted flowers. 15. The garden *campion* with fleſh coloured flowers, not ſpotted. 16. The double garden *campion*. 17. The Helvetian mountain *lychnis* with flowers in umbells. 18. The common white flowered ſingle wild *lychnis*. 19. The double flowered white *lychnis*. 20. The wild white *lychnis* with long and ſmooth leaves. 21. The white wild ſea *campion* with fleſhy leaves. 22. The green flowered proliferous wild *lychnis*. 23. The green flowered ocymaſtrum leaved wild *lychnis*. 24. The ſingle wild purple marſh *lychnis*. 25. The wild double red flowered *lychnis*. 26. The early procumbent purple *lychnis* with roundiſh leaves. 27. The larger *corn cockle*. 28. The *corn cockle* with yellow flowers, commonly called *yellow nigella*. 29. The red perfoliate leaved corn *lychnis*. 30. The perfoliate leaved corn *lychnis* with fleſh coloured flowers. 31. The perfoliate leaved corn *lychnis* with white flowers. 32. The common wild white *lychnis*, called *white ben*. 33. The double flowered *white ben*. 34. The wild *ben* with greeniſh purple flowers. 35. The narrower and more pointed leaved wild *ben*. 36. The ſmooth leaved purple flowered wild *lychnis*, or ſpatling poppy. 37. The alpine *ben* with roundiſh leaves and purple flowers. 38. The creeping ſea *lychnis*. 39. The ſhrubby myrtle leaved *lychnis*, reſembling the *white ben*. 40. The double flowered ſhrubby white *lychnis*. 41. The night flowering *campion*. 42. The ſweet ſcented narrow leaved night flowering *campion*. 43. The white flowered broad leaved viſcous mountain *lychnis*. 44. The *lychnis* called *the little white ocymoides*. 45. The ſmooth broad leaved purple viſcous *lychnis*. 46. The double flowered graſſy leaved *lychnis*. 47. The white flowered, broad leaved ſmooth viſcous *lychnis*. 48. The viſcous *lychnis* with flowers, purple on the outſide, and white within. 49. The viſcous *lychnis* with flowers, purple on the outſide, and white within, with ſmooth ſtalks and cups, and with the flowers diſpoſed in umbells. 50. The duſty leaved *lychnis* with narrow petals, purple on the outſide, and white within. 51. The clammy *lychnis* with ſlightly hoary leaves. 52. The viſcous hairy *lychnis* with fleſh coloured flowers. 53. The viſcous *lychnis* with larger moſſy barren flowers. 54. The viſcous *lychnis* with ſmaller moſſy fruitful flowers. 55. The leſſer moſſy leaved *lychnis*. 56. The auricula-like *lychnis*. 57. The larger woolly wild *lychnis*. 58. The ſmaller woolly wild *lychnis*. 59. The *lychnis*, commonly called *ſoap wort*. 60. The double flowered *ſoap wort*. 61. The meadow *lychnis* with jagged flowers. 62. The pale red jagged flowered meadow *lychnis*. 63. The jagged meadow *lychnis* with white flowers. 64. The jagged flowered meadow *lychnis* with large double purple flowers. 65. The jagged flowered meadow *lychnis* with large double white flowers. 66. The jagged flowered meadow *lychnis* with ſmall double flowers. 67. The wild broad leaved *lychnis* with turgid and ſtriated flower cups. 68. The narrow leaved wild *lychnis* with ſtriated turgid cups. 69. The procumbent Sicilian *lychnis* with extremely large turgid and ſtriated flower cups. 70. The wild *lychnis* with many leaves growing from every joint. 71. The red flowered narrow leaved viſcous wild *lychnis*. 72. The white flowered narrow leaved viſcous wild *lychnis*. 73. The broader leaved viſcous red flowered wild *lychnis*. 74. The narrow leaved hairy cretic *lychnis*. 75. The knot-graſs leaved mountain *lychnis*, called by many *ocymoides montanum*. 76. The dwarf graſſy leaved mountain *lychnis*, or *lychnis* flowered alpine moſs. 77. The dwarf graſſy leaved mountain *lychnis* with ſnow white flowers. 78. The procumbent ſea *lychnis* with very narrow and long leaves. 79. The long and hairy leaved *lychnis* with five petals, not bifid, in each flower. 80. The little hairy night flowering *lychnis*. 81. The daiſy leaved mountain *lychnis* with very ſmall pale red flowers. 82. The ſmalleſt moſſy flowered mountain *lychnis*. 83. The ſmooth leaved *lychnis* with very hard flower cups. 84. The wild hairy perennial *lychnis* with leaves like the Engliſh ſcurvy graſs, and very large flowers like the ſoap wort. 85. The little hairy annual *lychnis* with a ſmall fleſh coloured flower. 86. The round fruited *lychnis* with fleſh coloured flowers, ſtanding on long weak foot-ſtalks. 87. The red flowered ſmooth annual *lychnis* with oblong pyramidal capſules. 88. The wild white *lychnis* with a bending ſpike of flowers. 89. The little hairy *lychnis* with variegated flowers. 90. The fading flowered wild *lychnis*. 91. The night flowering *lychnis* with very ſmall flowers. 92. The little *lychnis* with red flowers and long narrow cups. 93. The little *lychnis*, called by many the *ſaxifrage* of the antients. 94. The little dwarf alpine ſtone *lychnis*. 95. The tall *lychnis* with numerous ſmall flowers, and toad flax leaves. 96. The flax leaved many flowered alpine *lychnis* with very large roots. 97. The ſmalleſt annual *lychnis* with fleſh coloured flowers, marked with purple lines. 98. The daiſy leaved annual Portugal *lychnis* with purple flowers. 99. The daiſy leaved annual Portugal *lychnis* with fleſh coloured flowers. 100. The lavender leaved *lychnis*. 101. The fleſhy leaved duſty ſea *lychnis*. 102. The willow leaved annual Spaniſh ſea *lychnis*. 103. The many flowered kali leaved Spaniſh *lychnis*. 104. The leaſt Pyrenean umbelliferous *lychnis*. 105. The naked ſtalked holoſteum leaved umbelliferous ſtone *lychnis*. 106. The Spaniſh *lychnis* with red valerian leaves and purple flowers. 107. The narrow leaved ſea *lychnis*. 108. The Portugal marſh *lychnis* with ſtriated cups. 109. The ſtinking viſcous Portugal mountain *lychnis*. 110. The capillaceous leaved Spaniſh *lychnis*. 111. The dwarf juniper leaved rock *lychnis*. 112. The little narrow leaved ſtone horned *lychnis*. 113. The fatty leaved ſea *lychnis*. 114. The upright ſpeedwell leaved *lychnis*.

The *lychniſes* differ from the *caryophylli*, or pinks, in that their flower cup is ſimple, not ſquammoſe at the bottom, as in the pink, and in the corona, which occupies the middle of the flower, and have angular kidney ſhaped ſeeds. *Tourn.* Inſt. p. 334, ſeq.

There are ſeveral ſpecies of this plant, which, for the beauty of their flowers, are cultivated in our gardens; they are very hardy plants, and are eaſily propagated either by parting the roots, or by ſeed.

The roots ſhould be parted in the latter end of Auguſt, or beginning of September, and planted in a light dry ſoil.

If they are to be raiſed from ſeed, they ſhould be ſown in March upon a bed of light freſh earth, and in May the young plants ſhould be removed into another bed of the like earth, at about ſix inches diſtance from each other, and watered and ſhaded till they have taken root; after which they will require no farther care, but to be kept clear from weeds; and at the end of the September following they may be removed, for the laſt time, into the borders where they are to ſtand, and they will flower in the June and July following; when, if they are ſuffered to ripen their ſeeds, they will ſow themſelves, and come up without any further trouble. *Miller*'s Gardners Dictionary.

LYCHNITES *marmor*, in the natural hiſtory of the antients, a name given by many to the Parian marble, of which the fineſt ſtatues among the antients were formed.

Varro imagines that it had this name from λυχνος, a lamp, becauſe, as he ſuppoſes, it was cut by candle-light in the quarries; but it ſeems much more probable, that it had it from the verb λυχνευειν, to ſhine, or be bright, from its remarkable ſplendor.

LYCIUM, in the materia medica, the name of a fruit called by the French *baye d'Avignon*, the Avignon berry, and by many authors the *pyxacantha*. The ſhrub which produces it, is the *lycium ſive pyracantha* of Gerrard. The fruit is about the ſize of a grain of wheat, and is not round, but of an angular form when dried, ſometimes of three, ſometimes of four angles, and ſometimes dented in at one end like a heart. It is of a yellowiſh green colour, and of a bitter and aſtringent taſte. It ſhould be choſen freſh dried, and large. There was formerly a rob, or inſpiſſated juice made from theſe berries, much in uſe in medicine; but this was generally adulterated with a rob made of the berries of the woodbind, privet, ſloe, or other ſhrub, and is now quite out of uſe. The dyers in France and Holland uſe it for a yellow; and the Dutch have another uſe for it, which is, that they boil it in alum water, and mixing it with whiting, form it into twiſted ſticks, which they ſell to the painters in water colours, under the name of *ſtil de grain*. *Lemery*, Dict. de Drog.

LYCODONTES, in natural hiſtory, the name given by Dr. Hill to thoſe foſſile bodies, called by the generality of authors *bufonitæ*. They have had this laſt name from an erroneous opinion of their being generated in the toad, but being now known to be the teeth of the *lupus piſcis*, or *wolf fiſh*, it is proper that they ſhould be called by another name. See Tab. of Foſſils, Claſs 8.

Many authors have taken theſe for mere ſtones, and the generality of writers have ranked them among the gems; but as they appear, on compariſon, to be the very ſame in ſhape and form, with the teeth of the recent jaws of this fiſh, and have been ſeveral times found yet remaining in the foſſile jaws, bedded in the ſtrata of ſtone; they certainly are the grinders, or *dentes molares*, of this fiſh, and not improbably ſome of them of other fiſh alſo.

The *lycodontes* are all of the ſame general figure, though of many varieties in the different degrees. The more common kind is rounded, riſing to an orbicular prominence at the top, and is hollowed within. Of theſe many reſemble a ſmall acorn cup, and their hollow is found commonly filled up with the matter of the ſtratum in which it is immerſed: this alſo is uſually the caſe in regard to the other kinds, but they are all ſometimes found alſo with their hollows empty. Another ſort of them are of an oblong figure, but rounded in the ſame manner with the others at the top. Theſe have by ſome been ſuppoſed to reſemble a ſmall boat in ſhape; and of theſe ſome are found of an equal diameter all the way, others are larger in the middle than elſewhere, and others at one end; ſome of them are alſo found remarkably raiſed in the middle, and ſome emulating a conic form. They are generally pretty deeply hollowed, but ſome are very little ſo, and ſome ſcarce at all; and ſome have been found hollowed at the top, as well as at the bottom. Many of them have an outer circle of a different colour from the reſt, and this is ſometimes ſtriated with very fine lines; ſome are found very long in proportion to their breadth, and in ſome degree reſembling the bodies called *ſiliquaſtra*; and finally, there are ſome perfectly round, but theſe are more rare.

The *lycodontes* are naturally of a fine poliſh, and are worn in rings for the ſake of their imaginary virtues, without any addition to this from the workman. Some of them have been found, however, a little rough and uneven, and ſome few ſtriated.

They are of various ſizes, from that of a pin's head, to ſuch as meaſure between two and three inches round, and are of a great variety of colours; ſome being black, others blueiſh, others brown; many of a light cheſnut colour, many of a liver colour, ſome of a reddiſh black, and ſome few whitiſh. They are moſt frequently of one ſimple colour in each, but ſometimes they are very beautifully mottled and variegated. The yellowiſh ones are often found irregularly variegated with black. Some of them are edged round with a circle of a different colour, and others have a beautiful ſpot in the center, ſurrounded with a number of circular lines; theſe are of all others the moſt elegant.

They are found in many parts of England, but more plentifully in Germany, and moſt of all ſo in the iſland of Malta. With us they are uſually bedded in ſtone; in Germany they are not unfrequently found bedded in a blue clay, and in Malta in the medicinal earth of that iſland, in which they lie in various cluſters, and are commonly called *ſerpents eyes*. *Hill*'s Hiſt. of Foſſ. p. 644.

LYCOGALA, in botany, a name by which Micheli has called ſeveral of the ſpecies of mucor, a kind of fungus conſiſting of ſmall bladders, with ſeeds on their inner ſurface affixed to capillary filaments. See MUCOR.

LYCOIDES, a term uſed by medical writers to expreſs the diſorders which ariſe in the human body by a long retention of the ſeed. Theſe are ſometimes madneſs, and very often dangerous quinſies and ſwellings, and inflammations about the neck and throat. If we conſider the natural tendency of the diſorders of this kind to affect the neck, and the remarkable ſwelling of the necks of bucks, and ſome other animals, at ruting time, it may give ſome rational hints towards underſtanding the alteration of the voice in boys who arrive at puberty.

Blancard derives the word *lycoides* from λυκος, *lupus*, and ειδος, *forma*, from a ſuppoſition that wolves are ſubject to this diſorder.

LYCOPERDON, *puff-ball*, in botany, the name of a genus of plants, the characters of which are theſe. The whole plant, while young, is of the fleſhy ſubſtance of the muſhrooms, but when ripe, it becomes hollow, and full of an extremely ſubtile powder.

The ſpecies of *lycoperdon*, enumerated by Mr. Tournefort, are theſe. 1. The great alpine *lycoperdon* with a lacerated bark. 2. The ſmaller *lycoperdon* with a lacerated bark. 3. The common orbicular *lycoperdon*. 4. The ſemi-orbicular *lycoperdon*. 5. The ſmall ſpherical cluſter *lycoperdon*. 6. The ſmall oval cluſter *lycoperdon*. 7. The ſmalleſt *lycoperdon* ſtanding on a pedicle. 8. The *lycoperdon* with a long ſcabrous pedicle. 9. The *lycoperdon* with a long tumid pedicle. 10. The greyiſh white pear faſhioned *lycoperdon*. 11. The white rough pear faſhioned *lycoperdon*. 12. The aſh coloured pear faſhioned *lycoperdon*. 13. The Virginian pear faſhioned *lycoperdon* with a ſpungy bottom. 14. The trifid Virginian *lycoperdon*. 15. The ſmooth, oblong and inwardly marginated *lycoperdon*. 16. The white ſphærical *lycoperdon*, variegated with brown ſcales. 17. The rough and warty ſphæric *lycoperdon*. 18. The blood red ſphæric *lycoperdon*. 19. The ſnow white ſphærical *lycoperdon*, with numbers of ſmall flat faces on the ſurface. 20. The white globular *lycoperdon* with a broad ſeſſile baſe. 21. The ſtinking oval *lycoperdon* placed croſswiſe, and without a baſe. 22. The ſmall warty *lycoperdon*. 23. The *lycoperdon* of the form of a chemical receiver. 24. The finger faſhioned *lycoperdon*. 25. The white club faſhioned *lycoperdon*. 26. The mortar faſhioned *lycoperdon*. 27. The ſtellated bladder *lycoperdon*. *Tourn.* Inſt. p. 563.

LYCOPERSICON, *woolf's peach*, or *love apple*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of a rotated form, and divided into ſeveral ſegments at the edge. The piſtil ariſes from the cup, and is fixed in the manner of a nail into the middle of the flower: this finally becomes a large, fleſhy, ſoft fruit, of a roundiſh figure, divided into ſeveral cells, and uſually containing flat ſeeds. The ſpecies of *lycoperſicon*, enumerated by Mr. Tournefort, are theſe. 1. The common *lycoperſicon*, called *mala aurea*. 2. The *lycoperſicon* with red fruit not ſtriated. 3. The yellow fruited *lycoperſicon*. 4. The white fruited *lycoperſicon*. 5. The pale fleſh colour fruited *lycoperſicon*. 6. The yellow cherry fruited *lycoperſicon*. 7. The red cherry fruited *lycoperſicon*. 8. The hard ſtriated fruited *lycoperſicon*, called by ſome *mala Æthiopica*. 9. The ſhrubby American *lycoperſicon* with large ſinuated leaves. *Tourn.* Inſt. p. 150.

The firſt ſpecies of this plant is cultivated in many of our gardens, and its fruit is eaten by the Spaniards and Italians, and by the Jew-families in England, as we do cucumbers, with oil and vinegar, or elſe ſtewed in ſoops. They are propagated by ſowing their ſeeds in March on a moderate hot-bed. When they come up, they are to be tranſplanted into another hot-bed of about the ſame temperature, where they are to be ſet at three inches diſtance. In this place they muſt be watered and ſhaded, and muſt have as much freſh air as may be; and in May they are to be tranſplanted into pots, or borders, and the branches, when they grow long, muſt be ſupported with ſticks, otherwiſe the fruit, when it grows large, will break them. They require frequent watering, and in Auguſt ripen their fruit, which grows to a large ſize, and makes a very pretty figure. But they ſhould not be planted near habitations, for the leaves and ſtalks, when rubbed by the clothes in people's paſſing by, yield a very ſtrong and very offenſive ſmell. *Miller*'s Gard. Dict.

LYCOPHTHALMUS, *the wolf's eye-ſtone*, a name given by ſome authors to ſuch pieces of agate, or any other ſemi-pellucid ſtone, as chance to have circular ſpots in them, reſembling in colour the eye of that animal.

LYCOPODIOIDES, in botany, the name of a genus of moſſes, the characters of which are theſe. It produces its ſeeds in ſpikes, in the manner of the *lycopodium*, or wolf's claw moſs, but that in two ways; for ſome of the capſules incloſe a powder, which ſeems only a farina; others ſeem to contain true ſeeds; theſe always ſtand to the number of three in each capſule. It differs from the *lycopodium* alſo, in its general appearance and manner of growth, the leaves being all placed in the ſame plane, and expanded in the manner of fins, with an intermediate ſeries of ſmall leaves, which cover the upper ſide of the middle rib, or ſtalk. Of theſe moſſes there are two orders; the firſt comprehends ſuch as are creeping, or procumbent.

Of theſe the following are all the known ſpecies. 1. The creeping ſcaly, or imbricated *lycopodioides*. This is found in ſhady and rocky places, but is not met with in England. It is the moſs called by many authors *muſcus denticulatus minor*, or the ſmall toothed moſs. Some have ſaid that they found it in England, but they all ſeem to have miſtaken ſome other ſpecies of moſs for it. 2. The creeping pinnated *lycopodioides* with birds foot leaves. This grows in Malabar, and the iſland of Ceylon. 3. The creeping denticulated *lycopodioides* with ſpikes ſtanding on ſlender pedicles. This is called *muſcus denticulatus*, and *muſcus denticulatus major*, by authors, and has been ſaid alſo to grow in England, but erroneouſly. It is frequent on the high mountains in Swiſſerland. 4. The creeping denticulated *lycopodioides* with footleſs ſpikes. This is found in ſhady places in Penſylvania, and other parts of North America. *Dillen*, Hiſt. Muſc. p. 469.

The ſecond order of the *lycopodioides* comprehends thoſe which are erect, or have ſome erect, and ſome procumbent, or creeping branches, with erect ſhoots riſing from them. Of this order the following are all the known ſpecies.

1. The ſhrubby *lycopodioides* with looſe and naked ſpikes. The leaves of this ſtand out in the manner of ſmall ſpines. It is a native of the Eaſt-Indies. 2. The larger upright fern-

fern-like *lycopodioides* with dentated leaves, and cylindric and very much branched ſtalks. This grows on the continent, as well as in the iſlands of America, in wet places. 3. The upright acacia leaved fern *lycopodioides* with ſulcated ſtalks. This is an Eaſt-Indian moſs, and is found in Malabar, and other parts. 4. The ſmall upright fern-like *lycopodioides* with denticulated leaves. This alſo is an oriental moſs, and is commonly brought from China. 5. The ſpleenwort-like *lycopodioides*, or *lycopodioides* with auriculated leaves. This alſo is found in the Eaſt-Indies. 6. The forked yew leaved *lycopodioides*. This is found in ſome parts of America. 7. The ſmaller forked ſtiff *lycopodioides* with denticulated leaves. This was found by Plumier in the iſland of St. Domingo. 8. The ſcaly *lycopodioides* with curled points. This is a native of the Eaſt-Indies. Id. Ibid. p. 473. See Tab. of Moſſes, N° 15.

LYCOPODIUM, in botany, the name of a genus of moſſes, the characters of which are theſe. It produces capſules in the alæ of certain leaves, which are very unlike the capſules of the other moſſes, having neither calypha, operculum, nor pedicle. Theſe do not ſtand as thoſe of the *felago*, in all the alæ of the leaves, but are collected together into a ſort of ſpike of a ſcaly ſtructure, and one capſule ſtands under every ſcale, or leaf. Theſe capſules are of the ſhape of a kidney, and when ripe, they ſeparate longitudinally into two parts, and throw out a powder, conſiſting of round globules. It has been ſuppoſed by many, that this powder is the farina of the flower; but as there are no ſeeds found in any other part of the plant for it to impregnate, it ſeems a much more probable opinion, that this powder, as well as that of the capſules of all the other moſſes, is the true and genuine ſeed of the plant. In moſt of the ſpecies of this plant, the ſpikes are compoſed of leaves of a different figure from thoſe of the reſt of the plant, and are therefore called ſcales; but in ſome they are made of leaves of the ſame figure with thoſe of the other parts of the moſs. See Tab. 2. of Botany, N° 14.

The firſt order of the *lycopodia*, according to Dillenius, conſiſts of thoſe which have their ſpikes ſupported on pedicles; and of theſe the firſt ſeries are diſtinguiſhed by the appellation of *juliferæ*, from their ſpikes reſembling the juli, or catkins of ſome trees, and being not of the ſame leaves with the reſt of the plant. Of theſe the following are all the known ſpecies. 1. The common *wolf's claw moſs*, or hairy rambling *lycopodium*. This has ſtalks of a vaſt length, and grows on heaths in many parts of England. 2. The creeping ſavin-like *lycopodium*, called by ſome cypreſs moſs, or heath cypreſs. This is very common in Yorkſhire, and ſome other parts of England, but not met with any where about London. 3. The long and round double forked *lycopodium* with finger'd arbor vitæ leaves. This creeps on the ground, and is found in many parts of North America. 4. The tall double ſquare forked *lycopodium*. This alſo is found in ſome parts of America. 5. The croſs broad leaved *lycopodium* with ſlender forked ſpikes. This is an Eaſt-Indian moſs, found in Malabar, and in the iſland of Ceylon. 6. The creeping pinnated *lycopodium* with long pedicles and ſpikes. This is the only ſpecies of the *lycopodia* whoſe ſpikes ſtand on pedicles, that has its leaves placed in the ſame plane. The whole, or compound leaves, are not more than an inch in length, and the pedicles of the ſpikes much longer. This was found by Mr. Cateſby in damp places in Carolina.

The ſecond ſeries of the *lycopodia* comprehends thoſe whoſe ſpikes conſiſt of leaves, the ſame with thoſe of the other part of the plant. Of this ſeries there are only two known ſpecies. 1. The ſhort creeping bag *lycopodium*, with ſingle erect clubs or ſpikes. This was firſt found by Mr. Ray on Hampſtead-heath, but has ſince been met with in many other parts of England. 2. The fox-tail *lycopodium* ſending roots from the ends of its branches.

The ſecond order of the *lycopodia* comprehends thoſe which have ſpikes not placed on pedicles. Of theſe there are only three known ſpecies. 1. The juniper leaved *lycopodium* with ſingle footleſs ſpikes. This is found on the Welch mountains. 2. The fine leaved curled ſhrub *lycopodium* with ſhort drooping clubs. This grows in the iſland of St. Helena and in the Indies. 3. The ſharp, ſquare ſpiked hoary, rock *lycopodium*. This grows on the rocks in Maryland and Penſylvania.

LYCOPSIS, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe: The cup is a perianthium, divided into five broad, oblong, acute, and open ſegments, and remaining after the flower is fallen. The flower conſiſts of a ſingle petal in form of a cylindric and crooked tube; the rim of which is ſlightly divided into five ſegments, and is obtuſe. The opening is covered with five convex and prominent ſcales, converging one towards another. The ſtamina are five extremely ſmall filaments, placed at the bending of the tube of the flower. The antheræ are ſmall and covered. The piſtil has four germina. The ſtyle is ſlender, and of the length of the ſtamina; and the ſtigma is obtuſe and bifid. The cup is very large, and contains four oblong ſeeds. *Linnæi* Gen. Pl. p. 61.

LYCOPUS, *water hore hound*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind; but, in ſome degree, reſembles the bell faſhioned flowers; for the upper lip is ſcarce at all to be diſtinguiſhed from the lower, ſo that the flower appears at firſt ſight a tubular one, divided ſimply into four ſegments. The piſtil ariſes from the cup, and is fixed in the manner of a nail to the lower part of the flower. It is ſurrounded by four embryos, which afterwards become as many ſeeds of a roundiſh form, and are contained in an open capſule, which was before the cup of the flower. *Tourn.* Inſt. p. 190.

The ſpecies of *lycopus* enumerated by Mr. Tournefort are theſe. 1. The ſmooth water *lycopus*. 2. The hairy water *lycopus*. 3. The cut leaved Canada *lycopus* with ſmooth leaves. 4. The water *lycopus*, with leaves very deeply divided into ſegments.

In the Linnæan ſyſtem of botany, the characters of this genus of plants are, that the cup is a monophyllous, or one leaved perianthium, tubulated and marked with five notches at the end, the ſegments all narrow and acute. The flower is compoſed of a ſingle petal in form of a cylindric tube, of the length of the cup, the margin of which is indented by four notches, and is obtuſe and ſpread open. The ſegments are all nearly equal in length, but the upper ſomewhat broader and rimmed round the edge, and the under narrower. The ſtamina are two filaments ſomething longer than the flower, and bent towards its upper ſegment: the antheræ are very ſmall. The piſtil has a quadrifid germen. The ſtyle is thread like ſtrait, and of the ſame length with the ſtamina. The ſtigma is bifid and bent backward. It has properly no fruit, the cup remaining after the flower is fallen, and containing in its bottom the ſeeds which are roundiſh, and four in number from each flower. *Linnæi* Gen. Pl. p. 7.

LYCOSTAPHYLÆ, *wolfs grapes*, in botany, a name given by ſome of the Greek writers to the *pomum amoris*, a kind of eſculent nightſhade, which we have much more properly called *lycoperſicon*, the *wolfs peach*; its fruit being as large as a peach, and in nothing reſembling a grape. Some of the Latin authors we find have called this *morella*; and ſome who have not underſtood this ſynonymous uſe of the word, have miſtaken the writers to have meant the muſhroom we call morell, when they preſcribe this plant in fevers. The ſeeds of this plant are, however, what are uſually preſcribed in this caſe, and there is no danger therefore of their ſubſtituting the morell muſhroom for it, if they will ſtick to the letter of the text; the ſeeds of that morella being too ſmall to be gathered in ſuch quantities as are preſcribed.

Æmilius Macer tells us, that the nightſhades, in general, were called by the name *morella* in his time: his words are *herbam quam Græci ſtrychnum dixere, Latini morellam dicunt.* The name *morella* ſeems to be formed upon the word *morion*, a name given both by the Greeks and Latins to one of the ſleepy nightſhades, and to the male mandrake, of Dioſcorides, which the ſhepherds were fond of eating; but which brought on ſleepy diſorders, if taken too largely.

LYCOSTOMUS, in zoology, the name of a fiſh caught in the Baltic, but not very frequently, and approaching ſomewhat to the nature of the herring or pilchard. It is uſually of five or ſix inches long, and ſo fat and fleſhy, that its body is not flat, as all the herring kind have theirs, but rounded. Its ſcales are very ſmall and looſe, eaſily falling off on rubbing. Its belly is white. Its ſides of a ſilvery brightneſs, and its back blackiſh. Its head is ſmall and pointed, and its upper jaw is longer than the lower, which is alſo ſharp, and falls into the upper as into a box. Its mouth is wide, and both the upper and lower jaw are furniſhed with ſharp but ſmall teeth. *Schonefeld* Hiſt. Piſc.

The name *lycoſtomus* is given by Ælian, and many other of the Greek authors to the *anchovy*, called by others the *encraulus* and *encrauſicholus*, and by the late writers *encraſicolus*. Artedi proves it to be only a ſpecies of the herring or clupea, and diſtinguiſhes it from the reſt by the name of the *clupea*, with the upper jaw longeſt.

LYCURGIA, Λυκουργία, in antiquity, a feſtival celebrated by the Spartans in memory of Lycurgus, whom they honoured with a temple, and an anniverſary ſacrifice. *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 413.

LYDIAN, (*Cycl.*) in antient muſic, the ſecond ſpecies of the diapaſon. See DIAPASON.

LYDIUM *marmor*, a name given by the antients, not only to the black marble, uſed as a touch-ſtone to the trial of gold, &c. but alſo to another very different one brought from the ſame place; the ground of which was red, and the veins, which were very numerous, and uſually beautifully diſpoſed, were white. This was an elegant marble, and was uſed in moſt of the public buildings for pavements, and covering the inner ſide of the walls.

LYDIUS *lapis*, in the natural hiſtory of the antients, the name of the ſtone uſed by way of touch-ſtone for the trial of gold and ſilver, and called alſo by ſome *heraclius lapis*, both which names are alſo applied by the antients to the load-ſtone, and hence have ariſen no ſmall miſunderſtandings of their works. Pliny has obſerved, that both the load-

load-ſtone and touch-ſtone were, at times, called *lydius* and *heraclius lapis*; but Salmaſius cenſures him on this occaſion, and declares, that the load-ſtone never was called by the latter of theſe names: in this, however, that great critic errs; and Pliny, however often wrong, is there right; the antient Greeks having called it ſo, as appears from Theophraſtus, *&c.* *Hill*'s Theophr. p. 111.

The true *lapis lydius*, or touch-ſtone, was antiently found only in the river Tmolus, but afterwards it was diſcovered in many other places, and is now very common in many of the rivers of Germany. The antients give us very remarkable and circumſtantial accounts of the uſes they made of it, and it is plain they were able to diſcern the alloys in gold, by means of it, with a very great exactneſs. We at preſent uſe ſeveral different ſtones under this name, and for the ſame purpoſe; in Italy a green marble, called *verdello*, is what is moſt frequently uſed; and with us, very frequently, ſmall pieces of the *baſaltes*, the ſame with that vaſt maſs of black marble, called the *giant's cauſeway* in Ireland. See BASALTES and GIANT's *cauſeway*.

LYGDINUM *marmor*, in the natural hiſtory of the antients, the name of a ſort of alabaſter, which may properly be diſtinguiſhed by the name of the white kind. It is a very elegant and beautiful ſtone, of a whiteneſs greatly ſuperior both to the Parian marble ſo famed of old, and to the carrara of the moderns; and in ſplendor greatly ſurpaſſing all the marble claſs. It is of a looſe, rough, and ſhattery texture; and when broken, is ſeen to be compoſed of a multitude of broad, flat, and large particles, of a very bright, and perfectly white marble ſpar. It is always found pure and free from veins, and is moderately hard in the maſs, but eaſily crumbles in ſmall pieces; it is however eaſily cut, and takes a very high and elegant poliſh. It is found in immenſe ſtrata in Ægypt and Arabia, and is not uncommon in Italy. It is ſeldom found in large blocks, the ſtrata being from the nature of the ſtone ſubject to very frequent perpendicular fiſſures. And the antients give us the ſame account of it, and uſed it for making vaſes and other ornamental furniture. *Hill*'s Hiſt. of Foſſ. p. 490.

LYGDUS *lapis*, in natural hiſtory, a name given by ſome of the antients to the ſpecies of alabaſter, which others of them called *marmor lygdinum*, by which name it was moſt uſually known. See LYGDINUM *marmor*.

LYGON, in botany. See AGNUS *caſtus*.

LYGUS, in botany, is uſed for *agnus caſtus*. *Lemeri* Tr. des Drog. p. 19. See AGNUS *caſtus*.

LYING-*in-women*. The diſorders that attend *lying-in-women* are principally theſe. The ſuppreſſion, or immoderate flux of the lochia; the manner of curing which, ſee under the article LOCHIA. Inflammatory fevers are too common in theſe caſes, and uſually ariſe either from a retention of part of the ſecundines, a ſuppreſſion of the lochia, or taking cold; or finally, from violent paſſions of the mind, ſuch as anger, fear, joy, or the like. Theſe fevers very often prove fatal, if not carefully treated. The beſt method in them, is to give the ſaline medicines joined to the abſorbents, partly ſaturated with acids, and the uſual attemperating powders of nitre, and the like. The diſcuſſion of the cauſe is at the ſame time to be attempted by the mild alexipharmics, among which the cortex elutherii holds a principal place, and during the uſe of theſe, the patient is to be kept in a gentle breathing ſweat, during the courſe of the cure; the bowels muſt alſo be kept gently open, by means of mild ſuppoſitories, emollient glyſters, or the gentle laxative medicines in ſmall doſes. The miliary fever often alſo attends *lying-in-women*, the method of cure in which ſee under the article PURPUREA *febris*, and not unfrequently they fall into the *febris popularis*, diſtinguiſhed from the other by the broadneſs of the ſpots. This uſually goes off by the uſe of attemperating and abſorbent medicines, and a gently diaphoretic regimen; and finally, after about fourteen days, it is proper to carry off the remaining ſordes by ſome gentle doſes of rhubarb.

A bilious diarrhœa is often alſo a complaint at theſe times. This is eaſily brought on by violent paſſions, or by drinking cold liquors, or ſuch as are fæculent and fermenting; and ſometimes it ſucceeds a natural ſuppreſſion of a flux of blood. This often proves a very terrible and fatal ſymptom, being attended with violent pains, and an inflammation of the inteſtines, attended with an inflammatory fever, eſpecially when it continues longer than three or four days. In caſe of this ſymptom the method is to give abſorbent powders, ſuch as mother of pearl and the like; and after the matter has been corrected by this, and the other teſtaceous powders, as coral and crabs eyes, the bitter extracts of gentian, *&c.* are to be given to ſtrengthen the parts, and in the intermediate days ſmall doſes of rhubarb, and if it be neceſſary of opiates, or other anodynes carefully corrected. Aſtringents and an improper uſe of opium are very dangerous, and it is always proper to drink a large quantity of warm diluting liquors: if it be found neceſſary to give nitre, it muſt be mixed in ſmall quantities with theſe liquors.

Flatulencies are alſo very common to women in child-bed, from improper diſcharges of the *lochia*; theſe are cured by giving internally the common abſorbents with calx of antimony, oil of ſweet almonds, aniſated ſpirit of ſal armoniac, eſſence of orange peel; and, in people of hot habits, nitrous medicines, and the *ſpiritus nitri dulcis*, with carminative broths, with a ſmall quantity of ſaffron boiled in them.

After Pains are the greateſt of all the complaints of *lying-in-women*, and withal the moſt common; theſe ſometimes ariſe from difficult labour; ſometimes from ſome part of the ſecundines being left, or from blood coagulated in the uterus; they alſo frequently ariſe from the improper evacuation of the lochia, whether they be too much, or too little in the quantity; alſo from cold; from neglecting the proper binding or ligature of the abdomen after delivery; and finally, from the infant's ſucking too violently while the mother is weak.

Theſe pains are greatly mitigated by the carminative, aromatic and nervous medicines; ſuch are the tincture of orange peels, zedoary, angelica root, and camomile flowers. Caſtor is to be particularly avoided in this caſe. Candied nutmegs are a very good medicine in it, and carminative broths; with the diſtilled waters of penny royal, baum, cinnamon, and the like. Externally fomentations may be uſed at the ſame time, made of decoctions of roſemary, mint, elder flowers, and bay berries; and the common carminative clyſters are often of the utmoſt ſervice; and finally, the carminative oils, as that of caraway, and the like, may be rubbed on the pit of the ſtomach.

Theſe pains ſeldom happen to women in their firſt *lying* in; but they are not wholly exempt from them, for ſingular inſtances happen of their violence in thoſe caſes

Swelling of the belly. This is another very common complaint with women after their *lying* in; and uſually is owing to the neglecting the proper ligatures about the abdomen after delivery. The cure for this is to be found in carminatives and reſolvents, which firſt of all cleanſe the womb from all its foulneſſes, and afterwards reſtore it to its due tone. Bryony and hellebore roots in various forms, as alſo the leaves of betony, origanum and chervil ſerve to this purpoſe; and Stahl's or Becker's pills are of the moſt ſingular ſervice, but all theſe things are to be uſed for ſome time.

Swelling of the pudenda. This is a ſymptom that uſually takes its riſe from difficult delivery; and beſide the pain, and other inconveniences attending it, uſually brings on a dyſury. The proper remedies are ointments of elder and of marſhmallows, with the camphorated white ointment, commonly called by the good women ſimply unguentum. Bags of camomile flowers, with linſeed, and a little camphor, boiled in milk, and then lightly ſqueezed, are alſo of great ſervice. When the dyſury continues after the ſwelling is taken down, it is then to be treated in the common way. When there is any actual wound in the parts, the liquor of myrrh, or oil of eggs, and other balſams are to be uſed, but all fatty ſubſtances are to be carefully avoided, as they uſually occaſion tumors.

Proper treatment of lying-in-women. As ſoon as ever they are delivered, they are to be put immediately into a warm bed, and the belly wound round with a broad ſwathe or roller; they are then to be kept with the utmoſt care from external cold; for the ſweats, on the one hand, and the lochia on the other, make them extremely ſuſceptible of miſchief that way; and the conſequence is a ſuppreſſion of the lochia with fevers of a very dangerous kind, tumors of the abdomen, and many other terrible complaints. They are then to be kept extremely quiet, and if they are not in danger of fainting they are to be ſuffered to ſleep as ſoon as poſſible; but if there be any ſuſpicion of fainting, they muſt be kept awake three or four hours after delivery. Their ſtrength is then to be reſtored by broths of tender meats, as chicken, or the like, and by caudles. And the uſe of jellies, as of hartſhorn, and the like, is to be freely indulged. After the fourth day, when the painful buſineſs of the milk is over, they may be indulged with good wine, drank alone, in moderate quantities. The heat of the room is to be all the time preſerved as equally as may be; and they are to be allowed to drink as much warm liquors as they pleaſe, but they muſt not touch any cold ones. The ſeveral excretions are carefully to be regarded, and eſpecially the lochia. Great care muſt be taken that this diſcharge is not rendered too great by means of hot medicines, or a too hot regimen, nor ſuppreſſed by a cold regimen, or by the cold air. A gentle ſweating is to be encouraged, and promoted during the whole time; and even, if this become very conſiderable, in people of corpulent habits, it is not to be checked. Coſtiveneſs, during the two or three firſt days, is not to be regarded, for the vital principle is at that time ſo much engaged in the ſecretions of the lochia and milk, that it is no wonder if the bowels are leſs ſtimulated. No means are to be uſed to irritate the bowels in this time, nor ſhould the ſtomach be loaded with ſolid foods. After theſe firſt days are over, if the coſtiveneſs remains, it is proper to give glyſters at times, to make the patient take lubricating foods, and now and then ſwallow a little oil of ſweet almonds. All paſſions of the mind are to be avoided in the moſt careful manner, and all occaſions of them kept from the

the patient. Fear is often known to ſtop the lochia, and anger to bring on hæmorrhages of a dangerous kind, and ſometimes fevers and bilious diarrhœas, and both often throw the patient into faintings. The light is to be kept out of the room in a great meaſure; for it often happens, that the ſight is much impaired, and the eyes weakened in tender perſons; and ſometimes noiſes and ringing in the ears, ſometimes deafneſs is brought on.

Talking much is very improper in theſe caſes, as it eaſily throws the blood into commotions; and it is to be carefully obſerved, that when the exceſſive flux of the lochia has rendered the patients very weak, and often ſubject to faintings, they are by no means to be indulged in that ſleepineſs which uſually grows upon them at this time; for they ſometimes die in ſuch ſleeps. Bags of carminative ingredients are very properly applied to the abdomen, during the firſt days of *lying in*, for they greatly prevent flatulencies; and it is a very good cuſtom, of ſome people, to apply cloths wetted in wine to the pudenda, when ſwelled, or otherwiſe injured in delivery. In young people, eſpecially thoſe of plethoric habits, all hot things are to be avoided, and wine is to be uſed with great caution and circumſpection. If the blood is on any occaſion thrown into commotions, abſorbents, and nitrous medicines are proper: when the perſon is of a weak conſtitution, ſhe is not to be ſuffered to get out of bed until the firſt nine days are over, and not to leave her room until a month, or until five or ſix weeks are over, and then it is proper to give a doſe or two of ſome gentle purge. *Junker*'s Conſp. Med. p. 727, ſeq. See the articles DELIVERY, MOLA and LOCHIA.

LYLAC, in botany. See the article LILAC.

LYMPHÆA, among the Romans, a kind of grotto's, or artificial caves, ſo called from *lympha*, water; becauſe they were furniſhed with a great many tubes, canals, and ſecret paſſages, through which the water ſuddenly guſhed upon the ſpectators, while buſy in admiring the great variety and beautiful arrangement of ſhells, with which the grotto was adorned. *Pitiſc.* in voc.

LYNCIS *lapis*, in natural hiſtory, the name given by moſt of the writers of the middle age to the belemnites. See the article BELEMNITES.

LYNCURIUS *lapis*, in the natural hiſtory of the antients, the name of a ſtone about which there have been various diſputes among the later writers. Theophraſtus has left us this account of it; that it was hard, and uſed for engraving ſeals on, and was of a very ſolid texture like the gems; that it had an attractive power like amber, and was pellucid, and of a flame colour.

The firſt, and moſt generally received opinion about this ſtone is, that it was what we call the *belemnites*, or thunderbolt. This is the opinion of Woodward, *&c.* but from the account we find of it in Theophraſtus, this opinion is very plainly erroneous. A belemnites could never be called a proper ſtone for engraving ſeals on; nor is it by any means of a ſolid texture, as the ſtones or gems, but compoſed of a number of thin cruſts, made up of tranſverſe ſtriæ, and no harder than ſpar, being eaſily cut, or ſcraped with a knife: this therefore muſt be allowed an erroneous opinion.

The few who diſſent from this opinion, of the belemnites being the *lapis lyncurius* of the antients, of which number are Geſner, Geoffroy, *&c.* hold, that amber is the ſubſtance which was called by the antients by that name. But we find this could never be the caſe, becauſe Theophraſtus, in the account we have quoted from him of the *lyncurius*, compares it in ſome degree to amber, and obſerves, that it had an attractive power like that of amber. It is not to be ſuppoſed that any author could intend to compare a thing to itſelf, and conſequently Theophraſtus plainly aſſures us, that the *lapis lyncurius* was not amber.

All that the antients have ſaid about it, determines that it was really one of the gems, and that it was of a flame colour; and this deſcription agrees perfectly with the gem we call the hyacynth, and this doubtleſs was the ſtone they knew by that name; ſince it is plain, by the antique heads we ſee cut in it, that it was in common uſe among them; and it is plain from all their writings, that they did not know it by any other name: what they called the hyacinth being a very different ſtone, and one to which that name much more properly belonged, being a bluer amethyſt than the common kind, and ſomewhat reſembling the colour of the hyacinth flower. The antients have ſpoken of three or four kinds of it, that is, three or four varieties in degree of colour; and we alſo, at this time, are acquainted with the very ſame varieties. What they called the male and female *lyncurius*, were plainly our deeper and paler hyacinth; and the fine *lyncurius*, deſcribed by Pliny, our hyacintha la bella. *Hill*'s Theophraſt. p. 75. See the article HYACINTH.

LYNX, in zoology, the name of a very fierce beaſt of prey called in Engliſh the *ounce*, and by many Latin authors the *lupus cervarius*, or dear wolf, from its loving to feed on deer. See Tab. of Quadrupeds, N° 4.

Pliny ſeems to diſtinguiſh the *lynx* from the *lupus cervarius*, but there ſeems not the leaſt reaſon for it. The principal colours of this creature are a whitiſh, and a purpliſh yellow, variegated with numerous very beautiful round ſpots like eyes, in the manner of the *leopard*; theſe are uſually black. Sometimes it is ſeen alſo of a plain fox colour on the back, and full of black ſpots, and grey on the belly, and inner part of the legs, with the like ſpots as on the back and ſides, but larger, of a ſomewhat paler colour, and fewer in number.

The hairs of this creature, as well ſuch as appeared reddiſh, as thoſe which were grey, when nicely examined, are all found to be truly of three colours in each ſingle hair; the middle part being of a reddiſh tawney, the bottom grey, and the top white; but thoſe which compoſe the black ſpots are only of two colours, there being no white at their ends.

This creature's eyes are extremely bright and vivid, and ſhew plainly that it has a very piercing ſight. Its ears are like thoſe of a cat, but have this peculiarity, which diſtinguiſhes the creature from all the animals of the ſame claſs; they have a fine pencil of black hairs growing out at their extremities, very ſmooth, and of a deep black like velvet, and two fingers long. Its tongue is rough like that of the lion. The *lynx* is found wild in Italy and Germany, but the greater number are in Aſia, and theſe are much finer coloured than the Europæan. They all differ conſiderably from one another, at times, in the number and diſpoſition of their ſpots. *Ray*'s Syn. Quad. p. 166.

LYRA, (*Cycl.*) in ichthyology, the name of a fiſh of the cuculus, or gurnard kind, of which there are two ſpecies. The one the *tibicen*. See the article TIBICEN.

The other the *lyra cornuta*, or horned harp fiſh. This laſt is a fiſh of an octagonal form, covered all over with bony ſcales: theſe are of a rhomboidal figure, and each has in its middle a ſharp and ſtrong prickle bending backwards. There are in reality only ſix orders, or ranges of theſe ſcales, but to a ſlight obſerver they appear eight, two being larger than the reſt, and appearing double. It is of a red colour, and its head is very large. Its ſnout divides toward the extremity into two long horns, on which are placed two perpendicular ſpines, and a third above makes an acute angle with theſe. It has one very long fin on the back, and another anſwering to it behind the anus; alſo two large ones at the gills, and two ſmaller on the belly. It has only two filaments, called fingers, behind its gill-fins. Its mouth is large, but has no teeth, and there are ſeveral beards on its under jaw; two of which are longer than the reſt, and are branched. It is caught in the Mediterranean, and brought to market at Rome. It is a ſcarce fiſh in other places, and at Montpelier was once ſhewed to Mr. Ray for the *remora*. See Tab. of Fiſhes, N° 45. *Geſner* de Piſc. p. 610.

LYRA is alſo the name of a beautiful ſea ſhell of the genus of the *concha globoſa*, or dolium. There are three ſpecies of the *lyra*, or harp ſhell. 1. The common *lyra*, which has thirteen roſe coloured ribs running along its body. 2. The eleven ribbed *lyra*. And 3. the noble harp, or *lyra nobilis*. This is a moſt elegantly variegated ſhell; its ground colour is a deep brown, and its variegations very elegant and black.

LYRATUM *folium*, among Botaniſts. See LEAF.

LYRODI, among the antients, a kind of muſicians who played on the lyre, and ſung at the ſame time. See the article LYRE, *Cycl.*

LYRODI was alſo an appellation given to ſuch as made it their employment, to ſing lyric poems compoſed by others. *Pitiſc.* in voc.

LYSANDRIA, λυσανδρια, in antiquity, a Samian feſtival celebrated with ſacrifices and games, in honour of Lyſander the Lacedæmonian admiral. It was antiently called *herea*, which name was aboliſhed by a decree of the Samians. *Potter*, Archæol. Græc. l. 2. c. 20. Tom. I. p. 413.

LYSIMACHIA, *willow herb*, in the Linnæan ſyſtem of botany, the name of a genus of plants, the characters of which are theſe. The cup is an erect perianthium divided into five ſegments, and remaining after the flower is fallen. The flower conſiſts of a ſingle petal, which forms no tube, but is divided into five oval oblong ſegments at the edge. The ſtamina are five tapering filaments cohering together at their baſe: theſe are but of half the length of the flower. The antheræ are pointed; the germen of the piſtil is roundiſh; the ſtyle is ſlender, and of the length of the ſtamina; the ſtigma is obtuſe. The fruit is a globoſe capſule, containing only one cavity, which has ten valves. The ſeeds are very numerous, and of an angular figure. The receptacle is globoſe, very large, and dotted. *Linnæi*, Genera Plant. p. 65.

The characters of *lyſimachia*, according to Tournefort, are theſe. The flower conſiſts of one leaf, and is rotated, and divided into ſegments at the edge. The piſtil ariſes from the cup, and is fixed into the lower part of the flower, in the manner of a nail, and afterwards ripens into a ſhell, or fruit, nearly of a globular figure, and opening

at

at the end, is ſeen to contain many ſeeds affixed to a placenta.

It is to be obſerved, that the word *willow herb* with us is the name of ſeveral different genera of plants, as is alſo the *lyſimachia* with many authors. It is here reſtrained to the yellow *willow herb* alone; but takes in alſo what our authors have erroneouſly accounted a diſtinct genus of plants, and called *nummularia*, or money wort, from the roundneſs of the leaves of the common kind, which reſemble pieces of money.

The ſpecies of *lyſimachia*, thus aſcertained, are theſe. 1. The common great yellow *willow herb*. 2. The yellow *lyſimachia* with leaves growing three at a joint. 3. The yellow *lyſimachia* with leaves four at a joint. 4. The yellow *lyſimachia* with leaves five at a joint. 5. The great five leaved *lyſimachia* of America with double yellow flowers. 6. The leſſer yellow *willow herb* with leaves ſpotted with black. 7. The three leaved yellow *lyſimachia* with ſpiked flowers. 8. The two leaved yellow *lyſimachia* with globular tufts of flowers. 9. The white flowered ſpiked willow leaved *lyſimachia*, called by ſome authors *ephemerum*. 10. The procumbent ſpreading ſmall round leaved *lyſimachia*, called *nummularia lutea*, or yellow moneywort. 11. The round leaved ſpreading procumbent *lyſimachia* with purple flowers, called *purple moneywort*. 12. The low ſpreading yellow *lyſimachia* with roundiſh, but pointed leaves, commonly called *anagallis lutea nemorum*, yellow pimpernel of the woods. And 13. the ſmall annual knotgraſs leaved *lyſimachia*, called *linum ſtellatum minimum* by Caſpar Bauhine.

Authors have called alſo ſeveral other plants by this name, which properly belong to other genera.

Of the number of theſe are the *lyſimachia lutea corniculata*, or horned yellow *willow herb*, which is a ſpecies of onagra. 2. The ſpecies of ſiliquoſe, or podded *willow herbs*, which are properly chamerions. 3. The purple ſpiked *willow herb*, which is a ſpecies of ſalicaria. 4. The blue ſpiked *willow herb*, which is a kind of veronica. 5. The headed *willow herb*, which is a ſpecies of caſſia. *Tourn.* Inſt. p. 141.

LYSIMACHIA *worm*, in natural hiſtory, a name given to an inſect found very frequently feeding on the leaves of the *lyſimachia*, or willow herb. It has uſually been eſteemed a caterpillar, but is properly one of the fauſſe chenilles, having a rounded head, and twenty two legs. This creature changes its ſkin ſeveral times, and finally changes its colour with it. It is at firſt of a blueiſh grey, but on its laſt change in the worm ſtate, it becomes of a yellowiſh green. When it has lived a week, or thereabout, after this laſt change, it becomes a chryſalis, from which there afterwards comes out a four winged fly. *Reaumur*'s Hiſt. Inſect. Vol. 9. p. 18.

LYSSA, a word uſed by medical authors to expreſs that ſpecies of madneſs which is peculiar to dogs and wolves, but is communicated by their bite to man and other animals. Hence perſons, labouring under the diſmal effects of ſuch a bite, are called alſo *lyſſodecti*.

LYTHRUM, in botany, a name by which Linnæus calls a genus of plants, named by Tournefort, and other Authors, *ſalicaria*. *Linnæi* Gen. Pl. p. 208. See SALICARIA.

The End of the FIRST VOLUME.

HUMANITIES REFERENCE

NON-CIRCULATING

HUMANITIES